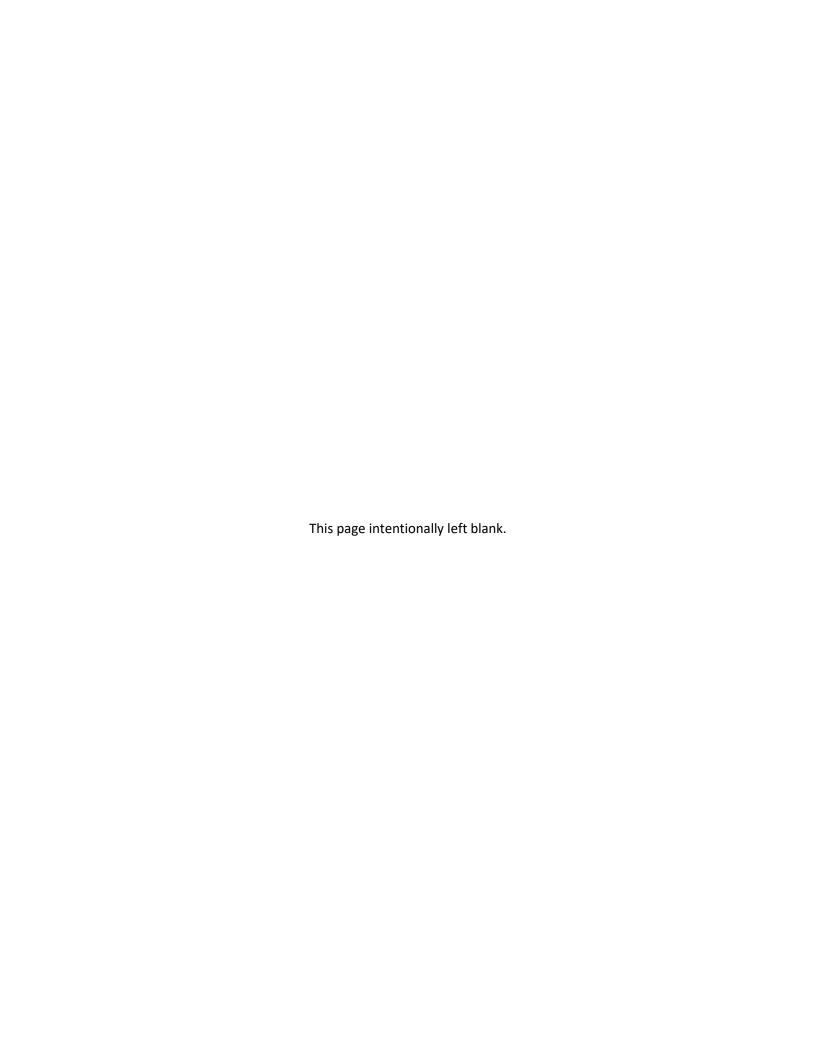
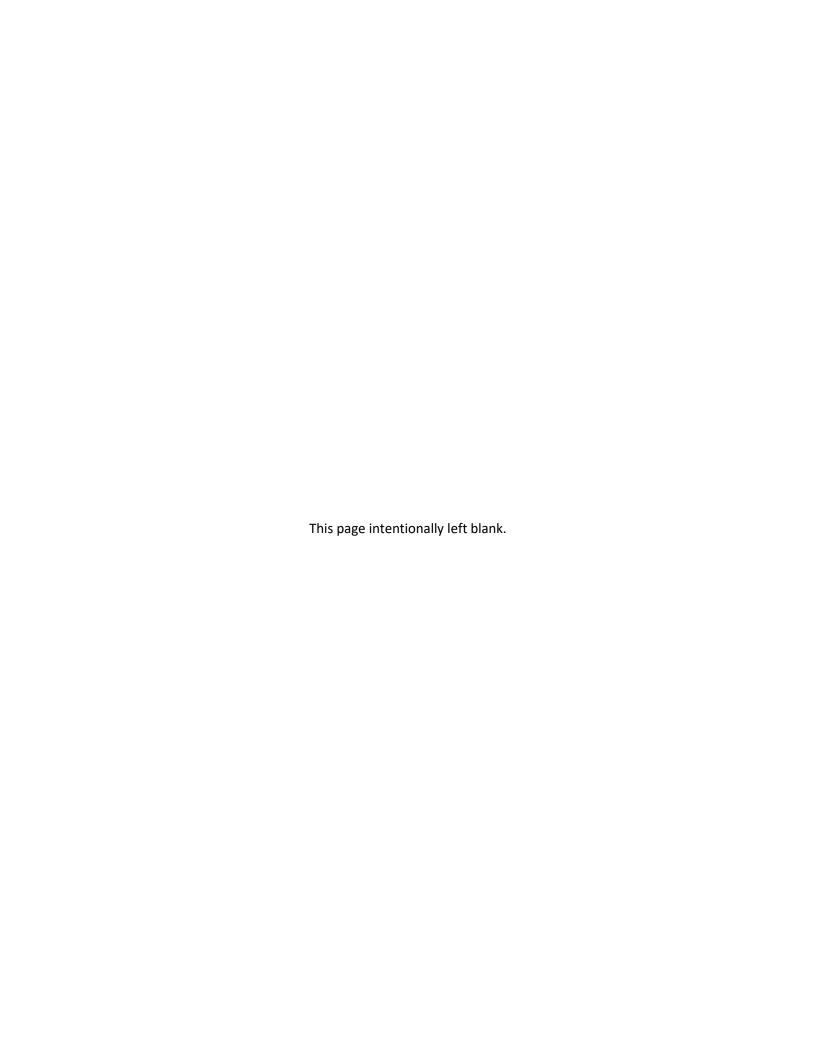
Appendix F

**Cultural Resource Reports** 



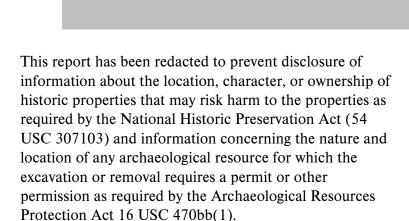




# —Final —

Archaeological Inventory Survey at Pacific Missile Range Facility in Support of Real Estate Environmental Impact Statement, Ahupua'a of Waimea, Kona District, Kaua'i Island

TMKs (1) 4-001:013 por., (1) 4-001:014 por., (1) 2-001:006 por., (1) 2-002:013 por., (1) 2-002:025 por., (1) 2-002:026 por., (1) 2-002:001 por., (1) 2-002:027 por., (1) 2-002:029 por.



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Contract No. N62742-18D-1802 Task Order N6274222F0206



INTERNATIONAL ARCHAEOLOGY, LLC
AUGUST 2024

# —FINAL —

# ARCHAEOLOGICAL INVENTORY SURVEY AT PACIFIC MISSILE RANGE FACILITY IN SUPPORT OF REAL ESTATE ENVIRONMENTAL IMPACT STATEMENT, AHUPUA'A OF WAIMEA, KONA DISTRICT, KAUA'I ISLAND

TMKS (1) 4-001:013 POR., (1) 4-001:014 POR., (1) 2-001:006 POR., (1) 2-002:013 POR., (1) 2-002:025 POR., (1) 2-002:026 POR., (1) 2-002:001 POR., (1) 2-002:027 POR., (1) 2-002:029 POR.

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August 2024

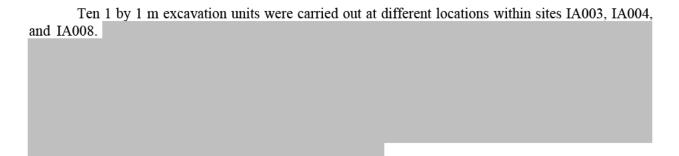
#### ABSTRACT

Under contract to AECOM Technical Services, Inc., and at the request of Naval Facilities Engineering Systems Command Pacific (NAVFAC Pacific), International Archaeology, LLC (IA) conducted archaeological inventory survey (AIS) of 533 acres at Pacific Missile Range Facility (PMRF), Kaua'i, Hawai'i. The AIS included pedestrian survey and subsurface testing on multiple discrete parcels, roads, and utility corridors distributed across PMRF. The survey area consisted of State lands including leaseholds and easement lands currently used by the United States Department of the Navy (Navy) at PMRF. The Navy proposes to retain the use of these 533 acres along with other State lands totaling 8,172 acres in support of continued and ongoing military training and testing at PMRF. The 533-acre survey area had not been fully inventoried prior to the current AIS.

As part of the proposed action, the National Aeronautics and Space Administration (NASA) also proposes to retain the use of 23 acres of State lands on Kaua'i, Hawai'i, in support of continued operations including measurements of the Earth's rotation and local land motion at Kōke'e Park Geophysical Observatory (KPGO). A separate AIS is being conducted for the KPGO lands. The proposed action is needed because the existing real estate agreements for these lands are set to expire between 2027 and 2030. The Navy and NASA are considering two action alternatives and the No Action Alternative. All work was done in compliance with the Antiquities Act of 1906; the Archaeological Resources Protection Act (ARPA) of 1979 and implementing regulations (32 CFR Part 229); the National Historic Preservation Act (NHPA) 1966, as amended, and implementing regulations (36 CFR Part 800); the Native American Graves Protection and Repatriation Act (NAGPRA); the PMRF Comprehensive Agreement; Department of Defense Instruction (DoDI) 4715.16; Navy Environmental Manual OPNAV-M 5090.1; and the methods and procedures outlined in the project's Performance Work Statement (PWS). The PWS is considered the equivalent of a federal permit as described in these acts and regulations. The current AIS was also conducted in compliance with Chapter 6E-42, Hawai'i Revised Statutes (HRS) and Hawai'i Administrative Rules (HAR) Chapters 13-276 and 13-284.

Archaeological pedestrian survey and subsurface testing was conducted within approximately 533 acres of the 8,172 acres consisting of multiple discrete parcels, roads, and utility corridors distributed across and outside of the main PMRF installation. These areas consisted of four main locations: 1) Mākaha Ridge (approximately 37 acres), 2) between the eastern boundary of PMRF Barking Sands and Kaumuali'i Highway (hereafter referred to as Main Base South [approximately 250 acres]), 3) northeast of North Nohili Road to the boundary of Polihale State Park (hereafter Main Base North [approximately 70 acres]), and 4) Kamokalā Ridge and portions of the surrounding area (approximately 176 acres). All of these survey areas are found along the western edge of Waimea Ahupua'a, Kona District, Kaua'i Island (TMKs [1] 4-001:013 por., [1] 4-001:014 por., [1] 2-001:006 por., [1] 2-002:013 por., [1] 2-002:025 por., [1] 2-002:026 por., [1] 2-002:001 por., [1] 2-002:027 por., [1] 2-002:029 por.) Five previously recorded sites and twelve newly recorded sites were identified during the AIS. The five previously recorded sites include one in Main Base South (50-30-05-2000), one in Main Base North (50-30-01-2049), and three in Kamokalā Ridge (50-30-05-0652, 50-30-05-0653, and 50-30-05-0658). Of these previously identified sites, two are historic in age, dating to around the WWII era, and

The twelve new sites were recorded and given temporary site numbers: two in Main Base North (IA011 and IA012) and 10 in Kamokalā Ridge (IA001 to IA010). Both sites in Main Base North are historic in age, with one consisting of a wooden framed structure associated with a small arms range and the other an extensive refuse area of bundled barbed wire, concrete rubble, and a mixture of broken glass and ceramic debris. The sites at Kamokalā Ridge include (exclusively WWII era and after) refuse areas with evidence of ranching.



The sites were assessed for National Register of Historic Places (NRHP) eligibility (NRB 15: 1997) and Hawai'i Revised Statue (HRS) Chapter 6E significance (HAR 13-284-6(b). Eight of the sites recorded at Kamokalā Ridge (IA001 through IA006, and IA008 and IA010) are assessed as eligible for listing on the National Register of Historic Place (NRHP) and evaluated as eligible under NRHP Criterion D and significant under HRS Chapter 6E under criteria d and e.

The eight sites recommended as eligible for NRHP listing and evaluated as significant under HRS Chapter 6E, have the potential to provide important information about the prehistory and history of Kaua'i and Hawai'i more generally. These sites are likely part of a more comprehensive system of agricultural infrastructure and offer an important opportunity to understand the timing of Hawaiian settlement into interior landscapes on Kaua'i. Additionally, this agricultural landscape also has the potential for providing comparative information useful for documenting the trajectory of this process across the Hawaiian archipelago.

As a consequence of the importance of these eight sites, it is recommended that a preservation plan be developed for the area. Furthermore, the potential impact to sites from future activities should be assessed during project planning stages and archaeological monitoring or additional mitigation actions be considered. A series of research questions about PMRF's inland sites should be integrated into a formal research design as part of PMRF's ICRMP and/or other management documents so that the importance of these inland resources, especially IA03, can be acknowledged and further examined during subsequent archaeological investigations. Finally, PMRF's ICRMP should be updated to include the new site information gathered during the AIS.

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# I. INTRODUCTION

Under contract to AECOM Technical Services, Inc., and at the request of Naval Facilities Engineering Systems Command Pacific (NAVFAC Pacific), International Archaeology, LLC (IA) conducted archaeological inventory survey (AIS) of approximately 533 acres at Pacific Missile Range Facility (PMRF), Kaua'i, Hawai'i (Figure 1 to Figure 3). The AIS included pedestrian survey and subsurface testing on multiple discrete parcels, roads, and utility corridors distributed across PMRF. The survey area consisted of State lands including leaseholds and easement lands currently used by the United States Department of the Navy (Navy) at PMRF. The Navy proposes to retain the use of these 533-acres along with other State lands totaling 8,173 acres in support of continued and ongoing military training and testing at PMRF. The 533-acre survey area had not been fully inventoried prior to the current AIS.

As part of the proposed action, the National Aeronautics and Space Administration (NASA) also proposes to retain the use of 23 acres of State lands on Kaua'i, Hawai'i, in support of continued operations including measurements of the Earth's rotation and local land motion at Kōke'e Park Geophysical Observatory (KPGO). A separate AIS is being conducted for the KPGO lands. The proposed action is needed because the existing real estate agreements for these lands are set to expire between 2027 and 2030. The Navy and NASA are considering two action alternatives and the No Action Alternative. All work was done in compliance with the Antiquities Act of 1906; the Archaeological Resources Protection Act (ARPA) of 1979 and implementing regulations (32 CFR Part 229); the National Historic Preservation Act (NHPA) 1966, as amended, and implementing regulations (36 CFR Part 800); the Native American Graves Protection and Repatriation Act (NAGPRA); the PMRF Comprehensive Agreement; Department of Defense Instruction (DoDI) 4715.16; Navy Environmental Manual OPNAV-M 5090.1; and the methods and procedures outlined in the project's Performance Work Statement (PWS). The PWS is considered the equivalent of a federal permit as described in these acts and regulations. The current AIS was also conducted in compliance with Chapter 6E-42, Hawai'i Revised Statutes (HRS) and Hawai'i Administrative Rules (HAR) Chapters 13-276 and 13-284.

# PROJECT LOCATION

PMRF is located approximately 100 miles from O'ahu on the northwest coast of the Hawaiian island of Kaua'i. PMRF occupies over 993.5 ha (2,454 ac.) in five separate areas on the island. The larger project in for which the AIS supports includes the following areas.

- Kamokalā Ridge: leaseholds (89 acres) and easement lands (355 acres) used for ordnance storage, utilities access, and tsunami evacuation;
- Mana Water Well: leaseholds (0.29 acre) used as the primary potable water source for PMRF;
- Mākaha Ridge: leaseholds (203 acres) and easement lands (42 acres) used for missile tracking and surveillance;
- Miloli'i Ridge: leaseholds (0.015 acre) used for radar and telemetry activities; and

• KPGO: leaseholds (16 acres) and easement lands (7 acres) used for surveillance and tracking, as well as NASA geodetic data collection and backup power generation

The AIS was carried out over four distinct areas within these more extensive parcels: 1) Mākaha Ridge (approximately 37 acres; approximately 1.77 km (1.09 miles [mi], to 6.825 km [4.24 mi] inland , 2) between the eastern boundary of PMRF Barking Sands and Kaumuali'i Highway (hereafter referred to as Main Base South; approximately 250 acres, 250 m [820.20 ft.] to 950 m [3,116.80 ft.] inland), 3) northeast of North Nohili Road to the boundary of Polihale State Park (hereafter referred to as Main Base North; approximately 70 acres, 250 m [820.21 ft.] to 750 m [2,460.63 ft.] inland), and 4) Kamokalā Ridge (approximately 176 acres, 2.82 km [1.75 mi] to 3.74 km [2.32 mi] inland) and portions of the surrounding area. The entirety of the survey area is on the western edge of Waimea Ahupua'a, Kona District, Kaua'i Island (see Figure 1 to 3).

The following TMK parcels were surveyed during the AIS: Makaha Ridge (TMKs [1] 4-001:013 por., [1] 4-001:014 por., [1] 2-001:006 por.), PMRF Main Base North and South (TMKs [1] 2-002:013 por., [1] 2-002:025 por., [1] 2-002:026 por., [1] 2-002:001 por.), and Kamokala Ridge (TMKs [1] 2-002:001 por., [1] 2-002:027 por., [1] 2-002:029 por.).

#### REPORT ORGANIZATION

This document includes six sections. Section I introduces the project logistics, describes the project area, and report organization. Section II summarizes the physical environmental characteristics and important cultural, historical, and archaeological background information for the survey areas. Section III presents the research questions that guided the investigations and aided in the NRHP eligibility and HRS Chapter 6E significance evaluations. Section IV discusses the field and laboratory methods that were employed. Section V presents the results of the pedestrian survey and subsurface testing for each of the four survey areas. Section VI provides the NRHP eligibility and HRS Chapter 6E significance evaluations for the newly identified sites. References cited and a glossary of Hawaiian words used in the report are presented after Section VI. Appendix A is the catalog list. Appendix B is the radiocarbon dating results. Appendix C is a list of the fish bony elements used for taxonomic identifications. Appendix D presents the geochemical non-destructive energy-dispersive x-ray fluorescence (EDXRF) data.

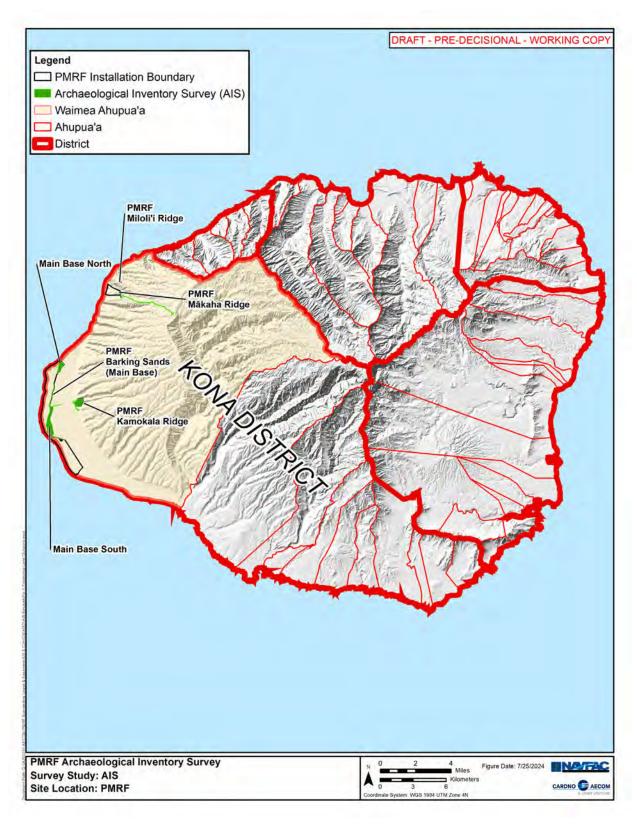


Figure 1. Traditional land divisions in Kaua'i and location of the archaeological survey areas within Waimea Ahupua'a in Kona District.

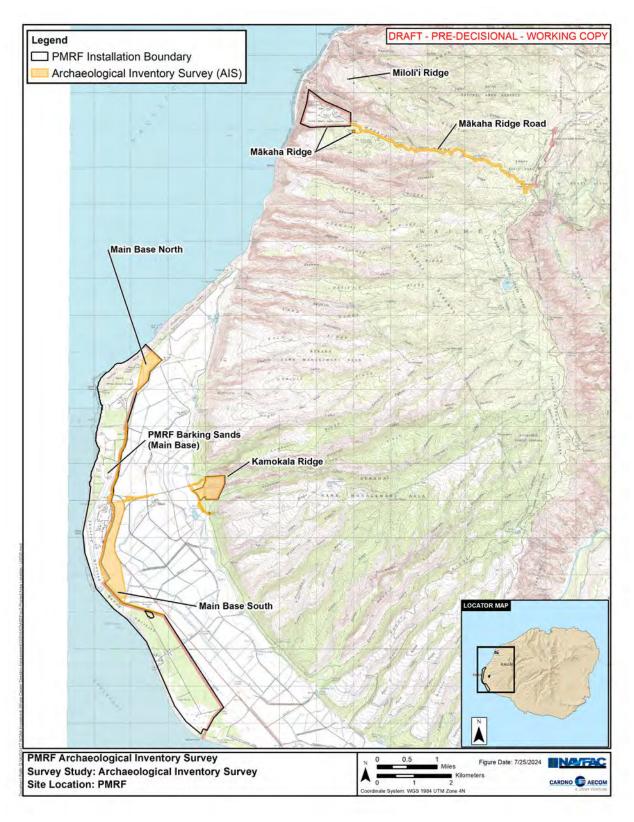


Figure 2. Archaeological survey areas within PMRF (USGS Kekaha and Mākaha Point Quadrangles 1991). Note that Barking Sands refers to the location of the Main Base survey areas.



Figure 3. Archaeological survey areas overlaid on World Imagery (World Imagery, ArcGIS Online 2021). Note that Barking Sands refers to the location of the Main Base survey areas.

# II. BACKGROUND

This section presents background information to contextualize the project and summarizes the physical environment, cultural and historical context, and previous archaeological research near the project area. Much of this information has been adapted from the 2005 and 2012 Integrated Cultural Resources Management Plans (ICRMPs) for PMRF (SEARCH 2012; Tomonari-Tuggle and Yoklavich 2005), Bell and Morrison (2009), and Knecht and Rieth (2016). More detailed information about PMRF and the surrounding area can be found in the two primary ICRMPs (Tomonari-Tuggle and Yoklavich 2005; SEARCH 2012).

#### PHYSICAL ENVIRONMENT

PMRF is located approximately 100 miles from O'ahu on the northwest coast of the Hawaiian island of Kaua'i and occupies over 993.5 ha (2,454 ac.) in five separate areas. The current AIS survey areas are within and around the components of PMRF. The Main Base (often referred to as Barking Sands) is located along the coastal plain. Mākaha Ridge is situated on the central mountain mass of the island. Kamokalā Ridge is at the inland edge of the Mānā Plain at the base of the central mountains.

PMRF's Main Base covers over 864 ha (2,134 ac.) on the Mānā Plain. The installation occupies most of the coastal fringe of the plain, extending 12.5 km from Kokole Point in the south to Polihale State Park in the north. At its northern and southern boundaries, the Main Base is slightly over 1 km wide, narrowing to less than 0.5 km in the central portion. The northern two-thirds of the plain is a complex of three key physiographic features: coastal dune and back beach sands formed by aeolian and wave action, an arc of alluvial/colluvial deposition at the inland edge of the plain, and wetlands in the intermediate area. The southern third of the plain, in contrast, has a low dune, with relatively level soils extending back to the edge of the central mountain.

PMRF's Mākaha Ridge Facility encompasses approximately 99 ha (245 acres) of a prominent  $N\bar{a}$  Pali ridgeline that overlooks the Mānā Plain. The ridge rises from 380 m to 565 m above sea level (asl) with an overall slope from east to west. The terrain surrounding the facility is steep, dropping quickly to the ocean along the west side and into narrow V-shaped drainages along the north and south sides.

PMRF's Kamokalā Ridge Installation is just inland from the Mānā Plain, in an area where the ancient 150- to 200-meter-high sea cliffs have been incised by narrow, steep-walled gullies. The more gently sloped foothills at the base of the cliffs and mouths of the gullies have formed alluvial and colluvial arcs that project seaward. Atop the largest of these is the Kamokalā Ridge Installation. Kamokalā Ridge is bound by Nahomalu Valley to the north and Kaʻawaloa Valley to the south.

Rainfall across the survey area is very low, with mean annual precipitation averaging 15 to 20 inches, increasing to 36 inches at the Mākaha Ridge Tracking Station and gradually increasing further along Mākaha Ridge to the east with an average of 48 inches (Giambelluca et al. 2013). Most rain falls between October and April. The aridity of this region is caused by its location in the rain shadow of Mount Kawaikini and Mount Wai'ale'ale (Tuggle and Tomonari-Tuggle 1997:37). The average minimum annual temperature occurs in January and is approximately 71°F, and the average maximum temperature occurs in August and is 78°F (Giambelluca et al. 2013).

Numerous soil types are found in the survey area due to the variation in terrain (Figure 4 and 5). The following soil descriptions are adapted from Foote et al. (1972).

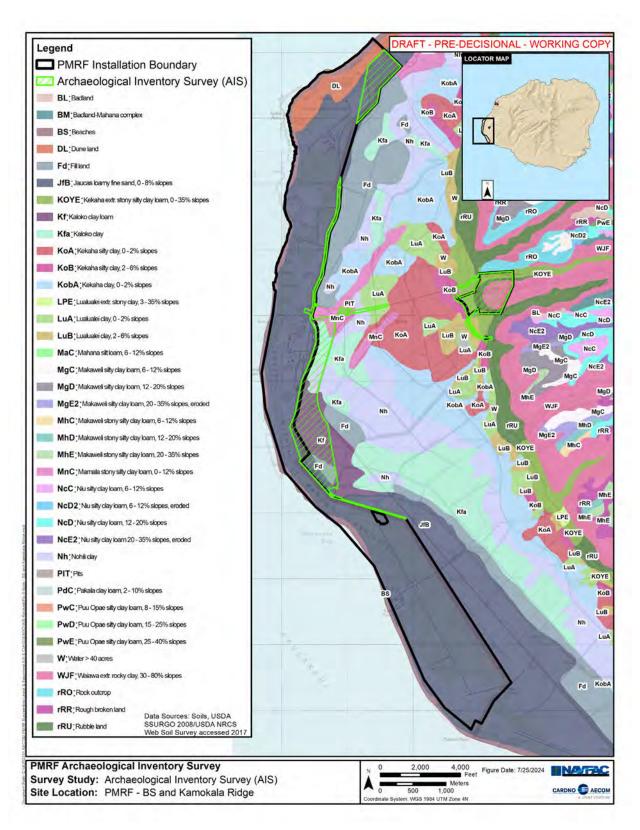


Figure 4. USDA soil classes in the vicinity of the survey area at Barking Sands (North and South) and Kamokalā Ridge.

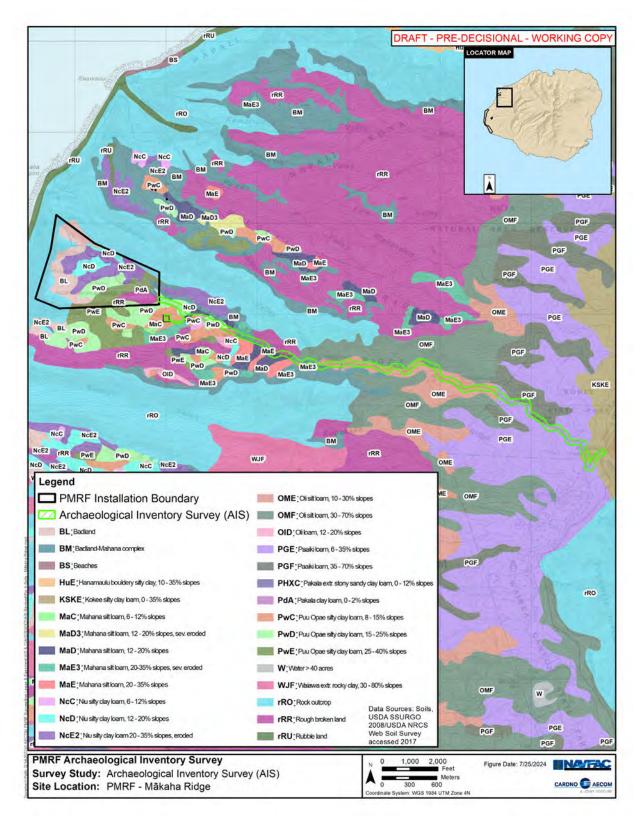


Figure 5. USDA soil classes in the vicinity of the survey area at Mākaha Ridge.

Along the coastal survey areas, five primary soil series are present. The Jaucas series, and Jaucas loamy fine sand (JfB), soils are excessively drained, calcareous soils that occur as strips on coastal plains. These soils develop by alluvial and aeolian deposition of sand formed from coral and seashells. Jaucas loamy fine sand (JfB, 0–8 percent slopes) occurs on old beaches and windblown sand deposits in the western and southern areas of Kaua'i. The Kaloko series, and Kaloko clay (Kf) and clay loam (Kfa), are poorly drained soils on coastal plains. These soils developed in alluvium derived from basic igneous rocks; the alluvium has been deposited over marly lagoon deposits. The Mamala series, and Mamala stony silty clay loam (MnC), 0–12% slopes, consist of shallow, well-drained soils along coastal plains. These soils formed in alluvium deposited over coral limestone and consolidated calcareous sand. The Lualualei series, and Lualualei clay (LuA), 0–2% slopes, consist of well-drained soils on coastal plains, alluvial fans, and talus slopes. These nearly level to gently sloping soils developed in alluvium and colluvium. The Nohili series, and Nohili clay (Nh), are poorly drained soils on coastal plains. These soils developed in alluvium that was deposited over marly lagoon deposits (Figure 4 and 5). Also present within this area are fill lands, which are low-lying or wetland areas that have been filled with bagasse and slurry from sugarcane processing, and dune lands, which are hills and ridges of sand drifted and piled by wind.

Along Kamokalā Ridge, two primary soil series are present (Figure 4). The Kekaha series, and Kekaha extremely stony silty clay loam (KOYE), 0–35% slopes, consist of well-drained soils on alluvial fans and flood plains that developed in alluvium washed from upland soils. The Waiawa series, and Waiawa extremely rocky clay (WJF), 30–80% slopes, are well-drained, very shallow, extremely rocky upland soils. These soils developed in colluvium and material weathered from basic igneous rock. Also present within this area are rubble lands, where 90 percent or more of the surface is covered by stones and boulders at the base of steep slopes.

Along Mākaha Ridge, five primary soil series are present (Figure 5). The Paaiki series, and Paaiki loam (PGE and PGF) 6–70% slopes, consist of well-drained soils on dissected uplands. These soils developed mainly in material weathered from basic igneous rock but partly in volcanic ash and ejecta. The Oli series, and Oli silt loam (OME and OMF), 10–70% slopes, consist of well-drained, moderately deep to deep soils on uplands. These soils developed in volcanic ash deposited over basic igneous rock. The Mahana series, and Mahana silt loam (MaD and MaE) 12–35% slopes, consist of well-drained soils on uplands. These soils developed in volcanic ash. The Puu Opae series, and Puu Opae silty clay loam (PwC and PwD), 8–40% slopes, consist of well-drained soils on uplands. These soils developed in material weathered from basic igneous rock. The Niu series, and Niu silty clay loam (NcC and NcD), 6–35% slopes, consist of well-drained soils on uplands. These soils developed in material weathered from basic igneous rock, possibly mixed with volcanic ash.

### TRADITIONAL LAND USE

Traditional land uses near the survey areas include habitation, subsistence activities, burial, and travel. These themes provide expectations for the categories of archeological sites that may be found during the AIS and also provide historical context for understanding how identified archaeological sites may potentially contribute to generating knowledge about the past. These themes are briefly summarized here.

# SETTLEMENT ON THE MĀNĀ PLAIN

Wichman (1991:12), in relaying the story of Polihale, a *konohiki* chief, describes the Mānā area in pre-Contact times as:

... a land that stretched from the western cliffs of Na Pali to the eastern boundary shared with Waiawa. Mānā is a land of long white beaches with the ocean on one side and a large swamp that teemed with birds on the other. Inland of the marsh was a fertile strip of land where sweet potatoes and gourds were grown. Above these fields cliffs rose stiff backed, broken wide by valleys down which constantly flowed fresh spring or rain water. The ridges, covered with sandalwood and *koa* (*Acacia koa*) trees, stretched into the mountains wreathed with cold and misty rain.

It is likely that permanent settlements were concentrated at the inland edge of the Mānā Plain, where houses, temples, and agricultural complexes were built in the foothills at the base of the cliffs, on high ground overlooking the wetlands and coastline.

Small fishing communities, possibly limited to temporary camps, were scattered along the coast, concentrating near optimal localities such as breaks in the reef where canoes could be launched or where reefs provided rich habitat for near-shore marine resources. Some camps were located on the protected, lee sides of the high dunes from Nohili Point to Polihale. Bennett (1931:102) observed house sites marked "by single rows of stones ... or by low walls" along the inland side of the dunes. Flores and Kaohi (1992:44) suggest that the sites on the inland side of the high dunes may have been permanent homes for:

Those families whose time was mostly occupied with fishing ... [The dunes] provided them protection from ocean storm waves, flood waters, and strong on-shore winds—yet, still close enough to easily access the ocean resources. Taro was cultivated in portions of Kolo Swamp that were adjacent and *mauka* of these house sites.

#### RESOURCE COLLECTION AND SUBSISTENCE

The people of Mānā were noted as fishermen, taking advantage of the rich waters of the channel between Kaua'i and Ni'ihau. Fishing was not confined to the ocean and shoreline of Mānā, but also included the swamps and ponds on the coastal plain. The swamp areas of Limaloa, Kawaiele, Nohili, and Kolo were utilized as brackish water *loko pu'uone* fishponds (Kikuchi 1987:5, 9; Kilauano 1991).

Although their modern forms are clearly related to the plantation era, the Nohili Ditch and the Kawaiele Ditch may have had earlier iterations as traditional Hawaiian ditches related to the functioning of the inland ponds for aquaculture. The Mānā Plain ponds were formed by water accumulating behind the dune berms with the natural ponds enhanced by excavation of channels through the dunes to allow the flow of ocean water into the ponds during high tide (Kikuchi 1987:9). The wetlands were also a place where wild resources could be collected.

Taro, sweet potato, bananas, and other food crops were also grown in and at the mouths of the narrow gulches that fed onto the plain; however, the aridity of the plain limited the amount of farming. Pukui (1983:271) writes of the proverb "Ola i ka 'ai uwahi 'ole o ke kini o Mānā, the inhabitants of Mānā live on food cooked without smoking." She says that in ancient days, the people of Mānā "did very little poi-making, except in a place like Kolo, where taro was grown" (see also Kilauano 1991). Handy (1940:61) notes that "wet taro has been grown at the northern end of the Mānā swamp, near the Barking Sands." However, most Mānā people exchanged fish and dryland products (like gourds) with taro producers from other parts of the island. Thus, because "all the taro cooking and poi-making was done elsewhere, the people of Mānā were said to live on 'smokeless food'" (Pukui 1983:271).

The coastal plain adjacent to the Main Base was a source of natural items that were collected and used for a variety of purposes. These included 'a'ali'i shrubs for firewood, hi'aloa and other plants for medicine, and makaloa and neki for weaving. The neki and makaloa were used in plaiting mats and other articles, the fashioning of which was called moena makaloa.

#### **BURIALS**

The coastal dunes of the Mānā Plain were the burial grounds of ancient Hawaiians. Human skeletal remains have been found in the sands of PMRF's Main Base, as well as in mixed sandy soils nearly a kilometer inland, from the north end of the installation to Waiapua'a Bay and Kokole to the south. References to burials in the Nohili area appear in oral traditions and literature (e.g., Fornander 1917).

#### **TRANSPORTATION**

There were two primary traditional land routes across the Mānā Plain: one along the shoreline and the other along the base of the cliffs and ridges. Other trails ran inland from the coastal plain to the mountains. People also traveled by canoe, particularly going to and from the valleys of the Nā Pali coast, by launching from beaches with unobstructed reefs and passageways such as at Palaiholani, Keanapuka, Poʻoahonu, Keawanaiʻa, and Polihale.

An unusual means of travel in this area is noted in historical accounts that describe the Mānā Plain after heavy flooding from Kona storms. These accounts note that one could travel by canoe from Waimea to Kolo through Mānā swamps and marsh lands. Faye (1981) recalls that "in a low bottomed canoe you could row for miles on this lake.... The canoe would tip over and if you were very short you wouldn't be able to touch bottom, but if you were taller, you could sort of tread over."

#### HISTORICAL PERIOD LAND USE

Historical land uses in this area included grazing, commercial agriculture, and U.S. military activities.

# EARLY HISTORIC PERIOD

Early Western explorers were not particularly interested in the Mānā Plain, which was described as a hot and dry place with large sections of marshland (Portlock 1789:170–171; SEARCH 2012). The inhabitants of Mānā, including the Main Base and Kamokalā Ridge survey areas, largely lived in the traditional ways of their ancestors until the 1848 *Mahele*, which wrought wide-ranging social changes and provided for private land ownership. Kamehameha III (Kauikeauouli) was granted the entire *ahupua* 'a of Waimea as crown land (92,646 acres) which he then provided to the government before his death in 1854 (SEARCH 2012: 36-37; Maly and Wulzen 1997:20). After the *Mahele*, some of these remaining crown lands within the project area at Mānā were used for grazing the royal family's cattle (SEARCH 2012: 37; Gonzalez et al. 1990a:28).

#### **COMMERCIAL AGRICULTURE**

Shortly after the *Mahele*, commercial agricultural practices were brought to the Mānā Plain by leases on crown lands to Archibald Archer and eventually Valdemar Knudsen. These commercial practices included grazing cattle, timber harvesting, and cultivation of crops such as tobacco, coffee, fruit, rice, and sugarcane (Jones 1992:6; Sweeney 1994:10; SEARCH 2012). As commercial crop cultivation increased, so too did the number of agricultural workers needed to tend the crops. The majority of these agricultural workers came from China, Japan, and the Philippines. With the influx of agricultural workers, the need for workers' housing also increased, and according to Smith (1989:4), the first camp for housing agricultural

workers dates to 1852. As agricultural production on the Mānā Plain expanded, much of the marshland was filled in or drained to provide more space for crops, with increasing amounts of land being converted to sugarcane cultivation, primarily as part of Kekaha Sugar Company, Ltd., which was formed in 1898 by Knudsen and L'Orange and continued operations through the 20th century (SEARCH 2012).

#### U.S. MILITARY

An early non-agricultural use of the land that would one day become PMRF's Main Base was an airstrip, established by the Territory of Hawaii in 1921 and constructed by 1928 (SEARCH 2012). The landing field at Barking Sands was considered a good location as a stopover for transpacific flights. Prior to formal military use, transpacific flights occurred until the completion of the Līhu'e airport. Photo 1 shows the location of the landing field in 1935.

In 1940, the U.S. Army requested that the 550-acre Barking Sands airfield be set aside for military use. By April 1941 (Photo 2), before U.S. involvement in World War II (WWII), the airfield was expanded to the north and south by 2,058 acres. In May of 1942, the airfield was designated as Barking Sands Army Air Base and was used primarily for flight training and aircraft refueling. Photo 3 shows the landing field in 1943 after the expansion and improvements were completed. Also, in 1943, 10 tunnel magazines, some with monorail transport, were built into the cliffs at Kamokalā Ridge for bomb storage (Photo 4 and 5). In late 1944, Barking Sands was established as a Combat Crew Replacement Center, with the goal of checking, repairing, and maintaining aircraft and housing and training crewmen prior to deployment to the forward area of the Pacific Theater. Activity at the base increased with the end of the war in Europe in May of 1945 and began to gradually decrease with the official surrender of Japan in September of 1945 (SEARCH 2012).

In the years immediately following WWII, military activity at Barking Sands declined and the installation was turned over to the U.S Air Force and renamed Barking Sands Air Force Base (AFB) in 1948 (Clark et al. 2015). In 1953, the base was redesignated as Bonham AFB in honor of a Hawaii Air National Guardsman who was killed during training exercises. The U.S. Navy became a tenant at the airfield in 1956 for the purpose of training with the Regulus missile, and the Navy gave the name of their operations the Pacific Missile Range Facility in late 1958. During the early 1960s, the Kauai Test Facility (KTF) located within the Main Base, was created, and operated by Sandia National Laboratories for the Atomic Energy Commission with the mission of high-altitude atmospheric sampling during nuclear tests in the Pacific. The installation was officially transferred to the Department of the Navy in 1966, and later renamed as the Pacific Missile Range Facility at Barking Sands. Between 1966 and 1970, the Navy constructed radar and telemetry facilities at Mākaha Ridge and many additional structures at Barking Sands (Photo 6 and 7) (SEARCH 2012).

PMRF currently remains an active military installation, occupying over 993.5 ha (2,454 ac.) in five separate areas across the island. The installation supports operations ranging from single-unit exercises up to largescale, multiple-unit battle group scenarios. PMRF Barking Sands (Main Base) is the world's largest instrumented multi-domain range. The facility supports subsurface, air, and space operations simultaneously (https://cnrh.cnic.navy.mil/Installations/PMRF-Barking-Sands/, accessed 07/25/2024).



Photo 1. Barking Sands Landing Field in 1935. Source: National Archives.



Photo 2. Barking Sands Army Air Base in 1941. Source: National Archives.



Photo 3. Barking Sands Army Air Base in 1943. Source: National Archives.



Photo 4. Example of Kamokalā Ridge bomb storage magazine. Source: Tomonari-Tuggle and Yoklavich (2005).

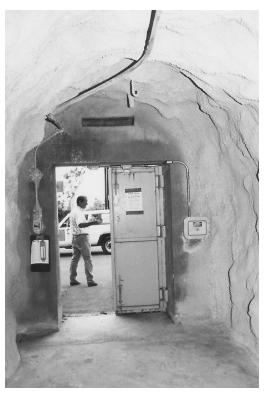


Photo 5. Example of Kamokalā Ridge bomb storage magazine. Source: Tomonari-Tuggle and Yoklavich (2005).



Photo 6. Mākaha Ridge Tracking Station in the 1960s. Courtesy of PMRF.



Photo 7. Mākaha Ridge Tracking Station with Mākaha Ridge Road in the background. Courtesy of PMRF.

# PREVIOUS ARCHAEOLOGICAL RESEARCH

This section describes archaeological studies that have been carried out at PMRF. Figures 6 to 11 illustrate the locations of major archaeological studies at PMRF's Main Base (Barking Sands) within approximately 400 m (0.25 miles) of the survey area. Table 1 lists the details of these studies. Figures 12 to 15 show the locations of previously identified historic properties within 400 m and Table 2 details these findings.

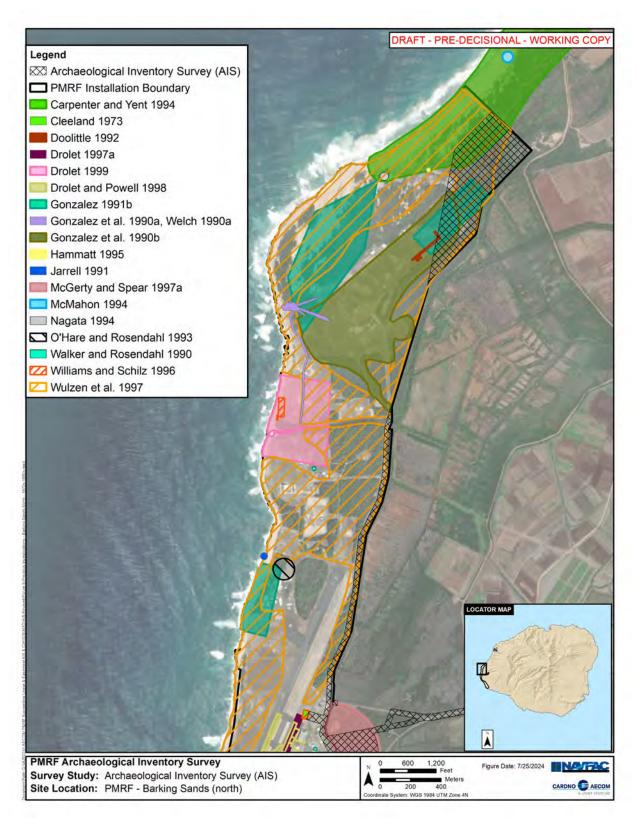


Figure 6. Previous archaeological investigations within 400 m of the survey areas within the northern portion of the Main Base (Barking Sands) from the 1970s–1990s.

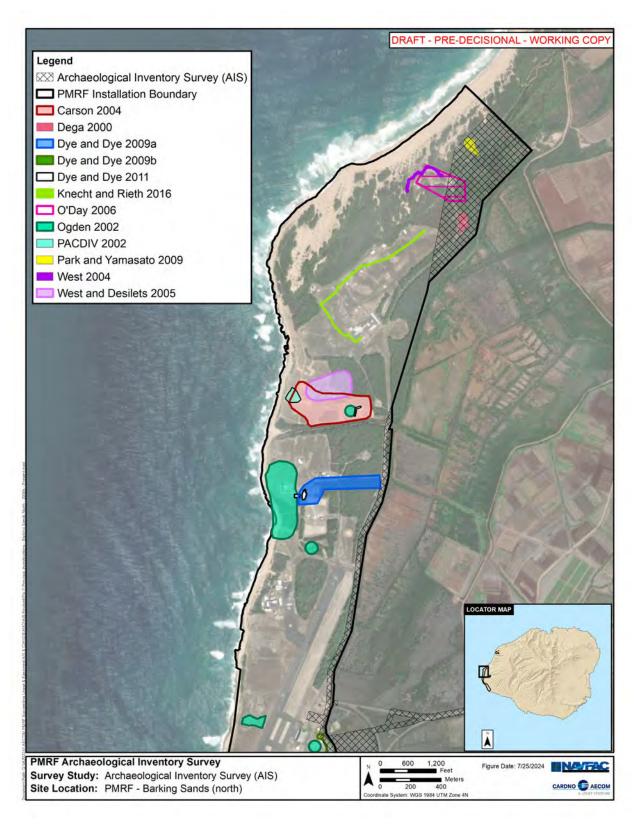


Figure 7. Previous archaeological investigations within 400 m of the survey areas within the northern portion of the Main Base (Barking Sands) from the 2000s to the present.

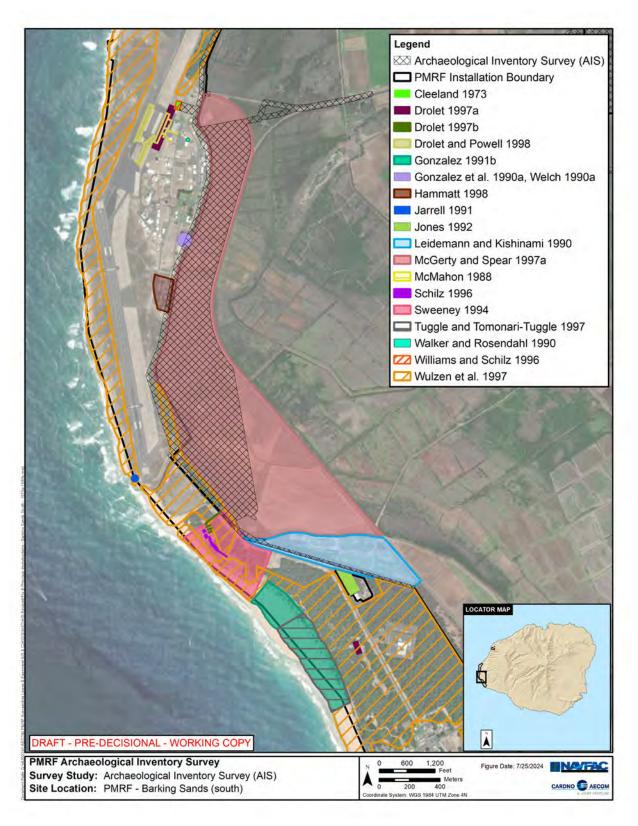


Figure 8. Previous archaeological investigations within 400 m of the survey areas within the southern portion of the Main Base southern (Barking Sands) from the 1970s–1990s.

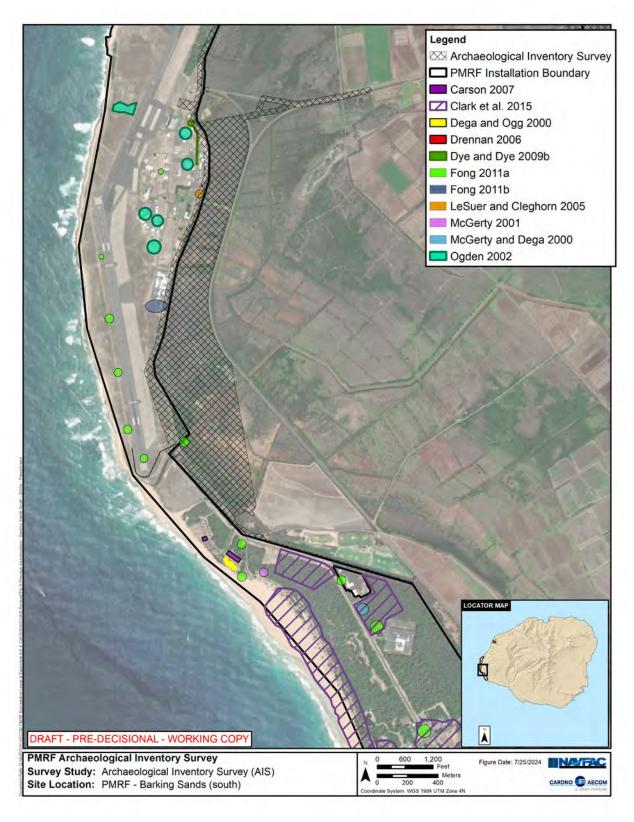


Figure 9. Previous archaeological investigations within 400 m of the survey areas within the southern area of the Main Base (Barking Sands) from the 2000s to the present.

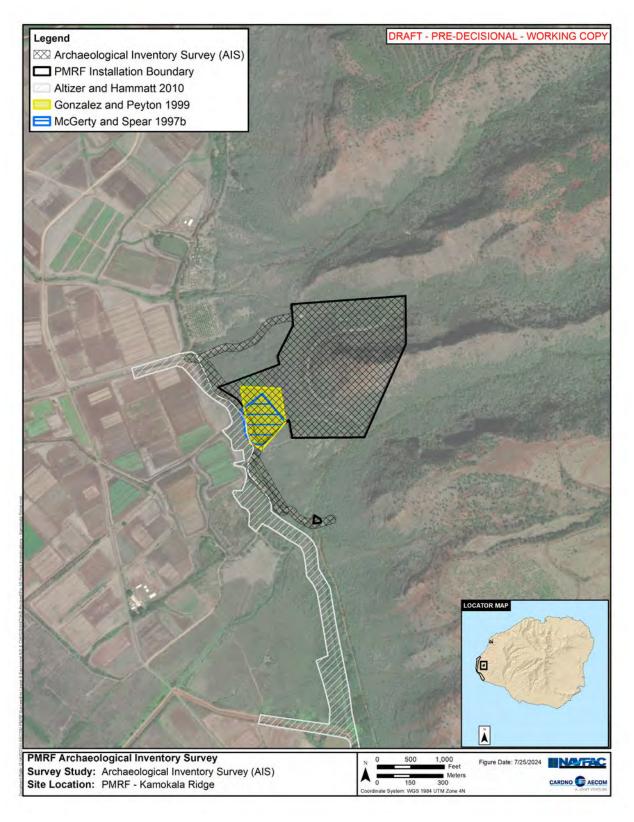


Figure 10. Previous archaeological investigations within 400 m of the survey areas at PMRF Kamokalā Ridge installation.

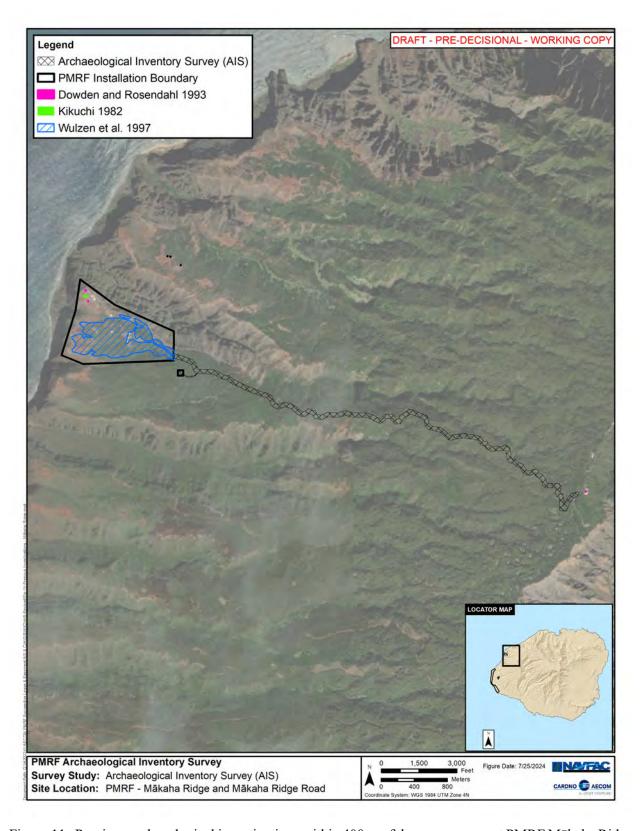


Figure 11. Previous archaeological investigations within 400 m of the survey areas at PMRF Mākaha Ridge installation and Mākaha Ridge Road.

Table 1. Summary of Previous Archaeological Studies at Pacific Missile Range Facility Within 400 m of the Survey Areas. Listed in Chronological Order. Note: Main Base Refers to Barking Sands.

Reference	Type of Study	Location	Findings
Bennett (1931)	Reconnaissance survey	Island-wide	Site 50-30-05-0007, lithic and midden scatter; Site 50-30-05-0008, 'Elekuna Heiau; Site 50-30-05-0009, stone alignments and walls
Cleeland (1973)	Survey	Multiple locations on Kaua'i; Main Base North	Site 50-30-05-0616, Japanese cemetery off Kaiwa Road
Kikuchi (1982)		Mākaha Ridge	No findings
McMahon (1988) <sup>1</sup>	Reconnaissance survey	Main Base	No findings
Leidemann and Kishinami (1990)	Reconnaissance survey and testing	Main Base South	No findings
Walker and Rosendahl (1990)	Survey	Main Base s	No findings
Welch 1990	Survey and testing	Main Base	No findings
Gonzalez et al. (1990a)	Survey and testing	Main Base North, EDX project site, just south of Nohili Dune	Excavation of 187 test bore holes; identified a disturbed buried traditional Hawaiian cultural deposit containing charcoal, marine shell, and sea urchin (no State Inventory of Historic Places [SIHP] number assigned)
Gonzalez et al. (1990b)	Subsurface testing	Main Base North, KTF	Identified a possible cultural deposit containing minimal charcoal and marine shell midden (no SIHP assigned)
Gonzalez (1991a) <sup>1</sup>	Reconnaissance survey	Main Base North, Nohili Dune/KTF	Identification of fuel tank (subsequently designated Site 50-30-01-2050 by Wulzen et al. 1997) <sup>2</sup>
Gonzalez (1991b)	Reconnaissance survey	Main Base North, KTF	No findings

Reference	Type of Study	Location	Findings
Jarrell (1991)	Inadvertent discovery of human remains	Main Base	Two burials, no SIHP numbers assigned
Doolittle (1992)	Ground-penetrating radar survey	Main Base North	No findings
Flores and Kaohi (1992) <sup>3</sup>	Ethnographic survey	Waimea district	Determinations of cultural sensitivity for PMRF and surrounding lands
Jones (1992)	Survey and testing	Main Base South	No findings
Dowden and Rosendahl (1993)	Survey and testing	Kōke'e Ridge and Mākaha Ridge	No findings
O'Hare and Rosendahl (1993)	endahl		No findings
Carpenter and Yent (1994)	Reconnaissance	Polihale State Park	Sites 50-30-01-1820, cultural scatter; 50-30-0- 1821, lithic scatter
McMahon (1994)	Inadvertent discovery of human remains	Polihale State Park	Site 50-30-01-0869, disturbed burial
Nagata (1994)	Survey	Main Base North, Nohili Dune	Site 50-30-01-6027, buried cultural deposit
Sweeney (1994)	Survey and testing	Main Base South	Site 50-30-05-4016, buried cultural deposit; radiocarbon date of 770±60 years BP
Hammatt (1995)	Subsurface testing	Main Base North, northeast of KTF	No findings
Schilz (1996)	Monitoring	Main Base South	No findings
Drolet (1997a)	Testing	Main Base North	No findings
Drolet (1997b)	Monitoring and testing	Main Base South	No findings
McGerty and Spear (1997a)	Survey and testing	Main Base South	No findings

Reference	Type of Study	Location	Findings
McGerty and Spear (1997b)	Survey	Kamokalā Ridge	Terraces and rock mounds (Sites 50-30-05-0652, 50-30-05-0653, 50-30-05-0657, and 50-30-05-0658); historic artifacts (Site 654); two dirt roads (Sites 50-30-05-0655, 50-30-05-0656)
Tuggle and Tomonari- Tuggle (1997)	Cultural resource assessment	Main Base South	No findings
Wulzen et al. (1997)	Reconnaissance survey	Main Base, Mākaha Ridge	53 Sites (including 78 features) at PMRF Barking Sands, no findings at Mākaha Ridge
Drolet and Powell (1998)	Monitoring	Main Base North	No findings
Hammatt (1998)	Monitoring	Main Base South	No findings
Gonzalez and Peyton (1999)	Survey	South of Kamokalā Caves Ordnance Magazine Area	Historic trash dump, no site numbers assigned
Drolet (1999)	Survey and subsurface testing	Main Base North	Identified habitation and midden features associated with extraction of marine resources, possibly a seasonal camp; Sites 05-1829/05-1830 were identified as NRHP-eligible under Criterion D.
Dega (2000)	Survey and monitoring	Main Base North, missile assembly building, back side of Nohili Dune	No findings
Dega and Ogg (2000)	Survey	Main Base South	No findings
McGerty (2000)	Survey and testing	Main Base South	No findings
McGerty (2001)	Cultural resource assessment	Main Base South, Waiapua'a Bay	No findings
Ogden Environmental and Energy Services, Co., Inc. (2002)	Cultural resource review	PMRF, all installations	Determination of potential disturbance to know historic properties

Reference	Type of Study	Location	Findings
PACDIV (2002)	Subsurface testing	Main Base	Identified boundary of Site 50-30-05-1829 and associated features <sup>2</sup>
Carson (2004)	Monitoring	Main Base North, new missile launcher hardstand, coral road and utility trench	No findings
West (2004)	Monitoring	Main Base North	No findings
LeSuer and Cleghorn (2005a) <sup>4</sup>	Monitoring	Main Base Central	No findings
LeSuer and Cleghorn (2005b) <sup>4</sup>	Monitoring	Main Base Central	No findings
West and Desilets (2005)	Survey and testing	Main Base North	No findings
Drennan (2006)	Cultural resource assessment	Main Base Centrals	No findings
O'Day (2006)	Survey and testing	Main Base North, proposed railgun facility	Wetland deposit with one radiocarbon date (calibrated date range AD 1460–1660)
Carson (2007)	Testing	Main Base South	No findings
Park and Yamasato (2009)	Monitoring	Main Base North	No findings
Dye and Dye (2009a)	Monitoring	Main Base North	No findings
Dye and Dye (2009b)	Testing	Main Base North	Site 50-30-05-05-05031, 17 subsurface features and cultural deposit, radiocarbon dates from late 1600s to early 1700s
Altizer and Hammatt (2010)	Survey	Kamokalā Ridge to Pokiʻi Ridge	Site 50-30-05-2111, 8 agricultural mounds Site 50-40-05-2112, Terrace Site 50-40-05-2113, Historical house site

Reference	Type of Study	Location	Findings
Dye and Dye (2011)	Data recovery	Main Base North	Site 50-30-05-05-05031, 17 subsurface features and cultural deposit, radiocarbon dates from late 1600s to early 1700s
Fong (2011a)	Testing and monitoring	Main Base South	No findings
Fong (2011b)	Survey and testing	Main Base South	No findings
Clark et al. (2015)	Survey and testing	Main Base South	Site 50-80-14-2272, two WWII gun emplacements
Knecht and Rieth (2016)	Monitoring	Main Base South, KTF	Multiple concrete footing features (likely early 1960s)

<sup>&</sup>lt;sup>1</sup> This report does not provide a figure displaying the survey area.

<sup>&</sup>lt;sup>2</sup> The referenced site is outside of the 400 m buffer and is not included in Figures 16 through 19.

<sup>&</sup>lt;sup>3</sup> As an ethnographic project, the survey area is not depicted in Figures 12 through 15.

<sup>&</sup>lt;sup>4</sup> These projects have the same survey area.

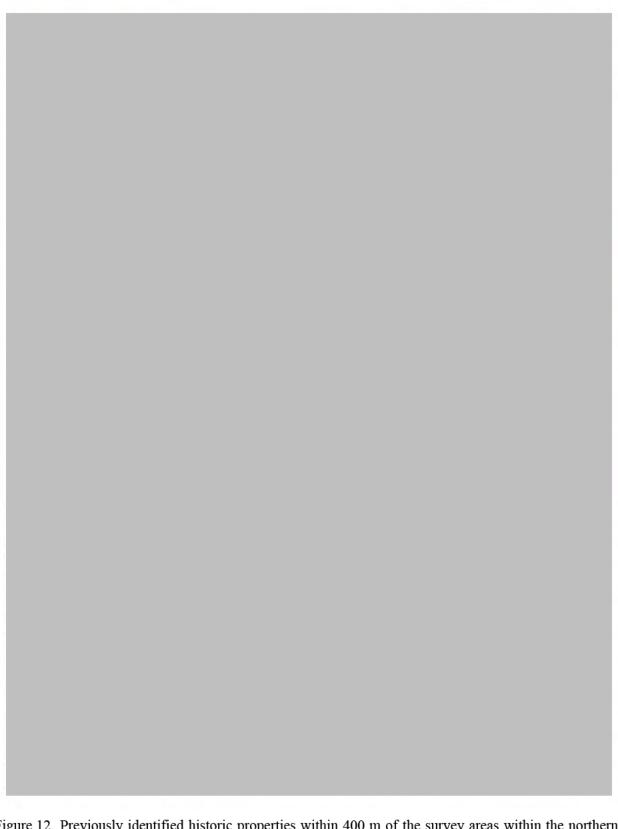


Figure 12. Previously identified historic properties within 400 m of the survey areas within the northern area of the Main Base (Barking Sands).

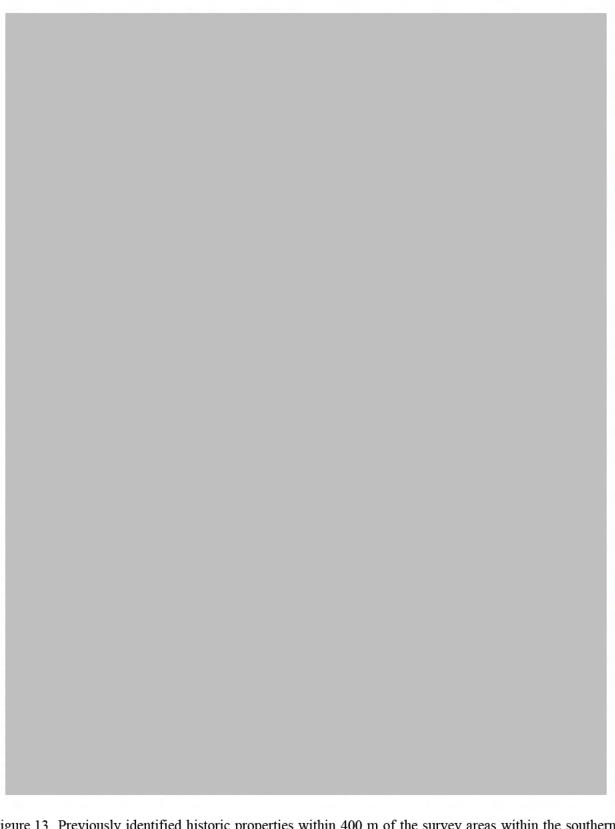


Figure 13. Previously identified historic properties within 400 m of the survey areas within the southern area of the Main Base (Barking Sands).

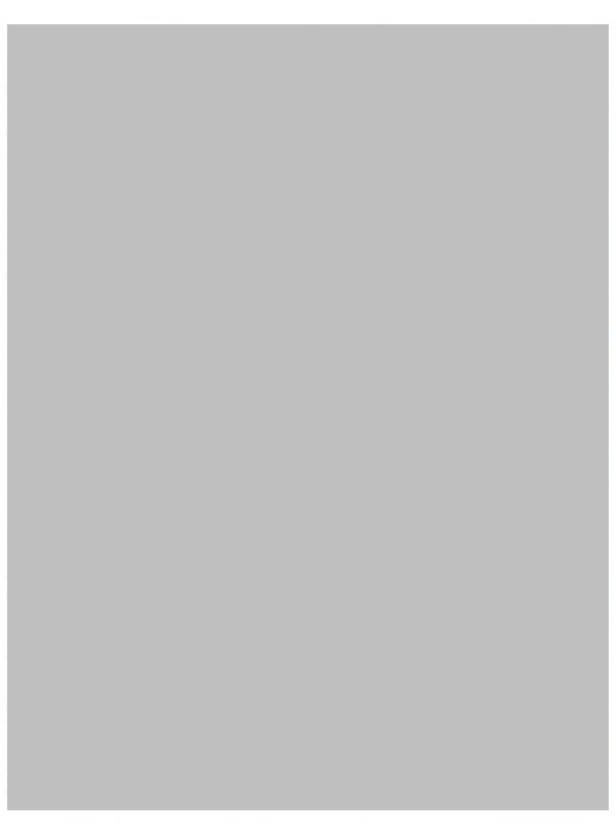


Figure 14. Previously identified historic properties within 400 m of the survey areas at Kamokal $\bar{a}$  Ridge.



Figure 15. Previously identified historic properties within 400 m of the survey areas at Mākaha Ridge installation and Mākaha Ridge Road.

Table 2. Known Historic Properties Within 400 m of the Survey Areas. Note: Main Base Refers to Barking Sands.

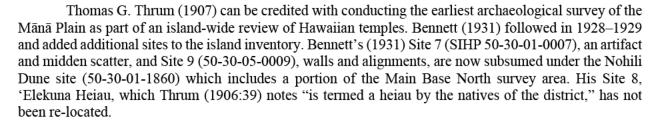
Site No. (50-30-)	Name/Description	Age	Inferred Function	Location	Information Source
01-0007	Lithic and midden scatter atop Nohili Dune (50-30-01-1860)	Traditional Hawaiian	Habitation	Main Base	Bennett (1931)
01-0008	'Elekuna Heiau; inland side of Nohili Dune (50-30-01- 1860)	Traditional Hawaiian	Habitation	Main Base	Bennett (1931)
01-0009	Stone alignments and walls; inland side of Nohili Dune (50-30-01-1860)	Traditional Hawaiian	Habitation	Main Base	Bennett (1931)
01-0869	Burial, disturbed	Traditional Hawaiian	Burial	Southern Polihale State Park	McMahon (1994)
01-1820	Lithic and midden scatter	Traditional Hawaiian	Habitation	Southern Polihale State Park	Carpenter and Yent (1994)
01-1821	Lithic scatter	Traditional Hawaiian	Habitation	Southern Polihale State Park	Carpenter and Yent (1994)
01-1860	Nohili Dune	Traditional Hawaiian	Burial, habitation	Main Base	Thrum (1907), Bennett (1931)
01-2013	Gun emplacement	WWII era	Military	Main Base	Wulzen et al. (1997)
01-2014	Historic midden	WWII era	Military	Main Base	Wulzen et al. (1997)
01-2017	Midden deposit	Traditional Hawaiian	Habitation	Main Base; inland between North Nohili Road and PMRF boundary	Wulzen et al. (1997)
01-2042	Historic midden	WWII era	Military	Main Base	Wulzen et al. (1997)

Site No. (50-30-)	Name/Description	Age	Inferred Function	Location	Information Source
01-2044	Concrete structure	WWII era	Military	Main Base	Wulzen et al. (1997)
01-2049	Historic midden	WWII era	Military	Main Base	Wulzen et al. (1997)
01-6027	Midden deposit; part of Nohili Dune (50-30-01- 1860)	Traditional Hawaiian	Habitation	Main Base	Wulzen et al. (1997)
05-0616	Japanese cemetery	Plantation	Burial	Central Main Base near Kaiwa Road	Cleeland (1973)
05-0652	Rock mound	Traditional Hawaiian	Agriculture	Base of Kamokalā Ridge	McGerty and Spear (1997b
05-0653	Seven rock mounds	Traditional Hawaiian	Agriculture	Base of Kamokalā Ridge	McGerty and Spear (1997b
05-0654	Historic midden	Plantation/WWII era	Dump	Base of Kamokalā Ridge	McGerty and Spear (1997)
05-0655	Historic dirt road	Plantation/WWII era	Transportation	Base of Kamokalā Ridge	McGerty and Spear (1997b
05-0656	Historic dirt road	Plantation/WWII era	Transportation	Base of Kamokalā Ridge	McGerty and Spear (1997b
05-0657	Terrace complex	Traditional Hawaiian	Agriculture	Base of Kamokalā Ridge	McGerty and Spear (1997b
05-0658	Rock mound	Traditional Hawaiian	Agriculture	Base of Kamokalā Ridge	McGerty and Spear (1997b
05-0721	Kawaiele Ditch	Traditional Hawaiian and Plantation era	Agriculture	Southern Main Base	Tomonari-Tuggle and Yoklavich (2005:102); SEARCH (2012:137)

Site No. (50-30-)	Name/Description	Age	Inferred Function	Location	Information Source
05-0825	Unmarked cemetery	Plantation era	Burial	Main Base, north of Bldg. 389	Drolet et al. (1996:34–35)
05-1832	Burial	Traditional Hawaiian or Plantation era	Burial	Main Base, east of runway	Drolet et al. (1996:37)
05-1833	Burial (may be the same as 50-30-05-1885)	Traditional Hawaiian	Burial	Main Base, south of runway	Drolet et al. (1996:37)
05-1834	Burial area	Traditional Hawaiian	Burial	Main Base , between Waiapua'a Bay and runway	Drolet et al. (1996:37–38)
05-1885	Burial and midden scatter (may be the same as 50-30-05-1833)	Traditional Hawaiian	Burial, habitation	Main Base, south of runway	Drolet et al. (1996:38)
05-2000	Bathhouse complex	WWII era	Military	Southern Main Base	Wulzen et al. (1997)
05-2001	Concrete slab	WWII era	Military	Southern Main Base	Wulzen et al. (1997)
05-2002	Fence	WWII era	Military	Southern Main Base	Wulzen et al. (1997)
05-2003	Historic midden	WWII era	Military	Southern Main Base	Wulzen et al. (1997)
05-2004	Concrete slab	WWII era	Military	Northern Main Base	Wulzen et al. (1997)
05-2005	Housing complex	WWII era	Military	Northern Main Base	Wulzen et al. (1997)
05-2010	Latrine complex	WWII era	Military	Northern Main Base	Wulzen et al. (1997)
05-2011	Historic midden	Post-WWII era	Military	Southern Main Base	Wulzen et al. (1997)

Site No. (50-30-)	Name/Description	Age	Inferred Function	Location	Information Source
05-2012	Excavation	WWII era	Military	Northern Main Base	Wulzen et al. (1997)
05-2015	Housing complex	WWII era	Military	Northern Main Base s	Wulzen et al. (1997)
05-2016	Concrete slab	WWII era	Military	Northern Main Base	Wulzen et al. (1997)
05-2018	Historic midden	WWII era	Military	Northern Main Base	Wulzen et al. (1997)
05-2022	Concrete structure	Cold War era	Military	Northern Main Base	Wulzen et al. (1997)
05-2024	Culvert complex	WWII era	Military	Southern Main Base	Wulzen et al. (1997)
05-2025	Metal box	WWII era	Military	Southern Main Base	Wulzen et al. (1997)
05-2026	Concrete structure	WWII era	Military	Southern Main Base	Wulzen et al. (1997)
05-2027	Historic midden	WWII era	Military	Southern Main Base	Wulzen et al. (1997)
05-2036	Revetment	WWII era	Military	Northern Main Base	Wulzen et al. (1997)
05-2037	Revetment	WWII era	Military	Northern Main Base	Wulzen et al. (1997)
05-2038	Revetment	WWII era	Military	Northern Main Base	Wulzen et al. (1997)
05-2039	Revetment	WWII era	Military	Northern Main Base	Wulzen et al. (1997)

Site No. (50-30-)	Name/Description	Age	Inferred Function	Location	Information Source
05-2040	Revetment	WWII era	Military	Northern Main Base	Wulzen et al. (1997)
05-2041	Concrete structure (Building 507)	WWII era	Military	Northern Main Base	Wulzen et al. (1997)
05-2046	Historic midden	WWII era	Military	Northern Main Base	Wulzen et al. (1997)
05-2047	Gun emplacement complex	WWII era	Military	Northern Main Base	Wulzen et al. (1997)
05-2048	Concrete pillbox	WWII era	Military	Northern Main Base	Wulzen et al. (1997)
05-2111	Eight rock mounds	Indeterminant	Agricultural	Kamokalā Ridge	Altizer and Hammatt (2010)
05-2112	Terrace	Indeterminant	Habitation	Kamokalā Ridge	Altizer and Hammatt (2010)
05-2113	House site	Historic	Habitation	Kamokalā Ridge	Altizer and Hammatt (2010)
05-80- 2772	Gun emplacements	WWII era	Military	Between N Sidewinder Road and Waiapua'a Bay Beach	Clark et al. (2015)
05-4016	Buried cultural deposit	Traditional Hawaiian	Habitation	Barking Sands; inland of Waiapua'a Bay Beach	Sweeney (1994)
05-5031	Buried cultural deposit	Traditional Hawaiian	Habitation	Main Base; northeast of airport	Dye and Dye (2009a and 2011)
50-Ka- C5-5 (BPBM)	Burial	Traditional Hawaiian	Burial	Main Base; north end of airstrip	Drolet et al. (1996:39)



Cleeland (1973) identified a Japanese cemetery (Site 50-30-05-0616) off of Kaiwa Road in central Barking Sands (Main Base). At the time of the survey at least 60 graves were visible, with the earliest marked grave dating to 1901.

At Kamokalā Ridge, McGerty and Spear (1997b), identified seven sites during an archaeological inventory survey and subsurface testing.

Sites 50-30-05-0654, 50-30-05-0655, and 50-30-05-0656 are a historical trash dump and two historical dirt roads, respectively. Altizer and Hammatt (2010) identified seven sites during an archaeological inventory survey

Flores and Kaohi (1992) conducted ethnographic and ethnohistoric surveys across the *ahupua* a of Mānā, identifying and describing traditional cultural properties, historic properties, legends, stories, resources, flora, fauna, and other elements of cultural significance.

Many other studies, which include survey, subsurface testing, and monitoring projects, resulted in no findings (Carson 2004, 2007; Dega 2000; Dega and Ogg 2000; Doolittle 1992; Dowden and Rosendahl 1993; Drennan 2006; Drolet 1997a, 1997b; Drolet and Powell 1998; Dye and Dye 2009b; Fong et al. 2011a, 2011b; Gonzalez 1991b; Hammatt 1995; Jones 1992; Leidemann and Kishinami 1990; LeSuer and Cleghorn 2005a, 2005b; McGerty 2001; McGerty and Spear 1997a, b; McMahon 1988; O'Day 2006; O'Hare and Rosendahl 1993; Park and Yamasato 2009; Tuggle and Tomonari-Tuggle 1997; Walden and Clark 2010; Walker and Rosendahl 1990; West 2004; West and Desilets 2005).

In summary, while numerous studies across PMRF have resulted in no findings, many others have identified both pre-Contact and post-Contact archaeological sites, particularly those related to WWII. The current survey areas overlap with some of these previously recorded sites

The next

section describes the research questions used to guide the fieldwork.

# III. RESEARCH QUESTIONS

Three research questions guided the archaeological investigation carried out for this project.

- 1) What were the depositional and soil-forming sequences for the different survey areas? Stratigraphic sequences exposed during sub-surface excavation can provide information about past environmental processes that shaped the back beach, inland edge, and central mountain areas of PMRF. Exposed stratigraphy can also provide information on the extent of human modification of the landscape.
  - 2) Are archaeological deposits present and, if so, what past activities do they document?

Identification of new deposits or sites in the survey area, particularly in areas that have been less impacted by development, agricultural, and ranching activities (e.g., Kamokalā Ridge) may provide further data relating to the chronology of traditional occupation, the types of activities that were carried out, and the spatial extents of these activities. Historical deposits relating to 19th century and early to mid-20th century activities may be encountered, as well providing evidence for historic-Era land use.

3) If burials or human skeletal remains are encountered during the archaeological survey, what are their contexts and conditions? Burials and secondarily deposited, isolated, fragmentary human skeletal elements have been discovered in the calcareous sands and mixed sandy soils across PMRF Barking Sands. These burials and human skeletal remains have been found in various states of preservation, disturbance, and exposure. If any burials are encountered, documentation of their depositional context and condition can inform on traditional land use and aid the government in proactive management practices for ancestral remains.

## IV. FIELDWORK LOGISTICS AND METHODS

This section discusses project logistics, the field methods that were employed, the laboratory procedures conducted, and NRHP eligibility and HRS Chapter 6E significance evaluation procedures.

#### **PERSONNEL**

Alex E. Morrison, Ph.D., was the Project Manager (PM) and Principal Investigator (PI). He is an SOI qualified archaeologists operating under IA's State of Hawai'i permit. Dr. Morrison was responsible for overall management of the project, ensuring that appropriate research standards were maintained and that appropriate personnel were selected to conduct the project. Dr. Morrison also provided research direction and oversight to ensure the client's needs were fully addressed. He provided project-specific guidance, including assistance in the establishment of research questions and goals and procedures as appropriate to the project scope of work, and oversight of project development, field investigations, laboratory analysis, and report preparation.

Scott M. Fitzpatrick, Ph.D., was the Project Director (PD). Dr. Fitzpatrick was responsible for coordinating and conducting field investigations and preparation of the final technical report with assistance from the PM/PI. Other crew members included Field Supervisors, Emily VanZanten B.A., and Brennan V. Chambers, M.A., who alternated roles over the course of the project, along with Field Technicians Jenna Golnik, B.A., and Grace Fritsch, B.A. Fieldwork work was completed between November 6, 2023, and February 5, 2024, under the direct guidance of the PD and PM/PI.

Fieldwork along Mākaha Ridge Road took place between November 7, 2023, and November 16, 2023, and consisted entirely of pedestrian survey. Fieldwork at Main Base South took place intermittently between November 8, 2023, and February 5, 2024. Fieldwork at Main Base North took place intermittently between December 5, 2023, and December 15, 2023. Fieldwork at Kamokalā Ridge took place intermittently between November 13, 2023, and January 26, 2024.

## PEDESTRIAN SURVEY AND SUBSURFACE TESTING METHODS

- 1. A pedestrian survey of the four areas was conducted by the PD, Field Supervisors, and two Field Technicians. The pedestrian survey and subsurface testing methods followed the procedures outlined in the Work Plan (Chambers and Rieth 2023). Survey transects, with few exceptions, were spaced no more than 5 m apart; tighter spacing was employed in areas of dense vegetation and/or low surface visibility. In some areas, wider transects were done, but only in cases where ground visibility was 100 percent and clearly impacted by historical and/or modern activities. Transect sweeps were recorded as line geometries with a Trimble DA2 global positioning system (GPS) unit. Areas that were dangerous or otherwise inaccessible were demarcated in the field and noted on subsequent maps.
- 2. Each field staff kept an updated daily log with a record of work completed (including the number of transects), notes on any finds, and summaries of other relevant information (e.g., the density of vegetation or evidence for modern disturbance). The daily log was completed using a standardized form on a Samsung tablet computer.
- 3. Photographs were taken of all archaeological finds and overviews of the survey areas. Photographs included a scale and north arrow (with the exception of landscape overview

photographs) and were recorded in a photography log. The log included the photograph file number, the date that the photograph was taken, the direction the photographer was facing, a general description of the photograph, and the initials of the photographer.

- 4. The locations of archaeological sites and features were recorded with a professional-grade Trimble DA2 GPS unit. GPS data were differentially corrected for submeter accuracy and then exported as a geographic information system (GIS) geodatabase.
- 5. Archaeological features were documented through text descriptions, profile and/or plan view maps as appropriate, and photography (with a north arrow and scale), along with GPS recording. Text descriptions were completed using a standardized form on the tablet computers, which included fields to record site/feature form and construction details, metric dimensions, age and function assessments, integrity and condition evaluations, associated surface artifacts, and environmental characteristics (slope, substrate/soil, vegetation).
- 6. Previously identified sites within or adjacent to the survey areas were revisited to assess the veracity of the recorded information and, if necessary, update site descriptions and GPS boundaries. To revisit previously recorded sites, the most up-to-date site boundary was uploaded into the Trimble DA2 GPS unit along with the associated text descriptions and maps. The GPS unit was then used in the field to navigate back to the site.

Following pedestrian survey, subsurface testing was conducted with the excavation of 10 controlled excavation units using the following methods:

- 1. Ten 1 by 1-meter controlled excavation units were excavated with the locations of the units determined by the PM/PI and PD in consultation with the PMRF Cultural Resource Manager. These excavations were undertaken to acquire information about the age and characteristics of the site's subsurface deposits with the goal of aiding NRHP eligibility and HRS Chapter 6E significance evaluations. The following procedures were generally adhered to during the excavations:
  - a. Excavations were carried out to establish the presence or absence of archaeological deposits, documenting deposition and site formation processes, and collecting artifacts, midden contents, and suitable dating samples to characterize the deposits.
  - b. Units were placed against selected masonry features (if present) to obtain datable material below foundations for *terminus post quem* (limit after the age of) feature estimates.
  - c. Units were also placed in areas with visible surface deposits or artifacts, or in areas suspected of containing such deposits, to characterize the function and age of deposits.
  - d. Subsurface features, such as combustion features, were excavated sperate from the rest of the test units. The contents of the excavations were placed in separate bags and analyzed according to their own provenience.

- 2. Each test unit was manually excavated by natural strata with arbitrary 10 cm levels. All excavated sediment was screened through 1/8-inch mesh. Archaeological material retained in screens was collected and catalogued.
- 3. Units were recorded using standardized grid level forms.
- 4. Scaled stratigraphic profile drawings were completed for at least one of the sidewalls of each unit. Soils were described and the excavation unit sidewalls and locations were photographed. Stratigraphic profiles and soil descriptions were described using a fresh vertical face. The following soil characteristics were recorded, at a minimum: color, including moisture condition (wet, moist, dry) when color read; texture; structural grade, size, and form (or absence of structure); dry or moist consistence; wet consistence (stickiness, plasticity); root frequency and size; presence of charcoal or other cultural materials; and lower boundary distinctness and topography (Munsell Color 2000; Soil Science Division Staff 2017). Each deposit was examined for signs of sedimentary structures, such as bedding, and for any other information (e.g., evidence for basaltic or coralline origin) that could help to clarify depositional and soil forming history.
- 5. The locations of all excavation units were recorded using a professional-grade Trimble GPS unit using the North American Datum of 1983 (NAD 83) in Universal Transverse Mercator Zone 4 North (UTM 4N). Data were differentially corrected to provide submeter accuracy.
- 6. Any artifacts, faunal, charcoal, or bulk samples recovered during excavation were collected in sealable plastic bags and given a unique catalog number, which recorded the contents, provenience (excavation unit number, layer and level, and depth below surface), collection date, and recorder.

## LABORATORY METHODS

All archaeological materials recovered as part of survey and excavation were transported to the IA Laboratory in Honolulu for sorting and analysis. Laboratory procedures followed the Work Plan (Chambers and Rieth 2023) and consisted of artifact classification and description, taxonomic identification of faunal remains, taxonomic identification of wood charcoal specimens, radiocarbon dating, and geochemical characterization of selected lithic artifacts.

All archaeological collections generated by the project are stored in archival-quality containers and boxes suitable for long-term curation at PMRF. These collections and all original field documents and electronic files will be transferred to the PMRF CRM at the completion of the project.

#### **ARTIFACTS**

Artifacts were cleaned, sorted by material, and analyzed for functional, manufacturing, and chronological characteristics. Artifact analyses began with general sorting by material and class. Artifacts were categorized by artifact or manuport form and material. Debitage was quantified by form (i.e., flake, shatter, or core) and polished surfaces were noted, if present. Manuports and fire-cracked rock were counted and weighed. Post-Contact artifacts were analyzed for diagnostic characteristics that infer item identification, manufacture date, functions using standard and specialized text and online references.

#### FAUNAL REMAINS

All recovered vertebrate or marine invertebrate material were sorted into the lowest taxonomic categories possible. Marine shell, mammal, and fish remains were identified with the aid of comparative reference collections housed at IA's Honolulu laboratory and the University of Hawai'i at Mānoa. All taxonomic nomenclature for marine mollusks was verified following the World Register of Marine Species online database (WoRMS Editorial Board 2021). Marine invertebrates that were waterworn or showed signs of natural or secondary deposition (not from midden contexts) or predation (e.g., predator drill holes) were discarded. Taxonomic identification of fish relied on an expanded suite of bony elements (e.g., Butler 1988, 1994; Filimoehala 2019; Lambrides and Weisler 2016), as well as a series of special bones from various taxa (Appendix C). Skeletal terminology for fish followed Wheeler and Jones (2009). Vertebrate elements were examined for modification indicative of food processing (e.g., burning) or tool manufacturing (e.g., cut/sawn edges). Vertebrate faunal remains were quantified as the number of individual specimens (NISP).

#### WOOD CHARCOAL IDENTIFICATION AND RADIOCARBON DATING

Gail Murakami, B.A., and Carly Walker, B.A., completed the taxonomic identifications of wood charcoal samples. This analysis was conducted to select short-lived taxa or plant parts for radiocarbon dating, and to provide paleoenvironmental information about the woody plant taxa that were previously available in the area. Identifications were done under magnification of a dissecting microscope comparing the anatomical features seen in the freshly fractured transverse and tangential facets of the charcoal pieces with those of known woods from the Pacific Islands Wood Collection at the University of Hawai'i at Mānoa, Department of Botany, and CSIRO Atlas of Hardwoods (Ilic 1991). Charcoal specimens from suitable short-lived taxa were submitted to the University of Georgia's Center for Applied Isotope Studies Laboratory for radiocarbon dating using the accelerator mass spectrometry (AMS) technique.

## **GEOCHEMICAL CHARACTERIZATION**

Lithic samples were submitted to the Geoarchaeological Laboratory at the University of Hawai'i at Hilo (UHH) for geochemical characterization and provenance analysis using non-destructive energy-dispersive x-ray fluorescence (EDXRF). The resulting geochemical data were compared to a database of lithic source geochemistry to determine the likely origin of the material.

# NATIONAL REGISTER OF HISTORIC PLACES AND HRS CHAPTER 6E SIGNIFICANCE EVALUATIONS

Newly identified archaeological sites identified during pedestrian survey and subsurface testing were evaluated for eligibility for inclusion in the NRHP using the criteria set forth in 36 CFR Part 60.4. These sites were also assessed for significance under HRS Chapter 6E as described in HAR 13-284-6(b). The criteria for each of these is described separately below.

## NRHP CRITERIA FOR EVALUATION

The NRHP criteria set forth in 36 CFR Part 60.4 states:

(t)he quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

- (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) that are associated with the lives of persons significant in our past; or
- (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) that have yielded, or may be likely to yield, information important in prehistory or history.

#### HRS CHAPTER 6E SIGNIFICANCE EVALUATIONS

The State of Hawai'i has similar criteria for evaluation of significance described in HAR 13-284-6[b]) which states: (note that the HRS Chapter 6E criteria have lowercase designations):

To be significant, a historic property shall possess integrity of location, design, setting, materials, workmanship, feeling, and association and shall meet one or more of the following criteria:

- (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) that are associated with the lives of persons significant in our past; or
- (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) that have yielded, or may be likely to yield, information important in prehistory or history.
- (e) have an important value to the native Hawaiian people or to another ethnic group of the State due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity.

A group of sites can be collectively argued to be significant under any of the criteria.

The NRHP eligibility and HRS 6E significance evaluations are presented separately in Section VI.

## V. RESULTS

This section presents the results of the pedestrian survey, subsurface testing, and laboratory analyses. During fieldwork, no archaeological sites were recorded within the Mākaha Ridge Road survey area. Archaeological sites were identified within the additional three survey areas: Main Base South, Main Base North, and Kamokalā Ridge. These sites include five that were previously recorded and 12 newly identified ones (Table 3). The results include a description of the previously recorded sites that were encountered, new sites that were identified, features found within these sites, and a summary of the subsurface testing and laboratory analyses that were conducted.

## PEDESTRIAN SURVEY RESULTS

This section presents the results of the pedestrian survey. The survey included three primary goals. First, where possible, previously recorded sites were visited to update geographical coordinates with high precision GPS and to provide any additional descriptive data about the site and its features. Secondly, all newly identified sites and associated features were recorded according to the methods described in Section IV and the project Work Plan (Chambers and Rieth 2023). Finally, newly recorded sites were examined for their potential to provide information to address the project research questions and to aid in NRHP eligibility and HRS Chapter 6E significance evaluations through subsurface excavations. The results of the pedestrian survey are presented first, and the excavation results are described later in the section.

Table 3. Previously Documented and New Sites Found During Survey. Note: Main Base Refers to Barking Sands.

Site Number	Survey Area	Site Type	Number of Features	<b>Interpreted Function</b>	Temporal Period	Justification for Interpretation
50-30-01-2049	Main Base North	Historic Refuse Area			Historic	
50-30-05-0652	Kamokalā Ridge	Rock Mound			Indeterminate	
50-30-05-0653	Kamokalā Ridge	Rock Mounds			Indeterminate	
50-30-05-0658	Kamokalā Ridge	Rock Mounds			Indeterminate	
50-30-05-2000	Main Base South	Bathhouse Complex			WWII	
IA001	Kamokalā Ridge	Rock Wall			Hawaiian	
IA002	Kamokalā Ridge	Rock Wall and Enclosure Complex			Hawaiian and/o post-Contact	
IA003	Kamokalā Ridge	Midden, Rockshelters, and Retaining Wall Complex			Hawaiian and/o post-Contact	
IA004	Kamokalā Ridge	Stone Platform and Modified Outcrop			Hawaiian	

Site Number	Survey Area	Site Type	Number of Features	Interpreted Function	Temporal Period	Justification for Interpretation
IA005	Kamokalā Ridge	Historically Modified Rock Wall			Hawaiian and post-Contact	
IA006	Kamokalā Ridge	Terrace and Retaining Wall Complex			Hawaiian	
IA007	Kamokalā Ridge	Mound and Basalt Quarry			Hawaiian and/or post-Contact	
IA008	Kamokalā Ridge	Terrace and Retaining Wall Complex			Hawaiian	
IA009	Kamokalā Ridge	Historic Refuse Area			WWII and after	
IA010	Kamokalā Ridge	Mound			Hawaiian and/or post-Contact	
IA011	Main Base North	Small Arms Range			WWII and after	
IA012	Main Base North	Historic Refuse Area			Indeterminate	

### MĀKAHA RIDGE ROAD

The Mākaha Ridge Road parcel is a ca. 4 mile (6.4 km) stretch of road with a corridor approximately 60 m (196.85 ft.) wide leading west-northwest from Kokee Road (State Highway 550) toward the Nā Pali coast. Survey transects were conducted on either side of the road and along a short offshoot in the very western part of the corridor (Figure 16). Vegetation was generally thick, comprising a combination of short to medium high grasses and shrubs intermixed with larger trees in densely forested areas, resulting in extensive leaf litter and other debris covering the ground's surface (see Photos 8 to 11). The topography was also generally steep on either side of the corridor, preventing more expansive survey coverage in some locations. No archaeological sites were identified at Mākaha Ridge. Similarly, Wulzen et al. (1997:77) also did not identify archaeological sites during the survey of the leased portion of the PMRF facility at Mākaha Ridge.



Figure 16. Map of Mākaha Ridge Road showing transects.



Photo 8. View of terrain along Mākaha Ridge Road; looking south.



Photo 9. View of terrain along Mākaha Ridge Road; looking north.



Photo 10. View into one of the valleys at Mākaha Ridge on the south side of road; looking southwest.



Photo 11. View of two-track off Mākaha Ridge Road showing vegetation; looking east-southeast.

#### MAIN BASE SOUTH

The Main Base South was the largest of the four parcels surveyed (Figures 17 to 20). Those sections that were within the Navy fee-simple and leased lands were a mix of actively mowed grassy areas adjacent to facility buildings, airfield runways, and densely forested areas with a mix of *kiawe*, short to medium sized trees, and shrubbery. Much of the Main Base has been improved to support infrastructure and airfield operations. In the process many locations are now characterized by woody debris that have been pushed along the perimeter of forested sections. These berms were often difficult to traverse and significantly limited ground surface visibility (Photos 12 to 19).

Survey sections that extended east onto easements were often heavily vegetated with larger shrubs, smaller trees, and fields of tall sword grass or other grasses. These areas were also impacted by plantation era canal systems that crisscrossed through the parcels. Other evidence for historic and/or modern agricultural activities included plastic tubing and irrigation pipes. The combination of these factors made both survey and visibility extremely difficult, with ground cover in many places limited to less than 10 percent. Perhaps because of these survey limitations combined with historical impacts to the landscape, no archaeological sites were identified in the easternmost parcels.

Survey within the PMRF main installation, however, did result in the identification of a number of previously recorded WWII-era sites and associated features, including concrete structures associated with a bathing area for U.S. servicemen at site 50-30-05-2000 (Figure 20). Detailed descriptions of each of these previously identified sites and features are provided below. Note that previously recorded sites are shown on the survey parcel maps, but only those that were observed by the field crew are reported here.

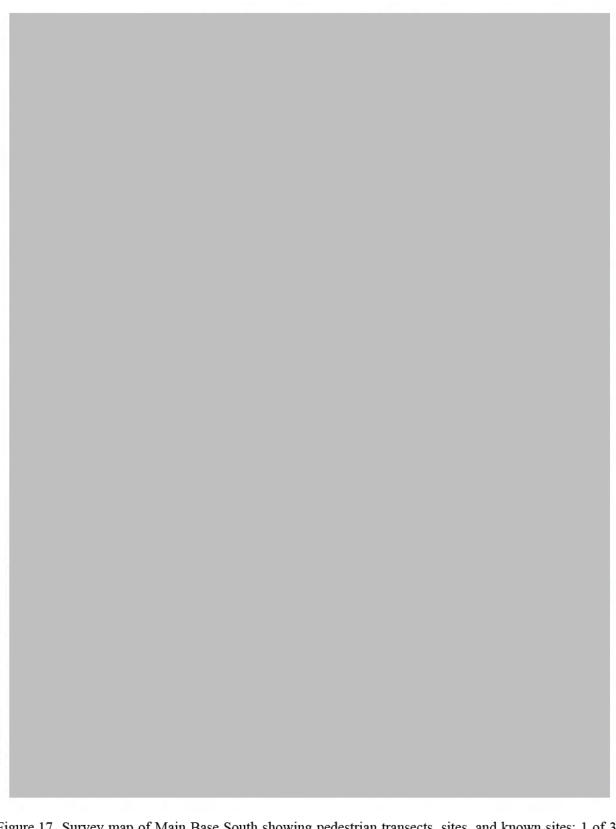


Figure 17. Survey map of Main Base South showing pedestrian transects, sites, and known sites; 1 of 3. Note: Main Base refers to Barking Sands.

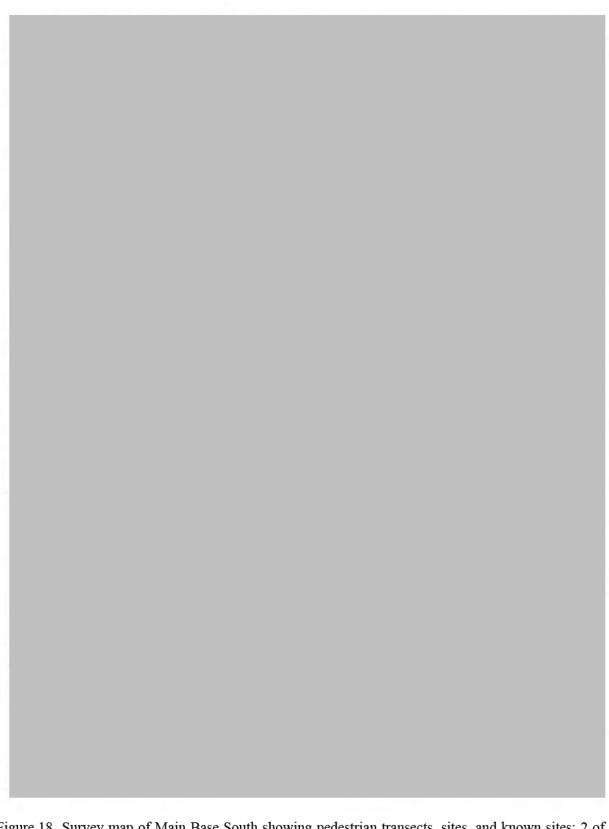


Figure 18. Survey map of Main Base South showing pedestrian transects, sites, and known sites; 2 of 3. Note: Main Base refers to Barking Sands.

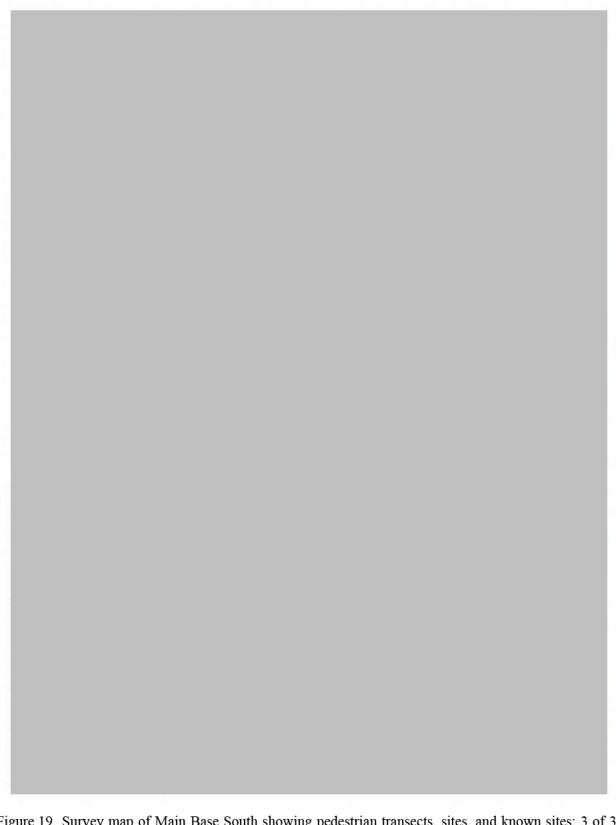


Figure 19. Survey map of Main Base South showing pedestrian transects, sites, and known sites; 3 of 3. Note: Main Base refers to Barking Sands.

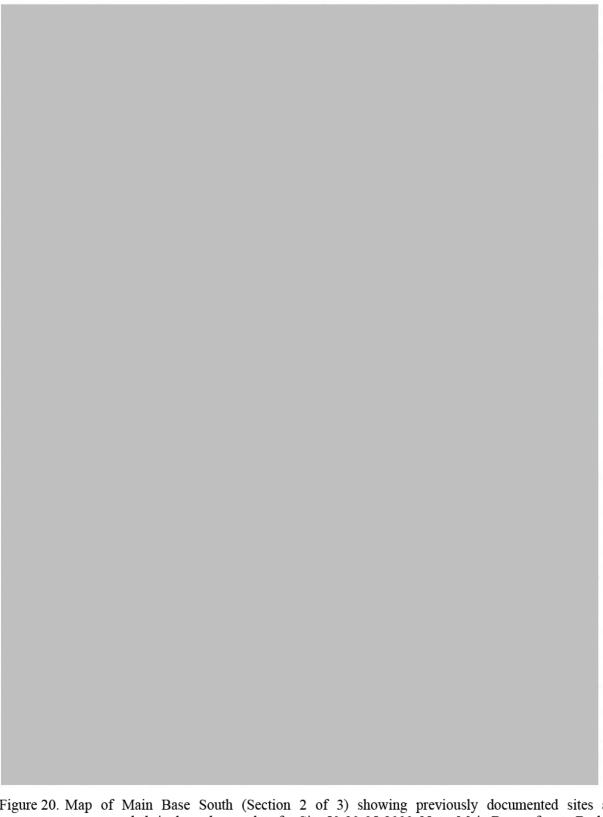


Figure 20. Map of Main Base South (Section 2 of 3) showing previously documented sites and recommended site boundary update for Site 50-30-05-2000. Note: Main Base refers to Barking Sands.



Photo 12. Pumping station accessed through security gate at the Kawai'ele Waterbird Sanctuary and used to access survey areas outside (and east) of PMRF.



Photo 13. Overview of landscape in Barking Sands Southeast of main PMRF facility within the intersecting canal zone showing mudflats interspersed by dense vegetation; looking northwest.



Photo 14. Overview of landscape and dense vegetation in Barking Sands South, west of Kaumualii Highway in area intersected with canals; looking south-southwest.



Photo 15. Landscape overview in Main Base South, east of the main PMRF facility and west of Kaumualii Highway showing flooded mudflats; 180-degree panorama, northwest to southeast.



Photo 16. Landscape overview in Main Base South showing dense vegetation within an area of intersecting canals; looking northwest to south.



Photo 17. Landscape overview of mudflats in Main Base South surrounded by dense vegetation; looking north to southwest.



Photo 18. Landscape overview of Main Base South showing the flooding of mudflats after heavy rains, just south of Imiloa Road and west of Kaumualii Highway;180-degree panorama looking northwest to southeast.



Photo 19. Landscape overview of Main Base South showing the flooding of mudflats after heavy rains, just south of Imiloa Road and west of Kaumualii Highway; looking south.

## **Previously Recorded Sites Within Main Base South**

One previously recorded archaeological site (Site 50-30-05-2000) was found during the survey. This site is described below along with additional information that had not been previously presented in earlier reporting of the site. Numerous archaeological and historical sites have been documented in the Barking Sands South area, though only a few of these potentially overlapped within the project area.

### Site 50-30-05-2000

Site 50-30-05-2000 (see Figure 18) was previously recorded by Wulzen et al. (1997) as a WWII "Bathhouse complex" and consisted of five concrete features. It is located about 40 m west of South Nohili Road between the Waioli and Kauai'ele Drains. Four of the five features were encountered during survey These correspond to Features A through D as reported by Wulzen et al. (1997: B-1 to B-3; Photo 20; Figure 22). Feature A is an excavated area filled with basalt rocks that may have functioned as a cesspool (Wulzen et al. 1997: 62). Feature B is a concrete box water catchment/basin (Photo 20: Figure 22). Feature C is similar to Feature A and is an excavated pit filed with basalt rocks (Wulzen et al. 1997: 62). Note that only one of the two cesspools were recorded by GPS and it is unclear whether this is Feature A or C in Wulzen's report (see Table 4; Figure 21; Photo 40).

Feature D is a large concrete slab. Upon cleaning and closer examination, numerous inscriptions were revealed in the concrete. These included the names of 23 servicemen (19 of which were decipherable), and in most cases, their hometown and date of inscription. These men had presumably aided in the foundation's construction and left their mark before the concrete had completely dried (Table 5). The concrete was poured on October 20, 1942. A selection of those inscriptions that were mostly decipherable can be seen below in Photo 23 to Photo 37. Feature D was previously recorded by Wulzen et al. (1997); however, they did not mention the inscriptions. At the request of the PMRF CRM, IA field staff attempted to determine whether any of these individuals or their relatives could be identified in military or other public registries. A search online suggested that they were part of the 40th Infantry Division who arrived in Hawai'i in September 1942. These men were stationed on Oahu and Kauai before being sent into active combat in the Pacific Theater at Guadalcanal (Solomon Islands) and Luzon and Panay (Philippines).

The fifth feature (Feature E) reported by Wulzen (1997: B-3) consisted of concrete fence posts that may "be remnants of pre-World War II cattle grazing on the dunes" (Wulzen et al. 1997:56); however, these fence posts were not identified during survey.

Of note was another feature found in proximity to the site, which was a rectangular, four course stacked rock structure (Feature F; Photo 38 and 39). This feature overlaps with the current site boundary but does not fit the description of other features reported by Wulzen et al. (1997:45; Wulzen et al. 1997: Figure 16) and so was assigned a new letter.

Table 4. Features Recorded at Site 50-30-05-2000 by Both Wulzen et al. (1997) and During This Survey.

Site Number (50-30-05-)	Survey Area	Feature Number	Morphology (Feature Type)	Maximum Length (m)	Maximum Width (m)	Depth (m)	Orientation
2000	Main Base South	F	Concrete Feature, Stone Alignment	3.3	1.3	0.5	
2000	Main Base South	В	Concrete Box (Basin)	2.0	1.8	0.9	NE-SW
2000	Main Base South	D	Concrete Feature (Slab)	6.5	6.0		N-S
2000	Main Base South	A or C	Excavation/Cesspool	16.0	15.0		

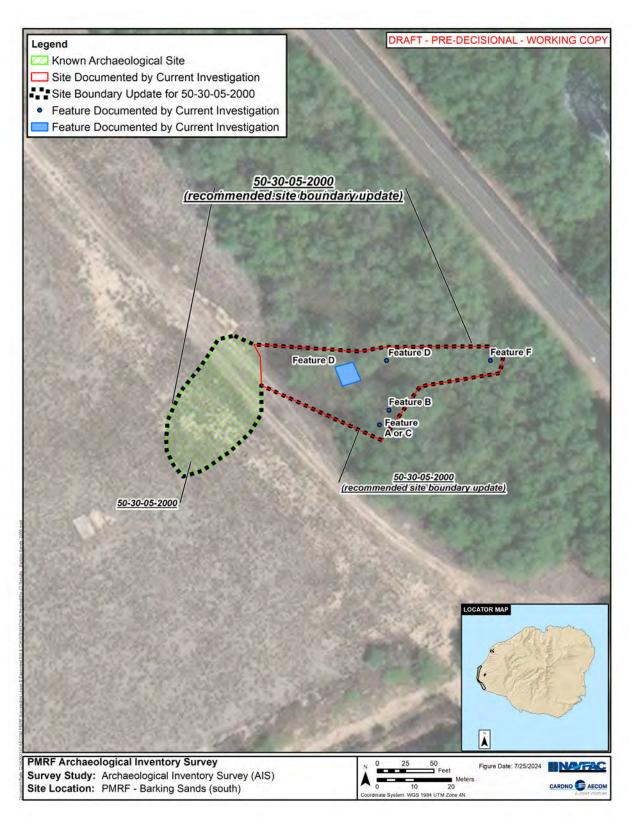


Figure 21. Map of site 50-30-05-2000 at Main Base South showing previously recorded site boundary and updated boundary. Note: Main Base refers to Barking Sands.



Photo 20. Feature B at Site 50-30-05-2000: concrete basin associated with U.S. Army showering facility (Wulzen et al. 1997:45).

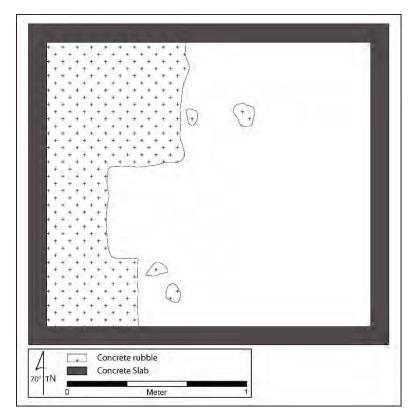


Figure 22. Feature B at Site 50-30-05-2000: plan view map of concrete basin.



Photo 21. Feature D at Site 50-30-05-2000: concrete showering area used by U.S. servicemen during WWII; looking south-southwest.



Photo 22. Feature D at Site 50-30-05-2000: concrete showering area used by U.S. servicemen during WWII; looking north-northeast.

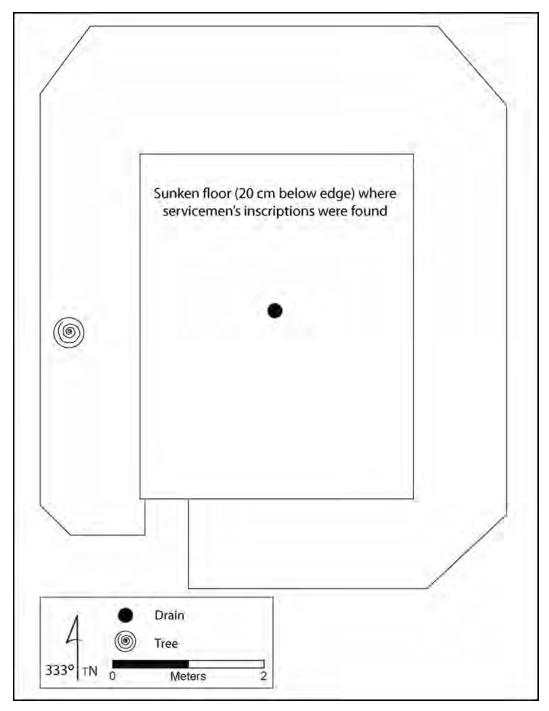


Figure 23. Feature D at Site 50-30-05-2000: concrete pad bathing area.

Table 5. Names and Associated Inscriptions of U.S. Servicemen.

No.	Name	Inscription
1	Walter Strizic	Butte, Montana
2	Frank Buchholz	Grafton Wisconsin
3	Ray Ponder	Mississippi
4	Gordon Lindenburg	Chicago, Illinois
5	S/SGT Ashton	Kansas
6	Jimmy Verderoci	Oakland, California
7	PFC G Seyroyt	Los Angeles, California
8	Geo Baker	Pineville, California
9	Ty Unaitis	Kenosha, Wisconsin
10	Dan Larson	Los Angeles, California
11	A.E. Cleary	Ironton, Ohio
12	PFC Lauver	
13	G. Ross	Nevada
14	Deruuse	Texas
15	SGT Wingrud	Anaheim, California
16	Shorty Linklater	
17	Ponce Whittier	
18	Ken Gibs	Texas
19	LT. Dever	



Photo 23. Feature D at Site 50-30-05-2000: inscription of names of two U.S. servicemen, including "PFC Lauver" on the floor of concrete showering area (Wulzen et al. 1997:45) dating to October 20, 1942.



Photo 24. Feature D at Site 50-30-05-2000: inscription of "Walter Strizic, Butte, Mont" on the floor of concrete showering area (Wulzen et al. 1997:45).

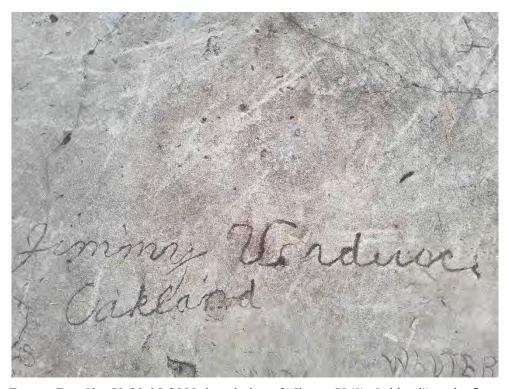


Photo 25. Feature D at Site 50-30-05-2000: inscription of "Jimmy V (?), Oakland" on the floor of concrete showering area (Wulzen et al. 1997:45).



Photo 26. Feature D at Site 50-30-05-2000: inscription of "Pfc G. Seymor (?), Los Angeles, Calif, 10-20-42" on the floor of concrete showering area (Wulzen et al. 1997:45).



Photo 27. Feature D at Site 50-30-05-2000: inscriptions of two U.S. servicemen, including "Geo. Baker, Pineville, KY" and "M.L (?), Calif." on the floor of concrete showering area (Wulzen et al. 1997:45).



Photo 28. Feature D at Site 50-30-05-2000: inscription of U.S. serviceman "G. Ross, Nevada" on the floor of concrete showering area (Wulzen et al. 1997:45).

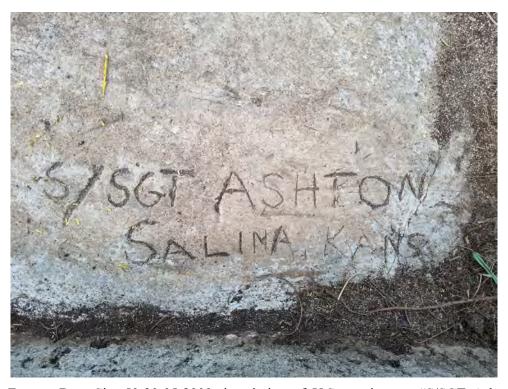


Photo 29. Feature D at Site 50-30-05-2000: inscription of U.S. serviceman "S/SGT Ashton, Salina, Kansas" on the floor of concrete showering area (Wulzen et al. 1997:45).

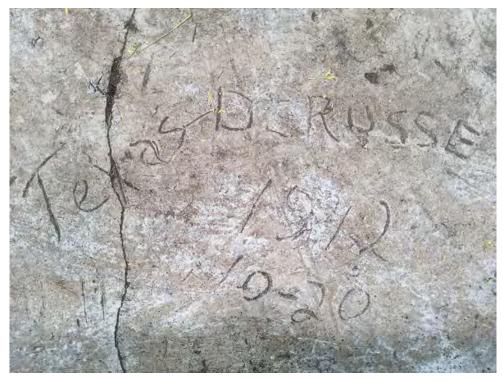


Photo 30. Feature D at Site 50-30-05-2000: inscription of "Texas—Derusse, 1942, 10-20" on the floor of concrete showering area (Wulzen et al. 1997:45).



Photo 31. Feature D at Site 50-30-05-2000: inscription of U.S. serviceman "Ty Unitis, Kenosha, Wisconsin" on the floor of concrete showering area (Wulzen et al. 1997:45).

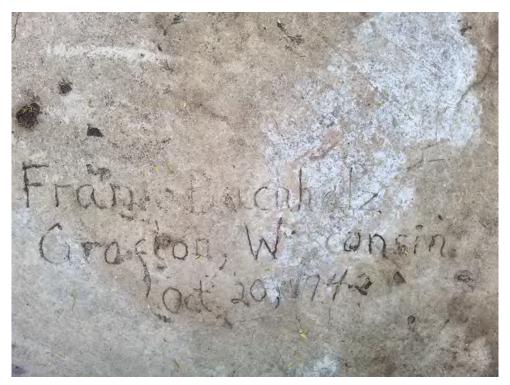


Photo 32. Feature D at Site 50-30-05-2000: inscription of U.S. serviceman "Frank Buchholz, Grafton, Wisconsin, Oct. 20, 1942" on the floor of concrete showering area (Wulzen et al. 1997:45).



Photo 33. Feature D at Site 50-30-05-2000: inscription of "Mele Kalikimaka" and U.S. serviceman "P..., 10-20-42, Whittier" on the floor of concrete showering area (Wulzen et al. 1997:45).



Photo 34. Feature D at Site 50-30-05-2000: inscription of U.S. serviceman "Ray Ponder, Mississippi" on the floor of concrete showering area (Wulzen et al. 1997:45).



Photo 35. Feature D at Site 50-30-05-2000: inscription of U.S. serviceman "Gordon Lindeberg, Chicago, Illinois, Oct. 20, 42" on the floor of concrete showering area (Wulzen et al. 1997:45).



Photo 36. Feature D at Site 50-30-05-2000: inscription of U.S. serviceman "Ken Gibbs, Texas" on the floor of concrete showering area (Wulzen et al. 1997:45).



Photo 37. Feature D at Site 50-30-05-2000: inscription of U.S. serviceman "A. E. Cleary, Trenton, Ohio" and "Lt. Dever (?)" on the floor of concrete showering area (Wulzen et al. 1997:45).



Photo 38. Feature 1 at Site 50-30-05-2000: four course stacked rock structure in embedded concrete; looking south-southeast.



Photo 39. Feature 1 at Site 50-30-05-2000: four course stacked rock structure in embedded concrete; looking south-southwest.



Photo 40. Feature A or C at Site 50-30-05-2000 in Main Base South.

## MAIN BASE NORTH

The Main Base North survey area was a mix of dense vegetation, dunes in the northwestern section, and to the east, forest intermixed with large piles of concrete rubble, barbed wire bales, and an abandoned apiary that made it difficult and at times impossible to complete transects (Photos 41 to 47). Hence, there are several open spaces on the survey transect map (Figure 24) corresponding to locations deemed unsafe or impractical for survey.

The survey area also overlapped with four known sites: three traditional Hawaiian and one historic. The three traditional Hawaiian sites included Nohili Dune (Site 50-30-01-1860)—

Site 50-30-01-0009 which was noted by Bennett (1931)

and Site 50-30-1-2049,

The other historic site, 50-30-01-2042, is a trash deposit related to military activities dating to WWII and after. Two new sites, IA011 and IA012, were identified, both of which were historic in age, including remnants of a structure associated with a small arms range and a long segment of barbed wire bundles and refuse (Figure 25).

The northwestern portion of this survey area included steep dunes covered in *kiawe* trees that led up to Site 50-30-01-1860 in the Nohili Dunes with the survey area overlapping with an approximately 350 m by 75 m sector, a small area of the overall site. No new archaeological sites were found in this location. Site 50-30-01-0009, which was surmised to partially overlap with the northeastern corner of the survey area, could not be located. Given that these and many other sites were previously recorded using coarser survey methods (e.g., without the aid of GPS), their locations are sometimes rough approximations based on the digitization of older reports (i.e., in this case, Bennett 1931). It is quite possible that Site 50-30-01-0009, is further to the east.

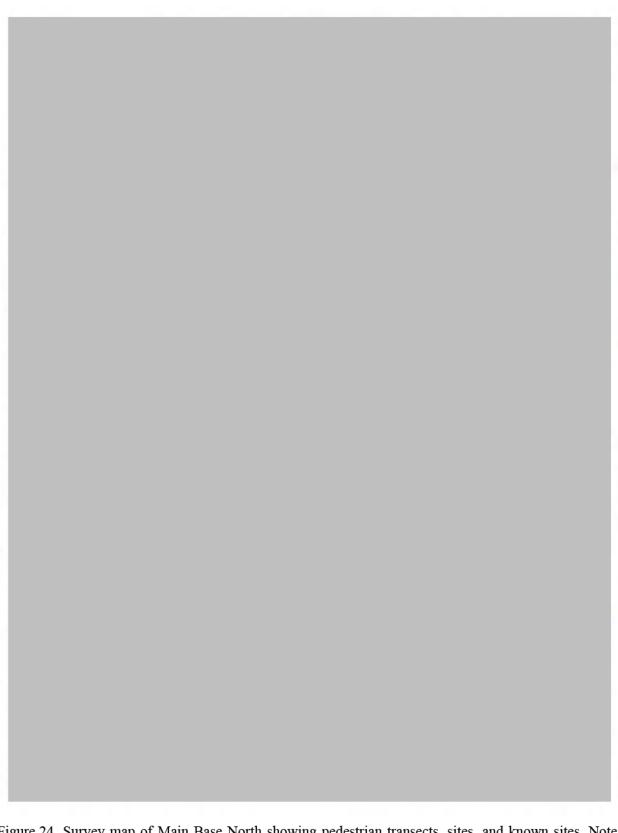


Figure 24. Survey map of Main Base North showing pedestrian transects, sites, and known sites. Note: Main Base refers to Barking Sands.

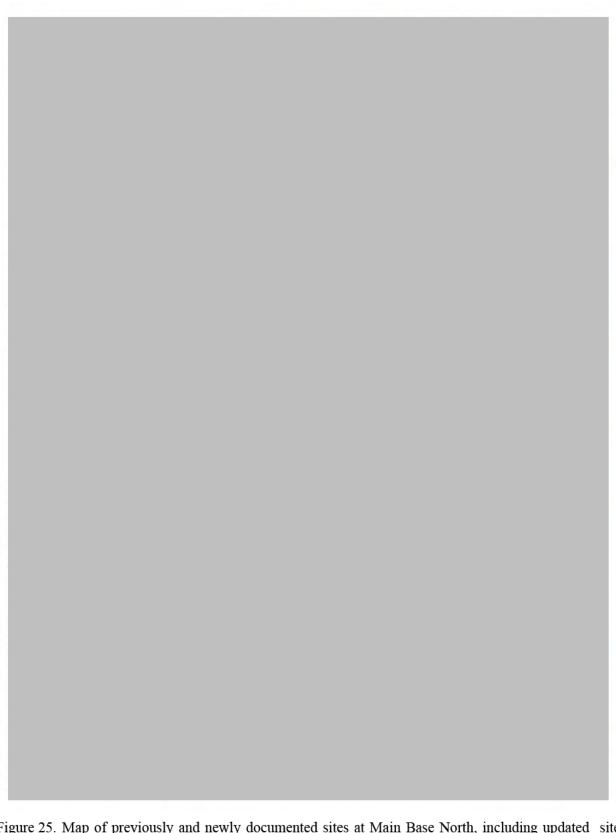


Figure 25. Map of previously and newly documented sites at Main Base North, including updated site boundaries for previously recorded sites . Note: Main Base refers to Barking Sands.



Photo 41. View of portion of survey area and ground visibility at Main Base North; looking north.



Photo 42. View of portion of survey area and ground visibility at Main Base North; looking southeast. Note density of kiawe trees.



Photo 43. Survey area overview showing vegetation density.



Photo 44. Overview of the previously recorded Nohili Dune site (50-30-01-1860).



Photo 45. Example of concrete and metal debris rubble pile; looking north.



Photo 46. Landscape in northeast section of Main Base North showing vegetation and ground visibility; looking west.



Photo 47. Abandoned apiary; looking north.

# Previously Recorded Sites Visited Within Main Base North

During survey of the Main Base North survey area, two previously recorded sites, 50-30-01-2042 and 50-30-01-2049, were encountered and the site boundaries were updated. Further information about the two sites is presented below.

## Site 50-30-01-2042

This site was recorded as a trash deposit by Wulzen et al. (1997: 69). They note, "Site 2042, at the far northeast corner of the base, consists of a series of large piles of barbed wire, metal fence posts, metal cans, and bottles covering c. 30 m by 15 m. These may be the remains of shoreline barbed wire defenses."

During the current survey, the site was re-located but was found to be approximately 40 m to the west recognizable by a scattering of metal, glass, and ceramic debris largely consistent with the description provided in Wulzen (1997: 69). The site boundaries were updated based on newly acquired GPS data and can be seen in Figure 26.



Figure 26. Map of Site 50-30-01-2042 at Main Base North showing updated site boundary. Note: Main Base refers to Barking Sands.

#### Site 50-30-01-2049

Site 50-30-01-2049 is a historic era midden that was reported by Wulzen et al. (1997: B-35 to B-36) as a trash deposit dating to WWII or later. They note the site as "containing piles of crushed metal barrels and glass bottles. It is found east of North Nohili Road, at the junction with the pistol-range dirt road, and may post date World War II (p. 69)". During the current survey, the site boundary was updated based on newly acquired GPS data and can be seen in Figure 27. The site is a large scatter of burnt barrels, glass and ceramic debris, and various metal pieces (Photos 48 to 51). The site is approximately 20–25 m square and about 10 m east of the small arms range as noted by Wulzen et al. (1997) (Site IA011, described below).

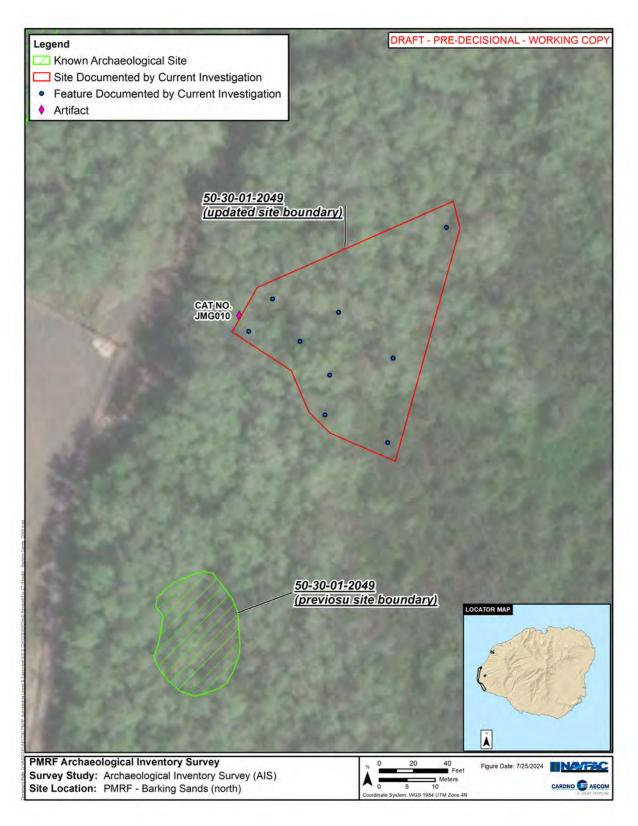


Figure 27. Map of Site 50-30-01-2049 at Main Base North showing updated site boundary. Note: Main Base refers to Barking Sands.



Photo 48. Large metal burnt barrel pile at Site 50-30-01-2049; looking south.



Photo 49. View of landscape and metal debris at Site 50-30-01-2049; far right; looking south.



Photo 50. Glass bottles and other glass and ceramic debris at Site 50-30-01-2049.



Photo 51. Glass bottle, ceramic bowl, leather fragments, and other miscellaneous items at Site 50-30-01-2049.

### **Newly Identified Sites Within Barking Sands North**

Two new historic sites were identified during the survey, including remnants of a wood frame structure used previously in association with the small-arms firing range (IA011) and a refuse area dominated by bundles of barbed wire and other debris (IA012).

### Site IA011: Wood Frame Structure (Small-arms Firing Range)

Site IA011 consists of a wood frame structure previously used in association with a small- arms firing range (Table 6; Photos 52 to 54; Figure 28). The structure is surrounded by concrete and asphalt refuse that was likely pushed to the location with heavy machinery, similar to what was observed in other parts of Main Base North. The building has a concrete foundation with wooden posts supporting the roof. There is a small 1 by 1 m extension of the pad for a manual clay launcher to the west-southwestern edge of the structure. The range building is mostly open air except for a small shed built into the center of the structure on the south-southeastern edge. Along the ceiling there are concealed wires for lighting and a telephone jack. The roof is partially collapsed, and the concrete has buckled on the east-northeastern half of the feature. A bench and table can still be found underneath the building's foundation. The structure has a facility number of 576 on the door.

Table 6. Site IA011 Site Dimensions

Site Number	Survey Area	Morphology (Feature Type)	Maximum Length (m)	Maximum Width (m)	Depth (m)	Orientation
IA011	Barking Sands North	Wooden Frame Structure	11.0	2.5	3.5	E-NE, W-SW



Photo 52. Wooden Frame structure at Site IA011.



Photo 53. View of inside of wooden frame structure at Site IA011.



Photo 54. Safety rules sign inside of concrete structure at Site IA011.



Figure 28 Map of Site IA011 at Main Base North.

## Site IA012: Historic Refuse Area

Site IA012 is a historic refuse area, including bundles of barbed wire within a larger push pile of debris (Table 7; Photo 55). The push pile appears like a mound that was created by mechanically removing barbed wire fencing, perhaps initially placed along the edges of the canal that lies about 5 m to the northwest. The push pile is oriented roughly northeast-southwest and consists of large piles of rusted barbed wire roughly 2–2.5 m in diameter, concrete fragments, tree stumps, metal fence post fragments, and glass and ceramic bottles.

Table 7. Site IA012 Site Dimensions.

Site Number	Survey Area	Feature No.	Morphology (Feature Type)	Surface	Maximum Length (m)	Maximum Width (m)	Height (m)	Orientation
IA012	Barking Sands North	N/A	Historic Refuse Area	X	38.0	1.0	1.2	NE-SW



Photo 55. Site IA012: Bundles of rusted barbed wire found adjacent to canal; looking west.

## **Isolated Finds Within Main Base North**

Apart from the two sites identified and recorded within Main Base North, IA011 and IA012, three historic bottles, a possible marine shell artifact, coral abrader, and lava rock manuport were recorded and collected as isolated finds across different parts of the survey area (Table 8; Photos 56 to 60).

Table 8. Isolated finds collected from Barking Sands North.

Cat. No.	Туре	Age
JMG008.01	Glass milk bottle	Historic
JMG008.02	Glass milk bottle	Historic
JMG010	Glass medicinal bottle	Historic
EVZ002	Possible shell artifact	pre-Contact
JMG009	Coral abrader	pre-Contact
	Waterworn basalt cobble	
JMG011	manuport	pre-Contact



Photo 56. Historic milk bottle from Sokei Dairy, Kauai found at Barking Sands North (Cat. No. JMG008.02).



Photo 57. Historic milk bottle from Waimea Dairy, Kauai found at Barking Sands North (Cat. No. JMG008.01).



Photo 58. Glass medicinal bottle found at Barking Sands North (Cat. No. JMG010).



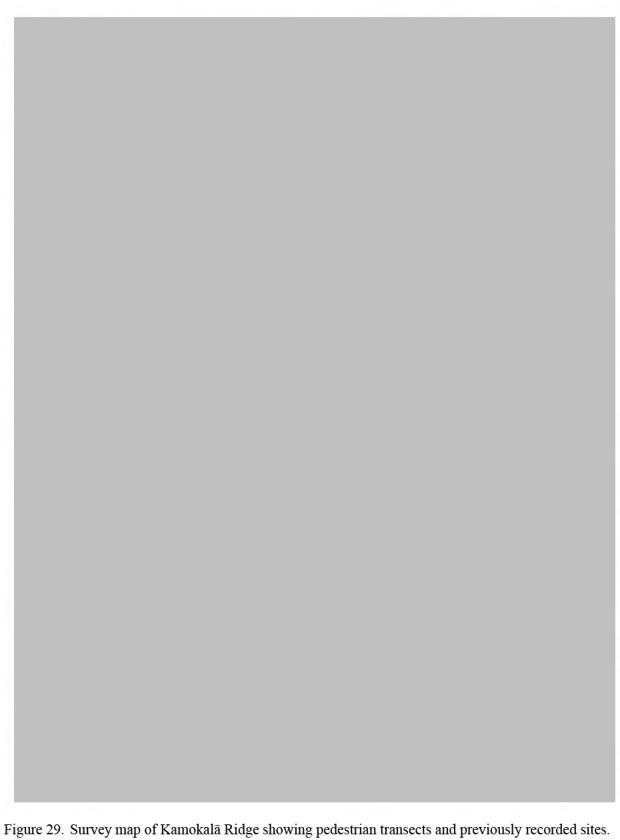
Photo 59. Possible shell artifact (Cat. No. EVZ002).



Photo 60. Grooved coral abrader (Cat. No. JMG009).

# KAMOKALĀ RIDGE

Kamokalā Ridge is east of the Main Base. During the survey, vegetation was typically dense and
the terrain rocky with some areas having deep ravines or steep topography exhibiting active flooding during
heavy rain (Photos 61 and 62). As such, some parts of the survey area could not be traversed safely.
Nevertheless, of the four parcels surveyed, Kamokalā Ridge had the densest concentration of previously
recorded and newly identified sites, including remnants of pre-Contact and early historic agricultural
activities and historic era refuse
areas (e.g., see McGerty and Spear 1997b). The latter includes abandoned cars, metal pipes, appliances,
glass/metal debris, and other miscellaneous trash. Most of the previously recorded sites within the
Kamokalā survey area were verified during the pedestrian survey and a number of new sites were also
identified.
Fieldwork at Kamokalā Ridge also consisted of subsurface testing through excavation of ten 1 by
1 m units. These units were placed within (n=3; see Figure 29) and on top of
or adjacent to stone architectural features at Site  Of these 10 units, eight were positive
for cultural material and included
101 Cultural material and included



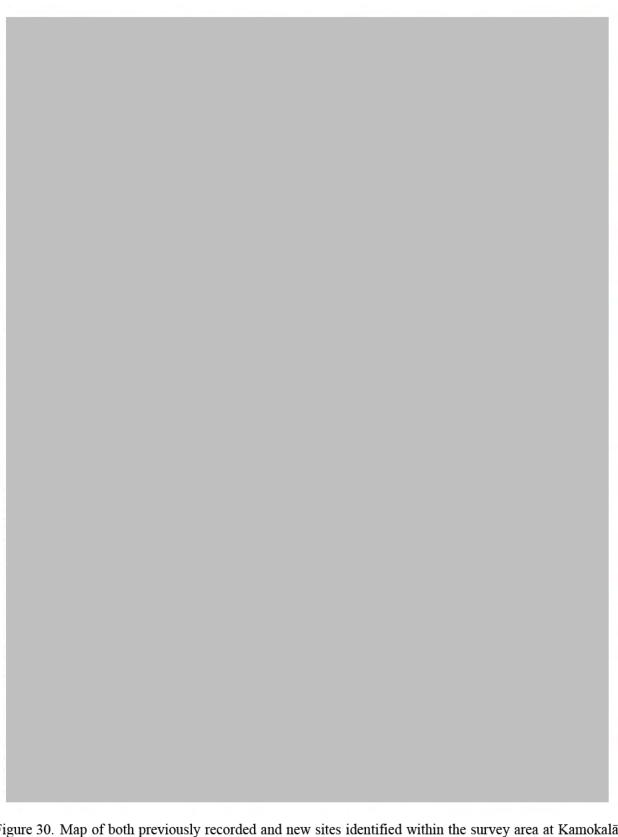


Figure 30. Map of both previously recorded and new sites identified within the survey area at Kamokal $\bar{a}$  Ridge, including updated site boundaries.



Photo 61. Portion of extensive Night-Blooming Cereus Dragon Fruit (Hylocereus undatus) grove that prohibited access through part of the survey area; looking northeast.



Photo 62. Stream bed along the northern boundary of the survey area after heavy rains during the previous day.

# **Previously Recorded Sites**

During the survey, three sites that had been previously recorded were identified: 50-30-05-0652, 50-30-05-0653, and 50-30-05-0658. These sites were verified during the pedestrian survey and are briefly described below.

Site 50-30-05-0652

Site 50-30-05-0652 consists of a single feature (Feature 1 in McGerty and Spear 1997b:22) which was described as "a single rock mound feature

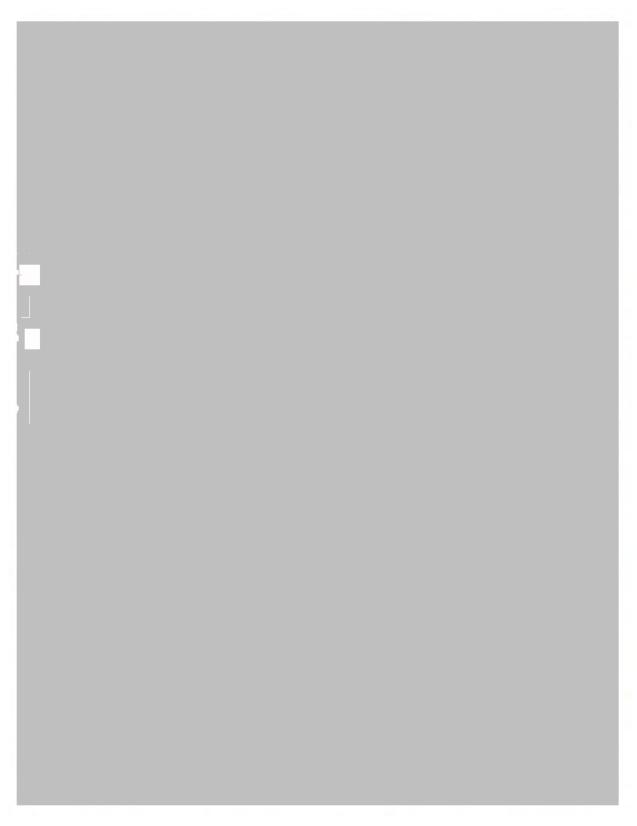


Figure 31. Site 50-30-05-0652 showing updated site boundary.



Photo 63. Site 50-30-05-0652: rock mound (recorded as Feature 1 by McGerty and Spear 1997b:22); looking north-northwest.

## Site 50-30-05-0653

Site 50-30-05-0653 was reported by McGerty and Spear (1997b: 22) to consist of seven rock mounds interpreted as being agricultural in nature (see also Altizer and Hammatt 2010; Figure 32). The site was verified during this pedestrian survey and the boundary was updated. However, four more similar features were found in the vicinity, making a total of 12 rock mounds. It was not possible to correlate the previously identified mounds from McGerty and Spear (1997b:25) and therefore the mounds were give new feature numbers (Features 1–12; see Table 9; see Figure 26; Photos 64 to 75).

Table 9. Features Recorded at Site 50-30-05-0653 Both by McGerty and Spear (1997b) and in This Survey.

te Number 50-30-05-)	Survey Area	Feature Number	Morphology (Feature Type)	Surface	Maximum Length (m)	Maximum Width (m)	Height (m)	O
0653	Kamokalā Ridge	1	Rock Mound					
0653	Kamokalā Ridge	2	Rock Mound					
0653	Kamokalā Ridge	3	Rock Mound					
0653	Kamokalā Ridge	4	Rock Mound					
0653	Kamokalā Ridge	5	Rock Mound					
0653	Kamokalā Ridge	6	Rock Mound					
0653	Kamokalā Ridge	7	Rock Mound					
0653	Kamokalā Ridge	8	Rock Mound					
0653	Kamokalā Ridge	9	Rock Mound					
0653	Kamokalā Ridge	10	Rock Mound					
0653	Kamokalā Ridge	11	Rock Mound					
0653	Kamokalā Ridge	12	Rock Mound					

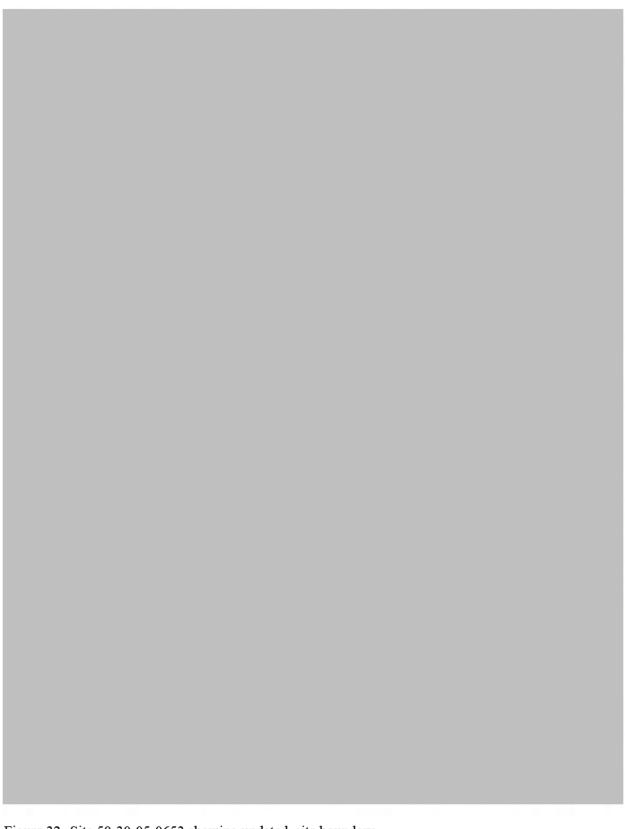


Figure 32. Site 50-30-05-0653 showing updated site boundary .



Photo 64. Feature 1 at Site 50-30-05-0653: rock mound; looking east-northeast.



Photo 65. Feature 2 at Site 50-30-05-0653: rock mound; looking north-northwest.



Photo 66. Feature 3 at Site 50-30-05-0653: rock mound; looking east.



Photo 67. Feature 4 at Site 50-30-05-0653: rock mound; looking south-southwest.



Photo 68. Feature 5 at Site 50-30-05-0653: rock mound; looking east-southeast.



Photo 69. Feature 6 at Site 50-30-05-0653: rock mound; looking south



Photo 70. Feature 7 at Site 50-30-05-0653: rock mound; looking north.



Photo 71. Feature 8 at Site 50-30-05-0653: rock mound; looking east.



Photo 72. Feature 9 at Site 50-30-05-0653: rock mound; looking east.



Photo 73. Feature 10 at Site 50-30-05-0653: rock mound; looking southeast.



Photo 74. Feature 11 at Site 50-30-05-0653: rock mound; looking northeast.



Photo 75. Feature 12 at Site 50-30-5-0653: rock mound; looking east-southeast.

# Site 50-30-05-0658

This site was orig	inally described as	"a single feature of	consisting of a rock mo	oun

Table 10. Features Recorded at Site 50-30-05-0658 Both by McGerty and Spear (1997b) and in This Survey.

Site Number (50-30-05-)	Survey Area	Feature Number	Morphology (Feature Type)	Surface	Maximum Length (m)	Maximum Width (m)	Height (m)	Orientation
0658	Kamokalā Ridge	1	Rock Mound					
0658	Kamokalā Ridge	2	Rock Mound					
0658	Kamokalā Ridge	3	Rock Mound					

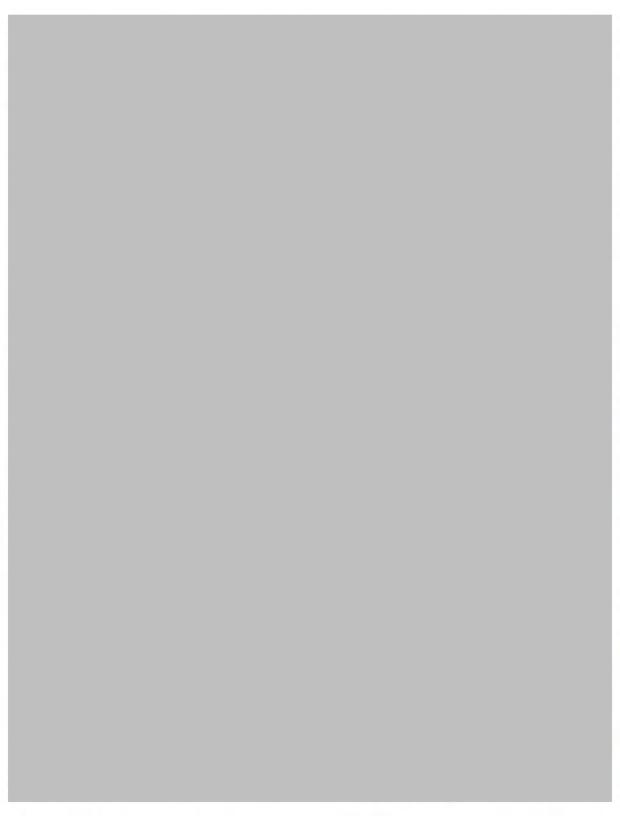


Figure 33. Site 50-30-05-0658 showing features and site boundary update.



Photo 76. Feature 1 at Site 50-30-05-0658: rock mound; looking north-northeast.



Photo 77. Feature 2 at Site 50-30-05-0658: rock mound; looking south-southwest.



Photo 78. Feature 2 at Site 50-30-05-0658: ground stone artifact.



Photo 79. Feature 3 at Site 50-30-05-0658: rock mound; looking west.

# **Newly Identified Sites**

A total of 10 new sites were identified within the Kamokalā Ridge survey area. These new sites are associated with traditional Hawaiian activities and historic period landscape use. Each of the sites and their associated features are described further below.

Site IA001: Rock Wall

Site IA001 consists of a traditional Hawaiian rock wall (

Table 11. Site IA001 Dimensions.

Site Number	Survey Area	Morphology (Feature Type)	Surface	Maximum Length (m)	Maximum Width (m)	Height (m)	Orientation
IA001	Kamokalā Ridge	Stone Wall					

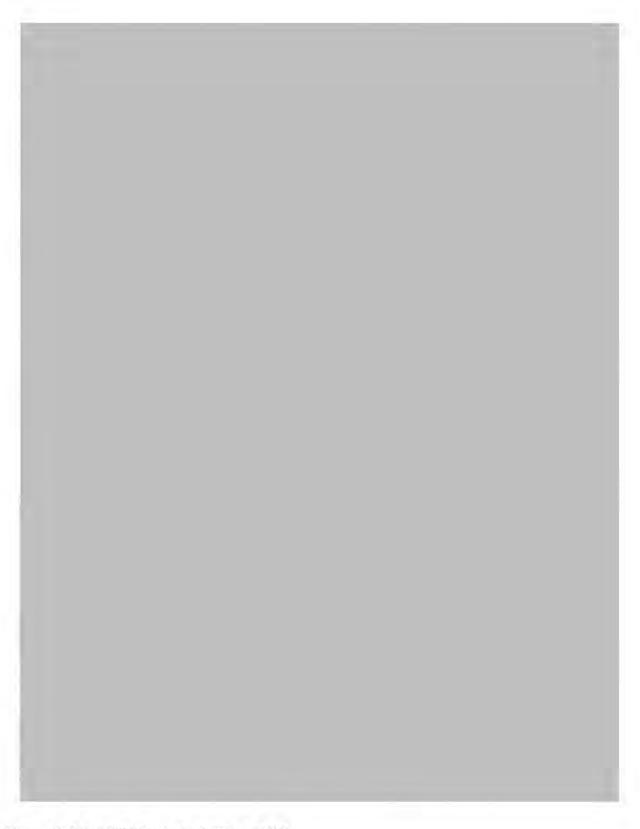


Figure 34. Site IA001 location relative to IA010.



Photo 80. Site IA001: rock wall; view to the west.



Photo 81. Site IA001: rock wall (south side of collapsed section); view to the west-northwest.



Photo 82. Site IA001: rock wall; view to the west-northwest.



Photo 83. Site IA001: rock wall; collapsed area along southern end; view to the east.

Site IA002: Rock Wall and Enclosure Complex

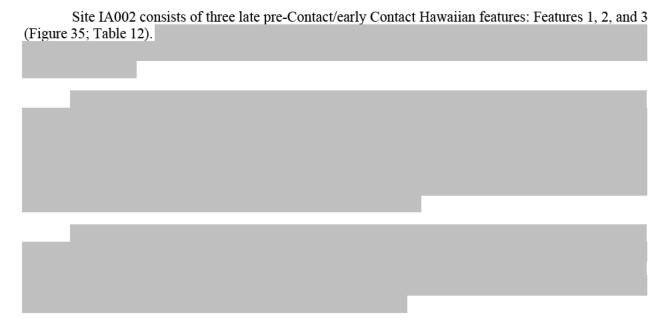


Table 12. Site IA002 Feature Dimensions.

Site Number	Survey Area	Feature No.	Morphology (Feature Type)	Surface	Maximum Length (m)	Maximum Width (m)	Depth (m)	Orientation
IA002	Kamoka lā Ridge	1	Rock Wall					
IA002	Kamoka lā Ridge	2	Rock Enclosure					
IA002	Kamoka lā Ridge	3	Retaining walls and tenaces					

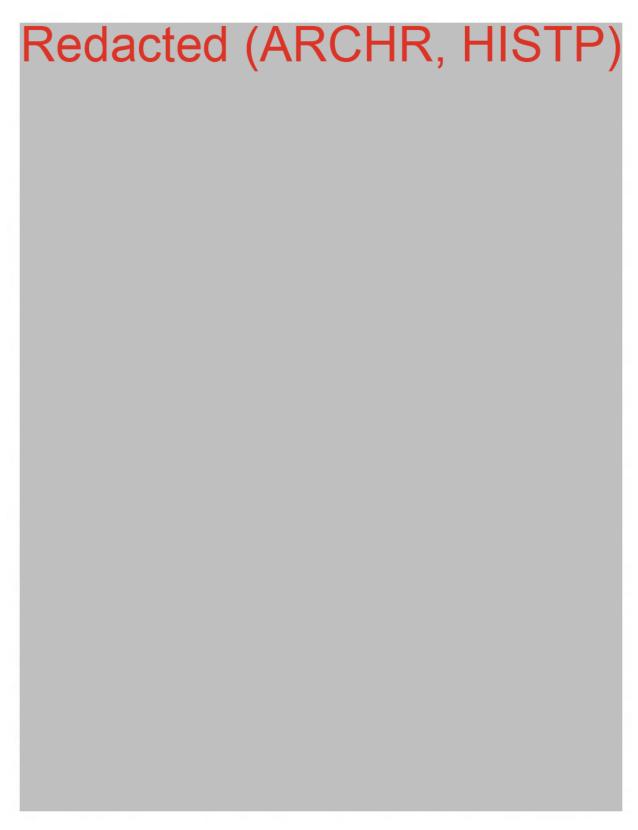


Figure 35. Site IA002 dimensions and location of associated features.



Photo 84. Feature 1 at Site IA002: rock wall on southern side; view to the east.



Photo 85. Feature 1 at Site IA002: rock wall with modern fencing; view to the northeast.



Photo 86. Feature 1 at Site IA002: rock wall; view to the south.



Photo 87. Feature 2 at Site IA002: rock wall; view to the west.

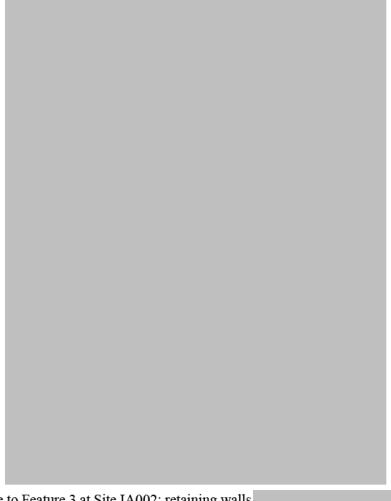


Photo 88. Entrance to Feature 3 at Site IA002: retaining walls



Photo 89. Overview of Feature 3 at Site IA002: retaining walls; view to the east.



Photo 90. Overview of Feature 3 at Site IA002: retaining walls; view to the east-northeast.



Photo 91. Overview of Feature 3 at Site IA002: retaining walls; view to the north.

Site IA003: Rock Shelter

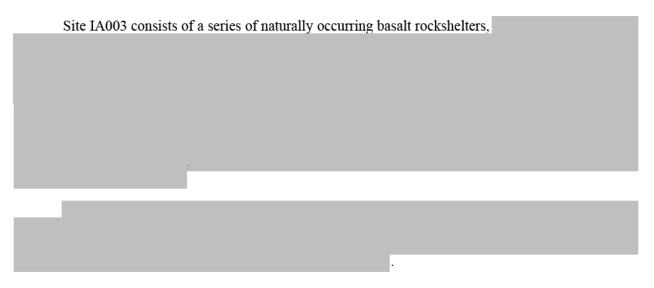


Table 13. Site IA003 Feature Dimensions.

Site Number	Survey Area	Feature No.	Morphology (Feature Type)	Surface	Maximum Width (m)	Height (m)	Orientation
IA003	Kamokalā Ridge						
IA003	Kamokalā Ridge						
IA003	Kamokalā Ridge						
IA003	Kamokalā Ridge						

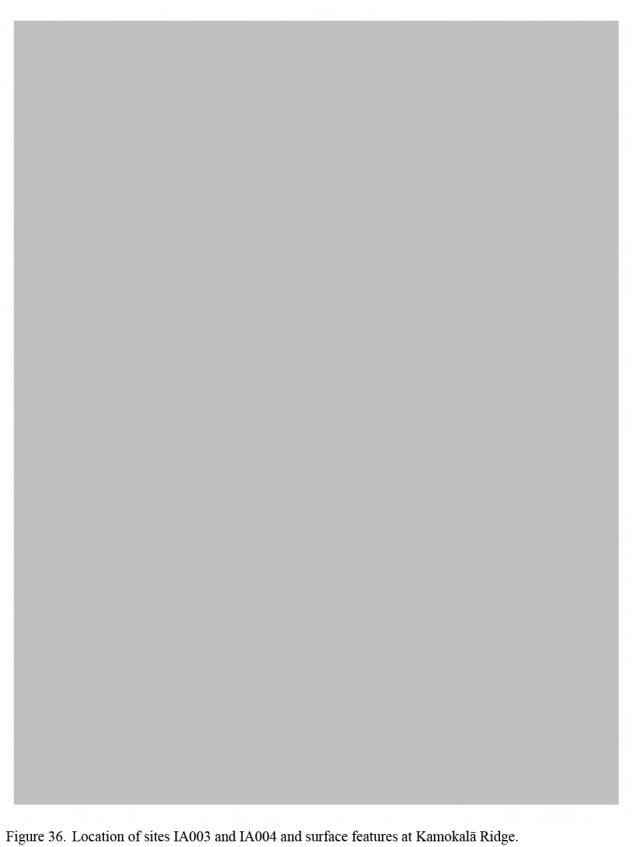




Photo 92. Feature 2 at Site IA003: Retaining wall below floor of larger rockshelter.

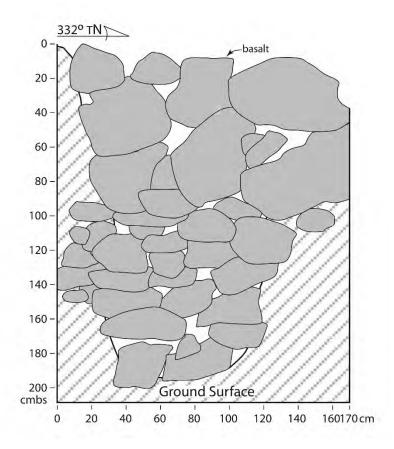


Figure 37. Profile of Feature 2 at Site IA003: Retaining wall; west wall.



Photo 93. View of Feature 3 at Site IA003: smaller rockshelter situated to the north of larger overhang; view to the north-northeast.



Photo 94. Feature 4 at Site IA003: overview of southern end of larger rockshelter; view to the east.



Photo 95. Feature 4 at Site IA003: view of larger rockshelter situated above Cave 10; view to the east.

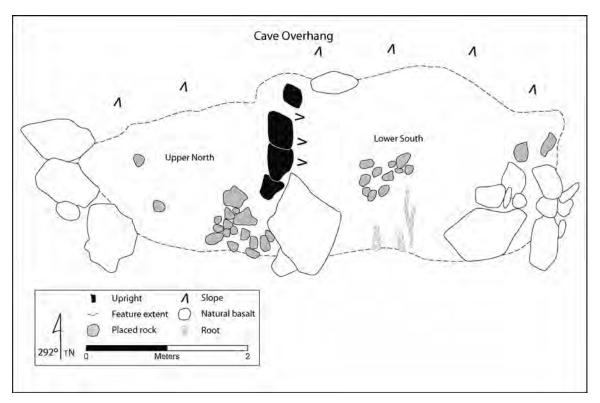


Figure 38. Feature 4 at Site IA003: plan view of larger rockshelter.



Photo 96. Feature 4 at Site IA003: view of larger rockshelter after clearing; view to the east.



Photo 97. Hematite net sinker found on surface (Cat. No. JMG001).



Photo 98. Marine gastropod shell (Morula sp.) found on surface.



Photo 99. Metal can found on surface.

Site IA004: Stone Platform and Modified Outcrop

Site IA004 is located includes two features. Feature 1 is a roughly rectangular platform exhibiting traditional Hawaiian construction (Photo 100 to Photo 102;

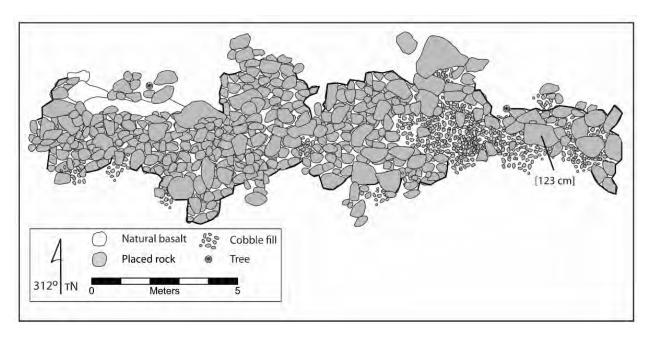


Figure 39; Table 14). The area northeast of the feature has an approximately 20-degree slope covered in grasses, *kiawe*, and fallen rocks. To the southwest, the shelf extends an additional 2.5 m before it becomes a vertical drop-off.

The platform (Feature 1) is stacked roughly 1–4 courses in height along the southwestern edge, averaging 80–130 cm above the ground's surface, while the northeast edge appears to have been built into the side of the flatter shelf. The platform measures 21 m in length and extends in a southeast/northwest orientation. The surface of the platform is relatively flat, but there is evidence of erosion and additional rock fall from the ridge above. The site may have been used for short-term habitation, perhaps in association with the rockshelter (Site IA003) below, but its function is not entirely clear. Feature 2 is a modified rock outcrop about 25 m north of Feature 1 (Photo 103).

Table 14. Site IA004 Feature Dimensions.

Site Number	Survey Area	Feature No.	Morphology (Feature Type)	Surface	Maximum Width (m)	Depth (m)	Orientation
IA004	Kamokalā Ridge	1					
IA004	Kamokalā Ridge	2					

Photo 100. Feature 1 at Site IA004: overview after vegetation clearing; view to the east.



Photo 101. West end of Feature 1 at Site IA004: overview; view to the north-northwest.



Photo 102. Feature 1 at Site IA004: overview; view to the east.

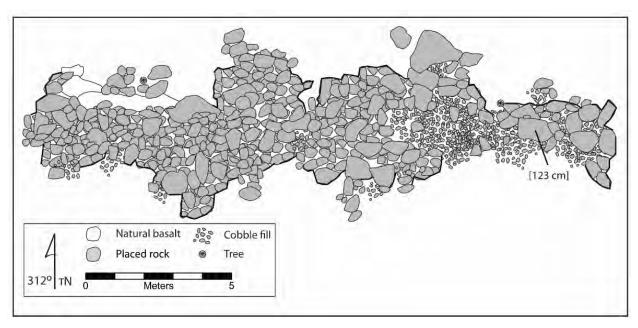


Figure 39. Feature 1 at Site IA004: plan view map of stone platform.



Photo 103. Feature 2 at Site IA004: modified rock outcrop; view to the north.

## Site IA005: Historically Modified Rock Wall

Site IA005 consists of two features—a J-shaped rock wall 16 m in length, 1.5 m average in width, and between 0.7 and 1.2 m in height (Table 15; Figure 40) and a concrete culvert that was constructed after modifying the original rock wall. The wall is similar to a traditional Hawaiian structure; however, it has been modified with a concrete and metal culvert system visible along two different sections. One of these sections (Photo 104) would have required the removal and replacement of basalt boulders to construct the concrete thruway while the other modified section was built along the adjacent side, possibly without requiring modification of the original structure (Photo 105 to Photo 106). Both of these historic additions, possibly related to plantation era activity, would have allowed water from a nearby stream to be diverted into and around the structure and possibly elsewhere. The site is located north of the stream, which was active at the time of recording, though no water movement through the feature was observed.

Table 15. Site IA005 Dimensions.

Site Number	Survey Area	Feature Number	Morphology (Feature Type)	Surface	Maximum Length (m)	Maximum Width (m)	Depth (m)
IA005	Kamokalā Ridge	1	Rock Wall	X	16.0	1.5	1.2
IA005	Kamokalā Ridge	2	Concrete Culvert	X	3.5	1.0	1.0

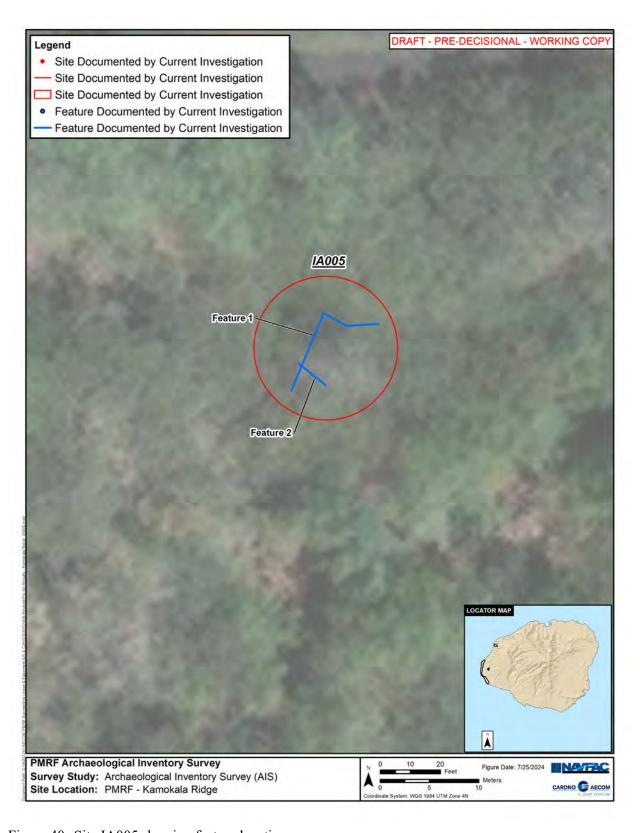


Figure 40. Site IA005 showing feature locations.



Photo 104. Features 1 and 2 at Site IA005: modified rock wall with concrete culvert; view to the east.



Photo 105 Feature 1 at Site IA005: modified rock wall; view to the east.



Photo 106. Feature 2 at Site IA005: concrete and metal culvert extension; view to the northeast.

Site IA006: Retaining Wall Complex with Terraces

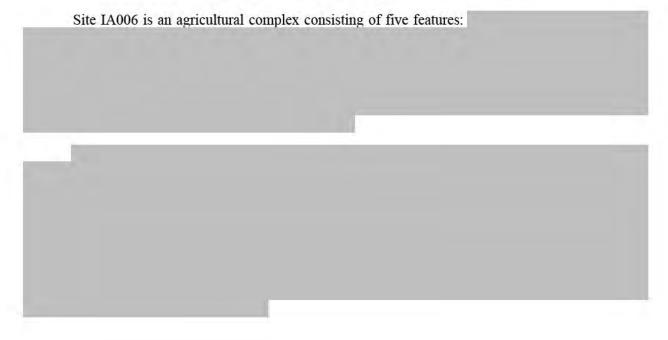


Table 16. Site IA006 Rock Wall Feature Dimensions.

Site Number	Survey Area	Feature No.	Morphology (Feature Type)	Surface	Maximum Length (m)	Maximum Width (m)	Depth (m)	Orientation
IA006	Kamokalā Ridge							
IA006	Kamokalā Ridge							
IA006	Kamokalā Ridge							
IA006	Kamokalā Ridge							
IA006	Kamokalā Ridge							

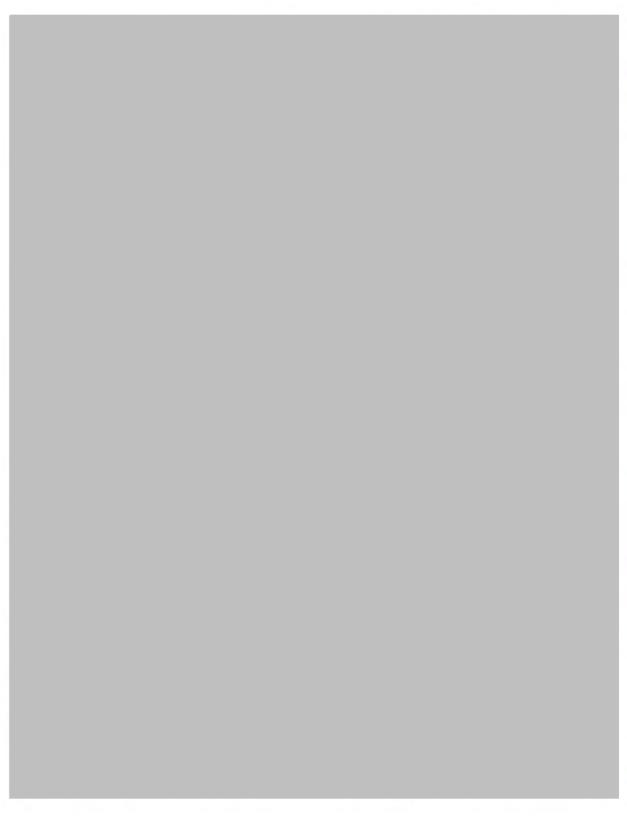


Figure 41. Site IA006 showing site boundary and feature locations.



Photo 107. Feature 1 at Site IA006: retaining wall; view to the east-northeast.



Photo 108. Feature 1 at Site IA006: retaining wall; view to the north.



Photo 109. Feature 2 at Site IA006: retaining wall; view to the north.

Site IA007: Basalt Quarry

Site IA007 is a basalt quarry

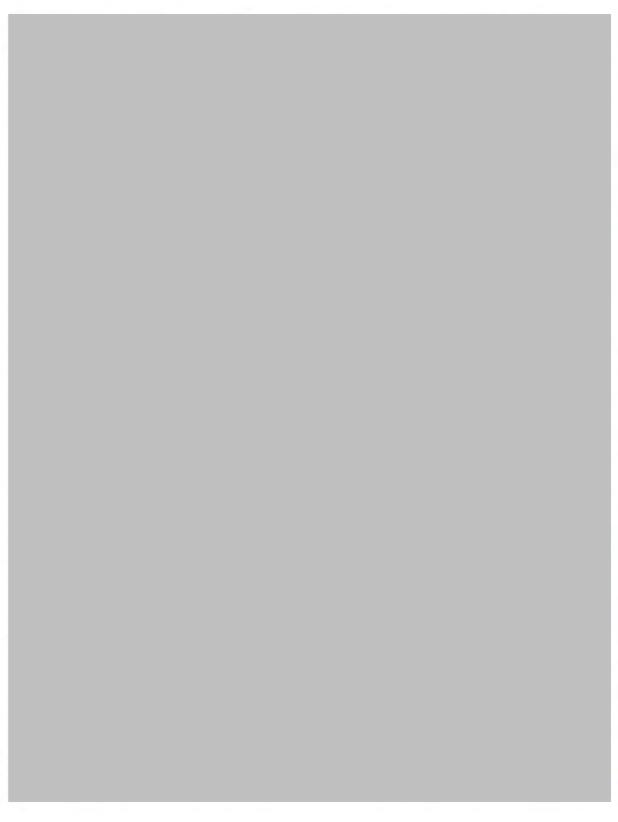


Figure 42. Map of Site IA007 location.



Photo 110. Feature 2 at Site IA007: basalt quarry; view to the east.



Photo 111. Feature 2 at Site IA007: basalt quarry.



Photo 112. Feature 2 at Site IA007: surface scatter of debitage at basalt quarry; view to the east.

Site IA008: Terrace Complex

Site IA008 consists of a terrace complex

Table 17. Site IA008 Feature Dimensions.

Site Number	Survey Area	Feature No.	Morphology (Feature Type)	Surface		Maximum Width (m)	Depth (m)	Orientation
IA008	Kamokalā Ridge	Re	edacte	ed (A	ARC	HR,	HIS	STP)
IA008	Kamokalā Ridge							
IA008	Kamokalā Ridge							
IA008	Kamokalā Ridge							

Site Number	Survey Area	Feature No.	Morphology (Feature Type)	Surface	Maximum Length (m)	Maximum Width (m)	Depth (m)	Orientation
IA008	Kamokalā Ridge							
IA008	Kamokalā Ridge							
IA008	Kamokalā Ridge							
IA008	Kamokalā Ridge							
IA008	Kamokalā Ridge							
IA008	Kamokalā Ridge							
IA008	Kamokalā Ridge							

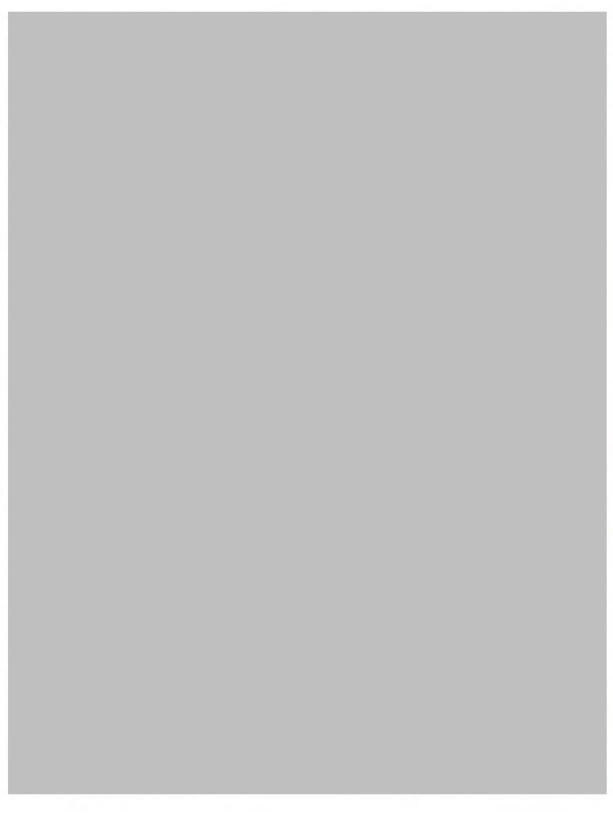


Figure 43. Site IA008 showing site boundary and features.

Feature 1 (Photo 113 and Photo 114: Figure 45 and Figure 46) is a stone platform that is 5.4 m long (east-west) by 2.4 m wide (north-south) and ranges between .11 to .70 m in height with a slight depression in the middle.



Photo 113. Feature 1 at Site IA008: stone platform; view to the east.



Photo 114. Feature 1 at Site IA008: stone platform; view to the west.

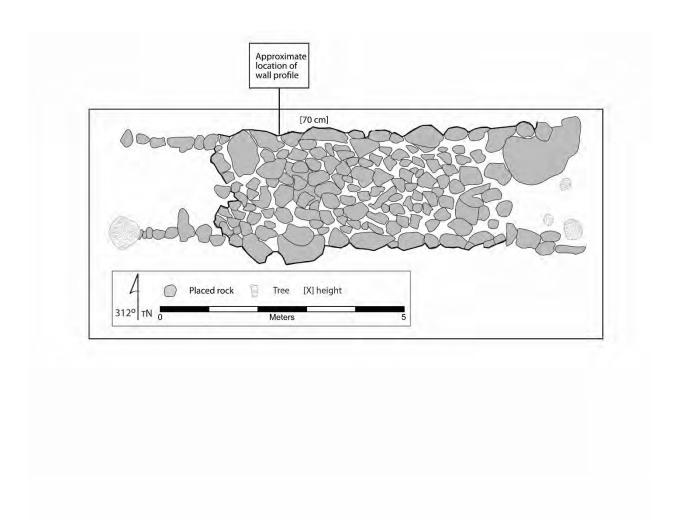


Figure 44. Feature 1 at Site IA008: plan view map of stone platform.

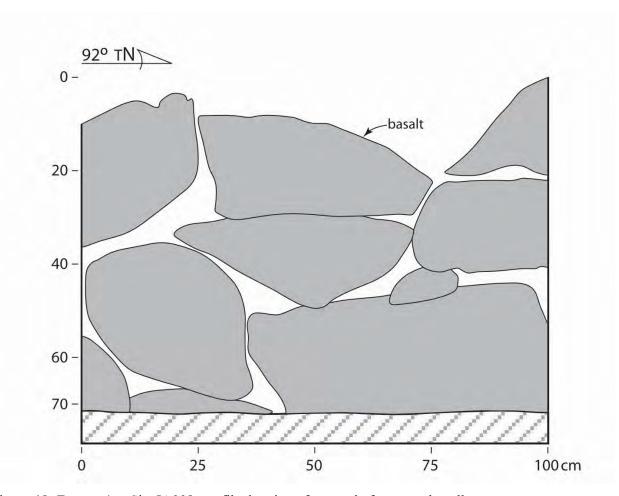


Figure 45. Feature 1 at Site IA008: profile drawing of stone platform; north wall.

Feature 2 (Photo 115) is a rock wall approximately  $2.7~\mathrm{m}$  long (east-west),  $1.3~\mathrm{m}$  wide, and  $0.35~\mathrm{m}$  in height.



Photo 115. Feature 2 at Site IA008: rock wall; view to the north.

Feature 3 (Photo 116 and Photo 117) is a rock wall
42 m (east-west). It fluctuates between 2 to 4 m in width and 1 to 2 m in height depending on the location.



Photo 116. Feature 3 at Site IA008: rock wall; view to the south.



Photo 117. Feature 3 at Site IA008: rock wall; view to the west.

Feature 4 (Photo 118) is a rock alignment



Photo 118. Feature 4 at Site IA008: rock alignment; view to the north.



Photo 119. Feature 5 at Site IA008: rock alignment; view to the south.



Photo 120. Feature 5 at Site IA008: rock alignment; view to the west.



Photo 121. Feature 5 at Site IA008: termination of rock alignment at western end; view to the east/northeast.



Photo 122. Feature 6 at Site IA008: rock wall; view to the east.



Photo 123. Feature 6 at Site IA008: rock wall; view to the south.

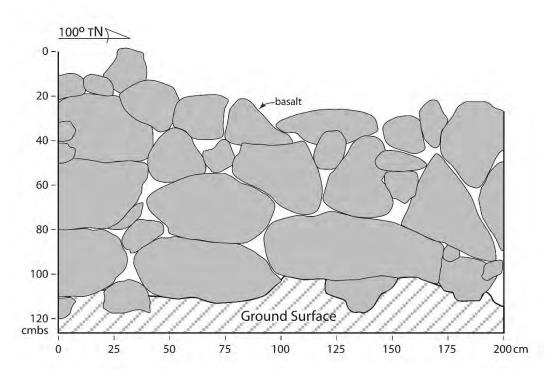


Figure 46. Feature 6 at Site IA008: profile drawing of rock wall.

Feature 7 is a rock wall (Photo 124) measuring 3 m in length (north-south), 0.9 m in width (eastwest), and 0.3 m in height.



Photo 124. Feature 7 at Site IA008: rock wall; view to the north.

## Directly to the south is a large gully.

The main entrance is marked by two concrete posts that are still standing (Photo 125 to Photo 127). The corral then widens into a triangular shape bordered by a series of milled wooden posts that support metal (steel) and wooden planking sections along with barbed or high tensile (New Zealand) fencing used to also support posts or wound around trees. Sizes of planking differs across various sections, from 12×1" to smaller and thicker planks or beams, likely the result of repairing and rebuilding section. On the opposite (eastern) side of the corral is another entryway with a narrow enclosure that, when opened, would have extended access to grazing for hundreds of meters eastward, though there are no remnants of gates apart from the aforementioned posts and possible collapsed wooden planking at the entrance. Barbed wire and other fencing stretching parallel to the stream would have ensured that livestock were contained.



Photo 125.. Feature 8 at Site IA008: main entrance to corral.



Photo 126. Feature 8 at Site IA008: paneled fence; view to north-northeast.



Photo 127. Feature 8 at Site IA008: view to the southeast.

Feature 9 is a rock alignment (Photo 128 and Photo 129) that encloses a triangle-shaped area . The feature is triangular shaped and situated along a natural terrace to the north and south. It measures 13.4 m (southeast-northwest) to 7.7 m (northeast-southwest) long and ranges between about 0.6 to 1.5 m wide and 0.7 to 1.5 m in height. The surrounding area is quite flat, possibly from disturbance due to construction



Photo 128. Feature 9 at Site IA008: rock alignment within a terrace formation; view to the south-southeast.



Photo 129. Feature 9 at Site IA008: rock alignment within constructed terrace formation; view to the south-southeast.

Feature 10 (Photo 130 and Photo 131) is a roughly V-shaped modified natural rock outcrop that forms a retaining wall. This feature is 19.3 m long in total (10 m northeast-southwest and 9.3 m north-south), 0.6-1.0 m wide, and 0.5-0.8 m in height. This feature is situated along a natural slope that and appears to have taken advantage of the natural aggregation of boulders that were later supplemented with smaller stones.



Photo 130. Feature 10 at Site IA008: modified rock outcrop .



Photo 131. Feature 10 at Site IA008: modified rock outcrop.

Feature 11 (Photo 132 and Photo 133) is a roughly U-shaped rock wall just south of Nahomalu Stream. The feature is 14.6 m in length (northeast-southwest), 0.6 by 1.0 m in width, and ranges between

0.5 and 0.8 m in height. Further south there is a flat path that measures 4 m wide before dropping off into a small gully.



Photo 132. Feature 11 at Site IA008: rock wall; view to the north.



Photo 133. Feature 11 at Site IA008: rock wall; view to the east.

Of the 11 features recorded at Site IA008, 10 likely date to the late pre-Contact/early Contact period, consisting of either constructed rock walls and alignments or modified natural rock outcrops. The site is best described as multicomponent agricultural complex, with a pre-Contact/early Contact component of terraces and a historic component of the corral

#### Site IA009: Historic Refuse Area

Site IA009 (Figure 48; Photo 134 to Photo 139) is an approximately 180 m by 70 m area within the northwestern portion of the survey parcel that comprises a historic dumpsite. This site primarily consists of historic and modern refuse, particularly automobiles, appliances, metal pipes, and other types of metal and glass debris. A selection of photographs below provides a short summary of what was found. While most of these are not culturally or historically significant, the refuse area may be associated with a former plantation camp. A WWII era canteen was also found and collected (Photo 140; Cat. #EVZ001).

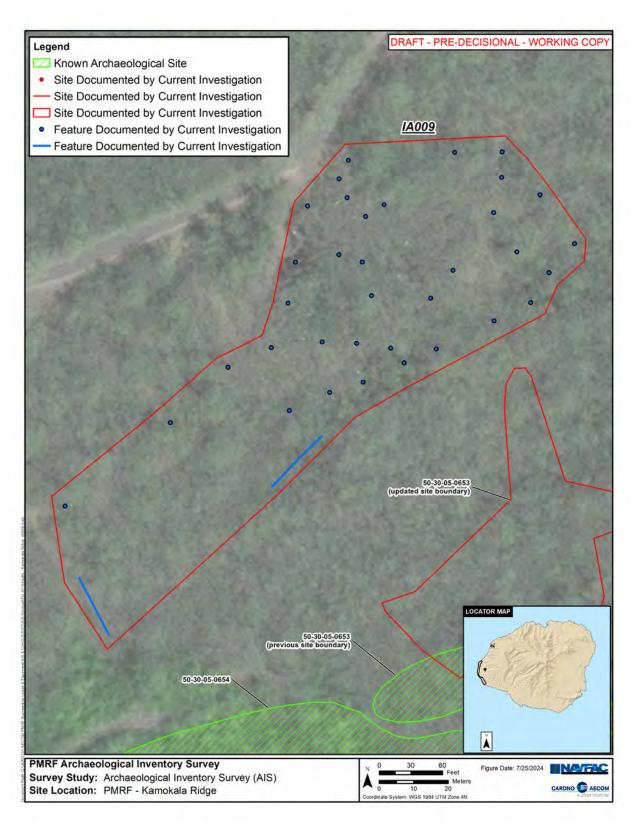


Figure 47. Site IA009 showing site boundary and feature locations.



Photo 134. Feature 1 at Site IA009: abandoned vehicles and other metal debris; view to the north.



Photo 135. Feature 1 at Site IA009: abandoned vehicle.



Photo 136. Feature 1 at Site IA009: collection of glass and ceramic debris.



Photo 137. Site IA009: abandoned vehicle showing engine block; view to the northeast.



Photo 138. Site IA009: Metal debris, tires, and other refuse; view to the south.



Photo 139. Site IA009: Large metal pipes; view to the northwest.



Photo 140. Site IA009: Military canteen found on surface (Cat. No. EVZ001).

Site IA010: Mound

Site IA010 is a single basalt rock mound on a slope ranging between 20–35 degrees (Table 18; Photo 141). The mound was constructed using subangular basalt cobbles and boulders in a roughly circular shape and likely dates to the late pre-Contact/early Contact period. The mound was perhaps used for agriculture.

Table 18. Site IA010 Site Dimensions.

Site Number	Survey Area	Morphology (Feature Type)	Surface	Maximum Length (m)	Maximum Width (m)	Depth (m)	Orientation
IA010	Kamokalā Ridge	Mound					



Photo 141. Site IA010: rock mound.

#### **Pedestrian Survey Summary**

The Mākaha Ridge Road parcel was a narrow ca. 4 mile (6.4 km) stretch of road with generally thick vegetation and steep topography which limited ground visibility and access. Pedestrian survey did not reveal cultural resources in this area.

At Main Base South, identification of cultural resources was limited to a single previously recorded site (50-30-05-2000)—a WWII era bathhouse that consisted of several concrete features. Though the site had already been recorded (see Wulzen et al. 1997), the clearing of the largest concrete pad revealed inscriptions from more than 20 U.S. servicemen that had not been previously reported. Research into the identities of these individuals indicated they were part of the 40th Infantry Division that came to Hawaii in September 1942 prior to being deployed to the Solomon Islands and the Philippines and who later engaged in active combat with the Japanese in the Pacific Theater. This discovery adds importance to what would otherwise be a series of relatively common concrete structures and provides new information on activities that took place on the PMRF property during World War II. The exact date for the pouring of the concrete is also know.

The Main Base North parcel overlapped with four known traditional Hawaiian and historic sites, including Nohili Dune (50-30-01-1860), site 50-30-01-0009 (50-30-01-2042, 50-30-01-2049). No cultural resources were found near the Nohili Dune site in the small area that pedestrian survey overlapped with it and the site extension was not found. Only one of the two historic trash deposits recorded were re-identified during survey. However, two new historic sites were recorded, including remnants of a wooden framed structure used in association with a small arms shooting range (IA011) and a refuse area dominated by bundles of barbed wire and other debris (IA012).

Of the four survey areas included in the pedestrian survey, Kamokalā Ridge contained the highest number of archaeological sites. Three previously known sites were revisited and documented, including 50-30-05-0652, 50-30-05-0653, and 50-30-05-0658. In addition, ten new sites were recorded (IA001-IA010) in several different sections of the survey parcel.

These four sites across three different sections of Kamokalā Ridge appear to be part of an integrated network of temporary/semi-permanent habitations coupled with stonework infrastructure to facilitate water management for agricultural activities. These are clear testaments to the development of food production systems in a part of Kauai that to date have received little research attention. Given the density and extensiveness of these sites and features at Kamokalā Ridge—coupled with the paucity of similar cultural resources in the area—ten 1 by 1 m excavation units were placed in proximity to sites IA003, IA004, and IA008. The overall goal was to try and recover short-lived materials for dating and cultural material that might prove useful for understanding each site's use and the duration of various activities to aid NRHP eligibility and HRS Chapter 6E significance evaluations. The results of these subsurface investigations are discussed in the following section.

#### SUBSURFACE INVESTIGATIONS

This section presents the results of subsurface testing at three sites within the Kamokalā Ridge survey area. Based on information collected during pedestrian survey, ten 1 by 1 m units were excavated.

Overall, eight of the ten units were positive for cultural material. One unit (TU 8) contained only charcoal but no artifacts. Below is a summary table (Table 19) of the test units and a description of what was recorded in each. Detailed laboratory analysis of materials recovered from the excavation units is presented later in the chapter.

Three charcoal (*Euphorbia* sp.) samples were submitted for radiocarbon dating to the University of Georgia Center for Applied Isotope Studies from TUs 1, 7, and 10. The sample details are presented below in Table 20.

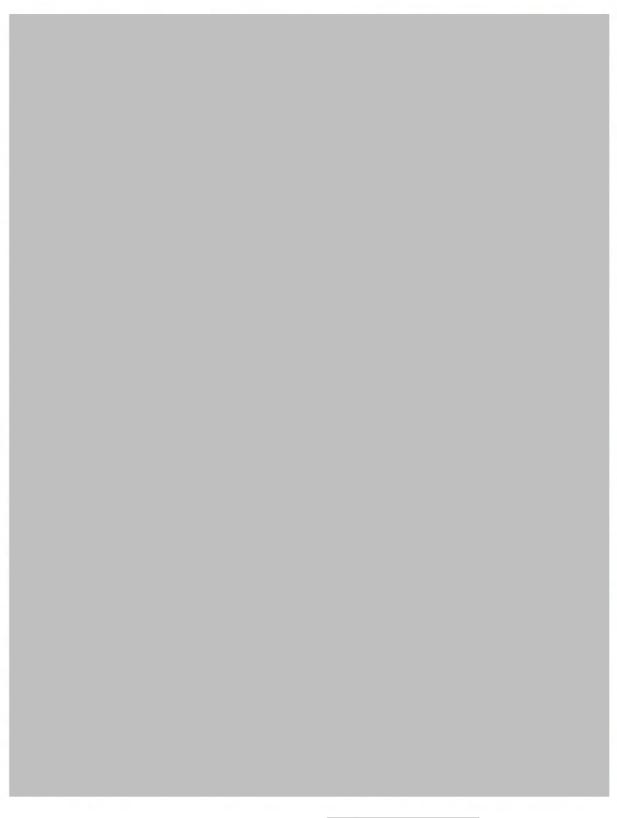


Figure 48. Locations of Test Units 1 through 10 at sites Redacted for CUI (ARCHR, HISTP)

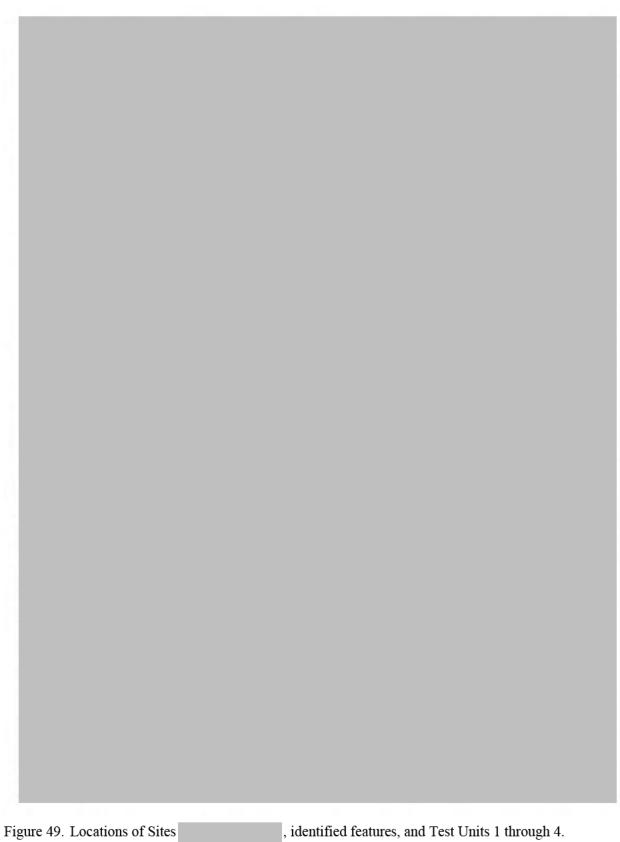
Table 19. Summary of Test Units at Sites

at Kamokalā Ridge.

Test Unit/Site	Depth	Stratigraphy	Archaeological Material	Comments
1/	64 cm bs	I, II		
2/	59 cm bs	I, II		
3/	38 cm bs	I, II, III		
4/	65 cm bs	I, II		
5/	70 cm bs	I		
6/	52 cm bs	I		
7/	70 cm bs	I, II		
8/	35 cm bs	I, II		
9/	35 cm bs	I		
10/	70 cm bs	I, II		

Table 20. Summary of Radiocarbon Dates and Calibrated Results.

UGAMS#	Sample ID	TU	Layer	cmbd	Material	Species	δ13C, ‰	14C age, years BP	±	cal. BP (2σ)	Prob. Dist. %
69177	IA202241.JMG023	1	I/I	34-44	charcoal		-11.03	410	25	332–513	0.100
69993	IA202241.JMG019.22	1	I/1	34-44	gourd rind		-25.25	320	20	314-459	.960
69178	IA202241.GOF030	10	I/IV	40–50	charcoal		-10.75	170	25	0–288	0.100
69179	IA202241.GOF018	7	I/IV	50–60	charcoal		-10.71	250	25	152–425	0.980



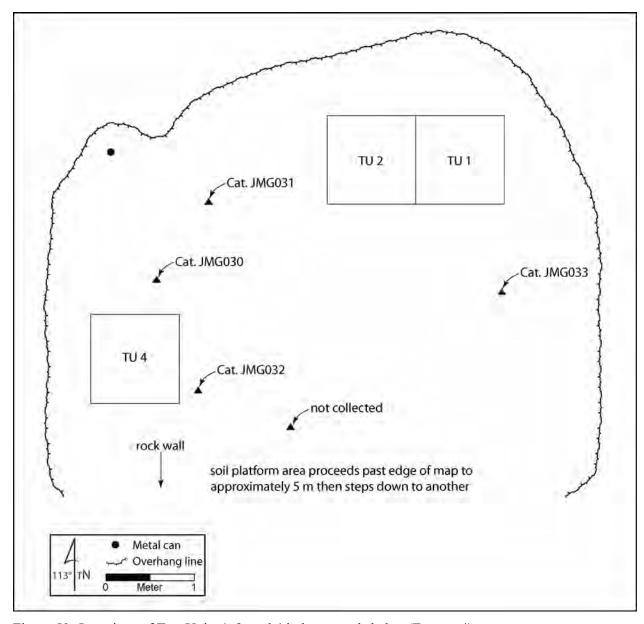


Figure 50. Locations of Test Units 1, 2, and 4 in larger rockshelter (Feature 4).

Three units (TU1, TU2, and TU4) were excavated within in areas where surface material (e.g., faunal, lithic) was concentrated to determine the depth of deposits and extent of site constituents. These are described below.

## TU 1

TU 1 was a 1 by 1 m unit

## **Subsurface Feature 1**

Table 21. Soil Descriptions for Test Unit 1.

Layer	Typical Depth Range (cmbs)	Descriptions	Interpretation
I	0–44	Dark reddish brown (5YR 3/3) silt loam; dry; structureless; non-plastic; few to many roots; few pebbles; smooth boundary;	Humic soil (A horizon) mixed with aeolian sediment;
II	44–54	Dark reddish brown (5YR 2.5/2) silt loam; dry; structureless; non-plastic; few to no roots; few pebbles; smooth boundary;	Mix of A and B horizons;



Photo 142. Placement of TU 1

; view to the east.



Photo 143. TU 1 base of excavation at 54 cm bs;



Photo 144. TU 1 west wall profile at

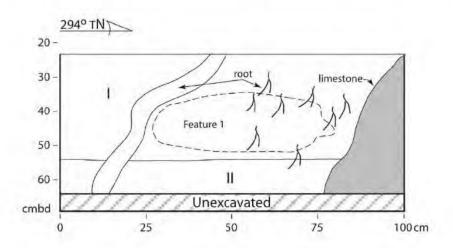


Figure 51. TU 1 west wall profile

Table 22. Artifacts and Manuports Recovered from TU 1 (Counts) at

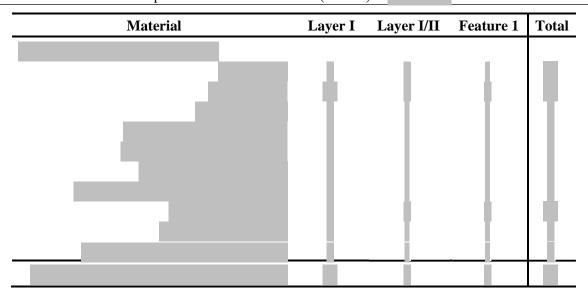


Table 23. Vertebrate Remains Recovered from TU 1 (NISP).

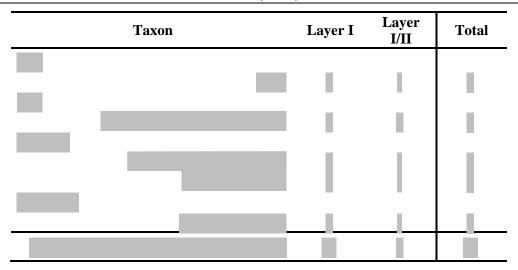
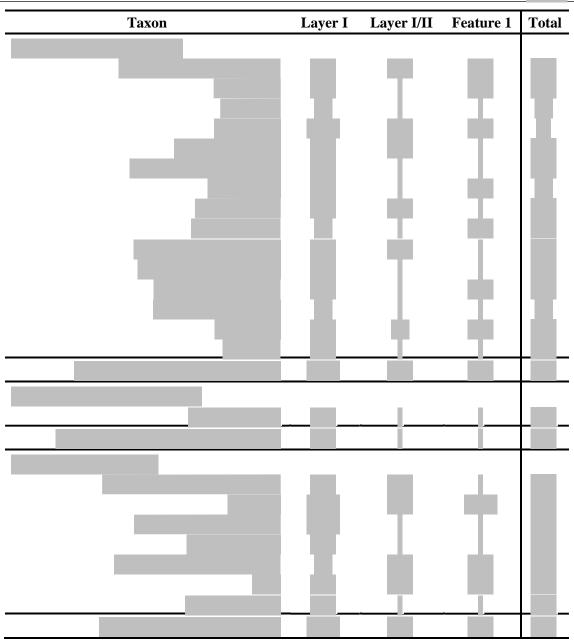
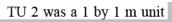


Table 24. Invertebrate and Macrobotanical Remains Recovered from TU 1 (Weight, g) at Site





# **Subsurface Feature 2**

Table 25. Soil Descriptions for Test Unit 2 at Site

Layer	Typical Depth Range (cm bs)	Descriptions	Interpretation
I	0–20	Dark reddish brown (5YR 3/2) silt loam; dry; structureless; non-plastic; few to many roots; few pebbles; smooth boundary;	Humic soil (A horizon) mixed with aeolian sediment;
II	20–39	Dark reddish brown (5YR 3/3) silt clay loam; dry; structureless; non-plastic; few to no roots; few pebbles; smooth boundary;	Mix of A and B horizons;



Photo 145. TU 2 base of excavation



Photo 146. TU 2 north wall profile

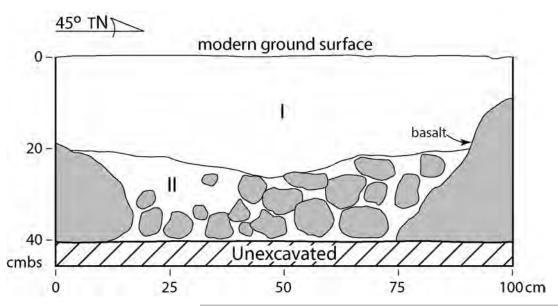
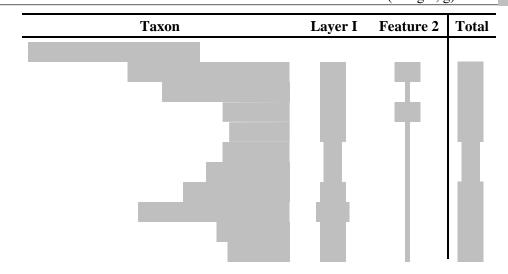


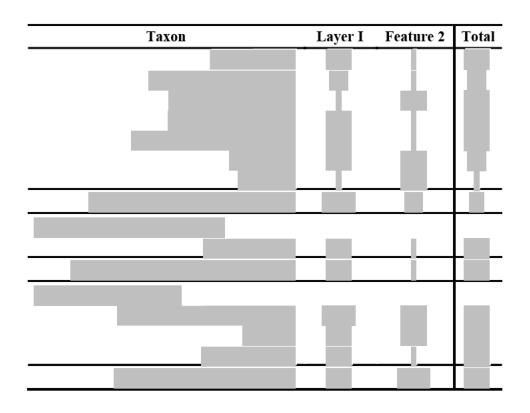
Figure 52. TU 2 northwest wall profile

Table 26. Artifacts and Manuports Recovered from TU 2 (Counts) at Site

Material	Layer I	Feature 2	Total
_			ш
		- 1	
		_	

Table 27. Invertebrate and Macrobotanical Remains Recovered from TU 2 (Weight, g) at Site





TU 4

TU 4 was a 1 by 1 m unit

Table 28. Soil Descriptions for Test Unit 4 at Site

Layer	Typical Depth Range (cm bs)	Descriptions	Interpretation
I	05–45	Very dark brown (10YR 2.5/1) silt clay loam; moist; well-formed structure; moderately-plastic; moderate roots; some pebbles; wavy boundary; c	Humic (A horizon) soil mixed with aeolian sediment;

Layer	Typical Depth Range (cm bs)	Descriptions	Interpretation
П	45–55	Very dark gray (10YR 3/1) clay; moist; well-formed structure; plastic; few to no roots; some pebbles; wavy boundary;	Mix of A and B horizons;

Photo 147. TU 4 base of excavation at 35 cm bs at Site



Photo 148. TU 4 east wall profile at Site

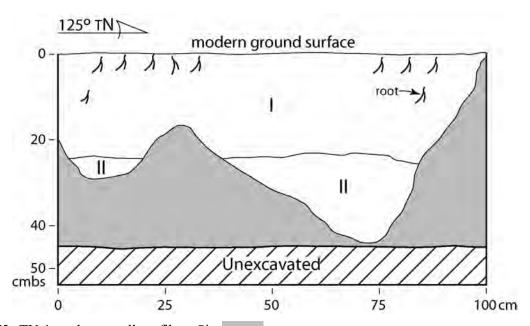


Figure 53. TU 4 northeast wall profile at Site

Table 29. Artifacts and Manuports Recovered from TU 4 (Counts) at Site

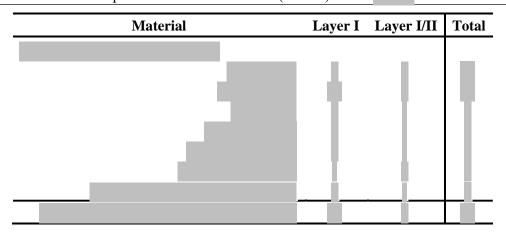


Table 30. Invertebrate and Macrobotanical Remains Recovered from TU 4 (Weight, g) at Site

Taxon	Layer I	Layer I/II	Total
		-	
		_	

One test unit (TU 3) was carried out at IA004.

# TU3

TU 3 was a 1×1 m unit

Table 31. Soil Descriptions for Test Unit 3 at Site

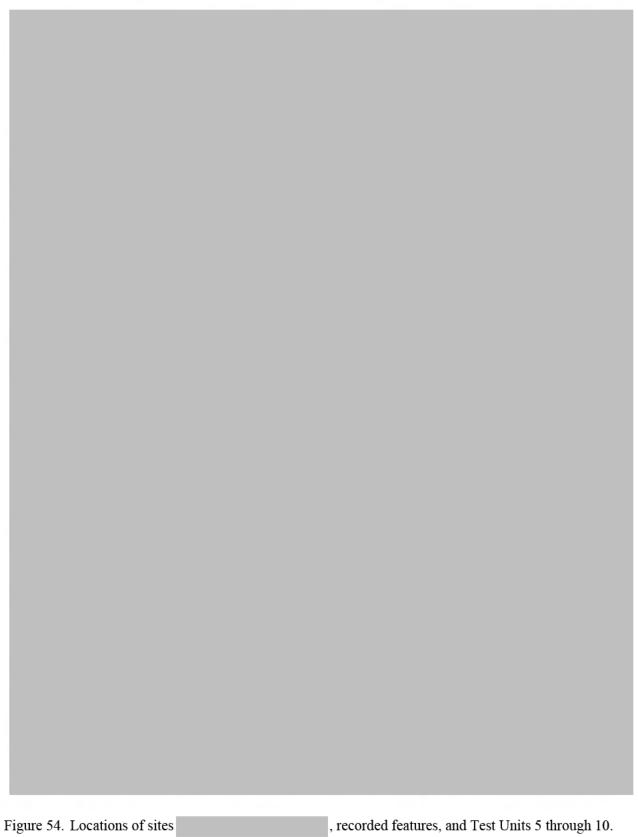
Layer	Typical Depth Range (cm bs)	Descriptions	Interpretation
I	0–6	Very dark brown (7.5YR 3/2) silt loam; moist; weak structure; very friable; many roots; few pebbles; smooth boundary;	Humic soil (A horizon)
II	6–30	Very dark gray (7.5YR 3/1) silt clay; moist; moderate structure; firm; few to no roots; subrounded gravels; smooth boundary;	Mix of A and B horizon.
III	30–38	Very dark brown (7.5YR 3/1) clay; moist; moderate structure; firm; few to no roots; subrounded gravels; smooth boundary;	B horizon with some colluvium



Photo 149. TU 3 base of excavation at 39 cm bs at Site

Table 32. Artifacts Recovered from TU 3 (Counts) at Site

Material	Layer I	Total



Six units were excavated within (TU 5, TU 6, TU 7, TU 8, TU9, TU 10). Details of these excavations including the identified strata and cultural material are described below.

# TU 5

TU 5 was a 1×1 m unit

Table 33. Soil Descriptions for Test Unit 5 at Site IA008.

Layer	Typical Depth Range (cm bs)	Descriptions	Interpretation
I	0–57	Dark reddish brown (5YR 3/3) silt loam; dry; structureless; non-plastic; few roots; few pebbles; smooth boundary; boulders at base of unit;	Humic soil (A horizon) mixed with alluvium



Photo 150. TU 5 base of excavation at 57 cm bs at Site

Table 34. Artifacts and Manuports Recovered from TU 5 (Counts) at Site

Material	Layer I	Total
		Н–

Table 35. Macrobotanical Remains Recovered from TU 5 (Weight, g) at Site

Taxon	Layer I	Total
		_

TU 6

TU 6 was a 1×1 m unit

Table 36. Soil Descriptions for Test Unit 6.

Layer	Typical Depth Range (cm bs)	Descriptions	Interpretation
I	0-45	Dark reddish brown (5YR 3/4) silt clay loam; dry; non-plastic; abundant roots; cobbles and boulders common; smooth boundary;	Humic soil (A horizon) mixed with alluvium



Photo 151. TU 6 base of excavation

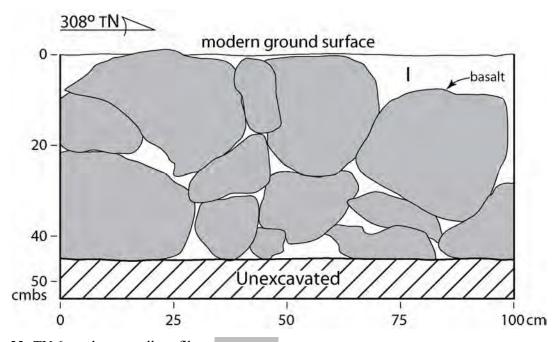


Figure 55. TU 6 southwest wall profile at

Table 37. Artifacts and Manuports Recovered from TU 6 (Counts) at Site

Material	Layer I	Total
		L

Table 38. Macrobotanical Remains Recovered from TU 6 (Weight, g).

Taxon	Layer I	Total

TU7



# **Subsurface Feature 1**

Table 39. Soil Descriptions for Test Unit 7 at Site

Layer	Typical Depth Range (cm bs)	Descriptions	Interpretation
I	0–32	Dark reddish brown (5YR 3/4) silt clay loam; moist; non-plastic; roots common; well-rounded gravels (15–35%); smooth boundary;	Humic soil (A horizon) intermixed with alluvium;
П	32–70	Dark reddish brown (5YR 3/4) silt clay loam; moist; plastic; few to many roots; large boulders; smooth boundary;	Alluvium



Photo 152. TU 7 base of excavation at 70 cm bs showing west wall profile;

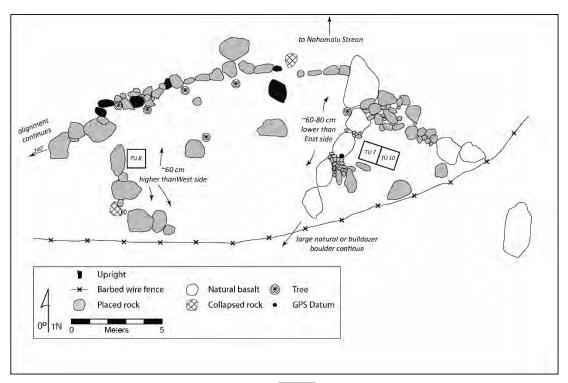
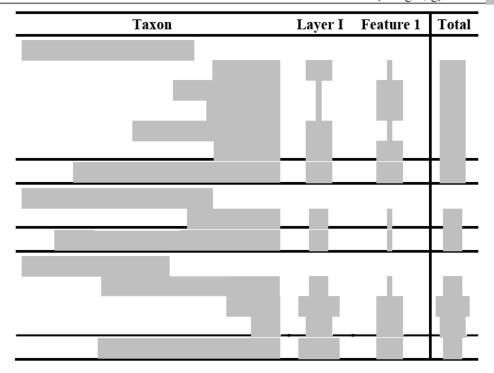


Figure 56. Location of TUs 7, 8, and 10 within Site along with associated features and natural rock formations.

Table 40. Artifacts and Manuports Recovered from TU 7 (Counts) at Site

Material	Layer I	Feature 1	Total
		_	_
	- 6		
	т.		
			62

Table 41. Invertebrate and Macrobotanical Remains Recovered from TU 7 (Weight, g) at Site



TU 8

TU 8 was a 1 by 1 m unit

Table 42. Soil Descriptions for Test Unit 8 at Site IA008.

Layer	Typical Depth Range (cm bs)	Descriptions	Interpretation
I	0–22	Dark reddish brown (5YR 3/4) silt clay loam; dry; structureless; non-plastic; roots common; few pebbles; smooth boundary; no cultural material present;	Humic soil (A horizon) mixed with alluvium
II	22–38	Very dark brown (7.5YR 2.5/2) silt clay loam; dry; structureless; non-plastic; roots abundant; few pebbles with some boulders; smooth boundary; no cultural material present;	Alluvium

Photo 153. TU 8 base of excavation at 38 cm bs; view to the north at Site



Photo 154. TU 8 east wall profile at Site

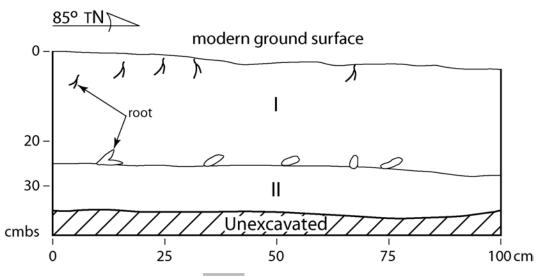


Figure 57. TU 8 north wall profile at Site

Table 43. Macrobotanical Remains Recovered from TU 8 (Weight, g) at Site

Taxon	Layer I	Layer II	Total

# TU 9

TU 9 was a 1 by 1 m unit excavated to the south of a large rock wall alignment

The unit was excavated to a depth of 32 cm bs and consisted of a single stratigraphic layer (Layer I) (Table 44; Photo 155). No cultural material was identified.

Table 44. Soil Descriptions for Test Unit 9 at Site

Layer	Typical Depth Range (cm bs)	Descriptions	Interpretation
I	0–32	Dark reddish brown (5YR 3/4) silt clay loam; moist; slightly plastic; few to no roots; few pebbles; smooth boundary;	Humic soil (A horizon) mixed with alluvium



Photo 155. TU 9 base of excavation at 32 cm bs showing north wall profile at Site

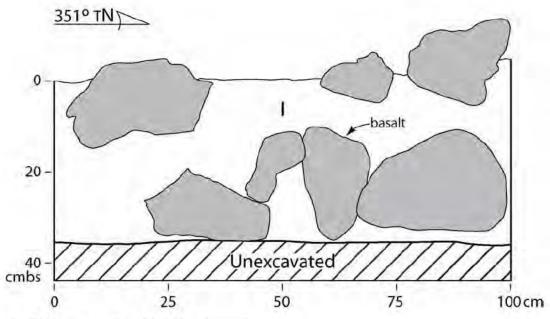


Figure 58. TU 9 west wall profile at Site

# TU 10



# Subsurface Feature 1



Table 45. Soil Descriptions for Test Unit 10 at Site

Layer	Typical Depth Range (cm bs)	Descriptions	Interpretation
I	0–55	Dark reddish brown (5YR 3/4) silt clay loam; moist; non-plastic; roots common; well-rounded gravels (15–35%); smooth boundary; cultural	Humic soil (A horizon) intermixed with alluvium;
П	40–70	Dark reddish brown (5YR 3/4) silt clay loam; moist; plastic; few to many roots; large boulders; smooth boundary;	Alluvium

Photo 156. TU 10 base of excavation at 70 cm bs.

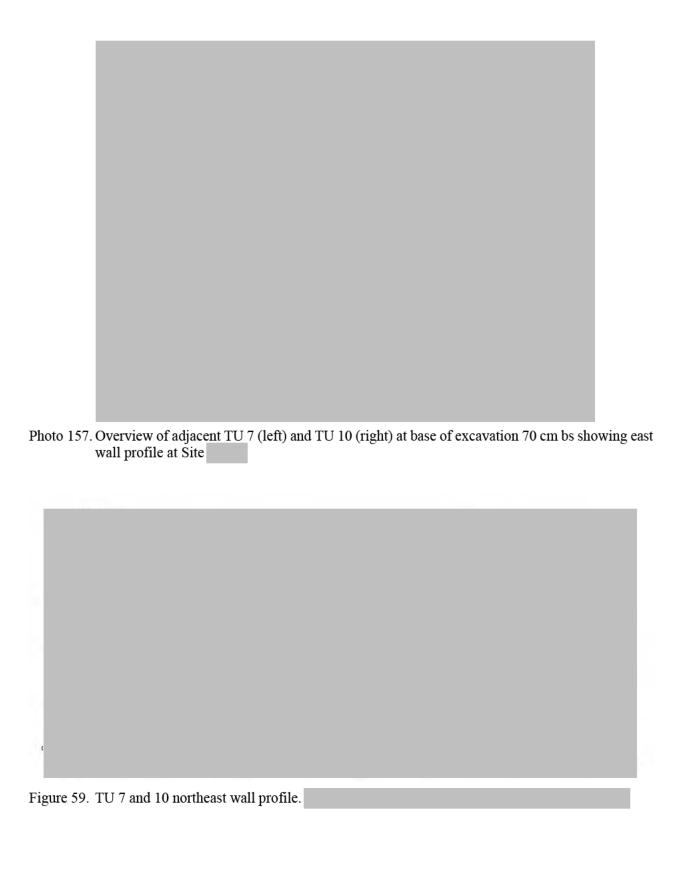


Table 46. Artifacts and Manuports Recovered from TU 10 (Counts) at Site

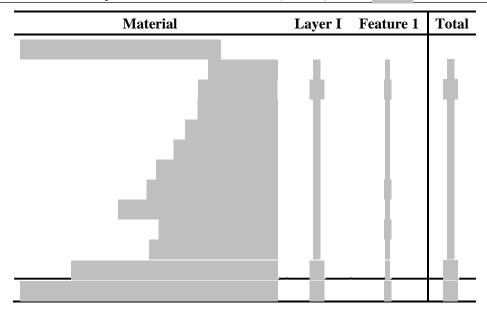


Table 47. Invertebrate and Macrobotanical Remains Recovered from TU 10 (Weight, g) at Site

Taxon	Layer I	Feature 1	Total
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### SYNTHESIS OF LABORATORY RESULTS

This subsection provides a synthesis of the laboratory results organized by past activities (e.g., subsistence), artifact age (e.g., historical artifacts), and specialized analyses including wood charcoal identifications, and radiocarbon dating. Results are presented by site, with inter-site comparisons, as warranted.

#### ANIMAL-BASED SUBSISTENCE

### Vertebrate Fauna

A small vertebrate assemblage was collected from subsurface excavations at summarizes the vertebrate remains recovered. Ray-finned fish and non-human medium mammal make up the majority of the vertebrate collection. The former are represented by at least four families and five species. Labridae (wrasse) is the most abundant (by NISP). These taxa are largely nearshore reef fish that could have been captured through netting, spearing, and hook-and-line techniques. Similarly, a variety of food preparation methods could have been employed, with broiling, drying/salting, and raw consumption perhaps equally common. Bird, pig, dog, rat and small vertebrate were secondary contributors of protein.

Table 48. Vertebrate Remains Recovered from Across the Project Area (NISP).

Taxon	Site
Bird	
Aves	5
<u>Fish</u>	
Acanthuridae (surgeonfish)	3
Balistidae (triggerfish)	1
Labridae (wrasse)	6
Scaridae (Calotomus sp.) (parrotfish)	2
Scaridae (parrotfish)	1
Actinopterygii (ray-finned fish)	117
<u>Mammal</u>	
Canis familiaris (dog)	1
Rattus exulans (Pacific rat)	2
Medium mammal (non-human)	143
Sus scrofa (pig)	6
<u>Vertebrate</u>	
Vertebrate (small)	1
Vertebrate	88
Vertebrate Total	376

### **Invertebrate Fauna**

Approximately 142 g of marine invertebrates were collected from and (Table 49). The marine invertebrate collection consists of at least 12 marine mollusk genera, four echinoderm species and crustacean. A small number of terrestrial invertebrates was also recovered from each site.

Monetaria caputserpentis is the highest-ranking exploited taxon from morum. Monetaria caputserpentis are common on reef flat and reef crest, and Drupa morum can be collected from the shoreline and reef areas. The invertebrate collection from Site is considerably less diverse than and consists of four marine mollusk species and two echinoderm species. The highest-ranking exploited taxon is Drupa morum.

Table 49. Invertebrate Remains Recovered from Across the Project Area (Weight, g.).

Taxon	Habitat			Total
Marine Invertebrate Remains				
Brachidontes crebristriatus	Shore	0.54	-	0.54
Cellana sandwicensis	Shore	1.23	-	1.23
Cellana sp.	Shore	1.71	-	1.71
Chiton sp.	Shore	0.58	-	0.58
Conus sp.	Variable, uncertain	6.49	-	6.49
Drupa morum	Shore, reef	21.19	4.1	25.29
Sistrum ricinus	Shore, reef	2.36	-	2.36
Rapaninae	Variable, uncertain	3.82	-	3.82
Isognomon sp.	Variable, uncertain	0.23	-	0.23
Littoraria pintado	Shore	4.53	0.17	4.7
Monetaria caputserpentis	Reef flat, reef crest	35.11	1.94	37.05
Cypraeidae	Variable, uncertain	29.51	0.43	29.94
Nerita picea	Shore	1.91	0.3	2.21
Pinctada sp.	Reef flat	0.37	-	0.37
Siphonaria sp.	Variable, uncertain	8.4	-	8.4
Nondiagnostic gastropod	Variable, uncertain	3.67	0.07	3.74
Colobocentrotus atratus	Shore	0.25	-	0.25
Echinometra mathaei	Shore	0.22	-	0.22
Echinometra oblonga	Shore	0.77	0.07	0.84
Heterocentrotus mamillatus	Variable, uncertain	0.13	-	0.13
Echinoidea	Variable, uncertain	6.63	5.43	12.06
Crustacea	Variable, uncertain	0.02	-	0.02
Marine Invertebrate Remains Total		129.67	12.51	142.18
Terrestrial Invertebrate Remains				
Terrestrial snail	-	0.24	0.11	0.35
Terrestrial Invertebrate Remains Total		0.24	0.11	0.35

#### TRADITIONAL TOOL MANUFACTURE AND USE

An assemblage of artifacts manufactured from lithic material, coral, shell, gourd, and bone were recovered from both the surface during survey and in excavation units. Below is a summary of these assemblages for both the project area and specific test units. The gourd artifacts are described in a subsequent section.

#### Lithic Artifacts

Two hundred and twenty-five lithic artifacts were collected from excavations and surface contexts (Table 50). The majority is debitage (n = 161) with the ratio of volcanic glass and basalt debitage being 19.5:1, revealing a preference for the latter material.

Table 50. Traditional Lithic Artifacts Collected from Across the Project Area (Counts).

Artifact				N/A	Total
Basalt adze preform	1	-	-	-	1
Basalt flake	24	1	15	-	40
Polished basalt flake	-	-	1	-	1
Retouched basalt flake	1	-	-	-	1
Basalt point	-	-	1	-	1
Basalt shatter	45	-	44	-	89
Polished basalt shatter	-	-	2	-	2
Modified basalt	-	-	1	-	1
Waterworn basalt cobble manuport	-	-	1	2	3
Waterworn basalt pebble manuport	2	-	38	-	40
Chert flake	1	-	-	-	1
Fire-cracked rock	1	-	1	-	2
Hematite octopus lure sinker	1	-	-	-	1
Hematite fragment	1	-	10	-	11
Ochre fragment	-	-	2	-	2
Volcanic glass flake	16	-	2	-	18
Volcanic glass fragment	-	-	1	-	1
Volcanic glass shatter	9	-	1	-	10
Total	102	1	120	2	225

A complete hematite octopus lure sinker (luhe'e) was recovered

). It is a "coffee bean" sinker type with a flat dorsal surface and domed ventral surface with a 0.3 cm wide groove running down the length; several chips are present on both the dorsal and ventral surfaces, but overall, the sinker is intact, in good condition, and highly polished. It is 4.7 cm long, 3.5 cm wide, and 1.7 cm thick.

An unmodified hematite fragment was also recovered from
Additional unworked hematite fragments were recovered from within

The unworked hematite fragments are enigmatic, and their function(s) are unclear, but given the complete hematite coffee bean sinker recovered from within it is likely indicative of raw material collection and manufacturing at these locations. Filimoehala et al. (2015) examined the distribution of hematite artifacts (their presence and artifact forms) across the archipelago, and found that the majority of hematite artifacts identified on Kaua'i were recovered within Nu'alolo Kai, Hanalei District, approximately 14 kilometers northeast from Kamokalā Ridge. Modified hematite fragments (e.g., abraded, polished on one or more facets) were the most common artifact class, followed by sinkers and sinker fragments (Filimoehala et al. 2015:11). The two most common sinker types were the coffee bean and bread loaf. Coffee bean sinkers were used in both shallow and deeper waters where they could be jigged.

A basalt point consisting of two conjoining fragments was recovered from Layer I during the excavation of 7 (Photo 159; Cat. GOF011.02). The basalt fragment has been abraded on multiple sides to create a pointed shape. One of lateral sides is thicker than the other creating an asymmetrical cross section, portions of lateral edges appear polished from excessive grinding. The dimensions of the tool are 8.3 cm long by 1.4 cm wide by 0.8 cm thick.

A basalt adze preform was collected from the surface of (Photo 160; Cat. JMG033). The preform is a large flake that has been reduced along one edge with microflaking to create a more triangular edge. The terminus of the flake is rounded and appears to have been the intended bevel edge. The dimensions of the preform are 6.8 cm long by 2.8 cm wide (at the bevel) by 1.6 cm wide (poll). Maximum thickness is 1.2 cm and 0.7 cm thick at the bevel.



Photo 158. Hematite octopus lure sinker (*luhe 'e*) recovered from



Photo 159. Basalt point recovered from



Photo 160. Basalt adze preform recovered from

## Geochemical Analysis of Selected Volcanic Stone Tools

Geochemical analysis provides a means to evaluate geographical relationships between the past populations of the area. Twenty-eight basalt, hematite, and volcanic glass artifacts from Sites and were submitted to the UHH Geoarchaeology Laboratory for geochemical characterization using non-destructive EDXRF (Table 51). Samples were selected to characterize the geochemistry of formal tools and debitage to elucidate resource procurement sources. All basalt and volcanic glass samples fall within the well-defined groups for Kaua'i, specifically Groups A, C, and I (Peter Mills, pers. comm., 2024). Group A consists of local shield-building theoleiitic lavas of Na Pali member basalts which includes "low concentrations of incompatible trace elements (Rb, Sr, Y, Zr, Nb, and Ba) and relatively high concentrations of compatible trace elements (Ni and Cu) (Mills et al. 2010:3390). Group C falls within the range of the Waimea Canyon basalts. Group I departs from expected compositions of the Waimea Canyon basalt series. The higher concentrations of incompatible trace elements, lower concentrations of compatible trace elements (Ni and Cu), and higher K2O and MnO values, all point to post-shield orrejuvenated stage lavas, such as those that compose the Kōloa Volcanic Series that cover much of the eastern half of Kaua'i (Mills et al. 2010:3392).

The hematite artifacts vary in composition. The sinker produced the highest concentration of iron (17%) and the lowest silicate (39%) and is the most pure example of a well-developed hematite for this collection (Peter Mills, pers. comm., 2024)

Table 51. Geochemical Grouping and Probable Sources of Basalt, Hematite, and Volcanic Glass Artifacts .

Artifact (Count)	Site	Provenience	Justification	Cat. No	Group	Probable Source
Hematite octopus lure sinker (1)	Redacted (ARCH	Redacted (ARCHR, HIST	Formal tool	JMG001	Hematite	
Basalt flake (5)	Redacted (ARCH	Redacted (ARCHR, HISTP)	Debitage to compare with formal tools	JMG019.18	I	
Volcanic glass flake (2)	Redacted (ARCH	Redacted (ARCHR, HISTP)	Debitage to compare with formal tools	JMG026.10	A	
Retouched basalt flake (1)	Redacted (ARCH	Redacted (ARCHR, HIST	Modified debitage	JMG032	I	
Basalt adze preform (1)	Redacted (ARCH	Redacted (ARCHR, HIST	Formal tool	JMG033	С	
Hematite fragment (1)	Redacted (ARCH	Redacted (ARCHR, HISTP)	Material type sample	JMG040.02	Hematite	

Artifact (Count)	Site	Provenience	Justification	Cat. No	Group	Probable Source
Volcanic glass flake (1)			Debitage to compare with formal tools	JMG041.05	A	
Basalt flake (1)			Debitage to compare with formal tools	JMG051.11	I	
Basalt point (1)			Formal tool	GOF011.02	A	
Polished basalt flake (1)			Modified debitage	GOF020.04	С	
Volcanic glass flake (1)			Debitage to compare with formal tools	GOF 020.09	Hematite	
Hematite fragment (3)			Material type sample	GOF022.06	Hematite	
Polished basalt shatter (1)			Modified debitage	GOF 023.10	C (small)]	
Polished basalt shatter (1)			Modified debitage	GOF026	С	
Hematite fragment (7)			Material type sample	JMG047.08	Hematite	

## Coral, Bone, and Shell Artifacts

Non-lithic artifacts recovered from across the project area consist of various coral, bone, and shell artifacts (Table 52). In addition to the artifacts collected, a total of 23 coral manuports were recovered. The coral items were determined to be manuports after no modification was visible under magnification.

Material			N/A	Total
Modified bone (non-human)	1	2		2
Bone fishhook fragment	-	1	-	1
Coral abrader	-	1	1	2
Coral manuport	2	21	-	23
Modified bone (non-human)	1	-	-	1
Pearlshell fishhook fragment	1	-	-	1
Total	4	25	1	30

A bone (medium mammal; non-human) fishhook fragment was collected from TU (Photo 161; Cat. GOF011.01). The fragment is the lower portion of the shank with a maximum length of 1.1 cm, width of 0.8 cm from the hook to back of shank, and 0.2 cm thick. Three modified bone fragments (medium mammal; non-human) were also recovered and likely the result of bone fishhook manufacturingOne of the modified bone fragments is a bone tab, and exhibits small cut marks along the lateral edge and a deep groove on the short end (Photo 162; Cat. JMG021). Dimensions of the tab are 2.1 cm long by 1.4 cm wide by 0.6 cm thick.

Two coral abraders were collected during the project. One was recovered on the surface during pedestrian survey (Photo 163; Cat. JMG009) and the other was identified during the excavation of TU (Photo 164; Cat. GOF022.11). The coral abrader from the surface is triangular in cross section and at least one facet has been abraded. The dimensions of the abrader are 4.7 by 2.8 by 2.7 cm. The TU coral abrader has dimensions of 7.2 by 2.4 by 1.1 cm and a slight groove is visible on the coral's surface from use as an abrader.

A pearl shell fishhook fragment was recovered from TU (Photo 165; Cat. JMG027.15). Based on the shape and angle of the fragment, the hook is most likely a two-piece or composite fishhook. The dimensions of the fragment are 1.7 cm long by 0.6 cm wide (maximum) by 0.1 cm wide at the point and 0.3 cm thick.



Photo 161. Bone fishhook fragment (Cat. GOF011.01) recovered from TU



Photo 162. Modified bone (medium mammal; non-human; bone tab, Cat. JMG021) recovered from TU



Photo 163. Coral abrader (Cat. JMG009) collected from



Photo 164. Coral abrader (Cat. GOF022.11) recovered from TU



Photo 165. Pearl shell fishhook fragment (Cat. JMG027.15) recovered from TU

#### HISTORICAL ARTIFACTS

Several glass and metal artifacts were recovered from general surface contexts within the project area. Three diagnostic glass bottles and a glass ink well were collected from general surface contexts within the project area; a 1928 U.S. dime was recovered from the surface within and a metal canteen was recovered from (Table 53–Table 54).

Table 53. Historical Artifacts Recovered from Within the Project Area (Counts).

Material	50-30-05- 2000			N/A	Total
Ceramic insulator	1	-	-	-	1
Glass bottle	-	-	-	3	3
Glass ink well	-	-	-	1	1
Mercury dime	-	1	-	-	1
Metal canteen	-	-	1	-	1
Total	1	1	1	4	7

A U.S. dime was recovered from the surface within (Photo 166; Cat. JMG003) indicating visitation to the area during the historic era. It is a 1928 mercury dime. Mercury dimes, also called Winged Liberty Head dimes, were produced by the United States Mint from 1916 to 1945. The coin was designed by Adolph A. Weinman and his monogram (AW) is visible on the front of the coin. Manufacturing of the coin began at all three U.S. mints in the Fall of 1916: San Francisco, Philadelphia, and Denver, with each dime featuring either an "S", "P", or "D" denoting the minting location. The dime features a young Liberty wearing a winged cap who is often confused with the Roman god Mercury. The coin's reverse features a Fasces, a bundle of rods with a projecting axe blade, surrounded by olive branches. The Fasces is a symbol of the Nation's strength through unity with the olive branches representing peace. The recovered dime was minted in 1928 at the San Francisco mint facility.



Photo 166. 1928 Mercury Dime recovered from (Cat. JMG003).

Table 54. Historical Artifact Table for Material Recovered Within the Project Area.

Catalog Number	Feature/Layer	Form & Portion	Color	Function/Contents	Manufacturer Mark	Manufacturer & Origin	Manufacturing Characteristics	Manufacturing Date	Count
JMG050	N/A	Inkwell, complete	Clear	Household, ink	Embossed "PARKER" arched over "MADE IN U.S.A." over "2 oz." over "59 cc" (base)	Unknown	Base has slightly rounded square shape; orange peel stippling texture on base surrounding embossed text; deep suction scar is also present on base; each corner of the bottle has 7 ribs that are widest at the shoulder and narrow to a more pointed shape at the heel; ribs are present encircling the entire neck from base of finish to the shoulder (the neck is not very distinct in width compared to the body. Finish is an external thread and has two broken threads to hold a cap. Bottle is likely a Parker "Quink" inkwell. Bottle is slightly frosted and has patina from age.	1940s <sup>1</sup>	1
JMG010	N/A	Bottle, complete	Sun- colored amethyst	Medicinal?	None	Unknown	Octagonal flask body (four main sides and then each corner is also flattened into a short side giving the flask 8 total sides); no seams are visible through the body or neck. Bottle has a tooled prescription finish.	1880s–1920s <sup>2</sup>	1
EvZ001	N/A	Canteen, complete	Metal	Military	Engraved "U.S" above "L.F.&C." over "1918" (lower portion of body)	Landers, Frary & Clark	Aluminum canteen with welded side seams; cap is part of the design change from 1914 that includes a flat top and full knurling around the side. Cap is attached to canteen neck with a chain.	1918³	1
JMG008.01	N/A	Bottle, complete	Clear	Household, milk	Painted text in green "Waimea" over "Dairy" (in script) over "THE BEST IN DAIRY FOODS" over "WAIMEA, Kaua'i" over "PHONE: 38-4441" (all on front face); "Keep Me Cold Keep Me Cold Keep Me Cold" (in script) along shoulder. Embossed "LIQUID 2" (heel of side face); "ONE QUART" (heel of back face). "I" inside "O" with "23" to the left and "61" to the right (base).		Machine made milk bottle with circular base and rounded square body; side mold seams start at horizontal heel seam and continue to base of finish; capseat finish with additional ridges on the exterior lower portion of finish.	19614	1

 $<sup>^{1} \</sup>quad \text{https://fountainpenlove.com/fountain-pen-ink/identifying-vintage-fountain-pen-ink-bottles-and-boxes/} \\$ 

<sup>&</sup>lt;sup>2</sup> https://sha.org/bottle/finishstyles.htm#Prescription; https://sha.org/bottle/colors.htm

 $<sup>^3 \</sup>qquad https://history.army.mil/html/museums/messkits/Field\_Mess\_Gear(upd\_Jul09).pdf$ 

 $<sup>^4 \</sup>qquad https://sha.org/bottle/pdffiles/OwensIllinois2015.pdf$ 

Catalog Number	Feature/Layer	Form & Portion	Color	Function/Contents	Manufacturer Mark	Manufacturer & Origin	Manufacturing Characteristics	Manufacturin Date	eg Count
JMG008.02	N/A	Bottle, complete	Clear	Household, milk	Painted text in orange "SOKEI" over "DAIRY" over heart logo with text "BUSINESS WITH A HEART" over "KAPAA, KAUAI" (front face). Additional painted text on back face is mostly chipped off but appears to read: "GRADE A" over "PASTEURIZED MILK" over "AND" over "CREAM" over "WASH AND RETURN" (back face). Embossed "ONE QUART" (heel on back face). "I" inside a diamond inside "O" with 23" to the left and "52" to the right over "Duraglas" in script (base).	Co., Los Angeles, CA	Machine made milk bottle with circular base and body; has long neck and thick capseat finish. One side mold seam is present and is most noticeable along the shoulder, the seam is much fainter near the heel and finish. Note that the interior of the bottle is partially filled with some sort of dried tar.	19525	1

bttps://sha.org/bottle/pdffiles/OwensIllinois2015.pdf

A U.S. Army issued field metal canteen was recovered from Temporary Site (Photo 167; Cat. EvZ001). The metal canteen was manufactured by the Landers, Frary & Clark, New Britain, Connecticut, company in 1918. It is constructed from two aluminum halves that were welded together around the outer edge. "U.S." above "L.F.&C.", over "1918" is engraved on the lower portion of the body. The cap has a flat top, full knurling around the side, and a lug which secures the cap chain with a small pin. The cap is still attached to the canteen neck with its chain. During World War I, the Quartermaster Corps, a sustainment support branch of the U.S. Army, took over responsibility for individual military equipment, including the manufacturing of canteens<sup>6</sup>. In 1918, the Quartermaster Corps contracted five U.S. companies to take over the manufacturing of canteens, one of which was the Landers, Frary & Clark company. Landers, Frary & Clark manufactured housewares, including food scales, coffee grinders, and metal tableware but once contracted in World War I, temporarily produced equipment including canteens like the one recovered, trench knives, and sabers required for the United States Cavalry. However, the date of 1918 may only refer to the 1918 army standard, the canteen may date between 1918 and 1942 when the Bakelite cap became standard.



Photo 167. Complete metal canteen (Cat. EvZ001).

#### **Glass Artifacts**

A total of four complete glass bottles were collected from the surface across the project area. The oldest glass bottle recovered during the pedestrian survey is a possible medicinal bottle which has a suncolored amethyst color (Photo 168). This bottle has a tooled prescription finish and likely dates to between 1880 to 1920 based on the manufacturing characteristics. One of the glass bottles was a clear Parker inkwell which is likely a Parker's "Quink" inkwell (Photo 169). Quink was fist manufactured in 1931 using isopropyl alcohol which was a solvent not previously used in inks. Some of the features which made Quink

https://history.army.mil/html/museums/messkits/Field Mess Gear(upd Jul09).pdf

such a successful fountain pen ink included: it resisted water, did not clog, had proper ink flow quality, resisted molding, non-corrosive, did not leave deposits, did not fade, and was quick drying<sup>7</sup>.

Two of the glass bottles recovered are complete milk bottles from two different Kaua'i dairies. One bottle (Catalog JMG008.01) is a Waimea Dairy milk bottle manufactured by the Owens-Illinois Glass Company at their Los Angeles, CA plant in 1961 (Photo 170). The history of Waimea Dairy begins in 1848 when Reverend George Rowell was awarded a large land grant from Kaua'i's last queen, Deborah Kapule (Soboleski 2014). Initially, Rowell's only supplied milk to his family and other missionaries before expanding to larger commercial purposes. Following Rowell's death, the dairy and pasture lands were leased to E. E. Conant in 1884. Approximately ten years later, H. P. Faye, a sugar planter, facilitated the consolidation of his wife's family dairy, Moloaa Dairy with Waimea Dairy. In 1904, Faye, who was now the manager of the Kekaha Sugar Company, purchased the dairy to ensure milk supplies for the Kekaha Sugar Co. By 1923, Waimea Dairy had a herd of 25 milking cows and was selling 200 quarts of milk each day. Alan Faye Sr., son of H. P. Faye, oversaw the management and ran Waimea Dairy from 1928 to 1964. This included the acquisition of the Lihue William Hyde Rice Dairy in 1940 following its closure. Waimea Dairy was sold to Meadow Gold in 1964 where operations continued at the original location between Waimea and Kikiaola Harbor until 1989. The dairy was then moved to Moloa'a before closing in 2000, marking the end of Kaua'i's dairy production.

Catalog JMG008.02 is a Sokei Dairy milk bottle manufactured by the Owens-Illinois Glass Company at their Los Angeles, CA plant in 1952 (Photo 171). The complete history of the Sokei Dairy is unknown; however, it was started by Ryoju Sokei, and grew from a small operation of just 3 cows supplying 13 quarts per day to include over 300 acres of land and 200 cows by 1960 (Moriki 2014; Soboleski 2010). Similar to Waimea Dairy, Sokei Dairy was eventually sold to Meadow Gold.

https://ksgills.com/blogs/updates/the-story-behind-quink-fountain-pen-ink#:~:text=Quink%20was%20first%20 marketed%20in,the%20alcohol%20contained%20in%20Quink.



Photo 168. Complete sun-colored amethyst medicinal bottle (Cat. JMG050).



Photo 169. Complete Parker inkwell (Cat. JMG050).



Photo 170. Complete Waimea Dairy milk bottle (Cat. JMG008.01).



Photo 171. Complete Sokei Dairy milk bottle (Cat. JMG008.02).

#### WOOD CHARCOAL IDENTIFICATION

Four charcoal samples were analyzed for taxonomic identification to aid in the selection of short-lived taxa or plant parts for radiocarbon dating. These identifications also provide information on firewood gathering and by extension the woody plant communities accessible to past inhabitants. Table 55 presents the charcoal identification results. Two woody taxa are present, including at least one Polynesian introduction (*Aleurites moluccana*).

Table 55. Wood Charcoal Identifications for the Current Investigations (Wt, g).

Provenience	Taxon	Part	Weight (g)	Cat. No	<sup>14</sup> C Sample
	Euphorbia sp. ('akoko)	Wood charcoal	0.06	Cat. JMG023	Yes
	Euphorbia sp. ('akoko)	Wood charcoal	0.06	Cat. JMG029	No
	Aleurites moluccana (kukui)	Charred endocarp	0.05	Cat. JMG029	No
	Euphorbia sp. ('akoko)	Wood charcoal	0.15	Cat. GOF018	Yes
	Euphorbia sp. ('akoko)	Wood charcoal	1.14	Cat. GOF030	Yes

#### **RADIOCARBON DATING**

Four charcoal samples from short-lived taxa or plant parts were submitted to the University of Georgia's Center for Applied Isotope Studies Laboratory for accelerator mass spectrometry (AMS) radiocarbon dating (Table 56). UGAMS# 69177 from TU returned a calibrated age of cal. 332–513 BP (AD 1442-1623) (2σ). UGAMS# 69993 from TU returned a calibrated age of cal. 314–459 BP (AD 1496–1641) (2σ). These age range firmly establishes the deposit within the pre-Contact period a conclusion supported by the cultural material recovered from the excavation units. Furthermore, sample UGAMS# 69993 is a modified gourd rind (*cf. Lagenaria sp.*) which establishes a direct date for a traditional Hawaiian artifact. Samples UGAMS# 69178 and 69179 both recovered from adjoining excavation units at IA008 returned calibrated ages of cal. 0–288 (AD 1667 to modern) and 152–425 BP (AD 1530–1803) (2σ) respectively. These dates overlap and suggest an age range of the late pre-Contact to early historic period for use of the site.

Table 56. Radiocarbon Results from Test Units 1, 7, and 10.

UGAMS #	Sample ID	TU/ SITE	Layer	cmbs	Mater ial	Species	δ13C, ‰	14C age, year s BP	±	cal. BP (2σ)
69177	IA202241.JMG023		I/I	24–34	charco al	Euphorbia sp.	-11.03	410	2 5	332– 513
69993	IA202241.JMG019 I/I .22	24- g 34	gourd rind sample	0 0	2 314 0 459					
69178	IA202241.GOF030		I/IV	30–40	charco al	Euphorbia sp.	-10.75	170	2 5	0–288
69179	IA202241.GOF018		I/IV	40–50	charco al	Euphorbia sp.	-10.71	250	2 5	152– 425

#### MACROBOTANICAL REMAINS

Beyond the woody taxa identified during wood charcoal taxonomic identifications, additional macrobotanical remains were recovered during lab processing. These include *kukui* (candlenut; *Aleurites moluccana*) endocarp, *Cocos nucifera* (coconut; *niu*), Cucurbitaceae gourd rind fragments, including one gourd stopper with attached sennit cordage and one modified gourd fragment, and cf. *Lagenaria siceraria* (bottle gourd; *ipu*) seeds.

The stopper was manufactured from the top portion of a Cucurbitaceae gourd (probably *Lagenaria siceraria*) (Photo 172–Photo 174). It has a single drilled hole on one side with sennit strung through the hole. On the interior of the gourd, the sennit is knotted to ensure the cord remains intact. The sennit is manufacture from multiple fibers separated into two strands then twisted together and possibly from coconut (*Cocos nucifera*) fibers. The stopper length is 4 cm, with a diameter of 2.6 at the widest end and 1.4 at the narrow end. The length of the sennit extends from the stopper is 2.4 cm.



Photo 172. Gourd stopper with sennit cordage (Cat. JMG020).



Photo 173. Closeup of twisted sennit fibers extending from stopper (Cat. JMG020).



Photo 174. Interior view of stopper. Note that the cordage is knotted to remain intact with stopper (Cat. JMG020).

## VI. SUMMARY AND NATIONAL REGISTER OF HISTORIC PLACES ELIGIBILTY EVALUATIONS

Archaeological pedestrian survey and subsurface testing was conducted within approximately 533 acres consisting of multiple discrete parcels, roads, and utility corridors distributed across and outside of the PMRF installation. These consisted of four main locations: 1) Mākaha Ridge Road; 2) between the eastern boundary of PMRF Barking Sands and Kaumuali'i Highway (Main Base South); 3) northeast of North Nohili Road to the boundary of Polihale State Park (Main Base North); and 4) Kamokalā Ridge and portions of the surrounding area, all of which are found along the western edge of Waimea Ahupua'a, Kona District, Kaua'i Island. The following TMK parcels were surveyed during the AIS Makaha Ridge (TMKs [1] 4-001:013 por., [1] 4-001:014 por., [1] 2-001:006 por.), PMRF Main Base North and South (TMKs [1] 2-002:013 por., [1] 2-002:025 por., [1] 2-002:026 por., [1] 2-002:001 por.), and Kamokala Ridge (TMKs [1] 2-002:001 por., [1] 2-002:027 por., [1] 2-002:029 por.).

Results from pedestrian survey found no archaeological sites along the Mākaha Ridge Road corridor. However, five previously identified sites were encountered at Main Base South (50-30-05-2000), Main Base North (50-30-01-2049), and Kamokalā Ridge (50-30-05-0652, 50-30-05-0653, and 50-30-05-0658). Additionally, 12 new sites were recorded, two of which were found at Main Base North (IA011 and IA012) and 10 at Kamokalā Ridge (IA001 to IA010). Of the two new sites identified at Main Base North, (IA011 and IA012) both were historic, consisting of a wooden frame structure associated with a small-arms shooting range (IA011) and a refuse area (IA012). The latter, in particular, was extensive, and included dense concentrations of concrete rubble and large bales of barbed wire running roughly parallel to one of the old canals (with several offshoots), along with scatters of broken glass, ceramic, and metal debris

In contrast, 10 new sites recorded at Kamokalā Ridge (IA001 to IA010) revealed	intensive use of
the area from the pre-Contact period up through the historic era.	

#### SITE FUNCTION

The twelve new sites documented during the fieldwork can be categorized by their inferred function and include agriculture, ranching, temporary and permanent habitation, refuse disposal, and military activity (Table 57).

Table 57. Functional Classification of Newly Identified Sites Recorded During the Project.

Site Number	Survey Area	Site Type	Interpreted Function	Temporal Period
IA001	Kamokalā Ridge	Rock Wall	Agriculture	Hawaiian
IA002	Kamokalā Ridge	Rock Wall and Enclosure Complex	Agriculture, Plantation, and Ranching	Hawaiian and/or post-Contact
IA003	Kamokalā Ridge	Midden, Rockshelters, and Retaining Wall Complex	Temporary Habitation	Hawaiian and/or post-Contact
IA004	Kamokalā Ridge	Stone Platform and Modified Outcrop	Habitation	Hawaiian
IA005	Kamokalā Ridge	Historically Modified Rock Wall	Agriculture	Hawaiian and post-Contact
IA006	Kamokalā Ridge	Terrace and Retaining Wall Complex	Agriculture	Hawaiian
IA007	Kamokalā Ridge	Mound and Basalt Quarry	Agriculture	Hawaiian and/or post-Contact
IA008	Kamokalā Ridge	Terrace and Retaining Wall Complex	Agriculture/Habitation	Hawaiian
IA009	Kamokalā Ridge	Historic Refuse Area	Refuse Area	WWII and after
IA010	Kamokalā Ridge	Mound	Agriculture	Hawaiian and/or post-Contact
IA011	Barking Sands North	Small Arms Range	Military	WWII and after
IA012	Barking Sands North	Historic Refuse Area	Refuse Area	Post-Contact

#### HISTORY AND LAND USE IN THE PROJECT AREA

Most new sites (excluding IA011 and IA012) identified during the survey were found within the Kamokalā Ridge survey area approximately 2.82 km (1.75 mi) to 3.74 km (2.32 mi) inland. Therefore, these sites may provide important information about the use of interior areas on Kaua'i and the Hawaiian islands more generally. Aside from IA002 and IA009, all of these sites appear to date to the pre-Contact/post-Contact interval and may have been integrated into an intricate network of stone features and efforts to modify the landscape for temporary or perhaps longer-term habitation as well as agricultural activities.

Two radiocarbon date provides important information about initial site chronology within the interior of the project area. UGAMS# 69177 from TU 1 at returned a calibrated age of cal. 332–513 BP (AD 1442-1623) (2σ). UGAMS# 69993 from TU 1 returned a calibrated age of cal. 314–459 BP (AD 1496-1641) (2σ). These dates indicate that the deposit dates firmly within the pre-Contact period. Review of the artifact content recovered from the excavations corroborates this conclusion as a variety of traditional Hawaiian artifacts and faunal remains were recovered from the deposit. Although no historic artifacts were found in a dime dating to 1928 was recovered from the surface near the excavation unit. Two radiocarbon dates both recovered from adjoining excavation units at returned calibrated ages of cal. 0–288 (AD 1667 to modern) and 152–425 BP (AD 1530-1803) (2σ), respectively. These dates overlap and suggest an age range of the late pre-Contact to early historic period for use of the site.

The four radiocarbon dates in combination indicate use of the Kamokalā Ridge area from around the 17th century into historic times. These results indicate that the upslope areas of PMRF were initially used for temporary habitation and perhaps agriculture as early as cal. 332–513 BP (AD 1442-1623) (2σ) and into the historic period. While many of the previously acquired dates from archaeological sites on PMRF are problematic for several reasons including the dating of samples of unidentified wood charcoal, current evidence suggests that coastal sites such as Nohili (Site 50-30-05-1829) may date to as early as the 14th century (SEARCH 2012: 156). If these dates for coastal sites are reliable, then it is possible that expansion into upland areas occurrent several hundred years after settlement of the coast. Importantly, the overall suite of radiocarbon dates from traditional Hawaiian deposits acquired from PMRF is relatively small (less than 20 not including the current project results). Consequently, the results reported here make a major contribution to understanding the chronology of the area's settlement and land use. The following section revisits the project research questions considering the results of the fieldwork and laboratory analysis. The discussion about research contributions provides important context for evaluating the newly identified sites' eligibility for listing on the NRHP and HRS Chapter 6E significance evaluations.

#### REVISITING THE PROJECT RESEARCH QUESTIONS

Three research questions guided the archaeological investigation carried out for this project. These questions are:

- 1. What were the depositional and soil-forming sequences for the different survey areas?
- 2. Are archaeological deposits present and, if so, what past activities do they document?

3. If burials or human skeletal remains are encountered during the archaeological survey, what are their contexts and conditions?

These questions are discussed briefly in context of the results of the fieldwork and subsequent laboratory analysis.

## 1) WHAT WERE THE DEPOSITIONAL AND SOIL-FORMING SEQUENCES FOR THE DIFFERENT SURVEY AREAS?

The excavations conducted in support of the project can help to address this question within the Kamokalā Ridge survey areas where 10 excavation units were carried out. Documentation of the subsurface characteristics indicate that soil forming sequences in the Kamokalā Ridge survey area have resulted in shallow sedimentary deposition and soil formation. For example, excavation units carried out at 1, 2, and 4) all terminated at bedrock between 39 and 55 cmbs with some excavations at reaching slightly deeper (70 cmbs). The typical stratigraphic sequence in an excavation unit included a well-developed A horizon consisting of organic material and aeolian sediment on top of an eroding B horizon.

Importantly, the evidence from the excavations at Kamokalā Ridge demonstrates that depositional processes in the area have

Finally, it should be noted that areas in Kamokalā Ridge have been affected by feral goat activity and PMRF allows hunting with prior approval by the Installation Commanding Officer. Therefore, it is likely that some of the sites in the survey area experience disturbance from bioturbation from feral goats,other wildlife, and hunting.

## 2) ARE ARCHAEOLOGICAL DEPOSITS PRESENT AND, IF SO, WHAT PAST ACTIVITIES DO THEY DOCUMENT?

The 12 new sites identified during the pedestrian survey are indicative of past landscape use ranging from traditional Hawaiian habitation and agriculture to historic era ranching and military activities.

. Given the presence of *kukui* endocarps recovered in some of the test units, it is possible that aboriculture was an important part of the subsistence activities practiced in the Kamokalā Ridge area. It is becoming increasingly recognized that Hawaiian traditional aboriculture involving *kukui* and breadfruit, for example, has been underestimated (Lincoln et al. 2024). Given that this part of Kaua'i has received little attention archaeologically—and that many of the rock walls and alignments and other features extend further into areas that were outside the scope of this investigation—expanding survey beyond these boundaries could prove useful in identifying how local agroforestry and other food production systems developed.

## 3) IF BURIALS OR HUMAN SKELETAL REMAINS ARE ENCOUNTERED DURING THE ARCHAEOLOGICAL SURVEY, WHAT ARE THEIR CONTEXTS AND CONDITIONS?

No burials or secondarily deposited human skeletal remains were encountered during the project.

## NATIONAL REGISTER OF HISTORIC PLACES ELIGIBILITY AND HRS CHAPTER 6E SIGNIFICANCE EVALUATIONS

This section presents the NRHP eligibility and HRS Chapter 6E significance evaluations for the twelve newly identified sites. The archaeological resources at Kamokalā Ridge have much to contribute to our understanding of traditional use of the inland portions of Kaua'i for agricultural and habitation purposes. Based on results from both pedestrian survey and subsurface investigation in this area, many of the sites meet Criterion D of the NHRP in that they have or are likely to yield "information important for research on prehistory or history" and HRS Chapter 6E Criteria d and e. These evaluations are presented separately below.

## NRHP ELIGIBILITY EVALUATIONS

This section presents NRHP eligibility evaluations for the 12 sites (Table 58). The evaluations discuss theme, context, association, criteria, and integrity, where appropriate, following the guidelines in National Register Bulletin 15 (NRB 15: 1997).

Table 58. National Register of Historic Place and HRS Chapter 6E Significance Status for the 12 New Sites Recorded During the Survey.

Site #	Description	Feature Time Period	NRHP Criteria	HRS Chapter 6E Criteria
IA001	Rock wall	Late pre-Contact/early historic	D	d, e
IA002	Rock wall and enclosure complex	Late pre-Contact/early historic	D	d, e
IA003	Midden, overhangs, retaining walls complex	Late pre-Contact/early historic	D	d, e

Site #	Description	Feature Time Period	NRHP Criteria	HRS Chapter 6E Criteria
IA004	Platform and modified outcrop	Late pre-Contact/early historic	D	d, e
IA005	Modified rock wall	Late pre-Contact/early historic/historic	None	None
IA006	Retaining wall and terrace complex	Late pre-contact/early historic	D	d, e
IA007	Basalt quarry	Late pre-contact/early historic	D	d, e
IA008	Retaining wall and terrace complex	Late pre-Contact/early historic/historic	D	d, e
IA009	Historic refuse area	Historic	None	None
IA010	Rock mound	Late pre-Contact/early historic	D	d, e
IA011	Former Shooting Range	Historic	None	None
IA0012	Push pile and historic refuse area	Historic	None	None

#### SITES ELIGIBLE FOR NRHP LISTING UNDER CRITERION D

Eight sites (IA001-IA004, IA006-IA008, and IA010 are eligible for NRHP listing under Criterion D. These sites are all related to agricultural activities in the upland areas of Kaua'i and therefore have the potential to provide information important for research within the theme of agricultural practices during the Hawaiian pre-Contact or early post-Contact Period. The historic context for these sites is the development of agricultural practices in upland Kaua'i and the Hawaiian islands more generally. In recent years, the trajectory of expansion of agriculture into the interior island landscapes of Hawai'i has received considerable research attention (see Morrison et al. 2022; Quintus et al. 2023), however very little research on the topic has been conducted on the island of Kaua'i. Therefore, these sites are recommended as eligible for NRHP listing under significance Criterion D because they offer the potential to answer questions about the timing of use of Hawai'i's interior areas, the expansion and intensification of agriculture and its relationship to political economy, and the importance of aboriculture within the overall subsistence regime. These sites all retain the integrity of location, design, material, and setting to help convey the significance of the site's characteristics in relationship to the historic context of agricultural development in the Hawaiian Islands. These eight sites are not associated with important events that have made a significant contribution to the broad patterns of our history (Criterion A), nor are they associated with a person of historical significance or have that association with the activities, events, etc., for which the person is important (Criterion B), nor do they embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C).

#### SITES NOT ELIGIBLE FOR NRHP LISTING

Four sites (IA005, IA009, IA011, and IA012) are evaluated as not eligible for listing on the NRHP. IA005 is a historically modified rock wall identified in the Kamokalā Ridge survey area. The site was probably related to agricultural activities in the upland areas of Kaua'i but has since been modified during the historic period to include two concrete culverts perhaps to allow for water control. The alterations to the wall have resulted in a loss of integrity and therefore the site is not recommended as eligible for NRHP.

IA009 is a historic refuse area identified in the Kamokalā Ridge survey area. The site includes a wide variety of disposed historic and modern materials. The site is not recommended as eligible for listing on the NRHP. The site is not associated important events that have made a significant contribution to the broad patterns of our history (Criterion A), nor is it associated with a person of historical significance or have that association with the activities, events, etc., for which the person is important (Criterion B), nor does it embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C). Furthermore, the site does not have the potential to yield important information about history or prehistory (Criterion D).

IA011 is a wood framed structure associated with a historic small-arms range identified in the Main Base North survey area. The site is not recommended as eligible for listing on the NRHP. The site is not associated important events that have made a significant contribution to the broad patterns of our history (Criterion A), nor is it associated with a person of historical significance or have that association with the activities, events, etc., for which the person is important (Criterion B), nor does it embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C). Furthermore, the site does not have the potential to yield important information about history or prehistory (Criterion D).

IA012 is a historic refuse area. None of the contents of the site have the potential to contribute to understanding the prehistory or history of the area. The site is not recommended as eligible for listing on the NRHP. The site is not associated important events that have made a significant contribution to the broad patterns of our history (Criterion A), nor is it associated with a person of historical significance or have that association with the activities, events, etc., for which the person is important (Criterion B), nor does it embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C). Furthermore, the site does not have the potential to yield important information about history or prehistory (Criterion D).

#### HRS CHAPTER 6E SIGNIFICANCE EVALUATIONS

This section presents the HRS Chapter 6E significance evaluations for the 12 sites and follows the guidelines for evaluation of significance presented in HAR 13-284-6(b).

Eight sites (IA001-IA004, IA006-IA008, and IA010) are evaluated significant under HRS Chapter 6E using Criteria d and e. As discussed above, these sites are all related to agriculture in the upland areas of Kaua'i and therefore have the potential to provide information important for research within theme of agricultural practices during the Hawaiian pre-Contact or early post-Contact Period. The historic context for these sites is the development of agricultural practices in upland Kaua'i and the Hawaiian Islands in general. The importance of expansion of agriculture from coastal settings into the upslope interior environments of Hawai'i has been the focus of recent research projects (see Morrison et al. 2022; Quintus

et al. 2023), however the island of Kaua'i has not received much attention. Therefore, these sites are recommended significant under Criterion d because they offer an important area for comparison with studies that have been conducted on O'ahu and Hawai'i island. These types of studies offer the potential to answer questions about the trajectory of use of Hawai'i's interior areas, the expansion and intensification of agriculture and its relationship to political economy, and the importance of aboriculture within the overall subsistence regime. In addition to Criterion d, these eight sites are also evaluated significant under Criterion e because they offer important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts--these associations being important to the group's history and cultural identity.

The sites all retain the integrity of location, design, material, and setting to help convey the significance of the site in relationship to the historic context of agricultural development in the Hawaiian Islands. These sites are not associated with important events that have made a significant contribution to the broad patterns of our history (Criterion a), nor are they associated with the lives of persons important in our past (Criterion b), nor do they embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values (Criterion c).

#### SITES EVALUATED NOT SIGNIFICANT UNDER HRS CHAPTER 6E

Four sites (IA005, IA009, IA011, and IA012) are evaluated as not significant under HRS Chapter 6E. IA005 is a historically modified rock wall identified in the Kamokalā Ridge survey area. The site was probably related to agricultural activities in the upland areas of Kaua'i but has since been modified during the historic period to include two concrete culverts perhaps to allow for water control. The alterations to the wall have resulted in a loss of integrity and therefore the site is not recommended as significant.

IA009 is a historic refuse area identified in the Kamokalā Ridge survey area. The site includes a wide variety of disposed historic and modern materials. The site is evaluated as not significant under HRS Chapter 6E. The site is not associated with important events that have made a significant contribution to the broad patterns of our history (Criterion a), nor are they associated with the lives of persons important in our past (Criterion b), nor do they embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values (Criterion c). Furthermore, the site has not yielded nor is likely to yield information important for research on prehistory or history (Criterion d), nor does the site offer important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts--these associations being important to the group's history and cultural identity (Criterion e).

IA011 is a wooden framed structure associated with a historic small-arms shooting range identified in the Main Base North survey area. The site is evaluated as not significant under HRS Chapter 6E. The site is not associated with important events that have made a significant contribution to the broad patterns of our history (Criterion a), nor are they associated with the lives of persons important in our past (Criterion b), nor do they embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values (Criterion c). Furthermore, the site has not yielded nor is likely to yield information important for research on prehistory or history (Criterion d), nor does the site offer important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts--these associations being important to the group's history and cultural identity (Criterion e).

IA012 is a historic refuse area. None of the contents of the site have the potential to contribute to understanding the prehistory or history of the area. The site is evaluated as not significant under HRS Chapter 6E. The site is not associated with important events that have made a significant contribution to the broad patterns of our history (Criterion a), nor are they associated with the lives of persons important in our past (Criterion b), nor do they embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values (Criterion c). Furthermore, the site has not yielded nor is likely to yield information important for research on prehistory or history (Criterion d), nor does the site offer important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts--these associations being important to the group's history and cultural identity (Criterion e).

#### RECOMMENDATIONS

The eight sites recommended as eligible for NRHP listing and evaluated as significant under HRS Chapter 6E, have the potential to provide important information about the prehistory and history of Kaua'i and Hawai'i more generally. These sites are likely part of a more comprehensive system of agricultural infrastructure that extends beyond the boundaries of the current project area and offer an important opportunity to understand the timing of Hawaiian settlement into interior landscapes on Kaua'i. Additionally, this agricultural landscape also has the potential for providing comparative information useful for documenting the trajectory of this process across the Hawaiian archipelago. Excavations conducted within a rockshelter (IA003) attest to the high preservation of organic material, an often rarely recovered class of artifact.

As a consequence of the importance of these eight sites, it is recommended that the information from this study be incorporated into PMRF's ICRMP and the boundaries for the re-located sites be updated. Furthermore, the potential impact to the sites from of any future activities should be assessed during project planning stages and archaeological monitoring or additional mitigation actions be considered. Finally, a series of research questions about PMRF's inland sites should be integrated into a formal research design as part of PMRF's ICRMP and/or other management documents so that the importance of these inland resources can be acknowledged and further examined during subsequent archaeological investigations.

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## **GLOSSARY OF HAWAIIAN WORDS**

Hawai'ian Spelling*	Definition
ʻaʻaliʻi	Hawai'ian hopseed, <i>Dodonaea viscosa</i> ; native shrubs and small trees
ʻalae	mudhen or Hawai'ian gallinule, Gallinula chloropus sandvicensis
`alaae	Water-soluble colloidal ocherous earth, used for coloring salt, for medicine, for dye, and formally in the purification ceremony called hi'uwai; any red coloring matter.
ahupua'a	land division usually extending from the uplands to the sea, so called because the boundary was marked by a heap $(ahu)$ of stones surmounted by an image of a pig $(pua'a)$ , or because a pig or other tribute was laid on the altar as tax to the chief
heiau	temple, shrine
hiʻaloa	small, downy, American weed, <i>Waltheria indica</i> var. <i>americana</i> ; leaves and inner bark of root are very bitter and are used for tea or chewed to relieve sore throat
kukui	candlenut, <i>Aleurites</i> moluccanus; a flowering tree in the spurge family, Euphorbiaceae, the official state tree of Hawaii and considered a "canoe plant" brought by Polynesians during their voyages to different islands
kiawe	invasive species of mesquite tree, <i>Prosopis pallida</i> ; a spreading bush or moderately sized tree with spines and spikes of greenish-yellow flowers, and long pods filled with small brown seeds.
koa	the largest of native forest trees ( <i>Acacia koa</i> ), with light gray bark, crescent-shaped leaves, and white flowers in small, round heads
konohiki	headman of an ahupua'a land division under the chief
loko	pond, lake, pool
makaloa	a perennial sedge, Cyperus laevigatus
mauka	toward the mountain, or inland
moena makaloa	the fashioning of mats and other articles
neki	great bulrush
poi	a Hawaiian dish made from the fermented root of the taro which has been baked and pounded to a paste
pu'uone	pond near the shore connected to the sea by a stream or ditch; sand dune

<sup>\*</sup> Adapted from Mary K. Pukui and Samuel H. Elbert, 1986, *Hawai 'ian Dictionary*, University of Hawai 'i Press, Honolulu, unless otherwise noted.

# APPENDIX A: CATALOG LIST

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
EvZ001		N/A	N/A	N/A	N/A	Surface	-	Metal canteen	1	311.01	EvZ	11/30/2023 10:21:26
EvZ004		N/A	TU 3	I	1	6-25cm bd	-	Basalt flake	1	101.7	EvZ	12/19/2023 12:36:28
GOF001		D	N/A	N/A	N/A	Surface	-	Ceramic insulator	1	277.1	GOF	11/8/2023 14:37:25
GOF002		N/A	TU 1	I	1	p.p. 21 cm bd	-	Charcoal	-	0.96	GOF	12/13/2023 17:14:13
GOF003.01		10	TU 6	I	1	7–32 cm bd	-	Aleurites moluccana endocarp	-	21.51	GOF	1/18/2024 12:49:00
GOF003.02		10	TU 6	I	1	7–32 cm bd	-	Waterworn basalt pebble manuport	13	106.41	GOF	1/18/2024 12:49:00
GOF003.03		10	TU 6	I	1	7–32 cm bd	-	Vegetal remains	-	0.25	GOF	1/18/2024 12:49:00
GOF003.04		10	TU 6	I	1	7–32 cm bd	-	Ochre fragment	2	0.02	GOF	1/18/2024 12:49:00
GOF005		09	TU 7	I	1	p.p. 20 cm bd	-	Basalt shatter	2	32.02	BVC	1/19/2024 10:03:33
GOF006		09	TU 7	I	1	12-30 cm bd	-	Charcoal	-	0.81	BVC	1/19/2024 10:03:33
GOF007		09	TU 7	I	1	p.p. 26 cm bd	-	Charcoal	-	0.26	BVC	1/19/2024 10:03:33
GOF008		09	TU 7	I	1	p.p. 27 cm bd	Feature 1	Charcoal	-	3.87	BVC	1/19/2024 10:03:33
GOF009.01		09	TU 7	I	1	25–34 cm bd	Feature 1	Charcoal	-	4.98	BVC	1/19/2024 10:03:33
GOF009.02		09	TU 7	I	1	25–34 cm bd	Feature 1	Seed	-	0.04	BVC	1/19/2024 10:03:33

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
GOF009.03		09	TU 7	Ι	1	25–34 cm bd	Feature 1	Echinoidea	-	0.19	BVC	1/19/2024 10:03:33
GOF009.04		09	TU 7	Ι	1	25–34 cm bd	Feature 1	Littoraria pintado	-	0.17	BVC	1/19/2024 10:03:33
GOF009.05		09	TU 7	Ι	1	25–34 cm bd	Feature 1	Faunal remains	-	-	BVC	1/19/2024 10:03:33
GOF009.06		09	TU 7	I	1	25–34 cm bd	Feature 1	Nerita picea	-	0.22	BVC	1/19/2024 10:03:33
GOF010.01		09	TU 7	I	1	12-30 cm bd	-	Faunal remains	-	-	GOF	1/19/2024 14:33:35
GOF010.02		09	TU 7	I	1	12–30 cm bd	-	Waterworn basalt pebble manuport	5	8.14	GOF	1/19/2024 14:33:35
GOF010.03		09	TU 7	I	1	12–30 cm bd	-	Volcanic glass fragment	1	0.3	GOF	1/19/2024 14:33:35
GOF010.04		09	TU 7	I	1	12–30 cm bd	-	Basalt flake	3	18.29	GOF	1/19/2024 14:33:35
GOF010.05		09	TU 7	Ι	1	12–30 cm bd	-	Basalt shatter	3	3.46	GOF	1/19/2024 14:33:35
GOF011.01		09	TU 7	Ι	1	12-30cm bd	-	Bone fishhook fragment	1	0.1	GOF	1/19/2024 14:36:01
GOF011.02		09	TU 7	I	1	12-30cm bd	-	Basalt point	1	13.8	GOF	1/19/2024 14:36:01
GOF012		09	TU 7	I	2	30-40cm bd	-	Charcoal	-	105.24	GOF	1/22/2024 10:10:12
GOF013.01		09	TU 7	I	2	30–40 cm bd	-	Charcoal	-	1.86	GOF	1/22/2024 10:13:59
GOF013.02		09	TU 7	I	2	30–40 cm bd	-	Faunal remains	-	-	GOF	1/22/2024 10:13:59

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
GOF013.03		09	TU 7	Ι	2	30–40 cm bd	-	Echinoidea	-	0.05	GOF	1/22/2024 10:13:59
GOF013.04		09	TU 7	I	2	30–40 cm bd	-	Nondiagnostic gastropod	-	0.07	GOF	1/22/2024 10:13:59
GOF014 .01		09	TU 7	Ι	2	30-40cm bd	-	Faunal remains	-	-	GOF	1/22/2024 10:15:57
GOF014 .02		09	TU 7	I	2	30-40cm bd	-	Coral manuport	7	14.05	GOF	1/22/2024 10:15:57
GOF015		09	TU 7	I	3	40-50cm bd	-	Charcoal	-	27.26	GOF	1/22/2024 12:55:06
GOF016.01		09	TU 7	I	3	40-50cm bd	-	Faunal remains	-	-	GOF	1/22/2024 12:57:04
GOF016.02		09	TU 7	I	3	40-50cm bd	-	Cypraeidae	-	0.25	GOF	1/22/2024 12:57:04
GOF016.03		09	TU 7	I	3	40-50cm bd	-	Coral manuport	-	2.45	GOF	1/22/2024 12:57:04
GOF017.01		09	TU 7	I	3	40–50 cm bd	-	Charcoal	-	0.1	GOF	1/22/2024 12:59:17
GOF017.02		09	TU 7	I	3	40–50 cm bd	-	Faunal remains	-	-	GOF	1/22/2024 12:59:17
GOF017.03		09	TU 7	I	3	40–50 cm bd	-	Aleurites moluccana endocarp	-	0.1	GOF	1/22/2024 12:59:17
GOF018		09	TU 7	I	4	50–60cm bd	-	Charcoal	-	0.44	GOF	1/25/2024 15:00:37
GOF020.01		09	TU 10	I	1	7–20 cm bd	-	Charcoal	-	0.08	GOF	1/25/2024 15:43:04
GOF020.02		09	TU 10	I	1	7–20 cm bd	-	Faunal remains	-	-	GOF	1/25/2024 15:43:04

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
GOF020.03		09	TU 10	I	1	7–20 cm bd	-	Coral manuport	3	3.76	GOF	1/25/2024 15:43:04
GOF020.04	_	09	TU 10	I	1	7–20 cm bd	-	Polished basalt flake	1	67.66	GOF	1/25/2024 15:43:04
GOF020.05		09	TU 10	I	1	7–20 cm bd	-	Basalt flake	1	1.53	GOF	1/25/2024 15:43:04
GOF020.06	_	09	TU 10	I	1	7–20 cm bd	-	Echinoidea	-	0.54	GOF	1/25/2024 15:43:04
GOF020.07	_	09	TU 10	I	1	7–20 cm bd	-	Fire-cracked rock	1	42.7	GOF	1/25/2024 15:43:04
GOF020.08	_	09	TU 10	I	1	7–20 cm bd	-	Basalt shatter	4	3.86	GOF	1/25/2024 15:43:04
GOF020.09	_	09	TU 10	I	1	7–20 cm bd	-	Volcanic glass flake	1	0.93	GOF	1/25/2024 15:43:04
GOF020.10		09	TU 10	I	1	7–20 cm bd	-	Volcanic glass shatter	1	0.03	GOF	1/25/2024 15:43:04
GOF021		09	TU 10	I	1	7–20 cm bd	-	Charcoal	-	1.57	GOF	1/25/2024 15:44:31
GOF022.01		09	TU 10	I	2	20-30 cm bd	-	Faunal remains	-	-	GOF	1/25/2024 15:46:12
GOF022.02		09	TU 10	I	2	20-30 cm bd	-	Charcoal	-	0.95	GOF	1/25/2024 15:46:12
GOF022.03	_	09	TU 10	I	2	20-30 cm bd	-	Echinoidea	-	1.16	GOF	1/25/2024 15:46:12
GOF022.04		09	TU 10	I	2	20-30 cm bd	-	Waterworn basalt pebble manuport	3	11.81	GOF	1/25/2024 15:46:12
GOF022.05		09	TU 10	Ι	2	20–30 cm bd	-	Basalt flake	6	4.17	GOF	1/25/2024 15:46:12

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
GOF022.06		09	TU 10	I	2	20–30 cm bd	-	Possible hematite fragment	3	4.93	GOF	1/25/2024 15:46:12
GOF022.07		09	TU 10	I	2	20-30 cm bd	-	Basalt shatter	15	51.64	GOF	1/25/2024 15:46:12
GOF022.08		09	TU 10	Ι	2	20–30 cm bd	-	Drupa morum	-	4.1	GOF	1/25/2024 15:46:12
GOF022.09		09	TU 10	I	2	20–30 cm bd	-	Cypraeidae	-	0.18	GOF	1/25/2024 15:46:12
GOF022.10		09	TU 10	I	2	20–30 cm bd	-	Coral manuport	5	2.67	GOF	1/25/2024 15:46:12
GOF022.11		09	TU 10	I	2	20–30 cm bd	-	Coral abrader	1	21.28	GOF	1/25/2024 15:46:12
GOF023.01		09	TU 10	I	2	19–32 cm bd	Feature 1	Faunal remains	-	-	GOF	1/25/2024 15:48:03
GOF023.02		09	TU 10	I	2	19–32 cm bd	Feature 1	Charcoal	-	32.89	GOF	1/25/2024 15:48:03
GOF023.03		09	TU 10	I	2	19–32 cm bd	Feature 1	Echinoidea	-	3.04	GOF	1/25/2024 15:48:03
GOF023.04		09	TU 10	I	2	19–32 cm bd	Feature 1	Echinometra oblonga	-	0.07	GOF	1/25/2024 15:48:03
GOF023.05		09	TU 10	I	2	19–32 cm bd	Feature 1	Volcanic glass flake	1	0.05	GOF	1/25/2024 15:48:03
GOF023.06		09	TU 10	I	2	19–32 cm bd	Feature 1	Nerita picea	-	0.08	GOF	1/25/2024 15:48:03
GOF023.07		09	TU 10	I	2	19–32 cm bd	Feature 1	Terrestrial snail	-	0.01	GOF	1/25/2024 15:48:03
GOF023.08		09	TU 10	I	2	19–32 cm bd	Feature 1	Monetaria caputserpentis	-	1.94	GOF	1/25/2024 15:48:03

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
GOF023.09	_	09	TU 10	I	2	19–32 cm bd	Feature 1	Aleurites moluccana endocarp	-	0.59	GOF	1/25/2024 15:48:03
GOF023.10		09	TU 10	I	2	19–32 cm bd	Feature 1	Polished basalt shatter	1	0.14	GOF	1/25/2024 15:48:03
GOF023.11		09	TU 10	I	2	19–32 cm bd	Feature 1	Basalt shatter	2	11.18	GOF	1/25/2024 15:48:03
GOF024		09	TU 10	I	2	20-30 cm bd	-	Charcoal	-	2.17	GOF	1/25/2024 15:50:17
GOF025	_	09	TU 10	I	2	p.p. 17 cm bd	-	Basalt shatter	1	54.52	GOF	1/25/2024 15:52:07
GOF026	_	09	TU 10	I	2	p.p. 19 cm bd	-	Polished basalt shatter	1	92.02	GOF	1/25/2024 15:54:22
GOF027	_	09	TU 10	I	2	20-30cm bd	-	Charcoal	-	18.87	GOF	1/25/2024 15:56:13
GOF028.01		09	TU 10	I	3	30-40cm bd	-	Faunal remains	-	-	GOF	1/26/2024 10:36:07
GOF028.02		09	TU 10	I	3	30-40cm bd	-	Basalt flake	1	31.68	GOF	1/26/2024 10:36:07
GOF028.03		09	TU 10	I	3	30-40cm bd	-	Waterworn basalt pebble manuport	2	6.94	GOF	1/26/2024 10:36:07
GOF029	_	09	TU 10	I	3	30-40cm bd	-	Charcoal	-	7.16	GOF	1/26/2024 10:40:49
GOF030		09	TU 10	Ι	4	40-50cm bd	-	Charcoal	-	4.96	GOF	1/26/2024 10:49:05
GOF031.01		09	TU 10	I	4	40-50cm bd	-	Charcoal	-	0.04	GOF	1/26/2024 11:03:19
GOF031.02		09	TU 10	I	4	40-50cm bd	-	Faunal remains	-	-	GOF	1/26/2024 11:03:19

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
GOF031.03	_	09	TU 10	Ι	4	40-50cm bd	-	Echinoidea	-	0.45	GOF	1/26/2024 11:03:19
GOF031.04	_	09	TU 10	I	4	40-50cm bd	-	Waterworn basalt pebble manuport	5	43.17	GOF	1/26/2024 11:03:19
JMG001	_	01	-	N/A	N/A	Surface	-	Hematite octopus lure sinker	1	56.79	JMG	11/16/2023 7:35:56
JMG002.01	_	01	-	N/A	N/A	Surface	-	Cypraeidae	-	0.76	JMG	11/16/2023 7:38:39
JMG002.02	_	01	-	N/A	N/A	Surface	-	Drupa morum	-	20.89	JMG	11/16/2023 7:38:39
JMG002.03	_	01	-	N/A	N/A	Surface	-	Siphonaria sp.	-	0.3	JMG	11/16/2023 7:38:39
JMG003		01	-	N/A	N/A	Surface	-	Mercury dime	1	2.46	JMG	11/16/2023 7:40:57
JMG004.01		01	-	N/A	N/A	Surface	-	Basalt flake	1	86.2	JMG	11/16/2023 7:43:03
JMG004.02		01	-	N/A	N/A	Surface	-	Basalt flake	1	22.2	JMG	11/16/2023 7:43:03
JMG005			-	N/A	N/A	Surface	-	Waterworn basalt cobble manuport	1	204.47	JMG	11/17/2023 7:44:55
JMG008.01	_	N/A	-	N/A	N/A	Surface	-	Glass bottle	1	502.6	JMG	12/7/2023 15:08:01
JMG008.02	_	N/A	-	N/A	N/A	Surface	-	Glass bottle	1	754.3	JMG	12/7/2023 15:08:01
JMG009		N/A	-	N/A	N/A	Surface	-	Coral abrader	1	16.26	JMG	12/7/2023 15:16:07
JMG010		N/A	-	N/A	N/A	Surface	-	Glass bottle	1	95.43	JMG	12/7/2023 15:24:53

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
JMG011		N/A	-	N/A	N/A	Surface	-	Waterworn basalt cobble manuport	1	276.39	JMG	12/7/2023 15:21:32
JMG012		N/A	TU 1	I	1	15–34 cm bd	-	Faunal remains	-	-	JMG	12/14/2023 15:47:05
JMG013		01	TU 1	Ι	1	p.p. 27 cm bd	-	Possible Pandanus sp. mat fragment	4	2.48	JMG	12/14/2023 15:48:21
JMG014		01	TU 1	I	1	p.p. 19 cm bd	-	Vegetal remains	-	0.09	JMG	12/14/2023 15:50:32
JMG015.01		01	TU 1	I	1	15–34 cm bd	-	Gourd fragment	10	2.28	JMG	12/14/2023 15:52:32
JMG015.02		01	TU 1	I	1	15–34 cm bd	-	Cocos nucifera endocarp	-	9.85	JMG	12/14/2023 15:52:32
JMG016		01	TU 1	I	1	p.p. 34 cm bd	-	Basalt shatter	1	12.9	JMG	12/14/2023 15:53:57
JMG017		01	TU 2	I	1	p.p. 28 cm bd	-	Volcanic glass shatter	1	0.34	JMG	12/14/2023 15:55:26
JMG018		01	TU 1	I	1	15–34 cm bd	-	Charcoal	-	7.34	JMG	12/14/2023 15:56:42
JMG019.01		01	TU 1	I	1	15–34 cm bd	-	Charcoal	-	1.16	JMG	12/14/2023 15:59:25
JMG019.02		01	TU 1	I	1	15–34 cm bd	-	Crustacea	-	0.02	JMG	12/14/2023 15:59:25
JMG019.03		01	TU 1	I	1	15–34 cm bd	-	Chiton sp.	-	0.34	JMG	12/14/2023 15:59:25
JMG019.04		01	TU 1	I	1	15–34 cm bd	-	Monetaria caputserpentis	-	3.71	JMG	12/14/2023 15:59:25
JMG019.05		01	TU 1	I	1	15–34 cm bd	-	Cypraeidae	-	14.53	JMG	12/14/2023 15:59:25

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
JMG019.06	_	01	TU 1	I	1	15–34 cm bd	-	Echinoidea	-	2.67	JMG	12/14/2023 15:59:25
JMG019.07		01	TU 1	I	1	15–34 cm bd	-	Echinometra mathaei	-	0.06	JMG	12/14/2023 15:59:25
JMG019.08		01	TU 1	I	1	15–34 cm bd	-	Aleurites moluccana endocarp	-	45.78	JMG	12/14/2023 15:59:25
JMG019.09		01	TU 1	I	1	15–34 cm bd	-	Littoraria pintado	-	2.15	JMG	12/14/2023 15:59:25
JMG019.10		01	TU 1	I	1	15–34 cm bd	-	Nerita picea	-	0.73	JMG	12/14/2023 15:59:25
JMG019.11		01	TU 1	I	1	15–34 cm bd	-	Cellana sp.	-	0.95	JMG	12/14/2023 15:59:25
JMG019.12		01	TU 1	I	1	15–34 cm bd	-	Colobocentrotus atratus	-	0.25	JMG	12/14/2023 15:59:25
JMG019.13		01	TU 1	I	1	15–34 cm bd	-	Sistrum ricinus	-	1.4	JMG	12/14/2023 15:59:25
JMG019.14		01	TU 1	I	1	15–34 cm bd	-	Terrestrial snail	-	0.01	JMG	12/14/2023 15:59:25
JMG019.15		01	TU 1	I	1	15–34 cm bd	-	cf. Lagenaria siceraria seed	10	0.28	JMG	12/14/2023 15:59:25
JMG019.16		01	TU 1	I	1	15–34 cm bd	-	Siphonaria sp.	-	5.43	JMG	12/14/2023 15:59:25
JMG019.17		01	TU 1	I	1	15–34 cm bd	-	Nondiagnostic gastropod	-	0.76	JMG	12/14/2023 15:59:25
JMG019.18		01	TU 1	I	1	15–34 cm bd	-	Basalt flake	5	36.64	JMG	12/14/2023 15:59:25
JMG019.19		01	TU 1	I	1	15–34 cm bd	-	Basalt shatter	9	5.8	JMG	12/14/2023 15:59:25

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
JMG019.20		01	TU 1	I	1	15–34 cm bd	-	Waterworn basalt pebble manuport	1	2.11	JMG	12/14/2023 15:59:25
JMG019.21		01	TU 1	I	1	15–34 cm bd	-	Gourd fragment	2	0.19	JMG	12/14/2023 15:59:25
JMG019.22		01	TU 1	I	1	15–34 cm bd	-	Modified gourd fragment	1	0.05	JMG	12/14/2023 15:59:25
JMG019.22		01	TU 1	I	1	15–34 cm bd	-	Cocos nucifera endocarp	1	0.34	JMG	12/14/2023 15:59:25
JMG020		01	TU 1	I	1	p.p. 29 cm bd	-	Gourd stopper with cordage	1	4.43	JMG	12/15/2023 14:18:06
JMG021		01	TU 1	I	2	p.p. 37 cm bd	-	Modified bone	1	1.28	JMG	12/15/2023 14:19:17
JMG022.01		01	TU 1	I	2	34-44 cm bd	-	Faunal remains	-	-	JMG	12/15/2023 14:21:25
JMG022.02		01	TU 1	I	2	34–44 cm bd	-	Echinometra oblonga	-	0.59	JMG	12/15/2023 14:21:25
JMG022.03		01	TU 1	I	2	34–44 cm bd	-	Volcanic glass flake	4	1.08	JMG	12/15/2023 14:21:25
JMG022.04		01	TU 1	I	2	34–44 cm bd	-	Gourd fragment	3	1.59	JMG	12/15/2023 14:21:25
JMG022.05		01	TU 1	I	2	34–44 cm bd	-	Volcanic glass shatter	2	0.57	JMG	12/15/2023 14:21:25
JMG022.05		01	TU 1	I	2	34-44 cm bd	-	Aleurites moluccana endocarp	-	0.08	JMG	12/15/2023 14:21:25
JMG023		01	TU 1	I	2	34-44 cm bd	-	Charcoal	-	2.2	JMG	12/15/2023 14:23:44
JMG024.01		01	TU 1	I	2	34–44 cm bd	-	Faunal remains	-	-	JMG	12/15/2023 14:24:49

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
JMG024.02	_	01	TU 1	I	2	34-44 cm bd	-	Echinoidea	-	0.6	JMG	12/15/2023 14:24:49
JMG024.03		01	TU 1	I	2	34-44 cm bd	-	Charcoal	-	1.49	JMG	12/15/2023 14:24:49
JMG024.04		01	TU 1	I	2	34-44 cm bd	-	Chiton sp.	-	0.16	JMG	12/15/2023 14:24:49
JMG024.05		01	TU 1	I	2	34-44 cm bd	-	cf. Lagenaria siceraria seed	3	0.09	JMG	12/15/2023 14:24:49
JMG024.06		01	TU 1	I	2	34-44 cm bd	-	Echinometra mathaei	-	0.11	JMG	12/15/2023 14:24:49
JMG024.07		01	TU 1	I	2	34-44 cm bd	-	Nerita picea	-	0.08	JMG	12/15/2023 14:24:49
JMG024.08		01	TU 1	I	2	34-44 cm bd	-	Cypraeidae	-	4.9	JMG	12/15/2023 14:24:49
JMG024.09		01	TU 1	I	2	34-44 cm bd	-	Monetaria caputserpentis	-	0.84	JMG	12/15/2023 14:24:49
JMG024.10		01	TU 1	I	2	34-44 cm bd	-	Siphonaria sp.	-	1.96	JMG	12/15/2023 14:24:49
JMG024.11		01	TU 1	I	2	34-44 cm bd	-	Aleurites moluccana endocarp	-	3.21	JMG	12/15/2023 14:24:49
JMG024.12		01	TU 1	I	2	34-44 cm bd	-	Nondiagnostic gastropod	-	0.22	JMG	12/15/2023 14:24:49
JMG024.13		01	TU 1	I	2	34-44 cm bd	-	Gourd fragment	4	0.13	JMG	12/15/2023 14:24:49
JMG024.14		01	TU 1	I	2	34-44 cm bd	-	Coral manuport	1	2.23	JMG	12/15/2023 14:24:49
JMG024.15		01	TU 1	I	2	34-44 cm bd	-	Nondiagnostic gastropod	-	1.74	JMG	12/15/2023 14:24:49

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
JMG024.16		01	TU 1	I	2	34-44 cm bd	-	Basalt flake	3	21.25	JMG	12/15/2023 14:24:49
JMG024.17		01	TU 1	I	2	34-44 cm bd	-	Seed	1	0.04	JMG	12/15/2023 14:24:49
JMG025		01	TU 2	I	1	16-29 cm bd	-	Charcoal	-	17.04	JMG	12/18/2023 16:33:42
JMG026.01		01	TU 1	I/II	3	44–54 cm bd	-	Faunal remains	-	-	JMG	12/18/2023 16:37:59
JMG026.02		01	TU 1	I/II	3	44–54 cm bd	-	Charcoal	-	1.11	JMG	12/18/2023 16:37:59
JMG026.03	_	01	TU 1	I/II	3	44–54 cm bd	-	Echinoidea	-	1.3	JMG	12/18/2023 16:37:59
JMG026.04	_	01	TU 1	I/II	3	44–54 cm bd	-	Basalt flake	1	1.61	JMG	12/18/2023 16:37:59
JMG026.05		01	TU 1	I/II	3	44–54 cm bd	-	Cypraeidae	-	5.11	JMG	12/18/2023 16:37:59
JMG026.06		01	TU 1	I/II	3	44–54 cm bd	-	cf. Lagenaria siceraria seed	1	0.01	JMG	12/18/2023 16:37:59
JMG026.07		01	TU 1	I/II	3	44–54 cm bd	-	Aleurites moluccana endocarp	-	3.54	JMG	12/18/2023 16:37:59
JMG026.08		01	TU 1	I/II	3	44–54 cm bd	-	Brachidontes crebristriatus	-	0.08	JMG	12/18/2023 16:37:59
JMG026.09		01	TU 1	I/II	3	44–54 cm bd	-	Siphonaria sp.	-	0.37	JMG	12/18/2023 16:37:59
JMG026.10		01	TU 1	I/II	3	44–54 cm bd	-	Volcanic glass flake	2	0.22	JMG	12/18/2023 16:37:59
JMG026.11		01	TU 1	I/II	3	44–54 cm bd	-	Nondiagnostic gastropod	-	0.35	JMG	12/18/2023 16:37:59

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
JMG026.12		01	TU 1	I/II	3	44–54 cm bd	-	Littoraria pintado	-	0.82	JMG	12/18/2023 16:37:59
JMG026.13		01	TU 1	I/II	3	44–54 cm bd	-	Basalt shatter	3	2.49	JMG	12/18/2023 16:37:59
JMG026.14		01	TU 1	I/II	3	44–54 cm bd	-	Seed	3	0.09	JMG	12/18/2023 16:37:59
JMG027.01		01	TU 2	I	1	16–29 cm bd	-	Charcoal	-	0.25	JMG	12/18/2023 16:41:01
JMG027.02		01	TU 2	I	1	16–29 cm bd	-	Nerita picea	-	1.01	JMG	12/18/2023 16:41:01
JMG027.03		01	TU 2	I	1	16–29 cm bd	-	Volcanic glass flake	2	1.1	JMG	12/18/2023 16:41:01
JMG027.04		01	TU 2	I	1	16–29 cm bd	-	Volcanic glass shatter	5	1.72	JMG	12/18/2023 16:41:01
JMG027.05		01	TU 2	I	1	16–29 cm bd	-	Aleurites moluccana endocarp	-	0.15	JMG	12/18/2023 16:41:01
JMG027.06		01	TU 2	I	1	16–29 cm bd	-	Cellana sp.	-	0.11	JMG	12/18/2023 16:41:01
JMG027.07		01	TU 2	I	1	16–29 cm bd	-	Drupa morum	-	0.3	JMG	12/18/2023 16:41:01
JMG027.08		01	TU 2	I	1	16–29 cm bd	-	Rapaninae	-	3.82	JMG	12/18/2023 16:41:01
JMG027.09		01	TU 2	I	1	16–29 cm bd	-	Faunal remains	-	-	JMG	12/18/2023 16:41:01
JMG027.10		01	TU 2	I	1	16–29 cm bd	-	Echinoidea	-	0.83	JMG	12/18/2023 16:41:01
JMG027.11		01	TU 2	I	1	16–29 cm bd	-	Monetaria caputserpentis	-	30.32	JMG	12/18/2023 16:41:01

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
JMG027.12		01	TU 2	I	1	16–29 cm bd	-	Brachidontes crebristriatus	-	0.21	JMG	12/18/2023 16:41:01
JMG027.13		01	TU 2	I	1	16–29 cm bd	-	Echinometra oblonga	-	0.17	JMG	12/18/2023 16:41:01
JMG027.14		01	TU 2	I	1	16–29 cm bd	-	Littoraria pintado	-	1.04	JMG	12/18/2023 16:41:01
JMG027.15		01	TU 2	I	1	16–29 cm bd	-	Pearlshell fishhook fragment	1	0.47	JMG	12/18/2023 16:41:01
JMG027.16		01	TU 2	I	1	16–29 cm bd	-	Gourd fragment	5	1.15	JMG	12/18/2023 16:41:01
JMG027.17		01	TU 2	I	1	16–29 cm bd	-	Siphonaria sp.	-	0.34	JMG	12/18/2023 16:41:01
JMG027.18		01	TU 2	I	1	16–29 cm bd	-	Aleurites moluccana endocarp	-	33.51	JMG	12/18/2023 16:41:01
JMG027.19		01	TU 2	I	1	16–29 cm bd	-	Cellana sandwicensis	-	1.23	JMG	12/18/2023 16:41:01
JMG027.20		01	TU 2	I	1	16–29 cm bd	-	Nondiagnostic gastropod	-	0.49	JMG	12/18/2023 16:41:01
JMG027.21		01	TU 2	I	1	16–29 cm bd	-	Terrestrial snail	-	0.23	JMG	12/18/2023 16:41:01
JMG027.22		01	TU 2	I	1	16–29 cm bd	-	Heterocentrotus mamillatus	-	0.13	JMG	12/18/2023 16:41:01
JMG027.23		01	TU 2	I	1	16–29 cm bd	-	Cypraeidae	-	1.79	JMG	12/18/2023 16:41:01
JMG028.01		01	TU 2	I	2	29–39 cm bd	-	Volcanic glass flake	1	0.27	JMG	12/19/2023 15:06:17
JMG028.02		01	TU 2	I	2	29–39 cm bd	-	Echinoidea	-	0.15	JMG	12/19/2023 15:06:17

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
JMG028.03		01	TU 2	I	2	29–39 cm bd	-	Monetaria caputserpentis	-	0.24	JMG	12/19/2023 15:06:17
JMG028.04		01	TU 2	I	2	29–39 cm bd	-	Cypraeidae	-	0.31	JMG	12/19/2023 15:06:17
JMG028.05		01	TU 2	I	2	29–39 cm bd	-	Nondiagnostic gastropod	-	0.11	JMG	12/19/2023 15:06:17
JMG028.06		01	TU 2	I	2	29–39 cm bd	-	Aleurites moluccana endocarp	-	0.09	JMG	12/19/2023 15:06:17
JMG028.07		01	TU 2	I	2	29–39 cm bd	-	Chiton sp.	-	0.08	JMG	12/19/2023 15:06:17
JMG028.08	_	01	TU 2	I	2	29–39 cm bd	-	Fire-cracked rock	1	10.01	JMG	12/19/2023 15:06:17
JMG028.09	_	01	TU 2	I	2	29–39 cm bd	-	Basalt flake	1	0.64	JMG	12/19/2023 15:06:17
JMG029	_	01	TU 2	I	2	29–39 cm bd	-	Charcoal	-	1.01	JMG	12/19/2023 15:07:53
JMG030		01	N/A	N/A	N/A	Surface	-	Basalt shatter	1	17.49	JMG	12/20/2023 14:52:08
JMG031	_	01	N/A	N/A	N/A	Surface	-	Basalt shatter	1	12.78	JMG	12/20/2023 14:53:50
JMG032	_	01	N/A	N/A	N/A	Surface	-	Retouched basalt flake	1	175.34	JMG	12/20/2023 14:55:24
JMG033	_	01	N/A	N/A	N/A	Surface	-	Basalt adze preform	1	28.23	JMG	12/20/2023 14:56:57
JMG034		01	TU 4	I	1	p.p. 25 cm bd	-	Waterworn basalt pebble manuport	1	82.84	JMG	12/20/2023 14:58:13
JMG035		01	TU 4	I	1	p.p. ~18 cm bd	-	Basalt shatter	1	13.24	JMG	12/20/2023 15:16:56

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
JMG036		01	TU 4	Ι	1	15–45 cm bd	-	Charcoal	-	31.52	JMG	12/21/2023 10:55:44
JMG037		01	TU 4	I	1	p.p. 35 cm bd	-	Charcoal	-	4.42	JMG	12/21/2023 10:57:13
JMG038		01	TU 4	Ι	1	p.p. 35 cm bd	-	Faunal remains	-	-	JMG	12/21/2023 11:08:52
JMG039.01		01	TU 4	I	1	15–45 cm bd	-	Basalt flake	7	155.94	JMG	12/21/2023 11:10:40
JMG039.02		01	TU 4	I	1	15–45 cm bd	-	Basalt shatter	16	125.07	JMG	12/21/2023 11:10:40
JMG039.03		01	TU 4	I	1	15–45 cm bd	-	Seed	2	0.06	JMG	12/21/2023 11:10:40
JMG039.04		01	TU 4	I	1	15–45 cm bd	-	Conus sp.	-	4.23	JMG	12/21/2023 11:10:40
JMG039.05		01	TU 4	I	1	15–45 cm bd	-	Isognomon sp.	-	0.23	JMG	12/21/2023 11:10:40
JMG039.06		01	TU 4	I	1	15–45 cm bd	-	Pinctada sp.	-	0.37	JMG	12/21/2023 11:10:40
JMG039.07		01	TU 4	I	1	15–45 cm bd	-	Cypraeidae	-	1.69	JMG	12/21/2023 11:10:40
JMG039.08		01	TU 4	I	1	15–45 cm bd	-	Coral manuport	1	2.23	JMG	12/21/2023 11:10:40
JMG039.09		01	TU 4	I	1	15–45 cm bd	-	Faunal remains	-	-	JMG	12/21/2023 11:10:40
JMG039.10		01	TU 4	I	1	15–45 cm bd	-	Charcoal	-	0.45	JMG	12/21/2023 11:10:40
JMG040.01		01	TU 4	I	2	p.p. 49 cm bd	-	Chert flake	1	1.48	JMG	12/21/2023 13:16:04

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
JMG040.02		01	TU 4	I	2	p.p. 49 cm bd	-	Hematite fragment	1	1.42	JMG	12/21/2023 13:16:04
JMG041.01		01	TU 4	I/II	2	45–55 cm bd	-	Conus sp.	-	2.26	JMG	12/21/2023 13:24:14
JMG041.02		01	TU 4	I/II	2	45–55 cm bd	-	Seed	1	0.02	JMG	12/21/2023 13:24:14
JMG041.03	_	01	TU 4	I/II	2	45–55 cm bd	-	Basalt shatter	1	2.26	JMG	12/21/2023 13:24:14
JMG041.04	_	01	TU 4	I/II	2	45–55 cm bd	-	Basalt flake	4	30.13	JMG	12/21/2023 13:24:14
JMG041.05	_	01	TU 4	I/II	2	45–55 cm bd	-	Volcanic glass flake	1	0.39	JMG	12/21/2023 13:24:14
JMG042	-	01	TU 4	I/II	2	45–55 cm bd	-	Charcoal	-	8.83	JMG	12/21/2023 13:26:24
JMG043.01	-	01	TU 5	I	1	13-40 cm bd	-	Aleurites moluccana endocarp	-	37.33	JMG	1/5/2024 14:45:46
JMG043.02	_	01	TU 5	I	1	13-40 cm bd	-	Waterworn basalt pebble manuport	3	23.29	JMG	1/5/2024 14:45:46
JMG044.01	_	01	TU 5	I	1	p.p. 33 cm bd	-	Waterworn basalt pebble manuport	1	131.13	JMG	1/5/2024 14:47:37
JMG044.02	_	01	TU 5	I	1	p.p. 33 cm bd	-	Modified basalt	1	588.2	JMG	1/5/2024 14:47:37
JMG045.01	-	01	TU 5	I	2	40-50cm bd	-	Aleurites moluccana endocarp	-	0.25	JMG	1/5/2024 14:49:55
JMG045.02		01	TU 5	I	2	40-50cm bd	-	Waterworn basalt pebble manuport	2	8.11	JMG	1/5/2024 14:49:55
JMG046.01		09	TU 7	I	1	p.p. 23 cm bd	-	Coral manuport	1	25.81	JMG	1/19/2024 14:36:20

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
JMG046.02		09	TU 7	I	1	p.p. 23 cm bd	-	Waterworn basalt pebble manuport	1	17.29	JMG	1/19/2024 14:36:20
JMG047.01		09	TU 7	I	1	12–30 cm bd	-	Faunal remains	-	-	JMG	1/19/2024 14:38:38
JMG047.02		09	TU 7	I	1	12–30 cm bd	-	Waterworn basalt pebble manuport	3	2.41	JMG	1/19/2024 14:38:38
JMG047.03		09	TU 7	I	1	12–30 cm bd	-	Seed	-	4.69	JMG	1/19/2024 14:38:38
JMG047.04		09	TU 7	I	1	12–30 cm bd	-	Waterworn basalt cobble manuport	1	55.88	JMG	1/19/2024 14:38:38
JMG047.05		09	TU 7	I	1	12–30 cm bd	-	Terrestrial snail	-	0.1	JMG	1/19/2024 14:38:38
JMG047.06		09	TU 7	I	1	12–30 cm bd	-	Charcoal	-	11.98	JMG	1/19/2024 14:38:38
JMG047.07		09	TU 7	I	1	12–30 cm bd	-	Coral manuport	5	16.21	JMG	1/19/2024 14:38:38
JMG047.08		09	TU 7	I	1	12–30 cm bd	-	Possible hematite fragment	7	4.26	JMG	1/19/2024 14:38:38
JMG047.09		09	TU 7	I	1	12-30 cm bd	-	Basalt flake	4	14.35	JMG	1/19/2024 14:38:38
JMG047.10		09	TU 7	I	1	12–30 cm bd	-	Basalt shatter	17	46.04	JMG	1/19/2024 14:38:38
JMG048		N/A	TU 8	I	2	32–39 cm bd	-	Charcoal	-	0.97	JMG	1/23/2024 8:35:03
JMG049		N/A	TU 8	II	2	35–49 cm bd	-	Charcoal	-	2.8	JMG	1/23/2024 9:52:16
JMG050		N/A	N/A	N/A	N/A	Surface	-	Glass ink well	1	100.43	JMG	1/24/2024 9:56:33

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
JMG051.01		01	TU 1	I	1	15–34 cm bd	-	Echinoidea	-	0.37	JMG	12/13/2023 0:00:00
JMG051.02		01	TU 1	I	1	15–34 cm bd	-	Echinometra oblonga	-	0.01	JMG	12/13/2023 0:00:00
JMG051.03		01	TU 1	I	1	15–34 cm bd	-	Cellana sp.	-	0.42	JMG	12/13/2023 0:00:00
JMG051.04		01	TU 1	I	1	15–34 cm bd	-	Brachidontes crebristriatus	-	0.02	JMG	12/13/2023 0:00:00
JMG051.05		01	TU 1	I	1	15–34 cm bd	-	Littoraria pintado	-	0.52	JMG	12/13/2023 0:00:00
JMG051.06		01	TU 1	I	1	15–34 cm bd	-	Faunal remains	-	-	JMG	12/13/2023 0:00:00
JMG051.07		01	TU 1	I	1	15–34 cm bd	-	cf. Lagenaria siceraria seed	11	0.13	JMG	12/13/2023 0:00:00
JMG051.08		01	TU 1	I	1	15–34 cm bd	-	Aleurites moluccana endocarp	-	10.53	JMG	12/13/2023 0:00:00
JMG051.09		01	TU 1	Ι	1	15–34 cm bd	-	Volcanic glass flake	2	0.28	JMG	12/13/2023 0:00:00
JMG051.10		01	TU 1	I	1	15–34 cm bd	-	Gourd fragment	1	0.04	JMG	12/13/2023 0:00:00
JMG051.11		01	TU 1	I	1	15–34 cm bd	-	Basalt flake	1	3.71	JMG	12/13/2023 0:00:00
JMG051.12		01	TU 1	I	1	15–34 cm bd	-	Milled wood	-	107.71	JMG	12/13/2023 0:00:00
JMG051.13		01	TU 1	I	1	15–34 cm bd	-	Human fingernail	1	0.01	JMG	12/13/2023 0:00:00
JMG051.14		01	TU 1	I	1	15–34 cm bd	-	Volcanic glass shatter	1	0.05	JMG	12/13/2023 0:00:00

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
JMG051.15		01	TU 1	I	1	15–34 cm bd	-	Basalt shatter	4	3.89	JMG	12/13/2023 0:00:00
JMG051.16	-	01	TU 1	I	1	15–34 cm bd	-	Seed	3	0.09	JMG	12/13/2023 0:00:00
JMG052.01		01	TU 2	I	1	21–26 cm bd	Feature 2	Faunal remains	-	-	JMG	12/18/2023 0:00:00
JMG052.02		01	TU 2	I	1	21–26 cm bd	Feature 2	Brachidontes crebristriatus	-	0.02	JMG	12/18/2023 0:00:00
JMG052.03		01	TU 2	I	1	21–26 cm bd	Feature 2	Cellana sp.	-	0.15	JMG	12/18/2023 0:00:00
JMG052.04		01	TU 2	I	1	21–26 cm bd	Feature 2	Echinoidea	-	0.12	JMG	12/18/2023 0:00:00
JMG052.05		01	TU 2	I	1	21–26 cm bd	Feature 2	Echinometra mathaei	-	0.03	JMG	12/18/2023 0:00:00
JMG052.06		01	TU 2	I	1	21–26 cm bd	Feature 2	Crustacea	-	0.08	JMG	12/18/2023 0:00:00
JMG052.07		01	TU 2	I	1	21–26 cm bd	Feature 2	Aleurites moluccana endocarp	-	0.12	JMG	12/18/2023 0:00:00
JMG052.08		01	TU 2	I	1	21–26 cm bd	Feature 2	Volcanic glass flake	1	0.11	JMG	12/18/2023 0:00:00
JMG052.09		01	TU 2	I	1	21–26 cm bd	Feature 2	Basalt shatter	4	0.79	JMG	12/18/2023 0:00:00
JMG052.10		01	TU 2	I	1	21–26 cm bd	Feature 2	Charcoal	-	54.3	JMG	12/18/2023 0:00:00
JMG053.01		01	TU 1	I	1	18–34 cm bd	Feature 1	cf. Lagenaria siceraria seed	8	0.13	JMG	12/13/2023 0:00:00
JMG053.02		01	TU 1	I	1	18–34 cm bd	Feature 1	Cellana sp.	-	0.08	JMG	12/13/2023 0:00:00

Cat. No.	Site No.	Surface Fea. No.	Test Unit	Layer	Level	Depth	Subsurface Fea. No.	Contents	Count	Weight (g)	Recorder	Date
JMG053.03		01	TU 1	I	1	18–34 cm bd	Feature 1	Brachidontes crebristriatus	-	0.21	JMG	12/13/2023 0:00:00
JMG053.04	_	01	TU 1	I	1	18–34 cm bd	Feature 1	Echinoidea	-	0.59	JMG	12/13/2023 0:00:00
JMG053.05	_	01	TU 1	I	1	18–34 cm bd	Feature 1	Nerita picea	-	0.09	JMG	12/13/2023 0:00:00
JMG053.06	_	01	TU 1	I	1	18–34 cm bd	Feature 1	Sistrum ricinus	-	0.96	JMG	12/13/2023 0:00:00
JMG053.07	_	01	TU 1	I	1	18–34 cm bd	Feature 1	Cypraeidae	-	0.42	JMG	12/13/2023 0:00:00
JMG053.08	_	01	TU 1	I	1	18–34 cm bd	Feature 1	Volcanic glass flake	3	0.1	JMG	12/13/2023 0:00:00
JMG053.09	_	01	TU 1	I	1	18–34 cm bd	Feature 1	Basalt shatter	4	0.81	JMG	12/13/2023 0:00:00
JMG053.10	_	01	TU 1	I	1	18–34 cm bd	Feature 1	Charcoal	-	63.62	JMG	12/13/2023 0:00:00
JMG053.11	_	01	TU 1	I	1	18–34 cm bd	Feature 1	Faunal remains	-	-	JMG	12/13/2023 0:00:00
JMG053.12		01	TU 1	I	1	18–34 cm bd	Feature 1	Echinometra mathaei	-	0.02	JMG	12/13/2023 0:00:00
JMG053.13		01	TU 1	I	1	18–34 cm bd	Feature 1	Seed	1	0.05	JMG	12/13/2023 0:00:00

# APPENDIX B: RADIOCARBON RESULTS



Center for Applied Isotope Studies

### RADIOCARBON ANALYSIS REPORT

May 7, 2024

Darby Filimoehala International Archaeology, LLC 2081 Yong Street Honolulu, HI 96826

Dear Dr. Filimoehala,

Enclosed please find the results of  $^{14}$ C Radiocarbon analyses and Stable Isotope Ratio  $\delta^{13}$ C analyses for the samples received by our laboratory on April 5, 2024.

UGAMS#	Sample ID	Material	δ <sup>13</sup> C,‰	<sup>14</sup> C age, years BP	±	рМС	±
69177	IA202241.JMG023	charcoal	-11.03	410	25	94.99	0.29
69178	IA202241.GOF030	charcoal	-10.75	170	25	97.9	0.29
69179	IA202241.GOF018	charcoal	-10.71	250	25	96.92	0.3

The charcoal sample was treated following the acid/alkali/acid (AAA) protocol involving three steps: (1) an acid treatment (1N HCl at 80°C for 1 hour) to remove secondary carbonates and acid-soluble compounds; (2) an alkali (NaOH) treatment; and (3) a second acid treatment (HCl) to remove atmospheric CO2. Sample was thoroughly rinsed with deionized water between each step, and the pretreated sample was dried at 105°C. For accelerator mass spectrometry analysis the cleaned samples were combusted at 900°C in evacuated / sealed ampoules in the presence of CuO. The resulting carbon dioxide was cryogenically purified from the other reaction products and catalytically converted to graphite using the method of Vogel *et al.* (1984) Nuclear Instruments and Methods in Physics Research B5, 289-293. Graphite <sup>14</sup>C/<sup>13</sup>C ratios were measured using the CAIS 0.5 MeV accelerator mass spectrometer. The sample ratios were compared to the ratio measured from the Oxalic Acid I (NBS SRM 4990).

The sample  $^{13}$ C/ $^{12}$ C ratios were measured separately using a stable isotope ratio mass spectrometer and expressed as  $\delta^{13}$ C with respect to PDB, with an error of less than 0.1‰.

The quoted uncalibrated dates have been given in radiocarbon years before 1950 (years BP), using the <sup>14</sup>C half-life of 5568 years. The error is quoted as one standard deviation and reflects both statistical and experimental errors. The date has been corrected for isotope fractionation.

Sincerely,

Alexander Cherkinsky, Ph.D. Senior Research Scientist

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Center for Applied Isotope Studies

### RADIOCARBON ANALYSIS REPORT

June 11, 2024

Darby Filimoehala International Archaeology, LLC 2081 Yong Street Honolulu, HI 96826

Dear Dr. Filimoehala,

Enclosed please find the results of  $^{14}$ C Radiocarbon analyses and Stable Isotope Ratio  $\delta^{13}$ C analyses for the samples received by our laboratory on May 21, 2024.

UGAMS#	Sample ID	Material	δ <sup>13</sup> C,‰	<sup>14</sup> C age, years BP	±	рМС	±
69993	IA202241.JMG019.22	charcoal	-25.25	320	20	96.1	0.26

The charcoal sample was treated following the acid/alkali/acid (AAA) protocol involving three steps: (1) an acid treatment (1N HCl at 80°C for 1 hour) to remove secondary carbonates and acid-soluble compounds; (2) an alkali (NaOH) treatment; and (3) a second acid treatment (HCl) to remove atmospheric CO2. Sample was thoroughly rinsed with deionized water between each step, and the pretreated sample was dried at 105°C. For accelerator mass spectrometry analysis the cleaned samples were combusted at 900°C in evacuated / sealed ampoules in the presence of CuO. The resulting carbon dioxide was cryogenically purified from the other reaction products and catalytically converted to graphite using the method of Vogel *et al.* (1984) Nuclear Instruments and Methods in Physics Research B5, 289-293. Graphite <sup>14</sup>C/<sup>13</sup>C ratios were measured using the CAIS 0.5 MeV accelerator mass spectrometer. The sample ratios were compared to the ratio measured from the Oxalic Acid I (NBS SRM 4990).

The sample  $^{13}$ C/ $^{12}$ C ratios were measured separately using a stable isotope ratio mass spectrometer and expressed as  $\delta^{13}$ C with respect to PDB, with an error of less than 0.1‰.

The quoted uncalibrated dates have been given in radiocarbon years before 1950 (years BP), using the <sup>14</sup>C half-life of 5568 years. The error is quoted as one standard deviation and reflects both statistical and experimental errors. The date has been corrected for isotope fractionation.

Sincerely

Alexander Cherkinsky, Ph.D. Senior Research Scientist

### APPENDIX C: BONY ELEMENTS CONSIDERED FOR FISH TAXONOMIC IDENTIFICATIONS

Neurocranium	Branchiocranium	Appendicular	Vertebral Column/Caudal	Fins and others
Basioccipital	Articular	Basipterygium	Atlas vertebra	Dorsal spine
Parasphenoid	Ceratohyal	Cleithrum	Anterior vertebra	Dorsal spine and pterygiophore
Posttemporal	Dentary	Coracoid	Posterior vertebra	Pterygiophore
Vomer	Epihyal	Scapula	Antepenultimate	Ray
	Hyomandibular	Supracleithrum	Penultimate	Rib
	Maxilla		Ultimate vertebra	Scale
	Opercular		Hypural	
	Palatine			
	Premaxilla			
	Preopercular			
	Quadrate			
	Urohyal			

Scientific Name	Common Name	Element(s)	Average Number Per Fish
Acanthuridae	Surgeonfish	1st dorsal ptery. and spine 1st ventral ptery. and spine Caudal peduncular spine Caudal peduncular keel (Naso sp.)	1 1 2–4 2
Anguilliformes	Eel	Premaxillo-ethmo-vomer	1
Balistidae	Triggerfish	1st dorsal spine 2nd dorsal spine Pterygial carina Scale Teeth	1 1 1 ? 14
Carangidae	Jack, Pompano, Jack Mackerel, Runner, and Scad	Scute	27
Diodontidae	Porcupinefish	Dermal spine (burr)	250
Elasmobranchii	Shark	Teeth, vertebra	100, 70
	Ray	Dental plate, spine	2, 2
Holocentridae	Squirrelfish, Soldierfish	Anal spine	1
Labridae	Wrasse	Lower pharyngeal	1
	_	Upper pharyngeal	2
Lethrinidae	Emperor	Teeth	48
Monacanthidae Ostraciidae	Filefish Boxfish, Cofferfish, Cowfish and Trunkfish	1st dorsal spine Scale	1 150
Scaridae	Parrotfish	4th epibranchial Lower pharyngeal Upper pharyngeal	2 1 2
Scombridae	Mackerel, Tuna, and Bonito	Keel Urostyle (fused hypurals)	2–3 1

# APPENDIX D: EDXRF DATA

## **EDXRF Analysis Report**

### UHH Geoarchaeology Lab

Sample List: basalt vg and hematite

Analysis Technique: Linear

Method File: C:\...\Methods\10-21 Methods\10-21-Kauai PMRF KPGO IARII 202241.mth **Analyzed:** 06/27/24 10:54:22 Last Calibrated: 10/01/21 09:15:16

Software version: 7.2 (Build 134)

#### **Conditions**

High	n Zb			
	Voltage Livetime	50 kV 250 seconds	Current Counts Limit	Auto 0
	Filter	Cu Thick	Atmosphere	Vacuum
	Maximum Energy	40 keV	Count Rate	Medium
	Warmup time	0 seconds		
Mid	Za			
	Voltage	16 kV	Current	Auto
	Livetime	200 seconds	Counts Limit	0
	Filter	Pd Thin	Atmosphere	Vacuum
	Maximum Energy	20 keV	Count Rate	Medium
	Warmup time	0 seconds		
Mid	Zc			
	Voltage	28 kV	Current	Auto
	Livetime	250 seconds	Counts Limit	0
	Filter	Pd Thick	Atmosphere	Vacuum
	Maximum Energy	40 keV	Count Rate	Medium
	Warmup time	0 seconds		
Low	Za			
	Voltage	6 kV	Current	Auto
	Livetime	200 seconds	Counts Limit	0
	Filter	No Filter	Atmosphere	Vacuum
	Maximum Energy	10 keV	Count Rate	Medium
	Warmup time			

### Results

Element	Concentration	Peak (cps/mA)	Background (cps/mA)
JMG-001 PMRF si	ite IA Feature 0°	surface polished	and grooved hematite sinker 56.79g
Na2O	1 %	-10	156
MgO	1.6573 %	604	348
Al2O3	10.2037 %	9360	-9
SiO2	39.6903 %	40835	-2080
P2O5	0.4044 %	3405	-52
S	1126.6 ppm	3106	443
K2O	0.2856 %	173	106
CaO	0.8407 %	357	109
TiO2	0.8034 %	1403	646
V	152.7 ppm	98	413
Cr	493.3 ppm	366	335
MnO	[-20.0] ppm	43	601
Fe	17.766 %	207917	3691
Ni	10.9 ppm	24	48
Cu	59.8 ppm	9	14
Zn	172.9 ppm	29	9
Rb	231.9 ppm	223	247
Sr	97.2 ppm	108	22
Υ	0 ppm	0	56
Zr	88.3 ppm	104	94
Nb	6.2 ppm	7	147
Мо	0 ppm	0	241
Ва	32 ppm	5	87
La	0 ppm	0	119
Ce	[24] ppm	2	140

Pb 7.3 ppm 2 10 JMG-032 PMRF site IA Feature 01 surface large unpolished basalt flake pa 175.34g 3 % 205 Na2O -32 MgO 3.710 % 1019 509 Al2O3 14.7612 % -455 21293 SiO2 51.874 % 111934 -5911 5567 P205 0.7693 % -517 S 722.8 ppm 2143 1004 K20 2.738 % 534 13 CaO 8.472 % 2729 -77 TiO2 3.1826 % 53 1815 ٧ 166.5 ppm 34 344 Cr 0 ppm 0 79 MnO 1947.8 ppm 475 80 7.675 % Fe 31284 409 Ni 10.0 ppm 7 24 22 Cu 19.6 ppm 10 140.7 ppm Zn 60 19 60.17 ppm Rb 154 58 3825 Sr 1307.9 ppm 43 Υ 38.27 ppm 112 161 Zr 307.9 ppm 799 1030 Nb 88.3 ppm 292 342 624 Мо 3.0 ppm 10 Ва 863.2 ppm 518 227 109 ppm 34 338 La 216 ppm 53 389 Ce Pb 5.52 ppm 5 18 JMG-019.18 PMRF site IA Feature EVZ 002 TU1 Layer I-1 15-34cmbd basalt flake dense medium grained with some primary cortex qa 34.62g Na2O 5 % -51 257 MgO 3.109 % 995 613 Al2O3 15.970 % 26748 -923 SiO2 52.311 % 121639 -6807 P205 0.7305 % 5337 -518 S 717.5 ppm 2131 1260 K20 2.5742 % 548 13 CaO 7.926 % 2779 -83 TiO2 2.9462 % 53 1835 154.5 ppm 35 364 Cr 0 85 0 ppm MnO 1862.3 ppm 497 83 7.943 % 35229 450 Fe Ni 8.4 ppm 6 25 Cu 23.8 ppm 12 21 Zn 126.6 ppm 57 17 150 62 Rb 55.50 ppm 3992 Sr 1294.3 ppm 45 Υ 46.18 ppm 143 164 Zr 287.9 ppm 1013 844 Nb 84.3 ppm 294 361 Мо [1.3] ppm 4 645 Ва 956.7 ppm 585 233 37 353 La 115 ppm Ce 187 ppm 46 418 Pb 5 5.14 ppm 20 JMG-033 PMRF site IA Feature EVZ 002 surface basalt small adze preform da 28.23 Na<sub>2</sub>O 2 % -15 149 4.379 % 1541 306 MgO Al203 12.9818 % 17417 -548 SiO2 48.253 % 97999 -5273 P205 0.5886 % 4496 -287 2289.5 ppm 5880 735 K20 0.8127 % 172 33 CaO 10.905 % 3868 -162 TiO2 2.2153 % 1368 88

250

75

334.2 ppm

```
Cr
                  271.7 ppm
                                    71
                                                      82
    MnO
                  1655.0 ppm
                                    441
                                                      94
    Fe
                  8.897 %
                                    38648
                                                      523
                                    79
    Ni
                  104.8 ppm
                                                      19
    Cu
                  44.2 ppm
                                    18
                                                      20
    Zn
                  146.8 ppm
                                    61
                                                      13
    Rb
                  16.48 ppm
                                    44
                                                      51
                  523.0 ppm
                                    1470
                                                      49
    Sr
    Υ
                  24.27 ppm
                                    68
                                                      125
                  109.0 ppm
                                    328
                                                      428
    Zr
    Nb
                  24.61 ppm
                                    78
                                                      326
                  [0.8] ppm
                                    3
                                                      552
    Мо
    Ва
                  307.4 ppm
                                    160
                                                      230
    La
                  46 ppm
                                    13
                                                      322
    Ce
                  90 ppm
                                    19
                                                      378
    Pb
                  1.70 ppm
                                                      16
                                    1
GOF-020.04 PMRF Site IA
                            Feature EVZ 006 TU10 Layer I-1 7-20cmbd polished basalt flake pa 67.66g
                  3 %
    Na2O
                  4.747 %
                                    1983
                                                      389
    MgO
    Al2O3
                  13.8259 %
                                    23679
                                                      -800
    SiO2
                  48.681 %
                                    116722
                                                      -6033
    P205
                  0.2682 %
                                                      -140
                                    2597
    S
                  263.5 ppm
                                    1048
                                                      1524
    K20
                  0.5683 %
                                    119
                                                      38
    CaO
                  12.821 %
                                    4545
                                                      -195
                                                      86
    TiO2
                  2.1220 %
                                    1300
                  289.0 ppm
                                    64
                                                      244
    Cr
                  261.7 ppm
                                    67
                                                      78
    MnO
                  1732.9 ppm
                                    457
                                                      92
                  9.001 %
                                    38747
                                                      489
    Fe
    Ni
                  106.5 ppm
                                    80
                                                      20
                  22.9 ppm
    Cu
                                                      21
                                    11
    Zn
                  118.3 ppm
                                    49
                                                      13
    Rb
                  14.91 ppm
                                    42
                                                      52
    Sr
                  547.4 ppm
                                    1586
                                                      46
    Ÿ
                  24.26 ppm
                                    70
                                                      127
    Zr
                  114.2 ppm
                                    356
                                                      439
                  24.57 ppm
                                    80
                                                      334
    Nb
    Мо
                  [2.3] ppm
                                                      559
                                    7
                                    176
                                                      232
    Ва
                  330.8 ppm
    La
                  40 ppm
                                    11
                                                      336
    Се
                  90 ppm
                                    20
                                                      395
    Pb
                  [0.02] ppm
                                    0
                                                      18
GOF-026 PMRF Site IA Feature EVZ 006 TU10 Layer I-2 19cmbd polished shatter da azdze turned to fcr 92.02g
    Na<sub>2</sub>O
                  3 %
                                    -22
                                                      151
    MgO
                  8.031 %
                                    1691
                                                      325
    Al2O3
                  14.4726 %
                                    16712
                                                      -477
                  50.520 %
                                                      -4283
    SiO2
                                    84240
    P205
                  0.1224 %
                                    1733
                                                      16
    S
                  264.4 ppm
                                    1050
                                                      1114
    K20
                  0.7071 %
                                    106
                                                      34
                  11.979 %
                                                      -125
    CaO
                                    3035
                                    1050
    TiO2
                  2.3903 %
                                                      67
                  319.4 ppm
                                                      197
    V
                                    51
    Cr
                  292.3 ppm
                                    54
                                                      66
    MnO
                  1695.7 ppm
                                    321
                                                      81
                  9.187 %
                                    28275
                                                      404
    Fe
    Ni
                  99.8 ppm
                                    54
                                                      15
    Cu
                  30.8 ppm
                                    10
                                                      14
                                    43
                                                      10
    Zn
                  138.5 ppm
    Rb
                  14.51 ppm
                                    30
                                                      39
    Sr
                  505.9 ppm
                                    1084
                                                      34
    Υ
                  23.06 ppm
                                    50
                                                      92
    Zr
                  105.4 ppm
                                    241
                                                      310
    Nb
                  24.51 ppm
                                    59
                                                      241
                                                      419
    Мо
                  [0.2] ppm
                                    1
    Ва
                  290.4 ppm
                                    126
                                                      198
                                    0
                                                      286
    La
                  [1] ppm
```

```
Се
                  [37] ppm
                                    7
                                                      334
    Pb
                  [0.86] ppm
                                    1
                                                      13
JMG-026.10a PMRF site IA
                           Feature EVZ 002 TU1 Layer I-II-3 44-54cmbd vg 0.1g small
    Na2O
                  3 %
                                    -14
                 3.0690 %
    MgO
                                    1123
                                                      153
                  12.1338 %
    Al2O3
                                    7442
                                                      19
    SiO2
                 48.562 %
                                    52417
                                                      -2354
    P205
                 0.0430 %
                                    1263
                                                      276
                 978.5 ppm
                                                      721
    S
                                    2753
    K20
                 0.4935 %
                                    32
                                                      8
    CaO
                  10.230 %
                                    1116
                                                      -54
    TiO2
                 2.3850 %
                                    455
                                                      17
    V
                 304.1 ppm
                                    21
                                                      76
    Cr
                 288.8 ppm
                                    23
                                                      18
    MnO
                  1574 ppm
                                    130
                                                      19
                                    11052
    Fe
                 8.156 %
                                                      135
    Ni
                 87.9 ppm
                                    20
                                                      7
                  129.4 ppm
                                    19
                                                      5
    Cu
                 271.8 ppm
                                                      3
    Zn
                                    45
    Rb
                                                      17
                 6.17 ppm
                                    7
    Sr
                  291.5 ppm
                                    315
                                                      17
                 27.06 ppm
    Υ
                                    29
                                                      49
    Zr
                  137.5 ppm
                                    163
                                                      124
    Nb
                  14.0 ppm
                                                      133
                                    17
    Мо
                 [1.7] ppm
                                    2
                                                      219
                                    4
                 50 ppm
                                                      39
    Ва
                 64 ppm
                                    3
                                                      47
    La
    Се
                 [29] ppm
                                                      54
                                    1
    Pb
                  1.54 ppm
                                    0
                                                      5
JMG-026.10b PMRF site IA
                             Feature EVZ 002 TU1 Layer I-II-3 44-54cmbd vg 0.1g small
                 2 %
    Na2O
                                                      126
                                    -12
    MgO
                  1.9671 %
                                    656
                                                      183
    Al2O3
                  11.0333 %
                                    4591
                                                      176
    SiO2
                 44.617 %
                                    31403
                                                      -1160
    P205
                 0.00570 %
                                    1042
                                                      520
                  1312.4 ppm
                                    3550
                                                      636
                 0.6460 %
    K20
                                    30
                                                      5
    CaO
                 9.223 %
                                    710
                                                      -35
                 2.3636 %
    TiO2
                                    320
                                                      14
                 256 ppm
                                    13
                                                      56
    Cr
                 364.2 ppm
                                    21
                                                      15
    MnO
                  1524 ppm
                                    89
                                                      20
    Fe
                  7.951 %
                                    7675
                                                      104
    Ni
                  118.0 ppm
                                    20
                                                      5
                  116.8 ppm
    Cu
                                    13
                                                      4
    Zn
                 342.3 ppm
                                    43
                                                      2
                                    5
                                                      11
    Rb
                 5.10 ppm
                 252.7 ppm
                                    206
    Sr
                                                      15
    Υ
                 24.75 ppm
                                    20
                                                      36
                                    108
                                                      88
    Zr
                  122.0 ppm
    Nb
                  10.0 ppm
                                    9
                                                      100
                                    0
    Мо
                 0 ppm
                                                      164
                 71 ppm
    Ва
                                    5
                                                      30
                                    0
                                                      40
    La
                 0 ppm
    Ce
                  [70] ppm
                                    2
                                                      44
                                    0
    Pb
                 [0.32] ppm
                                                      4
JMG-040.02 PMRF Site IA
                            Feature EVZ 002 TU4 Layer I-2 49cmbd hematite fragment 1.42g
    Na<sub>2</sub>O
                 0 %
                                                      83
                                    0
    MgO
                  1.4532 %
                                    334
                                                      278
    Al203
                  18.608 %
                                    17909
                                                      -840
    SiO2
                  47.657 %
                                    43550
                                                      -2429
    P205
                 0.03645 %
                                    1224
                                                      86
                 555.9 ppm
                                    1745
                                                      225
    K20
                 0.1002 %
                                    18
                                                      34
                                                      29
    CaO
                 0.9942 %
                                    155
    TiO2
                  4.3093 %
                                    2272
                                                      87
                 316 ppm
                                    60
                                                      395
```

```
Cr
                  670.9 ppm
                                    148
                                                      96
    MnO
                  2978 ppm
                                    662
                                                      130
    Fe
                  13.815 %
                                    48929
                                                      721
    Ni
                                                      12
                  113.6 ppm
                                    73
    Cu
                  199.2 ppm
                                    34
                                                      11
                                    26
    Zn
                  134.2 ppm
                                                      7
    Rb
                  27.14 ppm
                                    33
                                                      52
                  158.5 ppm
                                    209
                                                      24
    Sr
    Υ
                  17.56 ppm
                                    23
                                                      64
                  392.8 ppm
    Zr
                                    599
                                                      120
    Nb
                  55.2 ppm
                                    82
                                                      158
                  0 ppm
                                    0
                                                      289
    Мо
    Ва
                  131 ppm
                                    26
                                                      95
    La
                  [32] ppm
                                    3
                                                      130
    Ce
                  103 ppm
                                    9
                                                      151
                                                      7
    Pb
                  9.57 ppm
                                    4
JMG-041.05 PMRF Site IA
                            Feature EVZ 002 TU4 Layer I-II-2 45-55cmbd vg 0.39g
                  2 %
    Na2O
                  3.885 %
                                    1330
                                                      203
    MgO
    Al2O3
                  12.5733 %
                                                      -161
                                    9576
    SiO2
                  48.805 %
                                    61650
                                                      -3038
    P205
                  0.0631 %
                                                      216
                                    1382
    S
                  613.4 ppm
                                    1882
                                                      835
                  0.3952 %
    K20
                                                      17
                                    36
    CaO
                  9.807 %
                                    1503
                                                      -59
    TiO2
                                    642
                                                      35
                  2.3902 %
                  298.4 ppm
                                    29
                                                      114
    Cr
                  356.3 ppm
                                    40
                                                      36
    MnO
                  1494.7 ppm
                                    174
                                                      46
                  8.389 %
                                    15946
                                                      224
    Fe
    Ni
                  125.6 ppm
                                    41
                                                      9
    Cu
                                    24
                                                      9
                  115.2 ppm
    Zn
                  187.3 ppm
                                    43
                                                      6
    Rb
                  7.25 ppm
                                    12
                                                      23
    Sr
                  280.1 ppm
                                    426
                                                      25
    Ÿ
                                                      65
                  28.14 ppm
                                    43
    Zr
                  132.3 ppm
                                    220
                                                      168
    Nb
                                    18
                                                      179
                  10.8 ppm
    Мо
                  0 ppm
                                    0
                                                      302
                  92 ppm
                                    18
                                                      80
    Ва
    La
                  [28] ppm
                                    3
                                                      109
    Се
                  [44] ppm
                                    4
                                                      124
    Pb
                  [0.85] ppm
                                    0
                                                      8
JMG-047.08 PMRF Site IA
                            Feature EVZ 006 TU7 Layer I-1 12-30cmbd multiple poss hematite frags 4.26g
    Na<sub>2</sub>O
                  1 %
                                    -4
                                                      81
    MgO
                  2.569 %
                                    458
                                                      302
    Al2O3
                  17.113 %
                                    15666
                                                      -514
                  52.915 %
                                    64259
                                                      -3496
    SiO2
                  0.0743 %
    P205
                                    1448
                                                      95
    S
                                    1330
                                                      656
                  381.8 ppm
    K20
                  0.9198 %
                                    155
                                                      21
                  1.7396 %
                                                      21
    CaO
                                    366
                                    1686
    TiO2
                  3.4147 %
                                                      75
                  407.2 ppm
                                                      293
    V
                                    73
                  983.7 ppm
    Cr
                                    204
                                                      74
    MnO
                                                      129
                  665.9 ppm
                                    151
                  11.138 %
                                    37678
                                                      501
    Fe
    Ni
                  351.8 ppm
                                    212
                                                      3
                  72.5 ppm
200.4 ppm
    Cu
                                    22
                                                      20
                                    66
                                                      7
    Zn
    Rb
                  22.89 ppm
                                    46
                                                      44
    Sr
                  111.03 ppm
                                    239
                                                      37
    Υ
                  21.39 ppm
                                    46
                                                      93
    Zr
                  190.9 ppm
                                    463
                                                      169
    Nb
                  21.77 ppm
                                    53
                                                      238
                                                      423
    Мо
                  0 ppm
                                    0
    Ва
                  109.2 ppm
                                    41
                                                      167
                                    6
                                                      226
    La
                  [28] ppm
```

```
Се
                  59 ppm
                                    9
                                                      259
                                    10
    Pb
                  15.31 ppm
                                                      10
JMG-051.11 PMRF Site IA
                            Feature EVZ 002 TU1 Layer I-1 15-34cmbd basalt flake pa 3.71g
    Na<sub>2</sub>O
                  5 %
                                    -46
                  3.168 %
    MgO
                                    1181
                                                      487
    Al2O3
                  15.039 %
                                    22841
                                                      -650
    SiO2
                                    114563
                                                      -6216
                  51.798 %
    P205
                  0.6973 %
                                    5140
                                                      -475
                  622.0 ppm
                                                      1029
                                    1903
    S
    K20
                  2.4972 %
                                    503
                                                      10
    CaO
                  7.626 %
                                    2523
                                                      -71
    TiO2
                  3.0050 %
                                    1772
                                                      50
    V
                  184.4 ppm
                                    39
                                                      334
    Cr
                  0 ppm
                                    0
                                                      76
    MnO
                  1894.7 ppm
                                    478
                                                      74
    Fe
                  7.755 %
                                    32648
                                                      411
    Ni
                  6.6 ppm
                                    5
                                                      24
                  20.7 ppm
                                                      20
    Cu
                                    10
                                    62
    Zn
                  141.5 ppm
                                                      16
    Rb
                  57.01 ppm
                                    150
                                                      58
    Sr
                  1293.8 ppm
                                    3864
                                                      46
    Υ
                  37.69 ppm
                                    113
                                                      160
    Zr
                  289.4 ppm
                                    987
                                                      838
                                    288
                                                      344
    Nb
                  85.3 ppm
    Мо
                  0 ppm
                                    0
                                                      626
                  941.6 ppm
                                    521
                                                      212
    Ва
                  107 ppm
                                    31
                                                      316
    La
    Се
                  214 ppm
                                    48
                                                      365
    Pb
                  4.95 ppm
                                    4
                                                      19
GOF-011.02tip PMRF Site IA
                               Feature EVZ 006 TU07 Layer I-1 12-80cmbd polished basalt file tip 5.1g
    Na2O
                  2 %
                                                      159
                                    -21
    MgO
                  3.509 %
                                    1280
                                                      288
    Al2O3
                  13.7804 %
                                    18111
                                                      -593
    SiO2
                  50.420 %
                                    102137
                                                      -5403
                                                      -334
    P205
                  0.2997 %
                                    2784
    S
                  1540.7 ppm
                                    4094
                                                      577
                  0.8258 %
    K20
                                                      25
                                    153
    CaO
                  9.962 %
                                    3086
                                                      -137
    TiO2
                  2.7739 %
                                    1505
                                                      53
                  342.0 ppm
                                    67
                                                      254
    Cr
                  234.2 ppm
                                    53
                                                      62
    MnO
                  1482.8 ppm
                                    349
                                                      72
                                    30591
                  7.910 %
                                                      386
    Fe
    Ni
                  99.4 ppm
                                    66
                                                      18
                  118.4 ppm
    Cu
                                    43
                                                      17
    Zn
                  132.1 ppm
                                    52
                                                      12
                                    28
                                                      44
    Rb
                  10.13 ppm
                                    982
                                                      49
    Sr
                  360.8 ppm
    Υ
                  33.73 ppm
                                    92
                                                      113
    Zr
                  144.1 ppm
                                    431
                                                      336
    Nb
                  15.27 ppm
                                    46
                                                      309
    Мо
                  0 ppm
                                    0
                                                      530
    Ва
                  126.8 ppm
                                    59
                                                      217
    La
                  50 ppm
                                    13
                                                      291
    Ce
                  55 ppm
                                    11
                                                      349
                                    2
    Pb
                  1.91 ppm
                                                      15
GOF-011.02base PMRF Site IA
                                 Feature EVZ 006 TU07 Layer I-1 12-80cmbd polished basalt file base 8.6g
    Na<sub>2</sub>O
                  2 %
                                    -19
                                                      150
                  4.946 %
                                    1268
                                                      420
    MgO
    Al203
                  14.6793 %
                                    21495
                                                      -727
    SiO2
                  51.192 %
                                    109600
                                                      -5787
    P205
                  0.1527 %
                                    1913
                                                      36
                  407.7 ppm
                                    1392
                                                      1216
    K20
                  0.7832 %
                                    142
                                                      32
    CaO
                  9.970 %
                                    3021
                                                      -127
    TiO2
                  2.9421 %
                                    1562
                                                      56
                  353.4 ppm
                                    68
                                                      268
```

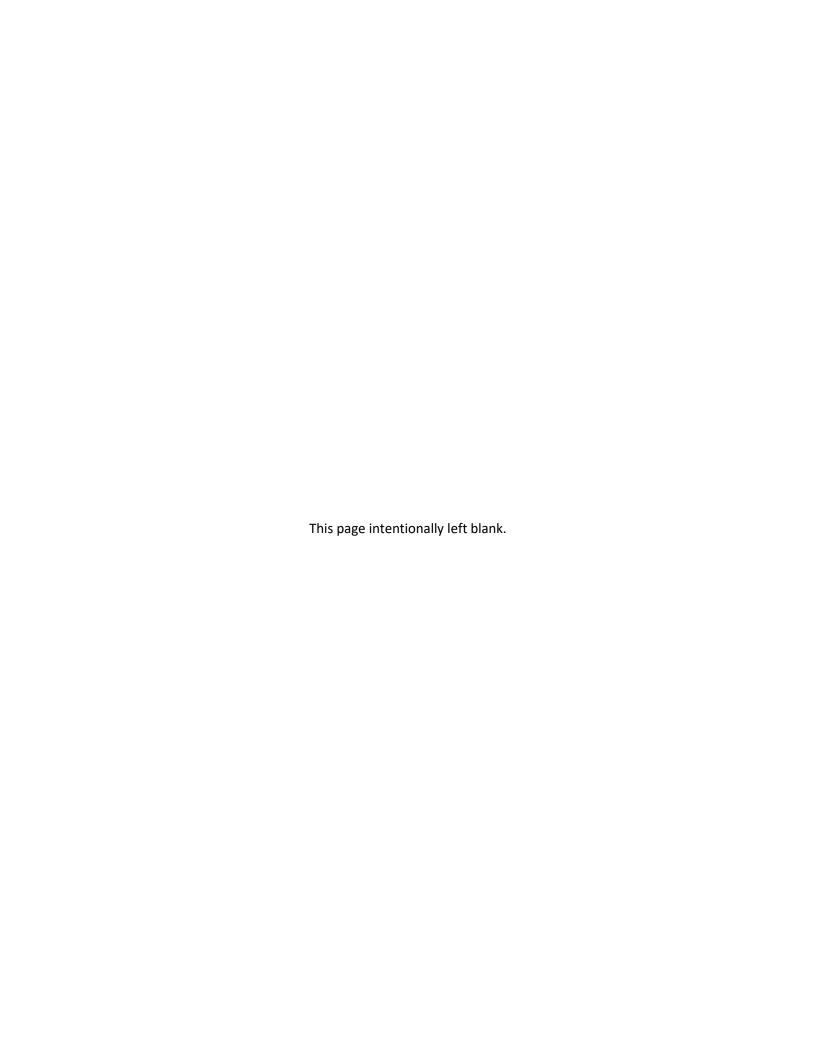
```
Cr
                 210.0 ppm
                                    47
                                                      70
    MnO
                  1650.4 ppm
                                    378
                                                      80
    Fe
                 8.205 %
                                    30895
                                                      452
                                                      17
    Ni
                  110.9 ppm
                                    72
    Cu
                  119.7 ppm
                                    43
                                                      17
                                    54
    Zn
                  136.4 ppm
                                                      11
    Rb
                  10.60 ppm
                                    29
                                                      45
                 354.5 ppm
                                    961
                                                      50
    Sr
    Υ
                 32.57 ppm
                                    89
                                                      114
                  142.5 ppm
                                    425
                                                      331
    Zr
    Nb
                  14.16 ppm
                                    43
                                                      314
                 0 ppm
                                    0
                                                      533
    Мо
    Ва
                  127.6 ppm
                                    61
                                                      220
                                                      304
    La
                 42 ppm
                                    11
    Ce
                 71 ppm
                                    14
                                                      359
                                    2
    Pb
                 2.21 ppm
                                                      15
GOF 020.09 PMRF Site IA
                            Feature EVZ 006 TU10 Layer I-1 7-20cmbd Hematite shatter qa 1.0g
                  1 %
    Na2O
                 3.184 %
                                    625
                                                      222
    MgO
    Al2O3
                  15.315 %
                                    13996
                                                      -231
    SiO2
                 54.341 %
                                    78134
                                                      -3888
    P205
                 0.0289 %
                                    1179
                                                      56
    S
                 299.7 ppm
                                    1134
                                                      914
    K20
                  1.0703 %
                                    122
                                                      10
    CaO
                  1.8168 %
                                    262
                                                      12
                 4.1159 %
    TiO2
                                    1372
                                                      40
                  478 ppm
                                    57
                                                      227
                  1447.6 ppm
    Cr
                                    202
                                                      44
    MnO
                 294.6 ppm
                                    51
                                                      95
                  11.301 %
                                    25753
                                                      316
    Fe
    Ni
                 336.3 ppm
                                    137
                                                      3
    Cu
                 63.6 ppm
                                                      8
                                    9
    Zn
                  173.6 ppm
                                    26
                                                      3
    Rb
                  18.45 ppm
                                    17
                                                      17
    Sr
                  153.3 ppm
                                    153
                                                      14
    Ÿ
                                                      42
                  17.40 ppm
                                    17
    Zr
                 201.0 ppm
                                    226
                                                      84
    Nb
                                    26
                 23.1 ppm
                                                      112
    Мо
                 0 ppm
                                    0
                                                      195
                  149 ppm
                                    20
                                                      58
    Ва
    La
                  [3] ppm
                                    0
                                                      82
    Се
                  [62] ppm
                                    3
                                                      91
    Pb
                  17.96 ppm
                                    5
                                                      4
GOF-022.06a PMRF site IA
                             TU10 Layer I-2 20-30cmbd poss hematite frag 2.5g
    Na<sub>2</sub>O
                  1 %
                                    -4
                                                      77
    MgO
                 2.465 %
                                    409
                                                      295
    AI2O3
                  16.297 %
                                    14315
                                                      -370
    SiO2
                 50.869 %
                                    56992
                                                      -3075
                 0.1398 %
    P205
                                    1836
                                                      102
    S
                 556.4 ppm
                                    1746
                                                      695
    K20
                  1.0871 %
                                    184
                                                      18
                  1.8696 %
                                                      22
    CaO
                                    406
                                    1661
    TiO2
                 3.3571 %
                                                      68
                 371.8 ppm
                                    66
                                                      289
    V
    Cr
                  1027.5 ppm
                                    213
                                                      76
                 926.3 ppm
    MnO
                                    205
                                                      132
                  10.845 %
                                    36866
                                                      456
    Fe
    Ni
                                    205
                 339.0 ppm
                                                      4
    Cu
                  84.2 ppm
                                    25
                                                      18
                  173.5 ppm
                                    57
                                                      8
    Zn
    Rb
                  19.95 ppm
                                    41
                                                      42
                  130.96 ppm
    Sr
                                    287
                                                      37
    Υ
                 27.37 ppm
                                    60
                                                      95
    Zr
                  179.3 ppm
                                    439
                                                      182
    Nb
                  19.74 ppm
                                    48
                                                      248
                                    0
                                                      427
    Мо
                 0 ppm
    Ва
                  141.4 ppm
                                    53
                                                      178
                                                      238
                 40 ppm
                                    8
    La
```

	Ce Pb	61 ppm 13.05 ppm	10 8	280 9
GOF	F-022.06b PMR	RF site IA TU 10	Laver I-2 20-30cml	od poss hematite frag 1.8g
	Na2O	1 %	-7	109
	MgO	3.191 %	855	288
	Al2O3	14.9710 %	15905	-486
	SiO2	54.531 %	94334	-5078
	P2O5	0.1887 %	2126	-149
	S	482.2 ppm	1570	675
	K2O	0.7579 %	139	21
	CaO	1.7535 %	403 1828	19 84
	TiO2 V	3.4052 %		314
	v Cr	417.8 ppm 1023.2 ppm	81 230	76
	MnO	271.8 ppm	78	144
	Fe	11.717 %	42895	519
	Ni	303.8 ppm	199	3
	Cu	57.7 ppm	16	18
	Zn	263.0 ppm	79	7
	Rb	25.42 ppm	45	43
	Sr	95.37 ppm	185	35
	Υ	18.28 ppm	36	89
	Zr	195.8 ppm	430	154
	Nb	21.3 ppm	47	226
	Mo	0 ppm	0	390
	Ba	49.0 ppm	13	133
	La	0 ppm	0	180
	Ce Pb	55 ppm 19.09 ppm	7 11	207 9
	FU	тэ.оэ ррпп	11	9
GOE	F-022.06c PMR	F site IA 008 TU 10	Laver I-2 20-30cmb	od poss hematite frag 0.5g
٠٠.	Na2O	1 %	-4	55
	MgO	2.409 %	317	199
	Al2O3	16.369 %	10941	-355
	SiO2	50.567 %	42309	-2283
	P2O5	0.03833 %	1235	138
	S	385.2 ppm	1338	580
	K20	1.717 %	20	0
	CaO	2.782 %	46	1
	TiO2	5.357 %	181	4
	V	527 ppm	6	31
	Cr MnO	1788 ppm	25 17	5
	MnO Fe	1164 ppm 16.769 %	3745	11 39
	Ni	520.2 ppm	21	-1
	Cu	89.5 ppm	2	1
	Zn	424.1 ppm	11	0
	Rb	13.7 ppm	2	2
	Sr	132.2 ppm	23	2
	Υ	19.9 ppm	3	7
	Zr	184.8 ppm	36	14
	Nb	17.4 ppm	3	20
	Мо	[0.3] ppm	0	34
	Ba	171 ppm	4	10
	La	[4] ppm	0	13
	Ce	[72] ppm	1	15
	Pb	14.9 ppm	1	1
GOI	F-023.10 PMRF	site IA 008 Feature	e EVZ 006 TU 10 l a	yer I-2 Feature 1 19-32cmbd polished basalt shatter 0.14g very
JJ.	small	2.10 II. 000 I calar		ye catalo . To caemba pendida badan dilatto dilatg foly
	Na2O	3 %	-12	110
	MgO	1.6196 %	376	197
	Al2O3	11.5001 %	4286	101
	SiO2	43.3155 %	21351	-746
	P2O5	[0.00091] %	1013	488
	S	904.0 ppm	2576	688
	K2O	0.7035 %	25	6
	CaO	10.305 %	608	-31 -11
	TiO2	2.3664 %	244	11

V Cr MnO Fe Ni Cu Zn Rb Sr Y Zr Nb Mo Ba La Ce Pb	251 ppm 143.8 ppm 1554 ppm 8.001 % 85.8 ppm 43.6 ppm 367.7 ppm 9.84 ppm 422.0 ppm 19.1 ppm 90.5 ppm 16.7 ppm [0.8] ppm 262 ppm [3] ppm [59] ppm [0.57] ppm	9 6 69 5871 11 4 40 7 293 13 66 13 1 22 0 2	44 13 13 75 4 3 2 10 10 32 93 85 137 33 47 52 3
BHVO-2 slab 6-	11-24.1		
Na2O	2 %	-21	172
MgO	6.789 %	2197	399
Al2O3	13.2749 %	18257	-486
SiO2	50.560 %	114518	-5956
P2O5	0.1841 %	2099	-5
S	463.2 ppm	1524	1208
K2O	0.5961 %	120	38
CaO	11.268 %	3795	-157
TiO2	2.7255 %	1598	73
V	351.1 ppm	74	279
Cr	275.9 ppm	68	79
MnO	1592.1 ppm	403	93
Fe	8.455 %	35032	422
Ni	110.4 ppm	79	19
Cu	112.4 ppm	43	18
Zn	118.2 ppm	48	16
Rb	10.87 ppm	31	48
Sr	386.0 ppm	1097	47
Υ	25.70 ppm	73	127
Zr	181.4 ppm	576	357
Nb	18.60 ppm	59	329
Мо	2.9 ppm	9	576
Ва	143.3 ppm	74	233
La	34 ppm	10	317
Ce	78 ppm	17	366
Pb	3.06 ppm	3	16
. ~	-100 PP	•	. •







Cultural Impact Assessment for Pacific Missile Range Facility (PMRF) and Kōke'e Park Geophysical Observatory (KPGO) Real Estate Environmental Impact Statement, Ahupua'a of Waimea, Kona Moku, Mokupuni of Kaua'i



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INTERNATIONAL ARCHAEOLOGY, LLC
OCTOBER 2024



# CULTURAL IMPACT ASSESSMENT FOR THE PACIFIC MISSILE RANGE FACILITY (PMRF) AND KŌKE'E PARK GEOPHYSICAL OBSERVATORY (KPGO) ENVIRONMENTAL IMPACT STATEMENT, AHUPUA'A OF WAIMEA, KONA MOKU, MOKUPUNI OF KAUA'I

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October 2024

#### **EXECUTIVE SUMMARY**

Under contract to AECOM Technical Services, Inc International Archaeology, LLC has prepared this cultural impact assessment [CIA]. The purpose of this CIA is to analyze the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the Proposed Action to introduce elements which may alter the setting in which cultural practices take place on 8,371 acres of State lands. The Navy proposes to retain the use of 8,348 acres of State lands on Kaua'i, Hawai'i, for operational continuity and sustainment (in support of continued military training, testing, and facility operations) at the Pacific Missile Range Facility (PMRF). The National Aeronautics and Space Administration (NASA) proposes to retain the use of 23 acres of State lands on Kaua'i, Hawai'i, in support of continued operations including measurements of the Earth's rotation and local land motion at Kōke'e Park Geophysical Observatory (KPGO). The Proposed Action is needed because the existing real estate agreements for these lands are set to expire between 2027 and 2030. The Navy and NASA are considering two action alternatives and the No Action Alternative.

This CIA was conducted from October 2023 to January 2024 and was carried out in two phases. The first phases consisted of a cultural and historical archival literature review, followed by an ethnographic study, including oral history interviews. The collected ethnographic data and past oral histories were analyzed for relevant patterns to learn and understand cultural practices and beliefs and ultimately to assess the potential effect of the Proposed Action. Five analytical categories were used to structure the interviews and subsequent data analyses including: (1) *Moʻokūʻauhau* [Genealogy] and *Pilina* [Connection] to 'Āina [Land]; (2) *Meheuheu* or Hawaiian Cultural Traditions and Practices: (3) *Moʻolelo* [Stories] and *Wahi Pana* [Cultural Sites, Legendary Places, and Sacred Sites]; (4) Historic Period [Plantation and Military Era]; and (5) General Comments About the Study Area

Thirteen cultural consultants consisting of longtime residents of the area, traditional cultural practitioners, community elders, professors, Hawaiian language experts, fishers and natural resource gathers, and farmers, provided information about cultural activities and practices, beliefs, and resources within the study area and vicinity and identified potential effects to these activities and resources by the Proposed Action. These individuals provided written consent to include their information in the CIA.

Three locations within the State leased lands and easements, Nohili Dunes, Polihale, and Kaunalewa were mentioned during the consultation interviews. Portions of Nohili Dunes and Polihale are known to contain *iwi kūpuna* and places visited for veneration of ancestors. Kaunalewa was mentioned during interviews as a spiritual place where apparitions of both traditional Hawaiian and modern structures have appeared. The exact location of these sighting is unknown. PMRF currently has SOPs providing guidance for the discovery, consultation on, preservation, and treatment of *iwi kūpuna*.

#### **ACKNOWLEDGEMENTS**

The sharing of 'ike [recognize, knowledge] and mana'o [thoughts, belief] between people is precious, and it is the leo [voice] that brings ola [life] to the mo'olelo [story]. It is the leo of the ethnographic consultants that makes this Cultural Impact Assessment [CIA] possible, and therefore mahalo nui loa all of you: Aunty Leina'ala Compoc, Uncle Paul Compoc, Kipi Akana, Kaina Makua, Enoka Karratti, Hena Caberto-Raco, Uncle James Nakaahiki, Sean Andrade, A'alona Dela Cruz, Eben Manini, Billy DeCosta, and Mike Faye.

A very special *mahalo* to Keao NeSmith who scheduled all the interviews, participated in the interviews, conducted one inteview, and contributed valued pieces of work to this CIA. The authors greatly appreciated your '*ike* and *mana*'o throughout the whole process. *Nā Huaka*'i [the field trips] and being on the '*āina* [land] was the best.

*Mahalo* to Lilia Merrin for your participation in the interviews, conducting of an interview, the ride to Wai'awa, and contributing your photos and maps. *Mahalo* also to Hena for the ride to Pu'u 'Ōpae; the rental car would never have made it.

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#### I. INTRODUCTION

Under contract to AECOM Technical Services, Inc., International Archaeology, LLC [IA] prepared this cultural impact assessment [CIA] to analyze the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting on 8,371 acres of State lands (Figure 1 and Figure 2). The Navy proposes to retain the use of 8,348 acres of State lands on Kaua'i, Hawai'i, for operational continuity and sustainment (in support of continued military training, testing, and facility operations) at PMRF. The National Aeronautics and Space Administration (NASA) proposes to retain the use of 23 acres of State lands on Kaua'i, Hawai'i, in support of continued operations including measurements of the Earth's rotation and local land motion at Kōke'e Park Geophysical Observatory (KPGO). The Proposed Action is needed because the existing real estate agreements for these lands are set to expire between 2027 and 2030. The Navy and NASA are considering two action alternatives and the No Action Alternative. The EIS will evaluate the potential environmental consequences of the Navy's and NASA's proposal to retain these State lands.

The Navy's current real estate agreements with the State of Hawai'i Department of Land and Natural Resources (DLNR) include 684 acres of leaseholds and 7,664 acres of easement lands, for a total of 8,348 acres. These existing Navy real estate agreements with the DLNR are set to expire between 2027 and 2030. The Navy's current leases and easements are primarily used for passive encroachment buffers, as well as for mission operations, access, and utilities at the following five general locations: Main Base, Kamokalā Ridge, Mānā Water Well, Miloli'i Ridge, and Mākaha Ridge. The Navy's 8,348 acres of leaseholds and easement lands are part of the larger PMRF installation, which also includes 1,933 acres of federally\_owned fee simple land located adjacent to the State lands, and an open ocean offshore training and testing area comprising over 1,020 square nautical miles of instrumented ocean ranging from depths of 1,800 to 15,000 feet.

NASA currently leases 23 acres of State land for operations at KPGO that include collecting and coordinating geodetic data that contribute to daily measurements of the Earth's rotation and orientation in space. NASA issued the Navy a Use Permit in 2016 for portions of KPGO to conduct radar, telemetry, and communications services in support of PMRF operations. In addition to their mission operations, the Navy and NASA also conduct environmental management and stewardship activities on these lands.

Under Alternative 1 (Succeeding Current Real Estate Agreements), the Navy and NASA would apply to the DLNR for new long-term real estate agreements in the same manner and for the same uses as the current leases and easements.

Under Alternative 2 (Fee Simple Acquisition of Current Real Estate Agreements for Leaseholds), the Navy and NASA would pursue fee simple acquisition of 707 acres (684–Navy, 23–NASA) of leaseholds, and otherwise obtain use of the remaining acreage as described in Alternative 1.

Under the No Action Alternative, the Navy and NASA would hold no real estate agreements for the State lands on Kaua'i after expiration of the leases and easements between 2027 to 2030. The current real estate agreements for 8,348 acres with the Navy and 23 acres with NASA would expire. All existing infrastructure would be removed from the Navy leased and easement lands and all NASA leased lands.

This document has been produced in support of Hawai'i Chapter 343 HRS. This CIA provides information that may be used by the Department of Land and Natural Resources (DLNR) to fulfill their Article XII, Section 7 of the Hawaii Constitution obligations. Preparation of CIAs, as explained in the State

of Hawai'i CIA guidelines (Environmental Council 1997), involves the collection of ethnographic and ethnohistorical documentary information for the purpose of learning and understanding cultural practices and beliefs in order to assess the potential the effect of a proposed action. The intent of this specific CIA is to present information about past and present cultural practices, beliefs, activities, and resource uses for the Mānā Plains and extending inland up to 10 km within the broader Kona *moku* of Kaua'i. This information is used to identify and analyze the potential cultural impacts of the Navy's and NASA's Proposed Action. The conclusions of this study are based on a combination of ethnographic and documentary data relating to the study area. Thirteen cultural consultants provided information about cultural activities and resources within the study area and vicinity and identified potential impacts to these activities and resources by the Proposed Action. These thirteen individuals provided written consent to include their information in the CIA (Appendix B). The ethnographic data, particularly the oral interviews with consultants completed for this study, identify cultural beliefs, cultural practices, and specifically Native Hawaiian cultural ties to the *moku* [district] of Kona, Kaua'i.

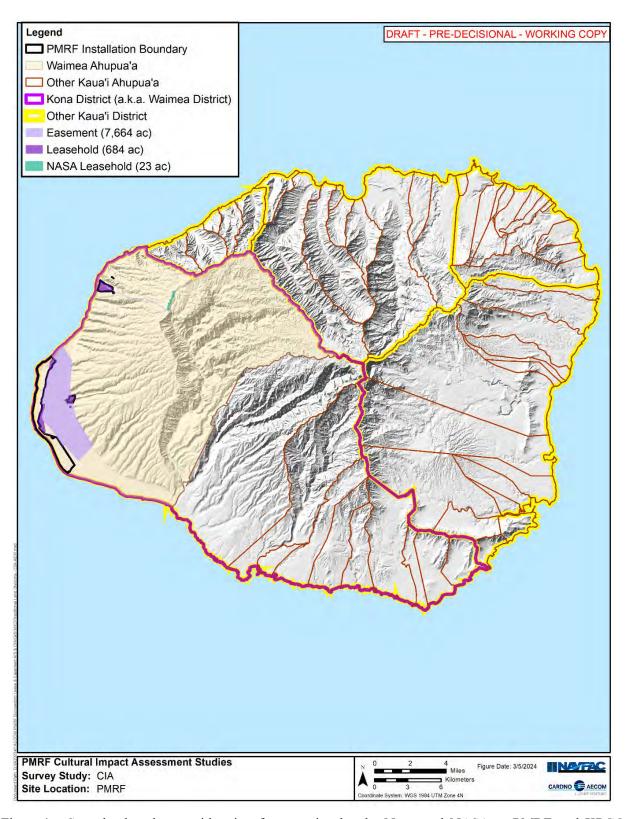


Figure 1. State land under consideration for retention by the Navy and NASA at PMRF and KPGO (respectively) on Kaua'i Island.



Figure 2. The CIA study area and State land under consideration for retention by the Navy and NASA.

#### STUDY AREA LOCATION

PMRF is located approximately 100 miles from the island of O'ahu on the northwest coast of the Hawaiian island of Kaua'i (see Figure 1). KPGO is located within Kōke'e State Park on the island of Kaua'i, at an elevation of approximately 3,600 feet above sea level near Waimea Canyon. The Project Area overview is shown in Figures 1 and 2. The Project Area consists of the following:

- Main Base: leaseholds (392 acres) and easement lands (7,267 acres), located adjacent to the fee-simple lands at the installation, used for PMRF operational support, utilities, flood control, and as safety buffers;
- Kamokalā Ridge: leaseholds (89 acres) and easement lands (355 acres) used for ordnance storage, utilities access, and tsunami evacuation;
- Mānā Water Well: leaseholds (0.29 acre) used as the primary potable water source for PMRF;
- Mākaha Ridge: leaseholds (203 acres) and easement lands (42 acres) used for missile tracking and surveillance;
- Miloli'i Ridge: leaseholds (0.015 acre) used for radar and telemetry activities; and
- KPGO: leaseholds (23 acres) used for surveillance and tracking, as well as NASA geodetic data collection and backup power generation.

The study area for this CIA encompasses a larger area than the leaseholds and easements the Navy and NASA propose to retain at PMRF and KPGO in order to collect more general information about the area's resources, practices, and history. The entirety of the study area is in the western portion of the traditional Hawaiian land area or ahupua 'a [land division usually extending from the uplands to the sea] of Waimea in the district of Kona on Kaua'i. Kona is the largest district on Kaua'i, occupying the entire southwestern half of the island. PMRF lies in the area called Mānā, and the Mānā Plain was a clearly delineated geographical zone of human occupation during the prehistoric period. The coastal dune and back beach areas at Mānā were the setting for temporary fishing camps that were linked to permanent communities at the foothills of the central mountain. A 15-mile long beach borders the Mānā Plain from Polihale near Ke-one-kani-o-Nohili [Barking Sands] to the town of Kekaha (Clark 2002:158). The town of Kekaha literally means "the place," and it is "the place" that kanaka [people] on the west side like to be, especially at the kahakai [seashore] to gather and fish for marine resources. It is the westernmost town on Kaua'i with its calcareous sandy beach that runs prominently along its coastline. Today the residents of the area live on Hawaiian Homelands in a close-knit community and manage vital resources, with schools to educate  $n\bar{a}$  keiki [the children] and several cemeteries where the  $k\bar{u}puna$  [ancestors] are close at hand. Figure 1 displays the location of the State land in consideration for retention by the Navy and NASA and Figure 2 shows the relationship of the larger CIA study area to the State land, PMRF, and KPGO.

#### ORGANIZATION OF THE REPORT

This document includes six sections. Section I introduces the project's legal and logistical context. Section II presents the methods used to carry out the CIA, including a cultural and historical archival review, an ethnographic study including oral interviews, and data synthesis. Section III describes the cultural context for the study, including the results of genealogical research, place names, and a review of traditional and historical land and resource use near the study area. Section IV presents the ethnographic review, pertinent excerpts of the oral interviews, and subsequent data summary. Section V includes the data analysis based on the archival literature and ethnographic information collected during the CIA. Specific assessments about how the Proposed Action and No Action Alternative may potentially affect the cultural resources, practices, and beliefs of the community members interviewed are discussed. Following Section V is a list of references cited in the document. Appendix A presents the interview consent forms. Appendix B contains the full interview transcripts, and Appendix C is a blank copy of the consultant biographical data sheet.

#### II. CULTURAL IMPACT ASSESSMENT METHODS

The primary purpose of the CIA was to collect information relating to the practices and beliefs of Native Hawaiians and other community members to determine the cultural impact of the Proposed Action. This information was obtained through a combination of archival research, including Hawaiian-language sources, and an ethnographic study using oral history interviews. Information provided by knowledgeable stakeholders, such as traditional cultural practitioners and long-term residents of the area, was applied to assess the impacts of the Proposed Action on cultural resources, practices and beliefs, in conjunction with information from other sources, such as documentary research.

The area considered during the CIA is purposefully larger than the study area to account for the locations of cultural resources, beliefs, and practices that may not be included within the boundaries of the project but are relevant for understanding the interconnectivity of resource use in the area (see *Guidelines for Assessing Cultural Impacts* [1997] protocol 1 below). To this effect, a large portion of the Mānā Plain inland from PMRF Barking Sands is included in the cultural impact assessment, but also are several areas from Nā Pali to the land or/and resources bording the *ahupua* 'a(s) of Waimea and Makaweli.

The assessment considered cultural resources, practices, and beliefs related to subsistence (e.g., fishing, gathering, and agriculture), habitation, commercial activities, access issues, recreation, and religious/spiritual activities and customs. The locations of places essential to these cultural practices and beliefs were documented.

The assessment used the methods and recommendations found in the Office of Planning and Sustainable Development (OPSD) Environmental Review Program (ERP) (formerly the Office of Environmental Quality Control [OEQC])'s *Guidelines for Assessing Cultural Impacts* (1997) and include:

- 1. identify and consult with individuals and organizations with expertise concerning the types of cultural resources, practices and beliefs found within the broad geographical area, e.g., district or ahupua'a;
- 2. identify and consult with individuals and organizations with knowledge of the area potentially affected by the proposed action;
- 3. receive information from or conduct ethnographic interviews and oral histories with persons having knowledge of the potentially affected area;
- 4. conduct ethnographic, historical, anthropological, sociological, and other culturally related documentary research:
- 5. identify and describe the cultural resources, practices and beliefs located within the potentially affected area; and
- 6. assess the impact of the proposed action, alternatives to the proposed action, and mitigation measures, on the cultural resources, practices and beliefs identified.

In addition, cultural impacts should address, but not necessarily be limited to, the following matters:

1. A discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural

- practices and features associated with the project area, including any constraints or limitations which might have affected the quality of the information obtained.
- 2. A description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken.
- 3. Ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained.
- 4. Biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area.
- 5. A discussion concerning historical and cultural source materials consulted, the institutions and repositories searched, and the level of effort undertaken. This discussion should include, if appropriate, the particular perspective of the authors, any opposing views, and any other relevant constraints, limitations, or biases.
- 6. A discussion concerning the cultural resources, practices, and beliefs identified, and, for resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site.
- 7. A discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area affected directly or indirectly by the proposed project.
- 8. An explanation of confidential information that has been withheld from public disclosure in the assessment.
- 9. A discussion concerning any conflicting information in regard to identified cultural resources, practices, and beliefs.
- 10. An analysis of the potential effect of any proposed physical alteration on cultural resources, practices, or beliefs; the potential of the proposed action to isolate cultural resources, practices, or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place.
- 11. A bibliography of references and attached records of interviews which were allowed to be disclosed.

The CIA was conducted to provide information to be used to evaluate the Project for its potential to affect or impair valued cultural, historical, or natural resources--including traditional and customary native Hawaiian rights pursuant to Article XII, Section 7 of the Hawaii Constitution which obligates that the State and its agencies:

... shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights.

The analytical framework created a three-part process relative to evaluating potential impacts, and requires specific findings and conclusions regarding (Ka Pa'akai o Ka 'Āina v. Land Use Comm. 2000:25):

- (1) the identity and scope of "valued cultural, historical, or natural resources" in the petition area, including the extent to which traditional and customary native Hawaiian rights are exercised in the petition area;
- (2) the extent to which those resources—including traditional and customary native Hawaiian rights—will be affected or impaired by the proposed action; and
- (3) the feasible action, if any, to be taken by the LUC [Land Use Commission] to reasonably protect native Hawaiian rights if they are found to exist.

This CIA was conducted from October 2023 to January 2024 and was carried out in two phases. The first phase consisted of a cultural and historical archival literature review, followed by an ethnographic study, including oral history interviews. The collected ethnographic data and past oral histories were then analyzed for relevant patterns to identify cultural resources, practices, and beliefs, and to assess the potential impacts resulting from the Proposed Action. Five analytical categories were used to structure the interviews and subsequent data analysis including: (1) *Moʻokūʻauhau* [Genealogy] and *Pilina* [Connection] to 'Āina [Land]; (2) *Meheuheu* or Hawaiian Cultural Traditions and Practices: (3) *Moʻolelo* [Stories] and *Wahi Pana* [Cultural Sites, Legendary Places, and Sacred Sites]; (4) Historic Period [Plantation and Military Era]; and (5) Comments About the Study AreaThe following sections discuss the methods used during each of these stages in greater detail.

#### PHASE 1: CULTURAL AND HISTORICAL ARCHIVAL LITERATURE REVIEW

During the first stage of the CIA, primary and secondary sources in Hawaiian and English were collected and examined for relevant information. These sources included genealogies, oral histories, Hawaiian language newspapers, and other studies and reports that were collected and examined for relevant information. Secondary source material included previous ethnographic works and historical texts. Most of the cultural and historical archival literature review was conducted by Dr. Keao NeSmith who is a *kupa* or a Native Hawaiian well acquainted with the Kona *moku* [district]. The results of the cultural and historical archival research are presented in Section III.

#### PHASE 2: ETHNOGRAPHIC STUDY/ORAL HISTORY INTERVIEWS

The ethnographic study was designed so that information acquired during interviews would help determine if any cultural or natural resources or associated practices, including access to these areas, would be impacted by the implementation of the Navy's Proposed Action to retain the use of State land at PMRF and NASA's proposal to retain the use of State land at KPGO. With this objective in mind, the following basic research themes were incorporated into the ethnographic study: Consultant Background, Land Resources, Water Resources, Cultural Resources, and Comments of Past and Continued Stewarship by the U.S. Military. These research themes have sub-themes that were developed based on the ethnographic raw data (oral histories) or responses of the ethnographic consultants. The responses and collective information were then synthesized into supporting evidence for conclusions made regarding impacts on cultural

resources and/or practices. Interview questions were provided to PMRF staff and authorized before commencement of the interviews.

Thirteen consultants were interviewed for the current study. The selection of the consultants for the current ethnographic study and oral history interviews began by researching the 'āina and family names associated with the study area. This research began by reviewing previous cultural studies of the island of Kaua'i and the Kona *moku* or district (e.g., Francis and Robinson 1891; Faye 1981; McKinzie 1983; Kilauano 1991; Smith 1989; Wichman 1991; Clark 2002), including the comprehensive study completed by Flores and Kaohi (1992). Nearby cemeteries were visited to identify families with multi-generational ties to the area. After a preliminary list of family names was generated, Thomas Nizo and Dr. NeSmith added the names of other stakeholders to the list. Additionally, on October 13, 2023, a letter requesting public input on the project was sent to Ka Wai Ola, the Office of Hawaiian Affairs Bulletin. The letter was published on November 1, 2023. No public comment was received as a result of the Ka Wai Ola letter.

The list of potential consultants was assessed to maximize diversity in points of view while maintaining expertise in knowledge of the area's cultural resources, practices, and beliefs. Kekaha *kama 'āina* [native born, one born in a place] Keao NeSmith, PMRF Deputy Public Works Officer/Cultural Protocol Officer Thomas Nizo, and PMRF Community Liaison Officer Kaulana Mossman were consulted on the initial stakeholder list, which was refined according to their recommendations. To ensure that knowledgeable stakeholders with the most potential for providing relevant information were chosen for the interviews, the following selection criteria were applied:

- Individual had (has) a past or current *pilina* [connection] to the study area or vicinity.
- Individual is a known Hawaiian cultural or natural resource specialist.
- Individual is a known Hawaiian traditional practitioner.
- Individual was referred by another reputable person.

Many of the consultants were suggested, chosen, and contacted by Dr. Keao NeSmith, a *kupa* [Native Hawaiian] with a long-standing connection to the Kekaha area and the broader Kona *moku* [district]. Dr. NeSmith was also interviewed because he was raised and lived in the Kona *moku* and one of his family members worked close to the study area. Moreover, he retains '*ike* [knowledge] of history and *mo'olelo* [stories] and has engaged in cultural practices within the project area and/or vicinity. Between October and November 2023, phone calls were placed to potential consultants. Ultimately thirteen individuals were selected for consultation interviews (Table 1).

Each interview participant filled out a Biographical Data Sheet (BDS) and consent form before the interview. It was the choice of the consultant to answer or not answer any questions on the BDS. The BDS included name; mailing address; phone number; email; year and place they were born; their past and present residence; gender; citizenship; ethnicity; spoken language(s); where they went to school; where they work; interests, skills, and hobbies; religion; community/professional organization involvement (past and present); parents names; the participant's place in the family (order of siblings); and maternal and paternal names of ancestors and where they lived. During the interview, they also talked about some of the information they individually recorded on their BDS. The BDS has the following positive results: (1) the BDS helped the consultants think about the information they wanted to present about themselves and their family; (2) the BDS resulted in more time during the interview to concentrate on the gathering of additional information other than what is listed on the BDS; and (3) the correct data was collected and written, reinforcing what was heard and/or not spoken in the interview.

Upon arriving at the meeting place for the interview, greetings to the consultants and their 'ohana included aloha [love] and mahalo [thanks], a lei [necklace] made personally by IA, and some form of compensation made to the consultants who contributed to the study. This was done by providing makana to individual consultants in the form of a gift certificate from Big Save, fresh poke [meal of raw fish and other ingredients] made personally by IA, dried fish made personally by IA, chocolates, and Japanese Sakura arare and ume candies.

The 'ano hana kūkākūkā [talk story, moral quality procedure] was applied to the structure of the interview which allowed for the consultant's leo or voice to be heard. This method is the conduit for a dialogue to ensue, thereby permitting the consultant to speak about a general topic in their own specific words. All the excerpts included throughout the following sections represent nā hua 'ōlelo [the spoken words] of ka mea e 'ōlelo ana [the one talking]. The excerpts used are in the exact words of each consultant or paraphrased to insert words that are "understood" or to link sentences that were brought up as bridged after thoughts or related additions denoted elsewhere in the interview. The interviews were recorded using an Olympus WS-823 Digital Voice Recorder.

Upon completion of the interview transcripts in January and February 2024, IA sent follow-up email messages to these consultants asking them to review their comments, edit them if desired, and to consent their responses could be reproduced in the CIA. IA also restated the nature and function of the CIA and emphasized that participation was voluntary. All thirteen consultants provided written or verbal agreement that their original or revised responses could be included. The consent letters are reproduced in Appendix A and the full interview transcripts can be found in Appendix B.

Table 1. Interview Participants.

Consultant	Born/Raised	Identified Ethnicity	Work	Connection
Richard Keaoopuaokalani "Keao" NeSmith	Waimea/Kekaha, Kauaʻi	Hawaiian	Self-employed, freelance researcher	Keao is a <i>kupa</i> [native born and well-aquainted to a place] of Kekaha, and his maternal <i>moʻokūʻauhau</i> [genealogy] exists from the time of Hāloa. His father, Bill NeSmith worked at KPGO. His mother, Odetta NeSmith taught <i>hula</i> for 19 years in the community, and Keao was one of her assistants. Keao has his Ph.D. in linguistics, and is an educator. He is very knowledgeable about cultural and natural resources, cultural traditions/practices, <i>wahi pana</i> [storied/sacred places] including <i>moʻolelo</i> [stories] in the Kona district and broader Kauaʻi, and beyond. Keao grew up in Kekaha during the Plantation Era. He is part of the Nā Pali ʻOhana, Kaunalewa, and other groups.
Brad "Kipi" Akana	Waimea, Kauaʻi	Hawaiian	Retired Kaua'i Police Officer, and Department of Conservation and Resources Enforcement (DOCARE) Branch Chief	Kipi's father, Paul Compoc worked at KPGO. His mother, Leina'ala Compoc worked at KPGO and PMRF. Kipi is knowledgeable about natural and cultural resources as a fisherman, hunter, gatherer, and working in the area as a DOCARE branch officer. He ia also a <i>lua</i> [Hawaiian martial arts] practitioner.

Consultant	Born/Raised	Identified Ethnicity	Work	Connection
Sylvia Johnette "Leina'ala" (Akana) Compoc	Waimea, Kauaʻi	Hawaiian	Retired from working for the Federal Government	Aunty Leina'ala is the mother of Kipi and wife to Uncle Paul. She worked at KPGO and PMRF. She grew up in Waimea Valley during the Plantation Era. Aunty was a part of the Kaumuali'i Hawaiian Civic Club. Her grandfather was the great Henry Kekahuna who is one of the first surveyors of Nohili and did prolific works of cultural preservation on Kaua'i and the <i>Pae 'Āina</i> [Hawaiian Islands].
Paul Compoc	Kahuku, Oʻahu	Filipino, Spanish, Chinese	Retiree from working for the Federal Government	Uncle Paul is father to Kipi and husband to Aunty Leina'ala. He arrived in Kaua'i during the '70s, where he worked at Kentro and KPGO. Uncle Paul has knowledge about basic plantation life because he was raised in Kahuku during the Plantation Era.
Kaina Makua	Līhue/Waimea, Kauaʻi	Kanaka Maoli [Native Hawaiian]	Owner of Aloha Aina Poi. Executive Director of Kumano I Ke Ala	Kaina is a <i>kupa</i> [native born and well-aquainted to a place] and continues to steward the lands in the Kona district of Kaua'i. He has fished and gathered at the shores of Nohili. He is knowledgeable about the Hawaiian language, culture, history and <i>mo'olelo</i> [stories] of the Kona <i>moku</i> [district] and beyond. Kaina is the model for the logo of the organization called Aha Kane. The following is a snippet on the Aha Kane website: "Kaina is a college graduate and <i>kalo</i> farmer from Kaua'i, is recognized in the Hawaiian community as an exemplary representation of a modern <i>kāne</i> [man, masculine]: a culturally knowledgeable, educated, robust, 'olu'olu [affable, gracious] family man."

Consultant	Born/Raised	Identified Ethnicity	Work	Connection
Enoka Chee Fook Karratti	Waimea/Kekaha, Kauaʻi	Hawaiian	Program Coordinator at Kumano I Ke Ala	He is a native, born and raised in Kekaha. Enoka is a fisherman and gatherer at the shores of Nohili and other areas. He has worked at PMRF, and gathered <i>lā'au</i> [plants] to make lei at Kōke'e with his <i>wahine</i> [woman, wife]. Enoka is an officer on the board of Mālama Hulē'ia, a group who manages the Alakoko Fishpond in Nāwiliwili, and educates the community on cultural values, and the caring and management of cultural and natural resources. He also spends time coaching the Waimea High School girls volleyball team.
Treston "Hena" Caberto-Raco	Kauaʻi/Waiʻawa and Wailua, Kauaʻi	Hawaiian, Filipino, Chinese, Vietnamese	Foreman at Princeville Ranch	Hena has been endowed the <i>kūleana</i> [rights, privilege, responsibility] of Palakiko Farms at Wai'awa passed down through his family. He is a hunter, gatherer, and a steward of Wai'awa. Hena has knowledge of the <i>mo'olelo</i> [stories], and history of Wai'awa and the surrounding area. He is a member of the organization, Kaunalewa.
James Kanohoanu Nakaahiki	Waimea/Kekaha	Hawaiian, Filipino	Firefighter for PMRF and the State of Hawai'i for 44 years, now retired	Uncle James was born in Waimea and is a native to his homeland, Kekaha, where he resides currently. His grandfather and father worked for the sugar plantation. James' mother worked for the pineapple cannery. He has a multi-generational connection to the area, and is part of the Aipoalani and Kilauano 'ohana [family]. James is a part of the organization Kaunalewa and is one of the stewards for the Kekaha Hawaiian Homestead Association (KHHA) Pu'u 'Ōpae Farm and Irrigation Project.

Consultant	Born/Raised	Identified Ethnicity	Work	Connection
Sean Mokuonahiala Andrade	Waimea/Waimea, Lawai, and Kalaheo, Kauaʻi	Hawaiian, Portuguese, Chinese	Employed by Ferguson Enterprises, Inc. for 30 years	Sean was born in Waimea, and raised in the valley of Waimea and nearby Lawai and Kalaheo. He is the Chief Executive Officer for the organization Kaunalewa, and plays a large role in the KHHA Pu'u 'Ōpae Farm and Irrigation Project. Growing up he fished and gathered at the ocean and streams. Sean comes from a line of ranchers.
Edwin Ray "A'alona" Dela Cruz	Waimea, Kauaʻi	Hawaiian, Pinoy [Filipino male], Japanese, <i>Haole</i> [Caucasian]	Boat Captain for the Na Pali tours docked at Kikiola Harbor	A'alona is a native of Waimea. He is a waterman and cultural practitioner involved with the art of <i>lua</i> , <i>la'au lapa'au</i> (Hawaiian medicine taught by Kumu Levon'Ohai), and avid <i>lawai'a</i> [fisherman]. As a <i>lawai'a</i> , he has fished and gathered from Kekaha to Polihale and near other seashores. A'alona has knowledge of <i>mo'olelo</i> [stories] and history. He is a member of the Polynesian Voyage Society and the Nā Pali Coast 'Ohana.

Consultant	Born/Raised	Identified Ethnicity	Work	Connection
Eben Kawaikea Manini	Waimea/Waimea and Puʻu ʻŌpae, Kauaʻi	Part Hawaiian	Tour Guide, Airport Mechanic	Eben is a native of Waimea and Pu'u 'Ōpae. He is the son of Paniolo Hall of Fame Inductee Joseph Punilei Manini Sr., who worked at the Gay and Robinson's Makaweli Ranch for 47 years, and Pu'u 'Ōpae Ranch, a ranch he and his family established. Eben resides at Pu'u 'Ōpae Ranch where he enjoys farming, ranching, and operating heavy equipment. He is knowledgeable of cultural sites of Mānā and other areas in the Kona <i>moku</i> [district] of Kaua'i. He is a member of the Kaua'i Master Gardner Program. Eben is a trained volunteer who assists the University of Hawai'i in its mission to deliver relevant, research-based, environmentally sound horticulture information to the public. He is involved with youth sports and youth outdoor education.

Consultant	Born/Raised	Identified Ethnicity	Work	Connection
Bill Dan "Billy" DeCosta	Waimea/Pākala, Kauaʻi	Portuguese, Spanish	School teacher for 23 years and Kaua'i County Council member for 3 years	Billy was born in Waimea and raised at Pākala's Camp. He is one of three or four generations of his 'ohana [family] who lived at the camp. His grandfather, John Costa, was Sheriff of Pākala, and his dad was supervisor at the Gay and Robinson's Makaweli Ranch. When mauka [uplands], he hunts for ungulates, and gathers maile (Alixia stellata) and mokihana (Melicope hawaiensis). He is a fisherman and gatherer when at the ocean. From a young age, he was taught by his grandfather conservation methods at the mountain and ocean when gathering and harvesting. He is continuing this tradition by teaching conservation methods to his children.
Michael "Mike" Andreas Faye	Waimea/Waimea and Waiʻawa	Caucasian	Kekaha Agriculture Association	Mike was born and raised in Waimea, Kaua'i. In his teenage years he spent a lot of his summers with a hoe and file in the sugarcane fields of Wai'awa. He comes from a legacy of sugar plantation and business owners who migrated here about 170 years ago from Norway. His grandfather's uncle is Valdemar Knudsen who arrived here in the 1850's and served as a <i>konohiki</i> [headman of an <i>ahupua'a</i> land division under the chief] for the Hawaiian Kingdom, collecting tax and ridding the mountain areas of cattle. Mike and his 'ohana [family] are owners of the Wrangler's Steakhouse and Waimea Plantation Cottages.

# III. ETHNOHISTORICAL AND CULTURAL CONTEXT FOR THE STUDY AREA

This section presents cultural and historical context through a review of primary and secondary source literature. The information provided in this section include *moʻokūʻauhau* (genealogies), *wahi* (places), *moʻolelo* (traditional literature), traditional land use, and historical land use.

#### *MO'OKŪ'AUHAU* [GENEALOGIES]

This section provides genealogy for important ruling chiefs of Kaua'i. The genealogies, handed down by oral tradition and later recorded for posterity, not only give a glimpse into the depth of the Hawaiian culture of old, but they also provide a permanent record of the links of notable Hawaiian family lines. *Po'e kū'auhau* or genealogy *kahuna* [masters] were very important people in the days of old. They not only kept the genealogical histories of chiefs "but of *kahuna*, seers, land experts, diviners, and the ancestry of commoners and slaves ... an expert genealogist was a favorite with a chief." During the time of 'Umi-a-Līloa, genealogies became *kapu* [forbidden] to commoners, which is why there "were few who understood the art; but some genealogists survived to the time of Kamehameha and even down to the arrival of the missionaries" (Kamakau 1992:242).

There are several chants from Hawai'i and other Polynesian islands referred to as migration chants that expand on the travels of ancient Polynesians and not only explain why they traveled from place to place, and where they traveled, but also give their genealogy illustrating how families are connected from one Polynesian island-nation to another. Examples are the chants and stories by Kamakau and Kepelino about Hawai'i-loa, a famous ancient navigator and discoverer of the islands named after him (PVS 1999).

Surviving genealogies illustrate that the ruling families of each island were interrelated quite extensively. The chiefs of Oʻahu, Kauaʻi, Hawaiʻi, Maui, and Molokaʻi had common ancestry. Families branched out but conjoined several times in succeeding generations. Oʻahu's and Hawaiʻi's chiefs were linked as were Hawaiʻi and Maui chiefs, and Hawaiʻi's chiefs were linked to Kauaʻi chiefs (Kamakau 1991:101; McKinzie, 1983:xxv). Not only were the chiefs or *aliʻi* [ranked person] related to each other, but they were also related to the commoners. In *Ruling Chiefs of Hawaiʻi*, Kamakau states that "there is no country person who did not have a chiefly ancestor" (Kamakau 1992:4).

The *mokupuni* [island] of Kaua'i was once called Kamawaelualanimoku, the first child conceived by Wākea [Sky Father] and Papa [Earth Mother], two of the recognized Hawaiian progenitors. The islands of Kaua'i, Ni'ihau, Lehua, and Kaula were the only islands conceived by Papa, an account from the previous historian before Kamahualele. Kamahualele, a great prophet and historian, orates the story of Mo'ikeha who left Tahiti for Hawai'i with his concubine, Lu'ukia. They arrived on the shores of Kaua'i (Fornander 1916–1917:18). Mo'ikeha ascended from the chiefly line of Nanaulu and Maweke (Fornander 1917:70). After arriving in Kaua'i he was enamored with the grace and beauty of Ho'opoikamakanai and Hinau'u, the daughters of chief Puna. After chief Puna was laid to rest, Mo'ikeha became the *ali'i* of Kaua'i. Mo'ikeha had at least five male children total with Ho'opoikamakanai and Hinau'u.

At least five generations later in the 1400's–1500s, Kūkona was born to father Luanu'u and mother Kalanimoeikawaikai (Fornander 1880:92). A Hawai'i Island chief, Kalaunuiohua invaded several islands in order to unify them under his control. After his victory in Waianae, on O'ahu he set sail with Kaua'i in

his sights. Kūkona was the  $m\bar{o}$  ' $\bar{i}$  [king, sovereign] on Kaua'i during that time. A battle ensued at the coastal area of Koloa and Kūkona was victorious, capturing Kalaunuiohua and his fleet who surrendered. Kūkona released everyone but kept Kalaunuiohua for several years until a negotiation, and Kalaunuiohua returned to Hawai'i Island (Fornander 1880:68). Kūkona and his wife Laupuapuama'a had a son named Manōkalanipō. It is known in Hawaiian culture of several  $M\bar{o}$  ' $\bar{i}$  or Ali'i Nui such as Mānōkalanipō whose reigns are said to be the Golden Ages of their societies as they were hanohano [glorious, magnificent] because of their  $hana\ maika$ 'i [good works]. He was noted for his 'ike [wisdom] and energy he used to inspire agriculture and industry of which he carried out long and difficult works of irrigation, and consequently brought fields of wilderness under cultivation. Subsequently, no wars disturbed his reign. After his reign and to present day, Kaua'i is known as "Kaua'i-O-Manōkalanipō." One of the sons he had with his wife, Naekapulani, is Kaumakamanō.

At least two to three centuries later, the parents of Chiefess Kamahelei, her father, Kaumehe'iwa and her mother, Ka'apuwai were living during the time Captain James Cook arrived on Kaua'i in January 1778, and at that time Kamakahelei obtained a second husband, Kaeokulani. Kamakahelei's first husband, Kaneoneo, died during the rebellion against Kahekili on O'ahu about 1785–1786. Kaeokulani was the younger brother of Kahekili,  $m\bar{o}$  ' $\bar{\tau}$  of Maui. Kaeokulani and Kamakahelei had a son, Kaumuali'i. Captain Vancouver mentions in his journal in 1792 that Kaumuali'i was 14 years old, but he may have been two or three years older (Fornander 1880:298).

### WAHI [PLACE]: KONA MOKU [DISTRICT] OF KAUA'I

This section discusses the important *wahi* [place] within the *moku* [district] of Kona. The west Kona *moku* of the island of Kaua'i lies between Nā Pali and the Waimea River where there are scores of valleys created by the carving and winding of waters flowing for several million years. Below these valleys are plains stretching out from the mountains to the oceans. The names of these places along with their meaning and sources, and location (if available) are presented in Table 2 and depicted in Figure 3 where possible.

Table 2. Place Names and Cultural Sites Within the Kona Moku of Kaua'i and Surrounding Area.†

Map Key #	Place Name	Meaning* and Source	Location
	Ahuloulu	Peak. <i>Heiau</i> . Lit., altar of the <i>heiau</i> type dedicated for the prevention of epidemics, famine, and/or destruction. (Gay and Robinson 1891 map of Kaua'i).	Located southeast of Kahālauaola Ridge.
13	'Āina'ike	(Also 'Āina'iki, Gay and Robinson 1891 map of Kaua'i) Lit., land of recognition.	On the Mānā plains.
8	'Anaki	Ridge. Named in LCA 5944 to Papalena. Site of Manienie <i>heiau</i> in Miloli'i Valley (Bennett site 201). (Gay and Robinson 1891 map of Kaua'i).	In the <i>ahupua 'a</i> of Waimea, Kaua'i. Southeast of Keawanui.
9	'Āwini	Falls and Stream (USGS 1965). (Gay and Robinson 1891 map of Kaua'i).	Waimea moku, Kaua'i. Fall is at the Elevation 2280+ft. on 'Āwini Stream at the NE corner of Pu'u Ka Pele Forest Reserve.
_	'Elekuna	Heiau ('Ele was sometimes referred to a certain type of priest). (Gay and Robinson 1891 map of Kaua'i).	Bennett's Site 8. "near the Barking Sands at Mānā, in a cove on the inland side of the dunes" (Bennett 1931:101). At Mānā, near Nohili.
_	Hā'ele'ele	Valley. Ridge. Lit., blackish. (Gay and Robinson 1891 map of Kaua'i)	Valley between Polihale Ridge and Hā'ele'ele Ridge. Ridge between Polihale Ridge and Lapa Ridge.
14	Hale'ie'ie	Valley. Lit., shelter of the 'ie'ie. (Gay and Robinson 1891 map of Kaua'i).	Valley above the midpoint of Kamokala and Niu Ridge.
	Hoʻoneʻenuʻu	Heiau. Lit., to push ahead to a higher elevation	Bennett's Site 12. "along the ditch line inland from the government road near the center of Kaunalewa ridgeThrummentions that it was a heiau for circumcision." (Bennet 1931:102).
3	Honopū	(Gay and Robinson 1891 map of Kaua'i).	Nā Pali. North of Nu'alolo Ridge
2	Honopū Wai Akua	(Gay and Robinson 1891 map of Kaua'i).	Along the Nā Pali coast.

Map Key #	Place Name	Meaning* and Source	Location
4	Honopū Wai Kanaka	(Gay and Robinson 1891 map of Kaua'i).	Along the Nā Pali coast.
	Ka'anamahuna	Valley (Ulukau: Inoa 'Āina Hawai'i, 2023-09-30)	Joins Kaluanamaulu Valley at about 2230 ft. to for, Nahomalu Valley.
	Ka'awaloa	Valley. Lit., the long 'awa plant (Ulukau: Inoa 'Āina Hawai'i, 2023-09-30).	Between Kamokala Ridge and Niu Ridge.
	Kahālauaola	Ridge. Peak. Lit., the long canoe house of chief Ola. (Gay and Robinson 1891 map of Kaua'i).	East of Mānā Ridge.
	Kahamaluʻihi	Pu'uhonua, place of refuge for Kona <i>moku</i> . Lit., the sacred sheltered/protected place.	Unknown.
	Kahelu	Lit., the enumeration. (Ulukau Inoa 'Āina Hawai'i, 2023-09-30: USGS 1963). Heiau. (Gay and Robinson 1891 map of Kaua'i).	Bennett's Site 10. "Kahelu heiau, at Kahelu near Mānā and described by Thrum as 'A heiau of platform character at the base of the hill, about 6 feet high in front, not of large size" (Bennett 1931:102). Ridge between Kahelunui Valley and Nahomalu Valley.
	Kahelunui	Lit., big Kahelu. (Ulukau: Inoa 'Āina Hawai'i, 2023-09-30: USGS 1963). (Gay and Robinson 1891 map of Kaua'i).	Valley between Mānā Ridge and Kahelu Ridge.
	Kahoaloha	Valley. Lit., the friend. (Gay and Robinson 1891 map of Kauaʻi).	Valley between Lapa Ridge and Kolo Ridge.
	Kahuaapu'u	Peak. Lit., foundation of (the) peak. (Gay and Robinson 1891 map of Kaua'i).	The peak where Kaunalewa Ridge and Pulehu Ridge meet towards the east. East of Mai'aloa Valley.
	Kaihuulu	(Gay and Robinson 1891 map of Kauaʻi).	A place on the Mānā Plains below Pulehu Ridge. It sits between Kaunalewa to the north, Waiawa to the south, and Kapua'ihalulu to the west.

Map Key #	Place Name	Meaning <sup>*</sup> and Source	Location
1	Kalalau Valley	Stream, valley, trail, land scetion, and beach northwest Kaua'i. Returned by Kamāmalu, retained at the Mahele. No claims were awarded by the Land Commission but 18 Royal Patent Grants were issued in Kalalau and Honopu, 11 of which are unlocated. Lit., the straying. (MB 6, 231; IN 44; USGS 1965). (Gay and Robinson 1891 map of Kaua'i).	Nā Pali.
	Kalanamaihiki	Lit., the floating as though above the arising waters. (Gay and Robinson 1891 map of Kaua'i).	On the plain of Mānā. Below Kahelu Ridge. Slightly northeast of Palaiholani.
	Kalialaioa	(Gay and Robinson 1891 map of Kaua'i).	On the Mānā Plain. Directly below Niu Ridge.
	Kaluakauila	Peak. Lit., the <i>kauila</i> tree pit. (Gay and Robinson 1891 map of Kaua'i).	East of and between Kamōkala Ridge and Niu Ridge. East of Kaawaloa peak or ridge, on or near the same ridge line.
	Kaluanamāʻulu	Valley. (Ulukau Inoa 'Āina Hawai'i, 2023-09-30: USGS 1963). (Gay and Robinson 1891 map of Kaua'i).	Joins Ka'anamahuna Valley at about 2230ft. to form Nahomalu Valley. Northeast of Mānā Ridge.
	Kaluapele	Lit., the volcanic pit. (Gay and Robinson 1891 map of Kauaʻi).	North of Waiaka Ridge.
	Kalua'ua'u	Valley. Lit., the 'ua'u/'uwa'u seabird nesting hole. (Gay and Robinson 1891 map of Kaua'i).	Valley between Kamōkala Ridge and Niu Ridge.
7	Kamaile	Ridge. (Gay and Robinson 1891 map of Kaua'i).	Nā Pali. Ridge south of Nu'alolo Valley, and east at the coastal area of Nu'alolo.
	Kamao	Unknown. (Note: kāma'o is an endemic an endangered Kaua'i thrush ( <i>Phaeornis obscurus myadestina</i> ).	Unknown.

Map Key #	Place Name	Meaning* and Source	Location
	Kamapele	Peak. Lit., volcanic child. (Gay and Robinson 1891 map of Kaua'i).	Peak east of Hā'ele'ele Ridge. North of Pu'ukapele.
	Kamoʻokala	[Or Kamōkala.] Ridge. Lit., the ridge of the sun. (Gay and Robinson 1891 map of Kaua'i).	Ridge between Kahelu Ridge and Niu Ridge.
	Kamolehua	Peak. Lit., seed of the <i>kamole</i> plant. (Gay and Robinson 1891 map of Kaua'i).	Peak at or near the same ridge line east of Kamahoa Ridge.
	Kanaʻahaki	Gulch. Lit., broken divisions/apportions.	Unknown.
	Kanahaweli	Beach.	Unknown.
	Kapaʻula	There are two heiau. Lit., Red enclosure.	Bennett's Site 6. "at Kolo near Mānā described by Thrum as 'A large heiau said to be still standing, about 4 feet high against the hill. Class unknown." Heiau. Near Hā'ele'ele Ridge. Bennett's Site 4. "on the north side of Ka'ula'ula Valley, about 100 feet above the base of the talus slope on Hā'ele'ele Ridge about 100 feet above the base of the talus slope on Hā'ele'ele Ridge."
	Kapuaʻi	Point. Lit., the bubbling and flowing out of fresh water. (Ulukau Inoa 'Āina Hawai'i, 2023-09-30).	Point along shore of Waimea between Polihale and Nohili.
	Kapuaʻihalulu	Lit., the roaring/thunderings noise of bubbling and gurgling fresh water. (Gay and Robinson 1891 map of Kaua'i)	A place on the Mānā Plains, south of Kaluapele and north of Limaloa.
	Kapuahiaola	Valley. Lit., fireplace of chief Ola. (Gay and Robinson 1891 map of Kaua'i).	Peak east of Kahelu Ridge. North of Ahuloulu peak.
	Kaulakahi	Ocean channel. Lit., the single flame (streak of color). (USGS 1926, 1984).	Ocean channel between Kaua'i and Ni'ihau.

Map Key #	Place Name	Meaning <sup>*</sup> and Source	Location
	Kaulanakiholo	Peak. (Gay and Robinson 1891 map of Kaua'i).	Peak east of Hā'ele'ele Ridge. East of Lonoko'iu'iu peak.
	Kaʻulaʻula	Valley. Lit., the redness. (USGS 1965).	Valley between Ha'ele'le Ridge and Lapa Ridge
	Kaunalewa	Ridge once noted for its famous Coconut Grove (USGS 1965). Spring [Kaunalewa Shaft/Well] (USGS 1963); Former Plantation Camp/Village (USGS 1963). Lit., placed up high as near the heavens.	Ridge between Wailau Valley and Kuapa'a Valley.
	Kauwila/Kauila	Lit., kauila tree.	Unknown.
	Kawai'eli		Along beach between Kokole Point and Moelaoa, ear south end of airstrip. On the Mānā plain. West of Niu Ridge.
	Kealapiʻikamenehune	Trail. Lit., the trail of the Menehune.	Unknown.
	Keālia	Pond. Lit., Salty or brackish.	Unknown.
	Keana	Lit., the groto	Unknown.
	Keanapuka	Beach area. Lit., the tunnel passage. (Gay and Robinson 1891 map of Kaua'i).	On the Mānā coastal area.
	Keawanai'a	Beach area, fishing and hikilau area. Lit., the porpoise channel/passage. (Gay and Robinson 1891 map of Kauaʻi).	On the Mānā coastal area. South of Polihale
	Kekiamanu	Lit., the bird catcher. (Gay and Robinson 1891 map of Kaua'i).	On the Mānā plain. West of Kolohale.

Map Key #	Place Name	Meaning <sup>*</sup> and Source	Location
	Kepapa	Spring boundary point. Elevation 1800 feet (USGS 1965).	Water enters Ka'ula'ula Valley. Corner on Forest Reserve boundary.
	Kinikini	Beach area, fishing grounds, ditch area.  Name of the Chinese who was the caretaker of the Kawai'eli ditch which regulated the flow of water from the swamp to the sea, he lived nearby here. Surf site, windsurf site, and drainage cana at PMRF. Lit., abundant.	Pacific Missile Range Facility, Kaua'i.Kinikini is the section of the shore that includes the drainage canal that empties into the ocean at the south end of the runway, also known as Airports.
	Kipakea	(Gay and Robinson 1891 map of Kaua'i)	On the Mānā plain. Below Makahoa Ridge, and north of Kaunalewa
	Koenaha	(Gay and Robinson 1891 map of Kaua'i).	On the Mānā plain. West of Kaunalewa.
	Kohomahana	Beach area. (Flores and Kaohi 1992:15 Map).	On the Mānā Plains, north of Mānā Point, and west of the PMRF Airport.
	Kokole Point	[Lae o Kokole] (USGS 1963), lighthouse. Lit., any food crop stunted by weeds or drought; raw.	Light atop a pole approximately 58 feet above sea level on the dunes south of the Pacific Missle Range Facility.
	Kolo	Ridge. (USGS 1965). Swamp; <i>loko pu'u one</i> , and possible village. Lit., crawl or pull. (Gay and Robinson 1891 map of Kaua'i).	Ridge betweem Kahoaloha Valley and 'Ōhai'ula Valley. <i>Loko pu'uone</i> located on the Mānā plain, south of Kolo Ridge.
15	Kolohale	Lit., house of Kolo. (Gay and Robinson 1891 map of Kauaʻi).	On the plain of Mānā between Niu Ridge and Makahoa Ridge.
	Kona	Moku or traditional land district. Lit., leeward.	South side of Kaua'i island.
	Kuakiʻi	Stone, beach area. Lit., image of the back, referring to the image of a person's side view on a stone that is submerged in the ocean just off the reef area at the site. (Flores and Kaohi 1992:15 Map).	Located in the ocean west of the Māna Plains, southwest of Moelola and northwest of Kohomahana.

Map Key #	Place Name	Meaning* and Source	Location
	Kuapaʻa	Valley. Lit., firm back. (USGS 1963).	Valley between Kaunalewa Ridge and Pulehu Ridge.
	Kunumao	Possible village. Lit., cleared-up cough. (Gay and Robinson 1891 map of Kaua'i).	Located on the Mānā Plain, directly below and between Kamokala Ridge and Niu Ridge.
	La'ahia	Possible village. Lit., set apart for sacred purposes. (Gay and Robinson 1891 map of Kaua'i).	On the plains of Mānā. West of Mānā Ridge.
18	Lā'au'ōkala	Point, Boundry point.Lit., bristly tree. (BCT 1:140, USGS 1963). (Gay and Robinson 1891 map of Kaua'i).	Point near Makaweli. "Boundary of Waimea commences at the beach at the mouth of the Waimea River at a place called Laauokala."
	Lapa	Gulch, ridge, sand dune, and house sites. Lit., ridge. (USGS 1965). (Gay and Robinson 1891 map of Kaua'i).	Ridge between Kaulala Valley and Kahoaloha Valley
	Limaloa	Village, once the area of a famous coconut grove, swamp. Lit., long arm. Name of the god of mirages in Mānā, Kaua'i, guardian of the sea. (Gay and Robinson 1891 map of Kaua'i).	South of Kaunalewa nd Kaunalewa Ridge. On the plains of Mānā.
	Lonokoʻiuʻiu	Peak. Lit., Lono of a faraway distance, so high as to be barely visible. (Gay and Robinson 1891 map of Kaua'i).	Peak on the same ridge line as Hā'ele'ele Ridge.
	Lua	Reservoir and hill. Lit., crater or hole. (USGS 1965).	Reservoir near Pu'u Lua. "Pu'u Luais an eroded remnant of an ancient filled crater" in the Nā Pali formation of the Waimea Canyon Volcanic Series. Elevation 3476 ft. Lua Reservoir formed by a dam at the head of Hā'ele'ele Stream, at the SE side of Pu'u Lua, and supplied by Koke'e Ditch. Elevation 3268 ft.
	Mahamoku	Possible beach.	Unknown.

Map Key #	Place Name	Meaning <sup>*</sup> and Source	Location
	Maka'aki'aki	Heiau. Possible Pāhula.	Bennett's Site 29. "near the Waimea ditch line on the west side of the Waimea river, a little above the Menehune ditchIt is said that the hula was taught here." (Bennett 1931:107).
	Maiʻaloa	Valley. Lit., long banana.	Ridge located between Niu Valley and Wailau Valley
	Makahoa	Ridge. Lit., friendly point. (USGS 1965). (Gay and Robinson 1891 map of Kauaʻi).	Ridge between Niu Ridge and Kaunalewa Ridge.
	Makahoe	Heiau. Lit., friendly point.	Bennett's Site 11. "Makahoe heiau and village site on Niu ridge, Kaunalewa. A small platform village shrine. Thrum describes the village as 'Four and one-half miles from the coast and at an altitude of 1200 feet' Petroglyphs were reported for this area." (Bennett 1931:102).
	Makuaiki	Unknown.	Unknown.

Map Key #	Place Name	Meaning* and Source	Location
11	Mānā	Ahupua 'a, ridge, village, former plantation camp, reservoir, shaft (USGS 1965), point. (USGS 1963), and ditch. Dry western end of Kaua'i, where an older sister of Pele, Nāmaka-o-Kaha'i (the eyes of Kaha'i), introduced the kauna 'oa dodder. Coastal plain from Kekaha to Polihale fronted by a calcareous sand beach approximately 15 miles long, one of the longest beaches in Hawai'i. The cliff along the inner edge of the plain is an ancient sea cliff and the composition of the plain is a combination of lagoon deposits, calcareous beach and dune sand, and alluvium. Mānā Plains Historic Ditch State Site no. 50-30-05-00754. Site consists of a ditch constructed either at the end of the 18th century or at the beginning of the 19th in order to drain Mānā Plain while it was still a marsh. Lit., arid. (OHA Kipuka Online, 2023-10-02, SHPD Library: K-00289). (Gay and Robinson 1891 map of Kaua'i).	On the Westside of Kaua'i.
	Mānā J. Cemetery	Historic Site no. 50-30-05-00616. (OHA Kipuka Online, 2023-10-02, SHPD Library K-00215).	Site located beyond Kehaha, off Kaua'i Road, on grounds at PMRF at Barking Sands, approx. 180.0m north of site 618; consists of Japanese plantation worker cemetery containing 60 graves; dates to 1901, at earliest.
	Moelola	Ridge and valley. Lit., striped tapa. (Gay and Robinson 1891 map of Kaua'i).	Ridge between Ka'awaloa Valley and Niu Valley. Valley between Niu Ridge and Makahoa Ridge.
	Namahana	Valley. Lit., warmth. (Gay and Robinson 1891 map of Kauaʻi).	Valley east of Kamōkala Ridge.

Map Key #	Place Name	Meaning* and Source	Location
	Niu	Ridge and valley. Lit., coconut. (USGS 1963 and 1965).	Valley and ridge between Kamōkala Ridge and Makahoa Ridge.
12	Nohili	Barking sand [Keonekanionohili]. Swamp, pu'u one, ditch, point, beach area, sand dune, pond, house, and camp sites. (USGS 1965). Nohili Pond was one of three large ponds drained and filled for sugar plantation. See also Kawaiele and Kolo ponds. Lit., tedious or slow. (Gay and Robinson 1891 map of Kaua'i).	Coastal area of Mānā.
	Nohomalu	Valley. Lit., sheltered residence. (Gay and Robinson 1891 map of Kaua'i).	Valley between Kahelu Ridge and Kamōkala Ridge.
6	Nuʻalolo	Valley, stream, land section, trail, Nā Pali Coast, north-west Kaua'i, proposed as a State reserve area. The <i>iliau</i> , a relative of the silversword grows here. Nua'lolo-kai is a small coastal flat protected by a fringing reef. It provided access to the sea for residents of hanging valley of Nu'alolo-'āina. (USGS 1965).	Nā Pali Coast, north-west Kauaʻi.
	Ōhaiʻula	Ridge and Valley. (USGS 1965). Lit., red 'oha shrub.	Ridge between 'Ōhai'ula Valley and Waiakamo'o Valley. Valley between Kolo Ridge and 'Ōhai'ula Ridge.
	ʻŌpelu	'Ili 'āina, ahupua'a, and beach. Not awarded. Testimony by Iona Kamo'opōhaku. (Māhele Documets, Native Testimoney 11:241). Lit., mackerel scad, and also a variety of taro.	'Ili 'āina located in claim no. 6112 by Isaac Neck: "No. 3. An ahupua'a called 'Ōpelu beach; on Waimea side by ahupua'a 'Ōpelu 2; on makai side by sea; on Miloli'i side by ahupua'a Ka'awaloa (q.v.). 'Ōpelu 1 and 2 were probably 'ili of the former ahupua'a of Mānā, at the mouth of the Ka'awaloa Valley."

Map Key #	Place Name	Meaning <sup>*</sup> and Source	Location
	Palaiholani	Beach area, boat landing, point. (Gay and Robinson 1891 map of Kaua'i).	At the coastal area of the Mānā plain. West of Kahelu Ridge.
	Papa'alae	Peak. Lit., reddish flat surface. (Gay and Robinson 1891 map of Kauaʻi).	Peak east of Kolo Ridge.
	Pāpi'ohuli	Lit., curled-over arch of the <i>'ohai</i> blossoms. (Ke Alakai o Hawaii, Feb 4, 1932, p.4).	Located in the area of Polihale. Once the home of the Kua $k\bar{u}puna$ . The descendants of the Kua $k\bar{u}puna$ presently reside in Kekaha.
	Papohale	Valley. Lit., deep/open enclosure. (Gay and Robinson 1891 map of Kauaʻi).	Valley located east between Mana Ridge and Kahelu Ridge. It runs northeast off of Kahelu Nui Valley.
17	Pawehe	(Gay and Robinson 1891 map of Kaua'i).	On the coastal area of Waimea town. South of Waimea Plantation.
	Piliamoʻo	Valley. Lit., adjoining the mo'o. (Gay and Robinson 1891 map of Kaua'i).	Valley near Waiakamoʻo. (Pilimoʻo is also an ʻili in Makaweli ahupuaʻa). North east of Waimea Plantation. North of Kikiaola.
	Pine'i	Beach area, fishing grounds, and ditch area.	Unknown.
	Pohakainapuaʻa	Stone. Lit., splotching/dotting on the pigs. (?-Pig destroying stone, Pōhākāinapua'a). (Gay and Robinson 1891 map of Kaua'i).	East of Polihale Ridge. North of Pu'ukapele.
	Pōhakumanō	Stone, peak. Lit., shark stone. (USGS 1963). (Gay and Robinson 1891 map of Kauaʻi).	It is also a boundary point, and pu'u in Waimea <i>ahupua'a</i> at the 2600 ft. elevation. The point is on a Forest Reserve boundary above Mānā. On the same ridge line north of Kaunalewa Ridge and Pulehu Ridge. South of Ahuloulu peak.

Map Key #	Place Name	Meaning <sup>*</sup> and Source	Location
	Polihale	Heiau, house site/lookout platform, cultural/lithic deposits and scatter, cutural/basalt scatter, spring (near end of beach), cliff, spring (in cliffs) (USGS 1965), ridge (USGS 1965), beach area, and State park. Polihale is famous for its seaweed [pahapaha or līpahapaha, a general term for sea lettuce (Ulva fasciata and Monostroma oxyspermum)] used in leis, a practice said to have been introduced by Pele's sister, Nāmakaokaha'i. Lit., near the bosom is where the departing souls free secured and hospitable. (Gay and Robinson 1891 map of Kaua'i).	Polihale Ridge is between Hikimoe Valley and Hā'ele'ele Valley. Bennett's Site 1. "a four-terraced structure on the seashore at the base of Polihale cliff" (Bennett 1931:99; USGS 1963). Westside of Kaua'i.
	Poʻoahonu	House site, beach area, fishing village, canoe landing, swimming lagoon formed when sand shifts with heavy surf exposing protective outer reef and pond near the shore. Lit., head of the turtle. (Gay and Robinson 1891 map of Kaua'i).	Along the coastal area of Mānā. West of Kolo.
5	Puanaiea	Coastal area. (Gay and Robinson 1891 map of Kaua'i).	Nā Pali Coastal area at the foot of Nuʿalolo Valley.
	Puʻuhalo	Lit., peering mound. (Gay and Robinson 1891 map of Kaua'i).	Located on the Mānā Plains, east of 'Āina'ike also known as 'Āina'iki
	Pu'uheihei	Possible village. Lit., enchanged/ensared mound.	Unknown

Map Key #	Place Name	Meaning <sup>*</sup> and Source	Location
10	Puʻukapele	House sites and <i>heiau</i> platforms, house sites, peak. Voices from the Menehune at Pu'ukapele could be heard on O'ahu. Lit., the volcano hill. (AB 6:184, TMK 1602:76:11, Claim No. 6112:1 by Neck, TMK 1602:37). (Gay and Robinson 1891 map of Kaua'i).	The peak is at the 3,657-4,000 ft. elevation of Waimea Canyon. East of Kolo Ridge.
	Puʻulehu	Ridge. Lit., ash-colored hill. (Gay and Robinson 1891 map of Kaua'i).	Ridge between Kaunalewa and Hauola Ridge.
	Puʻulua	Peak. Lit., double hill. (Gay and Robinson 1891 map of Kaua'i).	East of Polihale Ridge.
	Pu'umoi	Peak. Lit., <i>moi</i> fish hill. (Gay and Robinson 1891 map of Kaua'i).	Peak east of Kamōkala Ridge. South of Ahuloulu peak.
	Pu'uohanalei	Peak. Lit., hill of Hanalei (Gay and Robinson 1891 map of Kaua'i)	Peak between and to the east of Kolo Ridge and Ohaiula Ridge.
	Puʻuʻōpae	[Pu'u 'Ōpae] Reservoir. Ranch. Manini family ranch. Location of KHHA (Kekaha Hawaiian Homes Association) project. Lit., shrimp hill. (Marshall, 1914:39).	Triangulation station, Nā Pali at the 2,147 ft elevation.
	Puʻuōpaeiki	Peaki. Lit., small shrimp hill. (Gay and Robinson 1891 map of Kaua'i).	Above Kaunalewa Ridge.
	Puʻuʻōpaenui	Peak. Lit., big shrimp hill. (Gay and Robinson 1891 map of Kauaʻi).	Above Kaunalewa Ridge.

Map Key #	Place Name	Meaning <sup>*</sup> and Source	Location
	Saki Mānā	Village, plantation camp. "ancestors on my grandma's side were residents of Polihale. That would be the Aipoalani and the Kilauano 'ohana [family]. They were descendants of Saki. Saki is a group of islands out in South PolynesiaI guess. Supposedly, they migrated from that areaSakinese" (James Kanohoanu Nakaahiki, 2023-11-26).	Polihale.
	'Uwaluiki	Valley. Lit., slightly clawed or scratched. (Gay and Robinson 1891 map of Kaua'i).	Valley along Mānā Ridge, south of Piliamoʻo Valley
	Waiakamoʻo	Valley (USGS 1965). Lit., water of the mo'o.	Valley is between 'Ōhai'ula Ridge and Mānā Ridge.
	Waia'o'u	Peak. Lit., water of the 'o'u bird. (Gay and Robinson 1891 map of Kaua'i).	Peak in the vicinity of Kaunalewa Ridge.
	Wailau	Valley. (USGS 1963). Lit., many waters. (Gay and Robinson 1891 map of Kaua'i).	Valley between Makahoa Ridge and Kaunalewa Ridge.
16	Waimea	Moku (judicial land district), canyon, kūlanakauhale, landing, river, and ditch. (USGS 1963). Lit., reddish water. (Gay and Robinson 1891 map of Kauaʻi).	<i>Moku</i> [judicial land district] extending from Nualolo to Hanapepe, inclusive. A ditch that takes water to Mānā from the Waimea River at about the 150 ft. elevation.
	Waineki	Swamp and <i>mo 'o</i> . (Māhele documents, Native Testimony 11:34). Lit., neki bulrush water.	Swamp in the mountain above Waimea town, home of the Menehune. The swamp has a stream joining 'Elekeninui Stream at about the 3540 ft. elevation to form Kōke'e Stream. "A moo of Waineki bounds the makai side of claim no. 6331:1 by Koolau (TMK 1601:19) in the ili of Halepua. TMK 1601:18."
	Waiokapua'a	[Or Waiapua'a] Beach area, bay, point. Lit., water of the pig. (Gay and Robinson 1891 map of Kaua'i).	Located on the coastal area of the Mānā plain. West of Makahoa Ridge.

Map Key #	Place Name	Meaning* and Source	Location
	Waiolono	Beach area, point. Lit., water of Lono. (Gay and Robinson 1891 map of Kauaʻi).	On the coastal area of Mānā. West of Kaunalewa.
	Waioluhi	Lit., water of Luhi.	Unknown.

Places of names sourced mainly from Flores and Kaohi 1992, and USGS maps unless otherwise noted.

<sup>\*</sup> Adapted from Ulukau: Hawaiian Electronic Library (https://ulukau.org/index.php?l=en).

<sup>†</sup> Most of these place names were derived from: Flores and Kaohi 1992 with translations and other sources of information collected from Ulukau (Online): Hawaiian Dictionary (Pukui 1969), Hawai'i Place Names (Pukui and Elbert 1966) and Place Names (Clark 2002) unless noted in the Meaning and Source column. The Map Key# are places mentioned in the *mo'olelo*(s) translated by Keao NeSmith on pages 35-48, and depicted in Figure 4 (Gay and Robinson 1891 map of Kaua'i).

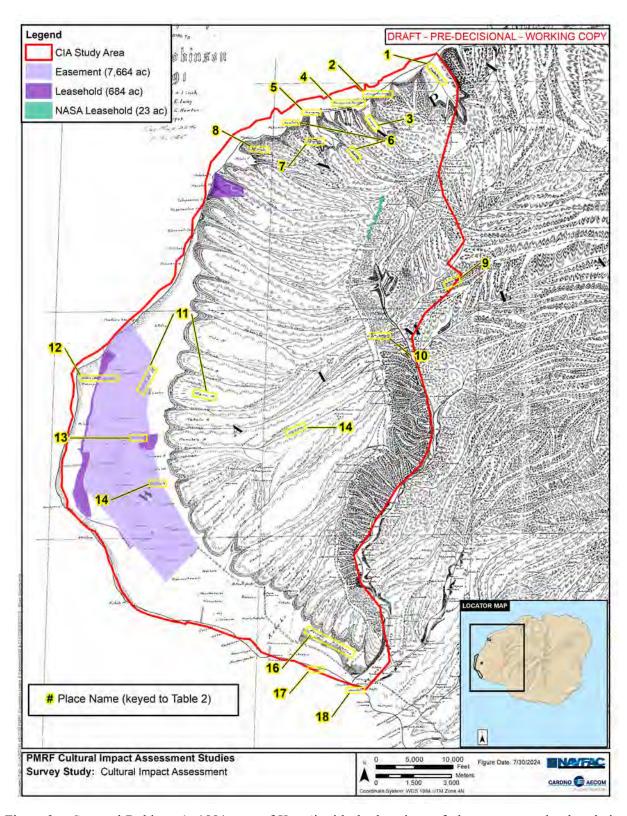


Figure 3. Gay and Robinson's 1891 map of Kaua'i with the locations of place names and cultural sites within the Kona *moku* of Kaua'i and surrounding area. These locations are described in detail in Table 2.

### MO'OLELO: TRADITIONAL LITERATURE

The ethnographic works of the late 19th and early 20th centuries contribute a wealth of information that comprise the traditional literature—the *mo 'olelo*, *oli*, and *mele*—as well as providing glimpses into snippets of time, and a part of the Hawaiian culture often forgotten. The *mo 'olelo* [stories] allow *ka po 'e kahiko*, [the people of old], the *kupuna* [ancestors], to come alive as their personalities, loves, and struggles are revealed. The *oli* [chants] and the *mele* [songs] not only give clues about the past, special people, and *wahi pana* or legendary places, they also substantiate the magnitude of the language skills of *ka po 'e kahiko*.

The following two *mo'olelo* or stories (Table 3 and Table 4) were contributed by Keao NeSmith who translated them (Table 3 and Table 4). *He Moolelo O Kaao No Papiohuli* [The Story of Pāpiohuli] was published in the Hawaiian Newspaper, *Ku'u Hae Hawai'i*, July 4, 1913, pp. 5–7. *He Mo'olelo Hooni Puuwai No Ka Elu Kapunohuula* [A Romantic Tale of the Hero Kapūnohu'ula] was published in the Hawaiian Newspaper, Kuokoa Home Rule, Feburary 24, 2911, p. 4. Several of the names in this *mo'olelo* are places depicted in Figure 3. Both *mo'olelo* attest to the importance of the locations near Mānā, its shoreline, and marine resources.

Table 3. Kuu Hae Hawai, July 4, 1913, pp. 5–7.

### HE MOOLELO KAAO NO PAPIOHULI

Ke Kaupu Keehi-ale o na Ku-nalu o Awini, a o ka Ipo Aloha Hoi a ke Aliiwahine Kolohale, "ka Wahine Hele-La o Kaiona—Alualu Wailiula o Mana."

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pu mai nei kona wahi e noho mai poo huna i ke ao uli, no keia mau la he kanaka kino ula he alii he olelo a Kuhoolapa ua huli like aku na poe apau o ka papa hulihonua a nana ma kahi e noho mai ana o Puanaiea ka makaula, eia nae aohe he ike aku o na poe apau, a koe wale no elua mea e ike nei, oia no, o Kuhoolapa ke kahuna, ame ke aliiwahine Mana, nokamea ua haawi mai la na aumakua poo o ka po i ka ike ia Mana no ia wa wale no e ike aku ai oia i ke kanaka kino ula ana i halawai uhane ai he elua manawa.

Ke kali nei ka papa hulihonua i ka manao pane o na alii ma ko laua aoao no ke noi a Puanaiea no ka lilo o ke keiki nana e hanai me kana wahine me Anaki ka mea nona ka puu o ahi kapu ia mau la, e o nei no ka inoa o keia wahine ma ua Puu o ahi e kaulana nei Anaki e ku kilakila nei i ke alo o Milolii.

Oia kali ia o ka papa hulihonua a liuliu iki, ia wa i loheia aku ai ka leo o ke alii Kalanamaihiki i pane ana mai; Ae, ua manao no maua e aua i ka hanai

### THE STORY OF PĀPIOHULI

The Albatross Stepping Over the Waves of 'Awini and the Lover of Chiefess Kolohale, The Woman Who Goes to the Sun at Kaiona—Chasing the Mirages of Mānā

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... and everyone of the council of priests turned to look at where Puanaiea, the prophet, was sitting, but not everyone saw him; only two saw him: Kūhō'ōlapa, the priest, and Chiefess Mānā, as the leading family of deities of the night granted sight to Mānā alone when she saw the man in spirit form, with whom she met twice as spirits.

The council of priests awaited the response of the two chiefs on their side regarding the request of Puanaiea about taking the boy to adopt, a request of his wife, 'Anaki, as well, for whom the peak where firebrands are hurled is named, thus perpetuating the name of this woman on that famous firebrand-hurling peak of 'Anaki that stands so majestically in the face of Miloli'i.

The council of priests waited a little while, and at that time, the voice of the chief, Kalanamaihiki, replied, "Yes, we both thought to withhold the adoption of the child for us, and that is why we were slow to respond to the request of the

ana o ke keiki na maua, a oia ke kumu o ka ulolohi o ka maua pane ana aku i ka hua noi a ka Makaula Puanajea no ka lawe hanaj i ke keiki.

Aka hoi, na ka ouli o ka manawa i ku hoaku mai nei, a ke aliiwahine nei hoi i ike aku nei, nana ma o ke aliiwahine nei la, i ao mai nei ia maua e ae aku maua i ka lilo ana o ke keiki e hanauia ae ana e ke aliiwahine nei na Puanaiea ka makaula e hanai, a oia ka maua e ae aku nei imua o oukou e ka papa hulihonua o ko maua alo alii nei. A eia wale no nae ka ke aliiwahine noi ia oe e Puanaiea, i ekolu hoi la o ke keiki a maua me maua e milimili aku ai a i ka eha no hoi o ka la e kii mai ai oe i ke keiki a lawe aku, ia wa koke no i ae mai ai o Puanaiea a o ka nalo aku la no ia o ke aka kino wailua o ke kanaka kino ula, a ke aliiwahine i ike ai i ku mai ma ko Puanaiea wahi e noho ana.

A o ka pau ana iho la no ia o ka hui ana o ka papa hulihonua, a na ka Hoopaa Kahuna Hooneinei i ku mai i ka pule pani a hookuu i ka papa hulihonua. A penei ia pule a Hooneinei:

E Ku, e Lono, e lono i kauweke, E uweke, e wehena ka pawa, Ka piliaiku o ka po e—a—e, He po kaakua po kinikini, I kinikini i ka lono i noa a— Enoa ka papaiaea, ka papakapu,

Ka makohi makolukolu o ka ike, E ike i ka hoole akua hoole ma—na,

E ike e ka paa iluna ka paa ilalo, E ko kela pea ko keia pea, a— E ke namu ke nawa hoi ea— Ua pau kikikaale o ko muli nei, Pau ka wa olelo a ka piha akua,

E hainukai e kai olena ea, Ua noa, ua noa ka Papa Hulihonua, Amama lele wale aku la.

A pau keia pule a Hooneinei ka hoopaa kahuna ia wa i hookuu ai na hana a ka papa hulihonua, a hoi no hoi kela ame keia i kona hale iho, a o na alii no hoi i ko laua Halealii i hanaia a akoia me ka uluhe ame ke ka o ka maile a oloko ua hoonaniia me na nani like ole, elike me ke ano mau iloko o na hale o na alii o ke au kahiko o keia Paeaina, o ka

prophet, Puanaiea, regarding taking the boy to adopt.

"But when the omen appeared that the chiefess saw, it taught the two of us through the chiefess that we should agree that the boy to be born to the chiefess and Puanaiea, the prophet, should be adopted out, and that is what we agree to before the council of priests of our royal court. And this is the only request of the chiefess to you, Puanaiea, that our child remain with us for three days to spend time, and on the fourth day, you should come and take the child." At that time, Puanaiea agreed to it and the apparition of the man in mystical form disappeared that the chiefess saw that stood where Puanaiea was sitting.

And that was the end of the gathering of the council of priests, and Ho'oneinei, the chanter of the priests, stood and offered the closing prayer and released the council. This was the prayer Ho'oneinei offered:

O Kū, Lono, Lono who opens the way Let it be open, break open the morning Having sat stiff through the night A night of dizziness, multitude of nights A multitude that Lono made free Let the council that elevated, the council placed under sacred restriction be set free Digging profoundly for knowledge Knowledge to deny the god, to deny the power Let those above and below see Those of the far extremities The Nāmū people, the Nāwā people Those at the rear are quick to appear The time for the throng of gods to speak is over Feed them the salt water, the 'olena water It is set free, the Priest Council is set free It is released

When that prayer was over, Ho'oneinei, the chanter of the priests, ended the event of the council of priests and each went to their own home, and the two chiefs went home to their royal home that was constructed and thatched with uluhe ferns and the inner bark of maile decorated with all sorts of beautiful things, as was customary for the homes of chiefs in the ancient days of these islands. There was a bed made that

moena oluna o ka hikiee moe o na alii oia no ka moena Ahunalii Pawehe o Niihau i ulana ponoia e Pahuihonu, ka wahine kino paee o Niihau, nana i ao mai i ka ulana ana o ka moena Pawehe o Niihau e kaulana nei i keia la, he moena e pahee ai o ko ili, ame ka nui o ke kala e loaa ai. A ua ulana puia no hoi iluna o keia moena o na alii Kalanamaihiki ame kana Aliiwahine Mana, ka Hulupue, o ka manu ula o Kaula.

A pela no ka noho ana o na alii ai aina o Mana a ua noho no hoi ko laua mau makaainana elike no me ke ano mau e ikeia nei.

A hala ae ana he mau anahulu la, a pela aku ana, ua ike maopopo loa ia ae la ka opu hapai o ke liiwahine a o ka eono paha ia o na ku ma ka helu Hawaii.

Ia wa i hoea mai ai o Puanaiea, a hiki ana imua o na alii, i lawe mai oia he laau na ke aliiwahine e ai mau ai mai ia manawa aku a hiki i ka hanau ana o ke keiki, a o keia laau mai ia manawa mai ka maa ana o ka lahuikanaka o Hawaii nei i ka hanai i na wahine hapai, a o ka inoa o keia laau he "makou," he laau keia e hooi ae ai i ka ui o na helehelena o ke keiki, a he hiona hoi e kau ana o ke kanaka ui, a wahine ui maluna o na keiki i hanauia mai e na makuahine i ai i keia laau, a aole e pau ka ui a elemakule a luahine hoi.

Ia loaa ana mai o keia laau makou i ke aliiwahine Mana, ua hoomaka iho la oia e ai, a pela mau aku aia no ka pau ana a ka la e nahunahu hanau ai o ke keiki.

A ua ana aku la no hoi na alii ia Puanaiea ka makaula e noho mai me laua a hana ke anahulu. He ana ana no hoi na na alii i aeia aku ai e Puanaiea.

A hala ae ana he mau anahulu la, a pela aku ana ke hookokoke loa maila ka wa hanau o ke aliiwahine Mana.

Ia ka hiki ana he elima la wale no i koe a hanau ai ke aliiwahine, ua hoike e mai la na lani i na hoikena hai mua, ua kokoke loa mai e hanau ka hookalakupua, ke aiwaiwa ahikanana o na pali ku'iae ku'i iho o na Honopuwai akua Honopuwai kanaka, oia hoi ke ike aku nei ka lehulehu o na kanaka o ke Alii Kalanamaihiki i ka lele ino o ke

was raised, which was called a moena ahunali'i pāwehe of Ni'ihau woven expertly by Pāhuihonu, the woman of mystical form of Ni'ihau, who taught weaving of fine mats of Ni'ihau that have become so famous today. It is a mat that is so slick to the touch and very colorful. And what was woven into this moena of the chief Kalanamaihiki and his chiefess, Mānā, was the feathers of the red birds of Ka'ula.

And that was the way the rulers of the land lived of Mānā, and the people under them lived in the usual way as we know it today.

Several weeks passed and it was seen that the chiefess was soon to give birth, and it was the sixth period of the pregnancy according to the estimation of Hawaiians.

That is when Puanaiea arrived and came before the chiefs in order to bring medicine for the chiefess for her to eat from that time until the birth of the baby, and the type of medicine at that time that was familiar among the people across Hawai'i to give women about to give birth was called *makou*, an herbal medicine to improve the beauty of the face of the child giving the child a beautiful appearance as a handsome man or beautiful woman after being born to a mother who consumed this medicine. They would not lose their good looks as they became an old man or woman.

When Chiefess Mānā received this medicine, she started eating it up until the time drew close for her labor contractions to give birth.

The chief and chiefess pressed Puanaiea, the prophet, to stay with them for another ten days. It was an accommodation that Puanaiea allowed the chiefs.

A few more weeks passed and the time was close for Chiefess Mānā to give birth.

When five days remained for the chiefess to give birth, the heavens revealed the first signs that the time was close to give birth in magical fashion, in mysterious ways giving birth to a warrior of the succession of cliffs of Honopū Wai Akua, Honopū Wai Kanaka. The multitudes of the people of Chief Kalanamaihiki witnessed the

ao kaalelewa a he ekolu manawa e ku'i pamalo ai o ka hekili i ka la hookahi, ke ui aku nei ui mai na kanaka; ea, heaha la hoi na hopena e hoea mai ana o keia mau hana a ke ao papanuu ke ao papalani?

A me ia mau ano iho la ia mau la e hana mau ai, a ma na po no hoi, aohe i kana mai ua mea he hauwalaau o ka leo o ke kai, me he la e hoonakeke maoli mai ana no ka nalu i ka paala o kahakai, a ua ku a makau maoli ka poe hele lawaia hoomoemoe o ka po.

A e uwaka mau mai ana no hoi ka leo o ka manu Noio aukai, a i ka ike ana o na kanaka apau i keia mau haawina ko ka lewaluna ame ko ka paa ilalo nei, ua hoomaka mai ka manao o na kanaka e pioo pioloke me ka piha pihoihoi, ano ku i ka weliweli, eia nae, ke ike mai la no ke kahuna nui Kuhoolapa i ke kumu mai o keia mau ouli kamahao, a oia kana i olelo aku ai ia Hooneinei ka hoopaa kahuna:

"Ea, hookokohi kaumaha mai nei na paia lani, a akahi wale no ka po i kohakoha ai ika pukeia ana o ka paala o kahakai."

Ia wa i pane aku ai o Hooneinei: "E nanalia aku no hoi ka ike aole e o ka noho nanea wale iho no a hoea mai ka la o ka pilikia oia ka wa e kukupau ai ke kai o Nualolo."

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I keia wa e puka nei keia mau olelo ia Hooneinei aia ke lo'u iki la ka Kuhoolapa aka, me ka ike ole mai o ka hoopaa kahuna, me ka manao nei o Hooneinei aole la i ike o Kuhoolapa ke kahuna nui, i na ano o keia mau ouli ana i hoomaoe aku nei

A o na ano no i loaa i ke kahuna nui, oia mau ano no kai ike pu ia e Puanaiea ka makaula iaia e noho kamailio pu ana me Honopuwaiakua a o Honopuwaikanaka no ia hookahi kino elua inoa.

E pono paha maanei e hoakaka pokole aku ka mea kakau, i kekahi mau mea e pili ana i keia luahine ano kupua, i akaka e ai ia oe ke ano o keia wahine ma ka nee ana aku o keia moolelo, oia hoi, penei:

O keia wahine he elua ona kino lau eepa, oia no he kino makani nona ka hapa mua o kona inoa clouds racing across in the sky and three cracks of dry thunder in the same day, and the people asked each other, "Wow, what are all of these happenings on the earth and in the sky going to lead to?"

And along with these events that happened in those days, at night, there was much racket of the sea as if the waves were rattling the boulders of the seashore and the fishermen who planned to lay nets at night became very afraid.

The noio birds chattered noisily, and when the people saw these signs taking place in the skies above and on the earth here below, they began to worry with fear and excitement, terrified. But the high priest Kūhōʻōlapa knew the reason behind the marvelous omens and that is why he said to Hoʻoneinei, the chanter of the priests:

"The walls of the heavens are greatly troubled with pain. This is the first night that the boulders of the beaches are cracked together loudly."

At that time Ho'oneinei answered: "Pay attention to what is known. Don't sit relaxed until the day the day of troubles. That is when the sea of Nu'alolo will become violent"

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While Ho'oneinei was speaking, the shadow of Kūhō'ōlapa was hovering, but the chanter of the priests did not see it thinking that the high priest, Kūhō'ōlapa, did not know the meaning of the various omens that he spoke of in vague ways.

What the high priest did understand, however, is that what Puanaiea, the prophet, did see as he was talking with Honopūwaiakua and Honopūwaikanaka, was that they were one and the same.

It is probably necessary here for this writer to explain a few things briefly about this old woman who was also a demigod, that you may have already gathered about this woman as this story has progressed:

This woman has two physical forms, a wind form, which is the first part of her name, Honopū, the name of the wind that Kūapāka'a did not get for

Honopu oia no ka inoa makani i loaa like ai ia Kuapakaa iaia i paha ai i na makani o Kauai, e olelo ana penei: "He Honopu ko na Honopuwai."

O ka ikaika o kela kumu makani me keia kumu makani ame ko ikaika o kela welelau makani me keia welelau makani, eia iloko o keia kino eepa o Honopuwaiakua, a o ka lua o na kino eepa, oia no, he kino wai, a nona ka hapa hope o ka inoa keia wahie eepa o Waiakua.

O ka ikaika o na kumu wai ua apau o ka lewa ame na welelau wai ua apau loa o ka lewa, ame ka ikaika o na kumu waikahe apau, me na welelau waikahe apau o lalo nei eia iloko o keia kino eepa o keia wahine, a pela i holo loa ai keia inoa kupua eepa o keia wahine o Honopuwaiakua, a e o nei no keia mau inoa ma kekahi mau aina owawa pali kahako o "Na Pali" o Kauai, a ke makemake keia wahine e noho oia iloko o kona mau kino lau, alala e hoi ana oia a noho ma Honopuwaiakua, a ke makemake no hoi oia e noho iloko o ke kino ano kanaka, alaila e hoi no oia a noho ma Honopuwaikanaka, a pela iho i pili pu loa ai keia mau awawa aina elua i kahi hookahi, nokamea he hookahi no mea nona ka puana o na inoa oia wahi i hele a noho kaulaaa i na keiki aloalo makala o ua mau hulaana la o na Honopu elua o ka mokupuni o Kauai a Manokalanipo (Kamawaelualani i keia wa).

A o kekahi mau mea kupanaha i ikeia no keia wahine makuahine o ka Makaula Puanaiea, oia no, ma kona mau maka elua he hookahi maka he maka ano kupua oia ka maka akau he ike loa ia maka i ka nohona ame ka hana ana a na eepa kupua o ka lewa iluna ame ko ka paa aina ilalo nei, a o kekahi maka hoi he ike loa i ka nohona, ame ka hana ana a na kanaka o ka paa aina o lalo nei, a o keia mau ano ae la no elua na mea i loaa ma ka lolohe o na pepeiao o keia wahine kupua Honopuwaiakua me Honopuwaikanaka.

Eia nae, me keia nui ike, nui ikaika nui mana, i loaa i keia wahine a na kauna, na kaau na lau, na mano ame na kini a ka eepa nui wale i noho ai aole loa iloko ona a oia mau mea paha i loaa iaia ka manao e hana ino wale mai i ka noho, ka hana ana a na kanaka oia wa, aia wale no a hooheuia aku alaila e oni auanei ua kaikamahine ihupani laeoo la o na Honopu ilaila e ike pono aku ai oe e

the names of Kaua'i winds, and it was said, "the wind name of the two Honopūwai valleys is the Honopū wind."

The strength of the various origins of wind and the origin of the various winds are contained in this mystical form of Honopūwaiakua and the second mystical form is a form of water, and that is the back part of the name of this mystical woman, Waiakua.

The strength of the source of all waters of the sky and all rain water of the sky, and the strength of the source of all flowing waters and flowing waters on the ground are held in the body of this woman of mystical form, and that is how the demigod name of this demigod is rendered as Honopūwaiakua, and these names live on in some of the cavernous valleys of Nāpali on Kaua'i. And when this woman wants to live in her supernatural form as a native crow, she goes back to live in Honopūwaiakua, and when she wants to live in the form of a human, she goes to live in Honopūwaikanaka, and that is why these two valleys are together as one because there is one whose name is spoken of as belonging to that place, who became famous among the children who dared swim the rocky points of the two Honopū valley of the island of Kaua'i of Manokalanipō (Kamawaelualani in these days).

Among the amazing things known about this woman, who was the mother of the prophet, Puanaiea, is that of her two eyes, one eye, her right eye, is able to see mystical beings, their nature, and what they do, both mystical beings of the air and those down here on the land. The other eye can see the nature and actions of people here on the land. These two abilities are gathered from what people talk about this demigod woman, Honopūwaiakua and Honopūwaikanaka.

But with these abilities, these strengths and powers that this woman has in abundance, and then some, as a mystical and powerful being, there is no intention to cause harm to anyone, which is what people of the day would do, unless trouble was brought on, and then this wise and knowledgeable young woman of the two Honopū valleys would realize, dear reader, the meaning of these lyrics of attack below of the ancient days:

ka mea heluhelu i ka pili o keia mele ku'i o ka wa kahiko:

Na ka Ia la i oni po-ia ke ku'i, Kapeku ka hiu o ka Ia la, Lewa ana i ke kai e, Ua nape ha e ka maha, Ke api mai nei la, He Ia nui no ka'u, Ua paa la ma ka hiu, Ku oe la i ka e-o, He pipi no ka akoa, Ku wau la i ka pahu, Moku oe la i ka ohe, Hoi mai.

E hoi ae kaua e ka mea heluhelu ma ke kuamoo o ka kaua moolelo.

Ae, ua ike ae nei kaua ma ka wa o kela mau hiohiona kuapaianaha i ikeia ai e ke kahuna nui ame na kanaka apau o na Alii Kalanamaihiki ame Mana kana aliiwahine oia no ka po ekolu mamua mai o ka hanau ana o ka mea nona keia moolelo aiawai nui wale, a ma ia po hookahi no aia o Puanaiea ke u kamailio pu la me kona makuahine hookalakupua nona kahi moolelo kupanaha i hoikeia ae nei, nana i alako loa mai nei ia kaua e ka mea heluhelu, a kaawale loa mai ke kuamoo mai o ka hele ana o ka moolelo ma kona alahele pololei.

O ke kumu o kela hiki ana o Puanaiea a hui kamailio pu me kona makuahine, no kana wahine no Kamaile i kena aku iaia e hele e hui kuka pu me ka luahine no ka mea e pono ai ka laua hanai alii, a ma ia hui kamailio pu ana o Honopuwaiakua Honopuwaikanaka me Puanaiea kana keiki i hoike mai ai ua luahine la penei:

"Ia olua ka inoa kahu hanai o ke Keikialii a o ka hanai ana ma na mea apau e pono ai kona noho ana aku o keia mua aku, o kakou apau ke hanai, e hanai olua ma na mea hiki ia olua, a pela no hoi au ma na mea hiki iau ke hanai, a na ka hopena no auanei e hoike mai i ka puana a ka moe, oia aku ana ke aiwaiwa a ke ahikanana, e o ai kona inoa apuni na moku, e lilo ai i mea na na kanaka e keha ai. O ke Kaupu keehi ale nana e hee ke ku nalu o Awini." (A e koho pono ai nono keia mau lawena olelo ana a ke mele):

The fish moves to strike with a hit
The tail of the fish strikes
It knows the ways of the sea all too well
The gills flair
They throb
I have a great fish
I have caught it by the tail
You have been speared and are defeated
A clam of the coral reef
I have been stabbed
You are torn by the bamboo
Come back to me

Let us return to the backbone of our story, dear reader.

Yes, we have seen that when the high priest witnessed those events and all of the men of Chief Kalanamaihiki and Mānā, his chiefess, that was on the third night before giving birth to the one whose amazing and great story this is, and on that same night, Puanaiea was talking with his magical mother, whose story is itself spectacular, as was shown above. She is the one who diverted our attention away from the main story being carried on here on this straightforward path.

The reason Puanaiea went to talk with his mother was because his wife, Kamaile, told him to go and consult with the old woman regarding what they should do regarding adopting the young chief that was to be born, and in that conversation of Honopūwaiakua Honopūwaikanaka with Puanaiea, her son, the old woman said the following:

"You two have the adoptive name of the young chief and you two will raise him in all things having to do with his life from now on. We all will raise him. You two will raise him in the ways you can, and I will raise him in what I can, and the result will reveal itself when his sleep in spoken of, amazing things the warrior had done, and his name shall live on across the islands to become something people will aspire to surpass. He will be the ka'upu bird that tramples over and surfs the waves of 'Āwini." (And they will guess that the words of this mele will pertain to him):

I challenge the rough waves of Hanalei

He aloalo kuaua au no Hanalei, He hueu he eueu no ka manomano, He laau lala ole ia no luakini, He laau milolii ia no ka naele, He koa hoopakipaki wai ua no Kahilikolo,

He okaa, oniu, owala laau no Puukapele, He kilohana no Kauai loa no apuni.

A olelo hou mai la ua luahine nei ia Puanaiea, "Eia ke hoomaka mai nei na alelo o ka ino eia la ua hele ka lewa luna a haakokohi, a he elua wale no po i koe a oili mai ka hanai alii a kakou a hoomakuakau anei olua i ka hale," i ninau mai ai ua luahine nei ia Puanaiea.

Ua ae aku la no hoi o Puanaiea, "Ae, oia no ka mea i noho aku nei o Kamaile, a ua makaukau no hoi ke kapa e wahi mai i ke alii ma ko maua la e kii ai oia ka eha o ka la iwaho, a mai ia la aku no hoi e lilo mai ai ke keikialii na kakou e hanai."

Ia wa i pane mai ai o Honopuwaikanaka, "Eia ae keia kapa a o ke kapa ia mawaho loa a olua e wahi ai i ke alii."

O ka wehe mai la no ia o ua luahine nei i emo o ka Hokeo waiho o na kapa i hoopunaheleia a lalau iho la ua luahine nei, i kekahi kapa i kukuia me ka noeau loa, a ua kapalapalaia a hooluu paiulaia no me ka wai aala o na pua aala o ka nahele, e laa ka na-u, ke kamakahala, me ka heu o ka hinano o na hala o Mapuana, a pela aku.

A ua olaniia i ka uwahi o ka iliahi ame ka naio i na la ame na po he umi anahulu, a ina e kaulaiia keia kapa i ka la ua like kona ano me he makaihuwa la i ka po pouli. Ua kapaia ka inoa o keia kapa ia wa o Kaahumakanoelani a na Honapu, a na Honopuwaiakua maoli no i kuku i keia kapa, mamuli no o kona ike e ana i ala honua me kela make ike ona i ka mea e hoea mai ana oia hoi he hanai alii nui aiwaiwa aku ana o Puanaiea kana keiki, ua ae aku la no hoi o Puanaiea i keia mau olelo a kona luahine makuahine, a opeia mai la no hoi ua kapa nei a paa, a lalau aku la no hoi o

p. 7 Puanaiea a kuiee ae la, haawi ke aloha anoai o ke keiki ka makuahine, a hoi mai la o Puanaiea ia po I raise a great ruckus

A tree without branches in the temple

A tree of curled grains of the forest

A koa tree upon which the rain splashes at Kāhilikolo

A club that twirls and swings of Pu'ukāpele A vantage point to view all of Kaua'i

And the old woman said further to Puanaiea, "The tongue of the storm approaches. The skies have become threatening and two nights remain before our adopted chief emerges. Have you two prepared the house?" the old woman asked Puanaiea.

Puanaiea said yes, "Yes, that is why Kamaile stayed behind. The tapa sheets are prepared to wrap the chief in on the day we go and get him when the pain comes out and from that day onwards when he becomes the prince that we raise."

Then Honopūwaikanaka answered, "Here is a tapa that you two should wrap around him as the outer covering when you wrap the chief."

The old woman then took out a container of tapa that she treasured. She took out a tapa that was beaten with great expert skill that was stencilled and dyed with red patterns with scented liquid of the sweet-scented flowers of the forest, like nā'ū, kamakahala, and the fine hairs of the hīnano flower of the hala tree of Māpuana, and so on.

It had been held over the smoke of sandalwood and naio wood flames over a period of ten days, and if this tapa were hung out it would glow like the phosphorescent sparkles of the waves in the dark night. The type of tapa was called at the time Ka'ahumakanoelani by those of the Honopū valleys, and it was Honopūwaiakua who actually pounded this tapa after having seen a way for this chief to become adopted by her sone, Puanaiea. Puanaiea accepted these words of his elderly mother and folded up the tapa nicely and

p. 7 carried it under his armpit. He said goodbye to his mother and Puanaiea came home that dark night, but the darkness was nothing to him as the prophet, Puanaiea, was quick at jumping cliffs.

pouli eia nae he mea ole wale no nae ia pouli nui i ka mama lelepali o ua makaula Puanaiea nei.

Ia hiki ana aku o Puanajea i ko laua hale me kana wahine aia hoi e pulehu Uhi Punapuna mai ana o Kamaile, a kani ano ka ia nei hoe ia komo ana ku, a olelo mai la o Kamaile e liuliu aku nei oe a ma'o ae la no la hoi na wahi puuku Uhi a kaua o ko'u hookolo aku no ia ia oe eia nae ua hoea e mai la no hoi oe e paiina kaua, ilalo aku nei au o Koholanui a loaa no hoi ka'u mau wahi pilipili Hee pali a na wahi opuu Ina, a o ko i'a ono no hoi he manini naonao, ua koala iho nei au a ua moa a ua wali iho ei no hoi na wahi mana awa, o ka hoka wale aku o ka mea i koe, ia wa i olelo aku ai o Puanaiea, "Nau hoi ia e hoka aku e hooponopono io mai oe i ka kaua mau mea ai, ua hele no au a ha'eha'e i ke kukahekahe wale iho no me kela luahine, i na mea e pono ai ka hanai alii a kakou, a ua olelo pu mai nei ka hoi ua luahine nei a kaua o kakou pu no ke hanai i ke alii opio."

Pane mai la o Kamaile iaia e hooponopono i na mea ai, ua pono loa mai la ua ae mai la ka makuahine o kaua e hanai pu no kakou i ke alii.

A pau o hoi ka awa i hoka a hee no hoi a loko o na apu o laua nei, holoi na lima apau ua makaukau no hoi na mea ai o ka papaaina ia Kamaile. Ia manawa i ku iho ai o Puanaiea i ka pule poloai, penei:

E Ku kane e Ku wahine,
E na poo huna i ke ao uli,
E ka ohu kolo mai uka,
E ka ohu kolo mai kai,
O kike ala o piikea,
O na akua no apau ou kupuna,
A i ou makua no apau,
Ia Honopuwaiakua,
A ia'u ia Puanaiea,
Me ka'u hoolu-e kanaka,
Eia ka ai he ai ola,
Homai ua ola nui ua ola iki,
E hainukai e kai oki'a,
Amama ua noa, no—a.

A pau keia pule a Puanaiea o ko laua nei awala mai la no ia i na apu awa o laua nei, a pupu mai la ka puna ko kea, o ko laua ai ia a o ka maona ae no hoi koe malu ana ko laua nei ipuka i alo mai ka When Puanaiea reached the home of his wife's and his, Kamaile was grilling uhi punapuna yams and his paddle made a serene sound as he came in. Kamaile said, "You were away a long time and there was cooked uhi for us two, and I would have taken the food to you, but you came in time for us to eat. I went down to Koholānui and got some squid and some 'ina urchin, as well as your favorite fish, manini naonao. I broiled it and it's ready, and I even prepared some 'awa, it only needs to be strained," and Puanaiea said, "Go ahead and strain it and get all the food ready. I went all the way east to talk with the old lady about everything we need to do to take care of our little chief. The old lady told me that all three of us would help raise this little chief."

Kamaile told him that she would get all the food ready and that it was well that their mother agreed to help raise the little chief.

When the 'awa was strained and poured into the coconut cups for the two of them, they washed their hands and the food was ready and laid out on the table that Kamaile prepared. At that time, Puanaiea gave the prayer of appeal:

Male Kū, female Kū
The secret heads of the cosmos
The creeping clouds from the highland
The creeping clouds from the coast
Strike the boulders of the early morning light
All of the gods of your ancestors
And all of your parents
Including Honopūwaiakua
And me, Puanaiea
And all that comforts mankind
Here is the food, here is life
Grant us life, great and small
Let us be satisfied with drink
Let the prayer be released

When Puanaiea finished his prayer, the two drank their 'awa and ate their food until they were satisfied and they noticed that their doorway became darkened, and when they turned to look, their mother was coming up and said, "I heard your prayer that I should come and look over your table so nicely set with all this wonderful food with the broiled uhi and grilled manini and the

laua hana e kolo aku ana ko laua makuahine, a i mai la i lohe ae nei au i ko pule palo ai ana i na nana mai nei ko'u hana he papaaina makolukolu maoli ka olua i a mea ono, a holo ae nei no ke ala o Uhi pulehu ame ka manini koala, a ono mai nei no hoi i kahi awa, a nolaila au i hiki mai la e ai pu kakou apau, a hooaumoe pu me olua e au mau keiki, a ua pau loa ae nei anei ko olua awa?

Hoole aku o Puanaiea aole i pau e kii aku au e uwi hou mai a lawa oe.

Emo ole no ia alu ana ae o Puanaiea ku ana ka apu awa o ka makuahine a inu ae la o hoi ua luahine nei apau haawi mai la o Kamaile i puna ko kea ua pau i ke aki ia. Hoole aku la ua luahine nei a olelo aku ia Kamaile i Uhi pulehu kau wahi pupu a loaa no hoi ka Uhi pulehu, o ko lakou ai ia a maona, apau na mea o ka papaaina i ka hookaaweleia pau no hoi na lima o lakou nei i ka holoi.

Ia wa i pane aku ai ka luahine Honopuwaikanaka i kana mau keiki, "E, auhea olua, i ke kupono ana o ka la i ka lolo o ka la apopo, e ike ana olua i kekahi mau haawina ano e he hoailona hikimua hoi no ka hanau o ke keikialii e haaheo ai ke kini o Mana, a o ua mau hoailona la oia no e uhi paaia ana ka aina e ka ua koko, a hele mai ana ka wai aole owawa e koe, aohe hanuu pali e nele ka ikeia aku o ka wai, a ma ke kai hoi e owala lua mai ana ka haki ana a ka nalu, a e hele ana ka hua o ka nalu i ka akulikuli a i ke one maloo o ka hoomaka ana keia o na la kupilikii o na kanaka, he kupilikii ola nae i ka la mahope aku, aohe e hiki ke hele i kahakai i ka la apopo o ka mea ua hoalaia ke kaiuli mau kupueu a e hookokoke mai ana lakou ma na makalae na kuono kai ame na wahi kai halula apau, e huli e o i ka kahiaka nui i na mea ai i onoia a ke mahiki loa ae no ka la o ka pau no ia o ka wa pono, a ua lohe olua e au mau keiki, a e hiamoe kakou i keia wa."

I keia po a Honopuwaikanaka e moe pu nei me Puanaiea ma, kana mau keiki, ia wa pu aia ke aliiwahine ame Kalanamaihiki, ua u hoihoiia e ke kahuna Kuhoolapa iloko o ko laua hale i akoia me ka Ieie, a i kukuluia hoi makahi no e ikeia nei i keia wa o Haleieie. A maloko no o ua hale ieie la i moe ai na alii elike me ia i oleloia ae nei, a ka luahine e moe pu la me kana mau keiki. 'awa, so delicious, and that is why I showed up so that we can all eat together and so I can stay over with you and your children. Did you two finish your 'awa?"

Puanaiea said no, they weren't out yet and that he would go and strain more 'awa.

In an instant, Puna got a cup of 'awa ready for his mother to drink, and when that was done, Kamaile gave her some food to eat. The old woman refused the food and said to Kamaile, "I would like some broiled uhi," and they all ate until they were completely full. And when they had cleared the table clean they all washed their hands.

At that time, the old woman, Honopūwaikanaka, said to her two children, "So, when the sun reaches its highest point tomorrow, you will see some of the signs of the emergence of the young chief, and everyone all over Mānā will be so proud, and the omen will be a rainbow-colored cloud covering over the land, and no valley would be left without water. No cliff will be left without water, and at sea the waves will crash with a surge and the sea foam will reach all the way up to where the 'ākulikuli grows on the dry sand, and this will be the beginning of the troubles of the people, but everyone will survive it on the next day. You will not be able to go to the beach tomorrow because the spirits of the open ocean have been awakened and they have been brought close to the coasts, the bays and all of the calm spots. Go and gather food at the beach early in the morning. That will be the best time to go. You've heard me, my two children. Now let's go to sleep."

This night when Honopūwaikanaka was sleeping with Puanaiea and his wife, her children, was when Kūhōʻōlapa took the chiefess and Kalanamaihiki into their house thatched of 'ie'ie in a place that to this day is called Hale'ie'ie. And it was in that type of house thatched of 'ie'ie that the chiefs slept, where the old woman slept with her children.

And that night, when the chiefess Mānā slept, her spirit met with the spirit of the man of spirit form that the chiefess met with in spirit two times before, just in the way it was described in this

A ma ia po a ke aliiwahine Mana i moe ai ua hui hou aku la kona uhane me ka uhane o ke kanaka kino ula a ua aliiwahine nei no i halawai uhane ai he elua manawa mamua aku elike me na mea i ike mua ia ae nei ma keia moolelo, a ma keia hui hou ana o ka uhane o ke Aliiwahine Mana me ka uhane o ke kanaka kino ula, ua olelo mai la ua kanaka nei ia Mana, "He elua wale no la i koe a hanau mai oe i kau mau keiki a elike no hoi me ka'u i olelo aku ai ia oe mamua, o ke keiki e hanau mua mai ana he keikikane ia a o ka olua keiki no hoi ia, a ma ka wa a Puanaiea, ka Makaula, e lawe ai i ua keiki nei oia auanei kou wa e kapa aku ai i ka inoa o ua keiki nei au o Papiohuli, a penei no ke ano o keia inoa: Pa he mea oiwi kino nai aia la i ka lipolipo o ka moana, a he pau ka mano a kini iaia (oia no ka Pa Hiaku); Pio, na keia hapa o ka inoa o ko keiki e hoike mai iaia ame a'u, aia la i ka lewa mawaena o ka lani me ka honua he mea me kona mau waihooluu nani ehiku (oia no ka pio o ke anuenue); Hu, oia no he ikaika lua ole me he hu ana la no ka waikahe ika ika ame ka makani Kona; Li, e lilo no auanei ka inoa o keia keiki i mea e kauia ai o ka weli, a e li ai ka io o na ikaika e ae mai na kupua ame na kanaka no apau o keia ae la na wehewehe ano ana o ka inoa o ke keikikane, a o na ouli hiki mua o ke au o ka manawa elike me ia au e ike nei i keia mau la e hooi ia ae ana ia ma kou wa e nahunahu hanau ana, a pela, mau aku ana ka nohoana aia no ka hoi mai o ka lai me ka malie a hiki i ka lima o ka la oia hoi he elua la mahope iho o ka lilo ana o ke keiki na Puanaiea e hanai. A oia ae la na mea e pili ana no ka olua keiki. A hemo ke keiki mua iwaho a mamua o ka moku ana o kona piko e hemo hou mai ana mai a oe mai he mea ano huihui a na ia ano auanei e kono mai ia oe e nana aku i keia mea huihui ano e, a oia wale iho la no kou wa e ike ai i ka lua o kau keiki i hanau ai, a o ia keiki no hoi au he kaikamahine ia, a e like no hoi me ka'u i lelo ai ia oe mamua na'u a na makou hoi ia keiki, a e lilo aku ana no nae oia i mea hoomanao mauia i na hanauna o keia hope aku, a ma ka hihio ameka moeuhane e halawai ana no kou uhane a pela ka uhane o ke aliikane me ka uhane o na kaikamahine nei a olua, a o kona inoa oia no o Nohili a o Mahinakehau hoi kahi inoa ona.

"A eia hou," wahi a ka uhane o ke kanaka kino ula, i ka uhane o ke Aliiwahine Mana, "ma ka la e account above, and in this meeting of the spirit of Chiefess Mānā with the spirit of the man in spirit form, the man said to Mānā, "There are only two days left before you give birth to your children as I explained to you before. The first will be a boy, and that will be the child of you both, and when Puanaiea, the prophet, takes that child, that is when you will call the name of that child, Pāpiohuli, and this is what that name will mean: 'Pā' (mother-of-pearl shell) is a physical form from the dark depths of the ocean, and it will catch a numerous fish (a fishing lure made of mother-of-pearl shell for fishing aku); 'pi'o' (arch) this part of the name of the child is to show him and me that in the sky between the sky and the earth is something with its seven colors (the arch of the rainbow); 'hū' (overflow), which is the immense strength of the rising of flashfloods accompanying the Kona wind; 'lī' (to hang), the name of this child will become one that strikes fear and will cause flesh to be hung up at a level of strength apart from that of demigods and all men. It is a type of description of the name of the boy, and the first signs of the time, like what you've seen these days, will be greater when you have your contractions up until you see a return to your normal life in calm weather up until the fifth day, two days after the child is taken by Puanaiea to raise. And that is all to do with your child. And when the first child emerges, and before the umbilical cord was cut, another will emerge and will be rather cold, which causes you to look at this cold thing and that is when you will see that it is your second child who is born, and that child will be a girl, and just as I said to you earlier, that child will be mine and ours (not yours), and that child will be remembered from now on. In visions and in dreams is where your spirit and the spirit of the chief will meet with the daughters of you two, and her name will be Nohili, and Mahinakehau will be another name for her.

"And one more thing," said the man in spirit form to the spirit of Chiefess Mānā, "on the day these children are born, multiple flowers will grow out of a single plant. They will be red with a reddish tendril and will be known for that."

(To be continued.)
[This was the only issue of Kuu Hae Hawaii.]

hanauia ai keia mau keiki e hooulu ia mai ana he mau laau pua hookahi laau he ulaula ano nuku iwi kona inoa."

(Aole i Pau.)

### Table 4. Kuokoa Home Rula, February 24, 1911, p. 4.

## HE MOOLELO HOONI PUUWAI — NO KA EUEU — KAPUNOHUULA

### KA HELE ANA O KAULUHINALO MA KE ANA—KA HOAO ANA ME KAEWEOLAOKALANI MA KEAWAULA, MAKUA, WAIANAE

E ka makamaka heluhelu, e hoakaka iki aku kou mea kakau no keia kanaka e akena ia nei oia o Ainaike, ka ike ame ke akamai i ka hee-nalu.

Ua olelo ia, o keia Ainaike, oia kekahi kanaka helu ekahi ma keia hana o ka hee-nalu, a he hiapaiole ame ke aiwaiwa, i ikeia iluna o ka nalu i hele a pali kahako, ua hiki oia ke ikeia aku e kaha ana iluna o ka nalu me he iwa la, a ua hee ia no hoi e ia na nalu o keia mau kai, mai Kaula Lehua, a Niihau. A ua olelo ia no hoi o keia Ainaike, ke kanaka i hee pu me ka mano, aohe he mea e puka ae mamua o keia Ainaike.

Aka, ua olelo ia nae, he ekolu ko lakou nui i kaulana i ke akamai i ka hee-nalu, oia hoi o keia Ainaike ae la, o Lohiauipo ko Haenamae, a o Kaleipalaoa, ko na pali o Kalalau, o lakou nei ekolu na keiki i kaulana i ke akamai i ka hee-nalu i na kai mapu i ke ala o ka hinano ame ka lauae, a iwaena o lakou, o Lohiauipo ka mea o lakou i loaa ke mele i ka pae ana i Mahamoku i ke one o Makauea, oia iho keia:

Kuu aikane mai ka papa-alaia hee nalu o Hawaii loa,

Ke kai uwe pu me ka leo hanehane,

Aia no ka pae i ke one Makauea i Mahamoku, Ke lei ia mai la na limu pehu, pakika pahee o Mahamoku.

I lei hoi no na keiki hee-nalu o Hawaii loa, Ke kuku ae la na pae kapu hailona a Hihimanu

## A ROMANTIC TALE — OF THE HERO — KAPŪNOHU'ULA

# THE JOURNEY OF KAULUHĪNALO TO THE CAVE—THE MARRIAGE KAEWEOLAOKALANI AT KEAWA'ULA, MAKUA, WAI'ANAE

Dear reader, allow me your writer about this man who excelled, 'Āina'ike, who was the most knowledgeable and expert surfer.

It is said that this 'Āina'ike was the best person at the sport of surfing, he was an expert and marvelous at it, who knew how to ride from the top of the steepest waves; he could be seen riding from the top of the wave like a frigate bird, and he surfed the waves of these seas from Ka'ula, Lehua, and Ni'ihau. It was also said that this 'Āina'ike was the man who surfed together with sharks, and no one could defeat this 'Āina'ike.

But it was also said that there were three who were famous for their cleverness at surfing: this 'Āina'ike, Lohi'auipo of Hā'enama'e, and Kaleipalaoa of Kalalau, Nāpali, Kaua'i. These three boys were famous for their cleverness at surfing the seas, where the sweet fragrance of hīnano flowers was strong together with laua'e, and among them, Lohi'auipo who had a mele for when he surfed all the way to shore at Mahamoku on the sand of Makauea, as follows:

My dear friend of the narrow surfboard of all Hawai'i

The sea that cries with a ghostly voice
Surfing in all the way to the sands of Makauea
at Mahamoku

The garlands made of plump, slippery seaweed of Mahamoku are being worn

Ka manu lei lehua o Kaunuape- a inu —e,

Ke inu mai la i na mala awa ona o Kawaipuolo, O Koukou (w) o Alala (k), O Pikoiakalala, Ke keiki pana iole o Kaukoopua,

Auwe kaua—e, E kuu ipo—o—Lohiauipo

Nolaila, e kau hou ae kaua maluna o ke ala pololei, ma ka manawa a kahi kukini i hoea ai imua o na alii, ua ninau mai la ua poe alii nei i ka manao o Kalanialiiloa, ua hoike aku la ua wahi kukini nei ma na olelo mama wale no, oia hoi ko Kalanialiiloa ae ana.

Ma ka wehena kaiao o ka la e hee-nalu ai ua mau moho nei, ua lana aku la ko Kalanialiiloa waa i kahi kahu ona ia Lauuokala, iloko o ke kai, a i ua wahi kahu nei no hoi e kali ana, hoea aku la o Kalanialiiloa a kau aku la no hoi iluna o ka waa, a hoomaka aku la kahi kahu e hoe i ko laua waa.

Ia laua nei e holo aku ana, ike mai la o Ainaike i ko laua nei waa e holo aku ana, oiai ua Ainaike nei e lana ana me kona waa, a ia wa o ko lakou nei holo like aku la no ia a hiki ko lakou mau waa i kahi kupono o ka nalu e pae ai, hoolana iho la ko Aianike ma mau waa, kali mai la i ko Kalanialiiloa ma mau waa, o ka hoea aku, oiai no laua e kaupe malie aku ana no mahope.

Ia Kalanialiiloa ma i hiki aku ai, ua pane mai la o Ainaike ia Kalanialiiloa, "E kahi keiki a ka ukulii e hoonahoa mai nei i ka ulu i paki kepau, e hoolohe mai i ko'u leo."

"Ae," wahi a Kalanialiiloa, "he aha ka olelo"

"E kahi keiki a ka ui ame ka nani, ke puokooko mai la ka ula ahi, me he punohu-ula ala i ka moana, o ke poo ohuia i ka la o makalii, ke ko'a huki a'hi a Luaiopea, ka lawai'a nui a Kalokaa, ke ahi kapu o Panaewa i ke one o Luhi—e.

"E hoi e keiki opio ai waiu no uka o ka aina, aole o'u makemake o oe ko'u hoa pili e kahi keiki opiopio, he opiopio loa kou ano, a minamina au ia oe, ina e oluolu mai ana kou manao, e hoi no ka aina kahi maloo, i ai i kalo mo'a, e ke keiki. I

For all surfer boys across Hawai'i to wear The sacred ensigns of Mt. Hīhīmanu are standing

The bird adorning a lei of lehua of Kaunu'ape drinks

Drinking up the intoxicated 'awa gardens of Kawaipū'olo

Koukou (f), 'Alalā (m)

Pīkoiaka'alalā

The boy who shoots arrows at rats of Kauka'ōpua

Oh, the two of us

My dear lover, Lohi'auipo

So, let you and I return to the correct path. When the messenger reached the presence of the chiefs, the chiefs asked what Kalaniali'iloa's council was and the messenger revealed his message in brief summary only, which was Kalaniali'iloa's approval.

At the break of dawn on the day the competitors were set to surf, Kalaniali'iloa steadied his canoe where his guardian Lā'au'ōkala was at sea, and as his guardian waited, Kalaniali'iloa swam up and climbed onto the canoe, and his guardian began to paddle their canoe.

As the two went, 'Āina'ike saw their canoe going, while 'Āina'ike sat with his canoe steadied, and that is when they all paddled together to a good spot where the surf breaks, and 'Āina'ike's and the other canoe steadied themselves, where they waited for Kalaniali'iloa's canoes, which arrived as they were gently paddling their canoes.

When Kalaniali'iloa reached them, 'Āina'ike said to Kalaniali'iloa, "So, son of the little flea daring the 'ulu maika stone that smashes metal, pay attention to what I tell you."

"Yes," said Kalaniali'iloa, "what do you have to say?"

"You are a strong, handsome boy. The fire is getting really hot as a red, hot glow on the ocean like a great swell on the day the constellation, Makali'i, rises, the coral that pulls the file all the way Luai'ōpe'a, the great fisherman of Kaloka'a, the sacred fire of Pana'ewa at the shore of Luhi.

kanaka makua ko'u hoa e kohu ai i keia lealea ana, aole hoi o oe, ke minamina nei au ia oe aole e pono o oe ko'u hoa e hee ai i keia mau nalu i hele a pali kahako no au e ike ae la. Aole oe i kupono.

Ia manawa i pane mai o Kalanialiiloa, "Aole ka hoi i pa kuu poo i ke kai, ke hooiloilo e mai nei nae oe ia'u. Malia nae paha no ko ake mai i kuu opiopio, a manao iho la oe no ko kanaka makua ana, pela iho la oe i manao ai nau ka lanakila o keia la. He lohe wale no ko'u la i ka olelo ia, he puali wale no ka hau nui i ka hau iki.

"I lohe mai oe, aole au e hoi i uka o ka aina elike me kau i olelo mai nei, eia kaua i ka moana nei no ka hooko ana i ka pili a kaua, a owau nei o kaua ka mea ilihune a he mau iwi makee keia i lono ia ae e ke kanaka i kaulana i ke akamai i ka hee nalu, o ka lapawai o Waimea nei, a owau ke keiki i a-a mai la e make keia mau iwi i keia hana he haeenalu. A oiai ea, eia i ke keiki opio nei au i olelo mai nei ka pahu holo o kaua, a ia oe ka pahu eo o kaua. Nolaila, aohe ou kuleana ma kahi o ka pahu holo o kaua, ma kahi a'u e manao ai e holo kaua he hooko wale mai no kau ka ke kanaka ike heenalu o Pawehe nei.

"The suckling young boy should go home to shore, I have no desire that you should be my competitor, young boy. You are way too young and I pity you. If it is all right with you, go home to dry land and eat some cooked taro, boy. I prefer a mature man as a competitor for amusement, not you. I pity you and you should not be my companion to surf these waves that grow to towering as I see them. You are not worthy."

At that time, Kalaniali'iloa said, "My hasn't been struck by the sea. You curse me too soon. Maybe it's because you wanted me because of my youth, but were thinking about grown men. That is why you thought you would end up winning today. I have heard it said the large hau tree is like an army to a small hau tree.

"Just so you know, I have no intent to go back to shore as you suggest. Here you and I are out on the ocean to make good on the bet between us, and I am the poor one of us two, and mine are the bones that have been talked far and wide at surfing the river mouth of Waimea. I am the boy who dared to let these bones die at the sport of surfing, and the finish line will be won by this young boy that you are talking about, and you will come out behind, the loser of us two. So, you have no business at the finish line, where I intend we should strive for, and you will fulfill what the real expert surfer of Pāwehe here intended.

### TRADITIONAL LAND USE

Traditional land uses include settlement, resource collection and subsistence, burial, and transportation. PMRF lies in the area called Mānā in the traditional Hawaiian land area or *ahupua* 'a of Waimea in the district of Kona. Kona is the largest district on Kaua'i, occupying the entire southwestern half of the island (Figure 1). The Mānā Plain was a clearly delineated geographical zone of human occupation during the pre-Contact period. The coastal dune and back beach areas were the setting for temporary fishing camps that were linked to permanent communities at the foothills of the central mountain. The area was characterized by abundant marine resources and a readily accessible sandy shoreline. Archival research regarding the traditional land uses near the study area was also conducted.

### SETTLEMENT ON THE MĀNĀ PLAIN

Wichman (1991:12), in relaying the story of a *konohiki* chief, describes the Mānā area in pre-Contact times as: ... a land that stretched from the western cliffs of Na Pali to the eastern boundary shared with Waiawa. Mānā is a land of long white beaches with the ocean on one side and a large swamp that teemed with birds on the other. Inland of the marsh was a fertile strip of land where sweet potatoes and gourds were grown. Above these fields, cliffs rose stiff backed, broken wide by valleys down which constantly flowed fresh spring or rain water. The ridges, covered with sandalwood and *koa* (*Acacia koa*) trees, stretched into the mountains wreathed with cold and misty rain.

Small fishing communities, possibly limited to temporary camps, were scattered along the coast, concentrating near optimal localities such as breaks in the reef where canoes could be launched or where reefs provided rich habitat for near-shore marine resources. Some camps were located on the protected, lee sides of the high dunes from Nohili Point to Polihale. Bennett (1931:102) observed house sites marked "by single rows of stones ... or by low walls" along the inland side of the dunes. Flores and Kaohi (1992:44) suggest that the sites on the inland side of the high dunes may have been permanent homes for:

Those families whose time was mostly occupied with fishing ... [The dunes] provided them protection from ocean storm waves, flood waters, and strong on-shore winds—yet, still close enough to easily access the ocean resources. Taro was cultivated in portions of Kolo Swamp that were adjacent and *mauka* of these house sites.

From the inland edge of the plain, the Mānā community could access the forest resources of the upland mountains and was in easy reach of the wetlands where taro and fish were cultivated and wild resources such as ducks and birds were hunted. Eighty-one Hawaiian families still resided in the Mānā area through the mid-1800s. The area was known for abundant marine resources, melon and sweet potato cultivation, and small taro patches fed by freshwater springs (Tomonari-Tuggle and Yoklavich, 2005). Pāpiohuli was once an old fishing village located to the north of PMRF, near what is known today as Queen's Pond. The newspaper item transcribed below was published on page 4 of *Ke Alakai o Hawai'i* on February 4, 1932, and documents the Kua family as residents of Pāpiohuli. The Kua family later moved to Kekaha, where they presently reside. The news item is translated by Keao Nesmith.

Table 5. Ke Alakai o Hawai'i, February 4, 1932, p. 4.

### NA ANOAI O KA WAIULAILIAHI ME KA WAIKEA E KAULANA NEI

Mr. Lunahooponopono o ka nupepa Ke Alakai o Hawaii Aloha, ka uwila makeneki e anapa hele nei ma na Kai Ewalu o ka Moana Pakipika.

Aloha kaua a nui loa:

E oluolu mai kou ahonui i wahi lumi kapena no na Anoai o ka Waiulailiahi me ka Waikea e kaulana nei.

Ma ka home noho o Mr. ame Mrs. Kua, o Papiohuli, ua malamaia ka la hanau o ka laua moopuna, i ka la 23, o Jan. 1932. A ua kono aku laua i na poe a pau o ua mau Wai kaulana nei. A o kou mea kakau pu kekahi ia kono hookahi ia ana mai, me he mea ala ma ka ike aku a kou mea kakau o Manookalani holookoa.

### GREETINGS FROM THE WATERS OF WAI'ULA'ILIAHI AND WAIKEA WHOSE FAME SPREADS

Dear Mr. Editor of the beloved Ke Alaka'i o Hawai'i, the electric magnet sparking all across the Eight Seas of the Pacific Ocean.

Great greetings to you:

Will you kindly allow a bit of cabin space for a few greetings from the waters of Wai'ula'iliahi and Waikea, whose fame spreads widely.

At the residence of Mr. and Mrs. Kua of Pāpiohuli, a birthday was held for their grandchild on the 23rd of Jan. 1932. The two invited everyone from around the famous waters. Your writer was also invited to come alone as if your writer was a witness for all of Manookalani.

Maluna o na pakaukau i hoohiwahiwa ia me na lau lipolipo o ke kuahiwi. Aia maluna o laila na ono like ole a ka Hawaii i hoomakaukau ia e na ui o ua mau Wai kaulana nei.

Puaa laulau, Pipi laulau, Kulolo, Haupia, Opihi, na ono no a pau a ka Hawaii, ke hoonuu ala na mea apau i na ono like ole. E iho ana ka hema iho ka akau, ilali la holo hoi o hanale, kuonoono pono iho la ka lua o Kuhaimoana Keonibulu.

Noho mai o Kaula i ka mole olu ka home pohai a na manu. Ua ai a lawa, ua inu a kena i na ono like ole o ua mau ui nei o na Wai kaulana he ui mai hoi kau.

Aia hoi kou mea kakau e walea ana i ka ui ame ka nani a ua mau ui kaulana nei, hone ana ka leo o na kaikamahine o na Wai e kaulana nei, hui pu iho hoi me na kaula eono o uwe honehone hele loa i ka nani maoli.

Me na ai hoolewa kino he nani mai hoi kau, ke hele loa ae la i na hora o ke aumoe. Aia no kou mea kakau ke walea ala i ka nani o na Wai kaulana. O ia ka wa o kou mea kakau i lohe aku ai i keia mau leo nani. Na pua Lei o Kahelelani, Ka Momi o ke kai me mura o uka Alukauwea, Mr. ame Mrs. D. Wailiula. A ia i Niihau kuu pawehe ka Moena e pahee ai ko ili.

Pahee loa iho la kou mea kakau i ka ui ame ka nani ke hele loa aku la i ka pili o ke ao hoomanao ae la kou mea kakau i kahi pili koolua o ka hoomakaukau iho la no ia no ka hoi, ko malie mai la ka makani ame Waipao, ke huli hoi nei ke kaikamahine o ka makani moeahua.

Ke haawi nei kou mea kakau i na hoomaikai palena ole i na makua Mr. ame Mrs. N. Kamai Jr., ame na kupuna, ke kama hoi nona ka la me na hoopomaikai o ka makua mana loa e ola ke kama a kau i ka pua aneane.

Kauai Beauty, MRS. P. PALEA Kekaha, Kauai The tables were decorated with verdent, lush leaves of the mountains. Upon that was place all kinds of delicious dishes known to Hawaiians prepared by the lovely youth of these famous waters.

Pork laulau, beef laulau, kūlolo, haupia, 'opihi, all the delicasies of the Hawaiian people. Everyone gorged themselves on the wide range of delicasies from left to right, chasing hunger away, and the layer of Kūhaimoana, the bully, was stuffed full.

Ka'ula stood on the horizon, the home full of birds. Everyone ate until they were full and drank to their content on all that these lovely youth of the famous water prepared.

Your writer enjoyed a lovely time with these well-known beautiful people. The voices of the girls of these famous waters chattered pleasantly combined with the six cords pleasantly talking away all around in such a lovely setting.

There was so much lovely food for the body to enjoy all the way to the late-night hours. Your writer thoroughly enjoyed relaxing in the beauty of the famous waters. That is when your writer heard the beautiful voices of the musicians, the lovely children of Kahelelani, the pearl of the sea and myrrh of the uplands of 'Alukauea, Mr. and Mrs. D. Waili'ulā. There on Ni'ihau rests my mat spread out wide, so silky to the touch.

Your writer eased along in the beauty of the occasion to the early morning hours, and your writer reminisces on spending time with a loved one making ready. The breeze caressed us gently from Waipao, and the daughter of the Moeāhua wind returns home.

Your writer gives boundless thanks to the parents, Mr. and Mrs. N. Kama'i Jr., and the grandparents, the child of the sun, with the blessings of the most powerful father. May the child live on until a great, old age.

Kaua'i Beauty, MRS. P. PALEA Kekaha, Kaua'i

### RESOURCE COLLECTION AND SUBSISTENCE

The people of Mānā were noted as fishermen, taking advantage of the rich waters of the channel between Kaua'i and Ni'ihau. Fishing was not confined to the ocean and shoreline of Mānā, but also included the swamps and ponds on the coastal plain. The swamp areas of Limaloa, Kawaiele, Nohili, and Kolo were utilized as brackish water *loko pu'uone* (Kikuchi 1987:5, 9; Kilauano 1991).

The Mānā Plain ponds were formed by water accumulating behind the dune berms with the natural ponds enhanced by excavation of channels through the dunes to allow the flow of ocean water into the ponds during high tide (Kikuchi 1987:9). The wetlands were also a place where wild resources could be collected. Taro, sweet potato, bananas, and other food crops were grown in and at the mouths of the narrow gulches that fed onto the plain; however, the aridity of the plain limited the amount of farming. Pukui (1983:271) writes of the proverb "Ola i ka 'ai uwahi 'ole o ke kini o Mānā, the inhabitants of Mānā live on food cooked without smoking." She says that in ancient days, the people of Mānā "did very little poimaking, except in a place like Kolo, where taro was grown" (see also Kilauano 1991). Handy (1940:61) notes that "wet taro has been grown at the northern end of the Mānā swamp, near the Barking Sands." However, most Mānā people exchanged fish and dryland products (like gourds) with taro producers from other parts of the island. Thus, because "all the taro cooking and poi-making was done elsewhere, the people of Mānā were said to live on 'smokeless food" (Pukui 1983:271).

The coastal plain was a source of natural resources that were collected and used for a variety of purposes. These included 'a 'ali'i (Dodonaea viscosea) shrubs for firewood, hi 'aloa (Waltheria indica) and other plants for medicine, makaloa [a perennial sedge (Cyperus laevigatus) and neki [great bullrush; also 'aka 'akai (Scirpus validus, formerly called S. lacustris)] for weaving; formerly the plants were valued in Hawai'i for making the fine Ni'ihau mats]. The neki and makaloa were used in plaiting mats and other articles, the fashioning of which was called moena makaloa.

### **BURIALS**

The coastal dunes of the Mānā Plain were the burial grounds of ancient Hawaiians. Human skeletal remains have been found in the sands of PMRF Barking Sands as well as in mixed sandy soils nearly 3,281 feet inland, from the north end of the installation to Waiokapua Bay and Kokole to the south. References to burials in the Nohili area appear in oral traditions and literature (e.g., Fornander 1917) and have also been documented in the archaeological record (TEC: 2011:3–31).

### **TRANSPORTATION**

There were two primary traditional land routes across the Mānā Plain: one along the shoreline and the other along the base of the cliffs and ridges. Other trails ran inland from the coastal plain to the mountains. People also traveled by canoe, particularly going to and from the valleys of the Nā Pali coast, by launching from beaches with unobstructed reefs and passageways such as at Palaiholani, Keanapuka, Poʻoahonu, Keawanaiʻa, and Polihale (Tomonari-Tuggle and Yoklavich 2005:82).

An unusual means of travel in this area is noted in historical accounts that describe the Mānā Plain after heavy flooding from Kona storms. These accounts note that one could travel by canoe from Waimea to Kolo through Mānā swamps and marsh lands. Faye (1981) recalls that "in a low bottomed canoe you could row for miles on this lake.... The canoe would tip over and if you were very short you wouldn't be able to touch bottom, but if you were taller, you could sort of tread over." (Tomonari-Tuggle and Yoklavich 2005:82).

#### HISTORICAL LAND USE

While historical (circa early 1800s to 1974) land uses in this area were many, two primary uses included agriculture and U.S. military activities.

### **AGRICULTURE**

Early Western explorers were not particularly interested in the Mānā Plain, which was described as a hot and dry place with large sections of marshland (Portlock 1789:170–171; SEARCH 2012). The inhabitants of Mānā largely lived in the traditional ways of their ancestors until the1848 Māhele, which brought wide-ranging social changes and provided for private land ownership. Shortly after the Māhele, commercial agricultural practices were brought to the Mānā Plain by leases on crown lands to Archibald Archer and eventually Valdemar Knudsen (Photo 1). These practices included grazing cattle, timber harvesting, and cultivation of crops such as tobacco, coffee, fruit, rice, and sugarcane (Jones 1992:6; Sweeney 1994:10; SEARCH 2012).

As commercial crop cultivation increased, so did the number of agricultural workers needed to tend the crops. Most of these agricultural workers came from China, Japan, and the Philippines. With the influx of agricultural workers, the need for workers' housing increased, and according to Smith (1989:4), the first camp for housing agricultural workers dates to 1852. As agricultural production on the Mānā Plain expanded, much of the marshland was filled in or drained to provide more space for crops, with increasing amounts of land being converted to sugarcane cultivation, primarily as part of Kekaha Sugar Company, Ltd., which was formed in 1898 by Knudsen and L'Orange and continued operations through the 20th century (SEARCH 2012).



Photo 1. Eric Knudsen residence: Mānā, Kaua'i, ca. 1915. https://digitalarchives.hawaii.gov/item/ark: 7011/2kJc.

Rice and sugar cultivation were contemporaneous agriculture in the late 1800s. Rice was planted in the marshy areas of Mānā not suitable for sugar cultivation. The two Chinese who produced the most rice were Pah On and Ah Hoy. As in most places in Hawai'i, sugar eventually took over the rice growing areas of land, and in 1922 Kekaha Sugar Company gained control of the rice lands leased by Pah (Flores and Kaohi 1992:115). The Hawaii Territory Survey Mānā Lots December 1907 map (Figure 5) indicates the majority of lands were either still under rice cultivation, undrained swamps, or sugarcane land.

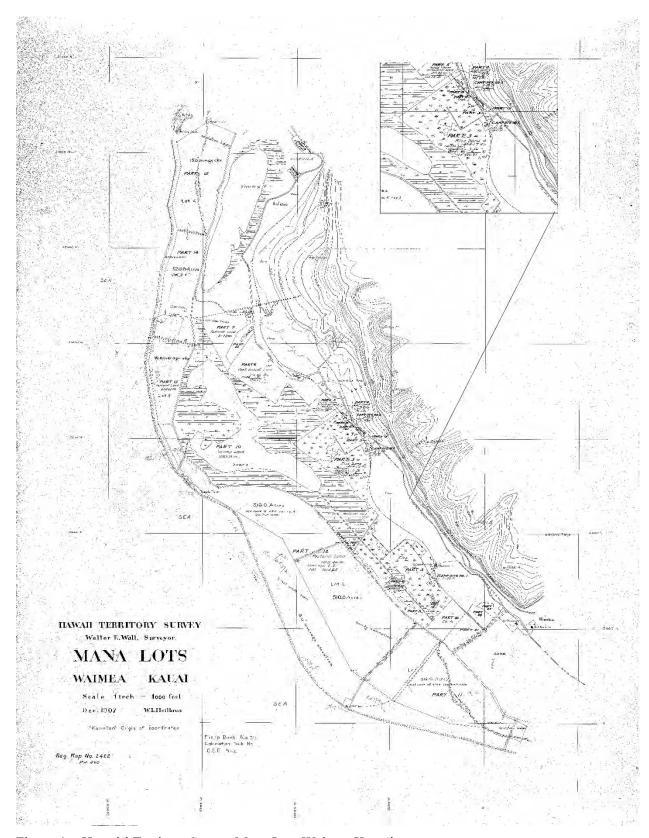


Figure 4. Hawai'i Territory Survey Mānā Lots Waimea Kaua'i.

### U.S. MILITARY

Military use of the land that would one day become PMRF Barking Sands began as an airstrip, established by the Territory of Hawaii in 1921 and completed for use by 1928 (SEARCH 2012). During the first half of the 20th century, it was one of numerous landing fields in the Hawaiian Islands maintained by the U.S. military, the government of the Territory of Hawaii, and commercial airlines. The landing field at Barking Sands was not intended to be a commercial airport due to its distance from Waimea but was considered a good location as a stopover for transpacific flights. However, the airfield was seldom used and poorly maintained. Photo 2 shows the location of the landing field in 1935.

In 1940, the U.S. Army requested that the 550-acre Barking Sands airfield be set aside for military use. Soon thereafter in 1941 (Photo 3), before U.S. involvement in World War II (WWII), the airfield was expanded to the north and south by 2,058 acres. In May 1942, the airfield was designated as Barking Sands Army Air Base and was used primarily for flight training and aircraft refueling. Photo 4 shows the landing field in 1943 after the expansion and improvements were completed. Also, in 1943, 10 tunnel magazines, some with monorail transport, were built into the cliffs at Kamokala Ridge for bomb storage. In late 1944, Barking Sands was established as a Combat Crew Replacement Center, with the goal of checking, repairing, and maintaining aircraft and housing and training crewmen prior to deployment to the forward area of the Pacific Theater. Activity at the base increased with the end of the war in Europe in May 1945 and began to gradually decrease with the official surrender of Japan in September 1945 (SEARCH 2012).

In the years immediately following WWII, military activity at Barking Sands declined and the installation was turned over to the U.S. Air Force and renamed Barking Sands Air Force Base (AFB) in 1948 (Clark et al. 2015). In 1953, the base was redesignated as Bonham AFB in honor of a Hawaii Air National Guardsman who was killed during training exercises. The U.S. Navy became a tenant at the airfield in 1956 for the purpose of training with the Regulus missile, and the Navy named their operations the Pacific Missile Range Facility in late 1958. During the early 1960s, the Kauai Test Facility (KTF) was created, operated by Sandia National Laboratories for the Atomic Energy Commission with the mission of high-altitude atmospheric sampling during nuclear tests in the Pacific. The installation was officially transferred to the Department of the Navy in 1966, and later renamed as the Pacific Missile Range Facility at Barking Sands. Between 1966 and 1970, the Navy constructed radar and telemetry facilities at Mākaha Ridge and many additional structures at Barking Sands (SEARCH 2012).

Between 1959 and 1960, a 40-foot steel web antenna mast was erected for NASA. The antenna was part of NASA's Hawaiian Tracking Station, which formed the twelfth of 18 stations located across the globe with the purpose of supporting the NASA's Mercury capsule spaceflight program. The Hawaiian Tracking Station was situated primarily on Kōke'e Ridge, with the purpose of providing telemetry and communications services and control-operations facilities. NASA is the lease holder for the facility, which is on Kaunuohua Ridge, a north-northeasterly ridgeline near the northwestern end of Waimea Canyon (SEARCH 2012:19; 23; 96).

PMRF has an access program that can be used by individuals and community organizations for cultural access to resources on base. According to PMRF ICRMP SOP #16, public access and Native American (American Indian, Eskimo, Aleut, and Native Hawaiian) cultural access is required by federal laws; Department of Defense (DoD) Instructions; the Memorandum of Agreement (MOA) between the U.S. Navy and PMRF, Hawaii State Historic Preservation Office (SHPO), and Advisory Council on Historic Preservation (ACHP) regarding activities proposed within the PMRF Enhanced Capacity Final EIS (FEIS 1998; MOA 1999); and the Programmatic Agreement (PA) among Commander Naval Region Hawaii (CNRH), the ACHP, and the Hawaii SHPO regarding Navy undertakings in Hawaiii (Search 2012:361). The primary responsibility of carrying out this SOP lies with the PMRF CRM. The SOP states (SEARCH 2012:362):

Requests for cultural or public access shall be submitted in writing. Upon receiving the request, the PMRF CRM is responsible for conducting any necessary consultation, and coordinating with other facility divisions and personnel, including the Public Affairs, Safety, and Range offices, to ensure no security issues or other circumstances conflict with the granting or scheduling of access. He/she will consult with Na Ohana Papa o Mana and other Native Hawaiian organizations concerning all requests for cultural access. The PMRF CRM shall notify requestors in writing of the approval or disapproval of their public or cultural access request. If access is approved, a list of all attendees should be submitted by the requestor(s) five working days prior to the preferred date of access in order to conduct any necessary security clearances and appropriately provide for support staff. All attendees will be required to present picture identification upon entry and sign a waiver of liability for injury or death.

In addition to the access program described above, all PMRF's shoreline access areas are open with the exception of locations demarcated by restricted area signage. In 2005, PMRF began the Morale, Welfare and Recreation (MWR) Guest Card Program, which allows civilians to access PMRF using the main gate and affords unrestricted travel and access to Waiapua'a (Majors Bay) and beach areas. In August 2012, beach access along PMRF's north and south boundaries was adjusted to allow walk-on beach use for civilians without authorized access to PMRF. Walk-on access to PMRF's shorelines is typically carried out from either the north or south and community members have the opportunity to participate in fishing, shell-collecting, and surfing. Civilians are not allowed to drive motorized vehicles on the State beach at any time. The authorization of PMRF beach access is based on circumstances related to PMRF Force Protection Condition (FPCON), public safety during range operations, and the protection of threatened and endangered animal and plant species and habitats. MWR Guest Cards allow access to additional areas on PMRF, including the Waiokapua Bay Trail, Shenanigans Beach, and weekend fishing at Kinikini Ditch.



Photo 2. Photograph of Mānā Airport (also known as Barking Sands Landing Field), looking south, 1935. Courtesy of the National Archives and Records Administration. (SEARCH 2012:82).



Photo 3. Aerial photograph of what would become Barking Sands Army Air Base, September 1941, looking north. Courtesy of the State of Hawai'i Department of Transportation. (SEARCH 2012:84).



Photo 4. Barking Sands, March 5, 1943. Courtesy of the National Archives and Records Administration.

# IV. ETHNOGRAPHIC DATA REVIEW AND ANALYSIS

Ethnographic studies are fundamental for determining how a proposed action will affect and/or limit access to culturally sensitive places, resources, and practices. This section contains the results of the cultural consultations carried out for this CIA. The oral histories collected through interviews were used to document culturally important resources, beliefs, and practices in the area, including specific sites and/or structures, localities or areas, landscapes, individual and social activities, and natural or environmental features.

#### DR. RICHARD KEAOOPUAOKALANI "KEAO" NESMITH

Dr. Keao NeSmith (Photo 5) was born Richard Keaoopuaokalani NeSmith in 1966. He is the sixth of seven children in his family and the fourth to be born in Waimea, Kaua'i. Dr. NeSmith was raised on Hawaiian Homestead land in Kekaha, the most westerly town on Kaua'i. The village of Mānā, further west, stood in his childhood years, and he had one grand-aunt who lived there, a sister of his maternal grandfather, but the village was abandoned while Keao was in his teenage years. Keao's parents were Bill NeSmith and Odetta Kapuaonalani Kauhane NeSmith. His father was from Gainesville, Texas, and his mother was born in Keaukaha, Hilo, on Hawai'i Island and raised there and in Kāne'ohe, O'ahu. Odetta was taught *hula* [Hawaiian dance] on O'ahu in her growing years and her parents were Hawaiian music entertainers, and she would dance for them at events.



Photo 5. Dr. Keao NeSmith. Photo taken above the *kūlanakauhale* [town] of Waimea in the Kona *moku* and *mokupuni* of Kaua'i.

Bill and Odetta arrived on Kaua'i in the '60s, as Bill had obtained work there, and in the early 1970s, Kekaha native Margaret Aipoalani, a *hula* practitioner and well-known musician, recommended that Odetta teach *hula* to Kaua'i communities under the auspices of the Foundation for Culture and the Arts. Odetta taught some of her children, including Keao, *hula*, and used them as assistants in her 19 years of teaching *hula* across Kaua'i. She worked as an educator at Waimea High School and Kula Aupuni Ni'ihau A Kahelelani Aloha, a public charter school that serves the families of the Ni'ihau community living on Kaua'i. Keao's father, Bill, worked at the National Aeronautics and Space Administration (NASA) Kōke'e Tracking Station from the late 1960s to 1991, and received awards for recognition of his service.

Keao's parents were firm believers in the value of education and encouraged him to pursue high academic achievement (Figure 5 and Figure 6). Keao's maternal grandparents were Samuel Kalola Kekuawela Kauhane of Honolulu, Oʻahu, and Annie Kealoha Kaaialii Kauhane of Kaʻū and Puna on Hawaiʻi Island. Keao lived with his grandmother Annie in his late teens, where he acquired Hawaiian language from her as the two only spoke Hawaiian with each other, and whenever home on Kauaʻi, he

would only speak Hawaiian with members of the Ni'ihau community on Kaua'i and elderly Hawaiian-speaking Kaua'i acquaintances.

Keao's paternal grandparents were William R. NeSmith Sr., and Georgia Belle O'Brien NeSmith. Originally from Gainesville, Texas, they married and in Bill's early life, the family relocated to California for a few years before moving to Kāne'ohe, O'ahu, where Bill met Keao's mother, Odetta, at high school, where they graduated in the 1950s. Keao is the sixth great-grandchild of the last king of the Kaua'i Kingdom, Kaumuali'i, a contemporary of Kamehameha of the Hawai'i Kingdom, through the lineage of his grandfather Samuel. Keao posed as the model for the statue of Kaumuali'i at Pā'ula'ula State Historical Park in Waimea, Kaua'i.

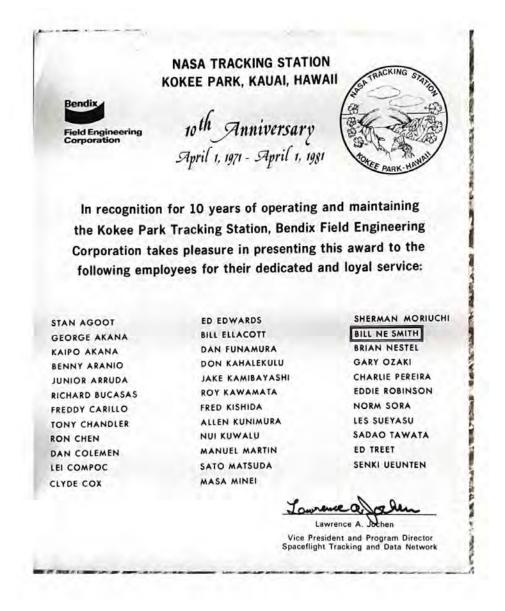


Figure 5. Letter of recognition for 10 years of operating and maintaining the NASA Tracking Station, Kōke'e Park, Kaua'i, Hawai'i, awarded to Bill NeSmith, Keao's father, for his dedicated and loyal service.

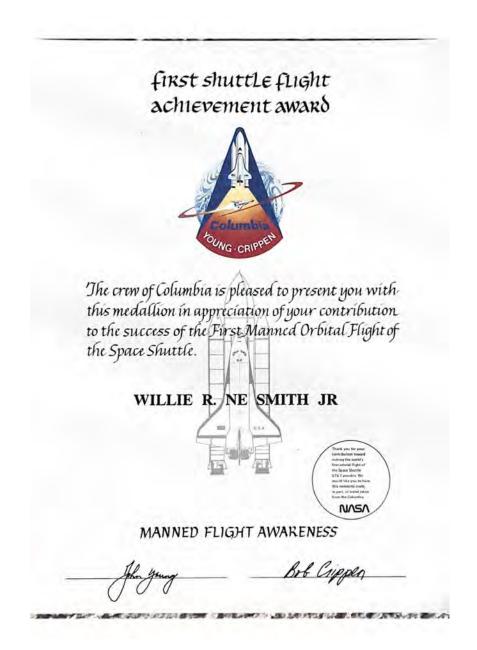


Figure 6. First Shuttle Flight Achievement Award recognizing Willie R. NeSmith Jr., Keao's father, for his contribution to the success of the First Manned Orbital Flight of the Space Shuttle.

Keao attended Kekaha Elementary School, Waimea Canyon Intermediate School, and Waimea High School for his ninth-grade year, and he finished high school at Kamehameha Secondary School in Honolulu in 1984. He started his undergraduate studies at Brigham Young University—Hawai'i Campus and completed his Bachelor of Arts in Hawaiian Studies at the University of Hawai'i at Hilo. He completed his master's degree in Pacific Islands Studies at the University of Hawai'i at Mānoa. He also did one year of his M.A. program at the University of French Polynesia on Tahiti. He earned his Ph.D. in Applied Linguistics at the University of Waikato in New Zealand in 2012. He taught Hawaiian language, Hawaiian Studies, and Tahitian language at the University of Hawai'i at Mānoa for 17 years, English and History at Waimea High School, and Hawaiian language at Hawai'i Preparatory Academy on Hawai'i Island and is

currently self-employed as a freelance researcher and consultant. He has translated and published several well-known titles in Hawaiian, including *The Hobbit*, *Alice's Adventures in Wonderland*, *Harry Potter and the Philosopher's Stone*, and other titles, and he has completed the translation of other titles that remain to be published, such as the entire Chronicles of Narnia series and five of seven of the Harry Potter series. Keao is also a frequent lecturer on the Aranui cruise ship across French Polynesia. He also frequently teaches at the University of French Polynesia. Besides Hawaiian, Pidgin, and English, he speaks Tahitian, Marquesan, and French. On Kaua'i, Keao is known for his research work and membership in local groups that focus on the maintenance of Kaua'i's ancient sacred and communal sites and the perpetuation of traditional Kaua'i and Ni'ihau language and culture. During the interview for this study Keao notes:

More as I became an adult, I became very fascinated with history. History and culture. So, I devoted lots and lots of time, years, into digging into the historical records, and the lore, and the cultural records of the area of Mānā, growing up. And then recently, in the past several years, I got into composing original *mele* [song] in Hawaiian for performance for *hula*, and for chants and stuff with Leinā'ala Jardin's *hālau* [school of *hula* called Hālau ka Lei Mokihana o Leinā'ala]. That's been like over 20 years now, doing that kind of thing. But digging into the *mo'olelo* [stories, history] in order to keep those *mo'olelo* alive, because they seem so many years ago; centuries ago. That to me anyway, it would be more than unfortunate if people today in our generation never really heard those stories. So, one way to go about it is to turn them into *hula*, *mele*, chants. To make people aware that these things continue even today. So that's really, I don't know ... summarizing my experience with Mānā.

Keao recalls his experiences as a child growing up in Kekaha, Mānā, and the areas around the PMRF facility as fun, adventuresome, and a catalyst for his continuous curiosity and search for answers:

Well, my first-hand personal experience growing up in Kekaha, there used to be a village up by Mānā side, right. You go on the highway all the way till you gotta make the left turn to go Polihale to the beach. On the right-hand side of the road, there at the turn off, was a village...old plantation houses. And there was a big community swimming pool there. And it was a nice swimming pool, so we used to go as kids, rarely to that swimming pool. I remember because it had the high diving board, 'cause we had a swimming pool in Kekaha too, but it didn't have a high diving board—but that one did. And uh, I have a grandaunty who used to live in that village over there. And, uh, only once though did we ever go visit her at her house over there. And I remember she had *lauhala* [pandanus leaf] mat covering the floor. Um, but that village closed down in the... '80s maybe into the '90s, is when people left that village permanently and then all the buildings got torn down.

So that's a big memory of Mānā side. Other than that, Polihale for sure ... camping, spending time on the beach, picking *puka* [hole] shells on the beach. As a kid, we used to make our own *puka* shell *lei(s)* [necklaces or garland made of flower, leaves, feathers, and/or shells etc.]—spending time on the beach over there picking *puka* shells. And I remember the rest of the coast 'cause we know Polihale really well but when you keep going on the beach around the point, Nohili way, around there to me always was *kine* [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of a mystery because it's not an area we used to go. Uh, Queen's Pond, close to Nohili is about as far as we would go, but the area around used to seem like a real mystery to me ... almost spooky *kine*. But, um, I came to learn later on that those sand dunes had all the bones inside. And I wasn't aware of that as a kid...we came to learn that over time. Um...but I used to ... I don't know, because it was overgrown with *kiawe* [algaroba tree (*Prosopis pallida*), a legume from Peru, first planted in 1828 in Hawai'i trees] and bushes ... the sand dunes, over there. So, I remember feeling *kine* of scared of that place, and then I came to learn later that that's where had the bones ... Then I made the connection, "Oh, no wonder I used to be so scared of that place ... "But I'm not afraid of that place anymore. It's not a ... there's nothing spooky about it.

And then growing up in the church [Church of Jesus Christ of Latter-day Saints (LDS)], we used to have church camping stays for days at a time. Not at Polihale but more around the point, which was good 'cause that was part of the area that I used to be scared of, because it was such a mystery to

me. But camping in those areas as a group, and all these people that I knew all my life, made it feel safe to me. And uh, so lot of fond memories ... Yeah, the memories my era was the plantation days. So, it was always sugarcane. Even now today, it's weird to me not seeing sugarcane, because it seems so recent that the sugarcane fields were done away with. Because it's such a big part of my growing up years, yeah? But going through all the dirt roads, through the different sugarcane fields as a kid, one of the really awesome things about growing up on the west side was to be able to just roam freely. There were never gates on the roads. The dirt roads going between the sugarcane fields, that came later, I guess starting in the '90s.

Because my two best friends, we were very tight and after school we would rush home and finish our homework, and then we would meet up again at the spot at the beach because we would spend at least a couple hours fishing in Kekaha, on the reef, and stuff like that. So that's why it was so important that we had the fishing lead! So, to us it was a big deal. And uh ... we would, uh ... if we weren't exploring up *mauka* [toward the mountain] on our bikes, then we were on the shore fishing ... doing a lot of fishing ... stuff like that. So, we were real tight.

So that was my firsthand experience. Rarely did we go to PMRF, the facility there. They would have special events like the Blue Angels. They would come and do their air show, and we went to go watch them perform a couple of times, as we were growing up. They would have fireworks displays, Fourth of July ... Uh, the military was heavily ... When we were growing up, our community was very tight. There was a community...Kekaha Community Association (KCA) ... were very active. They always had ... was very reliable. Very reliable during, um, New Year's. There would be a big fair. Bazaar, fair at the local park, Kekaha Park, with all the booths. It was a regular fair, carnival atmosphere ... And then Christmas time, there would be like a mini fair. A big gathering at the park. The military would come fly helicopters, Santa Claus would come down and throw all this candy and stuff like that.

So, the military were supportive of those events ... those Kekaha events. And then Fourth of July was a big, uh, the same type of event, Fourth of July. So, three times a year, very reliable. There was the Fourth of July Carnival; it was a big event you know, easily ten thousand people would show up. Then New Year's again, the same type of event. Then the Christmas Santa Claus Drop ... that was a big deal because it made us kids think that really was Santa Claus, 'cause he came down from the sky. [Chuckling.] But it was a military helicopter that would come. And um, the military would also provide doctors once in a while. They would set up a tent in town, in Kekaha. They would provide doctors to look people over ... dentist ... so that was the involvement of the military back then. Then over at the Navy housing, just past the landfill, there's a housing area where the military families would stay. And they had an outdoor movie theater, so there was an outdoor movie screen and then you can sit on the grass. It was available for the public back then, so we used to go there and watch movies under the stars. That was a lot of fun.

My mom used to teach *hula* [Hawaiian dance], as a kid growing up, at community centers around Kaua'i. And she also would teach *hula* there at the Navy Base for people, usually moms from the Navy families who wanted to learn *hula*. And my mom used to go... So, she would take me along with her sometimes. And so that was our exposure to the military families. In our church [Church of Jesus Christ of Latter-day Saints (LDS)], some military families would come to our church too...so that was the engagement we had with the area. Children of military families were my classmates at Kekaha Elementary School. I remember one particular friend I had whose family lived on the base and my mom took me on a couple of occasions to his house for a couple of hours to play with my friend and then she would come and pick me up.

When asked about the fishing in the area, Keao explained fishing techniques and bounty:

Moi [threadfish (Polydactylus sexfilis)], āhole [an endemic fish (Kuhlia sandvicensis) found in both fresh and salt water], manini [common reef surgeonfish (Acanthurus triostegus)], 'ō'io [ladyfish,

bonefish (*Albula vulpes*)], *pāpio* [young stage of *ulua* (crevally) fish] ... that's the kind that you catch with the fishing pole.

When you throw net, you get the  $\bar{a}hole$ , you get the manini, you get the ' $\bar{o}$  'io ... Um, the kind you spear fish on the reef, you get the uhu [parrot fish ( $Scarus\ perspicillatus$ )], you get the  $m\bar{u}$  [( $Monotaxis\ grandoculis$ ), known as the bigeye emperor or humphead bigeye bream], you get the  $k\bar{u}m\bar{u}$  [goatfish ( $Parupeneus\ porphyreus$ )].... Um, you get the palani, [surgeonfish ( $Acanthurus\ dussumieri$ )],  $p\bar{a}ku$  'iku' [a long fishing net; specifies a net laid in coral reef, into which fish were driven by beating the water] we call 'em. All this kind, that's all the favorite fish. Kala [Surgeonfish, unicorn fish], that's all the favorite kind fish to eat. And that's the reef fish.

And then you go outside on the boat, if you fish off the boat, then that's where you get the ... you can either get the deep sea *kine* [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] ... So, you get the *kawakawa* [mackerel tuna], and you get all the different kinds of snapper, yeah? And then you get the *ono* [large mackerel type fish (*Acanthocybium solandri*)]. Of course, you going get the barracuda, you cannot help [chuckling] ... And then you get the marlin, and you get the *mahimahi* [dolphinfish (*Coryphaena hippurus*), a game fish]. Plenty *mahimahi* outside on the boat....

Actually, we get pretty good on the *he'e* [octopus] side, especially if you go where get plenty reef, like ... and then the lobster too, yeah. But if you go Nā Pali side, choke *he'e* on that side.

When asked about the gathering of limu [seaweed], he recalls fond memorires of  $l\bar{u}$  'au(s) [Hawaiian feast, party], and other:

I wasn't so on it with the limu. Like I not so good at pointing out the different kinds but like my aunty who just called, her mom when she was alive, when we were kids, she used to come pick us up early in the morning, 4 o'clock, 4:30 on her truck, and take us, because a  $l\bar{u}'au$  [Hawaiian feast, party] was coming up and many people would call her to make the food. So, she would have her certain families that she would hit us up to go help her go harvest, yeah. So, I remember going with her out to Mānā side, Kinikini Point side. Um, she knew the spots to go, so we would just go with her and she just point to us on the reef, on the coast ... tell us go pick this limu, stick it in the bag. It was limu kohu [small seaweed (Asparagopsis taxiformis), with densely branched furry tops that are tan, pink, or dark red], ogo [Japanese term for limu, in the same family as Manauea (Gracilaria coronopifolia), a small red seaweed]and also sea cucumber. She would have us grab loli [sea cucumber (Holothuria spp.)] and she would sit on the reef and she would scrape 'em and then cut the two ends, squeeze out the guts, and then scrape 'em some more, and chop 'em into pieces and throw 'em in the big mayonnaise jar. And it would attract all these eels, and they would come eat up all the stuff and that used to make us scared. But we used to grab the loli, throw 'em to her, and she would just sit on the papa [reef] where the water would just come up to her, and that's where she would sit there and scrape, scrape, scrape, and then cut it up. And then we would help her prepare the foods for the  $l\bar{u}$  'au. I remember those memories ....

And Kekaha Beach was a huge beach, and now it's only waves crashing on rocks right now. But it was a huge beach. In fact, there used to be the big kind, the old school canvas tent, the military kind, and I remember going to at least one or two, at least two different big  $l\bar{u}$  'au on the beach in Kekaha, where it was like that ... With the long tables, everything was on the sand ... Or, or up mauka [toward the mountain], you know? Different locations ... Waimea, Kekaha ... Yeah, many  $l\bar{u}$  'au. I always, always did love that.

Throughout his life Keao lived and loved the Hawaiian culture. His grandmother, Annie had many 'ōlelo no 'eau [wise and traditional sayings] and all of them were treasured by Keao. He shared two:

She would say stuff like, " $\bar{A}p\bar{o}p\bar{o}$  aku nui ia  $l\bar{a}$ ," "leave it up to tomorrow." In other words, you gotta have faith and you gotta be confident that what you did today was good enough, that tomorrow

you going see the result. And she would say stuff like, when somebody pass away, "Hā 'ule ka 'ulu malalo," 'the breadfruit fell down.' Uh, 'ulu [breadfruit], is the 'ulu ah, growing in the tree? And ulu is to grow. So, our whole life, we growing just like one 'ulu tree. But there comes a point when we produce fruit and that's the things that we do that are good and that everybody can see ... that everybody can enjoy ... that everybody can benefit from. And then you work so hard, and then one day comes that the 'ulu fall down from the tree ... and that's the end. So that's, "Hā 'ule ka 'ulu malalo." And I thought it was a beautiful way to describe a person's life.

Keao tells of his grandma and her use of  $l\bar{a}$  'au lapa 'au [Hawaiian medicinal plants] and his thoughts about sacredness of Hawaiian elements:

My grandma would use for herself and with me, certain types of lā 'au lapa 'au. I have this scar over here on my arm. Used to be a boil when I was young, maybe 10 years old or something like that... My grandma was visiting with us in Kekaha and I had this boil on my arm, it was nasty. And my grandma would go outside in our yard and grab laukahi [broad-leafed plantain (Plantago major), a Eurasian stemless weed] and she would steam it to wilt it, and then she would pile it on top of the thing and wrap it. She said that was to bring the boil to a head so that it could drain out. And when I would be sick, she would give me...well, she would give me māmaki, [small native trees (*Pipturus* spp.) with white-backed leaves and white mulberry-like fruit], koko 'olau tea [a class of small plants of the genus Campylotheca employed as remedies, sometimes called the Hawaiian tea plant] on a regular basis, especially when I was living with her. A typical day living with grandma was for me, 'cause I was going to school and working, I would wakeup say 5:30 am in the morning, she was already up, already cooking, and she would make cowboy pancake with honey and butter and māmaki tea. Was always māmaki tea. If she never have, then would be ko 'oko 'olau tea because she said it was good for my ' $\bar{o}p\bar{u}$  [stomach]. And, uh, when I was sick with a cold or something, she would make ... ha 'uōwī [a weedy kind of verbena (Verbena litoralis)]. And she would talk about when she was growing up, ah .... That thing was yuk. [(Chuckling.]) She said was 'ono [delicious] for you ... I mean it's good for your sickness but I used to not like, 'cause it was so bitter ....

She went someplace and found 'em and then she would ... Like I would tell her I wasn't feeling good and she ask me, "What kind not good?" Then she would go... Next thing you know, there was this pot boiling on the stove, so ... I never really knew where she got it from but ... She was, uh, she used to explain to me, uh,  $ha'u\bar{o}w\bar{\imath}$ , ko'oko'olau,  $k\bar{\imath}$ nehe [(Bidens pilosa); young plants, just before flowering, are cooked for tea],  $m\bar{a}$ maki ... Uh, one time she talked about something having to do with mai'a coming out of the banana. I didn't pay attention. Now I regret, I didn't pay attention. I was, "Oh yeah, whatever grandma ...."

Lā'ī [ti leaf (Cordyline terminalis)]] is special ... we know it's special ... we know it's sacred, we know it offers protection. So that's always in our consciousness at some point. So, we'll integrate it when we think it's called for, either at the house, or ... Same for pa'akai [rock salt]. Pa'akai is for protection, for cleansing, forgiveness ... And so that incorporates into what we do. Um, making lei [necklace or garland made of flowers, leaves, feathers, and/or shells, etc.] for particular reasons ... And then, why we give lei. Why we make lei. Why the type of leaves, or flowers, or plants we use in lei ... There's a reason why we chose what we chose, and that all goes back to traditional understandings of the mana [spiritual/esoteric power; strength] inside those things. So, all of these things conveying mana is part of the, you know, centuries old understanding of how energies play an important role in our environment, the surroundings ... um, the energy of those things that are unseen around us. I don't know if you consider that religion, but it definitely plays into our consciousness as a family, as a community, um ... and definitely um, something that we still do, even today, even despite the fact that our family was raised in the Mormon Church, these things still played into these things. And the appreciation and understanding of what is an 'aumakua [personal or family gGod] ... things like that. So even though we don't know the specific name of our family's 'aumakua from the past, we know that, that's an important thing. It's not just when you cite an animal, and in our family, it was always understood to be pueo [owl], that's how come I have this tattoo over here ... But you cannot just say every pueo is your 'aumakua. There's one particular pueo and it has a name, and that name is somebody, is one of our  $k\bar{u}puna$  in the past, or that name is lost and we don't know that story attached to that name and that pueo. But it's a pueo. And so, you kind of keep it at that super general kind of space. We wish we knew ...we want to know ... there's a good chance we'll never know, but the memory of it, we preserve. So even though we grew up in the Church, from the western American sense, these things were always there, and they're always kind of in the background, or in the foreground, actually.

Keao voices his concerns about the military bombing and strafing of Ka'ula Island and its sacred, well-storied sites; missile launches at Nohili; threats of arrest for boaters off Kaua'i's west coast or those accessing the shoreline near the PMRF facility; ambiguity of military activities; the accountability of the United States making Hawai'i—and Kaua'i in particular—targets for international hostililities; education, or lack thereof, in Kaua'i schools regarding the sovereign status of the Hawaiian Kingdom since 1843; the continued US military occupation since 1893 despite a lack of a bilateral treaty of cession between the Hawaiian Kingdom (HK) and the US; and the need for the end of the U.S. occupation to allow the HK free exercise of its continued sovereignty:

Uh, having to do with the military, yeah, so there's been a happy slash, frustrating slash, irritating relationship with the military, yeah? First of all, the Hawaiian Kingdom achieved international recognition as a sovereign state in 1843 with status equal to the U.K., France, the US, and other recognized states through bilateral treaties of friendship, commerce, et cetera. In 1893 the U.S. lands their troops in an illegal occupation, military occupation, that continues until today. The United States has no business being here. This is the Territory of the Hawaiian Kingdom. The United States has mutual treaties of friendship, recognition, commerce with the Hawaiian Kingdom and those are still valid, even until today. There exists no bi-lateral treaty of cession between these two equally sovereign, equally independent nations—the Hawaiian Kingdom and the United States, just a unilateral declaration of annexation on the part of the U.S. There is no treaty of merger of these two countries. So, the United States has no business being here and the rights of the HK of its territory are continually violated every day of the occupation. This is an international crime, a war crime. The perpetuation of US propaganda making Hawai'i residents and people around the world think that Hawai'i is a state of the US is perpetuation of the crime.

So, there's that. Now, within this capacity as an illegal entity, military entity, here in the Hawaiian Kingdom, now we're using Ni'ihau as part of their advanced technology, radar communications technology, spy technology ... You know, to further the U.S. agenda for illegal purposes, is terrifying. Because that creates us ... We exist as a nuclear target, not because of the Hawaiian Kingdom but because of the U.S. presence here. So then, there's that. So, this uncomfortable, sometimes awkward relationship today with PMRF, has a lot to do with emotions that are stirred among locals. And are we educated in our elementary schools, middle schools, high schools, locally about these issues and exactly what the position of the United States is? The relationship between the Hawaiian Kingdom and the U.S.? It is not part of the curriculum. It is not part of this, so the fact that there's a lot of speculation going on and really charged emotions among locals that are many times unspecific, just ambiguous, charged up, frustrated emotions among locals having to do with the U.S. military, is no surprise to anyone because it is not part of the formal education that we get in our schools. And I am not a conspiracy theorist, however, it is no surprise that, that kind of ambiguity leads to either mistaken or confusing positions among locals, about the relationship between our Hawaiian people, the local people, and the U.S. military. So, don't be surprised about any of this. Obviously, it isn't our fault that we're not being educated properly about these relationships.

### **AKANA-COMPOC 'OHANA**

Aunty Leina'ala (Photo 6) was born Sylvia Johnette Leina'ala Akana (Compoc) in 1945. Her father was John W. Akana and her mother was Ella (Kekahuna) Akana. She is married to Paul Compoc (Photo 7) who is from Kahuku, O'ahu, born in 1947; he moved to Kaua'i in the 1970s. Brad Kekipiaki "Kipi" Akana (Photo 8) was born in 1968 and is one of several children born to Aunty Leina'ala. The interview for the CIA took place at the home of Aunty Leina'ala and Uncle Paul in Hanapēpē. Kipi lives in Kāhili, Kaua'i, on a 107-acre property where he occupies 15 acres with his family and his horses.



Photo 6. Aunty Leina'ala Compoc. Photo taken at her residence in the *kūlanakauhale* of Hanapēpē in the Kona *moku* on the *mokupuni* of Kaua'i.



Photo 7. Uncle Paul Compoc. Photo taken at his residence in the *kūlanakauhale* of Hanapēpē in the Kona *moku* on the *mokupuni* of Kaua'i.



Photo 8. Brad Kekipiaki "Kipi" Akana. Photo taken in the living room of his mother and father's residence in the kūlanakauhale of Hanapēpē in the Kona moku on the mokupuni of Kaua'i.

Henry Enoka Palenapa Kekahuna, Ella's father and the grandfather of Aunty Leina'ala, was a gifted Hawaiian surveyor who was born in 1881 and passed in 1969. He worked at the Bishop Museum and wrote extensively about the preservation of Hawaiian cultural sites. His work included the mapping of over 60 *heiau* [temple, place of worship] across the Hawaiian Islands, including three in Kaua'i. Kipi says he worked with brushes. His visionary work is the blueprint for today's restoration efforts of Kāneiolouma" (Hui Mālama O Kāneolouma 2024). Henry assisted the anthropologist Kenneth P. Emory for many years. Henry E. P. Kekahuna's memories were recorded on audio tape by Dr. Emory in the Museum's Hawaiian Hall in December 1956 (Bishop Museum Library and Archives/Institute of Museum and Library Services 2024). He accomplished prolific enduring works in academia.

During the interview Kipi informs about his great-grandfather's recordings in Bishop Museum, and his work on the west side of Kaua'i (Photo 9):

Even like ... you go to Bishop Museum, you go downstairs, and you can hear ... they even get recordings of him teaching classes ... in half-Hawaiian and half-English ... On this side, he did plenty stuff at Polihale and Barking Sands too, he ... mapped out.

Leina'ala recalls visiting with her grandfather when she and little baby Kipi went to Henry's home in Pālolo:

Two years ... two years after you were born, because he scolded us when I named him Kekipi. He said, "Why did you name him Kekipi?" I said, "I don't know, the father wanted his name Kekipi ... I just went along." "You know what this is?" "No." "That's the rebel ... and kids turn out to be like their names."

Hawaiians have a strong belief that the names given to a child is important, especially when having positive expectations for the child. But Kipi was successful. He retired as a police officer and also a Department of Land and Natural Resources Division of Conservation and Enforcement [DOCARE] Kaua'i branch chief.

Aunty Leina'ala grew up in Waimea Valley, Kaua'i, where her father's (John Akana) family had land. She can remember her great-grandmother, grandmother, and dad raising their families there in Waimea from at least the 1920s. She describes growing up in the valley:

It was wonderful .... I mean ... You know ... when I go up there now, it's a whole different town. It was very low key, everybody knew each other, everybody helped each other, all the kids played together ... you know ... That doesn't happen nowadays. It was very low key, Waimea Valley was very low key. But I think ... it was a very loving town, because no matter if you were Japanese or you were Filipino, Hawaiian, or whatever, it didn't matter ... you know ... you just ... everybody was one person.

Aunty Leina'ala and Uncle Paul worked at the NASA Tracking Station at Kōke'e Park. There is an award recognizing several people, including her and Bill NeSmith (Keao NeSmith's father) on April 1, 1981. The award marks the 10th Anniversary of the NASA Tracking Station. After working at the tracking station, Aunty Leina'ala went to work at PMRF. Aunty Leina'ala and Uncle Paul shared some memories. Aunty Leina'ala explains:

And I worked there [referring the NASA Tracking Staton at Kōke'e Park] from ... 1971 ... I worked there until 1983. And then I started down at the base [referring to PMRF] in 1985 ... I worked in the department called, 'Air Operations'. And I handled all the scheduling of the aircrafts, the pilots, the crew. Made sure we were in budget .... of course ... it's the main thing ... and I did whatever other clerical work that had to be done. I was the only woman in the whole department, among six officers, and 20 sailors. I was the only woman and the only civilian ... at times when we

had worldwide missions ... and then they would come here ... I think .... it was like every other summer ... and we would have people like from Japan, from China, from Portugal ... just from all over the world ... They would do their part of the mission that was ... like the Japanese would do like their part of what that mission was going to be for that time of the year ... Kōkeʻe was very interesting because it was something that was new to the world, more or less, because we did like aerospace that's when aerospace was in ... you know ... in full bloom ... I guess at that time. And we were the only Pacific Tracking Station. And we tracked the, ah ... You tell her, Dad ...

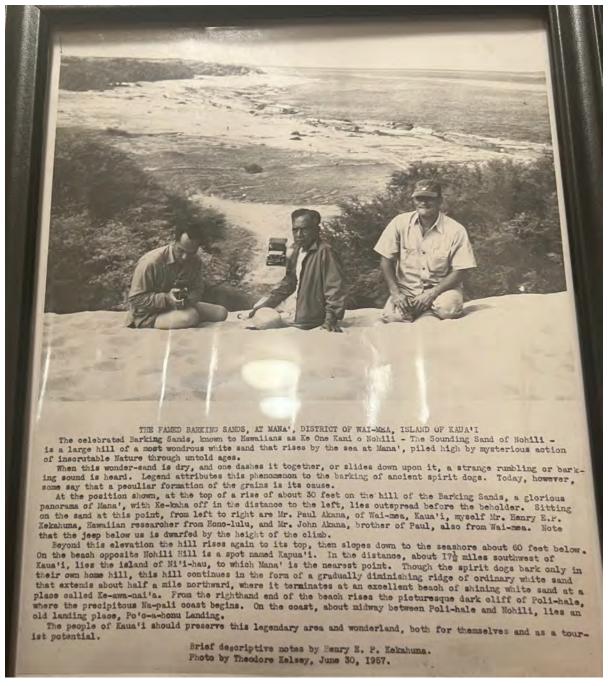


Photo 9. Photo taken of a photo hanging in the hallway of the Compoc home. The photo from left to right is Paul Akana from Waimea, Henry Kekahuna, and John Akana. The photo was taken on the very high dune of Nohili.

#### Uncle Paul notes:

We track all the big ships ... you know...the Apollo ... We were the only station in the U.S. or in the world in fact that could catch certain part of the orbit when the thing pass over. So we can track it, and take all that data, and send it straight to Houston ... I worked there. That's how I first came to Kaua'i. Before Kentron. 1971 ... I like say ... until 1978.

Kipi grew up and worked in Waimea and the surrounding area. His extensive knowledge is telling when he describes the large amounts of water feeding the plains from Waimea to Mānā, and the diversion which accounts for a less swampy place:

Used to be all water, and they used to grow taro and rice. If you drive on the west side and you see all that valleys coming out ... all those valleys was cut by water. And basically what they did when all those cane companies came, they dug out one ditch line on the top, and it catches all the water that used to feed all those valleys coming down, and then they shift the water ... transports the water to one place. And they use that water ... and it went to Pu'u Lua Reservoir up in Kōke'e, the big reservoir ... and down to Kitano Reservoir, that's where they distributed all the water to Kekaha Sugar and stuff. But all ... I mean was swampy that place .... Got drained and then they would stop the water from coming down the valleys ... Basically, if they let the water down again, Kekaha town would be flooded.

Aunty Leina'ala speaks about the different types of agriculture in the area:

I remember as a really young child ... I remember the rice paddies that we had going up to Waimea Valley on the right hand side. It's a subdivision now, but that was rice paddies in there. And then, but before long, it was gone. And everybody had their own lo'i [taro pondfield] as far as taro ... you know ... for taro. Sugar ... I mean ... I don't know when sugar came but ... I mean ... that was just the biggest employer here on the islands at one time ... was sugar. And then ... of course ... pineapple too. Mainly on the east side of the island. We had one, two ... we had three pineapple factories here on Kaua'i ... one was in Lawai and two in Kapa'a. One in Kapa'a tTown where Pono Kai Hotel is right now, and the other one was up on ... pass Kapa'a High School. Three, and was very, very good ... we had during the summer that would come from the outer islands that would be housed by the ... cannery owners to work in the fields.

Growing up in the area, Kipi remembers his grandfather gathering *limu kohu* [a soft, succulent, small seaweed (*Asparagopsis taxiformis*)], fishing in the ocean and streams, and ultimately harvesting the following:

Limu kohu ... Once in a while, yeah. My grandpa used to. Pāpio [the young stage of growth of ulua, a fish], moi [threadfish (Polydactylus sexfilis)], 'ō'io [ladyfish, bonefish (Albula vulpes)]. Cast, throw net... I catch 'o'opu [general name for fishes included in the families Eleotridae, Gobiidae, and Blennidae] in the river too.

Back in the '80s Aunty Leina'ala was one of the directors of the Kaumuali'i Hawaiian Civic Club in Waimea, Kaua'i. The club was a place where members honed their skills of *lei* [necklace or garland made of flower, leaves, feathers and/or shells etc.], making, *poi* [a thick paste of *kalo* (*Colocasia esculenta*)] pounding, procuring sea salt, sewing *kapa* [tapa, as made from *wauke* or paper mulberry [(*Broussonetia papyrifera*) bark], playing of Hawaiian instruments, modeling of  $p\bar{a}'\bar{u}$  [woman's skirt, sarong; skirt worn by women horseback riders], stringing of Ni'ihau shell *lei*(s), and *lauhala* [pandanus] weaving (Association of Hawaiian Civic Clubs, 1981). These cultural practices were taught to school children and many throughout the community.

When asked about cultural practices and Hawaiian family traditions, Kipi mentioned that he and his brother practiced the art of *Lua* or Hawaiian martial arts:

I do *lua*. In the class. I never go long time ... but get one right now with Alan Arquette ... in Waimea Valley. Started west side. Now, we was practicing at...the last time we went ... Kōloa Park ... in the dark ... The public county park. We get one big *papa* [class] maybe 100 people. We shake that park up...yeah. My brother is one 'ōlohe [skilled, especially in *lua* fighting] too, the 'ōlohe on Maui. And then Alan is the 'ōlohe over here.

Aunty Leina'ala also adds that her grandpa Henry composed the 'oli or chant used by all *lua* practitioners througout the *Pae* 'Āina or Hawaiian Islands.

The Akana-Compoc 'ohana' share favorable memories and stories about the plantation and military:

## Paul explains:

In the '70s, I not seeing no difference. The only difference is, when the plantations started closing down, everything went down hill. Nothing. Before, Kekaha was a striving ... When I came down, I was impressed ... everyday, every weekend you could see stuff happening with the community. They had a swimming pool ... everything. Then when all of that close ... that's what I'm talking about now...everything went downhill. By the time I came back again for visit in the '70s again, was different, was like nothing ... zero. It was like a big family, everybody take care of each other. You know ... when they ... I was from Kahuku now, plantation life ... when something went wrong, like they had strikes, and all that *kine* [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] stuff like that ... nobody had to feed us, we all feed each other. Soup kitchen, you tell somebody to go to the soup kitchen now, they going like, "Haaaa." They going say, "What is that?" That's how used to be when we had hard time. That's the same thing with Waimea, I think. All of a sudden that place went down...Kekaha. To me, no more nothing for the kids like before. Every weekend you could see stuff going on.

The military was still there. To me ... in my honest opinion ... without the military being there, that place would turn to crap. They took care of the place. Really, look at how they keep the place. Oh I guess they have the money, they can do it. Tough...they keep the place going and...all that buildings and ... Like now you go through there, it's like it's a different world. To me ... when people talk about them ... They want the land for what? Look at Barber's Point ... what they did with 'em? That's what gets me ... you know.

This side of the island ... but they helped everybody [referring to the military after Hurricanes Iwa and 'Iniki].

### Leina'ala adds:

Plus too, their the biggest employer of the island [(referring to the military]. I worked directly with them. The very next day after the hurricane, I went down to the base...you know ... to see. I went in my office ... it was all changed ... the desk was here, and now it was there. And I said, "What's going on?" And the Captain was in the office, and he said, "I'm using your office, and it has to be the central office." Because we are right there on ... the airstrip ... right next to the tarmac.

The hurricane time. What happened was ... I think it was couple of days after because my boss asked me...my boss was the head of the air operations ... he said, "Is there anything I can do for your family." I said, "Yeah, my husband is on O'ahu, and he and my son bought things for us ..." Because we lost this whole place. So I said, "They have things but they can't get it here." He says, "Okay." And I said, "My mother is here ..." My mother was very sick ... you know. And I said, "I want her to go to Honolulu, but we can't get her to Honolulu," He says, "Get her ready, bring her down here, I'll take her to Honolulu, as long as someone is there to meet her. And then I'll pick up your husband and your son, and I'll bring them back here. They can unload what they have for you, and I'll take them back again." And so from Hickam, he flew my mother with them yeah ... was with them yeah? Was with them. He came back ... he and my son came here, dropped off stuff for

us, took my mother back on the plane ... the little C-26 ... small plane yeah. And they took them back to Honolulu to Hickam. If wasn't for him, I don't know ...

## Brad "Kipi" notes:

I think ... the military, the jobs was more high paying than the sugar industry. And plenty people don't like the military, plenty people didn't like the plantation mentality either but...I like the military here. They take care the place, and what else we going do with the land? All these guys think they going farm, they not going farm. They ain't farming ... And then the sugar industry was good because it gave a lot of jobs, but bad because they stopped a lot of water. But the benefits of stopping all that water, coming down and making one swamp is the Mānā Community, the Kekaha Community ... you know ... get some some benefits. And of people always call me, "Plantation mentality." But those guys work hard for what they got ... those plantation guys.

I think a lot of people think that the base is not transparent with stuff they do because a lot of stuff is like 'hush-hush'. But some stuff got to be 'hush-hush' because it's just that ... you know ... like sometimes they shoot one missile like without telling nobody ... and everybody is freaking out, don't know what the hell is going on. Sometimes they tell you that the thing went off. And I know sometimes they cannot say, but I think a lot of people are like conspiracy theorists think that stuff going on out there that people don't know. But they are probably right because there are a lot of stuff out there that people never ever going to know what's going on ... that's part of life. I don't know why you gotta know everything. You cannot tell everybody what's going on. They ... out of all this little corporations and stuff ... they are probably the only people that help the community more than ... guaranty if the base shut down, Kekaha town shut down, because a lot of people work out there, and they support the community. Some of the plantations ... they don't help the community at all. I rather have ... This road [referring to the road from Kōke'e to PMRF], it's all paved down to Makaha. I work State for 30 something years. They shouldn't get any more land back because they cannot handle what they get now ... All these places in yellow ... All these places [referring to the map] are maintained nice. I can see all of this, I know exactly where all of this ... I work this side of the island for years. I know.

And they did ... when the hurricane came. They brought in plenty supplies ... Iniki ... Iwa ... they brought in a lot of supplies, the military. Yeah. They brought in plenty supplies. I love the base ... Yeah. And this is another story too. You know when my son was born, he was ... premature, and then ... but he was born that same week as ... the air ambulance crash on Maui, and so they never have one plane ... and they couldn't medevac him because never have the kine [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] ... so the Coast Guard came and ... Coast Guard, before they couldn't land at the regular airport because was too small ... so the Coast Guard when actually land their big C-130 on the thing, and take him on the ambulance all the way to the C-130 ... and they took off from the base. So I love the military. And they brought the plane in because nobody ... the air ambulance was down ... they wasn't flying ... they were grounded, but he had to go to Kapiolani (O'ahu children's hospital) ... and so we had to wait. And the Coast Guard actually sent one big C-130, the big plane ... landed at PMRF, and the ambulance took him to PMRF ... jump on the plane, and then ... it's different from air ambulance because I couldn't go on ... I mean ... I could go on the air ambulance with my son, but their protocol and stuff is like, "There is no passengers." So he went by himself. I showed up at the airport, and caught the last plane out, and went to Kapiolani. And the C-130 landed at Barber's Point and because they couldn't land in Honolulu International Airport, and then they transported him over there.

If wasn't for the base we wouldn't have gotten my grandma out, we wouldn't have gotten food in, because never have storage ... nothing ... and my son wouldn't have gotten medevac to Honolulu ... Personal ties ... to why we love the military ...

### KAINA MAKUA

Kaina Makua (Photo 10) was born in 1984 at Wilcox Medical Center in Līhu'e. He has two other siblings, and is the second child within the order of his siblings.



Photo 10. Kaina Mākua. Photo taken in his office at the Aloha Aina Poi Factory in the *kūlanakauhale* of Waimea within the Kona *moku* and *mokupuni* of Kaua'i.

Kaina received his M.A. in Secondary Education from the University of Hawai'i at Mānoa [UHM] (Teacher Standards Board-Teacher's License) and a B.A. in Hawaiian Studies at UHM. He is a fluent Native Hawaiian speaker who has danced *hula* (10 years ago), is a *kalo* [taro] farmer, educator, paddler, a *hale* master builder [a master builder of Hawaiian traditional house or building], and a really dynamic individual who wears many hats.

As a well-recognized leader in the Hawaiian community, he is skilled in the  $p\bar{a}$  'ani (game) of  $h\bar{a}pai$   $p\bar{o}haku$  [boulder lifting], an upright  $k\bar{a}ne$  [man, masculine] who modeled for the 'Aha Kāne organization logo. The organization pays tribute to him in the following ('Aha Kāne 2022):

The logo for 'Aha Kāne as an organization depicts a *kane*, a *kanaka maoli* [Native Hawaiian], shouldering the second of three stones that must be lifted by a single individual to start  $n\bar{a}$   $p\bar{a}$  'ani [the games] at the 'Aha Kāne conferences. In this competition called  $h\bar{a}pai$   $p\bar{o}haku$  [boulder lifting, the first heavy stone must be lifted onto the shoulder]. The second stone, unwieldy and awkwardly shaped, must also be heaved onto the shoulder. The last stone, largest of the trio, must be raised from the reclining state of Hina to the upright state of Kū. If no one is able to lift all three stones, then the games cannot be played. At the 2010 and 2012 conferences, Kaina Makua was the sole  $K\bar{a}ne$  who tried to and succeeded at lifting the stones. Kaina, a college graduate and *kalo* farmer from Kaua'i, is recognized in the Hawaiian community as an exemplary representation of a modern  $k\bar{a}ne$ : a culturally knowledgeable, educated, robust, 'olu'olu [affable, gracious] family man. But  $h\bar{a}pai$   $p\bar{o}haku$  is not simply a demonstration brute strength.  $K\bar{a}ne$  must also lift  $p\bar{o}haku$  comprised of intangibles like family responsibility and commitment to bettering the community and be fully

dedicated to bearing the weight of these important *kuleana* [responsibility, privilege, right]. Focus, discipline, strength of character—in addition to physical prowess—enabled Kaina to lift stones. 'Aha Kāne seeks to build up the positive image of  $k\bar{a}ne$  in modern-day Hawai'i by providing cultural and educational experiences to help them become better fathers, husbands, sons and community members who are grounded in their culture.

There is a true connection between Kaina and the 'āina [land], and when asked during the CIA interview where he conducts his Hawaiian spiritual practices and gathering of lā 'au lapa 'au [Hawaiian medicine] he replied:

A lot of 'em is at *kai* [sea], and up *mauka* [towards the mountain]. Sometimes in Kōke'e, and also in Nā Pali. You know ... *pule* [prayer], 'oli [chant], and always for the betterment of our people. Trying just to recenter ourselves, and keep us sane ... you know ... in this crazy world.

'Uhaloa [a small, downy, American weed (Waltheria indica var. americana)] and kauna 'oa [a native dodder (Cuscuta sandwichiana)] is all good stuff for your skin. Even the sand though. One [sand] is one big one. If you looking for one detoxing, external detox and internal detox, it's the one ... it's the biggest one. The whole 17 miles of Mānā that's all lā 'au [short for Hawaiian medicine, plant] that. You dig one hole maybe a foot deep, however deep you gotta go to bury yourself. You let it dry out. When it's dry, you get inside, and then whoever is there cover you up, and then you sit in that thing for six hours ... half-an-hour is brutal. :Clean everything out, pull everything out, open up your pores, push out all the toxins that you have. Pretty much, going dehydrate you. And clean you internally. I've done it couple of times this year, and it's brutal, especially in the summer. You know ... mentally, spiritually is like taking one...what is that call...half-an-hour is hot ... It's like ... what they call that ... when you gotta the kine [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] ... cleanse. One external and internal cleanse. Yeah, one. That's all lā 'au, 17 miles of lā 'au. I mean, you can go to the ko 'a [coral, coral head] and all the reefs in Mānā, when low tide and summertime, you going find pa 'akai [rock salt]. All the poho [depression, hole], all those puka(s) [holes] in the ko'a on the papa [reef] they all fill with ocean water, and in the summer, three weeks, it turns into salt. So we used to go gather ... you know ... we feed ourselves. Get plenty of limu [seaweed] ... all kind limu ... līpoa [bladelike, branched, brown seaweeds (Dictyopteris plagiogramma and D. australis)], limu kohu [a soft, succulent, small seaweed (Asparagopsis taxiformis)]. That's all lā'au, kohu is used for rebuilding...what do you cal that ... some kids get 'em ... your thyroids. I think my son get some thyroid issues. But *limu kohu* is *lā'au*. Anytime you talk about *lā'au*, it's everywhere. *Kauna'oa* [a native dodder (Cuscuta sandwichiana)] is one big one. Yeah. Cancer. Yeah, even your mimi [urine]. 'Ohai was one good teacher. And he's from Kaua'i.

As a master builder of traditional *hale*, Kaina gathers his materials from Kōke'e. His concept is to eradicate invasive plants by using them to build the *hale*, and to *kanu* or plant natives. He also restores  $p\bar{a}$   $p\bar{o}haku$  [stone walls] used in *heiau* [temple, place of worship] and fishponds. He helps to restore the Kapalawai fishpond located between Waimea and Pākala, and also the He'eia Fishpond in Ko'olaupoko, O'ahu, where he has been helping since 2004.

Kaina is the Program Director of Kumano I Ke Ala and owner of Aloha Aina Poi Company based in the Makaweli Valley, but which also has an operation in the *kūlanakauhale* [town] of Waimea. The organization is described in the following (Aloha Aina Poi 2024):

Aloha Aina Poi Co. is a community based social impact organization producing *poi* [*poi*, the Hawaiian staff of life, made from cooked taro corms]. The founders of this enterprise is heavily committed to community enrichment and empowerment work focused on West Kaua'i. Our sister organization, Kumano I Ke Ala (a 501(c)(3) non-profit organization) shares a common vision and mission to rebuild a sustainable West Kaua'i for future generations. Our partnership with Kumano I ke Ala is heavily focused on engaging youth and growing the next generation of farmers.

Kumano I Ke Ala projects that we support are the Mālama Waimea River Project (Community Volunteer Program), Aloha 'Āina Afterschool Program (Middle and High School), 'Ike Outreach program (K-12), and the Noke Mau Mentorship Program (At-Risk Youth and Adults). The Kilohana Canoe Club is also a community partner that provides youth activities and mentorship.

On the webpage, one can also find a snippet about the logo of the company: its source, the Hawaiian Newspaper; the non-use of diacritical marks in their name; and how valuable the over one million pages are coming from the words of the  $k\bar{u}puna$  [ancestors, elders] "enlightening the new generations." Caring for his community is valued by Kaina, from the keiki [child] to the kupuna [elder]. Living his life as a Hawaiian  $k\bar{a}ne$ , it is reflective in his values and teachings. He teaches the children Hawaiian language, Hawaiian mo 'olelo [Hawaiian stories], hoe wa 'a [canoe paddling], mahi 'ai kalo [taro farming], and more. He has a program that feeds the  $k\bar{u}puna$  and delivers meals to their homes. He also reminds people that the land is the  $k\bar{u}puna$  as well, so we must  $m\bar{a}lama$  [care for] the ' $\bar{a}ina$  [land] because it feeds everyone. With his taro products, Kaina feeds people throughout Kaua'i and the world through the website, merging ancient practices in the modern world.

Caring for the 'āina has been a focus for Kaina, and Malama Waimea River is one of the initiatives he endorses. In 2017, through Kumano I Ke Ala and the help of over 650 community members utilizing the practice of *laulima* [many hands], they managed to remove over 25,000 buckets and a million pounds of silt from the river. They are all responsible for the success of the free flowing Waimea River (Kumano I Ke Ala 2021). Kaina speaks passionately about caring for the resources and the negative effects companies invested in renewable energy have on Waimea's natural resources:

So, the water is ... KIUC like do their thing, and they work with AES [Applied Energy Services], who is this global ... renewable energy corporation ... claiming that they finding better ways for energy, but they just making money ... you know ... and solidifying their funding for longevity. And so, people like myself, the rest of the farmers in Makaweli, Waimea..you know ... we against that. But through the years of them taking water, we starting to, not starting to ... we been seeing the aftermath of that in our river. I mean we no more as much 'o'opu [general name for fishes included in the families Eleotridae, Gobiidae, and Blennidae] anymore ... We get silt all in the river, the riverbed has gotten four, five ... who knows ... eight feet higher. And so, now it becomes a hazard for the people living next to the river. When it floods, like how it did last night, it's brutal. I seen one picture from 1950 and 1980, the river actually wen' [Hawaiian Pidgin language meaning went or when] flood and came over that big berm ... you know the one they built, it's like 20 feet. Water came over. So, if that was then, it's not if, it's when? When going flood hard again, people going be in jeopardy with their lives ... losing their lives. But if they return the water, it's going to clean the river, going dredge the river itself. It's going to be natural dredge like it used to be. And so, our natural resources gotta be observed better. Like seriously observed better, and maintained better.

When asked about his familiarity with the Mānā and PMRF area, he expresses his concern for the natural environment. He also recounts a harrowing encounter he experienced with the military personnel, but recommends a solution to prevent such negative experiences:

Yeah. The water being pushed out to Kinikini. The water that they taking going out in Kinikini. That eco system there for *kai* [sea] stuff was pristine ... you know ... but where the river going out where it shouldn't be going, going ruin the reef. And we no more reef Waimea, but that was normal, that was hundreds, thousands of years they was doing this. Mānā it's going to be a problem soon. If it already isn't, it's going to be.

When we was young, we could go anywhere ... Nohili Point, *holoholo* [term used to go fishing], Kinikini, Kokole ... we go anywhere and *lawai'a*, go fish. What year was it? Might have been 2014 ... I think so ... but I went go *holoholo*, and they went close all those beaches, you couldn't'go..but you could go Polihale. So, I went Polihale, and I went walk because I know where get *'opihi* 

[limpets], I know where get *i'a* [fish]. So, I took my thrownet, I took my bag, I wen' get one *'opihi* knife, and I wen' go get *'opihi*. And I was in the water, and then two of these soldiers from PMRF came with AK47s, telling me for come out of the water. But me, I know, I not stupid ... you come out of the water, they get rights *fo'* [Hawaiian Pidgin language meaning for] take you in. So I just stood in the water, and they had their hand on the trigger. And I was like, "What's up guys?" And they said, "Ah you gotta come out, we like talk to you, just come cruise." "Negative, I know I safe in the water, but you should take your hand off of the trigger." And so, I just kept pounding *'opihi*. And for one solid 10, 15 minutes they stood there trying to get me go on the sand, so they could take me in. I just kept walking, pounding *'opihi*, and doing my thing. But that *kine* [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] stuff, no can have.

You know what I mean? If you ... whoever going be patrolling the beach, for whatever reason they going close 'em down and have all these frickin' securities, shouldn't be somebody that is not from here. Everybody is from Kaua'i, especially from west side, they know the *braddah* [Hawaiian Pidgin language meaning man, boy or brother], they know the people. One random dummy, because his finger was on the trigger, had two of them ... I was over there ... I no scared one gun, but I not going get out of this water. And any random ... white guy, who was treated wrong from America, would have pulled one trigger. Guarantee, because they never get their way. We see 'em on Instagram, social media, on Facebook. They dummies, they like shoot people because they was raised wrong, unfortunately. Or they was picked on and bullied. So, that is one big concern.

We need to have local people, unfortunately, to regulate what needs to be regulated on PMRF. You need people that know the people. Yeah, because pilina, relationships are very important here. And that's something they forget or something they never learned, but we are here to remind them and teach them. Yeah, that's one big concern. They should open the beaches to the people, because the people going regulate for them, guarantee. The right people going regulate. We've always regulated ... you know. We get stories that everybody who is not from Kalaheo to the west ... yeah ... everybody all the way northshore never used to come west side, because they was all scared ... as they should be ... because we take care our own. We get plenty of kanaka [Hawaiian person] on the west side because we did that for years, our people have done that for years. Guys come over here and act up, all of us guys lick 'em. They go surf with us Pākala, if you one white-skinned guy you get kicked out or beaten up, because that's how you regulate dummies coming west side. And I think, we missing more of that. Unfortunely, it's the truth, we missing more of that. 'Cause they going keep coming in and thinking they infiltrating, and start putting up ... giving us problems in our community, because it is not the way they want to live. "Oh, this guy parking on my yard." "What, you just got here ... you COVID, fricking freak." "2020, you just wen' [Hawaiian Pidgin language meaning went or sometime when move here. Just because you get money on hand, and you just bought one house, and you going tell me, who's been living here my whole life, how fo' [Hawaiian Pidgin language meaning for] park and where fo' park, that's not your place." We cannot have that kine stuff happen. And PMRF has a lot of those kine people. So they gotta regulate the guys they bring also. If they not going regulate 'em, send them to places like my non-profit who can teach them ... build relationships within the community so the people can understand. Then you can understand why we are, the way we are. Education going be the key to everybody's success. And if we can build more people like ourselves, that going be on PMRF, but not from here ... when they do leave after their three years of service here on Kaua'i at PMRF, they going take what they learn from us wherever they go, and then we building one better world.

With humble pride, Kaina tells of pristine Waimea Valley written in the journals of Captain Cook in 1778, and through his lens, as a *Kanaka Maoli* [Native Hawaiian] envisioning the present and future of  $n\bar{a}$  keiki, the children:

So ... being on the west side ... when Captain Cook came in 1778. In his journals, he writes about how Waimea was pristine, and about how it was the bread basket of the Pacific. Not anywhere else. And this guy came here after traveling the world, and said that. If he going say that, it's gotta have some 'i'o [truth, significance] to what he's saying. And we see it, there is so much land on the west

side, that's why everybody wants to be here. Everybody who farm commercial production of any type of food, because it's sun year round, so why not? Now, because of our natural resources being utilized in the wrong ways, we fail or have failed to effectively and efficiently feed our people. But it's 'ike [know, recognize], mea 'ai [food] ... all those levels of being kanaka [Hawaiian person], we failed just for one dollar. I not going on tangents now. So how do we remedy that? We start with our youth. Here, we start with our youth. I run one non-profit called, "Kumano I Ke Ala" on the west side. We have ... we educate roughly 3,000 kids to 5,000 kids a year. I do all kine Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] stuff. I help coach paddling ... So our kids, use the river all the time, and they know about everything ... from farming that I do to water theft ... Everything on the west side ... from plantation ... the Fayes the Robinsons ... ADC [State of Hawai'i, Agribusiness Development Corporation] ... We try to educate all of them. They know it's not just one place fo' [Hawaiian Pidgin language meaning for] us enjoy, we gotta take care of our resources. And what better way to start, than educating the youth. And we not hitting 'em all from the perspective or the kahua [foundation, background], foundation of farming, but a lot of them we are. At least a thousand of "em. And the rest is sporadic and centered around Makahiki [year; ancient festival beginning about the middle of October and lasting about four months, with sports and religious festivities and taboo on war]. But we touching them in different areas so that they can be interested to do the kind of work we do. And even if it's just one time, I think it's going to be beneficial. It has been beneficial in the last 10 years we been doing it. We also serve about 150 kids in the paddling community on the west side. Rebuilding our foundation is what "Kumano I Ke Ala" is. And so, we here doing that.

Kaina was one of many in his family lineage who were raised in Waimea, Kaua'i, although his father comes from the Mahi 'ohana in Keaukaha, Hawai'i Island. The Mahi 'ohana is known in Hawai'i for their musical talents and are great singers. He traces his mo'okū'auhau [genealogy] to the Kaua'i ali'i [chiefly] line of Kūkona and son Manōkalanipō who lived in the 1400's to 1500's. He claims Manōkalanipō as his biggest influence:

Kūkona had one son, Manōkalanipō. You know Kauaʻi, it's Kauaʻi-o-Manōkalanipō. But Manōkalanipō('s) years of reigning on Kauaʻi wasn't really one ... he never reigned like one normal *aliʻi* [chief], because everybody had eat the same, everybody had drank the same, everybody lived the same as he did, sat on the same table. They referred to his time as the Golden Years. And so ... going on one tangent ... what we do in Waimea, on the bridge ... all the way west, is trying to rebuilt that mindset of 'we all should all be equal' no matter how much we all have. Because if we can do that, we can live like they did. I was asked once, "Who is your biggest influence?" And it is Manōkalanipō. Not my (modern) family, not nobody else, it's the *moʻolelo* hear from him, because that is *kupuna* [ancestor, elder] for me. My oldest is Kūkona, my boy.

He shares a *mo 'oleo* [story] about the ancient chiefs Kūkona and Manōkalanipō and relates it to contemporary issues:

So ... you know ... you may not know, but Kamehameha wasn't the first guy to take over Kaua'i and the rest of the islands. He was actually the second. Kalaunuiohua was the first. Kalaunuiohua was also from Hawai'i Island. He was successful all the way until he came up to Kaua'i. And Kūkona and Manōkalanipō stood in the way. So, the story I know is...Kalaunuiohua('s) men made it to Po'ipū. They settle at Kaleinapua'a ... if I not mistaken. So, they land over there, but Kūkona and his son, Manōkalanipō was so intelligent, that ... when they landed, nobody was there on the beach. And so, they probably had four times the amount of people, than Kaua'i had, but they wasn't in the *mo'olelo* [story] that I know. But they wasn't as strategic and well ... Foundationally, they wasn't great warriors. Because we get one place Hanako on Kaua'i that they go and they train. Anyways, they made it there, never see nobody. The batallion leader was looking *mauka* [towards the mountains] and he seen Manōkalanipō on one peak. Half to three-quarters of their guys run and follow. So they went far into the valley and they just kept going. And the further they went, the further they found that Manōkalanipō would just go to every peak, and pretty much taunt them. By the time they got all the way in ... you know ... they were already tired. And so, they got ambushed

and died. And the war was won. But that's ... you know ... strategically, if we looking from a strategic lens ... those are the type of things, normal human beings forget about. Like, we going take water from the river, and we going push it to Mānā to farm sugar, 50 million gallons of water going be taken from our normal flow. So you screwing up one ecosystem for the benefit of nobody else, yeah? For the benefit of corporation, Yeah, and so, I think in the 1900's when Robinson wen' [Hawaiian Pidgin language meaning went or sometime when] ... the Fayes decided to create this industry of the sugar plantation, they failed to recognize how it was going to affect our natural resources. They wasn't strategic enough to ensure that our normal ecosystem flow was going to be maintained in the same way through that effort that they wanted for their corporation. For me, as long as we are fair, yeah ... and we not being overly greedy or greedy, our 'āina going find it's way to heal. But when we are selfish and greedy, it's going to be very hard for that to happen. No more balance. And it's happening already. I mean, KIUC [Kaua'i Island Utility Cooperative], the water ... Lahaina, and water ... everybody dealing with this on west side, the Leeward side of every island ... they just dealing with the water theft. And we doing it again, here on the west side. KIUC like build all of their hydros trying to make money for who? Not for the people, but they going tell the people that.

Kaina shares another *mo'olelo* of Chief Ola and the *Menehune(s)* [legendary race of small people who worked at night, building fish ponds, roads, temples; if the work was not finished in one night, it remained unfinished]:

Ola brought ... Ola, was one key component to why Waimea became very fertile and rich in food. So he had one idea to bring water on this side of the peninsula of the river. So get Waimea River, Makaweli, and way deep in Waimea. So everywhere had lo 'i [taro pondfields], but never have lo 'i on this peninsula because they couldn't get the water here. So he had an idea to bring one 'auwai [ditch, canal] from the river that was 15 feet below, 15 feet higher and feed one peninsula so they could get more kalo [taro]. And if you go to my shop, my apparel shop in Waimea, right down the road, you going find all these pictures of Waimea, and you can see in the 1900's, 1800's get all lo'i. This whole side of this left peninsula. That was due to him believing that he could build one 'auwai or at least get the right people to build the 'auwai. And he did, he asked some Menehune to build one 'auwai. "I need it to get around this corner, and from there, I take it." [r(Reflecting what the words might have been from Ola to the Menehune]). So they went agree to build 'em. And the only thing they didn't agree on is, every single Menehune would get fed the same fish. Everybody had to get fed equally. Just like Manōkalanipō. So he was like, "Okay." And unfortunately, he was put into like this coma under the water, until the job was done. And if the job was interrupted, like how it was at 'Alekoko [Menehune Fishpond], they just going leave, as they did in 'Alekoko. Night time not supposed to make noise...anyways, you know how they get all these superstitions yeah ..." Oh, no brush your hair at night., ." "No cut your nails at nigh." "No sweep in the hale [Hawaiian grass house]." No make noise, because those buggas' over there was working. It wasn't one superstition because they doing one job, and if you make noise when you go outside and play, the job not going get done. That's why get all these superstitions. The hair and the nails was because kahuna 'anā 'anā [sorcerer who practiced black magic]. Take away your stuff ... So, they did the job and got 'em done, and now we get water on this side of the peninsula. And every single Menehune was given one 'opae [shrimp] ... little ... 'opae. So the deal was kept, the agreement was kept.

It is obvious that Kaina is no doubt a person who works hard and has earned all the accolades he is noted for. An important 'olelo no 'eau [Hawaiian Proverb] is told here by Kaina which he fervently repeats:

'Ōlelo no 'eau ... in today's time, the most important 'ōlelo no 'eau I believe...is no be scared to work. Your work ethic cannot be taken away from you, everything else that you have can. If you willing fo' [Hawaiian Pidgin language meaning for] work, nobody can stop you.

#### ENOKA CHEE FOOK KARRATTI

Enoka Chee Fook Karratti (Photo 11) was born in 1978. He is the third child of six children in his 'ohana [family]. His parents are Steven and Phyllis Karratti. His maternal ancestors are from Hana and Ke'anae on the island of Maui, and they are from the 'ohana of Kala, Ka'aihue, and Ng. His paternal ancestors are from O'ahu and Hawai'i Island, and they are from the 'ohana of Nihoa, Keawe, and Karratti.



Photo 11. Enoka Karratti. Photo taken at the Aloha Aina Poi Factory in the *kūlanakauhale* of Waimea within the Kona *moku* and *mokupuni* of Kaua'i.

His father, Steven, was from Oʻahu and raised in Makiki. There is a Karratti Lane off of Pensacola Avenue. His father grew up there. His grandfather also lived in a house on Lemon Drive in Waikīkī, the house is still there, surrounded by many tall buildings. His father was a graduate of Farrington High School and grew up at Lanakila Housing in Kalihi. Although the family later moved to Waimānalo, he still attended Farrington, and hitchhiked to school. After graduating, he attended the Church College in Lāʻie [now called Brigham Young University–Hawaiʻi]. He studied electronics and was recruited as an electronic technician at the PMRF (Pacific Missile Range Facility). Steven and his friends moved to Kauaʻi with their girlfriends, eventually married, and settled in Kekaha in the early '70s. Initially, he worked on one of the radars up on Makaha Ridge, then another radar on Mānā, and then he became a civil service worker. As a civil service worker, he worked for a detachment for the Navy that came out of Keyport, Washington, but they had a station on PMRF. They installed underwater targets. Steven went from an electrician technician in the shop

to becoming a quaility assurance specialist, and eventually was the supervisor at the shop. He worked at PMRF for approximately 30 years and retired in 2018.

Enoka was born in Waimea at Kaua'i Verterans Memorial Hospital in 1978, and raised at the first Hawaiian Home Lands in Kekaha on Ho'omau Street. Enoka and his wife, Denise Karratti, have three children ages 10, 8, and 4. He and his 'ohana live on Alawai Road in Waimea. They have lived there for 12 years. He expressed how he feels living away from where he was raised, which has been a major change for him:

So leaving Kekaha was kind of trippy for me. All I knew was Kekaha. I mean I been to Waimea, we play through Waimea. Living in a different town, for me was kind of a trip. Even moving across the park from where you grew up ... is kind of trippy. When me and my wife got married, we was living in Kekaha, she was teaching in Kekaha. So just that kind of new experiences for me was kind of trippy.

While growing up, he and his 'ohana camped on PMRF near his father Steven's shop located next to Nohili Ditch. They fished with throw nets in the ditch, and fished through the opening in the reef. They swam in the area where the ditch emptied into the ocean. As he got older, he would go diving throughout that area with his daughter and her friends when the base allowed access. He names the fishes they would catch:

Nenue [chub fish, also known as rudder or pilot fish (*Kyphosus bigibbus*, *K. vaigiensis*)], pāpio(s) [named for the young stage of (crevally) fish], ulua(s) [certain species of crevalle, jack or pompano, an important game fish and food item], moi(s) [threadfish (Polydactylus sexfilis)]. If we in the ditch, then talapilas.

Enoka attended Kekaha Elementary School, Waimea Canyon Intermediate, Waimea High School, Brigham Young University–Hawai'i, and the University of Hawai'i at Mānoa. In the early to mid-2000s, he worked as a security guard at PMRF, and later moved to the supply ground, working there until 2018. He is an educator who has taught Hawaiian Studies, and was a Stewardship Project Coordinator at Chiefess Kamakahelei Middle School in 2018–2021. Presently, Enoka is the Education Coordinator at Kumano I Ke Ala, an organization "building a foundation of Aloha 'Āina through culturally-based Native Hawaiian education programming to grow self-aware, self-determinated and self-directed critical thinkers for a sustainable West Kaua'i" (Kumano I Ke Ala, 2021). He tells of his work at Kumano and teaching the *haumāna* [students]:

Well ... for us ... for Kumano I coordinate education outreach for the schools at Kumano ... and this current year, we are using Ola's mo'olelo [story] with Kekaha School's fFourth gGrade. We get on continuous ... for the fFourth gGrade lLevel. Long story short, we been talking to them about Ola. We go to the school, we give one little blurb about Ola, then they come visit our farm ... now we in the space of Ola. We can connect their brains and their eyes with what they heard. So I think, for us ... for me sharing Ola, and his mo'olelo, and what he did ... and everything that led to Waimea becoming Waimea ... we try to instill on the kids ... those different values. Anyway, just highlight those values of self-sacrifice of the bigger picture ... you know like the importance of water, the importance of taking care of each other. For me, I was focusing on ... taking care of each other ... having them understand that Ola did this for his people, you can do something similiar in your classroom, or in your family ... something like that. It's easy for me, for us to relate to Ola because of the space we in ... so welcoming the kids in that same space, trying to open up their minds eye

<sup>&</sup>lt;sup>1</sup> Kumano I Ke Ala (n.d.). *Our Mission*. Kumano I Ke Ala. Retrieved December 20, 2023, from https://kumanoi keala.org/

to what all of this means or could mean to them is important. The *mo'olelo* or the value in caring for others is what I try to share with them.

He is an officer on the board of Mālama Hulē'ia, a group who manages the Alakoko Fishpond in Nāwiliwili, and educates the community on cultural values, and the caring and management of cultural and natural resources. Enoka has assisted in the development of the web-based virtual field trip to the Hulē'ia project. He dedicates his time to the Waimea High School Athletic Department and coaches the girls varsity volleyball team. His wife, Denise, is the Vice-Principal at Waimea High School. Denise also dances *hula* and so do their children. Enoka fondly speaks about his wife gathering for her *hula* adornments and places they like to go:

She enjoys Kōke'e and pretty much wherever we go. I remember in the beginning part, when we first got married. I took her behind Berry Flats. So she never been up there before without me. She never been there before I took her there. I used to be like, "You nuts, at least get your bearings straight, you can get lost in here, people get lost." You 20 feet from the road but you wouldn't know it because you just walking in a circle ... right? I know Berry Flats was one special place for her. For our family as a whole...it's either mauka [towards the mountain] or makai [towards the ocean]. And makai typically, Kekaha ... it's where I grew up, and it's what I know. But now my kids they ma'a [accustomed] to Waimea, here ... the river mouth ... the river mouths. My wife is more like ... she likes to see the ocean but she don't like being in the ocean too much, but she enjoys it ... she don't enjoy being cold.

Enoka's favorite 'ōlelo no 'eau [Hawaiian proverb] is 'A' ohe pau ka 'ike i ka hālau ho 'okahi' [All knowledge is not taught in the same school] (Pukui 1983:24), and he explains why he favors this particular 'ōlelo no 'eau:

I like it because .... of course you not going learn everything in one place. You gotta be able to be in that space, in yourself that you can be open to, and seeing what get for learn, and using what you learn from different spaces, and making one space for yourself for be able to hone all those things you learn.

He would like access to PMRF again and speaks about his thoughts:

I think Mānā when I used to work security for them [PMRF], we used to drive through Nohili ... all the dunes ... and I drove through there as a kid, as a high school student. Back in the day, we could drive all through there. But being on the government side of the fence and going through that space, I used to think, "Whoa, too bad the community cannot see or be back here." You know obviously you going get the bad that come with the good, you not going be able to cover it all, but we used to go from Kekaha Elementary ... up to the dunes ... and the whole *moʻolelo* ... slide down and listen to the dogs bark. But I think, that's a special place ... that whole stretch, but obviously there are a lot of special places in Hawai'i, but growing up on the West, and knowing like that's Ni'ihau ... no can even go ... like that kind of vibe, I think ... that gotta change. We gotta ... accessible ... got to get more easy access to the space. You know .... something got to give.

### TRESTON "HENA" CABERTO-RACO

Treston Michael "Hena" Caberto-Raco (Photo 12) was born in the year 1989 on the island of Kaua'i to parents Michael Caberto and Terry Raco. Hena is the oldest of four children. He is married to Kalia Caberto, and they share three children. Hena is currently employed at Princeville Ranch where he is a ranch foreman.

His father, Michael and grandfather, Mr. Kahiamoe were born and raised in Kekaha, but the Kahiamoe family originated from Kohala, Hawai'i Island. His mother's family, the Palakiko(s), originated from Lahaina, Maui.



Photo 12. Hena Caberto-Raco. Photo standing in front of the  $p\bar{a}$   $p\bar{o}haku$  [stone wall] he and others built including Keao NeSmith at the lands under a lease from DHHL held by Hena's 'ohana at the ahupua'a of Wai'awa, Kona moku, and mokupuni of Kaua'i.

Through his mother's Palakiko family he inherited the lease for the land he cares for in Wai'awa. The land is part of the Department of Hawaiian Home Lands (DHHL), and the Palakiko family has had the lease since 2008. Hena relays how his family acquired the lease, contamination, and his tenure on the 'āina:

This is Hawaiian Home and we have a lease; we had a lease since 2008. But my grandpa, when the plantation was closing down, they were going into diversify ag. He teamed up with this other guy, Wally Johnson, and they had a company called, Far West Ag. And they were growing all the sweet corn and watermelon going out to Kekaha. All before these corn companies came in, they was growing real food. You know like, they had sweet corn and watermelon. My summers were spent in the mango orchards, and in the watermelon fields, and sweet corn fields, picking all that kind stuff. I never wanted to become one farmer.

Yeah. [Chuckling.] So and then, 2005 or something like that, he ended up not ... There was a little thing and he ended up selling his part of that company, Far West Ag. So, we lost all the 'āina [land] because we weren't part of the business. Then somehow, DHHL (Department of Hawaiian Home Lands) came back to my grandpa because Wally Johnson wasn't kanaka [Hawaiian native] and this was all Hawaiian Homelands. My grandpa was Hawaiian, so they asked him if he was interested in taking over inside Wai'awa Valley; we got that lease in 2008.

When I got in here in 2009, I was 19-years-old out of high school. I was pau [finished] with KCC (Kaua'i Community College) and I had the opportunity to go to Hilo with my class and everything. I registered and transferred to go to Hilo. I was like well, I get kuleana [right, responsibility, privilege]; if we learning about kuleana and what it is to do, you know like, that was just my calling to come back to 'āina [land]. Yeah when Keao came up, all of this was ... we didn't have the machines that we have now. Over time, it just takes a lot of time. Now we working with the non-profit, hopefully we can start moving things faster. But this kind work is just taking so long. And with the opportunities ahead of us in this generation, we can just go make money easily; go work construction and do all that kind stuff. And I did, to provide for my family in the beginning. Then when the opportunity came up to be on the ranch, I was like, "I think I going go that direction." It's hard; hard learning one style of living and going back to Western style. Yeah, money is important and we gotta sustain ourselves but we can have balance. There's balance now. You can make money, provide for your 'ohana [family] and still aloha 'āina [love of the land or of one's country] while doing that. It's just painting a picture so that they can see it; the image that you see.

I kine [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of roughed it for a while and cleared everything with one weed whacker and chainsaw. At first, I never even had weed whacker; had machete and what not. This place, this orchard was just almost like how you see it now [chuckling]; but was just covered. Only thing you could go through these trees was just pig tunnels, like this. At first we cleared it by hand, when I first moved in here and I was just living in one tent. This is my first lo'i that I dug by pick and shovel. All these rocks, not all of these rocks, but that big seat rock that you see right there was all by ' $\bar{o}$  ' $\bar{o}$  [digging stick] and pick and shovels that we would do everything with.

We have 20 acres on this side, and eight acres in the back over there, behind the Poison House. I think part of our lease is in the Poison House but after all of the test and everything done like that, it's still under our responsibility. We just don't do anything with that until we can do the remediation, proper remediation and cleanup of that valley. We've teamed up with another nonprofit, Kaunalewa, who is working towards doing brownfield cleanup in the Kekaha community.

One of the things that we battling here in Wai'awa is the growing practices that they were using for the plantation times. Our community calls this place, Poison Valley, as opposed to Wai'awa Valley, because of the contamination that's in this valley. Wai'awa Valley is one of the contaminated sites, brownfield sites, for our community. With the regenerative farming practices, we want to do here, it's kine of perfect collaboration between the farmer and the EPA [Environmental Protection Agency] cleanup. If we can do regenerative practices to the lepo [dirt, soil], the soil, and feed the community, and do all this cultural revitalization for our community, you know ... This wahi [place, location] is really, really a big player right now for the future of this westside community, I feel, in my na 'au [bowels, gut; mind, heart affections]. They used to house their pesticides and herbicides, and even they had, you know the telephone post. I guess they would dip the telephone post in that kind crazy chemicals over here. So, when they shut that down in 2000, DLNR [Department of Land and Natural Resources] just left, put up a chain link fence and labeled it a brownfield and said, "Nobody enter." But the problem with that is, is one State agency was labeling it as a brownfield while another agency was listing it as ag; leasing it out to my 'ohana [family]. So, in 2010, I brought this to the Hawaiian Homes Commission and I said, "What is the deal with this contamination on our side? We growing mangoes, we growing lo'i kalo [taro pondfield] we get 'uala [sweet potato (Ipomoea batatas)] all planted in the ground, gardens ..."

We had deer, goats, pigs, cows, 'alae 'ula [Hawaiian mud hen (Gallinula chloropus sandyicensis)], kolea(s) [Pacific golden plover (Pluvialis dominica)], we get the 'ūlili [wandering tattler (Heteractitis incanus)], we get ... 'auku'u [black-crowned night heron (Nyticorax nyticorax hoactli)], ae'o [Hawaiian stilt bird (Himantopus mexicanus knudseni)], pueo [Hawaiian short-eared owl (Asio flammeus sandwichensis)], we get ... with the cliff birds, what is that? Koa'e [white-tailed tropic bird (Phaethon lepturus dorotheae)], koa'e kea, koa'e ula. Invasives are all the parrots. The parrots are a new nuisance that we have come in over the last five years, I say. You know, when we first came in, I would see them high, maybe one or two flying over. I'm like, "Oh crap, they stay coming on this side, that's weird." Then the next year, would be little bit lower. And the next year, we see them all in the plain. The seed companies got all the grants to chase away all the parrots, like that. We would drive into seed company fields and they would be playing all kind high pitch sounds (making a sound) trying to scare the birds. They went chase the birds right into the valley. The parrots weren't even interested in the mangoes until maybe about three years ago.

We have about eight acres planted. We have about 12 varieties of mango that we growing and we're trying to do more diversified ag. We had about 15 'ulu [breadfruit (Artocarpus altilis)] trees planted in this orchard right here, and then the pipi [beef, cattle] came in and ate 'em. Oh no, we had 15 planted and KAA (Kekaha Agriculture Association), the irrigation guys, when Landis Ignacio was still here, told us that they were going to shut off the distribution line for one week; but it was shut off for about a month and a half. All of our 'awa [kava (Piper methysticum)], lo'i kalo [taro pondfield], everything just went make [died. Um, so over here we had koa trees [the largest of native forest trees (Acacia koa)]; we have some 'ōhi'a [tree of the 'ōhi'a lehua, which is the flower (Metrosideros macropus, M. collina subsp. polymorpha)]. In our nursery we had 'em. But we definitely planted them out and they grow, it's just that water situation. But we planted a lot of wiliwili [a Hawaiian leguminous tree (Erythrina sandwicensis)]. We did a ... the guy, Rick from Hui Kū Maoli Ola did a study up at Pu'u 'Ōpae and he found some 'iliahi [Hawaiian sandalwood (Santalum spp.)] up there, and yeah, there's a lot of stuff inside the valley that's growing.

It's been a year to year battle with the State agency that controls the water because we're such a small farmer. We're on Hawaiian Homelands and they manage Kekaha Ag, which is in front, so they have all the seed companies that they manage. But because we on DHHL (Department of Hawaiian Home Lands) land, we cannot be a part of their association because we not one ADC, Agrobusiness Development Corporation. By not being a part of their association, we kind of don't have a voice. And being on DHHL, we have first to water rights. These guys, they understand the law. They know that we as *kalo* farmers [taro farmers] get first to water rights but at the same time, we don't have enough community to voice for us.

And that's the thing with Kekaha ... Before used to be a lot different because everything was open. The gates were all open and the community could just roam, pretty much. And everybody would take care. But now with the thing being locked up, people no  $m\bar{a}lama$  [to take care of] They come in and out, they take what they like and they leave. When before, it was a different thing when everybody would take care. Everybody would take care the ditch lines, everybody would take care the watercress patches and what. They would grow their own pumpkin patches and people could come and eat. But now it's like, "Oh, the farmer stay back there ... oh, the farmer no stay. We go take his stuff and we going leave." We raising pigs, they going come steal the pigs, or if not, they get their hunting dog.

As a Hawaiian and a *mahi'ai* [farmer], Hena understands the value of water and offers his thoughts of how the mindful distributation and maintaninance of water can be beneficial to the ecosystem and humans alike:"

It would make it smart if we let the water go back into Waimea and uncap the wells because we have our own *wai* [water] over here. All the taro farmers and the ecosystem, the Waimea River is the lifeline. That is what feeds everything ... ecosystem. When you take water away from that, everything suffers from that. So, when the water commission came down, we said, "We the furthest

one west, before all these ... guys came in started farming taro ... we the furthest one west farming taro and we benefit from the Kekaha Ditch. But if you were to ask us what we would like, we have our own well water here in the valley. We could run our *kalo* [taro] and stuff like that off of our own well systems and we look at the larger picture; throw the water back into the Waimea River ..." So, I'd support that. There's a big balance between it. How do we manage the water situation? I think they're going to be piping it. One of the ideas was to pipe it from Wai'awa Valley to Mānā Plains. And you see, when we walked over there, you see how much animals and life run off of this ditch line? If we were to pipe this land, or this water, all of this land going go dry and barren. Everything going *make* [die], all of our community that sustain ourself off of this wild game and stuff like that. That's how our community is raised. We're rural over here.

Yeah, so whenever they turn off the whatever, we have the well. We can put one storage tank inside here so we not just constantly draining the well. Whenever that storage tank comes low, it just kicks back on and sucks up water so we can sustain ourselves off of that. But that's the biggest problem that we have when they turn off the water. As a farmer in Mānā, that's the hottest place in Kaua'i. You go two days planting anything, especially when you plant a new crop; one or two days without water is going to wipe out your whole thing. Even mature tree; I get one mature tree, they went shut 'em down for two, three weeks. You see that tree? *Make* [dead]. 'Cause the place get crispy in the summertime. It's so hot, all this grass is all new grass from the last rains we got the last two months. But before that was all brown, crispy ... especially the west sides. West Maui, West O'ahu 'cause they dry, the dry side.

With passion, Hena speaks about his experience with 'āina-based education in Wai'awa, and his wish to connect children with the land through education:

We were bringing up hāumana [students] from Kekaha Elementary School. At the time we were linked up with the fourth-grade program; it's like a leadership program. They were coming up every week. We had Boy's and Girl's Club coming up and Nā Pua No'eau kids' camp and stuff ... So, we're questioning, you know, if we're bringing up our hāumana ... The problem is, why does our west side community have to go all the way to the North Shore to learn about our 'āina [land] and cultural resources, when we have our own history on the west side. Why we gotta go all the way Waipā for go into lo'i kalo [taro pondfield]? Why we gotta go, you know, Limahuli and learn about that stuff? We have all of this stuff in our backyard right over here. But our keiki [children] in Kekaha isn't connected. And when they are connected, maybe they connected for ... I don't want to say the wrong reasons ... you know ... recreation. But to share the oral history of the mo'olelo [stories] of place, connecting them to place. The name you know, and everything like that, that is what we gotta plant in them so they get grounded into this community. Learn all the mo'olelo [stories] of our history. This goes back, Wai'awa's history goes back from the original inhabitants of Kaua'i to the Menehune [race of people, and/or legendary race of small people] time. They get one heiau [temple, place of worship], Hauola Heiau, inside over here. Get many, many stories about it but one of the stories is that they talk about of ... was an ali'i [chief, ruler] and I guess he had collaboration or, had little rule over the Menehune people. He was able to have them build part of the heiau when his son Ola, came up with the idea of Kīkīaola Ditch ... I feel the Kekaha Ditch replicated the Kīkīaola Ditch, how they brought the Waimea River water to the Waimea Plains to irrigate the lo'i kalo [taro pondfield] over there. The Kekaha Ditch is the same thing, they just brought it all the way to the Kekaha Plains. So, this valley is all related back to ag, from before times with the heiau, all the way back to ag with Kīkīaola Ditch system, and then you have plantation time with the maybe not so pono [correct or proper procedure] practices. We get Poison House inside here, and now with the contamination where we gonna bring our people to next as far as agriculture and sustaining ourselves?

Hena shares his fishing and gathering experience, educational knowledge, a cultural inventory of the land, and views of the Mānā and Kōke'e project areas:

Um, from early childhood memories are, you know, visiting family in Kekaha. We would be living in Kōloa and Līhu'e when I was a child but all of my 'ohana [family] lived out over here. So, every weekend or week days, we would come out and spend our time with the family in Kekaha. So, whether we be up mauka [towards the mountain] Kōke'e, in these hills along these valley sides hunting, or going makai [towards the ocean] surfing and fishing all on the base, the military base. Before the base used to be open so we could drive from Kekaha Beach all the way to Polihale. And just go drive right on the base, just go around and then go into Polihale. We spent a lot of time camping out there on the base and fishing picking limu [seaweed]. Ah, limu kohu [One of the best liked edible seaweeds; (Asparagopsis taxiformis)] mostly, and we would be picking 'opihi [limpets], throwing net catching nenue [chub or pilot fish (Kyphosusbigibbus, K. Vaigiensis)], diving, lobster ... Oh, it's a beautiful reef out over here. But my childhood fondest memory was camping on the base.

Yeah, so one of the stories is that she would visit with the Knudsens—the Knudsens had the ranch, Wai'awa Ranch at the time. I'm not sure what the time period was when they were doing the sugarcane but yeah, he would lead her up from Wai'awa, up the trail to go up to Kōke'e. And a lot of that history has to go back into the Queen Emma Festival that they have in Kōke'e, where the *wahine* [woman, lady] would ride in on horseback and everything, so ... You know, that would be interesting to uh, maybe do a ride with everybody one day ... [chuckling]. It's just cow trail.

We have native plants, a lot of 'a'ali'i [native hardwood shrubs or trees (Dodonaea), all species] and kukui [candlenut tree (Aleurites moluccana)] that you go through. There's really the dry forest on this side so you won't see a lot of the native big trees that you would see further up mauka [towards the mountain]. But you would see 'ilima [small to large native shrubs (all species of Sida, especially S. fallax)], 'a'ali'i... This place is known for having the pe'ape'a [Hawaiian bat (Lasiurus cinereus)] too, yeah. You know, growing up it's just someplace that we go for recreation. And then as we got older, you know, like camping and hunting and picking maile [a native twining shrub, (Alyxia olivaeformis)] and learning about our mauka [towards the mountain] land and native plants and stuff like that. And as I got older, it came more of a kuleana [right, responsibility, privilege] to mālama [to take care of]. I just start learning about the native plants, I got into Hawaiian Studies at KCC (Kaua'i Community College) so I get little bit more ma'a [accustomed, used to] with your 'āina [land, earth], you know ... We learning about all this in school but I actually grew up with all of this stuff, so it came natural to me to be ma'a to all of that stuff. Further up mauka[towards the mountain] we see snails. And I'm sure we do, down in these lower lands too. Definitely in our lo'i [pondfield, especially for taro] we see certain snails but we're not too ma'a [accustomed, used to] with the native snail species. But when we started opening up lo 'i right in the valley, the first thing we noticed was all the hinana [young of 'o 'opu, a fish]. Baby 'o 'opu (or hinana). And it's funny that they are in the downstream because what would have happened is they got diverted all the way from the Waimea River, go through all the way Kekaha Ditch, go down that crazy waterfall or through the pipe, and then get spit out into the ditch line over here. That ditch line is controlled or managed by Kekaha Agriculture Association. They manage from Waimea River all the way to Polihale and into the base.

We get to go and ride, you know. We do all these kind of things ...and we go hunting, we see the 'āina [land, earth] but we know the stories. But you know, the relationship is only within the people that is going, is doing that. So, people that is outside, they don't really recognize all the history that we have back in these hills. They only know outside ... seed companies, the landfill, PMRF, they don't really know the mauka [towards the mountian] sides. All the different bunkers that we have up on the ridges and the heiau(s) [temples, places of worship] ... Saki Mana, get Polihale...get few other heiau on this side.

Hena provides insight into the water and land use in Mānā before and after the Plantation Era:

I don't think that had rice but in the old *mo'olelo* [stories], you would hear the stories of the Mānā Plains having floating rafts of *kalo*. So, kind of like the Peru guys with the chinampa bed and stuff like that, you know. So that was really interesting, to hear all the ... I guess they dredged a lot of

this; this is all wetlands. Was all wetlands and you know ... when we talk to our friends that's involved with the fishponds they said, "This is the biggest fishpond on Kaua'i." Right here was all wetlands where you have, you know ... Some places you could sail canoe inside. It was navigable, they said, inside along this pali [cliff]. So, occasionally when the thing rains, I say, "Oh yeah, it does." We would see that it could do that. But with the plantation times ... that's why we have the most pristine lepo [soil] over here. From turning wetlands into dry, of course your lepo is going to be super good. Over time yeah, they drained the whole wetlands and then, you know, sugar plantation of course came in and their farming practices was ridiculous. You look at all the plastic they used to lay down for drip irrigation. At first, they never had that; they would just grow the  $k\bar{o}$ [sugarcane], the sugarcane, on raised beds, kind of like flooded ... pretty much like māla [garden] style, like lo'i kalo. Like māla, with the ditch around the whole field, and it would be irrigated that way. And then they came up with the drip irrigation; and then they had the heavy equipment where they would just till all that stuff in. So those are all the ag practices that has come about in the area they went plant. And then corn is there, and they were still doing that kind of same practices. What are we taking the next generation to, you know? How are we going to be feeding our people and sustaining ourselves off of this same 'āina [land]?

We are currently irrigated from the Kekaha Ditch. Kekaha Ditch comes down the hill, right over there and feed into the hydro. Hydro was the first electric on Kaua'i because ... And I guess the first traffic light, was right over there where you pulled in; right over there on the paved road. That was a cane truck crossing over there, so they had a traffic light. And I guess this hydro is also running all the pumps, to pump out all of the water out of the ... 'Cause we had all kind wells, yeah. Kekaha is filled with wells. The plantation capped all those wells so they can grow their sugarcane and stuff like that.

Yeah, and to create the model is what we're working for. We start at pa'a ka piko [the nexus or steadfast center which is the piko or navel] then we can go from here, and out. They can see this and maybe we can get little bit more acreage ... then little bit more and we work ourselves all the way to the kai [ocean, sea]. We work ourselves all the way mauka [towards the mountain]. It's so slow. I no see that, that piping project is pono [correct or proper procedure] in anyway. If they going do that, leave Wai'awa out of it 'cause I no like any pipes inside here. If there's anything they can say is key to my fight like that, we no like pipe any of this water. You see how much animals live off of this? And this goes all the way to Polihale.

In Wai'awa, south of Hena's farm, there are the lands managed by Kekaha Agriculture Association. Hena explains the use of land and water by the companies who occupy the land:

That ditch line [referring to Kekaha Ditch] is controlled or managed by Kekaha Agriculture Association. They manage from Waimea River all the way to Polihale and into the base. This water from the olden times was for the plantation. Now days would be these seed companies and uh, but not too many ... maybe the base? I think the water gets thrown out at Kinikini. I not entirely sure. It's all for their test corn. I think they producing seed for the mainland. Yeah, for the corn. And they were growing soy beans at one point; alfalfa, they tried to grow, but mostly corn. A lot of the seed companies they kind of disappeared; not too many ... I think they ... right in front they trying to do a starter program ... You see all the taro farmers? I think they get awarded an acreage of land and if they do good, they going get awarded more land. But I also hear that Aloun Farms going be coming in over here. It's kind of bitter sweet. You like to see food, but at the same time farming practices is everything. And what is the difference between monocropping farming practices between these commercialized guys who's growing real food? They still using synthetic fertilizer, they still spraying, so ... Yeah, we might be seeing food that you getting, but what is the growing practices, yeah?

Hauola Heiau is in Wai'awa Valley below the Hauola Ridge, not too far from Hena's farm. He gives some details about the ancient site:

Yes, in this place. There's caves inside here ... both sides, actually. I was educated on that when Aunty ... when we did that meeting with the Aipoalani and Kilauano 'ohana [family]; they are direct descendants. When you guys have your interview with Aunty Gwen, she can share more about, and how much she wants to share about that. But there's definitely *iwi kūpuna* [bones (of the) ancestors] inside here. Yeah, and a lot of the spiritual stuff connected with that side.

Hena educates by explaining the meaning of Wai'awa, a *mo'olelo* [story] based in Wai'awa, why Wai'awa is the most desecrated *ahupua'a* [land division usually extending from the uplands to the sea] on Kaua'i, how the *ahupua'a* should function in modern day, and his thoughts about community funding for the betterment of the 'āina and kanaka:

So, it literally translates into 'bitter water,' Wai'awa. I think, I don't know if that goes into the mana'o [thought, belief] of Kane and Lono sharing 'awa [kava], up over here. Some mo'olelo [stories] I've read have had that. And then others share, you know like the Knudsen's more forward, say it was because of the stream 'cause it was dirty, or something like that. There's different interpretations of it but we know that within this well, that we have our own fresh water inside there ... life can sustain itself inside here. It's amazing when you're in a  $k\bar{\imath}puka$  [opening in a forest] like this and you feel so isolated but at the same time, you can survive. You get water...it's like one oasis inside here. You get taro patches but people no see that from the outside looking in and they just think it's kiawe [algaroba tree (Prosopis pallida)] forest. And then when they come inside they say, "Oh, this place is green ... oh, get food!"

Wai'awa, can go back to the days of Kualu-nui-pauku-mokumoku [Kualu of the broken rope, he is the son of Kualu-nui-kini-akua; mentioned in the "Legend of the Mū People"], tracing it back to the *Menehune* [race of people, or/and legendary race of small people] times, when Ola was in here. That's one of my favorite stories of Ola on the west side, the *ali'i* [chief] Ola and Kualu, because it brings it back to when that was the original peoples that was here. So, imagine living on Kaua'i where you have this barren land and how are you going to sustain yourself in this 'āina [land]?

Wai'awa, this is the name of this *ahupua'a* [land division usually extending from the uplands to the sea] right here, Wai'awa is the most desecrated ahupua'a on this entire island. We have all these seed companies, the largest landfill on Kaua'i, the only landfill ... everybody's 'ōpala [trash, rubbish] comes to Wai'awa. You talk about resource management, if anything should be awarded in this community for hosting the landfill in this community, it should be projects like this that is bringing back life into the land. This is one contaminated place; this is one heavy cultural spot. Why not throw money into this kind of place? But you know, there's groups in our Kekaha community that say we going blow \$80,000 in one night for Fourth of July. And I was like, you know what I can do with \$8,000. Give me \$10 you know, we can do a lot. There are those kind of things that I feel, oh my goodness ... Wai'awa, the name of the valley is Wai'awa. This ahupua'a is Wai'awa. We gotta put in more *mana* [spiritual energy, divine power] inside this place.

Also, there's a lot of burials on the base that I know of. You hear it all the time of stories that, "Oh, we want to put up one post there, one light post there." But they dig three feet. And they find *kupuna* (referring to *iwi* [bone] of *kupuna* [ancestor]. So, there's that kind of stuff. And yeah, I don't know ... I no really feel really good about it but if it's here we have to plant seeds to make it good for us. What are the things that we going say that they can implement that'll be more cultural sensitive, or resource management sensitive? If we doing these *mauka* [towards the mountain] works, everything that happen that we doing *mauka*, if we doing work Pu'u Ka Pele Forest Reserve, they are connected. So, having the relationship between these entities, whether it be State, the military, DHHL (Department of Hawaiian Home Lands), ADC (Agrobusiness Development Corporation), Kekaha Ag, DLNR (Department of Land and Natural Resources) ... we just need more collaboration within this, from Kekaha to Polihale. Whatever entities, these seed companies, everybody is doing their own thing but that's not how it works in *ahupua* 'a [land division usually extending from the uplands to the sea] style.

### JAMES KANOHOANU NAKAAHIKI

James Kanohoanu Nakaahiki III (Photo 13) was born 1955 in Waimea to parents Ramona and James Nakaahiki. He is named after his father and grandfather, and is the third child of six. He comes from a line of Native Hawaiian multi-generational families who lived in the Kona *moku* [district]. He has lived in Kekaha all of his life, and o has most of his family. James and his wife, Gail, still reside in Kekaha on Hawaiian Homestead Land, a spot on the list transferred by his father. Gail originates from Līhu'e, Kaua'i. They have two children.



Photo 13. Uncle James Nakaahiki. Photo taken in front of the *loʻi kalo* up at Puʻu ʻŌpae, in the Kona *moku* on the *mokupuni* of Kauaʻi.

He informs about his distant ancestors coming from a place in Polynesia called the Sakinese Islands:

As far as I know, according to genealogical records, I believe some of my ancestors on my grandma's side were residents of Polihale. That would be the Aipoalani and the Kilauano 'ohana [family]. They were descendants of Saki. Saki is a group of islands out in South Polynesia ... I guess. Supposedly, they migrated from that area ... Sakinese. There is a place called Saki Mana. There is a settlement out there where they arrived by canoes ... They were ... dark, dark people. Uncle Andy was really dark-skinned.

His grandparents, parents, and other 'ohana [family] members are all buried at Kekaha Hawaiian Cemetery. James Kanohoanu Nakaaahiki I, his grandfather, loved nice new cars and was a steam locomotive operator. His grandfather drove the train that carried the sugarcane during the old plantation days, while James Kanohoanu Nakaahiki II, his father, was a crane operator, who loaded the cane on trucks. James expounds about the Nakaahiki family being warriors; although they were not foremen, they were

hardworkers, and all his uncles as well as his father helped to propel the locomotive his grandfather operated:

My 'ohana [family], the Nakaahikis they weren't luna(s) [formen, overseers], we were warriors, we were workers ... you know ... My  $t\bar{u}t\bar{u}$  [grandparent] man, if anything, was a locomotive driver. So he used to drive the train that carried the cane, so I guess, that was a pretty high up job driving one train ... you know. All his sons, my dad, Uncle Benny, and all them ... they shovel all the coal in the fire box to keep the train going. They all had to shovel the coal for him so he could drive the train and create steam, steam train ... yeah, that was my  $t\bar{u}t\bar{u}$  man. But he was [chuckle] a "happy go lucky" guy.

James and Keao recall growing up when James' 'ohana [family] had one or two horses. James also speaks about life during the Plantation Era when there were a little community that had two swimming pools, and when everything evolved around the mill:

We had horses. I mean it's not like a whole pasture full of horses, but maybe one or two. (Keao NeSmith: Tie 'em in the bush yeah. They used to break away sometimes come inside our yard. We used to go feed 'em. That was good fun). Yeah, Keao remembers. We used to tie the horse in the back before never had houses ... yeah ... in the homestead. Yeah, that was back in the days.

Was hard work and poor times. Oh, the community was ... yeah. They did provide for the community. Everything was evolved around the mill. Sugar was king. Although it wasn't the best interest for the people. But they ... that's all they had. It raised a lot of families. Yeah, so they had swimming pool. They had two pools actually, one in Mānā. I don't know if Keao remembers that one. (Keao NeSmith: That's the only one had the high dive). It was down the road, yeah. Water was like ... I think ... it was spring water ... right above ... higher. Exactly. (Keao NeSmith: Cold too. You think Kekaha was a dessert, but had cold water from the spring.). On the bottom of the ridge. Plantation had a ranch. Yeah, had one arena. (Keao NeSmith: So, we would be in church, and we could hear in the distance, you could hear the rodeo going on.), Was thriving at one time. What ever happened? (Kaumaka Anae: There was a lot of ethnic cultures) and camps during the Plantation Era) ... Filipino Camp, Japanese Camp, Chinese ... Puerto Rican ... Budinkies [Puerto Rican]. One of my uncles was a Budinky.

Ramona, James' mother, was a home maker who raised him and his siblings, and she also worked in the pineapple cannery as well because pPineapple was a major crop. He attributes half of his Filipino descent to his mom who was full-blooded.

His Uncle Benny, his father's brother, was a noted fisherman throughout the Kona moku [district], possibly the entire mokupuni [island] of Kaua'i, and beyond. Uncle Benny also made some of the best  $l\bar{u}$  'au [feast, party] and  $k\bar{a}lua$  [to bake in the underground oven]. He did not get to know all his dad's brothers, but James and Keao enjoyed sharing stories about James' Uncle Benny:

I had an uncle, he was a fisherman. We call him Uncle Benny. His real name is Benjamin. That's one of my dad's brothers. My dad had one, two, three ... big family ... five brothers ... I think ... and couple sisters. But never get to know all of them because we were like babies when some of them passed, and moved away. (Keao NeSmtih: He would fish) all over..a lot at Polihale, on the base ... yeah. He was a net fisherman. He used to surround akule [big-eyed or goggle-eyed scad fish (Trachurops crumenophthalmus)]. Thrownet fisherman. My Uncle Benny, yeah. He always brought the family together to go akule fishing. He go surround and hukilau [a seine; to fish with the seine. Lit., pull ropes (lau)], or they pick up with the boat if no can bring it to shore. Then we all used to go to his house and hemo [unfasten, loosen] fish. What ever you hemo is yours. He never did sell one fish ... not one fish ... it was all given away. But he used to do it often, every weekend if he could. Yeah, he had the eye. Nenue [chub fish, also known as rudder or pilot fish (Kyphosus bigibbus, K. vaigiensis)], moi [threadfish (Polydactylus sexfilis)] ... kala [surgeonfish, unicorn fish,

Teuthidae], palani [a surgeonfish (Acanthurus dussumieri)] ... (Keao NeSmith: Even right now, all his nets still stay hanging at Uncle Benny's house. Yeah, still hanging in his whole garage. All the time, if he wasn't fishing, he was fixing net, making net, sitting in his garage going. Pass the house he was always like that.). Couple of my other uncles used to go too. But my dad wasn't so much fisherman.

James Kanohoanu Nakaahiki III worked as a firefighter for 44 years on PMRF (Pacific Missile Range Facility) and for the State of Hawai'i. Now James is retired and enjoys farming, fishing, and hunting. He is part of Kekaha Hawaiian Homestead Association (KHHA) Pu'u 'Ōpae Farm and Irrigation Project . James tells of his time working and fishing around PMRF, mentions the land during the Plantation Era, and also discusses the work he and others are doing at Pu'u 'Ōpae:

I was an employee of PMRF in the '70s to late '80s. I was a firefighter out there for the PMRF Missile Range Facility. We used to do a lot of fishing. Shoreline fishing, thrownet fishing, gathering 'opihi [limpets], hā'uke'uke [an edible variety of sea urchin (Colobocentrotus atratus)], and all those shell-like things on the shoreline ... abundant, they were very abundant. Limu [seaweed], yes. I cannot tell you the name, the flat one, the limu kohu [a soft, succulent, small seaweed (Asparagopsis taxiformis)]. Yeah. I don't know the exact name.

As for I know, to my knowledge ... in a nutshell, they were called the Mānā Plains. All the land below us [relative to the interview location up the mountain at Pu'u 'Ōpae](we are located up the mountain at Pu'u 'Ōpae), was all rice paddies, and it was all marsh land. Before the base and everybody else came about, then the Sugar Plantation ... I guess ... came in. They drained the whole plains to grow sugar.

Right now pretty much, I am into mālama 'āina [cCaring for the land]. We are trying to grow kalo [taro], and raise some live stock. Sheep. We are experimenting with sheep right now. There is a lot of wild cattle roaming around, but we haven't gone that far into ranching and stuff. Basically, right now, it's just lo'i [taro pondfields] and maintaining the irrigation system. [(Referring to the plantation]) they were the ones maintaining all these roads and reservoir ... the plantations ... because they had sugar(cane) all up here. They had sugar(cane) at one time. Trying to maintain the ditch and irrigation system for future followers, whoever wants to be part of the land, work the land, and grow food. We have a lease for 231 acres, but right now it's only maybe five acres that we actually fenced in. That's just our shed, our storage and work shed. People prior to us were trying to raise protea. We just kine [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of took it over, and whatever survived. It seems to be thriving right now. Basically, we are going to do canoe crops, so right now, we get one 'ulu [breadfruit (Artocarpus altilis)] tree over there that we trying to grow. 'Uhaloa, yeah. There is some the kine too, it grows wild, what's the name of that ... 'a'ali'i [Native hardwood shrubs or trees (Dodonaea, all species)] ... yes. It kine of grows wild here for whatever reason.

In Kekaha he has driven on the beach to Barking Sands and also gone on to PMRF to fish. In the late '70s, James camped by the Nohili Ditch and in front of Sandia when his children were little. He and Keao remember camping at Kinikini for church camp:

My sons remember camping. In fact, my sons ask, "Can we go fish Kinikini?" My oldest son, still goes on the base and still goes fishing. He said, "Well you cannot drive there anymore, you gotta walk." You gotta park outside, and then walk in. Yeah, you can get on to the base, but there is actually a blockade on the beach. They put a berm over there, right by where the rifle range is. That would be ... Nohili ... no, not Nohili ... what point that is ... Kokole. Yeah, they blocked that area off ... you cannot ... drive further pass that.

As a youngster, James remembers the big U.S. military presence in the area. He also recounts a terrifying incident Joe Manini, a *kupa* [native born, long attached to a place] experienced with the military at Joe's home in Pu'u 'Ōpae:

But I remember when I was little, they had maneuvers right in Kekaha, right outside Kekaha, Second Ditch. They had landing crafts, you know the kind you see in the World War II movies? This barges, flat barges come in, and then the gate drops down. Yeah, they landed right there in Kekaha. They even had paratroopers. Jumping parachutes in the air. Mānā stretch, there were alfalfa fields, the plantation was raising alfalfa for the cattle. They used to raise cattle before. Yeah, the military made a big presence. In fact, the biggest presence that people remember is Uncle Joe Manini up here. His ... I don't know if you guys remember passing that Quonset hut? Yeah. So when they would do ... when they coming on shore ... can you imagine, all these big ships out there, all these landing crafts ... you probably could see it clear from here ... I can see 'em ... they would bring in their aircrafts, helicopters 46s, H-1s, whatever ... and they would do maneuvers up here ... the military, a lot of things they would do was coastline and ridgeline, yeah ... that's their mission and objections, yeah ... The Chinooks, yeah ... the 53s, 46s, and 47s. So they were landing troops up here on Hawaiian Homes Land. Uncle Joe Manini, he wasn't for that, he did not agree, and he actually went to ... I don't know if you guys know that ... he went to battle with them. He had his rifle with him, and he told them to get off of his land.

James shares his own knowledge added to the learning and experiences of several cultural traditions and practices taught by Aunty Mahilani Poepoe (Keao and Kaumaka add a few comments):

Menehune [legendary race of small people who worked at night, building fish ponds, roads, temples] ... this tribe of people ... they not that small though from what they researched. The legend is that they were little people, but they weren't that little. They were hard workers, they don't work in the day, and they only come out at night ... for whatever reason. I'm not sure, Eben Manini, Erna's brother knows exacly where it is. There is a formation of a pahale [enclosure in front of a house], supposedly it's a canoe hale [house]. I know Aunty Mahi once told us that on these ridges of Polihale, they used to dig out those canoes up on top the ridge. They select the tree, fell the tree, dig out the canoe ... they used to just slide 'em down the ridge, and launch it at Polihale. (Kaumaka Anae: Used to have Kahālauaola canoe house, and it was ... in the valley of Kawa'ahiki at Pu'ukapele...) Yeah, Pu'ukapele, right. That might be it, but I'm sure there are more. That would be the ridge, but Polihale is couple ridges over ... Polihale Ridge. That might be it, I'm not sure. Makahoa, Kaunalewa, this is all up here ... Wailau. Pu'u 'Ōpae, Shrimp Hill, I didnt know that. 'Ōpae ... Gotta have had shrimp, if not, gotta bring 'em back. (Keao NeSmith: That was the favorite food of the Menehune. They love the 'ōpae. Pu'ukapele that's the homestead of the Menehune).

I know that Polihale is house also spirit, yeah? Poli is spirit, hale is house. Aunty Mahi did mention it to us. (Kaumaka Anae: Poli can be bosom too yeah). (Keao NeSmith: When you go ... especially when you come from the ocean ... you come on the boat..you coming into Polihale ... get the two ridges ... this side get Hā'ele'ele ... look like ... One bosom. Yeah. And everybody live down here, so that was the hale [house] ... so it's like when you carry one baby like this [gesture like cradling a baby] ... so that is the hale of the baby ... and then down the beach is all the ... po'e [people]. But that is true because as a *leina* [or leina-a-ka-'uhane or place where spirits leap] that's where the spirits jump. They follow the sunset, they come from the east side, Anahola side, they pass cross the top over here, they end up over there at Polihale, and that's where they go in the ocean. That's why one of our friends, you remember, Dana Olores. He wen' go make [to die] yeah, he had cancer, he knew he was dying, he drove his truck all the way to Polihale, he took his dogs, tied up his dogs, and sit down ...) House of bosom, yeah ... make sense. That's why all the Polynesians ... the people from Polynesia would come here with there canoes. Because there is a hula [Hawaiian dance] platform over there. Aipoalani, they were hula masters. Well, it's over grown, but if you go climb up, there is a platform. (Keao NeSmith: But get some more along Nā Pali and some of the valleys, like Miloli'i, get one other heiau [temple, Place of worship], one papa [flat area], one flat one, and that's a pahula [place where hula is danced and ancestors are recognized]. So the Polihale one is a pahula and the Miloli'i one is another pahula. Aunty Margaret when she was young, they used to go along the rocks, to that one, that pahula. That's how she was educated in hula, was Polihale and over there. But that's for Kunanae tell. Get some more pahula along the way, Nā Pali, all the whole way).

I was reminded by a great aunty of ours, not even blood related but we call her aunty, Aunty Mahi Poepoe. She was from Moloka'i. She was a pretty powerful lady. She could ... believe it or not ... she could see, she could feel, she could ... yeah ... we learned a lot from her. She came over and she made it her mission to bring awareness to the 'ohana [family] what needs to be done. She pointed out a lot of places to us like Polihale, Waimea, Kōke'e ... so yeah. Actually, when we went down to Polihale over there by the Queen's Pond, she made us do a protocol. You offer prayer and then you throw pa'akai [Hawaiian salt, rock salt]. She said the pa'akai is part of the earth it opens up the portal ... as they would say ... to get in touch with the spirits. Ask for permission to enter, and ... what your intentions are ... why you are here. Then when you leave you do the opposite, you give thanks, and give pa'akai again to close the portal ...

Aunty Mahi used to tell us some stories. She had some great stories, or knowledge ... I remember one time she was telling us that ... there's a lava tube that is connected to the west ... and I'm not sure where it comes out ... but that's where they used to escape from the north shore or whatever, if they were trapped in by enemies ... and today that's the Wet Caves in Hā'ena. There is a passageway that comes out I forget where, Polihale probably.

With minimal comments from Keao, James apprises a story told to him by his Uncle Benny about the Leper Koʻolau (Photo 14):

Ko'olau the Leper. Supposedly, he is family to us. The story is that Ko'olau refused to go to Moloka'i for whatever reason, and he fled to Kalalau Valley. I don't know why but they sent soldiers to go get him, but they could never capture him. Pi'ilani, the wife of Ko'olau, she helped him escape. I am not sure if they escaped to Ni'ihau or whatever but yeah ... the Legend of Ko'olau and Pi'ilani. They eluded the soldiers, he was never caught. But one story my uncle, who was a fisherman, Uncle Benny ... he told us when we were visiting sites and places with Aunty Mahi ... Koʻolau is buried on Kaua'i in Kekaha. Right by the intersection. (Keao NeSmith: That's where their homestead was, Pi'ilani guys). Get one papa [flat area] over there, it's a sand dune, and it's in line with Poheo. So it's Poheo Point on Kaua'i and Poheo Point, Ni'ihau. That's what she told us. Uncle Benny told us, if we find his rifle, we going find him ... supposedly, that's where he was buried. I believe he told us that this is all grave sites. They used to do ... I not sure if you guys familiar with this ... kīlua(s),  $k\bar{\imath}luq$  would be mass imu [underground oven]. I guess, when they had a plague or something, they would burn all these bodies so the disease don't spread. So he said that's what they did over there. I don't know if they burned him or he was buried. They said, "If you guys find his rifle over here, that's where you guys going find him, you going find his bones." Supposedly, that's where he was buried. Yeah, so there was one big open pit over there Uncle Benny told us about. I guess, as a child, he had seen.



Photo 14 Home of Kaluaikoʻolau (aka Koʻolau the Leper) at Mānā, Kauaʻi: Kaluaikoʻolau, 1862–1897. https://digitalarchives.hawaii.gov/item/ark:70111/0cXk.

When James' dad would gather *puka* shells to make *lei*(s), his father would also drive an old Willy's jeep on the beach to get to his destination, Queen's Pond at Polihale. Polihale has a lot of cultural significance and sacred spiritualism which James and Keao discuss in the following:

Yes, I do know of some (burials). It's right by the area going to Queen's Pond. Queen's Pond Beach used to be where only the Queens used to go back in Royalty days, they were the only ones allowed to swim in that pond. It was a saltwater pond specifically for queens. On the road to Polihale, you can't miss it. There is a Monkeypod tree that's there. There is an intersection in the road that splits off, you take a left, you go up for about a quarter mile, before you climb over the dunes before you get to the beach, to the right of that, they are marked graves over there. There is *iwi* [the bones of the dead] in those dunes over there. Supposedly, they belong to the Kilauano 'ohana and Aipoalani, I believe.

One of the concerns James spoke about was the taking away of all the cultural significance and practices. When asked about the good and bad changes of the military occupation and sugar industry, including the land, James replied:

The good was, it provided jobs for families to raise their families, jobs and opportunities in the work force. But the bad would be taking away all the cultural significance and practices. The  $\bar{a}ina$ , whoo...drastic changes...I cannot say if it's good or bad ... I cannot tell right now.

He voices his concern about the county landfill as well:

One bad thing is the landfill. Yes, it wasn't that high. [Laughing]. But then again, there wasn't that much people on the island ... from 30,000, 40,000, 50,000 ... now, I don't know what it is, 60,000 probably. More people means more trash generated. And then we had couple hurricanes that really built up the landfill ... you know. Why would you want to put a landfill on a flat piece of land? By the ocean. And it has grown significantly. It's 70, 80 feet up in the air now. Pu'u 'Ōpala [trash hill]. Pu'u 'Ōpala we call 'em. And then there has been a lot more urban development, but that's progress ... population.

### SEAN MOKUONAHIALA ANDRADE

Sean Mokuonahiala Andrade (Photo 15) was born in 1969 to parents Joseph and Lusalle (Yorkman) Andrade. He was born in Waimea and raised in Kalaheo, where he presently resides. He raises livestock, following the footsteps of his father and others who came before him. Sean is the eldest of three children in his family. He is of Hawaiian, Portuguese, and Chinese descent. He and his wife, Jeannie, share four children together.

Lusalle, Sean's mother, is from a Native Hawaiian family living in the Waimea Valley for at least a century. Lusalle was born and raised in Waimea Valley. Sean's grandmother Ruth Luka (Hoʻopai) Yorkman came from Oʻahu and was hānai(ed) [fostered, adopted] by the Aana family and lived in Waimea Valley. She is the daughter of Agnes Kanui (Haili) and William Hoʻopaʻi, the first Honolulu Police Department Chief with Hawaiian ancestry. Sean's maternal grandfather, Craddock Yorkman, was from Maui, and was Kauai's first Fire Chief. Craddock was the son of Annie Paahao (Maiuu) and O Tom Yoke Man of China.

Joseph Andrade Jr., Sean's father, is from Kalaheo where he had a homestead and grew up helping his grandparents raise cattle. Rosaline Loke (Chandler) Andrade, his paternal grandmother, was a homemaker of the Kanialama lineage raised on Kauai's North Shore. His paternal grandfather, Joseph Andrade Sr., worked for the Board of Agriculture and Forestry (Territory of Hawaii). Sean's paternal great-great-grandfather Manual Andrade of Portugal was a luna [foreman, overseer] and cattle rancher for the Robinson Ranch at Makaweli where his great-great-grandparents lived. Sean's great-great-grandfather was also a Hawaiian saddle maker.



Photo 15. Sean Andrade. Photo taken in front of the *lo'i kalo* up at Pu'u 'Ōpae, in the Kona *moku* on the *mokupuni* of Kaua'i.

Sean spent his elementary school years at Holy Cross Parish and Sacred Heart Mission in Kalaheo. His intermediate and high school years were spent at Waimea High School. Having been born in Waimea and raised in Kalāheo, he recounts memories of his childhood:

Growing up in our younger years, having the springs accessible ... you know ... remembering of the Māna Camp ... their own spring water swimming pool. Plantation Era. And the springs was all Plantation Era when they tried to control it and utilize it, and eventually everything shut down. Today they capped all of that stuff. That is something I would like to see come back. But of course, the Mānā area is a flood zone, it's a swamp. Capping off the springs and doing all that stuff, will help to keep it drier. I'd like to see it come back. I'd like to see what it once was. Back in the old days, they could actually canoe from Waimea River all the way to Mānā. Of course, today that would be probably hard to do, but I would like to see that happen. In the '70s, early '70s. We were camping. Our whole family was camping. My Uncle Kamaile, and my Uncle Gilroy took me and a couple of my other cousins, and we were all swimming that day, we jumped in the jeep, we drove through PMRF (Pacific Missile Range Facility), went to Queen's Pond, jumped in the ocean there again, and drove back out straight to the spring water. We actually rinsed off and swam there for a little bit. So that was nice as a youngster. But today, I really don't know the difference because I haven't ... I don't like going in there, so I stay away from PMRF. It seems like it's so hard to get in. It just seems that way. I don't think it is, but it just seems that way.

We grew up throwing net all over the place. We grew up throwing poles and laying net. The places we'd lay is not by the reef, would be by the sand. Would be more pāpio(s) [the young stage of growth of ulua, a fish]. 'Ōio [ladyfish, bonefish (Albula vulpes)], some moi [threadfish (Polydactylus sexfilis)] ... just travelers, those sort of fish. We go crabbing too actually, a lot off of the Waimea landing. The haole crab [orr kūhonu crab, An edible spotted-back crab (Portunus sanguinolentus)], the white crab. That used to be choke ... Going prawning up Makaweli and up Waimea River. When I was a young kid, there were so many of them that we'd come back with bags full. Even 'o'opu [general name for fishes included in the families Eleotridae] back in the day. It's definitely not like today. Once at Makaweli, I was a young child, I was able to swim with hinana [young of 'o 'opu, a fish, formerly caught in nets and greatly relished] by the millions, in the river, Makaweli side. You could see them everywhere. I went underwater, opened my eyes, and I could see this shimmering all around me. I'm lucky to say that I have experienced that. I don't think that anyone has seen hinana in that amount since I can think, I don't know. 'Opae [shrimp] too, Waimea River. My mom loves to eat 'opae, with little bit of Hawaiian salt pa'akai [Hawaiian salt], round onion, and little bit of chili pepper. All you had to do was ... My grandmother's house was in Waimea Valley, the break water was right across, all you had to do was walk over, walk down the break water, to the river, align with buffalo grass ... walk at the edge of the buffalo grass, where it is in the water, go with the scoop net, reach over, just scoop it in the grass, and you would have like a good handful of 'opae. This is like Waimea River, you just saw Waimea River that close to the ocean. Just a lot yeah. My mom would sit at the kitchen table, and eat it live. I know get. There is still 'ōpae, quite a bit in Wainiha, that side of the island for sure. Some people are saying, there are still some here too. I havent gone up the valley in a long, long time. I talked to cousin Johnna Aona, "I want to take my kids up to Makaweli." She said, "Just go. Just tell them who you are if anybody questions you. Just tell them who you." . Mullet we used to throw net at the river mouth. Blind throws and catch mullet when we were teenagers.

Kalaheo, in Kalaheo. I've always enjoyed raising animals. So the farming part, I have always enjoyed. Doesn' 't matter the animal, I have always enjoyed that. As far as the farming part, I have been growing up, watching 'ohana, my  $t\bar{u}t\bar{u}$  [grandparent] man, cousins from both ends of the island, from Wainiha Valley to Makaweli Valley all raising kalo [taro]. I have always been asked to help in the lo 'i(s) [taro pondfields], but as a young kid, you don't want to work in the lo 'i(s). For one, I was kine [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of afraid of toads at a young age.

Sean relays some of the information he learned about the Mānā area:

Yeah, I did a little research myself about Mānā ... but I read stories ... Back in the early days, of course, the floods would come through Mānā, and they had to find a way to keep the *kalo*. So they did it on rafts. They had trees, weaved it together, anchored it down so it wouldn't float away. I did hear of that story. They canoeing it over from Waimea to Mānā. I've read stories of migrating birds, geese, and ducks landing here by the thousands up until it dried out. I have read that. I would love to see it happen again.

I've read a little bit about it. I actually want to go find where it is. I want to go find some of those spots. There is stories here about *heiau*(s) [temples, places of worship] in this area too. There is supposed to be three in this area. According to old maps there are two on this side. I know they found one on this side, up this way. There is supposed to be two up this way, but I think both of them got bulldozed when Plantation Days ... I think

When Sean's family would meet together, they would spend time gathering resources for food and preparing special dishes, and he reminisced about those special moments and realism:

When we going have one party or we are going to get together, going be, we going catch crab, we going catch prawn, 'ōpae [shrimp], 'o'opu [general name for fishes included in the families Eleotridae] that's the kind of stuff our family was gathering. Of course, had *kalo* [taro], other family members that was raising *kalo*, that was easy to get, so we didn't have to. So that was *kine* [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of our family gathering on this side...actually raising animals too...*kālua* [to bake in the ground oven]...did a lot of that ... *laulau* [wrapping, wrapped package; packages of ti leaves or banana leaves containing pork, beef, salted fish, or taro tops, baked in the ground oven, steamed or broiled; any cloth, net, or leaves used as a wrapper or carrier; to wrap or carry in such bundles], making *laulaua*(s). 'Opihi [limpets] was the favorite. As a child, growing up, picking 'opihi was pretty easy.

We would get family get togethers. As a young child, at some point in the get together at my grandmothers ... eventually the kitchen door would close, and all the kids would have to stay out. We would all try to listen to try to see what they were talking about, and everything would be spoke in Hawaiian, but it could never be passed. My mother's generation could understand Hawaiian, but cannot speak. My grandmother, they all could speak, but they never ever passed it down. A lot of that stuff died out, I guess.

For over 30 years, he has been employed at Ferguson Enterprises, Inc. in Līhu'e. His interests and skills are coaching and farming. He raises sheep, cattle, and chickens; plants *kalo* [taro]; and is an aquaponic farmer raising tilapia. Sean is the Chairman and President of an organization called Kaunalewa. One of the projects of Kaunalewa that he heads is the Kekaha Hawaiian Homestead Association Pu'u 'Ōpae Farm and Irrigation Project [KHHA]. Sean shares his passion for farming and how the project became an important part of his life and his vision for future generations:

We've been with Pu'u 'Ōpae anyway, I'm also with Kekaha Hawaiian Homes Association, and I am the chairperson for this project, and we have a lease with DHHL [Department of Hawaiian Home Lands] for 231 acres total. My Uncle Gilroy Yorkman, Kawai Warren, and a bunch of others who were part of KHHA back in the day, got this lease and started the process in 2010. Overtime there was a lot of red-tape dealing with the State. A lot of challenges. As you can see there is a challenge with us getting here...you know...trying to be here. With our project here, it *kine* [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of opened up my eyes on where I wanna be, and what I wanna do. This section here is called the nursery, Kawai guys called this the nursery. This is where a lot of learning was taking place to *kine* of understand the land. The land is bare, it's not very high in nutrients so we are trying to keep things organic as possible, as natural as possible. We still have a lot of work to do with reforestation. We got 75 acres of reforestation. We got 50 acres pastoral which we will do cattle, sheep, and chickens. We've got 50 acres of orchards which will be probably fruit trees and stuff like that. 10 acres in the front or so is a cultural center. We got a mix of another 20 something acres of more *lo'i*(s) that we want to do.

So, this is just the testing and beginning stages of what we trying to get to. This is the place where ... Our deal with DHHL, with Hawaiian Home Lands, the deal they made back in the day was, this is where we gonna help rehabilitate Hawaiians for the day that their put on their lands. If you don't know how to farm and you want to farm, you can come here and learn. If you're gonna be here to do pastoral, we can teach you that too. That is *kine* of the area why we are here in a way, in this area.

In Kalaheo we have sheep, chickens, we got egg layers. We have tilapia which tilapia is actually going to be part of the system too where we going to put them into ponds, and have that water, tilapia water help nourish the ground and the plants in the area. So, that's our game plan. I also raise cattle myself. And also, I just recently stopped ... there are new owners to this lease I had in Kalaheo, and they said we could be month to month, but I wasn't comfortable with the month to month because I had 30 mother cows. Now finding 100 acres to put 100 mother cows next month is not going to happen. Instead of being stressed out about that stuff, I decided to find some place else. Everybody knew I was looking, so people started offering to buy my herd too. So I decided, it might be best if I did sell the herd. I kept all my equipment and stuff for this up here. The idea up here on the pastoral part was to upkeep, that was going to be my section until ... My Uncle Gilroy passed away, and Kawai Warren kine of passed it on to me. Now, I'm doing the overall, the whole thing. My thing was going to be the 50 acres pastoral, and I was all good with that. But now I'm learning how to plant kalo [taro], take care of the Earth itself, the 'āina [land] itself. There is just a lot to do. We are trying to do it with ... our cCharter sSchools ... with those students, the haumāna [students] from the cCharter sSchools.

When asked about his opinion about the positive and negative impact of the military's presence on the west side, he replied:

PMRF (Pacific Missile Range Facility), the benefits maybe one of the few benefits or the only benefit there would be is, there is a military presence for Hawai'i. The negatives, where do we start ... we know that they are pumping water out most of the time to keep the area dry and not in such a swamp zone. There is a lot of negatives of being in that location, the closure of the swamp area, that's one. What I would like to see, my own personal opinion, I would like to see, maybe the base, PMRF not be here. My vision always go back to what it was. I am searching for my culture because I have been ... I guess ... denied that in a way. Yeah, so I'm trying to find, and get it back to what it once was, back in the day. I wish I lived in that era. I would like Mānā to be, what Mānā once was, a swamp area, raising kalo [taro] on rafts again. Hopefully bringing back the swamps and the migrating birds and all that stuff. Just what it once was. Open up the springs, let it flow. The other thing negative with the plantations is, all of the pesticides that is within the ground, and within the ditch ways ... within the ground, ends up in the ditchways, and naturally ends up in the ocean which kills everything there too. There are still remnants of that. I don't know how we get back to what it once was but it's going to take us removing things that's here, that was placed here years after. PMRF unfortunately, would be one to remove. I don't know why they put it there anyway to begin with. I don't know but that is my own vision. I'd like to see it removed, but I don't know if it's ever going to happen. What would be the outcome of that, I don't know. Even with all the radars and stuff ... I don't know ... all eye-sores. Who know what type of radiation or whatever is being put off too. I don't know. There is a lot of stuff I don't know. I do know, it's not what it once was. That's where I am with PMRF. I know that it employs a lot of our locals, I know a lot of funding comes to Kaua'i, Hawai'i, but is it all worth it? Is it all worth it for our people especially. Because we are the ones that are losing out, not any other nationality that comes here because they don't know, but we're the ones.

## EDWIN RAY A'ALONA DELA CRUZ

Edwin Ray A'alona Dela Cruz (Photo 16) was born in 1973 at the Kaua'i Veterans Memorial Hospital in Waimea, Kaua'i to parents, Edwin Ray Dela Cruz and Lorna J. (Shepherd) Dela Cruz. He is the eldest of five children. His father is a native of Waimea, Kaua'i where A'alona grew up.

A'alona's paternal grandmother was born in Makaweli, east of Waimea on the Robinson property. His great grandparents were from Hiroshima, Japan. His paternal grandfather was born in the Philippines, but dad was born in Waimea or Makaweli, and also worked for the Robinson family. His mother, Lorna was born in Jacksonville, North Carolina at Camp Lejeune, but moved back to O'ahu when she was three-years-old. His mom moved to Kaua'i in the '50s.



Photo 16. A'alona Dela Cruz. Photo taken on the grounds of the County of Kaua'i offices, in the *kūlanakauhale* of Līhu'e, within the Puna *moku* on the *mokupuni* of Kaua'i.

His father is an avid fisherman, and A'alona has inherited his love for the ocean and fishing. He started fishing with his father, uncles, and 'ohana [family] at a very young age. He and his 'ohana fished off the shorelines of Kekaha to Polihale, Nā Pali, and Ni'ihau far back as he can remember. In his youth, A'alona planned fishing trips with his friends. He recalls gathering resources, shoreline fishing, throw net, and diving with his father and uncles and collecting the following bounty at the shorelines of Kekaha to Polihale:

Wāwae 'iole [Codium edule, is a green seaweed], limu kohu [a soft, succulent, small seaweed (Asparagopsis taxiformis)] ... we would pick 'opihi [limpets], hā 'uke 'uke [an edible variety of sea urchin (Colobocentrotus atratus)], wana [sea urchin, as (Diadema paucispinum) and (Echinothrix

diadema)] ... I mean we did all aspects of fishing over there. To 'au [black snapper; blacktail snapper] ... I trying to remember what kind fish had over there, but I know the ... āholehole [young stage of the āhole, Hawaiian flagtail] ... and then ... we would catch the nenue [Chub fish, also known as rudder or pilot fish (Kyphosus bigibbus, K. vaigiensis) and kala [surgeonfish, unicorn fish, Teuthidae] ... the palani [a surgeonfish (Acanthurus dussumieri)] ...

Palani [a surgeonfish (Acanthurus dussumieri)], kala [surgeonfish, unicorn fish, Teuthidae; Naso hexacanthus, N. unicornis, N. brevirostris] ... we used to catch with the līpoa limu [bladelike, branched, brown seaweeds (Dictyopteris plagiogramma and D. australis)] ... put 'em on the hook throw 'em out when I go with my dad them guys. He'e [octopus (Polypus sp.), commonly known as squid], lobsters ... Pāpio [the young stage of growth of ulua, a fish], 'ō'io [ladyfish, bonefish (Albula vulpes)], moi [threadfish (Polydactylus sexfilis)], ta'ape [blueline snapper, bluestripe snapper] ... I remember when I was probably about seven or eight-years-old, I caught one nice, big kūmū [goatfish (Parupeneus porphyreus).

I just went go Nā Pali ... go kona crab. Some big *kine* [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit]. We got some big *kine*. We went last year ... I think we caught ... 30 something pieces, half-day ... three sets ... three strings ... three sets ... pull 'em up, go home. And then this last one we went, we got 65. Oh yeah. And the *kūpe'e* [an edible marine snail (*Nerita polita*)]. Nā Pali get couple places, but I get more on this side, the south side of the island. Yeah. You know ... thinking now about the areas where we used to camp by Nohili Point ... we used to camp there ... as long as it was the weekends and they didn't have operations ... from Friday 6:00 p.m. until Monday 6:00 a.m. we could camp. But the shoreline over there is perfect *kūpe'e* grounds. And I never did ... I never know it at the time ... my father guys never did go get that. Another thing over there is the ... I cannot think of the Hawaiian name ... sea cucumber ... *loli* [sea slug, sea cucumber, beche-de-mer, trepang (*Holothuria spp.*)] was the sea cucumber in general. Nā Pali get plenty of that. Yeah. My dad ... makes it, and I love it. Lemon juice and shredded *daikon* [pickled radish, Korean/Japanese dish], and he just *sashimi* [Cut in thin pieces, Japanese style of slicing] the *loli*. Oh, I get one small container left, I rationing 'em. [Laughter.]

Having the *pu'uwai* [heart] of a true *lawai'a* [fisherman], A'alona explains how he does not like to sell his catch, but rather to share it with others:

My mom's neighbor, I would always offer him fish ... certain *kine* fish he like ... he's particular. So, we give him and he would always give us smoked meat and smoked sausage. Whatever ... too much I had would go to my family first and then to  $k\bar{u}puna$  [elders, ancestors], yeah.

So we fill up the cooler. And my *wahine* [woman] at the time ... at work they asking, they like buy. I told her, "Give 'em." She came back and she told me, "He gave me \$60, \$70." I told her, "No, give 'em back, I don't want the money." He said, "No, go put gas, go buy hook." I said, "Oh, in that sense, I guess, I don't feel so bad, okay." Then one of her Tongan friends, I guess he found out ... the *nenue*, the *humunukunuku'ele'ele* [blue striped or black durgon; variety of the *humuhumu* (*Rhinecanthus aculeatus, R. rectangulus*)], he wanted them all, and he gave me one ... bag 'awa [the kava (*Piper methysticum*)] ... so he gave me couple pounds of 'awa. You know this I don't mind.

A'alona has fond memories at Polihale camping in the summer and on the weekends with his father and friends of his father such as Uncle Paddy Boy Mālama, and the 'ohana:

Yeah, so my dad and his friends ... like Uncle Paddy Boy Mālama, we would camp there in the whole summers ... the last day of school to the first day of school ... and then more on the weekends. We would just ... I don't know how they pulled it off, camping that long. My brother and I try now, we can hardly pull off a week. Whenever they went to work, we would stay back and watch everybody. All the boats was on the beach, if too big to be on the beach, it would be anchored

offshore. In the morning we eat breakfast and everybody just start loading up on the boats, and we go shell hunting, hunting, fishing ... anything and everything you can imagine. That was a typical summer at Polihale.

Growing up A'alona remembers the Mānā Plains having a lot of sugarcane. Sugarcane and plantation life surrounded he and his family. A'alona describes the interpersonal relationship the community shared among each other:

Yeah. Now days not as much, but same thing ... everybody so busy working. A lot of ... even hānai [foster, adopted] family ... just the community getting together ... every community is family ... don't need to be blood related ... like hānai ... the Ho'okanos ... you know ... the Okadas ... I mean the names go on and on in Waimea ... Waimea Town, Waimea Valley ... you know ... the Setos, the Kagawasthat was one other close family. My dad and his friends played baseball. My dad and my uncles were all fishermen ... owned boats and stuff like that. We always got together a lot. A lot of akule [big-eyed or goggle-eyed scad fish (Trachurops crumenophthalmus)] fishing, but it would be from shore. We would be out to the schools [reeferring to schools of fish]. We would meet at Polihale, and hukilau [a seine; to fish with the seine. Lit., pull (huki) ropes (lau)]. We used to go out on the boat at night and hook akule.

A'alona is very familiar and experienced with fishing at Polihale, and reveals his awareness of the spiritual and sacred value of Polihale Heiau:

I know the *heiau* [temple, place of worship] is there, the last valley ... right where the spring is at ... the spring where they tapped, to provide the water for the ... What I was told by archaeologists and historians, that was the most sacred water out of the island of Kaua'i, and that was what they use for the showers and bathrooms at the State Park area. That's the valley right there by the *heiau*. The story I was told ... They call it like the stairway to the Heavens [referring to Polihale Heiau] ... it was a five tier *heiau* ... all the departing points for the *'uhane* [spirit] ... Ka'ena Point, O'ahu ... they would come to Kaua'i, go to the *heiau*, and jump off the Pō'āina [Pō is the realm of the *akua* or god, and *'āina* is land]. And then ... there is supposed to be an underwater mountain range, out at sea, straight out there, that they consider Pō'āina.

A'alona is an active waterman and member of the Polynesian Voyaging Society (PVS). He had missed oppotunities to engage in long voyages. As a boat captain, he operates daily tours for Makana Charters from the Kīkīaola Small Boat Harbor. He has been in the boating industry for at least 31 years. On his tours, he narrates a *mo'olelo* [story] about the 'ōahi [hurling firebrands, as from a cliff for ancient Kaua'i spectacle; flashing lightning. *Lit.*, projecting fire. Nā pali 'ōahi o Makana, the cliffs of Makana, where fire was hurled forth]. When asked about his personal experiences and encounters when boating at PMRF and/or fishing in the Mānā side, he replied:

All and all it's pretty okay encounters. When they have missile launches, they hold us up for like an hour, and I understand why they do it in general .... But they stop us one hour prior to the launch, and it only takes me 15 minutes to get across the range. A lot of the times, people that I know who work on the security side of it or on the base, they know me, they know the speed of my boat, and they let me through. A lot of times, no matter what they do, the Navy is like, "No, shut it down." So it *kine* [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of impedes us and my job. But also, days where I'm not working, I have never been stopped, just because...lucky, lucky...I guess. There was one incident where I was coming North back to Kīkīaola ... over from Nā Pali back to Kīkīaola ... and I saw the security boat standing by off of Makaha. And I maneuvered to see if they would give chase. They didn't give chase, so I kept going, and when I got to Nohili Point ... Navy police, blue lights, 50 caliber ... yelling at me, scolding me for not answering my radio, telling me the Coast Guard was trying to get ahold of me. So, I went up to the Coast Guard, same thing ... blue lights, 50 caliber ... a little confrontation there about them pointing it somewhere else versus at me. He kept it, and I said, "Can you please point

that somewhere away from my 16 American passengers?" And at that point someone told him not to point it at me so ... They asked for my documents, my Captain's license ... documents, the boat documents ... handed it over to them ... and they looked through ... gave me back my documents, and I went on my way. And ... this was like 2005, '06 maybe, maybe even '07, somewhere around that time. And in 2008 I moved to O'ahu and was working doing the shuttle from Sand Island to Pier Four for the Coast Guard. And in the original exam center one day someoe asked me ... because I go by my Hawaiian name ... they asked me, "A'alona what is your English name? What is your legal name?" I said, "Oh, Edwin Dela Cruz. They go, "Oh." I go, "Why?" Before they had a chance to answer I go, "What PMRF?" And they go, "Yeah." They said the CO, XO, whoever is in charge of the base trying to get my license revoked, because I ran through the range, and shut down a multimillion-dollar operation. Needless-to-say everybody was pissed off, which is fine, but they didn't do their job, I just did what ... So they told me that the Coast Guard told the Navy that it was their fault, they messed up so they had no reason to pull my license. That's the hard part of ... me with the Navy, is stuff like that. Other than that ... besides not providing beach access for us like it used to be ... you know. Throughout my life we would go fishing over there. We used to fish from Kekaha Beach along the shoreline.

The Nā Pali 'Ohana is described as "A circle of friends, who share common goals and values. This commonality defines the Nā Pali 'Ohana. In 1997, the Nā Pali Coast 'Ohana Foundation officially formed as a 501(c) (3) non-profit corporation. In early 2000, the successful volunteer work of the 'Ohana was acknowledged by the Hawai'i Department of Land and Natural Resources (DLNR). An exclusive curator agreement was granted to the 'Ohana to *mālama*, care for, maintain and preserve, the cultural sites within Nu'alolo Kai." (Nā Pali Coast 'Ohana, 2024). Being a member of the Nā Pali 'Ohana for many years, A'alona recounts his start:

I been in the industry since 1992, and I worked for a company called Nā Pali Explorer. We were one of the three companies that were allowed to land at Nu'alolo ... picnic on the beach, do a narrated walk through the remains of the village at Nu'alolo, and snorkel from the beach. Part of that permit was, we would provide transportation I guess for N\(\bar{a}\) Pali 'Ohana, and while they were out there, we would bring out ice and any kinds of supplies they needed. They would make a call to whoever, and they would bring it down to the boat, and we would bring it out. At the end of the camping trip, we would load up the boat, and I mean ... the boat was full ... with cargo net and ... I was young, I was 19. So from that point, I worked for that company years and years, and just kine [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of built up ... got really close with Sabra and her husband ... Randy, and Vicky ... all the 'ohana [family]. I think Randy guys are from North Shore, and Sabra is from Līhu'e side, I'm not sure what parts of the island everybody came from ... but a lot of them was North Shore people. We had Aunty Lu Koerte from Kekaha, David, Nalani ... But over the years I built up a relationship with them, and just became a part of them. My day off, if they camping ... I go out on my boat, work, hang out, wala 'au [talk story], and just enjoy. Most times, I couldn't stay over night, so I would leave. When I could stay over night, then I would. I would stay away from them because part of the permitting, and everything like that. So, I technically wasn't there but yeah.

There are several accounts of the *moʻolelo* [story] of Barking Sands or known to Hawaiians as Keone-kani-o-Nohili, Aʻalona shares the story he was told as a youngster:

The one that I learned when I was really young is ... There was a fisherman, who lived at Nohili Point or that area, and he was one of the first, if not the first *kanaka* [Hawaiian person] to have dogs as pets, instead of for food. He really loved his dogs. Everyday he would tie up his dogs before he would go out and fish. He would play with his dogs, tie "em up, and go. This was a regular thing. One day when he went out *holoholo* [another term used for "to go fishing"], a storm had blown over. It was raining so hard, he couldn't see the island. Essentially, he didn't know where he was, he never had his bearings, but he could hear his dogs barking. So, however long the storm was, finally the storm passed, and his dogs barking kept him close to home. When he came in to shore, the first thing he wanted to do was untie his dogs, and love them up because they saved his life. And he couldn't

find them. He looked around, and looked around, could not find them, he heard barking, and he could not find them. And he never found his dogs 'tiltill today, that is why you can hear the dogs barking.

Although A'alona and his 'ohana [family] are prominent lawai 'a or fishermen, his parental paternal grandparents, Flor and Mary were mahi 'ai or farmers. He recalls them planting the following:

My grandpa Flor and grandma Mary, on the Dela Cruz side, we had string beans, bush beans, radishes, egg plant, okra ... we had 'uala [sweet potato] ... A lot of the vegetables and stuff ... I don't remember what the names were ... but there was like the big rooted vegetables, my father called them, "Ccandy." Like one potato ... you peel 'em, you cut, and you eat. I cannot remember the name of 'em though.

There are several members in A'alona's 'ohana, including himself who were creative at making seashell and seed *lei*(s) [necklaces or garland made out of shells, seeds, flowers, leaves and/or feathers, etc]. There is much *aloha* [love, affection] put into these necklaces they sew for members of their family, and it is transparent in the way A'alona speaks about it:

My mom gather shells. My grandmother always ... My grandmother was raised with the Ni'ihauan(s) too yeah, or she had a lot of contact with them working with the Robinsons ... And so, she went to Ni'ihau when she was young, because she was the caretaker for the old lady. She would pick shells or even seeds, like the black-eyed suzies and the ... the sheep's eye ... So she would collect all these ... but never had enough to make a full lei of the seeds. But...my mom would collect shells, not really to make lei...just for decorations...arts and crafts kine [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] stuff. My dad would pick puka shells from Polihale. And he made a lei for my mom with the Triton's Trumpet as the centerpiece, and three gray shells representing the three of us ... my mom, my dad, and me. My mom gave me that lei when I was 18 ... it was after I graduated. I have always been into picking. My mom picks puka shells at Polihale, Oueen's Pond area, and towards Nohili Point. And now it's more scarce, unless you know where to go. And now that they opened up access to Nohili Point, more people are going and picking so ... For me ... I used to pick and sew. Kūpe 'e [an edible marine snail (Nerita polita)]. I have a few kūpe 'e lei(s) that I made for my kids when they were younger ... the smaller shells ... the bigger shells for me ... and then my daughter's mother at the time. I haven't sewn lei in a while ... shell lei.

A'alona may not have been a *mahi'ai* [farmer], but he is a cultural practitioner in many aspects of the Hawaiian culture, including  $l\bar{a}$  'au lapa'au or Hawaiian medicine. He studied under the direction of Kumu 'Ohai. He calls to mind some of the medicinal plants and experiences around them:

I worked with kauna 'oa [a native dodder (Cuscuta sandwichiana), belonging to the morning-glory family, a leafless, parasitic vine, growing densely on other plants], more of the *kalika* [garlic],  $n\bar{i}$  'oi [cChili pepper]. Nī'oi and kalika is the strongest warriors ... for fight any kind of illness ... yeah. 'Ōlena [the turmeric (Curcuma domestica, also incorrectly called C. longa), a kind of ginger distributed from India into Polynesia] ... one of the things I learned, it was good for the immflammation but specifically, my son would go surfing, and he would come home with an ear infection or his ear stay sore. So, we would put some in his ear with the cotton, and we would take it out, and the next morning he's back in the water again. We would juice it. If I couldn't get the root, I would use the tumeric [(powdered) tumeric] and just dillute it down. And even 'tiltill today, I keep some in my icebox for my son. He old enough to go get his own, but if he cannot, I have ... my daughter, my grandson. My mom always has, and she has her little patch in her back yard. If we need, we can always go get, yeah. I never made kukui oil nut [Candlenut tree (Aleurites moluccana)], but I do use kukui oil just on my skin, because I on the ocean all the time, and it comes dry. And then, the 'inamona [relish made of the cooked kernel of candlenut (kukui) mashed with salt]. I made 'inamona once before with a friend of mine on O'ahu. Roast "em, yeah. That was a pretty cool experience to make the 'inamona. The popolo [the black nightshade (Solanum nigrum, often incorrectly called *S. nodiflorum*) a smooth cosmopolitan herb], the *pōpolo* berries, my mom always ... The weeds in the yard, I lawn mower 'em when I was younger. My mom, "Don't lawn mower that, that's the *kine* [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit], that's the medicine." We also went and harvested *māmaki* [small native trees (*Pipturus spp.*)] and 'awa [the kava (*Piper methysticum*)]. Two of my *lua* [Hawaiian martial arts] brothers would go hike up behind Blue Hole Ka'āpoko, and get one area up there. So we would go and harvest the 'awa and then we would replant. And had one area up on the *pali* [cliff], all *māmaki*.

A'alona voices his thoughts about adequate accessibility for him and his 'ohana in the area of Mānā and PMRF for fishing, harvesting resources and camping. He also explains the behavior of the sea life in the area with and without human activity.

Definitely better access. I guess ... you know ... we had it so good back then. And back then being pre-9/11 ... up until that point. They closed the base, and we couldn't even dive off shore, couldn't anchor offshore for couple of years or however it was. All the  $man\bar{o}$  [sharks] got a little bit more frisky, because no more boats chasing them, so it's like they took over. They [referring to the sharks] took the area back. When it first opened ... you shoot one fish, the sharks all over you already. So to be able to go back to how it was ... not that it's our space, but they were not as frisky as they were before. They more frisky than they were before and now they getting back to that not so frisky because people are utilitzing the area.

The main thing is ... I don't want to say lenient, but get more lenient on the access like ... it's an unenforced law, you are not supposed to drive on the beach. I'm in the ... I'm not quite *kupuna* [elder], but yet for me to lug all my gear to go fishing ... the parking area is ... the shore ... you like go more down ... you going have to walk in the soft sand. You know, stuff like that ... or open up the end so we don't have to come through the base, we can drive from the side and come in ... to have access to all these spots to fish. I remeber my dad ... get all my dad's lobster holes and everything too. We went from shore with one scuba tank. We swim out on the surface, get to the spot, turn on our air, dive down, we clean the hole, come out, and fill our cooler with lobsters from couple t-bars. Now we cannot. We cannot drive to that area anymore.

Gathering, camping ... actually I would love to camp at Nohili Point again ... on the Flats, at the grassy area before the gates and stuff. I like take my kids there, my boys like ... because all my family like to go *holoholo* [another term used for "to go fishing"]. Go camp on the beach at Majors Bay like we used to and stuff like that. We lost 'em, we lost all of that because of 9/11.

### EBEN KAWAIKEA MANINI

Eben Kawaikea Manini (Photo 17) was born in 1964 to parents Beverly Ann Curtis Manini and Joseph Punilei Manini, Sr. He has seven siblings and is the second youngest of them. He was born in Waimea, lived in Līhu'e, Kalaheo, and currently Pu'u 'Ōpae. He has been living at Pu'u 'Ōpae Ranch for approximately 20 years, and it is his permanent address.



Photo 17. Eben Manini. Photo taken at the Kekaha Neighborhood Pavilion in the *kūlanakauhale* of Kekaha within the Kona *moku* on the *mokupuni* of Kaua'i.

Eben's mother, Beverly Ann Curtis Manini was born on the island of Oʻahu. Her family was from Maui. On her Hawaiian side, there were actually known to be from the island of Nihoa. Kealohanui, was the name of her grandfather from Nihoa. On her father's side, they were from Tennessee. Beverly's father, Luther Curtis was part of the United States Navy, was blown off his ship in Pearl Harbor, lived, and survived througout the entire war. He was swimming in the water the entire time trying to survive, and he had PTSD (Post Traumatic Stress Disorder) for the rest of his life. Luther fought in World War I, and he and his brothers also fought in World War II. Eben's uncle and father fought in the Korean War. Eben come from a family of healers. His mother's grandfather was a well-known hearler. His paternal grand uncle, Herbert Manini was a healer using herbal medicine and the healing art of *kāhea* [to invoke, cry out]. His uncle Herbert would attend the Church of Jesus Christ of Latter-Day Saints in Kekaha. He is buried on the Temple

grounds in Lā'ie, O'ahu, and died in the '80s. His grandfather Benjamin Pinihakapunilei Manini, Sr., is buried in the Kekaha Hawaiian Cemetery along with Eben's brother Hōkūlani, who died as an infant.

Eben's father, Joseph Punilei Manini, Sr. is part of a mulit-generational family from the island of Kaua'i, and was actually born in a private house located at Olokele Valley which is related to Makaweli Valley in this day and age (O'Malley 2006). He was a cowboy and cattle rancher for over 50 years, and was inducted into the Paniolo Hall of Fame Hawai'i in 2005. He worked for the Gay and Robinson's Makaweli Ranch for about 47 years. On the ranch he drove cattle for slaughtering, rounded up and branded cattle, fixed fences, and cleared and watered patures. He watered the pastures by syphoning water from the ditch for the large sprinklers. During one experience while gathering cattle at Na Pali, it was very dangerous, a bull slid down the 400-feet cliff drop, landed on the reef, and died. The Robinsons were also part of the Sinclair Family, and they owned the plantations, and sometimes the plantation borrowed him from the ranch to operate the ranch tractor to plow the cane fields when the big tractor was broken. He describes the work of a cowboy as being harder than that of a taro farmer. On the ranch there was a Japanese beekeeper and the beekeeper taught him how to maintain bees, colonies, hives and harvest honey. Joseph retired from Makaweli Ranch in December of 1994 at the age of 64 .He acquired a Hawaiian Homestead lease at Pu'u 'Ōpae and started his own ranch in 1968. He and his 'ohana [family] installed fence around the entire 285acre parcel, and smaller pens at about 20 acres each. The fence posts wer dug with pick, shovel, 'ō' 'ō stick, and spam and tuna cans. On the weekends, after acquiring a post hole digger, he would set out to excavate 50 post holes a day with the installation of the accompanying posts. Joseph also was a kalo or taro cultivator at Pu'u 'Ōpae Ranch. He was a fisherman and hunter as well. He also found time to manage his business shoeing horses for the island of Kaua'i. The business was called, Joe's Saddle and Repair Shop. After fixing a broken saddle in 1952, he became a self-taught Hawaiian saddle maker.

While growing up in Waimea, in his youth Eben engaged in sports [little league throuhout the west of Kaua'i], delivered newspaper, and is a continued member of the Church of Jesus Christ of Latter-Day Saints in Kekaha. The Church offered many activities for the youth and their families which he enjoyed through his teens. He and his family attended the rodeos near the sugar mill's location in Waimea. His dad would rope and his siblings would join in a lot of different activities in the arena. On occasion, especially on Saturdays, they would go horseback riding all the way out to Mānā Camp, where they had a swimmining pool there. They used the old government road adjacent to the backdrop of the mountain range from the Mānā Plain Flats, and rode all the way down. They would swim in the pool, then ride all the way back on the highway pass PMRF (Pacific Missile Range Facility). Eben also remembers going swimming in all the freshwater swimming holes in the back section where there were many mango trees at the Kekaha wayside, instead of the Polihale wayside. Eben remembers some of the plants in the area, and describes them. He explains the area in more detail and adds other activites he experienced as a youngster on PMRF which includes harvesting *kiawe* wood for firewood and the wooden posts to secure the fencing on their Pu'u 'Ōpae Ranch:

More towards ... they call it now, the Magazines ... where the Magazines are for the military. The Pacific Missile Range has their bunkers possibly in there ... it's all fenced off, so it is private there, but that would be the location. Also going to Polihale for family picnics and ah ... celebrating some of the holidays ... maybe Easter at times. I remember driving back to Queens Pond as well. I was never a very good swimmer back when I was younger, so I was not allowed to go into the rough ocean, when at times, Polihale can be rough, and then Queen's Pond would be a lot calmer, and little bit safer to swim at that location. So I remember seeing a lot of the ... the old Kaua'i where we still had a lot of *kauna'oa* [a native dodder (*Cuscuta sandwichiana*), belonging to the morning-glory family, a leafless, parasitic vine, growing densely on other plants] growing all along side the roadway going to Polihale on the dunes, the sand dunes. Where now it's a whole lot different with invasive species. As far as the base, the Pacific Missile Range Base Area, we would go on base with permitting to cut *kiawe* [algaroba tree (*Prosopis pallida*), a legume from Peru, first planted in 1828 in Hawai'i, where, in dry areas] posts, which is an introduced species of trees to make fence posts

for our ranch up in Pu'u 'Ōpae. So we have permits to gather wood posts from the base in areas where they needed to cut back some of the invasive species encroachment on their facilities where they would be near the fuel farm or closer to the airstrip. This is again, when I was very young, and remember it going all the through almost my teenage years. Also, in the back of Kekaha where the Hawaiian Homes now has homes there, the latest improvement location, we would also cut firewood in that area. Near that location too, there used to be a firing range ... right now, I think the County calls it MacArthur Park ... would be just mauka [towards the mountain] of the MacArthur Park. So from that location back to the Old Kekaha Plantation Slaughter House, in that range we would be cutting a lot of fence posts as well. My dad would say had cultural significant areas that we would not cut in those areas for respect of what is there ... whether it would be burials or it would be heiau(s) [temple place of worship] in that areas, or special locations where he would pule [pray] a lot, and we would be inspired, or you would have locations passed down through you, through generations prior. My grandfather, Benjamin Pinihakapunilei Manini, Sr., he would go on the flatlands all in back of ... from Waimea to Kekaha when there still used to be swamp lands. And they would oar down with a flat-bottom boat where they would actually catch 'opae and some of the brackish-water fish that would be present in the area. So the water clarity was clear because the land is lower than sea level with the outside sand build up from the ocean. So I was told that the water used to be brackish, and there used to be even salt solidification sometimes on the dried off dirt areas during summertime. But there was a lot of interior freshwater springs that eventually the plantations capped to allow sugarcane to grow in this very marsh area so they dug canals to dry out the land mass so it could be cultivated. Of course, this is just new generations, new ideas, new development and building. I was told through kūpuna [elders, ancestors] in the past that there were certain varieties of kalo [taro] that could grow in brackish water. And then they'd build up mounds on higher locations within this marshy, boggy area where they would actually grow kalo. So at least there would be food and sustainable for the people who would live adjacent to this region alongside the mountain area. Not necessaryy pali [cliff] but higher elevation, up along the whole mountain range from Waimea to Polihale. My stories that was passed down through my family, my grandfather would say ... had a lot of native Hawaiian ducks in the area, possible had nēnē [Hawaiian goose (Nesochen sandvicensis), protected and rare on Maui and in Hawaii uplands (down to 40 at one time and about 1,000 in 1978)] back in the day too because they like to eat the swamp ... the grown wheats.

As a youngster while waiting for his newspaper delivery in the early morning near the laudromat at Hofgarrd Park in Waimea, he observed the following military activity:

So we would have to wait for delivery to come in before we could distribute papers throughout our zone where we deliver, and then we would see the flatbed trailers hauling the exposed test fire or dummy torpedos ... it would be exposed, and they would just haul it right on the road. And that was a normal thing as was back in the day ... a lot of the things they would do, is not like the regulations we have now. Occasionally now, if it is hauled on the road, it's on the same trailer, but it is contained. It's usually blocked off, so you cannot see what it is. So we would see the propellor on the back and the thing was ... you know ... well over 30 feet long ... and sometimes there would be two or three in back on the trailer hauling back towards the base. And sometimes I think they would pick it up at Port Allen which was retrieved after shooting. And then, I don't know if they rebuild it or ship it out, but that's all classified, but it is all part of their training exercises that they do possibly year round or during RIMPAC when they have numerous ... On Ni'ihau possible the early '80s where they had to install radars to see any encroaching enemy from the backside of Ni'ihau due to the curvature of the Earth. The satellites was not as great as it is now, so I don't think they need that feature anymore ... unless, the satellites should be disarmed, and you may have to go back to traditional ways ... with scanning the radar. Also, I recall a lot of our area out here ... although it's classified, there is a lot of submarine activities in our waters around Kaua'i, but usually around Nihoa and Ni'ihau. On occasions we would be fishing back in the '80s and '90s on the fishing boat in the channel between Kaua'i and Ni'ihau, and we would see submarines that would surface. Occasionally there would be retrievels of test fire torpedos that they would retrieve that is all a part of their training that they go through whether it's weekly, monthly, or whenever it's called upon for doing.

Eben recalls another story passed down in his family about the 'ōpae, Menehune [legendary race of small people who worked at night, building fish ponds, roads, temples]:, and artifacts once used by the Menehune and the physically larger statured men who came on the voyage to Kaua'i with Hawai'i Loa, and also the spiritual energy or mana which he felt in certain areas. He also pointed out a site to archaeologists:

Another story would be linked to all the 'opae that was linked to the whole region of this flatland, marshy areas would be ... if you look mauka [towards the mountains] where we are located to the north, there is a big hill, it is called, Pu'u 'Ōpae. The reason for the name Pu'u 'Ōpae is that this is the location where all of this 'opae shrimp flourished in this lowland was gathered, and exchanged on the top of that mountain ... with the mountain people ... Menehune or other people that were there. Some people say, "Menehune is small." They're not small ... I would say, "They were maybe smaller than the migration that came with Hawai'i Loa which they may have been seven or eight feet tall." But I believe the Menehune would stand about my height, which is a little bit over six feet tall, and not little minaiture dwarfs ... that's my personal opinion. They would be small yes, smaller in stature, yes. But I found some of the artifacts up our property from ancient times, and they would fit in my hand a certain way ... so knowingly ... probably the person using it would be similar to my stature. Also, my brother has found very large adzes in the past ... kind of showing that the person that had carried it must have been very large, maybe close seven to eight feet tall and well over 300 pounds. Artifacts that I knew about, would be nearing the pu'u [hill, peak] I mentioned ... Pu'u 'Ōpae. Yes, about five miles inland from our location. Some of the archaeological sites in the museum, in the Kaua'i Museum would show villages near this mountain range that I talk about. There is this specific energy that some people may admit to or some may not, but definitely there is different energies you would feel at times in this location where you can almost feel welcomed or almost denied to be in the location at that period of time. And I relate it more towards moon phases that can change the outcome of your presence. At times it can be very uncomfortable when you just know, "I have to leave." I have experienced that in numerous places on the island. This whole region that we are discussing today, and also in the deep Alaka'i Swamp near the summit I've felt these energies as well, because I have worked in conservation professionally for 12 years. Working with rare and endangered plants, and invasive species. That I was doing during my age of '40s, right now, I'm shy of 60 years old. As far as more artifact down lower, there is still some of the old, ancient walls where the people may have had homes or may have had hale [house].

I pointed out one of the *hale*(s) [grass houses] where archaeologists came down about a year and a half ago with the Department of Hawaiian Homes for their project for the hydro-electric. They measured it out, and they claimed to have found, or what we have identified as canoe *hale* where they would build canoes. As a little boy, I would ride my bicycle and walk a lot in this mountain range up here, and there was a lot more walls back in the day. But over the years the plantation needed to make more sugar for their expenses ... to be more profitable, so some of the walls that were there, were eventually removed and sugarcane was planted in the areas. I did go with a few archaeologists to try and find the locations that they had actually recorded on the GPS mapping, but all of the sites were sort of leveled down. But I will explain what I would have seen back in the day, this would have been back in the early '70s. And then now ... of course ... it's not present anymore.

Eben was a mechanic on the island of Kaua'i for at least 25 years for Sears and Napa. Now he is a mechanic at the Līhu'e Airport and a tour guide. Among his many interest, he enjoys the outdoors, hiking, farming, ranching, and operating heavy equipment. Eben is an active member of the community who does volunteer work for several different organizations dealing with youth sports, and outdoor education. He is a member of the Kaua'i Master Gardener program (MG). The Kaua'i Master Garderner (MG) is a volunteer program andministered by the University of Hawai'i College of Agriculture and Human Resources (CTAHR) Cooperative Extension Service (CES). "Kaua'i Master Garderners are trained volunteers who assist the University in its mission to deliver relevant, research-based, environmentally sound horticulture information to the public. Through community outreach and education, they strive to promote sustainable

gardening practices and environmental stewardship on Kaua'i (Keach, 2023). He also is an active member of the Kōke'e Resource Conservation Program (KRCP), a program near and dear to Eben. "KRCP is a volunteer based alien species control program sponsored by the Garden Island Resource Conservation and Development, Inc. Service learning projects connect all ages to nature by working in Kaua'i's magnificent but fragile native forest." (Kōkee Resource Conservation Program, 2023).

As an avid outdoors man, Eben experienced many wonderous and somewhat interesting archaeological sites and places where  $k\bar{u}puna$  [ancestors, elders] onced lived in his travels on the ' $\bar{a}ina$ , and recounts some of them:

So one of them ... [referring to the valleys of be Hale'ie'ie or/and Hā'ele'ele] there are actually terraces in that valley where looks like people either lived or farmed. That is the location I'm pretty sure if it is the valley I am thinking about or referring to ... that's where the plantation back in the day piped the water that came out of the springs and out of the mountain past these archaeological remains ... where I was told that people lived there, but eventually they had no water because they took that water for the Mana Camp which house the plantation workers. So there are still walls that are in there that were from the people back in the day. There is also another link ... in the split in that ... I believe in the Mahana Valley. In there ... there were also archaeological sites that I remember seeing back in the day when I would walk all the mountain looking for military bullets ... chuckle] ... and also, the miltary ammo cans we would find, and my dad would use it as little tool boxes ... the 30mm and 50mm cans that the Vietnam and Korean War Era ... they left a lot of this debris back on the property. As it comes lower, there is still some fruit trees, some Native Hawaiian orange fruit trees that are in some of these valleys that is still present till this day. A lot of them died off due to the cattle that was raised all in the same land area that the plantations raised for almost a hundred years, they had the area doing ranching. We do ranching above it in a different section of this property. There's another area that ... it's alot right now, that's why I'm trying to think ... Kaunalewa, the Valley of Kaunalewa ... where it comes out ... that particular area has walls in that valley too. On the ridge line where the plantations used to do sugarcane ... as a little boy I remember seeing walls ... and then some of the walls in this day and age is gone. It may have been pushed back or removed for planting sugarcane. But I recall seeing numerous walls in the area in the '70s, and now maybe there's just a few left. I pointed it out to some of the archaeologists and at least one of them said it was a canoe hale [traditional Hawaiian house or building] up on the hill. I would think there is more along the way. In my opinion, I would think there is more because different ridge lines we would find a lot of the old artifact, the adze ... used to dig out the canoe or harvest the wood from the forest. We had back in the day, large koa [the largest of native forest trees (Acacia koa)] forest. There's areas where there's quarries, where they would make the adze with the basalt rock. So you would see all of the chippings piled up where they would actually shape the stones, the artifacts. They would turn the stone into an artifact, mostly adze for digging. And at times, we would find some unfinished, then some fully finished, and some then broken or damaged from being used, and maybe it would crack. But all of these are still present up on the 'āina [land], in these hills, and in the valleys..

Among the places he has been, is an intriguing spiritual realm, a warning told by his father, he has seen the phenomena only twice in his lifetime (although it was not a grass hut), and is fortunate to live and share his sighting. (Keao NeSmith had an aunt, Aunty Maha who also shared a very similar experience with him):

In Kaunalewa was a story that my dad told me about a grass hut that's supposed to be on the plains ... on the flatter area, not on the hill. And he would say ... if I see the *hale* [traditional Hawaiian house or building], not to go to the *hale*. I never saw the actual grass *hale*, but I did in my lifetime twice, see another structure that is near where this *hale* should be. The house that I saw was very large, like a mansion. And it was two stories. ... I was between 18 and 19, the first time I saw it. And then the second time, I was near 50 years old. I saw it at least twice. The house still looked the same, yet if you come another day, the whole area back when I was 18, was sugarcane. I would tell

my dad, I saw like a manager's house or something ... in the middle of a field. And it's all cane. It's just back to cane again. In the modern time when I was about 50, it was corn. But that's the thing ... you see it ... And it was there. And I couldn't understand, but I remember my dad saying don't go to it, because if it disappears, you may disappear with it. What I remember seeing that area which is on the plains and heading back towards that mountain range we are relating to ... I think ... I touched on everything on what I saw, and how I felt, and what I heard in the past ... as far as the grass hut, I never saw the grass hut, it was always a modern structure that was magnificent ... really, really beautiful. I mean it's almost like very attracting where one would want to go, but when I was young ... it's like you should't go, because it is like we don't live in that kind of location, and so you're not welcomed to go ... but it was welcoming when I saw it.

Eben shared another story shared by his father about the singing of spirits, *heiau*, invocation enlisting the help of Heavenly Father, disturbed burial caves, and he expresses the mindfulness people should have regarding where sacred sites are or would be although they may not exist visually, they may have a spiritual existence:

Another place I want to relate to is further back here more where the traffic lights was back in the day. So there was a heiau [temple, place of worship] on that hill as well .... one of the Pō heiau(s) was back there. Hukipō is there too, I remember my dad sharing a story ... There's a lot of big old trees that are still present there. There was burials in that backside hill mountain range over there, and I believe there are still some today, iwi [human skeletal remains] inside the mountain there ... in the 'āina [land] ... in the tunnels or caves that might be there. So that particular area ... I remember my dad sharing a story that after they buried one of the kūpuna [elders, ancestors] or men, that lived in this area, he passed away ... what they did was, they buried him there, and they would always hear him singing. He would sing regularly and it would be so loud, that a lot of people in Kekaha Town could not sleep because it would be that loud. Echo through the valley and then come on out. So ... according to my dad, they took his body or his iwi, and then they moved him up into Waimea Valley. I cannot tell you the exact name of the location where they buried him, but I know if I was to drive up there or walk up there, I could tell you exactly what valley it is in. In the location, till this day, if you go up there ... occasionally you would hear singing in the location ... Hawaiian. Acapella ... You can hear him, just singing. You can hear this language, just going. And you can be thinking like, "I'm hearing something." But I was told ... Singing or chanting ... it's a combination. And you can still hear him, and according to my dad, it's the person they moved from Kekaha to that location. It didn't happen before. Now there's also another location near where I grew up alongside the mountain, where it's right under Panini's, which is a heiau up there as well. There's also singing ... just below the houses ... That heigu [temple, Place of worship] is present in one of the people's yards. It may not be approachable how the property lines are ... it supposed to be a flat right by the cliff. It looks almost like a little putting range. But that what I was told is the heiau right there. Now ... there also used to be a hale [traditional Hawaiian house, building] right behind it that Bishop Takahashi from the Kekaha Mormon Church would have to occasionally go up to bless, because the people living in the house couldn't go in certain rooms of the house. I think it's for whatever cultural things was happening in that period or in that state ... I want to say ... because they're not in the present yet, they are active in what they do ... they are not allowed to go into certain rooms. So, he would have to go bless, and he would see people in their home ... which was probably this home was built upon this sacred hale or whatever was there ... where they would prepare to present their offering or respectful duties to the heiau itself. But below that, we would also hear singing. So somewhere in there, there is probably a person chanting or singing that still may reside in that mountain range there. A lot of the graves there were broken into way back in the day for archaeological studies. Some of them where shipped off to the Smithsonian Institute. Artifacts and other things were disturbed. Some of the caves was exposed because we had a cattle pasture along that cliff line ... and then we would drive cattle, and we would see the exposed iwi [human skeletal remains] all in this location as well. As far as going down again back towards Polihale, I've seen two areas back in the '80s that had iwi in the upper caves, in the location where ... KIUC [Kaua'i Island Utility Cooperative] wanted to do a hydro line coming down from the upper mountain range. I mentioned it to them, my son and I went back, I could not find the exact cave anymore because there are a lot of wild goats in the area and seems like the goats desecrated the caves where the iwi used to be. Now, I only could find bedding areas of the goats all with a lot of goat poop all in that vicinity. But I did mention to them the approximate location where it was, so if they were to put waterlines or things, maybe to avoid at least where I saw in the past out of respect. Even though it's not there, I still want to make sure we're mindful of what would have been there before the present.

Eben passionately explains stories, history, and his encounters about the negative impact the military induced on the 'āina [land] regarding exploded and unexploded ordinances, fuel contamination, and bombings. He fears for public safety, pollution, and contamination of the 'āina [land] in the Kona moku [district]. Eben took steps through the proper channels to help and bring attention to the issues in order to rectify the problem, and suggests for the U.S. military to clear and clean the ordinances he refers to as "'ōpala [rubbish, trash]".

Ordinance. And it's still not cleaned and yet they still utilize our 'āina [land] in the modern day, but not have cleaned their 'opala [rubbish, trash] of the past. We all know about Kaho'olawe. We no talk about Puʻu ʻŌpae area. They talk about Waimea Valley, Mokihana ... Mokihana was also a target area ... public hunting is done there now. Ka'ula is happening to this day. Okay. And Lehua as well. They might have hit Lehua So, there could be strays. But in our area, they never went in with the metal detectors to check to remove all of the unexploded ordinances. In Mokihana, they burnt the whole mountain back in the day, after the war. According to my dad, as a cowboy with Robinson, they went with the minesweepers and checked the whole mountain for any, and if they found any ... they would put a charge near it to ignite it, and if it was big they knew it was live .... and if it was small, it was a dud or not active. Well, all the years that followed, after that burning of that forest, the grass grew back ... the Provisional Government did not want the community to go there because there still could be some that snuck under the dirt at a different trajectory ... which could be underground. Territory Days. They allowed Robinson to use the area for their cattle for ranching ... so if the cattle steps on it, and blows ... it's a lost to cattle, and not the general public. So, my dad, as a cowboy, Paniolo with Robinson, they would go in there, and occasionally they would find an ordinance. They would tie their handkerchief up in a tree ... a lot of it was haole koa [or koa haole is a common roadside shrub or small tree (Leucaena leucocephala)], and the koa was very tall so you could stand on the top of your saddle seat, and the tree would still be above your head at times. Yes. So, you tie your handkerchief so you can see it from a distance, and then they would call the ordinance from O'ahu to come over. The cowboys would bring them back so they could identify the target, then they would set a charge, and according to my dad ... on three occasions that he knows of ... he knows personally ... one was live, two was duds. So again, the charge is set, is a small charge ... it's a bang ... and if it doesn't increase to a big explosion, then that projectile was already disarmed or dud, maybe it got soiled from water or whatever it might be ... so it's contaminated it can explode. But one of the three was live. Hunting up there, I found projectiles on that mountain, and I would tell the hunters that I know ... according to my dad's story was ... you only ride your horse on the horse trails, because if you go off the trail, you might step on an exploded one that still could ignite with the wake of your animal and yourself. Now, the general public goes there weekly since the 1980s because the State of Hawai'i made it public hunting. And nobody talks about the unexploded ordinances that could be there ... which this is all military again related with continuation of the new extended lease that Pacific Missile Range wants.

So, as you would drive further down [referring to the area at Pu'u 'Ōpae near where the nursery is located for the project directed by Sean Andrade], almost to the drop off on the edges, that's where these things would be located. If you ever go back, you are going to see tall telephone poles ... some of the things I am talking about is right there ... all the big concrete slabs ... some of the metals are still there yet ... it's almost like you could put ammunition projectiles to hang it on racks, it's still there yet. It's history, the thing is ... is that ... is it safe to be there? Or the contaminants in the soil ... has it been tested? Or why is it still there? World War II has long passed. In the area above, we have found shrapnel from projectiles fired probably from the ocean into inland. So, where we are ... I, myself has found a projectile when I was about 12 or 13-years-old. I did not know what I found,

because I found a lot of small bullets like you spoke of earlier, but this was like the mother lode. I found the biggest bullet ever and I was so proud ... so I dug it out of the ground because I see the back half of it and a piece of metal was showing ... I dug it out of the ground, I flipped it over, it was hollow. So, I thought that was a bullet, but it was not. It was actually the projectile from the ocean inland. Yes, so the hollowed-out ... after I got a size 14 boot up my butt from my dad when I brought it home all proud, "Dad look what I found?" And I got a swift kick in my butt, and then a slap in the head. [Quoting his father.] "Because you know, you could have died." Because if the hollowed-out part was solid, when I dug it, it could have blown up, and I would have been dead. I still have that projectile till this day. I remember the tears and the pain up my spine from that boot giving me a swift kick, and my dad was close to 300 pounds ... so yeah, it was a pretty good hit. [Laughter]. [Quoting his father.] "Whenever you see this ... ever ... don't touch it." Part of the projectile had like rifling on it...where it would spin out of the gun. His theory of being an exmilitary said it probably came from the guns from the ocean, shooting inland. So, there's shrapnel throughout the mountain range up here.

I found one of the projectiles ... believe it or not ... my son, on one of his birthdays, might have been 22 or 23 years old ... he, myself, and his girlfriend ... he just wanted to go hike down the ridge line, because he never went down there ... so I said, "Okay, we go." So, we took the whole day, we walked down ... believe it or not...he found one too. Now, the internal part that I mentioned ... the one I found wasn't there, his was hollowed but there was a lot of pieces ... almost ball-bearings all scattered on the ground. So, it was like, it was disarmed. Yeah, like shot gun blast ... like thick though ... like marbles. But it was left on the ground, it was disarmed or deactivated, but some of the remains was still on the ground. What they used to take out the core, I would guess ... yes, of the explosives ... so it made this thing unaffected of exploding ... but he wanted to take it home for his memorabilia. So, I said, "Brah, that's a long walk." And the thing is almost like 40, 50 pounds of heaving steel. And he carried it all the way back out, because that's his. So, in our family we have two, one that I found and he found as an adult. But it's there. And occasionally you will see the. head or the trigger mechanism which is made of almost brass. When it blows, its's almost like lead, and it flies. And I found one of those on the roads when I was repairing the road. It actually, unturned ... almost like a compass with a reading...almost like lat. [latitude, long. [longitude] numbers ... And before my dad died, he said they turned that dial for the coordinates of where that projectile supposed to hit. So up there like I said, eventually we are going to have Native Hawaiian there ... but little do they know ... our area was soiled by the military.

Along that same ridge line [referring to the location near the upper mountain range in the vicinity where he once located some caves] going Polihale from there to the Magazine location where the military base is now, there's still some significant cement areas where some of the artillery guns were set up to defend Hawai'i back in ... probably during World War II. So, the platforms of the concrete are still there. I don't know if the area was ever checked for foreign matter in the soil. This whole area there is all ... supposed to be all Department of Hawaiian Homes property which is trust lands for the Native Hawaiian people. The modern maps that I've seen just a few weeks back in Waimea High School ... the DLNR (Department of Land and Natural Resources) came to present their new ... proposal for Kaua'i ... that lands are not even declared on their personal maps ... its defined as Kekaha Game Management. But it's not, it's actually Department of Hawaiian Homes trust lands for the beneficiaries. I just want to make sure on record that people know that if a State entity is making a decision to allow things to continue, that it should include the beneficiaries as well because it could easily be soiled or polluted by any other activity or unnecessarily mishaps. Along this same ridge line my son and I saw debris on one of the ridges. We went over about three weeks after that ... this happened about ... Military debris. About one and a half to two years ago we went down to go check along the edge of the drop, which is little bit pali [cliff], but visible from the highway ... you will see debris that looks like house debris or hurricane debris, but actually it's a destroyed rocket that impacted the 'āina [land] right there. It's completely blown up with aluminum pieces just scattered all over the hillside. I reached out to the Pacific Missile Range. The person that called me ... within a month he was relocated or reassigned ... so, no follow-up. I called the NTSB [National Transportation Safety Board] on O'ahu, I told them the location, they asked me to contact the base ... because NTSB should know about everything that hit, I did not know if it was

foreign or not, I wasn't getting a clear answer. My son and I went back down the cliff, we started walking the area, taking pictures. Some of the material had identification on it. So, it does belong to the United States. I sent that picture back to the base ... Pacific Missile Range. Eventually they contacted DHHL, Department of Hawaiian Home Lands, and ADC (Air Defense Command) representative. ADC representative contacted me saving, "Oh it's not on Hawaiian Homes Land so don't worry about it." I mentioned to that person, I have the old map from the 1920s and from the 1990s, and both maps show that the projectile or the debris is on DHHL property ... but their new maps are showing different ... as is the new DHHL map that they posted over in Waimea High School a couple weeks back. So, it's just like their changing boundary lines for things that may have happened in the past. I remember my dad being in opposition for some of the rockets they would launch off of Nohili Dunes, because they do it quite regularly. His concern was ... there might be one that goes crazy, and might impact us because we lived on the property. It was always said, "Don't worry about it, don't worry about it." Now I don't know if my dad knew if there was a rocket that actually impacted, because when we did our research, my son and I ... we went online to look how the debris we see, to measure out how much debris, and try to estimate what this rocket looked like ... the rocket would have been more than 40 feet tall. It's a good size rocket and then the one we saw that he could actually ... it was allowed for the general public to see ... it was actually launched off of a ... it was either a ship or a sub ... because they don't show the whole thing ... and it was launching off of the water ... so it's coming from either a ship or a sub ... and it's supposed to be like one of the earlier nuclear type mini warheads. The model of what we saw or what we compare would have probably been Korean War or right after Korean War. '50s, '60s type of rocket, because then it changed later. As a mechanic for more than 25 years, we go through a lot of fittings, aluminums, air conditioning, you name it...lot of the material on it was almost technology from the '80s even though this rocket should have been back from the '60s...it shows how much ahead the technology was before it came to the general public. That's what I was saying because I left ... everything I saw there ... I left ... because it is supposed to be cleaned up and people take responsibility for who it belongs to ... this is a military 'opala [rubbish, trash] ... it should be cleaned up because at some day or age maybe Hawaiian people will be back on the land or maybe not with an award but maybe they should be allowed to visit their home ... like I should be able to visit Nohili even though I cannot. But by changing the boundary to quiet people down, I don't think is the answer ... it's still the military needs to clean their mess.

### **BILLY DAN DECOSTA**

County Councilman, Bill Dan DeCosta (Photo 18) was born in 1965. His dad was William DeCosta a manager at the Makaweli Ranch. He is one of three or four generations in his family who has lived in the plantation community of Pālaka Camp (also called Makaweli Camp). The camp was under the control of the Robinson Sugar Plantation. Billy was born in Waimea and is the fifth of six children in his family. Billy and Drena DeCosta, his Native Hawaiian wife have three children. He has always lived on Kaua'i except when traveling to California for school at Taft College and Humboldt State University. Billy is of Portuguese and Spanish descent coming from a family of plantation stewards.

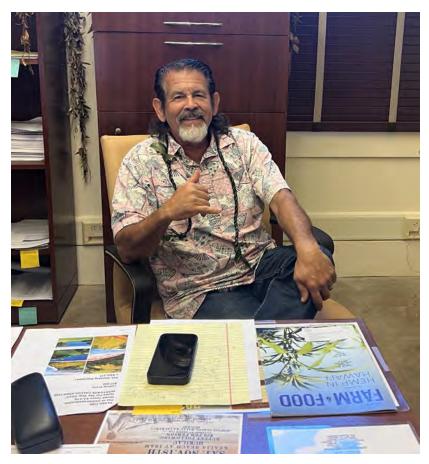


Photo 18. Billy DeCosta. Photo taken in his office on the grounds of the County of Kaua'i offices in the *kūlanakauhale* of Līhu'e within the Puna *moku* on the *mokupuni* of Kaua'i.

Billy's grandfather was a pillar of the community, a Sheriff of Pākala with excellent leadership skills. He explains the motto and standard set by his grandfather?

My grandfather actually, John Costa was the last remaining Sheriff of Pākala who had a permit to carry a firearm on his white horse. He was the sheriff that would ride around and police the town. His motto of being a sheriff was, "I don't tell people what to do, I mentor good behavior, and the community tells each other what to do. The community governs each other." And that's how we grew up right?

Billy describes the interpersonal relationships within the plantation community, and his grandmother's interaction more specifically with her preparation, sharing of foods and cultural remedies:

I know they used to make the tea with the māmaki, and I remember that. I know the one that they call the lonomea [a native tree (Sapindus oahuensis), to 10 m high, with ovate leaves 10 by 20 and 5 by 13 cm; it is found only on O'ahu and Kaua'i], which was one black olive that they could make soap and it was a laxative for the stomach. Of course, the kukui nut [Candlenut] grandma guys used to use little bit of that ... in the poke [diced fish with other ingredients] ... 'Inamona [relish made of the cooked kernel of candlenut (kukui) mashed with salt (perhaps a contraction of 'īna' i momona, sweet garnish)]. That would help with the constipation and stuff. There is a lot of little stuff. Of course, grandma guys they weren't native Hawaiian but because they were from the same community and the different ethnicities all inter-mingling ... so maybe when my grandmother would share sweetbread from the Portuguese side, or my mom's mom Trinidad Martin Escobar, when she would share her Montecao ... a Montecao is a sugar cookie, and is almost flaky, and it's made with homemade alcohol ... so when they would bring the Montecao, the Japanese would trade the sushi...the Filipino would trade the Pinakbet or the Dinuguan with the blood meat ... and the Native Hawaiian, they would trade the *poke* [diced fish with other ingredients] with the 'inamona [relish made of the cooked kernel of candlenut (kukui) mashed with salt (perhaps a contraction of 'īna'i momona, sweet garnish)]. A couple times my grandma would have a shell lei [necklace or garland made of shells, flowers, leaves, and/or feathers etc.] on the shelf, and we would be like, "Oh grandma what is that?" "That would be from one of the Ni'ihau families sharing because they were so appreciative." At one time we would think, "That's just one shell lei, oh, easy, we can go pick the shell today." Today that thing is worth more than gold. Yeah, they worth more than gold.

I remember growing up, we did not go to the hospital all the time. We had ' $\bar{o}p\bar{u}$  huli [a "turned stomach," believed caused by falls, especially of small children, resulting in a kink or turning of the stomach, with attendant vomiting; a symptom is said to be a shortening of one leg; the cure is massage and binding of the stomach; this diagnosis and treatment are said to have been learned from the Portuguese], and the Hawaiian aunty would come and rub 'em with here oil, salt, and bless with the ti leaf. I think the missionaries will call it 'bush' or the stomach was in a knot. The ' $\bar{o}p\bar{u}$  huli stomach they turn 'em and massage. If you go to one western medicine, they would operate and cut the gut, and sew 'em back together. There is so many different ... I have had injuries growing up that we blessed with the Hawaiian doctor ... rub the shoulder and pray, and it goes away ... it's amazing. I ain't saying it's better than western medicine, but it is an alternative. I experienced it, and the generation before experienced it. It's because it's real.

Aunties and uncles  $h\bar{a}nai$ (ed) [fostered, adopted] us they tell us what to do. "Eh, boy you get too much fish in the net. Boy, one throw enough, you get 32 fish. What you going do with all that fish? No be throwing again." Before we no sell fish, nobody sell fish, maybe the 'ahi [Hawaiian tuna fishes, especially the yellow-fin tuna (*Thunnus albacares*)], because that's big fish, good money. All the reef fish, we poke fish, dive, the 'uhu(s) [the parrot fishes, of which *Scarus perspicillatus* is among the most abundant and largest], the *kala* [surgeonfish, unicorn fish, Teuthidae], the *nenue* [Chub fish, also known as rudder or pilot fish (*Kyphosus bigibbus*, *K. vaigiensis*)]. We no sell fish.

Our whole mindset is different. How we take care our own kind, our people, take care each other, take care the land. We have a connection to the land. We feed off the land. Our food come from the land. People no understand that because for generations they paid for their food

His mother's family had acres of land up in the Kalaheo area where they were ranchers and pineapple growers. His father, William who was raised at Pākala, was a supervisor for the plantation. Billy shares growing up in the *moku* [district] of Mānā, some family history regarding his dad and interesting facts about other ancestors in his family:

The plantations brought in the Portuguese to supervise the different ethnicities throughout the Plantation Era. When the different ethnicities came, the Chinese, the Japanese, the Filipinos. They all came with their dialects, and their own ethics and morals. They became a melting pot of this diverse group of people that got along. The missionaries wanted to intervene with a nationality that could work on both sides. One with the large white land owner and two with the ethnicities. Because

the Portuguese had experience with sugar plantations in the Madeira Islands, they knew how to grow and cultivate sugar. They were the luna(s) or supervisors, foremen, stuff like that ... My dad was one of them.

And then my mom's two first cousins, her dad's brother had two sons, and they were *paniolo*(s) [cowboys] on the west side. The plains of Mānā and Kekaha where they raise the cattle for the AMFAC Sugar Plantation. So I used to ride my horse when I was young out in those valleys overlooking Mānā and herd the cattle, put them in the corrals, take 'em out to be shipped out on the barge to go to the mainland. I had an experience growing up in that area in that *moku* [district].

Addie Citrol, she was married to Jack Citrol, but Addie was a DeCosta. She married this European guy. She is one of my dad's great aunties from the Portuguese side. Addie, we believe as a family ... Addie through generations, because the Portuguese was the cultivators of sugar in the Madeira Islands, they needed a boiling point for sugar ... for some reason, I guess ... Jack ended up getting the credit for that. But we have something on our family legacy that the DeCosta Family gets residuals from this formula that they melting and cooking sugar at a certain temperature, crystalizing it. They yield a higher sweetness to the sugar. That was the C and H Sugar.

There was a story going around for many years about Hawaiian's being lazy, the statement started during the time of the Plantation Era, and Billy expounds why the statement is false:

You know there was a facade ... like one bullshit message. Do you know why they bought the Chinese, Japanese, and Filipinos to work the sugar plantations? Because the Hawaians never like work. They said the Hawaiians was lazy. You know why the Hawaiians never like work, you like I tell you why? Because they never understand, what they doing planting sugar, and we no even use sugar. Hawaiians no use sugar, that's a western ingredient ... you think about it. What you put sugar in? My wife, you know why she's attracted to me? The way I think, she loves my train of thought. She listen to me all day. I'm telling you something, one Kanahele man, he had green eyes, his mother slept with a whiteman. That's how they get the 'ehu [reddish tinge in hair] hair and green eyes. The Kanahele man, I think his name was Johnny, he was my father's really good friend. My father was a supervisor and before you carry 90 pound tank ... He told my father, "Willy, you guys killing the kids, the tank too heavy Willy." Gotta get the kine [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] plastic tank. You know what the Hawaiian guy told my father ... That's when they converted to the plastic tank. It was 90 pounds, you try carry ... I carried it in the summertime ... cement ... 90 pounds, the tank filled with the Round Up. The Hawaiian they believe, they not going waste their time planting one agricultural product ... (they not going to) ... eat. Then the western money, fo' [Hawaiian Pidgin language meaning for] buy what? What they needed to buy? So, they not lazy it's a persona they put on the people. So they brought all this other cultural people because in their country, they were being paid peanuts and they were ran like slaves. They all ran away to come here. They were actually slaves too here. Lucky for the Chinese and Japanese who had striked. I believe they were getting paid cents per day to getting paid a dollar a day, something like that. They were only getting paid five cents per day. They strike and then they got a dollar. And then the Portuguese came ... like I told you ... because they were the liaison between the Chinese, Japanese, and Filipinos. They were starting to ... the culture or nationalities started to bond too tight and they could not break their code of how they run the community. That's why our local government was always ran by Japanese, because for long time the Japanese during the Plantation Era, had a hold on how to run things, they were very smart. So, the westerners could not break them, they never could. That's why they bought all these white people in to bridge the gap.

For 10 years in his life, Billy has been an environmental studies teacher up in Kōke'e for the Department of Education. He has been a hunter of pig and goat in various mountain areas on Kaua'i, especially on the west side. He has also gathered *maile* [a native twining shrub, *Alyxia olivaeformis*] and *mokihana* [a native tree (*Pelea anisata*), found only on Kaua'i, belonging to the citrus family] in the isolated

mountain areas as well. He has fished along the shores of the west side including PMRF. Bill shares his experiences and conservation methods:

I know how to pick *maile*. A lot of the *maile* we picked, we twist with our hand, we hold tight, then we pull, and we break the stem with our fingernails so the new shoots come out. My grandpa taught me this. My grandpa always made us carry this sock, like a white sock, we call 'em a durham bag, it was a tobacco bag before. We would carry a pocket of fertilizer, we would get from the sugar plantation, everytime we take *maile* from the bush, we would take one small pinch of fertilizer, throw 'em down by the plant, and that would be for the next guy ... because that *maile* branch with the fertilizer, you already picked the *maile* ... but you fertilize it for the next guy. Amazing how beautiful the *maile*. Hawaiians say, "*Mālama the* 'āina [Care for the land], *mālama* what you gather." Same like when we go hunt, you catch one fat pig, and stay *hāpai*, pregnant, you supposed to let 'em go. It's hard to say that and couple times I never let 'em go, because how you going take the dogs off. But you wanna try and *mālama* your own.

One other one too ... when we would go hunt the goat, and there was one white goat ... we never shoot the white goat. It was called a spotting goat. So you don't shoot the white goat because with the naked eye, you can see the white goat 400, 500 yards away. Yeah, never shoot any animal that is white ... he's the spotter for the herd.

Mānā is the largest white sand beach in the state. We would go out that area during the *moi* [threadfish (*Polydactylus sexfilis*)] season, and fish for *moi*. We would throw net and get '*opihi* [limpets]. We would camp on the beach. Polihale was our retreat on the west side of the island. The east side, they would do Hā'ena and the Nā Pali Coastline, that was their retreat. So, in everybody's *moku* [district] we have an area where we culturally gather and take resources. The Mānā area was very abundant at one time. Mānā is also known for their wild goats that actually come down the beach today. We used to hunt those goats all the time. We have wild cattle in the valley. It's a very good food source. The one thing I believe that most people don't know about Mānā area that during the Plantation Era there was a cold pond ... there was a spring that ejected cold water out of the ground. After we would swim at the beach, or fish the *moi*, or thrownet, or gather '*opihi* we would go take one cold shower in the cold pond. Yeah. Those are ... I think ... memories that a lot of the kids today don't know about that was special. Of course, the great surf in that area that ... Majors Bay and Polihale have excellent breaks out there for surfing.

When they all carrying the eggs. You cannot do that. When you pick lobster, you look at 'em and get all that orange eggs, you got to put that lobster back. We used to take the fin, and broke one fin off the back, and you know why? So the next guy get lobster, "Eh, no more the fin." Then know that this is a mother, because sometimes they no more the eggs.

Akule [big-eyed or goggle-eyed scad fish (Trachurops crumenophthalmus)], the mainland people throw away that fish, it's a bait fish for them. The 'ō'io [ladyfish, bonefish (Albula vulpes)], they throw away that fish, that's a bonefish ... best eating fish. The 'ō'io, lomi 'ō'io. My grandmother them used to make fried fish cake, patties out of the 'ō'io. Akule, we would make poke [diced fish with other ingredients] out of the akule, it's a poor man's poke. Dried akule in the saddle bag when we go hunt, we get the dried akule. We get the dry akule in the dry box with only salt.

The aquatic resources on that side was very bountiful. I must say, there are still good grounds till today actually. We do have access that the base give us and that is very important. It is more of a controlled access. I cannot tell you if it's better or not for the community. Maybe with the controlled access, the fishing and the gathering is more abundant. I believe maybe if it was free-access, the abundance wouldn't be as much ... I don't know. I do know growing up, we did a lot of self-managing ourselves. Our  $k\bar{u}puna$  [ancestors, elders] ... as you Native Hawaiians would say ... would tell us, "You take what you need for your family, don't take more than you need, and leave back." So, I like to practice that till today with my own children. *Ogo* [Japanese term for *limu*, in the same family as Manauea (Gracilaria coronopifolia), a small red seaweed], we did the red *limu*. A

lot of time, a lot of people don't know, the scissors is your best friend when you harvest *limu*, you don't pull *limu*, you cut with the scissors, and you don't cut it too short. The *limu* is supposed to look like waving fans in the air, like fingers. When you cut it too short, you can ruin the *limu* ... and when you pull. Like to do with our sea turtles ... when you get too much sea turtles, they really over graze the *limu*. So everything has to have a balance, yeah? I remember when I was a boy growing up until about seven-years-old, we used to harvest turtle. The turtle go into the bang-bang net, get all the fish, but we bringing the turtle home. That's the best, better than fried chicken. Better than steak on the grill. Grandma would make a pot of turtle stew ... whoa. The fat was green, greenish-yellow. Plenty people don't know that. All of our environmentalists, they don't know that this was the ways of our generation, how we grew up.

Billy expresses his wishes for accesibility to the Mānā and PMRF area to harvest resources, fish, surf, and camp. He also offers ideas of regulating the permits allowed, and suggests a mixer event or night to mingle with the locals and PMRF staff.

You know how we raised off the land ... who wasn't raised off the land, who depend on currency, they look at us as being not as wealthy as them. They have their currency, they buy their stuff, they buy this package of beef jerky or fish jerky, whatever they going buy with the currency, we never had 'em ... only now we getting that mindset. How we were raised was from the land ... you take care the 'āina [land] and it take care of you, the American currency, you no need. They like you feel dependent on the currency. Just like the base, they want us to feel dependent that we need them. I think they need us more than we need them. If you ask me what I like see happen, I want to see them open up some camping on those beaches to local families with the IDs, and we can go back camp. I wanna see more access for surfing and for harvesting fish. They need to stop regulating so much. If you like know the hidden agenda, I tell you ... in reality that's my hidden agenda. Yeah, they provide a sense of security. Yes, they provide a whole bunch of jobs. I don't believe they should be restrictive of all the access, the harvesting, and the gathering of that area.

PMRF are the stewards of that land. They have a responsibility to care for the land. I not just talking about the land, they are responsible to care for the people's cultural gathering and harvesting rights. That's their job. They are only temporary stewards of that place. They need to make sure that the people can still practice what they used to. (There were a lof of people who used to fish out there). Big time. Camping too. We used to camp out there, now we cannot camp since ... 9/11. 9/11 has long passed. Maybe it's time they open up some camping. Because 9/11 has passed. Let me tell you, you can record me on this ... the base, I mean pass the base is Polihale State Park ... the State gives out permits, the permits are taken online, you cannot discriminate whether you local or whether you non-local. Mainlander's can request a permit. Sometimes Polihale State Beach no more room for the locals to camp. But on the base, if they would give out so much local permits to people with one driver's license, then they could let the locals go camp, so just think about that in your cultural survey.

Take care their own trash. They put their trash in our landfill, our County ... right next to them. We like them take care of their own trash. Maybe pay a higher fee for them to put their trash in our landfill. Be more cognitive of what they are putting in the landfill. Red Hill, the spill of fuel ... The fuel they have down there ... how secure is their fuel operation

I talked about some of the surfing access, the camping on the beach, the harvesting of the *moi* [threadfish (*Polydactylus sexfilis*)], the throw net, the fishing, '*opihi* [limpets] harvest ... I not sure ... I know the base has a restaurant, I know they open it to the public, that's nice. Taking care their own trash ... being good stewards of the land with their trash. Making sure that their water source and their fuel source is very well cared for. Their fuel source cannot contaminate their water source. I'm pretty sure it's not underground, it's probably above ground. The transparency of when we have world issues ... one time we had one ... I believe practice missile launch, west side ... RIMPAC ... there was one Russian boat out there, was in the newspaper, Russian boat ... the people deserve to know if there is stuff going down, and if there is this outside countries ... we like know, we no like

wait or hear the week after in the papers, the Russian ship was sitting outside ... we like know ... what if something happens, we want to prep and prepare. Maybe one good one would be ... A night to mingle. They have a restaurant, maybe make ... A night to mingle ... the military can do a little dinner and invite the community leaders, just some community people to come down and mingle, come out with us, ask some questions. Bring some family for a day at the pool. If you going be stewards of the land, then be stewards of the community, and know your community.

# MICHAEL ANDREAS "MIKE" FAYE

Michael Andreas "Mike" Faye (Photo 19) was born in the year 1951 in Waimea, Kaua'i where he currently resides. He is the son of Alan E. Faye, Sr. and Jean Burns Faye. He is the sixth out of seven children in his family. Mike is married to Colleen Vidinha Faye who comes from Kalaheo, Kaua'i. They have two children of the ages 41 and 36.



Photo 19. Michael Faye. Photo taken in his Kekaha Agriculture Association office at the *kūlanakauhale* of Wai'awa within the Kona *moku* on the *mokupuni* of Kaua'i.

His paternal ancestors first arrived in the Kona district of Kaua'i around 1850, in the area of Wai'awa where our interview took place. Michael is of Norewegian descent and explains how his family journeyed here from Norway, and established their businesses in Hawai'i:

Well ... it *kine* [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of started with my grandfather's uncle who was Valdemar Knudsen. Valdemar had come to Hawai'i for health reasons, wound up being hired by which ever king, which ever Kamehameha [Alexander Liholiho Kamehameha IV or Lot Kapuaiwa, Kamehameha V] ruling in the 1850s, and he became the *konohiki* [headman of an *ahupua'a* land division under the chief] of this Waimea district. Primarily, *kine* of like John Parker too ... rid the mountains and area of cattle ... so he, rancher went up, would harvest, and get cattle, rendered them into tallow parts of it, took care of collecting taxes, that sort of stuff. In the 1870's when Hawai'i signed the Reciprocity Treaty

... you know ... everybody jumped on the sugar market. It's kine of like hemp today. Royals and everybody ... and ... this land all out here is all Crown Land ... you know that yeah? So they wanted to grow sugar. Valdemar wrote to his nephew, my grandfather, H. P. Faye, who was in Norway. At the time ... I don't know if I have all the chronology just right but ... they were looking for workers, they being the people in Hawai'i ... looking around the world for different workers. They were trying ... seeing if they could get Europeans to come out here and be field workers. And it just happened that my grandfather's family in Norway, was a fairly successful ship builder and just kine of brokerage company. So they put out a notice for Norwegians to sign-up as contract laborers come to Hawai'i. So they signed a bunch of people up and H. P., my grandfather, H. P. Faye was selected to kine [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of lead the group. He brings them down here to Hawai'i. And comes across the U.S. on a train. They hit the western U.S. just as the silver boom is going off, so a bunch of Norwegians jumped ship, and they stayed there. He brought some here, met up with his cousin...I believe ... on Maui. And they began spreading these Norwegians out to the different plantations. Early on, when the first guys arrived, days...his cousin was escorting a group some place on Maui, on east Maui ... and was crossing one of the little streams, and got washed away, and drowned, and died. So he never liked Maui after that. They wind up coming over here with the rest of them, and tries to get established here. He doesn't do very well with his uncle, and winds up working for the Robinsons ... and back to Maui.

Eventually, he obtained a Royal Lease down in Mānā, and started growing sugar around there. He came in 1880, by 1885 he had established the H. P. Faye Limited in Mānā. Prior to him getting there, there was a rice farmer out here, Pah On. So he would hire ... he would work with Pah On, provide him labor with cleaning the rocks. We got a picture of him. Right below there, where the tunnels are, and its just this rocky field (Chuckles), full of rocks, and no bulldozers or anything. So anyway, he started out there, brought in some other Norwegians to help him manage it. I don't know where they got the laborers from, probably a lot of Chinese, and other Hawaiian families that were living around there. He had a house out in Mānā, eventually married a Scottish gal who was living in Kilauea, Moloa'a actually, and brought her out here. They raised eight children. Five ... I think ... were born out at Mānā, and my father and his next older brother was born at Pōki'i, right over here. And ... believe it or not ... in 1910 ... I don't know what the heck was going on ... but they packed up and took the family back to Norway. Everybody, the Japanese maids that took care of the kids, the Chinese cook (chuckles), and they go back to Norway ... and had one more kid over there. In the meantime, he's traveling back and forth to Norway once or twice a year...beleive it or not. That didn't work out, so he wound up coming back here. And the wife stopped him at Berkley, California, my grandmother, and established herself there. The kids could go to school, college whatever. But he kept coming back and forth to Hawai'i. I think ... you know ... the 10 years or 15 years living in Mānā was way the heck out there [Chuckles.] It must have been tough for her.

But in the meantime ... in the 1890's, all these independent growers of sugarcane consolidated into Kekaha Sugar Company, and he became the first manager. So I would like to tell the story that, "Here's this Norwegian coming to the Kingdom of Hawai'i, realizes the American Dream in the Republic of Hawai'i." [Chuckles.] Yeah, he choose the Hawaiian Dream, in the Republic of Hawai'i. I think one of the reasons he left ... I don't know ... if he could really fathom the American Democratic Democracy. He lived ... king on Norwary, king over here, strong rulers over here. But anyway ... his kids, the eldest ... So H. P. Faye during WWI, there is a really, really strong Anti-German sentiment going around. And the factory and company for Kekaha Sugar at the time was H. Hackfeld and Co., who were mostly owned by German nationals. And the government apparently was going to take over the company because they didn't want to have the German nationals. So he and a couple of people, he was getting wealthy at that time, got together and purchased it, and renamed it AMFAC or American Factors.

So as time goes on ... the eldest son, eventually rises and becomes the head of AMFAC ... the number two boy, runs Kekaha Sugar, which in the 1930s was considered one of the most valuable assets the territory had ... it was just spitting out money. My Uncle Lindsay [faye] ran it from about 1930 to about 1960 ... I think ... and coincidentally, his son ran it for a while. And now, I'm

basically running what's left of it ... as far as ... the infrastructure and assets is concerned, not the farming part. My father ran Waimea Sugar, which is in Waimea, that H. P. had purchased along the line. That plantation had been started by the Rowell family, the missionary Rowell family ... As all these plantations, they needed water, and so they dug or installed the Waimea Ditches, basically the second ditch taking water ... you know ... out of the Waimea River ... first being the Menehune Ditch, Peekauai [pronounced: Pe'eka'uā'i], and then Waimea. And I think ... H. P. was like ... had to be super jealous of them being able to pull the water out. So, I think he purchased it with the intention of incorporating it into Kekaha. That never happened so it ran independently. He buys it in the early 1900's. By 1908, he had already designed, constructed Kekaha Ditch coming out of the Waimea Valley ... which ... you know ... brings water by way of gravity ... all the way to Polihale, it's 29 miles. So if you kine [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of layed it out from Kekaha to past Hanama'ulu, all by gravity. He ran Kekaha or he had people run it for him ... then ran Waimea, and he died in 1928. As I said, the boys, the five boys in one fashion or another, continued ... you know ... within the business. One of the questions ... I'm the second youngest of the second youngest. So, it stretches way out. It's not my great-grandfather, it's my grandfather who did that ... so that's my paternal connection over here.

Michael's maternal ancestors are of Irish descent, the McCarthy family. His grandfather is Charles James McCarthy who became governor for the Territory of Hawai'i in 1918. Mike recounts his maternal family's connection to Hawai'i and interactions with his 'ohana:

On my mother's side, she was from Honolulu. Her grandfather was Charles McCarthy. McCarthy came from ... I don't know where the hell he came from ... he winds up in Hawai'i, he winds up working for Lili'uokalani. And ... is supposedly ... I don't know how true it is ... they said that he was in charge of the palace guards at the time of the Overthrow. He was supposedly on King Street ... or something like that ... in Honolulu. He heard the marines marching, the cadence of their marching ... swoosh ... swoosh. So, supposedly he goes outside, and goes in the middle of the road, and uses his whistle to have his troops fall in behind him, and they don't. So, he retreats to the palace and that's when Lili'uokalani says, "I'm going to be in the hands of ... the government's going to take care of me," blah, blah, blah ... you know ... "Save yourselves." He dashes out, he hides out in the boonies in Pearl City. The next child that is born there is named after ... her name is Pearl Lydia, after Lili'uokalani's name. He eventually becomses governor of the territory in the 1920s. And actually is the first person to have, the first Governor to live in Washington Place after Lili'uokalani dies. And they disperse her belongings. In fact, we have quite a bit of family in the Puget Sound area. We don't get together with that side of the family, but when we do, the conversation often is surrounding, "What are we going to do with our stuff from Lili'uokalani or 'Iolani Palace?" I usually recommend (for them) to send it back to the palace ... you know ... nowadays. They possess some stuff, yeah. For McCarthy ... I think ... he didn't really like the idea of people picking over Lili'uokalani's personal things. There is supposedly a whole list of stuff they sold. I think one of the family members has a list, and he buys a tea set ... what the hell your'e gonna do with a tea set ... you know? [Chuckles.]

He makes it clear that he is not an ocean person. When asked about ranching, Mike recalls growing up with cattle and his mother's fondness for horses:

We had a small ranch up in the Kalaheo area. My mother wanted 10 acres to raise horses. My father said, "Horses will never make a poor man rich, and it will make a rich man poor," something like that. [Chuckles.] So we had horses and stuff like that. My mother was very active in saddle clubs and stuff like that. She died really, really, young. She was 46, and so I was 14 ... I think ... 15. Yeah, so she died really young, and that kind of ended that whole ranch thing. We eventually sold it. Our home was right on the water, but Waimea has really dirty water from the river. I guess my parents were really busy. They instilled the fear of God in us, we are not to go in the ocean..don't go in the ocean.

Michael talks of the influence from growing up around the different ethnic groups and his interactions during the Plantation Era. He also explains how his views and appreciation for different new cultures changed while attending Carnegie Mellon University:

It was structured. I think everybody worked for kine of a purpose. Waimea Sugar was a small plantation, we only had 45 employees. Kekaha, next door, had 300. But I would call it structured. We grew up pretty much knowing the ethnic differences ... everybody teased each other about it..about each other, but nobody disliked anybody. To me it was a great upbringing. I gotta say, I was definitely privileged because I was the plantation manager's child's son. So, my life was different from everybody else's. But you know what? We always wound up in the camp playing agates or things like that. [Chuckles.] Like I said, it was structured, your org chart was very structured ... you had a manager, you had your office staff, you had your field supe, factory supe, your supervisors, and all the people going down from there. Everybody worked ... I'm a Buza man, so I work for Mr. Buza ... or I work for Peralta, something like that. I think it was somewhat stable, because you knew you were going to get paid every week or ... I cannot remember how pay was back then. I would say, disciplined and organized ... and culturally diversed, because you had all these different people around ... from Japanese Bon Dances to  $l\bar{u}$  'au(s) to Filipino things. I grew up with ... we had yard men, Joe Tsuyama, an old Japanese man, and Jose Cuaresma. Before before I knew English words, I knew all the bad Japanese words and the bad Filipino words. But you grow up like that ... you think your'e culturally astute to all these different things. I went to Carnegie Mellon University in Pittsburgh, kine [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of like the first time I left Hawai'i. And there were two groups of people I have never ever come across in Hawai'i, the Jews and Black people. Pittsburgh was half Jewish and half Black. [Laughing.] That made me kine of...and when people come to Hawai'i how different the things are over here, because I didn't know anything about this kosher food and stuff like that, that they eat over there. I had no idea. I had a better appreciation for visitors coming over here and asking, "How come you guys eating salty seed?" Stealling money to buy Yick Lung Li Hing Mui, or the big bag \$ 1.75. [Laughing.]

Throughout his lifetime Michael had many jobs from working in the fields for the plantation at a very young age to managing family owned business'. He graduated from University of Hawai'i at Mānoa with a degree in Business Administration. He elucidates his work experiences in the following:

So for me, I was ... you know...born and raised in Waimea, Saint Theresa School ... Kine of connection to this land ... in the day ... in those days when you turn 14 or 15, you expected to work at the plantation in the summertimes ... so I started off at Waimea Sugar, me and three or four other plantation kids, boys. Then my father died when I was in high school. I sat out one year, and one of the foremen from Kekaha, saw me walking around. Hong Min Hee saw me walking around, and he goes, "Mike what you doing you not working?" Chinese guys ... you know ... "You supposed to be working." We had sold Waimea sugar to Kekaha by then. "No, no, I can get you one job." "Supposed to be only plantation employees." "No, no, no, no worry, go see Spike Roduit." [Chuckles.] So sure enough, I go in there the next Monday, I was issued by hoe, my file, and ... So I spent the next six summers ... I think ... working over here, and it was a ... You know ... I knew I wasn't going to wind up being a huki lepo [pull or tug dirt] or something like that. So, I took it as an opportunity to be ... you know ... out and about. Our job was ... they call us the huki lepo gang, and it was kind of the replant. So with sugar, after they finished harvesting, they would either plant it with a ration crop right ... are you familiar with that? They just let the cane come back up ... reshape the rows, make it come up, but where the trucks went and everything, it's usally mashed down, and ground is hard as cement. We would have to go back in there and plant the seed ... the cane by hand in those areas, or whereever it was like bolohead. We hated ratoon fields because they were hard work. The planted fields, they would just ... do away with the old stools, and just replant ... with cane, those were way easier to deal with. I did that for more than six years. It was good fun. I probably walked down every square foot of this property [chuckles] at one time or another.

My first real job was at Pioneer Mill, Lahaina. So, I got hired over there as a AMFAC trainee ... in the new-fangled computer, the IT [Information Technology] Department. And to be honest, when I was at UH, I paid some kid to do my deck of cards, because I couldn't make it work. [laughing]. This was 1975. But they had a little computer, they were called, Data Point Computers. It was a real small thing, 16k max of storage, but pre-dated Microsoft, and predated Apple. It was a pretty cool machine. AMFAC was trying to get computers into each of their plantations. At that point, I did not work for the plantation, I worked for Mother AMFAC. Which is also *kine* of cool because we'd talk to our bosses...there is one of us on each plantation...we talked to our bosses about, "We gotta get together ... you know ... so we can learn." We would travel regularly to all the different plantations to compare notes and stuff. So, I got on here to Kekaha, Līhu'e ... used to be KLOPP yeah ... Kekaha, Līhu'e, O'ahu, Pioneer, and Puna. So we would fly around and check all that *kine* [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of stuff out. And it got us to go in to all the departments to see if we could somehow improve the paper flow. Then I got transferred to Līhu'e Plantation. And Līhu'e eventually hired me, because I worked there for ... I don't know ... five years or something like that ... until ...

So, Waimea Sugar remained in the Faye family hands. And H. P. did something way different than most of the other *Haole* [White, Caucasian] at the time ... instead of setting it up as a trust, he set it up as a corporation. And so from small kid time, we all owned stock in this. We became very kine of corporate literate. While we kine of stayed within our family ... siloed so to speak ... still till today, there is political intrigue and stuff ... who gets on the board ... who's going to be chairman ... and all that kine of stuff. The place never made any money. Nobody got rich off of it. But the family sold the Waimea Sugar Plantation operations to Kekaha. They kept the land. 1981 ... I think it was ... '80 or '81 I got hired by Kikiola Land Company, the successor company that owned the land underneath. It was like totally back water ... kine of a piece of property. We had the old plantation camp, the remains of the mill, the remains of the dairy, which is now Meadow Gold running it. Anyway, I kine of inherited managing that job. I hired an architect planner friend of mine. this guys Bob Fox to update an old master plan of the property that my father had created back in the early 1960s ... it's a 20-year-old plan. So, we got that thing updated, presented to a meeting, and basically the Board of Directors gave approval of it. Two weeks later, we got hit by a hurricane, the first one. 'Iwa ... kine of bust everything up. But from there ... one of the elements of that master plan was a plantation style hotel. Just a one-page, eight-and-a-half-by-eleven drawing of just the concept of some camp houses, but from there we grew Waimea Plantation Cottages ... came out of that whole thing. And so, I ran that until the family got tired ... until the next hurricane came. Then we had to rebuild it all over again. The family intrigue and politics, and all that ... basically they wanted me out ... so I cut a deal with them ... I developed ... we did all the work ourselves inhouse. So kine of developed the construction ... a maintainance department into a construction company. I said, "Sell me the construction company, give me a contract to do the maintenance for a couple of years, and lease me the land. I'll be out of your hair." So my wife and I formed, Kikiola Construction. We had Wranglers Steak House already. So from 1996 until 2018, I did Kikiola Construction. That was kine of fun because we got into structural moving along the way. Currently, we do most of the structural moving in the state. I have an office on the Big Island. Moved buildings over there. Got into working on old buildings so we became experts in single-wall construction and historic buildings ... and ... all that kine of stuff.

Then I got hired here ... my predecessor, this guy, Landis Ignacio had run or had been involved with running this place for like 20 years. Kekaha Ag [Kekaha Agriculture Association] comes about ... you know ... when sugar went out in 2001 there abouts ... one of the things I did when I was at Kikiola Land Company ... we had several hundred acres of cane land ... when the long sugar leases came up, I moved them from sugar into the corn, because they were paying way more money. I just thought it was *kine* of a cool thing to do. I *kine* a think ... I had something to do with the establishment of the corn industry out here. 'Cause when the sugar went down it reminds me of ... you know ... the Oklahoma Sooners when they shot the gun, and everybody went out to grab their land claims? *Kine* of the same thing. These guys, on their own, partitioned the whole plantation up, and who was going to get what. Corteva, Pioneer, Syngenta, all people had leased land to ... got them going ... Wally Johnson, another guy up here ... Robinsons from across the river. They just

kine of came across the river and said, "We're taking that cane," that was growing. This group of about five or six companies formed. They realized that the infrastucture was too much for any one company to handle. So they created Kekaha Ag Association to run a common intrastructure which involves all the roads, our drainage ditches, the irrigation systems, Kōke'e Ditch, Kekaha Ditch or Waimea Ditch ... which ever you want to call it ... the power plants ... what else did we do ... Pretty much that ... we got that organized ... got it ... In the meantime, the State transferred the land from DLNR [Department of Land and Natural Resources] into the new Agribusiness Development Corp. Kekaha Ag Association, which is a non ... it's a not-for-profit agricultural cooperative. And it's taxed by the IRS and the State. But anyway, they formed that, Landis was running it. There is a connection there too. Landis' grandfather, was my fathers's right hand field man. The Portuguese, they can either take the mother's name or the father's name right? So half of the kids, were Pavao and half of the kids took Ignacio name. Landis always had this dream to put hydro-electric plants along the Köke'e Ditch. The Kitano hydro goes way back to the plantation days. I think my uncle probably started it, or it started when he was running the plantation I should say. It was kine [Hawaiian Pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of on the 'back burner'. Landis tried to do that. By the the time they tried to do that, or maybe before ... the laws of the United States and the State of Hawai'i decided who had preference to water. The water rights is a pretty complicated situation. So, what happened was Kauai Electric or KIUC [Kaua'i Island Utility Cooperative] did not like the idea of a competing power generation entity, so they teamed up with Hawaiian Homes who has a constitutional prior right to water. We got sued because they were wasting water. We're taking the same amount of water that were were taking like during the plantation Era, like 50 million gallons a day, and basically spreading it around this land down here, the Mānā Plains, and then pumping it down into the ocean. So Earthjustice with several local groups sued, said, "You are wasting water." The end result was the Waimea Watershed Agreement. That was negotiated with Landis. Landis had all that possibility of hydro basically pulled out from under him. My personal feeling is that pretty much killed him, because within a few months after that settlement agreement was signed, he just dropped dead. So, they looked for somebody, took them about six or eight months. I knew some of the management people over here because my construction company did a lot of work around here, and they said, "Mike we haven't seen your name as an applicant." I said, "Yeah, I know, I'm having too much fun doing what I'm doing." They said, "No, no, no, you should put your name in." So I did, and I got hired. I been here ... for what ... six years now, five and half years.

There were three main seed corn companies. This is all the GMO [Genetically Modified Organism] research kine of stuff that people don't like. Pioneer, Syngenta, and then BASF [Badische Anilin und Soda Fabrik]. For some reason BASF had an idea to do corn research. I guess there's lots of money in it. So they put this building up, designed specifically for what they wanted. In the seed corn, you have what they call 'regulated' seeds, and then 'non-regulated'. So, this building, what we see on this side, is pretty much duplicated on the other side. The other side was 'non-regulated' and this is the 'regulated' side. You can't mix them, and the Department of Agriculture really keeps a close eye on what happens. Anyway, they decided to get out of here, basically sold it for a song to a family owned, a large family owned seed company, Beck's ... Beck's Superior Hybrids. Becks ran it for a few years, and they decided to get our of here. So I thought ... I was licking my chops ... and said, "Cool, I'm gonna get this building basically for free." I was willing for offer, or have Kekaha Ag offer ... you know ... couple million for it. As soon as they saw someone being interested in it, the price started going up and up. Eventually, people convinced the DOE [Department of Education] to buy it, because they were trying to do these ag. institutes on each of the islands. They were going to have to build them from scratch, they figured each campus was going to be 20 plus million, and could get this for a quarter of that. They bought it kine of for this ag institute, but at the same time they are trying to get the farm to school program going. Farm to table. But they couldn't really make it happend because of all the procurement issues ... you know ... with State run stuff. So the best thing they thought to do, was buy this, turn it over to us to develop and manage on their behalf. So that's what we're kine of doing. I'm in here under a use of facilities agreement. Which is kine of like, if you were to go sell brownies at a football game ... you know ... [laughter].

BASF is gone. Pioneer merged with DOW Chemical. I don't know why the corn companies are mixed up with chemical companies. I don't know. They merged and then they reorganized themselves. So Dow Chemical and Pioneer Chemical ... I think ... became DOW Chemical. The agro-science part got spun off as a wholly owned corporation called Corteva. Syngenta, across the street, huge company, got bought out by ChemChina. Those kinds of deals that to go through the United States something or other. They went, "No, no, no we cannot have Chinese owning a farm right next door to PMRF." The other syngenta property is up in Kunia, overlooking Pearl Harbor, next to Schofield Barracks. [Laughter.]

They said, "No, no, no you can't do that." Syngenta had to spin off the Hawai'i operations. Another large private family company, Hartung Brothers bought the Syngenta interest in Hawai'i. So, that's all we got left down here, is those two companies. They are way different than they were even 10 years ago. Syngenta across the road, is run by a young local guy, Josh Uyehara ... who is between my two children in age. Apparently, I don't remember this, but he used to come to my house, to our house, was friend of my son's, and they used to play video games and stuff. I probably must have been yelling at you guys to get out and do something healthy, instead of these stupid video games. He's my boss now. [Laughter.] They are doing alfalfa, they do all kinds of stuff. Way different company. Corteva they are moving a lot of their stuff into the shadehouses, into the greenhouses. My construction company put up a whole pile of them in different locations. It's clear that they can do their agriculture research better within these very controlled environments. When the plant gets about that big (hand gesture), they know everything they need about it. They grow some out in the fields, but way smaller footprint. Then you see how they farm versus like somebody like Aloun, big vegetable grower. On O'ahu. They got squeezed out of O'ahu so they are here. We helped them get into ... on Robinson property, which is like gold. Extremely good, Robinson's got a lot of water, higher lands which is way better than these plains out here. On the other side of the river. Aloun, they come in ... for them it's production, money, kala [money] for .... They gotta make it work. The seed companies, this is R and D [research and development].

Mike and his family have been very supportive of PMRF throughout the years, and he describes the relationship and shares the story of the Flight of the Southern Cross:

For me, we have always been supportive of the base all the way back to when we became part of the United States ... you know ... because my grandfather was out here, and the sand dunes ... he couldn't see any use for that. It was a military reserve coming into the United States. My uncle was running Kekaha Sugar or was it junior number two at the time, helps that Australlian pilot, Kingston-Smith or something like ... Flight of the Southern Cross ... out of PMRF ... I don't know if you know that story.

Apparently, they were trying to around the world flight. They landed the plane here, and their last leg was from here down to Kwajalein or the island that Amelia Earhart was trying to hit, some island down there. So apparently, they were getting it ready at here plantation. Of course,  $k\bar{o}kua$  [help] everything they could, fuel, food, and what ever. Apparently, the navigator liked to drink. They take off in the morning when it's cooler, so they can get more fuel into the airplane. They tried to find the navigator, and he's gone. They go up to Waimea Valley and he's in a bar at Waimea Valley. [Laughing.] They bring him down ... "Get in the airplane". They take off on the dunes, and they built some *kine* of runway on the dunes. They took the plane off, then the crowd watching it, and it sinks below the dunes. I go, "Oh my God, the thing crashed." Struggle, struggle so close to there water, finally could get some elevation, and off it flew. They found their destination and so they didn't die or anything like that.

But it's been a close relationship. I remember going out there as a kid, when they were doing the missile training and things. They would invite the community out there, and they would do this flybys and stuff. My father-in-law just passed, was a young teenager during the WWII, and would pick up slop and stuff like that out there. Kind of fast forward, a lot of anit-military kind of people ... I got the Kikiola Land Company ... I was running Kikiola Land at the time ... I got our Board

of Directors to write a public letter stating that we supported the base. We have always supported it. I have been in my Rotary Club for 40 something years, Back in the day, the Commanding Officer was always part of the Rotary, and got to be good friends with several of them. I generally have a nice pass to go out there. I don't have my CAC [Common Access Card] card anymore, but mines get renewed all the time, either for Kikiola Construction because we are out there doing work or because of now, our relationship. But on a larger thing, to me, it's good for the community because again it's financial stability, it gives good jobs for community people, high paying jobs, most of the positions are very stable. We fought hard because there was a period when they thought about shutting it down, and we worked hard to lobby that they keep it. I think the Base Commander at the time was a friend of mine. He explained to me what he was doing to reposition the base, and at that point ... I think it was under Point Magu or something like that ... and got it transferred to Pear Harbor, and that's been a really good situation. The base people intergrate with the community fairly well. I think, the Haole [Caucasian] sailors and all that love the local girls, the local girls love the Haole sailors ... and vice versa. So you get a good ethnic mixing as well ... if you wanna call it that. There has never been any real pilikia [trouble] between this community and base people. People wanting to fight. There is a relatively small presence ... so, it's not like Schofield Barracks ... compared to Wahiawa. Their small, and I think the Navy programs are good stewards of the land prety much. We actually don't like working on there because you got to go jump through too many hoops, because environmental stuff. We used to open up one of the ditches there, and it was like we just take one of our excavators, go on the base, and just do it. But you have to go through all these inspections. We can't go there because it's a nēnē [Hawaiian goose (Nesochen sandvicensis)] nesting area. But as stewards of the land, I think they're, in my opinion, their doing as good, if not better than anybody else would. When Inouye was around, a lot of pork came this way, that was good.

#### **SUMMARY**

This section summarizes the data provided through the interviews and provides important information about land resources, water resources, cultural resources, and general concerns about the Proposed Action. A component is included that specifically addresses these resources, including their value, availability, accessibility, and locations. These categories are used to organize information about important practices, locations, and concerns for the study area, and to aid in the analysis (presented in Section V) of how the Proposed Action may affect these resources, locations, beliefs, and practices. Some of the locations of noted cultural tradtions and practices in the Kona *moku* of Kaua'i and surrounding area are depicted in Figure 7 and listed in Table 6. Importantly, only three of these locations are within the State leased lands and easements, with numerous additional ones found throughout the main installation federal property.

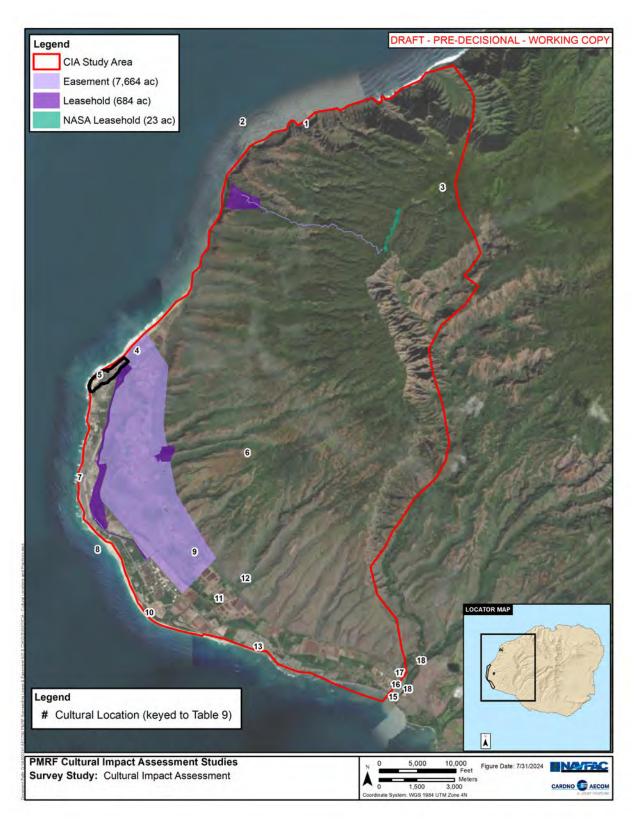


Figure 7. Places of noted cultural traditions and practices in the Kona *moku* of Kaua'i and surrounding area (see Table 6).

Table 6. Places of Noted Cultural Traditions and Practices in the Kona *Moku* of Kaua'i and Surrounding Area in Figure 7.

Number	<b>Cultural Traditions and Practices</b>	<b>Location and Comments</b>
1	Mālama 'Āina and Mālama Kumuwaiwai	Nuʻalolo Kai. Nā Pali Coast 'Ohana
2	Kona crabbing	Off of the Nā Pali Coast
3	Gathering for lei making used for hula	Pu'u Ka 'Ōhelo or Berry Flats
4	Mo'olelo of Pāpiohuli and Location where the ancestors of the Kua 'ohana resided in reference to the Hawaiian Newspaper Article (Ke Alakai o Hawaii, Feb 4, 1932, p.4). Presently the Kua 'ohana lives in Kekaha. The beaches of Polihale is a place of geat memories, where kanaka camped, fished, and gathered. There are memories of aloha and pilina close to the pu'uwai and poli, craddling the 'ohana who has spent time here. Many would like to spend time here or nearby Nohili. Puka shells were also collected here to make lei or necklace. There is kanu 'ia, pāhula, and heiau here. The leina-a-ka-'uhane is off the shores here as well. Iwi kūpuna and veneration of iwi.	Polihale. Location is where the Monkey Pod Tree is located. Presently the Kua 'ohana lives in Kekaha. Queen's Beach and at the shores of Polihale.
5	Iwi kūpuna and veneration of iwi	Ke One Kani O Nohili [Barking Sands]. Harvesting or and gathering of <i>kiawe</i> .
6	Mahi'ai kalo, Lā'au Lapa'au, Paniolo, Mālama 'Āina, Mālama Kumuwaiwai, Ho'ona'auao, 'Ōlelo Hawai'i, Pilina and Aloha with Lāhui.	Pu'u 'Ōpae, in the vicinty of Pu'u 'Ōpae Reservoir.
7	Up and down the coast of Mānā, the sand or <i>one</i> is prime for detoxing and cleaning, a form of <i>lā 'au lapa 'au</i> . From Kokole to Polihale [considered Mānā] the following practices are recognized:  Gathering: Marine Resources: Varieties of <i>limu</i> , <i>'opihi</i> , <i>pipipi</i> , <i>kūpe 'e</i> , <i>wana</i> , <i>hā 'uke 'uke</i> , and <i>loli</i> . <i>Pa 'akai</i> was collected in the <i>poho</i> of the <i>ko 'a</i> when the tide was low and <i>pa 'akai</i> had tie enough to solidify. Beach to the Inland Resources: <i>Lā 'au lapa 'a</i> or medicinal plants were collected such as <i>kauna 'oa</i> , wild <i>ilima</i> , <i>'uhaloa</i> , and other.  Lawai 'a: Diving for <i>he 'e</i> , lobster and fish is or have been a common practice in most <i>'ohana</i> . Other fishing such as casting throw net, surround net, and other allows for a variety of fish such as <i>'ō 'io</i> , <i>nenue</i> , <i>'āholehole</i> , <i>palani</i> , <i>kala</i> , <i>moi</i> , <i>kūmū</i> , <i>ta 'ape</i> , mullet and others.  Spiritualism: From makai to mauka there are archaological sites that are recognized where people pratice their own personal spiritualism, and ther are unknown sites as well.	Mānā (makai)
8	He'e Nalu.	Waiapua'a.

Number	<b>Cultural Traditions and Practices</b>	<b>Location and Comments</b>
9	Wahi 'āiwaiwa: Within the fields of cane and later corn. A place that exists on a different parallel as expressed in the interview with Eben Manini and Keao NeSmith.	Kaunalewa
10	Lawai <sup>a</sup> .	Kokole Point
11	Sugarcane. Kekaha Agriculture Association (Location may not be precise). Waiawa is where the Knudsen-Faye family lived and worked during the early years of their settling into the Kona <i>moku</i> , and as sugar became a prominent commodity, they expanded and lived in different areas.	Waiawa Plain
12	Mahiʻai Kalo, Mahiʻai Mala, Mālama ʻĀina, Mālama Kumuwaiwi, Lāʻau Lapaʻau, Paniolo, Pōhaku Building, Hoʻonaʻauao, Pilina/Aloha with Lāhui.	Waiawa Valley
13	Lūʻau. Pilina/Aloha with Lāhui. Lūʻau were held here at Kekaha Beach when it was sandy during the 20th century and Plantation Era. Presently, a wall was constructed in the 21st century because of improvement with the Kikiola Boat Harbor and possibly global warming.	Kekaha Beach
14	Nā Pali Coast tours launch site.	Kikiaola Boat Harbor
15	Kūhonu crabbing in the area. Lawai'a (Thrownet) for mullet. Hoe Wa'a: Kilohana Canoe Club.	Waimea River Mouth
16	Aloha Aina Poi Company. <i>Poi</i> processing and Mālama Kūpuna [feeding the <i>kūpuna</i> ] and selling <i>poi</i> products world wide.	Waimea Town
17	Kumano I Ke Ala: Hoʻonaʻauao; ʻŌlelo Hawaiʻi; Moʻolelo; Lāʻau Lapaʻau; Mālama ʻĀina, Mālama Kumuwaiwai; Mahiʻai kalo/loʻi kalo; Mala with other crops; Hale building; Pōhaku constructing; and Aloha/Pilina with Lāhui.	Waimea/Makaweli Valley
18	Gather for 'opae and 'o'opu/hinana	Waimea/Makaweli Stream

#### LAND RESOURCES

This section discusses land resources discussed in the interviews. Land resources and practices that were mentioned include the harvesting of kiawe; farming and ranching; sugar, rice and pineapple agriculture; and educational opportunities and responsibilities. Ho 'ona 'auao' or education is ' $\bar{a}ina$ -based education, a Hawaiian-forward concept from  $w\bar{a}$  kahiko [ancient time] to manawa  $n\bar{o}$  [at this time, contemporary]. ' $\bar{A}ina$ -based education offers a healthy environment through indigeous ways of knowing for future generations. The concept of ho 'ona 'auao' structured much of the conversation regarding land resources.

The long-term effect of sugarcane agriculture was a major topic that came up during the stakeholder interviews. Specific concerns mentioned included contamination through residual pesticides and the channeling of water away from natural water courses. It was also clear through the interviews that

revitalization of the landscape to support the planting of lo 'i kalo [pond for growing Colocasia esculenta] as well as providing ' $\bar{A}ina$ -based educational opportunities to the community are major stakeholder goals. These goals can be viewed through the lens of food sovereignty and the long-term aims of reconnecting with traditional and sustainable indigenous foodways.

#### WATER RESOURCES

Specific water resources that were mentioned during the interviews include:

- Marine resources:
  - o Fish: Specific taxa mentioned are *moi* [threadfish (*Polydactylus sexfilis*)], āhole [an endemic fish (Kuhlia sandvicensis) found in both fresh and salt water.], manini [Common reef surgeonfish (Acanthurus triostegus)], 'ō'io [ladyfish, bonefish (*Albula vulpes*)], *pāpio* [young stage of *ulua* (crevally) fish], uhu [parrot fish (Scarus perspicillatus)], mū [(Monotaxis grandoculis), known as the bigeye emperor or humphead bigeye bream.], kūmū [goatfish (Parupeneus porphyreus)], palani, [a surgeonfish (Acanthurus dussumieri)], pāku'iku'i [a long fishing net; specifies a net laid in coral reef, into which fish were driven by beating the water], Kala [surgeonfish, unicorn fish], kawakawa [mackerel tuna], ono [large mackerel type fish (Acanthocybium solandri], mahimahi [dolphinfish (Coryphaena hippurus), Pāpio [the young stage of growth of ulua, a fish], moi [threadfish (Polydactylus sexfilis)], 'o 'opu [general name for fishes included in the families Eleotridae, Gobiidae, and Blennidae], Nenue [chub fish, also known as rudder or pilot fish (Kyphosus bigibbus, K. vaigiensis)], ulua(s) [certain species of crevalle, jack or pompano, an important game fish and food item];
  - O Seaweeds: (limu); limu kohu (Asparagopsis taxiformis)], limu līpoa [bladelike, branched, brown seaweeds (Dictyopteris plagiogramma and D. australis)]; limu pahapaha [or limu līpahapaha a general term for sea lettuce (Ulva fasciata and Monostroma oxyspermum), a common green seaweeds with delicate broad blades]; ogo [Japanese term for limu, in the same family as Manauea (Gracilaria coronopifolia), a small red seaweed]; and wāwae 'iole [Codium edule, is a green seaweed];
  - O Shellfish and crustaceans: 'opihi [limpets], hā 'uke 'uke [an edible variety of sea urchin (Colobocentrotus atratus)], kūpe 'e [an edible marine snail (Nerita polita)]; lobster;
  - o Other: he'e [octopus]
- Freshwater resources: reliable arable land for agriculture, accessible water for farming, 'o'opu, 'ōpae [shrimp], and hīhīwai [endemic grainy snail (Neritinu graposacan)].

Many of the consultants expressed general concerns about the management of the natural water flow based on the history of sugarcane cultivation in the area. Also, of primary concern and mentioned during several of the interviews was the need to increase access to PMRF's shorelines for fishing, collecting marine resources, camping, and surfing. Many consultants had fond memories of camping at PMRF and

Polihale. For example, Hena Caberto-Raco, described the reef as being beautiful and he spent much time gathering and fishing. Camping near abundant marine resources has been part of Hawaiian life and culture for centuries. Concerns about access to PMRF are discussed further below.

Mānā has the largest expanse of white sand beaches on Kaua'i. The sand, reef, and rocks provide important habitat for marine wildlife. Kaina Makua and several other consultants expressed their joy of fishing and gathering at Nohili Point, Kinikini, and Kokole. They would harvest many of the marine resources listed above, including a variety of species of fish, octopus, crustaceans, and shellfish. Kaina Makua also conveyed a terrifying experience while harvesting 'ōpihi and fishing (thrownetting) at Polihale where he encountered armed soldiers from PMRF with AK47s. Kaina harvested 'ōpihi in the area of Polihale and Nohili Point. 'Opihi is a traditional delicacy with a substantial nutritional value. Safe accesibility to these resources is important for Hawaiians as described by Kaina Makua. Kaina also noted that the sand of Mānā including Nohili and Polihale, has healing qualities for detoxifying the body. Moreover, the raised coral reef can be used to harvest salt in the the same areas.

#### **CULTURAL RESOURCES**

This section covers Hawaiian cultural resources such as practices, traditions, and mo 'olelo [stories]. Traditional Hawaiian cultural practices or mēheuheu include, but are not limited to, 'ōlelo Hawai'i [Hawaiian language]; 'ōlelo no 'eau [wise and traditional sayings]; haipule [worship]; mahi 'ai kalo [taro farming]; lawai 'a [fishing]; lā 'au lapa 'au [Hawaiian medicine]; kāhea [spiritual invocation]; 'oli [chanting]; mele [singing]; lua [Hawaiian martial arts]; hoe wa 'a [canoe paddling]; kapa [tapa, as made from wauke or māmaki bark] making; lauhala [pandanus leaf] weaving; hula; lei making; mea kaua [weapons making]; hailawe [barter] food items, mālama kūpuna [care for the elders], mālama 'āina [care for the land], mālama kumuwaiwai [care for the resources] and ho 'ona 'auao [education].

Cultural resources may be traditional *wahi pana*(s) [cultural sites, legendary places, and sacred sites]; any cultural gathering place; or the tangible remains of *ka wā kahiko* [the ancient past]. The West Kona *moku* [district] of Kaua'i has remnants of *heiau*(s) [temple, place of worship]; *kanu 'ana*(s) [burials]; *koehana*(s) [artifacts]; *kauhale*(s) [house sites]; *hale wa 'a*(s) [canoe houses]; *loko i 'a*(s) [fishponds]; *lo'i kalo*(s) [taro pondfields]; *auwai*(s) [ditches, canals]; and *pā hula*(s) [platforms where *hula* is danced and honored]. There are other significant intangible cultural resources: *mo'okū'auhau* or geneaological and *pilina*(s) [connections] to place and people; spiritual locations (for example, *leina a ka 'uhane* [place where spirits leaped into the nether world]); and *wahi āiwaiwa*(s) [mysterious places]. Other ethnic traditions and practices are considered cultural resources as well.

Specific categories of cultural resources that were mentioned during the interviews included 'ōlelo no 'eau, mo 'olelo, hula, 'oli, mele, lua, and hoe wa 'a. Specific mo 'olelo mentioned include Mo 'olelo o Kūkona me Manōkalanipō, Mo 'olelo o Ke One Kani O Nohili, Mo 'olelo o Ola me Nā Menehune and Mo 'olelo o Ko 'olau. Remnants of the past are found in heiau, pahula, kanu 'ia, hale wa 'a, and kauhale, koehana. The specific locations of these resources were generally not identified during the interviews because consultants were not able to point out the precise locations maps.

#### IWI KŪPUNA

Several consultants expressed concern about the *iwi kūpuna* or ancestral bones in the sand on different areas of the base, but mentioned specifically the Nohili Dunes, Polihale and Queen's Beach, and fuel farm area. Disturbance of the *iwi* was one concern, but being able to have access to venerate these  $k\bar{u}puna$  was a higher and more significant concern. Most of the consultants have been on the base, and have

knowledge through their parents and grandparents, where the iwi are located. When they would visit the base, whether it be to harvest kiawe or harvest marine resources, they acknowledged these  $k\bar{u}puna$ .

#### V. DATA ANALYSIS AND CONCLUSION

This section examines the historical and archival information from Section III and the ethnographic interview data presented in Section IV and presents an analysis of the potential impacts that the Proposed Action alternatives and the No Action alternative may have on any cultural resources, practices, or beliefs within the project area. The primary results of the analysis are that the retention of the current State leased lands and easements has the potential to affect three resource areas mentioned during the consultant interviews. Moreover, retention of the State leased lands and easements, may affect access to PMRF's shoreline areas for cultural activities that include fishing and gathering of marine resources, camping, surfing, and visitation of *iwi kūpuna* areas specifically because access requires traveling across the State leased lands and easements. The following sections describe the cultural resources, practices, and beliefs found within the State leased lands and easements. A discussion of the potential impacts related to each of the Proposed Action alternatives and the No Action alternative is also presented. Finally, mitigation measures for each of these potential impacts are described.

# CULTURAL RESOURCES, PRACTICES, AND BELIEFS WITHIN THE STATE LEASED LAND AND EASEMENTS

There are three locations mentioned during the consultant interviews that are within the State leased land and easements. These are Nohili Dunes, Polihale, and Kaunalewa (see Figure 7 and Figure 8). No resources or practices were identified within the NASA leased parcel and it is not discussed further.

The northern portion of the State easements overlaps slightly with the Nohili Dunes. During the current project, several consultants mentioned Nohili as a place where  $iwi k \bar{u} puna$  are found in the dunes as well as a place where people enjoy fishing and camping. Tuggle and Tomonari-Tuggle (2004) conducted oral interviews, and reviewed both published and unpublished documentary sources concerning Hawaiian folklore, history, and land use. They listed the Nohili Dunes as a potential Traditional Cultural Place and note (p. 153):

Nohili is the name of point, sand dune, and beach area near the northern end of PMRF. It is also the name of a ditch located approximately 1 km south of the point and dune, as well as the name of a series of archaeological localities "indicated by stones and shells. Grooved sinkers large and small, grindstones, polishers, hammers, pieces of adzes, files, and other implements" and "single rows of stones outlining the sites, or by low walls" (Bennett 1931:101, 102; State Sites 50-30-01-07 and 05-09).

The sand dune, which is identified as State Site 50-30-05-1860, is famous for the "sounding sands" of the beach, the source of the modern name for the area, Barking Sands. Pukui (1983) records several proverbs related to "the sounding sands" of Nohili, including one that states that it makes a grunting sound when one slides down the sand hill; and another that refers to Nohili as a "haunt of ghosts" (Pukui 1983:269). Numerous human burials have been found in the sand dunes between Nohili Point and Polihale (at the north end of the Mânâ Plain)."

Polihale, located in the northern portion of the State easments just to the north of the Nohili Dunes, was mentioned several times during the interviews as a place where locals camp, fish, and gather. Many consultants indictated that they would like to spend more time here because it has figured importantly in their past and current lifeways. For example, Polihale is where shells are gathered to make necklaces. Like Nohili, the dunes in this area are noted for the presence of *iwi kūpuna* and visited to carry out practices associated with the veneration of *iwi*.

Kaunalewa, found inland within the southern portion of the State easements (see Figure 7 and Figure 8), was noted for its unique spiritual qualities. Both Eben Kawaikea Manini and Keao NeSmith relayed stories about seeing fleeting apparitions of traditional Hawaiian stuctures and modern houses among the sugarcane and corn fields. The exact location of these sightings is unknown other than within the Kaunalewa area generally.

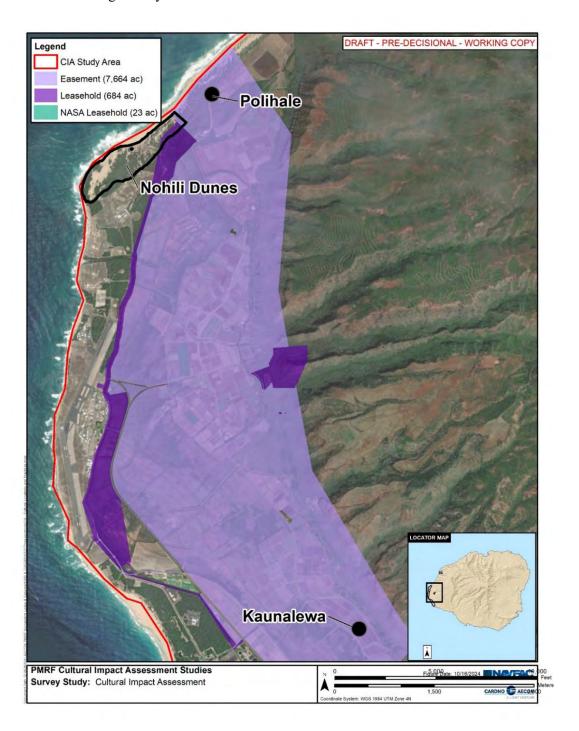


Figure 8. The three locations within the state leased lands and easements, Nohili Dunes, Polihale, and Kaunalewa, mentioned ruing the consultation interviews.

# CULTURAL RESOURCES, PRACTICES, AND BELIEFS ACCESSED VIA THE STATE LEASED LAND AND EASEMENTS

In addition to the three places directly within the State leased land and easements, several locations where consultants mentioned carrying out cultural practices are also potentially accessed via walking or driving on existing roads through the State leased land and easements. These include portions of the Nohili Dunes, the *makai* location of Mānā, Waiapuaʻa, and the northern portion of Polihale. Although PMRF's shoreline areas will not be directly impacted by either of the Proposed Action alternatives, the shoreline is potentially accessed through the northern extent of the State easements near Polihale and Nohili Dunes. These shoreline areas are where community members mentioned participating in fishing and the gathering of marine resources, such as shells, mollusks, and seaweed. The shoreline is also used for camping, surfing, and other cultural activities like visitation of *iwi kūpuna*. Concerns about limited access to PMRF were presented during several of the stakeholder interviews. When discussing access to the shoreline areas that front PMRF, Kaina Mākua notes:

When we was young, we could go anywhere ... Nohili Point, *holoholo* [term used to go fishing], Kinikini, Kokole ... we go anywhere and *lawai'a*, go fish. What year was it? Might have been 2014 ... I think so ... but I went go *holoholo*, and they went close all those beaches, you couldn't'go..but you could go Polihale. So, I went Polihale, and I went walk because I know where get *'opihi* [limpets], I know where get *i'a* [fish]. So, I took my thrownet, I took my bag, I wen' get one *'opihi* knife, and I wen' go get *'opihi*. And I was in the water, and then two of these soldiers from PMRF came with AK47s, telling me for come out of the water. But me, I know, I not stupid ... you come out of the water, they get rights *fo'* [Hawaiian Pidgin language meaning for] take you in. So I just stood in the water, and they had their hand on the trigger. And I was like, "What's up guys?" And they said, "Ah you gotta come out, we like talk to you, just come cruise." "Negative, I know I safe in the water, but you should take your hand off of the trigger." And so, I just kept pounding *'opihi*. And for one solid 10, 15 minutes they stood there trying to get me go on the sand, so they could take me in. I just kept walking, pounding *'opihi*, and doing my thing.

# Enoka Chee Fook Karratti also notes his concerns about access to PMRF:

I think Mānā when I used to work security for them [PMRF], we used to drive through Nohili ... all the dunes ... and I drove through there as a kid, as a high school student. Back in the day, we could drive all through there. But being on the government side of the fence and going through that space, I used to think, "Whoa, too bad the community cannot see or be back here." You know obviously you going get the bad that come with the good, you not going be able to cover it all, but we used to go from Kekaha Elementary ... up to the dunes ... and the whole *moʻolelo* ... slide down and listen to the dogs bark. But I think, that's a special place ... that whole stretch, but obviously there are a lot of special places in Hawai'i, but growing up on the West, and knowing like that's Ni'ihau ... no can even go ... like that kind of vibe, I think ... that gotta change. We gotta ... accessible ... got to get more easy access to the space. You know ... something got to give.

#### Similarly, Sean Andrade explains:

In the '70s, early '70s. We were camping. Our whole family was camping. My Uncle Kamaile, and my Uncle Gilroy took me and a couple of my other cousins, and we were all swimming that day, we jumped in the jeep, we drove through PMRF (Pacific Missile Range Facility), went to Queen's Pond, jumped in the ocean there again, and drove back out straight to the spring water. We actually rinsed off and swam there for a little bit. So that was nice as a youngster. But today, I really don't know the difference because I haven't ... I don't like going in there, so I stay away from PMRF. It seems like it's so hard to get in. It just seems that way. I don't think it is, but it just seems that way.

When discussing what he would like to see PMRF do to provide for future generations, Edwin A'alona answers:

Definitely better access. I guess ... you know ... we had it so good back then. And back then being pre-9/11 ... up until that point. They closed the base, and we couldn't even dive off shore, couldn't anchor offshore for couple of years or however it was. All the  $man\bar{o}$  [sharks] got a little bit more frisky, because no more boats chasing them, so it's like they took over. They [referring to the sharks] took the area back. When it first opened ... you shoot one fish, the sharks all over you already. So to be able to go back to how it was ... not that it's our space, but they were not as frisky as they were before. They more frisky than they were before and now they getting back to that not so frisky because people are utilitzing the area.

The main thing is ... I don't want to say lenient, but get more lenient on the access like ... it's an unenforced law, you are not supposed to drive on the beach. I'm in the ... I'm not quite *kupuna* [elder], but yet for me to lug all my gear to go fishing ... the parking area is ... the shore ... you like go more down ... you going have to walk in the soft sand. You know, stuff like that ... or open up the end so we don't have to come through the base, we can drive from the side and come in ... to have access to all these spots to fish. I remeber my dad ... get all my dad's lobster holes and everything too. We went from shore with one scuba tank. We swim out on the surface, get to the spot, turn on our air, dive down, we clean the hole, come out, and fill our cooler with lobsters from couple t-bars. Now we cannot. We cannot drive to that area anymore.

Gathering, camping ... actually I would love to camp at Nohili Point again ... on the Flats, at the grassy area before the gates and stuff. I like take my kids there, my boys like ... because all my family like to go *holoholo* [another term used for "to go fishing"]. Go camp on the beach at Majors Bay like we used to and stuff like that. We lost 'em, we lost all of that because of 9/11.

#### Billy Dan Decosta has thoughts about future access to PMRF and voices his concerns:

If you ask me what I like see happen, I want to see them open up some camping on those beaches to local families with the IDs, and we can go back camp. I wanna see more access for surfing and for harvesting fish. They need to stop regulating so much. If you like know the hidden agenda, I tell you ... in reality that's my hidden agenda. Yeah, they provide a sense of security. Yes, they provide a whole bunch of jobs. I don't believe they should be restrictive of all the access, the harvesting, and the gathering of that area.

PMRF are the stewards of that land. They have a responsibility to care for the land. I not just talking about the land, they are responsible to care for the people's cultural gathering and harvesting rights. That's their job. They are only temporary stewards of that place. They need to make sure that the people can still practice what they used to. (There were a lof of people who used to fish out there). Big time. Camping too. We used to camp out there, now we cannot camp since ... 9/11. 9/11 has long passed. Maybe it's time they open up some camping. Because 9/11 has passed. Let me tell you, you can record me on this ... the base, I mean pass the base is Polihale State Park ... the State gives out permits, the permits are taken online, you cannot discriminate whether you local or whether you non-local. Mainlander's can request a permit. Sometimes Polihale State Beach no more room for the locals to camp. But on the base, if they would give out so much local permits to people with one driver's license, then they could let the locals go camp, so just think about that in your cultural survey.

The cultural practice of *he'e nalu* (surfing) occurs at Waiapua'a (Majors Bay) which is accessed through the main gate located on a leased parcel at the Main Base. Billy Dan Decosta describes the importance of Waiapua'a and Polihale for surfing. "Of course, the great surf in that area that ... Majors Bay and Polihale have excellent breaks out there for surfing."

In summary, several locations of cultural resources, beliefs, or practices are accessed by transversing the State leased lands and easements. These include portions of the Nohili Dunes, *makai* sections of Mānā, Waiapua'a, and the northern portion of Polihale. Many consultants expressed concerns about access to these shoreline areas for fishing and collection of marine resources, visitation of *iwi kūpuna*,

camping, and surfing. The following section explicitly examines how the Proposed Action may potentially affect the cultural resources, beliefs, and practices of the community members interviewed during the CIA.

# POTENTIAL IMPACTS OF THE PROPOSED ACTION ALTERNATIVES AND THE NO ACTION ALTERNATIVE

This section analyzes the impact of the two Proposed Action alternatives and the No Action Alternative. Under Alternative I (Succeeding Current Real Estate Agreements), the Navy and NASA would apply to the DLNR for new long-term real estate agreements in the same manner and for the same uses as the current leases and easements. Under Alternative 2 (Fee Simple Acquisition of Current Real Estate Agreements for Leaseholds), the Navy and NASA would pursue fee simple acquisition of 707 acres (684–Navy, 23–NASA) of leaseholds, and otherwise obtain use of the remaining acreage as described in Alternative 1. Under the No Action Alternative, the Navy and NASA would not seek any real estate agreements for the State lands on Kaua'i after expiration of the leases and easements between 2027 to 2030. The current real estate agreements for 8,348 acres with the Navy and 23 acres with NASA would expire. All existing infrastructure would be removed from the Navy leased and easement lands and all NASA leased lands.

#### PROPOSED ACTION ALTERNATIVES 1 AND 2

The impact of Proposed Action alternatives 1 and 2 would essentially be the same and therefore this discussion covers both alternatives. There are both positive and negative potential impacts to these alternatives. The cultural resources, beliefs, and practices that are found or occur within the State leased lands and easements include Nohili Dunes, Polihale, and Kaunalewa. The Nohili Dunes and Polihale are noted as places where *iwi kūpuna* are buried and where community members come to venerate their ancestors. Furthermore, portions of the Nohili Dunes have been evaluated as eligible for listing on the National Register of Historic Places (NRHP) under Criterion D (SEARCH 2012:149) and it is also listed as a potential Traditional Cultural Place (Tuggle and Tomonari-Tuggle 2004:153). Regarding restricted access to areas that require transversing through the State leased lands and easements, the Navy restricts access to Waiapua'a at the main gate.

Activities associated with the operation of PMRF have the potential to impact *iwi kūpuna* directly through ground disturbing activities, and this concern was noted by several consultants. For example, James Nakaahiki provides locations of *iwi kūpuna* that concern him:

Yes, I do know of some (burials). It's right by the area going to Queen's Pond. Queen's Pond Beach used to be where only the Queens used to go back in Royalty days, they were the only ones allowed to swim in that pond. It was a saltwater pond specifically for queens. On the road to Polihale, you can't miss it. There is a Monkeypod tree that's there. There is an intersection in the road that splits off, you take a left, you go up for about a quarter mile, before you climb over the dunes before you get to the beach, to the right of that, they are marked graves over there. There is *iwi* [the bones of the dead] in those dunes over there. Supposedly, they belong to the Kilauano 'ohana and Aipoalani, I believe.

#### Keao NeSmith also notes:

Uh, Queen's Pond, close to Nohili is about as far as we would go, but the area around used to seem like a real mystery to me ... almost spooky *kine*. But, um, I came to learn later on that those sand dunes had all the bones inside. And I wasn't aware of that as a kid...we came to learn that over time. Um...but I used to...I don't know, because it was overgrown with *kiawe* [algaroba tree (*Prosopis pallida*), a legume from Peru, first planted in 1828 in Hawai'i trees] and bushes ... the sand dunes,

over there. So, I remember feeling *kine* of scared of that place, and then I came to learn later that that's where had the bones ... Then I made the connection, "Oh, no wonder I used to be so scared of that place ..." But I'm not afraid of that place anymore. It's not a ... there's nothing spooky about it.

Eben Kawaikea Manini mentioned that his father would refrain from cutting *kiawe* where there were thought to be burials, especially on the Nohili Dunes

While, the PMRF installation operations that require ground disturbing activities within the State leased lands and easements have the potential to impact *iwi kūpuna* and other associated artifacts and/or cultural materials, it is noteworthy that these resources found within these leaseholds and easements are also subject to federal legislative protections in place through the National Historic Preservation Act (NHPA) for any future activities, the Native American Graves Protection and Repatriation Act (NAGPRA), Archaeological Resources Protection Act (ARPA), National Environmental Policy Act (NEPA), and the Integrated Cultural Resources Management Plan (ICRMP) SOPs. These sets of legislation consider the areas as historic properties, sacred sites, and traditional cultural properties.

#### NO ACTION ALTERNATIVE

Under the No Action alternative, the Navy and NASA would not seek any real estate agreements for the State lands on Kaua'i after expiration of the leases and easements between 2027 to 2030. The current real estate agreements for 8,348 acres with the Navy and 23 acres with NASA would expire. All existing infrastructure would be removed from the Navy leased lands and easement and all NASA leased lands. Under the No Action Alternative, the Navy and NASA would not seek any real estate agreements for the State lands after expiration of the leases and easements. The current real estate agreements would expire, and the Navy and NASA would no longer have control of the leased lands or easements. Through the transfer of control of these lands from the Navy and NASA back to the State of Hawai'i, the No Action alternative could have potential impacts on the preservation of and visitation to *iwi kūpuna* within Polihale and Nohili Dunes. Regarding areas that currently require transversing through the State leased lands and easements for access, the Navy would restrict access to Waiapua'a at the fee-simple property line. These potential impacts of the No Action alternative are discussed further below.

# Iwi Kūpuna

Under the No Action alternative, the responsibility for preservation and access to *iwi kūpuna* within the State leased lands and easements would revert to the State of Hawai'i. The day-to-day protection of *iwi kūpuna* in the State leased lands and easements under federal legislation would end. This would include the protection of human skeletal remains and associated funerary items under NAGPRA and the PMRF and Na Ohana Papa o Mana executed NAGPRA CA. Other federal laws such as ARPA, NEPA, and NHPA would only become applicable if future projects in these areas were to include Federal involvement. Additionally, the day-to-day protection from PMRF's ICRMP SOPs #8, #10, and #6 for resource within portions of Polihale and the Nohili Dunes that overlap the State easements would no longer be applicable.

#### **PMRF Shoreline Access**

Shoreline access through the northern boundary of the State easement area located near Polihale under the current federal legislation include the policies and guidelines described in PMRF ICRMP SOP #16 which indicates that cultural access on federal lands is mandated by federal laws, Department of Defense (DoD) Instructions; the Memorandum of Agreement (MOA) between the U.S. Navy and PMRF,

Hawai'i State Historic Preservation Office (SHPO), and Advisory Council on Historic Preservation (ACHP) regarding activities proposed within the PMRF Enhanced Capacity Final EIS (FEIS 1998; MOA 1999); and the Programmatic Agreement (PA) among Commander Naval Region Hawai'i (CNRH), the ACHP, and the Hawaii SHPO regarding Navy undertakings in Hawai'i (Search 2012:361). Under the No Action alternative, management of access through these State lands could potentially be the responsibility of the State of Hawai'i and the current PMRF access program may no longer be applicable.

#### **MITIGATION**

The following section provides information about mitigation of the impacts for the Proposed Action alternatives 1 and 2 and the No Action Alternative.

#### MITIGATION OF PROPOSED ACTION ALTERNATIVES 1 AND 2

The potential impact of Proposed Action alternatives 1 and 2 primarily involves Polihale and Nohili Dunes. Specifically, the presence of  $iwi k \bar{u} puna$  within each of these locations was noted during consultant interviews as well as in documents reviewed during contextual research for the CIA. Portions of both locations are within the State easements and therefore have the potential to be affected by activites associated with the operation of PMRF.

PMRF has SOPs providing guidance for the discovery, consultation on, preservation, and treatment of *iwi kūpuna*. The PMRF ICRMP outlines these SOPs which include SOP #8: Monitoring During Construction and/or Ground-disturbing Activities, SOP #10: Inadvertent Discovery of Human Remains, and SOP #6: Native Hawaiian Consultation (SEARCH 2012:325–335). In addition to these SOPs, PMRF and Na Ohana Papa o Mana executed a NAGPRA Comprehensive Agreement (CA) in 2011 (see Appendix II in SEARCH 2012). As expressed in regulation 43 CFR 10.5(f), CAs between federal agencies and Native Hawaiian communities are encouraged to "address all federal agency land management activities that could result on the intentional excavation or inadvertent discovery" of NAGPRA items. The purpose of the CA is to provide guidelines for determination of the custody, treatment, and disposition of items covered under NAGPRA (SEARCH 2012:243). Mitigation of access restrictions to areas requiring travel across the State leased lands and easements would occur through use of the MWR Guest Card or coordination with cultural resource management program for cultural access, which would potentially allow for surfing, fishing, visitation of *iwi kūpuna*, and collection of the area's marine resources.

#### MITIGATION OF THE NO ACTION ALTERNATIVE

The primary impact of the No Action alternative is that the protection of *iwi kūpuna* within the State leased land and easements would no longer fall within the jurisdication of PMRF but would instead revert to the State of Hawai'i. This would include areas within Polihale and Nohili Dunes. Potential mitigation of these impacts would require that the State take over stewardship of the cultural resources within the former State leased lands and easements through the State Historic Preservation Department's Hawaii Revised Statutes (HRS) 6E. Under the No Action Alternative, like Proposed Action alternatives 1 and 2, mitigation of access restrictions would presumably also occur through use of the MWR Guest Card or coordination with cultural resource management program for cultural access, which would potentially allow for surfing, fishing, visitation of *iwi kūpuna*, and collection of the area's marine resources.

#### **CONCLUSION**

The Navy proposes to retain the use of 8,348 acres of State lands on Kaua'i, Hawai'i, for operational continuity and sustainment (in support of continued military training, testing, and facility operations) at the Pacific Missile Range Facility (PMRF). The National Aeronautics and Space Administration (NASA) proposes to retain the use of 23 acres of State lands on Kaua'i, Hawai'i, in support of continued operations at Kōke'e Park Geophysical Observatory (KPGO). The Proposed Action is needed because the existing real estate agreements for these lands are set to expire between 2027 and 2030. The Navy and NASA are considering two action alternatives and the No Action alternative. Under contract to AECOM Technical Services, Inc., IA has prepared this Cultural Impact Assessment (CIA) to analyze the potential effect of any proposed physical alteration on cultural resources, practices, or beliefs; the potential of the Proposed Action to isolate cultural resources, practices, or beliefs from their setting; and the potential of the Proposed Action to introduce elements which may alter the setting in which cultural practices take place.

The CIA was carried out in two phases. First, a cultural and historical archival literature review was completed. Next, an ethnographic study including oral history interviews, was conducted. Thirteen cultural consultants were selected to provide information about cultural activities, beliefs, and resources within the study area. Data from these two phases, which included the ethnographic interviews and past oral histories, were then analyzed to learn about cultural resources, practices, and beliefs, and ultimately to examine the potential that the Proposed Action alternatives and the No Action alternative could affect them.

Three locations—Nohili Dunes, Polihale, and Kaunalewa—were mentioned during the consultation interviews and are found within the State leased lands and easements. Portions of Nohili Dunes and Polihale are known to contain *iwi kūpuna* and are also places visited for veneration of ancestors. Kaunalewa was mentioned during interviews as a spiritual place where apparitions of both traditional Hawaiian and modern structures have appeared. The exact location of these sighting is unknown. PMRF currently has SOPs providing guidance for the discovery, consultation on, preservation, and treatment of *iwi kūpuna*. Under the No Action alternative, stewardship of these areas would revert to the State and HRS 6E legislation would presumably apply.

Although not directly impacted by the Proposed Action, a primary concern for many of the consultants interviewed was access to PMRF's shoreline areas for fishing, marine resource gathering, camping, visitation of iwi kūpuna, and surfing, which includes transversing through the northernmost State easements. PMRF currently has an access program that can be used by individuals and community organizations for cultural access to resources on base. PMRF ICRMP SOP #16 and the MWR Base Pass program describe public access and cultural access for individuals and community organizations that attach cultural significance to resources on PMRF. In addition to access concerns, the interviews often turned to feelings about the PMRF installation in general, including reservations about past and present activities, and future planning. There were both positive and negative impressions with several stakeholders pointing out the benefits of the installation for the community, including positive effects on jobs and community support. Specific categories of information about the military during the CIA interviews include problems with transparency between PMRF and the local community regarding planned and ongoing activities on base and within the surrounding areas. Several of the stakeholders also shared opinions that PMRF staff members from the mainland are not well integrated or educated on local community culture, history, or etiquette, and this lack of education leads to bad feelings and negative interactions. Finally, at least one consultant expressed the need for PMRF to conduct remediation to clear ordinance and contamination from locations not currently on PMRF.

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2005 Final: Integrated Cultural Resources Management Plan for the Pacific Missile Range Facility (PMRF), Island of Kaua'i, State of Hawai'i. Prepared for Commander, Navy Region Hawai'i Pearl Harbor, Hawai'i. Under contract with: Department of the Navy Naval Facilities Engineering Command, Pacific, Pearl Harbor, International Archaeological Research Institute, Inc, Honolulu.

# Tuggle, H. D and Tomonari-Tuggle, M. J.

2004 Final: A Study of Potetial Native Hawaiian Traditional Cultiral Places, Navy Region. Prepared for Commander, Navy Region Hawai'i Pearl Harbor, Hawai'i. Under contract with: Department of the Navy Naval Facilities Engineering Command, Pacific, Pearl Harbor, International Archaeological Research Institute, Inc, Honolulu.

United States Geological Survey

1963 Kaua'i: 1:24,000 Topographic Map.

United States Geological Survey

1965 Kaua'i: 1:24,000 Topographic Map.

Wichman, Frederick B.

1991 Polihale and Other Kaua'i Legends. Bamboo Ridge Press, Honolulu.

# **APPENDIX A: CONSULTANT CONSENT FORMS**

October 27, 2023

SUBJECT: Interview Authorization and Release Form for a Cultural Impact Assessment (CIA) for Pacific Missle Range Facility (PMRF) and Kōke'e Park Geophysical Observatory (KPGO) Succeeding Lease and Easement Areas, Kaua'i, Hawai'i, Contract N62742-18-D-1802. [IA202241]

International Archaeology, LLC (IA), a cultural resource management firm based in Honolulu, Hawai'i, is currently preparing a Cultural Impact Assessment (CIA) in support of a proposed action application by Commander, Navy Region Hawai'i (CNRH) and National Aeronautics and Space Administration (NASA) under contact to Cardno-AECOM Joint Venture (JV).

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Before the interview begins, the Ethnographer will ensure that each interviewee understands the interview process and goals, and that the interviewee provides informed consent in writing by signing this Authorization and Release Form. The informed consent procedure includes a review of the points listed below with the interviewee, and answering any questions the interviewee may have before signing this form.

- I, Keao NeSmith, voluntarily agree to participate in this study in accordance with the interview process and goals outlined in this form.
- I understand that this study is part of a proposed action application CNRH and NASA in support of the PMRF and KPGO Succeeding Lease and Easement Areas study emcompassing the surrounding areas.
- I undersand that participation in this study may involve sharing information about significant archivally-identified cultural areas, especially sites and their components within the area study.
- I agree that my interview(s) will be recorded with a digital recorder supplemented by handwritten notes. A map or maps of the subject parcel and the surrounding lands will also be provided for reference and annotation purposes.
- I understand that a full transcript of my interview(s) will be prepared in Microsoft Word
  (DOCX) format, and will be provided to me for corrections, additions, or deletions (in
  person, online, or via post). Only the interview data I have reviewed and approved will be
  used in the study.
- I understand that, following my review and approval of my interview transcript(s), the

Project Manager and Ethnographer will jointly analyze the interview results and extract information pertinent to identifying potential cultural and natural features of significance. These results will be included in the draft and final versions of the study.

- I understand that, following submittal of the final study, all digital recordings of interviews, approved written transcripts, annotated maps (if any), and signed consent forms will be submitted to the project contractor, JV and to CNRH, and NASA as part of project documentation.
- I understand that digital copies of the interview recordings, interview transcripts, annotated
  maps (if any), and signed consent forms will also be retained by International Archaeology,
  LLC, on its computer system in Honolulu, Hawai'i, for an unspecified period.
- I understand that I will not benefit directly from participating in this research.
- I understand that even if I agree to participate now, I can withdraw my consent at any time during the interview(s) or refuse to answer any question without consequences of any kind.
- I understand that I can withdraw permission to use my interview data within two weeks
  after I review and approve my interview transcript, in which case the material will be
  deleted. I also understand that I cannot withdraw my interview data after the final version
  of the study report has been submitted to the client
- I have had the purpose and nature of the study explained to me in person and in writing and I have had the opportunity to ask questions about the study.
- I understand that I am entitled to access the information I have provided at any time while it is in storage as specified above.
- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

International Archaeology, LLC (IA) may want to use portions of your interview for other CIAs, archaeological reports, oral history archives, educational programs, displays, or other public material (including the internet). You have the option to grant IA permission for future use of your interviews (s) on this form, or decline use beyond the purpose of this project.

**Deed of gift**: I hereby give this interview to International Archaeology, Inc. (IA) for historical, scholarly, educational, and community-outreach purposes as IA sees fit, including but not limited to exclusive rights of production (copyright), distribution, preparation of derivative works, public educational performance, displays visual, in print, or electronic, or other media including the internet unless stated otherwise here.

Yes/	I am donating	International	Archaeology,	LLC,	my interview(s	for future	use as
stated above	e.						

No \_\_\_\_\_\_ Please use my interview contribution exclusively for the purposes of this study as described on this form.

Project Manager: Alex Morrison, Ph.D. <a href="mailto:amorrison@iarii.org">amorrison@iarii.org</a> Ethnographer: Hannah Kaumakamanōkalanipō Anae, M.A. <a href="mailto:hanae@iarii.org">hanae@iarii.org</a>

Signature of participantt

By my signature, I give consent and release for my interview(s) to be used as specified.

Keavloting	11-25-23
Signature of participant	Date
Signature of researcher	
I believe the participant is giving informed consent to partic	ipate in this study
Haurela" Signature of researcher	11/25/2023 Date



October 27, 2023

Interview Authorization and Release Form for a Cultural Impact Assessment SUBJECT: (CIA) for Pacific Missle Range Facility (PMRF) and Koke'e Park Geophysical Observatory (KPGO) Succeeding Lease and Easement Areas, Kaua'i, Hawai'i, Contract N62742-18-D-1802. [IA202241]

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provided for reternce and annotation purposes.

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be used in the study.

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• I understand that I will not benefit directly from participating in this research.

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- I understand that I am entitled to access the information I have provided at any time while
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October 27, 2023

SUBJECT: Interview Authorization and Release Form for a Cultural Impact Assessment (CIA) for Pacific Missle Range Facility (PMRF) and Kōke'e Park Geophysical Observatory (KPGO) Succeeding Lease and Easement Areas, Kaua'i, Hawai'i, Contract N62742-18-D-1802. [IA202241]

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- I understand that I will not benefit directly from participating in this research.
- I understand that even if I agree to participate now, I can withdraw my consent at any time during the interview(s) or refuse to answer any question without consequences of any kind.
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Yes	I am donating International Archaeology, LLC, my interview(s) for future use as
stated a	bove.
No	Please use my interview contribution exclusively for the purposes of this study as

Project Manager: Alex Morrison, Ph.D. <a href="mailto:amorrison@iarii.org">amorrison@iarii.org</a>>
Ethnographer: Hannah Kaumakamanōkalanipō Anae, M.A. <hanae@iarii.org>

Signature of participantt

described on this form.

By my signature, I give consent and release for my interview(s) to be used as specified.

Signature of participant	$\frac{11}{28}$
Signature of researcher	

I believe the participant is giving informed consent to participate in this study

(// 2 / 1/2)

Signature of researcher



# IA INTERNATIONAL ARCHAEOLOGY, LLC

October 27, 2023

SUBJECT: Interview Authorization and Release Form for a Cultural Impact Assessment (CIA) for Pacific Missle Range Facility (PMRF) and Köke'e Park Geophysical Observatory (KPGO) Succeeding Lease and Easement Areas, Kaua'i, Hawai'i, Contract N62742-18-D-1802. [IA202241]

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- I understand that I will not benefit directly from participating in this research.
- I understand that even if I agree to participate now, I can withdraw my consent at any time during the interview(s) or refuse to answer any question without consequences of any kind.
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	Yes I am donating International Archaeology, LLC, my interview(s) for future use a stated above.
	No Please use my interview contribution exclusively for the purposes of this study a described on this form.
	oject Manager: Alex Morrison, Ph.D. <a href="mailto:amorrison@iarii.org">amorrison@iarii.org</a> hnographer: Hannah Kaumakamanökalanipō Anae, M.A. <a href="mailto:hanae@iarii.org">hanae@iarii.org</a>
Sig	gnature of participantt

By my signature, I give consent and release for my interview(s) to be used as specified.

Signature of participant

Date

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Ethnographer: Hannah Kaumakamanōkalanipō Anae, M.A. <hanae@iarii.org>

Signature of participantt

Signature of participant

Daye

Signature of researcher

I believe the participant is giving informed consent to participate in this study

Signature of researcher

Date

SUBJECT: Interview Authorization and Release Form for a Cultural Impact Assessment (CIA) for Pacific Missle Range Facility (PMRF) and Kōke'e Park Geophysical Observatory (KPGO) Succeeding Lease and Easement Areas, Kaua'i, Hawai'i, Contract N62742-18-D-1802. [IA202241]

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- I, ENOVA KAPRATTI , voluntarily agree to participate in this study in accordance with the interview process and goals outlined in this form.
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- I understand that, following submittal of the final study, all digital recordings of interviews, approved written transcripts, annotated maps (if any), and signed consent forms will be submitted to the project contractor, JV and to CNRH, and NASA as part of project
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I understand that I will not benefit directly from participating in this research.

- I understand that even if I agree to participate now, I can withdraw my consent at any time during the interview(s) or refuse to answer any question without consequences of any kind.
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I have had the purpose and nature of the study explained to me in person and in writing

and I have had the opportunity to ask questions about the study.

I understand that I am entitled to access the information I have provided at any time while it is in storage as specified above.

I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

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Project Mar Ethnograph	nager: Alex Morrison, Ph.D. <a href="mailto:amorrison@iarii.org">amorrison@iarii.org</a> her: Hannah Kaumakamanōkalanipō Anae, M.A. <a href="mailto:amarai.org">hanae@iarii.org</a>	

Signature of participantt

Signature of participant	U \ Date	29	23
Signature of researcher  I believe the participant is giving informed consent to participate	e in this	study	
Signature of researcher	Date		

SUBJECT: Interview Authorization and Release Form for a Cultural Impact Assessment (CIA) for Pacific Missle Range Facility (PMRF) and Kōke'e Park Geophysical Observatory (KPGO) Succeeding Lease and Easement Areas, Kaua'i, Hawai'i, Contract N62742-18-D-1802. [IA202241]

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No \_\_\_\_\_ Please use my interview contribution exclusively for the purposes of this study as described on this form.

Project Manager: Alex Morrison, Ph.D. <amorrison@iarii.org>

Ethnographer: Hannah Kaumakamanōkalanipō Anae, M.A. <hanae@iarii.org>

Signature of participantt

M	11/24/23
Signature of participant	Date
Signature of researcher	
I believe the participant is giving informed	I consent to participate in this study

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Signature of participantt

Janu D	alcall	w	11/26/2023
Signature of participa	<b>h</b> t		Date

Signature of researcher

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Signature of participantt

described on this form.

Kanno Kaumsker 11/26/2023
urcher Date

	NOV 26, 2023
Signature of participant	Date
Signature of researcher	

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Signature of participantt

described on this form.

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THE STATE OF THE S	11/28	/23
Signature of participant	Date	

Signature of researcher

I believe the participant is giving informed consent to participate in this study

Harrock K Grae Laumaka 1/28/2023

Signature of researcher

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Ethnographer: Hannah Kaumakamanōkalanipō Anae, M.A. < hanae@iarii.org>

Signature of participants & W. W.

ly k, hum	27th November 2023
Signature of participant	Date

Signature of researcher

I believe the participant is giving informed consent to participate in this study

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Signature of participantt

Signature of participant Date

Signature of researcher

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Signature of researcher

Date

SUBJECT: Interview Authorization and Release Form for a Cultural Impact Assessment (CIA) for Pacific Missle Range Facility (PMRF) and Kōke'e Park Geophysical Observatory (KPGO) Succeeding Lease and Easement Areas, Kaua'i, Hawai'i, Contract N62742-18-D-1802. [IA202241]

International Archaeology, LLC (IA), a cultural resource management firm based in Honolulu, Hawai'i, is currently preparing a Cultural Impact Assessment (CIA) in support of a proposed action application by Commander, Navy Region Hawai'i (CNRH) and National Aeronautics and Space Administration (NASA) under contact to Cardno-AECOM Joint Venture (JV).

The CIA will include semi-structured interviews with individuals from appropriate Native Hawaiian Organizations and local communities to obtain ethnographic information about multiple discrete parcels across PMRF and KPGO while contextualizing these specific areas within the *ahupua'a* and adjoining land for the PMRF and KPGO Succeeding Lease and Easement study. The information will be used to assess the cultural landscape and the potential impacts to cultural resources and practices that may result from this project. These interviews will be conducted by a qualified Ethnographer on behalf of the study's Project Director, who will assume primary responsibility for the background historical research and consolidation of the historical and ethnographic data, and will be the primary author of the CIA.

- 1, Bill De Coste, voluntarily agree to participate in this study in accordance with the interview process and goals outlined in this form.
- I understand that this study is part of a proposed action application CNRH and NASA in support of the PMRF and KPGO Succeeding Lease and Easement Areas study emcompassing the surrounding areas.
- I undersand that participation in this study may involve sharing information about significant archivally-identified cultural areas, especially sites and their components within the area study.
- I agree that my interview(s) will be recorded with a digital recorder supplemented by handwritten notes. A map or maps of the subject parcel and the surrounding lands will also be provided for reference and annotation purposes.
- I understand that a full transcript of my interview(s) will be prepared in Microsoft Word
  (DOCX) format, and will be provided to me for corrections, additions, or deletions (in
  person, online, or via post). Only the interview data I have reviewed and approved will be
  used in the study.
- I understand that, following my review and approval of my interview transcript(s), the

- I understand that, following submittal of the final study, all digital recordings of interviews, approved written transcripts, annotated maps (if any), and signed consent forms will be submitted to the project contractor, JV and to CNRH, and NASA as part of project documentation.
- I understand that digital copies of the interview recordings, interview transcripts, annotated
  maps (if any), and signed consent forms will also be retained by International Archaeology,
  LLC, on its computer system in Honolulu, Hawai'i, for an unspecified period.
- I understand that I will not benefit directly from participating in this research.
- I understand that even if I agree to participate now, I can withdraw my consent at any time during the interview(s) or refuse to answer any question without consequences of any kind.
- I understand that I can withdraw permission to use my interview data within two weeks
  after I review and approve my interview transcript, in which case the material will be
  deleted. I also understand that I cannot withdraw my interview data after the final version
  of the study report has been submitted to the client
- I have had the purpose and nature of the study explained to me in person and in writing and I have had the opportunity to ask questions about the study.
- I understand that I am entitled to access the information I have provided at any time while
  it is in storage as specified above.
- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

International Archaeology, LLC (IA) may want to use portions of your interview for other CIAs, archaeological reports, oral history archives, educational programs, displays, or other public material (including the internet). You have the option to grant IA permission for future use of your interviews (s) on this form, or decline use beyond the purpose of this project.

**Deed of gift:** I hereby give this interview to International Archaeology, Inc. (IA) for historical, scholarly, educational, and community-outreach purposes as IA sees fit, including but not limited to exclusive rights of production (copyright), distribution, preparation of derivative works, public educational performance, displays visual, in print, or electronic, or other media including the internet unless stated otherwise here.

Yes	_ I am dona	ting Internationa	Archaeology,	LLC, my	interview(s)	for future	use as
stated abo	ove.						

No \_\_\_\_\_ Please use my interview contribution exclusively for the purposes of this study as described on this form.

Project Manager: Alex Morrison, Ph.D. <amorrison@iarii.org>

Ethnographer: Hannah Kaumakamanōkalanipō Anae, M.A. <hanae@iarii.org>

Signature of participantt

Signature of participant Date

Signature of researcher

I believe the participant is giving informed consent to participate in this study

Signature of researcher

Date

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- I, Michael A. Fage, voluntarily agree to participate in this study in accordance with the interview process and goals outlined in this form.
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Yes	I am donating International Archaeology, LLC, my interview(s) for future use as
stated a	bove.
No	Please use my interview contribution exclusively for the purposes of this study as

Project Manager: Alex Morrison, Ph.D. <amorrison@iarii.org>

Ethnographer: Hannah Kaumakamanōkalanipō Anae, M.A. <a href="hannah">hannah Kaumakamanōkalanipō Anae</a>, M.A. <a href="hannah kaumakamanōkalanipō">hannah kaumakamanōkalanipō Anae</a>, M.A. <a href="hannah kaumakamanobamanokalanipō">hannah kaumakamanoka

Signature of participantt

described on this form.

Signature of participant

11/29/23

Date

Signature of researcher

I believe the participant is giving informed consent to participate in this study

Signature of researcher Kannahar 11/29/2023

## APPENDIX B: CONSULTANT TRANSCRIPTIONS

## ORAL HISTORY INTERVIEW

With

Richard Keaoopuaokalani "Keao" NeSmith [KN]

November 25, 2023

Waimea, Kaua'i

By

Hannah Kaumakamanōkalanipō Anae [HKA]

The interview took place in the *moku* of Kona, *ahupua* 'a of Waimea. Overlooking the town of Waimea.

Recording file names IA202241\_2023-11-25\_Keao NeSmith(1).MP3 and IA202241\_2023-11-25\_Keao NeSmith(2).MP3

HKA: *Welina kākou* [greetings to all], <sup>1</sup> today is November 25, 2023, and we are on the *mokupuni* [island] of Kaua'i.

KN: Moku [district] of Kona, ahupua 'a [land section] of Waimea.

HKA: I am Kaumaka Anae, representing International Archaeology, LLC and we are conducting the Cultural Impact Assessment interviews for the Pacific Missile Range Facility (PMRF) and Kōke'e Park Geophysical Observatory Succeeding Lease and Easement Areas. And I am here with Keao. Keao, can you say your full name?

KN: Keao NeSmith.

HKA: And do I have your permission to record this interview?

KN: Yes.

Most Hawaiian definitions were sourced from Ulukau: Hawaiian Dictionaries online (https://wehewehe.org/gsdl2.85/cgi-bin/hdict?l=en). In some instances, the subjects supplied definitions and in others, the interviewer provided a translation.

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HKA: Before we start, I'd like to say of course, e kala mai [excuse me], if I seem so maha oi [brazen].

And um, so ... it's not my intention. So, we can start this interview. So how long have you and your

'ohana lived in the area?

KN: I was born here in Waimea, raised in Kekaha, next town over. Um, but my family was here. My

parents, uh let's see ... Seven of us children, I'm number six out of seven and uh ... the third child in the

family was born here, and the rest of us was born here. So that was in the fifties, I guess?

HKA: And so, did your 'ohana ... did your mom and your 'ohana ... were they always living here? Your

sisters?

KN: Uh, not my mom and dad. Um ... my mom was born Keaukaha, Hilo. My dad was born in Texas ...

Gainesville, Texas. Um, but the generation before, my grandpa was born Hanalei, Kaua'i. And um, going

back on his side, is a long Kaua'i connection. And then on my grandma's side, my mom's mom, is Ka'ū,

Puna. Uh, my mom's grandpa was from Waihe'e, Maui but the maternal side all Ka'ū, and Puna, and

Hilo.

HKA: So, I know you're familiar with the Mānā area and PMRF (Pacific Missile Range Facility). What

can you tell me about that?

KN: The what?

HKA: The Mānā area and PMRF.

KN: Oh, Mānā ... Um, okay, so, ah, what ... just tell any kind about the area Mānā? Well, my first-hand

personal experience growing up in Kekaha, there used to be a village up by Mānā side, right. You go on

the highway all the way till you gotta make the left turn to go Polihale to the beach. On the right-hand

side of the road, there at the turn off, was a village ... old plantation houses. And there was a big

community swimming pool there. And it was a nice swimming pool, so we used to go as kids, rarely to

that swimming pool. I remember because it had the high diving board, 'cause we had a swimming pool in

Kekaha too, but it didn't have a high diving board—but that one did. And, uh, I have a grandaunty who

used to live in that village over there. And uh, only once though did we ever go visit her at her house over

there. And I remember she had *lauhala* [Pandanus leaf] mat covering the floor. Um, but that village

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closed down in the ... '80s maybe into the '90s, is when people left that village permanently and then all the buildings got torn down.

So that's a big memory of Mānā side. Other than that, Polihale for sure ... camping, spending time on the beach, picking *puka* [hole] shells on the beach. As a kid, we used to make our own *puka* shell *lei*(s) [necklaces made of flower, leaves, and/or shells etc.]—spending time on the beach over there picking *puka* shells. And I remember the rest of the coast 'cause we know Polihale real well but when you keep going on the beach around the point, Nohili way, around there to me always was *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of a mystery because it's not an area we used to go. Uh, Queen's Pond, close to Nohili is about as far as we would go, but the area around used to seem like a real mystery to me ... almost spooky *kine*. But, um, I came to learn later on that those sand dunes had all the bones inside. And I wasn't aware of that as a kid ... we came to learn that over time. Um ... but I used to ... I don't know, because it was overgrown with *kiawe* [algaroba tree (*Prosopis pallida*), a legume from Peru, first planted in 1828 in Hawai'i, where, in dry areas] trees and bushes ... the sand dunes, over there. So, I remember feeling *kine* of scared of that place, and then I came to learn later that that's where had the bones ... Then I made the connection, "Oh, no wonder I used to be so scared of that place ..." But I'm not afraid of that place anymore. It's not a ... there's nothing spooky about it.

And then growing up in the church, we used to have church camping stays for days at a time. Not at Polihale but more around the point, which was good 'cause that was part of the area that I used to be scared of, because it was such a mystery to me. But camping in those areas as a group, and all these people that I knew all my life, made it feel safe to me. And, uh, so lot of fond memories ... Yeah, the memories my era was the plantation days. So, it was always sugarcane. Even now today, it's weird to me not seeing sugarcane, because it seems so recent that the sugarcane fields were done away with. Because it's such a big part of my growing up years, yeah? But going through all the dirt roads, through the different sugarcane fields as a kid, one of the really awesome things about growing up on the west side was to be able to just roam freely. There were never gates on the roads. The dirt roads going between the sugarcane fields, that came later, I guess starting in the '90s.

But as a kid growing up, we were free to roam through the different cane fields and stuff like that ... through the ditches and explore on the bike. There were also the pig pens. A lot of families in Kekaha would raise pigs, and there were pig pens along the *pali* [cliff], back over here. So, the back road of the furthest *mauka* [toward the mountain] road closest to the *pali*, that used to be the old Government Road

that went all the way to Polihale. But when they made the coastal highway, then they kept the back road. But it always was a dirt road and along that road is where the pig pens were. So that was part of the adventure. To be able to go through those dirt roads, and there's those pig pens there—we used to stop and go check them out and stuff like that. And then there was the rubbish dump area, the landfill area. Now it's a big hill. It was never a hill, it was more of a dip before. You could just drive up with your truck and unload your rubbish into the pit ... there was a big pit. Now it's a big hill and it was pretty much ... for us it seemed unregulated at the time. Everyone just kind of knew you went to that particular spot, dump all your rubbish. Now it's heavily regulated ... for good reason.

And then next to the rubbish dump was a rifle range. There was a rifle range. It was a big, long rifle range. I guess it was the military that started it? I don't know but it was always there when I was a kid growing up. And my two best friends when we were growing up in elementary school ... One of the naughty things we used to do was go to the rifle range on the target end, and pick up exploded lead [chuckling], which was really bad. Come to find out, it was a really bad thing to do, but for us it was fun. And we pick up the exploded lead, and we go to my friend's house and he had the, the ... what is it, the smelting thing? To melt down the lead so that we could make fishing lead for our fishing poles. So now as an adult, I, uh ... am super alarmed that we even did that because that's one of the most dangerous things you can do. [Laughing.] And of course that's one of the things you don't tell your parents. And then finally I got busted; I got busted by my dad for doing that. He grounded me for like a month ... and I'll never forget that. Never went back and did that again. Only as an adult I came to realize how really dangerous that was ... lead poisoning and all that. Because my two best friends, we were very tight and after school we would rush home and finish our homework, and then we would meet up again at the spot at the beach because we would spend at least a couple hours fishing in Kekaha, on the reef, and stuff like that. So that's why it was so important that we had the fishing lead! So, to us it was a big deal. And uh ... we would, uh ... if we weren't exploring up mauka on our bikes, then we were on the shore fishing ... doing a lot of fishing ... stuff like that. So we were real tight.

So that was my firsthand experience. Rarely did we go to PMRF, the facility there. They would have special events like the Blue Angels. They would come and do their air show, and we went to go watch them perform a couple of times, as we were growing up. They would have fireworks displays, Fourth of July ... Uh, the military was heavily ... When we were growing up, our community was very tight. There was a community ... Kekaha Community Association (KCA)...were very active. They always had ... was very reliable. Very reliable during, um, New Year's. There would be a big fair. Bazaar, fair at the local park, Kekaha Park, with all the booths. It was a regular fair, carnival atmosphere ... And then

Christmas time, there would be like a mini fair. A big gathering at the park. The military would come fly helicopters, Santa Claus would come down and throw all this candy and stuff like that.

So, the military were supportive of those events ... those Kekaha events. And then Fourth of July was a big, uh, the same type of event, Fourth of July. So, three times a year, very reliable. There was the Fourth of July Carnival; it was a big event you know, easily 10,000 people would show up. Then New Year's again, the same type of event. Then the Christmas Santa Claus Drop ... that was a big deal because it made us kids think that really was Santa Claus, 'cause he came down from the sky. [Chuckling.] But it was a military helicopter that would come. And um, the military would also provide doctors once in a while. They would set up a tent in town, in Kekaha. They would provide doctors to look people over ... dentist ... so that was the involvement of the military back then. Then over at the Navy housing, just past the landfill, there's a housing area where the military families would stay. And they had an outdoor movie theater, so there was an outdoor movie screen and then you can sit on the grass. It was available for the public back then, so we used to go there and watch movies under the stars. That was a lot of fun.

My mom used to teach *hula* [Hawaiian dance], as a kid growing up, at community centers around Kaua'i. And she also would teach *hula* there at the Navy Base for people, usually moms from the Navy families who wanted to learn *hula*. And my mom used to go ... So, she would take me along with her sometimes. And so that was our exposure to the military families. In our church [Church of Jesus Christ of Latter-day Saints (LDS)], some military families would come to our church too...so that was the engagement we had with the area. Children of military families were my classmates at Kekaha Elementary School. I remember one particular friend I had whose family lived on the base and my mom took me on a couple of occasions to his house for a couple of hours to play with my friend and then she would come and pick me up.

So as far as my firsthand experience with Mānā side, that's it. More as I became an adult, I became very fascinated with history. History and culture. So, I devoted lots and lots of time, years, into digging into the historical records, and the lore, and the cultural records of the area of Mānā, growing up. And then recently, in the past several years, I got into composing original *mele* [song] in Hawaiian for performance for *hula*, and for chants and stuff with Leinā'ala Jardin's *hālau* [school of *hula* called Hālau ka Lei Mokihana o Leinā'ala]. That's been like over 20 years now, doing that kind of thing. But digging into the *mo'olelo* [stories, history] in order to keep those *mo'olelo* alive, because they seem so many years ago; centuries ago. That to me anyway, it would be more than unfortunate if people today in our generation never really heard those stories. So, one way to go about it is to turn them into *hula* [Hawaiian dance],

*mele* [song], chants. To make people aware that these things continue even today. So that's really, I don't know ... summarizing my experience with Mānā.

HKA: Does your 'ohana [family] have genealogical connections to the area, 'āina [land]? Your 'ohana family land?

KN: Yeah, some of the uh ... because we're in the Kaumuali'i [Kaua'i Chief] genealogy so some of those *kupuna* [elders] after Kaumuali'i's time lived in Kekaha. And they're *kūpuna* of mine. And after a while, the family kind of left the area and as far as I know, it's my family now, who are the next generation to actually go back to live in Kekaha. And that's where I grew up, yeah?

HKA: So, the house you're in now, is the same house you grew up in?

KN: No, our house now is Hawaiian Homestead Land and I have no idea where the family plot was ...

HKA: Aloha, we are back here with Kea'au ... Keao. Sorry, excuse me 'cause my niece is Kea'au. Um, and ... we are back. Can we start the interview again? So, where were we? Um, so, do you have any 'ohana burials, or burials that you know of? If so, where?

KN: Ah, just my dad. My dad is probably the one *Haole* [Caucasian, White] guy in the Hawaiian cemetery in Kekaha. [Laughing.] But that's where the rest of us going be too, eventually so ... we going get some Hawaiian NeSmith's in there.

HKA: Um, your *kupuna* ... were they, um ... Oh, you told me about your *kupuna*. So, do you know ... you mentioned being related to Kaumuali'i [Kaua'i Chief], and any other relatives from the past that is associated with the area?

KN: I mean, uh, just those kupuna who come after Kaumuali'i's time. I trying to remember the names right now. Any who ... and some of them are *ali'i* [chief, ruler] of Ni'ihau too, but we're talking in the late 1800s, early 1900s. Yeah, that's all as far as *kupuna* connected to Kekaha, Mānā are concerned.

HKA: What is your favorite 'olelo no 'eau [wise or traditional saying].

KN: [Chuckling] I mean, you know ... Eh, for me 'ōlelo no 'eau is no 'eau [wise, clever] because it came from a *kupuna*. Um, it's a little annoying when people always, "Oh, let me go look in the book" ... well that's not so much *no 'eau*, that's a collection of things that have been recorded. For me, the 'ōlelo no 'eau is stuff that came straight from my grandma, 'cause I lived with my grandma. That's how come when me and her were living together, we only spoke Hawaiian to each other. So when she has those expressions that just come out, that she can repeat, that's *no 'eau*.

HKA: 'Ae. [Yes.]

KN: Uh so, she would ... so when you ask me that kind stuff, I think of her and the kind of things that she would say. And they're a lot of things that she would say. Um ...

HKA: What is your favorite one, she would say?

KN: Uh, no more one single favorite ... I get plenty. They're all equally favorite. She would say stuff like, "' $\bar{A}p\bar{o}p\bar{o}$  aku nui ia  $l\bar{a}$ ", "leave it up to tomorrow." In other words, you gotta have faith and you gotta be confident that what you did today was good enough, that tomorrow you going see the result. And she would say stuff like, when somebody pass away, " $H\bar{a}$  'ule ka 'ulu malalo," 'the breadfruit fell down.' Uh, 'ulu [breadfruit], is the 'ulu ah, growing in the tree? And ulu is to grow. So, our whole life we growing just like one 'ulu tree. But there comes a point when we produce fruit and that's the things that we do that are good and that everybody can see ... that everybody can enjoy ... that everybody can benefit from. And then you work so hard, and then one day comes that the 'ulu fall down from the tree ... and that's the end. So that's, " $H\bar{a}$  'ule ka 'ulu malalo." And I thought it was a beautiful way to describe a person's life.

HKA: Yeah, yeah. And your grandmother, she spoke the Ni'ihau ...

KN: No, this is my mom's mom. So she from Ka'ū, Puna, Hawai'i and I was living with her in Hau'ula, O'ahu.

HKA: Oh wow ... wow. And what was her name?

KN: Annie Ka'uhane. We only spoke Hawaiian at home.

HKA: Wow ...

KN: And she would come visit us here in Kaua'i too, in Kekaha. And my neighbors in Kekaha from Ni'ihau, and so often she would go next door and spend the whole day talking story to my neighbors.

HKA: Nice. Um, what kind of um, besides the language of course, what kind of Hawaiian traditions are practiced by you or your 'ohana? Or your kupuna?

KN: Uh, a lot of the everyday kind stuff. So, the fact that we eat *poi* [Paste or pudding made of taro or breadfruit] on a regular basis. The fact that when people come, you go out of your way to welcome them at home ... um, you have to bust out all the food and the drink and make them feel really welcome in your home. And uh, my grandma taught *hula* as we were young, growing up ... and she passed that onto us too. And the music ... a lot of the music, Hawaiian music, is a big part of our family too ... um, plenty kind stuffs.

And then as I grew up, I would involve myself in learning the history and the culture ... having to do with heiau [Pre-Christian place of worship]. And so, I'm heavily involved these days in that kind of preservation work ... having to do with heiau. And then other skills like doing pa 'akai [salt] out in Hanapēpē, helping others with theirs. For many years I was a farmer of our lo 'i kalo [irrigated terrace for taro] in Kahana Valley, O 'ahu, working with 'ohana over there too ... And uh, so all of these things at different parts ... You know, you engage at different parts, times ... and then you move on to other things. So, there's always something there. There's always something around.

HKA: Do you still practice any part of the Hawaiian religion?

KN: Um, I don't know if you can call it religion, in the way we understand religion today. But customs, for sure, yeah. So, the things having to do with understanding how special, for example ... One thing is say,  $l\bar{a}$  [ti leaf (*Cordyline terminalis*)].  $L\bar{a}$  [i is special ... we know it's special ... we know it's sacred, we know it offers protection. So that's always in our consciousness at some point. So, we'll integrate it when we think it's called for, either at the house, or ... Same for *pa'akai* [rock salt]. *Pa'akai* is for protection, for cleansing, forgiveness ... And so that incorporates into what we do. Um, making *lei* [necklace or garland made of flowers, leaves, feathers and/or shells, etc.] for particular reasons ... And then, why we give *lei*. Why we make *lei*. Why the type of leaves, or flowers, or plants we use in *lei* ... There's a reason why we chose what we chose, and that all goes back to traditional understandings of the *mana* 

[spiritual/esoteric power; strength] inside those things. So, all of these things conveying mana is part of the, you know, centuries old understanding of how energies play an important role in our environment, the surroundings ... um, the energy of those things that are unseen around us. I don't know if you consider that religion, but it definitely plays into our consciousness as a family, as a community, um ... and definitely um, something that we still do, even today, even despite the fact that our family was raised in the Mormon Church, these things still played into these things. And the appreciation and understanding of what is an 'aumakua [personal or family god] ... things like that. So even though we don't know the specific name of our family's 'aumakua from the past, we know that, that's an important thing. It's not just when you cite an animal, and in our family, it was always understood to be pueo [owl], that's how come I have this tattoo over here ... But you cannot just say every pueo is your 'aumakua. There's one particular *pueo* and it has a name, and that name is somebody, is one of our  $k\bar{u}puna$  in the past, or that name is lost and we don't know that story attached to that name and that pueo. But it's a pueo. And so, you kind of keep it at that super general kind of space. We wish we knew ... we want to know ... there's a good chance we'll never know, but the memory of it, we preserve. So even though we grew up in the church, from the western American sense, these things were always there, and they're always kind of in the background, or in the foreground, actually.

HKA: So, you're *mahi 'ai* [farmer] and probably *lawai 'a* (fisherman) ... What did your ancestors plant or what do you plant?

KN: Um, I'm not so much active *mahi'ai* today but the emphasis was *kalo* [taro] in Kahana Valley for more than 10 years, maybe 15 years. Almost every weekend I was in the *lo'i kalo* [taro pondfield] in Kahana Valley, O'ahu working with my 'ohana harvesting *kalo*, growing *kalo*.

HKA: Your ancestors, what did they plant?

KN: Don't know.

HKA: Did they plant anything in this area?

KN: I don't know, I don't know. So, when my kupuna who were living in Kekaha, I don't know anything about what they did. I can guess because many of the others were, uh ... many other people in the area were fishermen and *mahi'ai*, to whatever extent subsistence *mahi'ai*, for the family, the neighbors and ... So, I can only assume it was like that 'cause it cannot be true that they did nothing, right?

HKA: 'Ae [Yes].

KN: It was impossible to do nothing, so must've been that they did either *mahi'ai* or unless it was other certain skills, yeah? Like making stuff, maybe *lauhala* [pandanus leaf]. Further back would be *kapa* [made from bark; formerly clothes of any kind] ... but stuff like that. Or, uh *paniolo* [cowboy].

HKA: How bout like *lā 'au lapa 'au* [medicine made of herbs to heal, cure]? Do you still use?

KN: My grandma would use for herself and with me, certain types of  $l\bar{a}$  'au lapa 'au. I have this scar over here on my arm. Used to be a boil when I was young, maybe 10 years old or something like that ... My grandma was visiting with us in Kekaha and I had this boil on my arm, it was nasty. And my grandma would go outside in our yard and grab laukahi [broad-leafed plantain ( $Plantago\ major$ ), a Eurasian stemless weed] and she would steam it to wilt it, and then she would pile it on top of the thing and wrap it. She said that was to bring the boil to a head so that it could drain out. And when I would be sick, she would give me ... well, she would give me  $m\bar{a}maki$ , [small native trees ( $Pipturus\ spp.$ ) with white-backed leaves and white mulberry-like fruit] laukahi (small plants of the genus Campylotheca employed as remedies, sometimes called the Hawaiian tea plant] on a regular basis, especially when I was living with her. A typical day living with grandma was for me, 'cause I was going to school and working, I would wakeup say 5:30 am in the morning, she was already up, already cooking, and she would make cowboy pancake with honey and butter and laukahi (ea. Was always laukahi). And uh, when I was sick with a cold or something, she would make ... laukahi [a weedy kind of verbena (laukahi)]. And she would talk about when she was growing up, ah.

HKA: What is ha'uōwī?

KN: Ha 'uōwī? It's another kind of plant. I wouldn't be able to point it out to you. [Chuckling.]

HKA: 'Cause I don't think it's here.

KN: Yeah, uh probably ... yuk. That thing was yuk. [Chuckling.] She said was 'ono [delicious] for you ... I mean it's good for your sickness, but I used to not like 'cause it was so bitter.

HKA: And where would she get these plants?

KN: Outside ... she knew.

HKA: She grew it?

KN: She never grow 'em.

HKA: She went and gathered?

KN: Yes. She went someplace and found 'em and then she would ... Like I would tell her I wasn't feeling good and she ask me, "What kind not good?" Then she would go ... Next thing you know, there was this pot boiling on the stove, so ... I never really knew where she got if from but ... She was uh, she used to explain to me uh, ha 'uōwī, ko 'oko 'olau, kīnehe [(Bidens pilosa); young plants, just before flowering, are cooked for tea.], māmaki... Uh, one time she talked about something having to do with mai 'a coming out of the banana. I didn't pay attention. Now I regret, I didn't pay attention. I was, "Oh yeah, whatever grandma ..."

HKA: [Laughing.]

KN: Uh, and then ... not anything more serious than that, really. But as far as coming straight from 'ohana, and not from a book, or not from a scientist, these are the kinds of  $l\bar{a}$  'au lapa 'au I'm talking about.

HKA: Yeah ... So, you're familiar with the *kalo* growing in the swampy areas, yeah? And they used to put 'em on top the rafts ...

KN: Yeah, I remember reading ... creating the rafts ...

HKA: And so, you know ... that stream going that way, that you showed me ... is that, that place, that swampy area where they used to travel on?

KN: Part of it, but it would ... all the way to Polihale right?

HKA: Yeah.

KN: And uh, it was the ponds and the lakes were kind of meandering, so it wasn't in straight lines or anything, it was just here and there ... I always found that fascinating yeah, when I first learned about that, and I can only imagine how it must've been. But essentially, it's pu'epu'e [A rounded pile of earth in which plants are set.] ... pu'epu'e style. You know how when you make mud mounds, yeah? So, you make the raft and then you pile the mud on top the dirt. And then you make it pu'epu'e style and that's how you plant the huli [Name of taro tops for planting.] on top of the pu'e, and then the irrigation is coming from underneath. But it couldn't work to use those ponds as lo'i because it's too much water, and it's standing water mostly because it comes from springs. It does flow, because the water was clear, yeah? So that means it was flowing and not just stagnant.

But when we were kids though in Kekaha, I grew up in the old Hawaiian homes section of Kekaha town and further west, there's a subdivision called Kekaha Gardens. I remember when that was, the ground was raised in order to build those houses. But before that it was ponds; it was swamp. We called it swamp, but really they were ponds. And the water was super clear, and it was green. It was green in color. And to us, it was spooky. [Chuckling.] We thought of it as spooky but it was so clear and mysterious but the water was spring water; it was actually fresh water. And they had to fill those in, in order to build that subdivision. So, we were able to see some of those ponds, as kids growing up. And then as I grew older, I learned that actually the whole, all the flat lands, because much of it is below sea level. So, a lot of the flat lands you see out here is actually below sea level. So, you got the beach and so you got the berm that comes up, but it goes downhill gradually till it goes below sea level. So that's why the water table is so high over here.

HKA: Yeah ... Okay, so let's go to the *limu* [seaweed] gathering. Well, let's go to the fish first. Have you...has your family, or have you been like fishing in the area? Like you know, around Mānā on the ocean side? What kind of fish ...

KN: Moi [Threadfish (Polydactylus sexfilis)], āhole [an endemic fish (Kuhlia sandvicensis) found in both fresh and salt water], manini [common reef surgeonfish (Acanthurus triostegus)], 'ō 'io [ladyfish, bonefish (Albula vulpes)], pāpio [young stage of ulua (crevally) fish] ... that's the kind that you catch with the fishing pole.

When you throw net, you get the *āhole*, you get the *manini*, you get the 'ō'io ... Um, the kind you spear fish on the reef, you get the *uhu* [parrot fish (*Scarus perspicillatus*)], you get the *mū* [(*Monotaxis grandoculis*), known as the bigeye emperor or humphead bigeye bream], you get the *kūmū* [Goatfish (*Parupeneus porphyreus*)] ... Um, you get the *palani*, [surgeonfish (*Acanthurus dussumieri*)], *pāku 'iku 'i* [a long fishing net; specifies a net laid in coral reef, into which fish were driven by beating the water] we call 'em. All this kind, that's all the favorite fish. *Kala* [Surgeonfish, unicorn fish], that's all the favorite kind fish to eat. And that's the reef fish.

And then you go outside on the boat, if you fish off the boat, then that's where you get the ... you can either get the deep-sea *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] ... So, you get the *kawakawa* [mackerel tuna], and you get all the different kinds of snapper, yeah? And then you get the *ono* [large mackerel type fish (*Acanthocybium solandri*)]. Of course. you going get the *barracuda*, you cannot help [chuckling] ... And then you get the *marlin*, and you get the *mahimahi* [dolphinfish (*Coryphaena hippurus*), a game fish]. Plenty *mahimahi* outside on the boat.

HKA: You guys get plenty he'e [octopus (Polypus sp.)] too, yeah?

KN: Uh, not bad, yeah. Actually, we get pretty good on the he'e [octopus] side, especially if you go where get plenty reef, like ... and then the lobster too, yeah. But if you go Nā Pali side, choke he'e on that side.

HKA: How 'bout the *limu* [seaweed]? What kind *limu* get? You guys still have over here?

KN: I wasn't so on it with the *limu*. Like I not so good at pointing out the different kinds but like my aunty who just called, her mom when she was alive, when we were kids, she used to come pick us up early in the morning, 4 o'clock, 4:30 on her truck, and take us, because a  $l\bar{u}$  'au [Hawaiian feast, party] was coming up and many people would call her to make the food. So, she would have her certain families that she would hit us up to go help her go harvest, yeah. So, I remember going with her out to Mānā side, Kinikini Point side. Um, she knew the spots to go, so we would just go with her and she just point to us on the reef, on the coast ... tell us go pick this *limu*, stick it in the bag. It was *limu kohu* [small seaweed (*Asparagopsis taxiformis*), with densely branched furry tops that are tan, pink, or dark red], ogo [seaweed], and also sea cucumber. She would have us grab *loli* [sea cucumber (*Holothuria spp*.)] and she would sit on the reef and she would scrape 'em and then cut the two ends, squeeze out the guts, and then scrape 'em some more, and chop 'em into pieces and throw 'em in the big mayonnaise jar. And it would

attract all these eels, and they would come eat up all the stuff and that used to make us scared. But we used to grab the *loli*, throw 'em to her, and she would just sit on the *papa* [reef] where the water would just come up to her, and that's where she would sit there and scrape, scrape, scrape, and then cut it up. And then we would help her prepare the foods for the  $l\bar{u}$  'au. I remember those memories ...

HKA: Wow ... that's neat. So, did you guys have a lot of  $l\bar{u}'au(s)$  when you guys were growing up?

KN: Plenty. And Kekaha Beach was a huge beach, and now it's only waves crashing on rocks right now. But it was a huge beach. In fact, there used to be the big kind, the old school canvas tent, the military kind, and I remember going to at least one or two, at least two different big  $l\bar{u}$  au on the beach in Kekaha, where it was like that ... With the long tables, everything was on the sand ... Or, or up *mauka* [toward the mountain], you know? Different locations ... Waimea, Kekaha ... Yeah, many  $l\bar{u}$  au. I always, always did love that.

HKA: You know what, so what I'm going to ask you is ... You tell me what you want to talk about in this interview ... because we're going to come across ... 17 more minutes to 12:00, so I'm going to let you talk ... tell me what you want to talk about?

KN: Okay. Well, um, let's see ... Uh, having to do with the military, yeah, so there's been a happy slash, frustrating slash, irritating relationship with the military, yeah? First of all, the Hawaiian Kingdom achieved international recognition as a sovereign state in 1843 with status equal to the U.K., France, the US and other recognized states through bilateral treaties of friendship, commerce, et cetera. In 1893 the U.S. lands their troops in an illegal occupation, military occupation, that continues until today. The United States has no business being here. This is the Territory of the Hawaiian Kingdom. The United States has mutual treaties of friendship, recognition, commerce with the Hawaiian Kingdom and those are still valid, even until today. There exists no bi-lateral treaty of cession between these two equally sovereign, equally independent nations—the Hawaiian Kingdom and the United States, just a unilateral declaration of annexation on the part of the US. There is no treaty of merger of these two countries. So, the United States has no business being here and the rights of the HK of its territory are continually violated every day of the occupation. This is an international crime, a war crime. The perpetuation of US propganda making Hawai'i residents and people around the world think that Hawai'i is a state of the US is perpetuation of the crime.

So, when Pearl Harbor was hit, the Japanese Empire was not bombing the Hawaiian Kingdom. They were bombing specific American targets—military targets—illegally occupying Hawaiian Kingdom Territory. That was actually part of the argument Japan was making at the time. Obviously, Japan was trying to jockey for its own selfish agenda at the time. That is not a question. But it remains true, at Pearl Harbor time, and all the way till today. So, the fact that Russian spy ships, Chinese spy ships, North Korean missiles and spies, are attracted to PMRF (Pacific Missile Range Facility), is not a Hawaiian Kingdom thing. Its only because of the illegal intervention of the United States military. That is the only reason. So, had the Hawaiian Kingdom been left alone and respected by the United States since 1893 till today, do you think these targeting of Hawai'i in these military ways, would continue? I doubt it, because there would be no motivation.

HKA: 'Ae [Yes].

KN: So, there's that. Now, within this capacity as an illegal entity, military entity, here in the Hawaiian Kingdom, now we're using Ni'ihau as part of their advanced technology, radar communications technology, spy technology ... You know, to further the U.S. agenda for illegal purposes, is terrifying. Because that creates us... We exist as a nuclear target, not because of the Hawaiian Kingdom [HK] but because of the U.S. presence here. So then, there's that. So, this uncomfortable, sometimes awkward relationship today with PMRF, has a lot to do with emotions that are stirred among locals. And are we educated in our elementary schools, middle schools, high schools, locally about these issues and exactly what the position of the United States is? The relationship between the Hawaiian Kingdom and the U.S.? It is not part of the curriculum. It is not part of this, so the fact that there's a lot of speculation going on and really charged emotions among locals that are many times unspecific, just ambiguous, charged up, frustrated emotions among locals having to do with the U.S. military, is no surprise to anyone because it is not part of the formal education that we get in our schools. And I am not a conspiracy theorist, however, it is no surprise that, that kind of ambiguity leads to either mistaken or confusing positions among locals, about the relationship between our Hawaiian people, the local people and the U.S. military. So, don't be surprised about any of this. Obviously, it isn't our fault that we're not being educated properly about these relationships.

So, one thing that disturbs me a lot is the position of the U.S. military relative to Ka'ula. [a rocky islet off Ni'ihau] Ka'ula is the modern day Kaho'olawe [smallest of the eight major Hawaiian Islands], back in its bombing days, which was never intended to continue past World War II. So, Kaho'olawe was never intended to be used as a bombing target past the war days of World War II. So, it was the imposition of

the U.S. again, with regards to that. Well, when Kahoʻolawe ceased as a bombing target, the U.S. military continued to bomb Kaʻula. And Kaʻula is a sacred site. That's where Kūhaimoana [shark god] lives, the giant shark, who is the guardian of this area, in the cave Hālauaola [shark cave], which is under the water level of Kaʻula over there. On top are several *heiau*, which the U.S. military continually disregards as anything special and feels perfectly fine strafing, you know, certain targets ... Like they'll lower Matson containers onto Kaʻula as a target to bomb, or to strafe with guns from aircraft or from boats. They join together in the RIMPAC exercises (Rim of the Pacific is the world's largest international maritime warfare exercise) with other countries to do the same, and that is absolutely unacceptable. That is unacceptable. The fact that Kaʻula was excluded from Papahānaumokuākea [US-declared marine preserve consisting the northwest Hawaiian Islands from Nihoa to Midway] is international injustice. That should never have happened. Kaʻula should always have been preserved and kept sacred and the emphasis should have been for local fishing, and learning, and for preservation purposes. Never for bombing or for guns.

We hear the bombing of Ka'ula from here, Kekaha. From Kekaha, we can hear the bombing in the valleys of Mānā and Kekaha. It reverberates in the valleys. So, Wai'awa, when you're in the valley, it reverberates when they bomb...you can hear the bombs from there during RIMPAC (Rim of the Pacific Exercise). So the fact that the U.S. considers it safe, or unharmful, et cetera, is a complete lie; a complete travesty. No one ever talks about it, the impact of such things, which is part of this agenda to keep us dumb. Keep us uninformed ... the locals of those activites. There must be education about what exactly is going on with regards to Ka'ula and what happens at PMRF. That cloak of secrecy and refusal to disclose is unacceptable. We want to know exactly what's going on over there. And the launching of missiles out of Nohili, that area where our local boat traffic has to come to a complete stop or be arrested under threat of arrest, under threat of anything not good ... that is unacceptable. And so, these are issues that always are there in the minds of locals but this needs to be ... What the military, the least that the military could do for us, is be transparent. We know that it is the nature of the military of any government not to be transparent. And that is unacceptable. We want to know why such information is denied us in our schools for our children to learn and we want that to be remedied. We want education to be prominent, as to what exactly the military is doing.

So, the fact that it provides all these jobs, I don't appreciate the fact that they use that as bait against us. That is inhumane. That is part of the inhumane tactics that other countries do, like Russia, for example, countries the U.S. constantly points fingers at for mistreating their people. And yet, here they go, doing it to us, ever since 1893. So, the destruction that was done to our language and our Hawaiian culture, traditional Hawaiian culture, traditional Hawaiian language, because the conspirators of 1893 were very

explicit, very clear that it was their intention to eliminate the Hawaiian language and to eliminate the consciousness of our Hawaiian National identity. They said so, straightforward. And so, the presence of the United States military till today, is a reinforcement of that agenda ... even today, all these years later. So that is what our local people need to know. That is what the U.S. military needs to own up to, and be responsible for and remedy. So, I understand that coming up in the next year, I believe, next October [2024], there is an agreement for the U.S. military to withdraw in increments, and that needs to be respected. It is a consequence of Secretary of State Blinken being served notice last month by the acting government of the HK of termination of the previous agreement of access to Pearl Harbor, which had a time limit of some years after 1887. *Pau* [Finished, done].

HKA: Mahalo nui [Thank you very much]. I will end this interview right here.

## ORAL HISTORY INTERVIEW

With

Sylvia Johnette Leina'ala Compac [SJLC],

Brad Kekipiaki"Kipi" Akana [BKA],

And

Paul Compac [PC]

November 28, 2023

Akana-Compac Home, Hanapēpē, Kaua'i

By:

Hannah Kaumakamanōkalanipō Anae [HKA]

Recording file name IA202241\_2023-11-28\_Akana-Compac Ohana.MP3

HKA: Welina kākou [greeting everyone], today is November 28, 2023, we are on the mokupuni [island] of Kaua'i, in the Kona moku [district], and kūlanakauhale [city, town] of Hanapēpē. I'm Kaumaka Anae, representing International Archaeology, LLC and we are conducting the Cultural Impact Assessment interviews for the Pacific Missile Range Facility (PMRF) and Kōke'e Park Geophysical Observatory Succeeding Lease and Easement Areas. And I am here with Aunty, Aunty, can you say your full name?

SJLC: Leina'ala Compac ... Leina'ala Akana-Compac.

HKA: And, Kipi, can you say your full name?

BKA: Brad Kekipiaki Akana.

Most Hawaiian definitions were sourced from Ulukau: Hawaiian Dictionaries online (https://wehewehe.org/gsdl2.85/cgi-bin/hdict?l=en). In some instances, the subjects supplied definitions and in others, the interviewer provided a translation.

HKA: *Mahalo* [Thanks] and do I have your permissions to record this interview?

BKA: Yes.

SJLC: Mmmhmm.

HKA: Before we start I would like to say, e kala mai, or excuse me if I seem so maha 'oi [brazen] ...

SJLC/HKA: [Chuckles.]

HKA: ... I apologize in advance. It is not my intention, and this is just for interview purposes.

SJLC: Yes.

HKA: So let's start the interview. So ... basically I start of with *mo'okū'auhau* [genealogy] or your *pilina* or connection to the land. And how long has your *'ohana* [family] lived in the area ... this area? Were you living in Kekaha?

SJLC: Waimea.

HKA: Waimea? So how long have you been living there?

SJLC: Oh ... I can remember as far back as ... I didn't know her, but my great-grandmother. My great-grandmother lived there, and then my grandma ... and then my dad and his families ... his siblings.

HKA: And possibly ...

SJLC: And that goes way back to the ... 'cause when we moved here, that was in the ... what, 1950s ... we moved from Honolulu. My grandma died in '47. I would say from maybe the '20s or '30s, I would say the '20s maybe.

HKA: Wow.

SJLC: 1920s I think.

HKA: And ... [clearing throat] ... and probably before that right ... your ... your mom's side, yeah?

SJLC: My father's side.

HKA: Yeah, your father's side.

SJLC: My mother has no family here.

HKA: Yeah. Your father's side may have even gone further, right?

SJLC: Yes, that could be. That could very well be.

HKA: Are you familiar with Mānā and PMRF [Pacific Missile Range Facility] because ...?

SJLC: Because I worked there.

HKA: Yes. And Kōke'e as well, right?

SJLC: Yes.

HKA: Can you tell me about that?

SJLC: Kōke'e was very interesting because it was something that was new to the world, more or less, because we did like aerospace; that's when aerospace was in ... you know ... in full bloom ... I guess at that time. And we were the only Pacific Tracking Station. And we tracked the, ah ... You tell her, Dad.

\*\*\*\*\*Paul Compoc enters conversation\*\*\*\*\*

PC: We track all the big ships ... you know ... the Cappalo ... We were the only station in the U.S. or in the world, in fact, that could catch certain part of the orbit when the thing pass over. So we can track it, and take all that data, and send it straight to Houston.

HKA: And, Uncle, what is your full name?

PC: Paul Compoc, born and raised Kahuku.

HKA: And do I have your permission to interview you, I mean to have this interview recorded?

PC: Of course.

HKA: Thank you and so ... you both worked there?

PC: I worked there.

SJLC: He worked there ...

PC: That's how I first came to Kaua'i. Before Kentron.

SJLC: Yup. A little before me.

HKA: And what year was that?

PC: 1971 ... I like say ... until 1978.

SJLC: And I worked there from 19 ...

PC: '71.

SJLC: '71?

PC: Yeah, because that's when I got there.

SJLC: Okay. 1971. And then I worked there until 1983. And then I started down at the base in 1985.

HKA: And what did you do at the base?

SJLC: At the base? [Clears throat.] I worked in the department called Air Operations. And I handled all the scheduling of the aircrafts, the pilots, the crew. Made sure we were in budget ... of course ... it's the main thing ... and I did whatever other clerical work that had to be done. I was the only woman in the whole department, among six officers and 20 sailors. I was the only woman and the only civilian.

HKA: And how was it before because you probably saw the place when there was less activity of the military, right? Could you see the difference in time ... like when they were there ... or was it always there when you came to Kaua'i?

SJLC: It was always there ... at times when we had worldwide missions ... and then they would come here ... I think ... it was like every other summer ... and we would have people like from Japan, from China, from Portugal ... just from all over the world.

HKA: So like a collaboration, yeah?

SJLC: Yeah ... I mean yeah.

HKA: And what would they do when they come?

SJLC: They would do their part of the mission that was ... like the Japanese would do like their part of what that mission was going to be for that time of the year.

HKA: So going back to the genealogical part ... did your 'ohana [family] have 'āina [land] around the area?

SJLC: In Waimea, yes.

HKA: Yes. And where was that?

SJLC: Waimea Valley.

HKA: Waimea Valley. Can you describe growing up in Waimea Valley?

SJLC: It was wonderful ... I mean.... You know ... when I go up there now, it's a whole different town. It was very low key, everybody knew each other, everybody helped each other, all the kids played together ... you know.... That doesn't happen nowadays. It was very low key, Waimea Valley was very low key. But I think ... it was a very loving town, because no matter if you were Japanese or you were Filipino, Hawaiian, or whatever, it didn't matter ... you know ... you just ... everybody was one person.

HKA: Did you guys have any community get togethers ... like  $l\bar{u}$  'au(s) [Hawaiian feast, party] and stuff?

SJLC: If there was any, it wasn't like a community thing it would be more like....

HKA: 'Ohana [family].

SJLC: Yeah, 'ohana thing.

HKA: Were any of your 'ohana engaged in lawai'a, like fishermen, or mahi'ai, farmers?

SJLC: You know, I can't remember them being that way ... The workers I can remember in our family was more like County workers, State workers, and stuff like that. But never for the 'āina [land] type. They never worked on the 'āina as a farmer ... Even fishermen, I cannot remember anyone being a fisherman.

HKA: Did they fish sometimes? Did they gather?

SJLC: Fun type, social type ... yeah.

HKA: Did they gather? Yeah ... yeah.

SJLC: Yeah, yeah, yeah.

BKA: We used to fish all the time.

SJLC: What's that?

BKA: We used to fish all the time.

HKA: Yeah, what kind of fish you guys used to catch?

BKA: *Pāpio* [the young stage of growth of *ulua*, a fish], *moi* [threadfish (*Polydactylus sexfilis*)], 'ō'io [ladyfish, bonefish (*Albula vulpes*)].

HKA: So what kind fishing your guys did ... cast ... or ... net?

BKA: Cast, throw net... I catch 'o'opu [general name for fishes included in the families Eleotridae, Gobiidae, and Blennidae] in the river too.

SJLC: [Chuckles.]

HKA: 'O'opu? You guys get 'ōpae [shrimp] too? BKA: Yes, but ... PC: Not plenty. BKA: Not plenty. Mostly in the streams. SJLC: The streams get that. HKA: Yes. So you guys gather *limu* [seaweed] too? SJLC: My dad used to. BKA: Once in a while, yeah. My grandpa used to. HKA: What kind limu? BKA: Limu kohu [a soft, succulent, small seaweed (Asparagopsis taxiformis)]. SJLC: What you call that? The Filipinos call that? BKA: No, not limu kohu. I grab limu kohu once in while. HKA: And where? Where you guys used to go? Waimea? SJLC: My mother ... BKA: Right here?

HKA: Hanapēpē?

BKA: Yeah.

SJLC: My mother had a stepbrother who married into our family in ... Kapa'a ... *limu kohu* was their business. The Lovell family.

HKA: And so is that business still being carried on today?

BKA: No. I don't think so.

SJLC: Not as a business, just as a ... you know ... private ... family type ... yeah. But that was an interesting thing, going and picking up *limu kohu* ... never did it before except with them.

HKA: Oh, yeah. I like doing that.

BKA: Get, but not over here ... where I live now.

HKA: Long *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit]

BKA: Long kine, purple kine.

HKA: Whoa, that's the 'ono [delicious, tasty] one.

PC: I remember camping up Miloli'i. Only helicopter can go inside there. And a bunch of us from Kōke'e, we get dropped off by helicopter. We went in there. The first thing they did was go up a stream, and they caught plenty, big *kine* shrimp. I don't know what they call 'em before, but they were plentiful.

BKA: Prawns.

SJLC: Prawns.

HKA: Prawns, yeah.

PC: Plenty ... you know ... I mean like.

HKA: Plenty, yeah, they get over here.

PC: Yeah. About that time when we went ... that's the first thing they caught, and that's what they ate.

I didn't eat that ... you know what I mean?

HKA: [Chuckles.] Yeah.

PC: That was ... to me ... that was interesting. Even for fishing like that over, because no one goes over there ... the fish comes to you.

HKA: Whoa ... man.

PC: Throw net ... and boof.

BKA: Mullet. We used to go there and get the  $h\bar{t}h\bar{t}wai$  [endemic grainy snail (*Neritinu graposa*), in both fresh and brackish water, eaten both cooked and raw].

HKA: Inside the streams?

BKA: Plenty. Some of the other beaches now, I think the hippies had figured it out ... yeah ... so they scraping the low ones, but if you go get the high ones, in any inaccessible stream get plenty inside there.

SJLC: What is that, Kipi?

HKA: *Hīhiīwai*, they almost like 'opihi [limpets]. BKA: Freshwater 'opihi.... HKA: Yeah. BKA: ... in one black shell. SLJC: I don't really eat shell food. HKA: Ohhh ... PC: I remember that ... in the stream ... that one stream ... Miloli'i.... BKA: Yeah. Miloli'i get. PC: ... they go right up there ... Otis guys ... and all of them ... and foom! But they only take what they going eat because this was camp for the weekend. And all the rest was fishing. SJLC: I remember going up Wainiha on the otherside of the island with Otis was to go get prawns. HKA: Yeah. BKA: We get prawns at my house too ... in our stream ... in our river. HKA: And where you live? SJLC/BKA: Kāhili [land division, peak (3,016 feet high), falls, and park, Waimea district, Kaua'i]. HKA: Where is Kāhili at?

BKA: You know ... like when you're going to the airport?

HKA: Yes

BKA: And like get the tree tunnel like when you going down to Po'ipū?

HKA: Yes.

BKA: Right before the tree tunnel ... get this sign that says ... like get one charter school inside.

HKA: Yes. Yes. I seen that.

BKA: All the way pass the charter school ... the last house ... all the way at the base of the mountain.

HKA: That's way up right?

BKA: Yeah.

SJLC: I love that place.

BKA: Yeah. We live on 107-acre property. With one ranch thing. And I get my own 15 acres on the side, and I get my horses ... and my....

HKA: Oh, really ... so you paniolo [cowboy] then ... right on.

SJLC: [Chuckles.]

BKA: I'm a ... wanna be.

HKA: So long you ranching ... that's paniolo.

BKA: Those cowboys, they work hard ... I not working that hard.

HKA: [Laughter.]

BKA: You should come out one time, come check it out. Keao knows where it's at.

HKA: Yeah. I went up that road a little bit because I was *maha'oi* [inquisitive] the first time I came. I seen where that school is ... it was beautiful ... and the trees are beautiful over there.

BKA: I live past the school, behind the school.

HKA: Yeah.

BKA: So instead of going through the school gate where they ... You gotta go to one gate, like right on the side get one little gate. But get one community up there of about 20 houses. Their own gated community.

SJLC: The most beautiful is getting up in the morning and seeing the waterfalls. Oh ... so beautiful.

BKA: We get our own water system, we get electric, we no more like cable or nothing. We just when get Wi-Fi like two weeks ago.

HKA: For real ... mean.

BKA: We when get the Elon Musk one ...

HKA: [Chuckles.]

BKA: Star Eight or something like that. Now we can watch a little bit of T.V.

HKA: That's cool.

PC: Kaua'i is just like Kahuku ... one big Kahuku. HKA: Yeah, Waimea reminds me sort of like Kahuku too. BKA: That's where we grew up. I grew up Waimea Valley. PC: He went to Kahuku. He used to spend his summers at Kahuku. HKA: For real? I wouldn't have known that ... you know what I mean ... while we were going to Kamehameha School ... I wouldn't have known that. BKA: Our hale [house, but in this case residents at the dormitory Kipi stayed at while attending Kamehameha Schools] and stuff used to go Kahuku. SJLC: You grew up in Punalu'u? HKA: Yes. BKA: Because was cheaper than flying back to Kaua'i. HKA: Yeah. PC: You know the Logans? HKA: Yes. BKA: Bulla.

HKA: Bulla is our classmate.

BKA: Yeah.

PC: You know the one used to work with me ... yeah ... the Lost ... when they filmed Lost like that. He used to work on ... I forgot his name. He was a Logan too. The old man.

HKA: Ahi?

BKA: Ahi?

HKA: Bulla's dad?

PC: No ... what's the other.... He used to be in Punalu'u ... you know ... Pat's At Punalu'u?

HKA: Yeah.

PC: In that building.

HKA: Oh, I wonder who's that?

PC: Logan ... I forget, but he was a bull. Logans, Greens, Compocs ...

HKA: I heard of the Compocs ... oh, your last name is Compoc.

PC: You know Jeffrey?

\*\*\*\*\*Conversation stricken from the record because it strayed away from the interview. The interview begins again at 18:28\*\*\*\*

HKA: So did any of your family practice Hawaiian traditions such as *lei* [necklace made of flowers, leaves, and/or shells, etc.] making, *'oli* [chant], *lua* [Hawaiian martial arts], *hula* [Hawaiian dance]?

PC: Tammy ... hula [Hawaiian dance]. BKA: Like now or ...? HKA: Now or even then ... BKA: I do *lua* [Hawaiian martial arts]. HKA: You do lua? BKA: Yeah. In the class. I never go long time ... but get one right now with Alan Arquette. HKA: Where is this at? BKA: Started west side. The guy ... the kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] ... is in Waimea Valley. SJLC: Alan Arquette. HKA: He's the instructor? BKA: My brother is one 'olohe [skilled, especially in lua fighting] too, the olohe on Maui. And then Alan is the 'olohe over here. HKA: Cool. I wouldn't think you would be doing *lua* right now. [Chuckles.] BKA: Yeah. I just when give up hunting. HKA: Oh, yeah?

BKA: About seven years ago. I was addicted to killing pigs with my dogs for years. HKA: [Chuckles.] Oh, we got plenty in Punalu'u too. BKA: Even by my house ... loaded pigs. HKA: And so ... where you guys practice *lua* [Hawaiian martial arts]? BKA: Now, we was practicing at ... the last time we went ... Koloa Park ... in the dark but. The public county park. We get one big papa [class] maybe 100 people. We shake that park up ... yeah. HKA: Wow ... good. BKA: Yeah. But I haven't gone in a while. Get some internal beefs [struggles] with some guys ... not me but ... they split apart and they ... HKA: Different factions? BKA: I never pick which group I going follow ... so ... SJLC: And you know the 'oli [chant] that they do ... HKA: Yeah. SJLC: ... before they start everything ... my grandpa Kekahuna wrote it. BKA: Yeah. HKA: Oh, really ...

BKA: For all the *papa* [class].

HKA: Can you talk about your grandfather Kekahuna ... where was he living?

SJLC: When I was growing up ... okay ... as far as I know ... him, growing up ... they lived in Pālolo.

HKA: He was an ... archaeo ... not certified archaeologist, but ...

SJLC: He was also for the Hawaiian Studies at University of Hawai'i. And this was told to me by Bill Kikuchi. Bill Kikuchi was ...

HKA: Yes, he was an archaeologist.

SJLC: Yeah, he was an archaeologist in Kaua'i. He told me when he was going to the University of Hawai'i, and they would go on excursions to different places, my grandpa would go with them.

HKA: Can you say your grandpa's full name?

SJLC: Henry Enoka Kaleinapa Kekahuna.

PC: Only one leg, yeah, he had? You know that he had only one leg, and he did all that walking.

SJLC: Yeah.

HKA: And what are the works that he did in the *moku* [district] of Kona, on the *mokupuni* [island] of Kaua'i?

SJLC: Kaua'i?

HKA: Yeah.

SJLC: Well, he was working with Mrs. Juliette Wichman, and he also was working with ... I don't remember his first name ... but Moir from Kōloa ... he used to have this cactus gardens, called the Moir Cactus Gardens ... and I think it sat on some kind of Hawaiian grounds. So my grandfather worked with him also, and with Mrs. Wichman ... mainly. But when he went to Hanalei to work with Mrs. Wichman, almost towards the end ... going to Hā'ena already. He also worked with another Hawaiian family out there ... Maka, the Maka family. There were two brothers, Simeon and the other one ... I cannot think of his name. But he gave my grandfather a lot of information about the areas on that side of the island ... on the north side of the island.

BKA: On this side, he did plenty stuff at Polihale and Barking Sands too, he ... mapped out

HKA: Polihale also had the *hula*  $p\bar{a}$  [a place to honor the hula] over there yeah?

BKA: He did all that stuff ... He did on the top of Barking Sands, I think it's part of PMRF, what he did.

The picture is of him on the top of Barking Sands.

HKA: Yeah, that's the one I just took. [I captured a photo of a photo of Henry Kekahuna hanging in a hallway of the Compoc home.]

SJLC: If you have a chance and you go to the Bishop Museum, you'll find things I didn't even know he did. I never knew he made calabashes.

PC: He made an original map of one [referring to the mapping of a *heiau* or temple at Po'ipū].

SJLC: The Koloa one.

PC: The original.

SJLC: Yeah, the Po'ipū one.

PC: Where is it?

SJLC: Loke has it, she's going to have it framed ... expensive because big ... ah ... the map. The map is about half the size of that door.

HKA: Oh, that's unreal.

BKA: Even like ... you go to Bishop Museum, you go downstairs, and you can hear ... they even get recordings of him teaching classes ... in half-Hawaiian and half-English. We listen to his voice, because I never ...

PC: These guys never even know.

BKA: He died ... I think ... like a year after ...

SJLC: Two years ...

BKA: ... after I was born.

SJLC: ... two years after you were born, because he scolded us when I named him Kekipi. He said, "Why did you name him Kekipi?" I said, "I don't know, the father wanted his name Kekipi ... I just went along." "You know what this is?" "No." "That's the rebel ... and kids turn out to be like their names." [Chuckles.]

HKA: [Chuckles.]

BKA: Oh, well.

SJLC: Because after he was born ... it wasn't even a year yet, we took him up at Pālolo to see my grandpa and my grandma ...

HKA: Wow, so he worked all over the *pae 'āina* [archipelago, group of islands], yeah?

SJLC: Yeah.

HKA: Whoa ... my goodness ... what a legend.

BKA: He's a legend ... but guys ... we get people from New Zealand coming over down, trying to talk to her, and just ... because he is such a legend in ... mapping. Without pretty much no training, just mapping out stuff. And drawing accurate maps while the thing is actually overgrown ...

HKA: That's crazy.

BKA: ... with bushes.

SJLC: With perfect penmanship.

PC: Yeah ... no need air support.

SJLC: Beautiful.

PC: No need nothing. One-legged.

BKA: Get the Po'ipū one ... get the stuff about the *heiau* [place of worship, temple]. And then get his picture on top too with ... Because they get one map, and one drone map of the thing, and the thing match up perfect to when he drew up the thing in the '60s.

HKA: Yeah. They do the overlays ... yeah? Oh, man ... that's amazing.

SJLC: He was ... he was an amazing man.

HKA: Did your 'ohana [family] practice any lā 'au lapa 'au, Hawaiian plant as medicine?

SJLC: No.

BKA: Only my father, but he's kind of ... on Maui. He was teaching lā 'au lapa 'au classes. HKA: Yeah? BKA: Maui Community College. HKA: Really, wow. PC: You probably know his last name, his biological father. BKA: Lyons-Naone. Before he went ... \*\*\*\*\*Stricken from the record\*\*\*\*\* HKA: You guys familiar with the Mānā area ... it was like a swampy area ... there was water flowing through ... they used to grow taro on rafts ... in the Mana area ... yeah? They used to grow them on rafts. BKA: There was one swamp out there before. HKA: Yeah. All the way down, from like Waimea to Polihale. And they used to go ... and you could travel on a canoe going inside this ... And I saw some of it when we went above Waimea, Keao pointed to some of it where the thing was. And you can see a stream going down. PC: Right behind Taniguchi's place going underground like. BKA: Like the Mānā ... like I know about Mānā ... used to be like all swamps.

HKA: Yeah ...

BKA: Used to be all water, and they used to grow taro and rice. If you drive on the west side and you see all that valleys coming out ... all those valleys was cut by water. And basically what they did when all those cane companies came, they dug out one ditch line on the top, and it catches all the water that used to feed all those valleys coming down, and then they shift the water ... transports the water to one place. And they use that water ... and it went to Pu'u Lua Reservoir up in Kōke'e, the big reservoir ... and down to Kitano Reservoir, that's where they distributed all the water to Kekaha Sugar and stuff. But all ... I mean was swampy that place.

HKA: Then it got drained ...

BKA: Got drained and then they would stop the water from coming down the valleys.

HKA: For plant, yeah?

PC: How come they get that water, you know by Waimea by David Taniguchi's house ... Kitano Stream ... in the back? Where Uncle Paul guys' house used to get one, like one trough.

BKA: Yeah ... that's how they transport the water.

HKA: Yeah, plenty ditches.

BKA: On top the mountain.

PC: Built right.

BKA: You can see 'em.

HKA: Yeah. I seen 'em.

BKA: It's on top the hill, above the hill.

PC: If they never do that, would flood out all the place?

BKA: Basically, if they let the water down again, Kekaha town would be flooded.

HKA: It wouldn't be dry like it is now.

BKA: So they had to stop all the water from coming down because all those big valleys ... dried out ... those valleys were made by water years ago.

HKA: Yeah. That's what carved the valleys.

PC: We used it call that the *Menehune*(s) [legendary race of people who worked at night, building fish ponds, roads, temples] ... the *Menehune*(s) used to go through there ... from the mountains.

HKA: Yeah, get Menehune Ditch ... yeah, over here?

BKA: Yeah, but the Menehune Ditch is below that top water one.

HKA: Yeah.

BKA: Yeah, it runs on top.

HKA: Pu'u 'Ōpae get ...

BKA: Pu'u 'Ōpae get the Pu'u 'Ōpae Reservoir.

HKA: Yeah, and I was at Waiawa too. Plenty water. Plenty ditches over there too.

BKA: Get the pump house over there at Wai'awa.

HKA: I saw the pump house too.

PC: What if those ditches broke, man? You know what I mean?

BKA: They been there for years.

PC: Years and years and years ... they not going be there forever.

BKA: Somebody gotta maintain 'em.

PC: All man-made too.

BKA: All man-made ... a lot of tunnels and stuff.

HKA: Yeah.

PC: Amazing.

HKA: Amazing yeah.

PC: How those people did 'em ... no technology.

BKA: They just when did by hand, these Chinese guys.

HKA: Yeah, they had the manpower. So you guys ... are around the *Menehune* ... you know ... history ... do you know anything about it?

BKA: So, my Aunty behind here, my Aunty Lei Ignacio ... she was kind of like my grandpa's sister ... when I was down there, she told me that ... when they was in high school one time ... [addressing SJLC] when did she graduate from high school?

[To HKA] They chased a *Menehune* [legendary race of people who worked at night, building fish ponds, roads, temples] through Waimea town then he went underneath the school building or something, and they couldn't find him. But she would tell me that story all the time. I was like, "I don't know man." She was pretty honest about stuff so ... I know think she would BS me too much but ...

HKA: Because there's the *Menehune* [legendary race of people who worked at night, building fish ponds, roads, temples], we talk about the little person, but there is also the *Menehune* that is a race of people ... What was said in some of the interviews ... like Hawai'i Loa, the Hawai'i Loa people when they came they were bigger ...

BKA: Yes ... and they *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of ...

HKA: Yeah, like the regular-statured people would be like the Menehune.

BKA: They *kine* of took over the *Menehune* ... yeah ... and they made them do work and stuff like that ... Is that what happened? That's what I heard.

HKA: They were pushed out of Kaua'i and they were on a different island ... There is all kinds of different narratives about the *Menehune*.

BKA: They would be scared of getting caught or something ... so, they would only come out and do some work at night.

HKA: Night.

BKA: I heard of something like that.

HKA: There was like chief Ola, he had them do work too. You heard about chief Ola?

BKA: Yeah.

HKA: That's why you get Hauola Heiau ... you get different stuff named after Ola ... stuff he commissioned ... what I read was the *Menehune* was here, then they went to Marquesas, and he had them come back, and he had them do these certain type of work for him ... and stuff like that.

BKA: I heard that.

HKA: That's another *mo'olelo* [story] that I heard about. But I just wanted ... you know ... people's opinion what they think a *Menehune* was or is ... because to me, it's a narrative that has always been heard, but everybody has been attributing it to ...

SJLC: Little people.

HKA: ... little people ... and like they're not real ... you know.

SJLC: I think they're real.

HKA: I think they're real. I think even the little ones are real.

PC: All that *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] stories.

HKA: Yeah. Even the race is real.

BKA: She told me in Waimea Valley ... that's where the Menehune was living in Menehune Valley ...

PC: Menehune Beach.

BKA: ... and they only would come out at night to work because they were scared of getting caught. And then whoever caught them, would make them do work for them ...

PC: Slaves.

BKA: Yeah. So they would come out at night, do their work, and hang out up there ... that's what I heard.

HKA: Yeah ...

PC: Doing all this *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] research ... you ever follow that old man that used to dress in the *malo* [men's loincloth] by Punalu'u?

\*\*\*\*\*Conversation stricken from the record because it is not pertinent information to this interview.\*\*\*\*

HKA: And so ... you know ... you were probably here during the time of the ... you might have seen the transition of the *kalo* [taro], and the sugar, right ... can you describe that?

SJLC: The difference you say?

HKA: Yeah, like ... you know ... when it changed ... Actually, it changed from *kalo* to *laiki*, rice yeah? And then went to sugar, yeah? Can you describe the land or what you saw?

SJLC: I remember as a really young child ... I remember the rice paddies that we had going up to Waimea Valley on the right hand side. It's a subdivision now, but that was rice paddies in there. And then, but before long, it was gone. And everybody had their own *lo'i* [taro pondfield] as far as taro ... you know ... for taro. Sugar ... I mean ... I don't know when sugar came but ... I mean ... that was just the biggest employer here on the islands at one time ... was sugar. And then ... of course ... pineapple too.

HKA: Where was the pineapple at?

SJLC: Mainly on the east side of the island. We had one, two ... we had three pineapple factories here on Kaua'i ... one was in Lawai and two in Kapa'a. One in Kapa'a town where Pono Kai Hotel is right now, and the other one was up on ... past Kapa'a High School. Three, and was very, very good ... we had during the summer that would come from the outer islands that would be housed by the ... cannery owners to work in the fields.

HKA: It's like Lana'i, yeah.

SJLC: Yeah.

HKA: So what is the pros and cons of having the sugar and the military?

SJLC: You know ... when you think about the military versus sugar ... you said, right?

HKA: Yeah.

SJLC: Unless with sugar you where in the upper echelon ... you know ... everything else below that was hard workers ... actual physical hard workers. I think ... with the military ... you have of course, those in the higher echelon, but almost everybody below that to be more or less educated ... I mean with some sort of education. To me that's the difference between sugar and the military.

PC: They think the military has something to do with all the plantations closing down?

HKA: Oh, no. No, no, no, that is not what I am asking ... what I'm trying to ask is like ...

SJLC: Comparison.

HKA: ... for sugar what is the pros and cons of the sugar industry being on this side of the island, being in Waimea? And what are the pros and cons of the military being there, being on that land ... on that 'āina [land]?

PC: In the '70s, I not seeing no difference. The only difference is, when the plantations started closing down, everything went down hill. Nothing. Before, Kekaha was a striving.... When I came down, I was impressed ... everyday, every weekend you could see stuff happening with the community. They had a swimming pool ... everything. Then when all of that close ... that's what I'm talking about now ... everything went downhill. By the time I came back again for visit in the '70s again, was different, was like nothing ... zero.

HKA: And how about the military, what do you think?

PC: The military was still there. To me ... in my honest opinion ... without the military being there, that place would turn to crap. They took care of the place. Really, look at how they keep the place. "Oh I guess they have the money, they can do it." Tough ... they keep the place going and ... all that buildings and.... Like now you go through there, it's like it's a different world.

SJLC: Plus too, they're the biggest employer of the island.

PC: To me ... when people talk about them.... They want the land for what? Look at Barber's Point ... what they did with 'em? That's what gets me ... you know.

BKA: I think ... the military, the jobs was more high paying than the sugar industry. And plenty people don't like the military, plenty people didn't like the plantation mentality either but ... I like the military here. They take care the place, and what else we going do with the land? All these guys think they going farm, they not going farm. They ain't farming ... And then the sugar industry was good because it gave a lot of jobs, but bad because they stopped a lot of water. But the benefits of stopping all that water, coming down and making one swamp is the Mānā Community, the Kekaha Community ... you know ... get some some benefits. And of people always call me plantation mentality. But those guys work hard for what they got ... those plantation guys.

PC: It was like a big family, everybody take care of each other. You know ... when they ... I was from Kahuku now, Plantation life ... when something went wrong, like they had strikes, and all that *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] stuff like that ... nobody had to feed us, we all feed each other. Soup kitchen, you tell somebody to go to the soup kitchen now, they going like, "Haaaa." They going say, "What is that?" That's how used to be when we had hard time. That's the same thing with Waimea, I think. All of a sudden that place went down ... Kekaha. To me, no more nothing for the kids like before. Every weekend you could see stuff going on.

HKA: That's what Keao told me ... [referring to Keao NeSmith telling HKA about how active Kekaha town was].

BKA: I think a lot of people think that the base is not transparent with stuff they do because a lot of stuff is like 'hush-hush'. But some stuff got to be 'hush-hush' because it's just that ... you know ... like sometimes they shoot one missile like without telling nobody ... and everybody is freaking out, don't know what the hell is going on. Sometimes they tell you that the thing went off. And I know sometimes they cannot say, but I think a lot of people are like conspiracy theorists think that stuff going on out there that people don't know. But they are probably right because there are a lot of stuff out there that people never ever going to know what's going on ... that's part of life. I don't know why you gotta know everything.

PC: That's why they have secret confidential ... you know what I mean?

BKA: You cannot tell everybody what's going on.

HKA: Yeah. So what is your concerns like moving forward about like these ... in fact, I have a map....

This is a map, I will show it to Kipi.

PC: They go Waimea and then come over here to Hanapēpē ... it's just a little corner of the world ... and that's it.

BKA: They ... out of all this little corporations and stuff ... they are probably the only people that help the community more than ... guarantee if the base shut down, Kekaha town shut down, because a lot of people work out there, and they support the community. Some of the plantations ... they don't help the community at all.

PC: It's all money.

BKA: [Looking at the map]. The yellow is where the lease is?

HKA: Yeah. You see ... yeah.

PC: They not buying more land, ah?

HKA: No, I don't think they are leasing more, but they do ... I could not really say if they are, honestly ... but that's where it is at. BKA: So if they don't get the lease, where does the lease go back to, the State? HKA: Basically. BKA: I rather have.... This road [referring to the road from Kōke'e to Pacific Missile Range Facility], it's all paved down to Makaha. I work State for 30 something years. They shouldn't get any more land back because they cannot handle what they get now ... All these places in yellow... PC: What about Polihale? BKA: Polihale is all State, park yeah. PC: They should take 'em back. BKA: All these places [referring to the map] are maintained nice. \*\*\*\*Conversation sticken from the record because I keep forgetting that SJLC [Aunty] is unable to see papers/maps I keep passing to her.\*\*\*\* BKA: I can see all of this, I know exactly where all of this ... I work this side of the island for years. I know. HKA: Yeah. BKA: Yeah.

One thing about Kaua'i, they never make one road that go around the island ...

PC:

HKA: Yes ... of course ... how can? Yeah, hard ... but I'm so glad they dont't because there is a lot of ... history over there.

PC: And they don't build a lot of big buildings.

HKA: Yeah. Yeah.

PC: Over here, they don't, they just stick to their guns. No buildings ... I love that.

HKA: Yeah.

PC: Imagine if they did ... Waimea would have hotels and ...

HKA: Yes.

PC: Shoot ... there probably would be a hotel by Polihale.

PC/BKA/HKA: [Chuckles.]

PC: They would build high, I telling you.

HKA: Yeah.

PC: Like this salt pond over here ... if they could, they would have one hotel right over there ...

HKA: Yeah, yeah.

PC: Like Barking Sands, at least they get one air ... believe it or not ... nobody looked at it that way, but they have a land airstrip that can really take ... when there is really big emergencies ... help a lot of people.

BKA: And they did ... when the hurricane came. They brought in plenty supplies ...

PC: And they never stop nobody.

HKA: Oh, nice. So ... during Iniki?

BKA: Iniki ... Iwa ... they brought in a lot of supplies, the military ... yeah, Ma?

SJLC: Yeah.

BKA: When she was working for them.

SJLC: I worked directly with them.

HKA: Wow ... Yeah, and that's good.

PC: This side of the island ... but they helped everybody.

BKA: Yeah. They brought in plenty supplies. I love the base ...

SJLC: The very next day after the hurricane, I went down to the base ... you know ... to see. I went in my office ... it was all changed ... the desk was here, and now it was there. And I said, "What's going on?" And the Captain was in the office, and he said, "I'm using your office, and it has to be the central office." Because we are right there on ...

BKA: The airstrip.

SJLC: ... the airstrip ... right next to the tarmac.

HKA: Wow ... that's pretty ...

BKA: Yeah. And this is another story too. You know, when my son was born, he was ... premature, and then ... but he was born that same week as ... the air ambulance crash on Maui, and so they never have one plane ... and they couldn't medevac him because never have the *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] ... so the Coast Guard came and ... Coast Guard, before they couldn't land at the regular airport because was too small ... so the Coast Guard when actually land their big C-130 on the thing, and take him on the ambulance all the way to the C-130 ... and they took off from the base.

HKA: Oh, wow.

BKA: So I love the military.

HKA: Yeah.

BKA: And they brought the plane in because nobody ... the air ambulance was down ... they wasn't flying ... they were grounded, but he had to go to Kapi'olani [O'ahu children's hospital Kapi'olani Medical Center for Women & Children] ... and so we had to wait. And the Coast Guard actually sent one big C-130, the big plane ... landed at PMRF (Pacific Missile Range Facility), and the ambulance took him to PMRF ... jump on the plane, and then ... it's different from air ambulance because I couldn't go on ... I mean ... I could go on the air ambulance with my son, but their protocol and stuff is like, "There is no passengers." So he went by himself. I showed up at the airport, and caught the last plane out, and went to Kapiolani. And the C-130 landed at Barber's Point and because they couldn't land in Honolulu International Airport, and then they transported him over there. So that was one big help during when the ... And they did it for a lot of people because ...

PC: Yeah, Mom.

BKA: For real?

PC: They brought me and Kanamu, and took his mother out ...

BKA: From the base?

SJLC: Yes, it was during the hurricane ... The hurricane was like ...

BKA: Oh ... she got evacuated from the base.

SJLC: No, no, no.

BKA: You was sick, yeah?

SJLC: The hurricane time. What happened was ... I think it was couple of days after because my boss asked me ... my boss was the head of the air operations ... he said, "Is there anything I can do for your family." I said, "Yeah, my husband is on O'ahu, and he and my son bought things for us ..."

Because we lost this whole place.

BKA: This was after the hurricane because it smashed this whole house to the ground.

SJLC: So I said, "They have things but they can't get it here." He says, "Okay." And I said, "My mother is here ..." My mother was very sick ... you know. And I said, "I want her to go to Honolulu, but we can't get her to Honolulu," He says, "Get her ready, bring her down here, I'll take her to Honolulu, as long as someone is there to meet her. And then I'll pick up your husband and your son, and I'll bring them back here. They can unload what they have for you, and I'll take them back again." And so from Hickam, he flew my mother with them, yeah ... was with them, yeah? Was with them. He came back ... he and my son came here, dropped off stuff for us, took my mother back on the plane ... the little C-26 ... small plane yeah. And they took them back to Honolulu to Hickam. If wasn't for him, I don't know ...

BKA: Never had water, never had.

SJLC: Never had water ...

BKA: Never had electric. Never have nothing over here. I don't think my grandma could survive. And plus to, she was living in a house here, and when I came that night after the hurricane had stopped, the whole house was flat to the ground.

HKA: Wow.

SJLC: But it's a good thing ... the day ... the night the hurricane ... was the next day of the hurricane, we went to where he was living up in 'Ele'ele with his girlfriend at the time.

BKA: I went go work. I was a policeman. I went go work that night, and left them up there by the house because ... Yeah, good because they wanted to stay here. But when I came the next day after they was clearing the roads ... that night ... probably about 10:30 when I got here, the whole house was like flat to the ground. All these houses.

PC: You couldn't even drive on the road.

BKA: You couldn't even drive.

PC: Because I remember when we came ...

HKA: So much debris?

PC: No, all the poles.

BKA: Yeah, all the poles was down.

HKA: All the poles and everything?

PC: You know what it reminded me of ... when my son and I was coming down here with all of the stuff to meet them, was like Vietnam ... all the trees ... all broken down like splinters, all on the roads and everything. Was dead silence, you could hear the ...

BKA: I came up here, I opened the door, I whistled, and all my hunting dogs came running from underneath the house, and jumped in the back of my police car, and I took them up to my girlfriend's house ... my ex-girlfriend's house.

PC: They heard you?

BKA: Yeah, they was scared ... Because before the hurricane came, I had all my hunting dogs in the cages over here. I just opened all the doors and let them run.

PC: Where they was hiding?

BKA: Every dog for themself, you know what I mean? [Laughter.]

HKA: [Laughter.]

BKA: So, before the hurricane had started, I came over here, I just opened kennel doors, and let all hunting dogs out, and I just let them run. They was running all around the place. And then I jumped in my car and left. When I came back, I seen the house, I just when whistle, and I seen them coming out from underneath the house. The foundation was still there, but just the whole roof, and the walls had collapsed ... everything.

PC: Never had nothing.

BKA: Nothing.

HKA: Wow, that is amazing.

SJLC: And you know ... the funny thing is, it looks like that spin of the hurricane came like from the valley ... just beyond there [pointing *mauka* or towards the mountain] ... because it hit that house, our house, and that house.

BKA: It came right through over here. Everybody else ...

SJLC: On the side ... these houses on the side, maybe little bit of the thing ...

BKA: Little bit damage, yeah ... but right through ...

HKA: Not flat, yeah ... like your guys'?

SJLC: No.

BKA: Either that or maybe they thinking one of the big houses in the valley, they roof had fly off, and maybe had fly in the wind, and come through this whole thing. If we were here, nobody would have survived.

HKA: I'm glad you guys weren't here.

SJLC/BKA: Yeah.

BKA: I was working and ...

PC: The funnel comes through this way, because everytime when get strong wind like that, I watch that tree ... you know ... the big mango tree over there?

HKA: The thing woosh ... [making a motion with her hand].

PC: I watch 'em, and the thing goes like this? [Making a motion with his hand.] You can see it lean ... turn this way ... everything up here.

HKA: Yeah. So much valleys, yeah.

SJLC: So funny, though, just this three houses ... across the street, ours, and the one behind us.

BKA: All in a line ... down. Maybe you think it was the wind or one big piece of debris that was flying in the air came flying right through here and whacked everything? If wasn't for the base, we wouldn't have gotten my grandma out, we wouldn't have gotten food in, because never have storage ... nothing ... and my son wouldn't have gotten medevac to Honolulu because ...

HKA: What happened to your son?

SJLC: He's fine.

HKA: No, what happened during that time?

SJLC: He was in the hospital. [Chuckles.]

BKA: He was in Kapi'olani, he did good. He was big, but he was like almost seven pounds ... seven pounds something. But because my wife was small, they had to an emergency C-section on her because his organs never developed, so he couldn't breathe on his own and stuff. I felt bad actually going to Kapi'olani because he was seven pounds something, and next to him get one baby about his big [making a gesture of how tiny the baby next to his son was]. I was like, "Bradley, what the hell is wrong with your baby, he's big."

HKA: But he needs help.

BKA: He's good now. I mean ... I was *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of premature, but I made up for it all these years.

HKA: [Chuckles.]

SJLC: He was, he was premature.

BKA: [Chuckles.] And more some ... at one point in my life. Double size ...

HKA: Oh, yeah. Me too.

PC: Oh, but that's interesting though.

BKA: And if it wasn't for the base ...

SJLC: Personally, we have very good ...

BKA: Personalities ... to why we love the military.

SJLC: ... association and appreciation.

HKA: Yes! Awg, that's good.

SJLC: You might go to the next house and they might tell you, "Oh the base ... throw 'em away." You know.

HKA: All kinds of different opinions.

BKA: Plenty people no like the base.

HKA: You get all kinds of different opinions.

BKA: People no like the plantation, the ... That's how it was ... It's over now, so I don't know what everybody crying about.

HKA: You know what ... I going end this interview right here. And I *mahalo* [thank] you guys because it's been a joy, *mahalo*.

SJLC: I wish Keao could have been here.

HKA: Me too.

## ORAL HISTORY INTERVIEW

With

Kaina Makua [KM]

November 29, 2023

Aloha Aina Poi Factory, Waimea, Kaua'i

By

Hannnah Kaumakamanōkalanipō Anae [HKA]

Lilia Merrin [LM]

And

Keao NeSmith [KN]

The interview took place in Waimea Town at Aloha Aina Poi Factory, and music can be heard in the background.

Recording file name IA202241 2023-11-29 Kaina Makua.MP3

HKA: Welina kākou [Greetings everyone]<sup>1</sup>, today is November 29, 2023 we are on the mokupuni [island] of Kaua'i, in the kūlanakauhale [city or town] of ...

KM: Waimea.

HKA: Waimea. I am Kaumaka Anae representing Internationa Archaeology, LLC. And we are conducting Cultural Impact Assessment interviews for the Pacific Missile Range Facility [PMRF] and Kōke'e Park Geophysical Observatory Succeeding Lease and Easement Areas. And I am here with ...

KM: Kaina Makua.

Most Hawaiian definitions were sourced from Ulukau: Hawaiian Dictionaries online (https://wehewehe.org/gsdl2.85/cgi-bin/hdict?l=en). In some instances, the subjects supplied definitions and in others, the interviewer provided a translation.

HKA: And is that your full name?

KM: That is my first and last name.

HKA: Mahalo nui [Thanks very much]. And ... do I have your permission to record this interview?

KM: Yes.

HKA: *Mahalo* [thanks], before we start ... of course ... I would like to say, *e kala mai* [excuse me] if I seem so *maha 'oi* [brazen]. (Chuckles.) It is not my intention, it's for the purpose of this interview. So ... let's start with your *mo 'okū 'auhau* [genealogy] or your connection to the 'āina [land]. How long has your 'ohana [family] been in this area?

KM: Pretty ... I don't know ... long time. We can trace ... you know ... our *mo'okū'auhau* goes pretty far back ... Kūkona, Kaumuali'i ... I mean Kaumuali'i [more modern chief (late 1700s–early 1800s), Kūkona very ancient chief (1400—1500s)]. And get *mo'olelo* [stories] about all of them in our connections. So, yeah ... I going go on tangents, but ...

HKA: It's cool, it's cool.

KM: Kūkona had one son, Manōkalanipō. You know Kauaʻi, it's Kauaʻi-o-Manōkalanipō. But Manōkalanipō's years of reigning on Kauaʻi wasn't really one ... he never reigned like one normal ali'i [chief], because everybody had eat the same, everybody had drank the same, everybody lived the same as he did, sat on the same table. They referred to his time as the Golden Years. And so ... going on one tangent ... what we do in Waimea, on the bridge ... all the way west, is trying to rebuilt that mindset of 'we all should all be equal' no matter how much we all have. Because if we can do that, we can live like they did. I was asked once, "Who is your biggest influence?" And it is Manōkalanipō. Not my family, not nobody else, it's the mo'olelo heard from him, because that is kupuna [ancestor, elder] for me. My oldest is Kūkona, my boy.

<sup>&</sup>lt;sup>2</sup> Dates acquired by HKA from her grandmother while growing up.

So ... being on the west side ... you know ... when Captain Cook came in 1778. In his journals, he writes about how Waimea was pristine, and about how it was the bread basket of the Pacific. Not anywhere else. And this guy came here after traveling the world, and said that. If he going say that, it's gotta have some 'i'o [truth, significance] to what he's saying. And we see it, there is so much land on the west side, that's why everybody wants to be here. Everybody who farm commercial production of any type of food, because it's sun year round, so why not? Now, because of our natural resources being utilized in the wrong ways, we fail or have failed to effectively and efficiently feed our people. But it's 'ike [know, recognize], mea 'ai [food] ... all those levels of being kanaka [Hawaiian person], we failed just for one dollar. I not going on tangents now. So how do we remedy that? We start with our youth. Here, we start with our youth. I run one nonprofit called Kumano I Ke Ala on the west side. We have ... we educate roughly 3,000 kids to 5,000 kids a year. And we not hitting 'em all from the perspective or the kahua [foundation, background], foundation of farming, but a lot of them we are. At least a thousand of 'em. And the rest is sporadic and centered around Makahiki [year; ancient festival beginning about the middle of October and lasting about four months, with sports and religious festivities and a taboo on war]. But we touching them in different areas so that they can be interested to do the kind of work we do. And even if it's just one time, I think it's going to be beneficial. It has been beneficial in the last 10 years we been doing it. We also serve about 150 kids in the paddling community on the west side. Rebuilding our foundation is what Kumano I Ke Ala is. And so, we here doing that. Enough of that tangent.

HKA: Wow, that's awesome. Can you tell me a story about Manōkalanipō or Kūkona?

KM: So ... you know ... you may not know, but Kamehameha wasn't the first guy to take over Kaua'i and the rest of the islands. He was actually the second. Kalaunuiohua was the first. Kalaunuiohua was also from Hawai'i Island. He was successful all the way until he came up to Kaua'i. And Kūkona and Manōkalanipō stood in the way. So, the story I know is ... Kalaunuiohua's men made it to Po'ipū. They settle at Kaleinapua'a ... if I not mistaken.

HKA: Where is this *leina* [referring to Kaleinapua'a]?

KM: It's in ... what is the name of the beach now? PK's, it's next to PK's.

HKA: Where is that?

KM: Brennecke's.

HKA: Yeah ... okay, in Po'ipū.

KM: Yeah, Poīpū, in Kōloa.

HKA: Yes.

KM: So they land over there, but Kūkona and his son, Manōkalanipō, was so intelligent that ... when they landed, nobody was there on the beach. And so, they probably had four times the amount of people than Kaua'i had, but they wasn't in the mo'olelo [story] that I know. But they wasn't as strategic and, well ... Foundationally, they wasn't great warriors. Because we get one place, Hanako on Kaua'i, that they go and they train. Anyways, they made it there, never see nobody. The batallion leader was looking mauka [towards the mountains] and he seen Manōkalanipō on one peak. Half to three-quarters of their guys run and follow. So they went far into the valley and they just kept going. And the further they went, the further they found that Manōkalanipō would just go to every peak and pretty much taunt them. By the time they got all the way in ... you know ... they were already tired. And so they got ambushed and died. And the war was won. But that's ... you know ... strategically, if we looking from a strategic lens ... those are the type of things normal human beings forget about. Like, we going take water from the river, and we going push it to Mānā to farm sugar, 50 million gallons of water going be taken from our normal flow. So you screwing up one ecosystem for the benefit of nobody else, yeah? For the benefit of corporation. Yeah, and so, I think in the 1900s when Robinson wen' [Hawaiian pidgin language meaning went or completed an action or when] ... the Fayes decided to create this industry of the sugar plantation, they failed to recognize how it was going to affect our natural resources. They wasn't strategic enough to ensure that our normal ecosystem flow was going to be maintained in the same way through that effort that they wanted for their corporation. For me, as long as we are fair, yeah ... and we not being overly greedy or greedy, our 'aina [land] going find it's way to heal. But when we are selfish and greedy, it's going to be very hard for that to happen.

HKA: No more balance, yeah?

KM: No more balance. And it's happening already. I mean, KIUC [Kaua'i Island Utility Cooperative], the water ... Lahaina, and water ... everybody dealing with this on west side, the Leeward side of every island ... they just dealing with the water theft. And we doing it again, here on the west side. KIUC like build all of their hydros trying to make money for who? Not for the people, but they going tell the people that.

\*\*\*\*\*Stricken from the record is a converstion KN has with KM, HKA, and LM regarding coordination of our interviews\*\*\*\*

HKA: Please disregard this conversation. Okay ...

KM: So, the water is ... KIUC like do their thing, and they work with AES [Applied Energy Services], who is this global, what the hell do they call themselves ... renewable energy corporation ... claiming that they finding better ways for energy, but they just making money ... you know ... and solidifying their funding for longevity. And so, people like myself, the rest of the farmers in Makaweli, Waimea ... you know ... we against that. But through the years of them taking water, we starting to, not starting to ... we been seeing the aftermath of that in our river. I mean we no more as much 'o 'opu [general name for fishes included in the families Eleotridae, Gobiidae, and Blennidae] anymore ... you know. We get silt all in the river, the riverbed has gotten four, five ... who knows ... eight feet higher. And so, now it becomes a hazard for the people living next to the river. When it floods, like how it did last night, it's brutal. I seen one picture from 1950 and 1980, the river actually wen' [Hawaiian pidgin language meaning went or completed an action or when] flood and came over that big berm ... you know the one they built, it's like 20 feet. Water came over. So, if that was then, it's not if, it's when? When going flood hard again, people going be in jeopardy with their lives ... losing their lives, so ... But if they return the water, it's going to clean the river, going drege the river itself. It's going to be natural dredge like it used to be. And so, our natural resources gotta be observed better. Like seriously observed better, and maintained better. I don't know if that's answering any of your questions.

HKA: [Laughter.] Yes.

KM: Or if you had any questions about that.

HKA: Yes. And so you're familiar with Mānā and PMRF (Pacific Missile Range Facility) ...

KM: Yeah. The water being pushed out to Kinikini. The water that they taking going out in Kinikini. That ecosystem there for *kai* [sea] stuff was pristine ... you know ... but where the river going out where it shouldn't be going, going ruin the reef. And we no more reef Waimea, but that was normal, that was hundreds, thousands of years they was doing this. Mānā, it's going to be a problem soon. If it already isn't, it's going to be.

HKA: And so, what do you forsee for Mānā ... the Mānā area? What kinds of changes ... or concerns ...?

KM: When we was young, we could go anywhere ... Nohili Point, holoholo [term used to go fishing], Kinikini, Kokole ... we go anywhere and lawai 'a, go fish. What year was it? Might have been 2014 ... I think so ... but I went go holoholo, and they went close all those beaches, you couldn't'go ... but you could go Polihale. So, I went Polihale, and I went walk because I know where get 'opihi [limpets], I know where get i'a [fish]. So, I took my thrownet, I took my bag, I wen' [Hawaiian pidgin language meaning went or completed an action or when] get one 'opihi knife, and I wen' go get 'opihi. And I was in the water, and then two of these soldiers from PMRF came with AK47s, telling me for come out of the water. But me, I know, I not stupid ... you come out of the water, they get rights fo' [Hawaiian pidgin language meaning for]take you in. So I just stood in the water, and they had their hand on the trigger. And I was like, "What's up, guys?" And they said, "Ah, you gotta come out, we like talk to you, just come cruise." "Negative, I know I safe in the water, but you should take your hand off of the trigger." And so, I just kept pounding 'opihi. And for one solid 10, 15 minutes they stood there trying to get me go on the sand, so they could take me in. I just kept walking, pounding 'opihi, and doing my thing. But that kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] stuff, no can have.

HKA: Yeah.

KM: You know what I mean? If you ... whoever going be patrolling the beach, for whatever reason they going close 'em down and have all these frickin' securities, shouldn't be somebody that is not from here.

HKA: From here. Yeah.

KM: Everybody is from Kaua'i, especially from west side, they know the braddah [Hawaiian pidgin language meaning man, boy, or brother], they know the people. One random dummy, because his finger was on the trigger, had two of them ...

HKA: That's crazy.

KM: I was over there ... I no scared one gun, but I not going get out of this water. And any random ... white guy, who was treated wrong from America, would have pulled one trigger. Guarantee, because they never get their way. We see 'em on Instagram, social media, on Facebook. They dummies, they like shoot people because they was raised wrong, unfortunately. Or they was picked on and bullied. So, that is one big concern. We need to have local people, unfortunately, to regulate what needs to be regulated on PMRF. You need people that know the people. Yeah, because *pilina*, relationships, are very important here. And that's something they forget or something they never learned, but we are here to remind them and teach them. Yeah, that's one big concern. They should open the beaches to the people, because the people going regulate for them, guarantee. The right people going regulate.

HKA: Right, exactly.

KM: We've always regulated ... you know. We get stories that everybody who is not from Kalaheo to the west ... yeah ... everybody all the way northshore never used to come west side because they was all scared ... as they should be ... because we take care our own. We get plenty of *kanaka* [Hawaiian person] on the west side because we did that for years, our people have done that for years. Guys come over here and act up, all of us guys lick 'em. They go surf with us Pākala, if you one white-skinned guy you get kicked out or beaten up because that's how you regulate dummies coming west side. And I think we missing more of that. Unfortunely, it's the truth, we missing more of that. 'Cause they going keep coming in and thinking they infiltrating, and start putting up ... giving us problems in our community because it is not the way they want to live. "Oh, this guy parking on my yard." "What, you just got here ... you COVID, fricking freak." "2020, you just wen' [Hawaiian pidgin language meaning went or completed an action or when] move here. Just because you get money on hand, and you just bought one house, and you going tell me, who's been

living here my whole life, how fo' park and where fo' park, that's not your place." We cannot have that *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] stuff happen. And PMRF (Pacific Missile Range Facility) has a lot of those *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] people. So they gotta regulate the guys they bring also. If they not going regulate 'em, send them to places like my nonprofit who can teach them ... build relationships within the community so the people can understand. Then you can understand why we are the way we are. Education going be the key to everybody's success. And if we can buld more people like ourselves, that going be on PMRF, but not from here ... when they do leave after their three years of service here on Kaua'i at PMRF, they going take what they learn from us wherever they go, and then we building one better world.

HKA: What is your favorite 'ōlelo no 'eau [Hawaiian proverb]?

KM: My favorite 'ōlelo no 'eau, that's a good question.

HKA: Like some of your own.

KM: I get plenty. 'Ōlelo no 'eau ... in today's time, the most important 'ōlelo no 'eau I believe ... is no be scared to work. Your work ethic cannot be taken away from you, everything else that you have can. If you willing fo' work, nobody can stop you.

HKA: So, you practice *lo'i kalo* [raising taro pondfields], that's one of the Hawaiian traditions that is passed down forever, what else Hawaiian traditions ... you or your *kūpuna* [ancestors, elders] engaged in? *Lei* [Necklace made out of flowers, leaves, and/or shells, etc.] making, *'oli* [chant], *lua* [Hawaiian martial arts], what other practices?

KM: My father from Keaukaha, Hawai'i Island. He one Mahi, Mahi are singers, they are all great singers ... you know ... they're musicians. I never go that route, but I enjoy it. I used to dance *hula* [Hawaiian dance], about 10 years, something like that ... but you know ... that's not my thing any more. I'm trying to help rebuild youth. I'm farming, I can build *hale* [Hawaiian grass hut]. I'm a master builder.

HKA: Traditional hale?

KM: Traditional hale ... yeah, yeah. I am one of the few master builders ...

HKA: So where do you gather materials to build your hale?

KM: Kōke'e get everything, a lot of what we have is invasives. So our whole push is we going eradicate the invasives to build *hale*, and try to plant natives. Building *hale*, restoring *pā pōhaku* [stone walls], rebuild *heiau*(s) [places of worship, temples], help to restore fishponds. I teach Hawaiian language.

HKA: So what are the fishponds you guys help restore?

KM: So there is one here Kapalawai. It's probably going to be a while till it gets ...

HKA: Where is it located?

KM: It's located between Waimea and Pākala.

HKA: That's Makaweli, yeah?

KM: Kekupua, actually. They refer to that area as Makaweli too. Get the fishpond on O'ahu ... at He'eia Fishpond.

HKA: Oh, Paepae o He'eia.

KM: Yeah, Paepae. I been there since 2004, we been helping them. I don't know ... I do all *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] stuff. I help coach paddling ... So our kids, use the river all the time, and they know about everything ... from farming that I do to water theft. We try to educate all of them. They know it's not just one place fo' us enjoy, we gotta take care of our resources. And what better way to start than educating the youth.

HKA: So you educate the youth on all ...

KM: Everything on the west side ... from plantation ... the Fayes, the Robinsons ... ADC [State of Hawai'i, Agribusiness Development Corporation] ...

HKA: And the maintaining and *mālama* [caring for] of the ... *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] to yeah ... the resources?

KM: ... everything. That's what our programming is all about, our nonprofit is created for that.

HKA: Yeah, that's really strong.

KM: And you can check us out at Kumano I Ke Ala.org.

HKA: [Laughing.]

KM: [Laughing.] You gotta give 'em ... you know the *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit].

HKA: So, do you practice any kind of Hawaiian religion?

KM: Yeah. I do, I do.

HKA: And so where do these practices take place?

KM: A lot of 'em is at *kai* [sea], and up *mauka* [towards the mountain]. Sometimes in Kōke'e, and also in Nā Pali. You know ... *pule* [prayer], 'oli [chant], and always for the betterment of our people. Trying just to recenter ourselves, and keep us sane ... you know ... in this crazy world.

HKA: [Laughter.] So, do you practice any lā 'au lapa 'au [Hawaiian medicine]?

KM: Yeah.

HKA: What kind of *lā 'au* [short for Hawaiian medicine, plant], and where do you practice? What do you gather actually?

KM: 'Uhaloa [a small, downy, American weed (Waltheria indica var. americana)] and kauna 'oa [a native dodder (Cuscuta sandwichiana)] is all good stuff for your skin. Even the sand though. One [sand] is one big one. If you looking for one detoxing, external detox and internal detox, it's the one ... it's the biggest one. The whole 17 miles of Mānā that's all lā 'au that.

HKA: How do you make the *one*?

KM: You dig one hole maybe a foot deep, however deep you gotta go to bury yourself. You let it dry out. When it's dry, you get inside, and then whoever is there cover you up, and then you sit in that thing for six hours ... half an hour is brutal.

HKA: And what does that do, clean you out?

KM: Clean everything out, pull everything out, open up your pores, push out all the toxins that you have. Pretty much, going dehydrate you. And clean you internally. I've done it couple of times this year, and it's brutal, especially in the summer. You know ... mentally, spiritually is like taking one ... what is that call ... half an hour is hot ... It's like ... what they call that ... when you gotta the *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] ...

HKA: Oh ... cleanse.

KM: Yeah, cleanse. One external and internal cleanse. Yeah, *one*. That's all  $l\bar{a}$  'au, 17 miles of  $l\bar{a}$  'au.

HKA: Yes, yes. The *kai* too, the *kai* is  $l\bar{a}$  'au  $[l\bar{a}$  'au lapa 'au or medicine] ...

KM: All of that.

HKA: You go right inside there, then right to the kai, yeah?

KM: I mean, you can go to the *koʻa* [coral, coral head] and all the reefs in Mānā, when low tide and summertime, you going find *paʻakai* [rock salt]. All the *poho* [depression, hole], all those *puka*(s) [holes] in the *koʻa* on the *papa* [reef] they all fill with ocean water, and in the summer, three weeks, it turns into salt. So we used to go gather ... you know ... we feed ourselves. Get plenty of *limu* [seaweed] ... all kind *limu* ... *līpoa* [bladelike, branched, brown seaweeds (*Dictyopteris plagiogramma and D. australis*)], *limu kohu* [a soft, succulent, small seaweed (*Asparagopsis taxiformis*)]. That's all *lāʻau*, *kohu* is used for rebuilding ... what do you call that ... some kids get 'em ...

HKA: It's good for your thyroids too.

KM: Yeah. Your thyroids. Yeah. Your thyroids. So we think ... well, anyways ... I think my son get some thyroid issues. But *limu kohu* is *lā 'au*.

HKA: Speaking of that, I got some *limu kohu* fish I made.

KM: Oh, right on. Thanks, ah.

HKA: [Laughing.] Lā 'au.

KM: Yeah. Anytime you talk about  $l\bar{a}$  'au, it's everywhere. Kauna 'oa [a native dodder (Cuscuta sandwichiana)] is one big one.

HKA: Yeah. It's good for cancer.

KM: Yeah. Cancer. Yeah, even your mimi [urine].

HKA: Yes. I done that one too.

KM: Yeah. Me too. Where you learn ... who's your ... 'Ohai? Papa Auwae?

HKA: They are from 'Ohai. Keoki (Baclayon) and what's her name? There is another girl he taught as well. She was going to be an attorney, but she became a  $l\bar{a}$  'au teacher. She moved to the Big Island, I forget her name.

KM: Not 'Uala ah?

\*\*\*\*\*Short conversation stricken from the record for information not pertaining to this interview\*\*\*\*

KM: Yeah, 'Ohai was one good teacher. And he's from Kaua'i.

HKA: I know.

KM: He used to ride on the plane all the time. "Where you going, Hawaiian?" "I going to class." I like, "Right on." And I had his class that day. Sometimes I never go. But he would be writing all his notes. He was one good man, amazing man.

HKA: Yeah. Amazing man.

KM: Amazing.

HKA: The people who he took under him ... he's been teaching amazing people ... so it's greatly reflected on the *kumu* [teacher].

KM: Oh, yeah. All the time.

HKA: Do you know any other *moʻolelo* [stories] around the area that might be connected to your family ... in the Mānā area ... Kōkeʻe?

KM: Just get the same stories ... you know ... Nohili. How he lived at Nohili Point, he had dogs, they couldn't speak until he went into the ocean, and they was trying to warn him. No go because get one storm coming. And he didn't listen. He went anyways. Somehow made 'em back. He couldn't find his dogs, but everytime he walked or ran, the sound of dogs came from his foot, and if you go over there now ... like a pah, pah, pah everything you walk on the sand. It's pretty cool. When I first had ... you know ... hear that, "Wow this is unreal, this is nuts." And I was one little kid.

HKA: This not just folklore, it's real.

KM: No, no, it's real. Yeah, for sure. No, we get plenty of *mo'olelo* [stories], I just no more enought time. I mean, I could sit here and talk to you about everybody ... Wai and Ola.

HKA: Yes, Ola.

KM: Ola brought ... Ola, was one key component to why Waimea became very fertile and rich in food. So he had one idea to bring water on this side of the peninsula of the river. So get Waimea River, Makaweli, and way deep in Waimea. So everywhere had lo 'i [taro pondfields], but never have lo 'i on this peninsula because they couldn't get the water here. So he had an idea to bring one 'auwai [ditch, canal] from the river that was 15 feet below, 15 feet higher and feed one peninsula so they could get more kalo [taro]. And if you go to my shop, my apparel shop in Waimea, right down the road, you going find all these pictures of Waimea, and you can see in the 1900s, 1800s get all lo 'i. This whole side of this left peninsula. That was due to him believing that he could build one 'auwai or at least get the right people to build the 'auwai. And he did, he asked some Menehune [legendary race of small people] to build one 'auwai. "I need it to get around this corner, and from there, I take it" (reflecting what the words might have been from Ola to the *Menehune*). So they went agree to build 'em. And the only thing they didn't agree on is, every single Menehune would get fed the same fish. Everybody had to get fed equally. Just like Manōkalanipō. So he was like, "Okay." And unfortunately, he was put into like this coma under the water, until the job was done. And if the job was interrupted, like how it was at 'Alekoko [Menehune Fishpond], they just going leave, as they did in 'Alekoko. Night time not supposed to make noise ... anyways, you know how they get all these superstitions, yeah ... Oh, no brush your hair at night. No cut your nails at night. No sweep in the hale [Hawaiian grass house]. No make noise because those buggas' over there was working. It wasn't one superstition because they doing one job, and if you make noise when you go outside

and play, the job not going get done. That's why get all these superstitions. The hair and the nails was because *kahuna 'anā 'anā* [sorcerer who practiced black magic]. Take away your stuff ...

HKA: Or take away your voice if you whistle, yeah?

KM: So, they did the job and got 'em done, and now we get water on this side of the peninsula. And every single *Menehune* [legendary race of small people]was given one 'ōpae [shrimp] ... little ... 'ōpae. So the deal was kept, the agreement was kept.

HKA: Beautiful. So we will end this interview.

KM: I get plenty mo 'olelo [stories], come back anytime. I get choke mo 'olelo.

HKA: I know, I could be here all night, all day ... *Mahalo nui* [thank you very much] for your time, and we going end this.

KM: Rajah [Yes or right on].

HKA: Mahalo nui.

## ORAL HISTORY INTERVIEW

With

Enoka Chee Fook Karratti [ECFK]

November 29, 2023

Aloha Aina Poi Factory, Waimea, Kaua'i

By:

Lilia Merrin [LM]

Recording file name IA202241\_2023-11-29\_Enoka Chee Fook Karratti.MP3

Waimea Town at a Aloha Aina Poi Factory, and music can be heard in the background.

LM: Welina [greetings]<sup>1</sup> ... today is November 29th, 2023, we are on the mokupuni [island] of Kaua'i, in the moku [district] of Kona, in the ahupua'a of Makaweli ...

ECFK: Waimea right now.

LM: Waimea? Okay, *mahalo* [thanks]. I am Lilia. I am subcontracted from Keao NeSmith. And Keao is subcontracted through Kaumaka Anae who represents International Archaeology. We are conducting Cultural Impact Assessment interviews for the Pacific Missile Range Facility (PMRF) and Kōke'e Park Geophysical Observatory Succeeding Lease and Easement Areas. And I am here this morning with ... And if you could state your full name please?

ECFK: Enoka Chee Fook Karratti.

LM: *Mahalo* [thanks], and do I have your permission to record this interview?

<sup>&</sup>lt;sup>1</sup>: Most Hawaiian definitions were sourced from Ulukau: Hawaiian Dictionaries online (https://wehewehe.org/gsdl2.85/cgi-bin/hdict?l=en). In some instances, the subjects supplied definitions and in others, the interviewer provided a translation.

ECFK: Yes.

LM: Mahalo [thanks]. And before we start, I would just like to say, e kala mai, excuse me, I know we

have some  $n\bar{\imath}nau$  [questions] in here that is guiding questions I don't mean to be maha 'oi or brazen

it's not my intention."

ECFK: Mahalo [thanks].

LM: Okay, let us begin this interview. I think we start with your mo 'okū 'auhau [genealogy] or pilina or

connection to this 'āina [land] or this place.

ECFK: Yup. I was born in Waimea at KVMH (Kaua'i Veterans Memorial Hospital) in 1978. I was raised

in Kekaha ... Ho'omau Street, Hawaiian Homes ... first Hawaiian Homes in Kekaha. And I was

born at that time, to a family of two older sisters, and then my parents ... both of which is not from

Kaua'i. But my dad found employment with PMRF through a contractor at that time, and so he

ended up finding the closest town to live in, and that's how we ended up in Kekaha.

LM: Where is your 'ohana [family] from?

ECFK: So Dad is from O'ahu. From ... actually his family was raised in Makiki. There's a ... (clears throat)

... there's a Karratti Lane on Pensacola Ave. on the right side. So his dad, his grandparents, grew

up there. And then his grandparents ... his granddad moved out to Waikīkī. So they lived in a house

on Lemon Drive<sup>2</sup>. The house is still there surrounded by all these other big buildings. My grandpa

lived in that Lemon Drive house, and he grew up in Waikīkī.

LM: I know where Lemon Drive is. Yeah ... wow ...

ECFK: Trippy yeah?

<sup>2</sup> The road is currently called Lemon Road but might have been called Lemon Drive at one time.

LM: Yeah ...

ECFK: That's the only house I think that's still there.

LM: The ...

ECFK: On the left, on the makai [towards the ocean] side ...

LM: Yeah. Yes, yes. I know which one you're talking about. How did your dad find his way here?

ECFK: So Dad ... graduated from Farrington. They were actually living in Lanakila Housing in Kalihi, attended Farrington, and ended up moving to Waimānalo, but graduated from Farrington still. So they used to hitchhike from Waimānalo back into Kalihi to go to school. And after he graduated, he went to ... at the time it was called Church College in Lā'ie. He got into electronics. And then ... a recruiter from the base ended up recruiting him as an electronic technician. So he picked up the job, moved here with one of his friends from Church College. So they roomed together in Kekaha, was working, and then his friends, and two of their girlfriends came here eventually, and they got married, and settled ...

LM: About what year you think that was?

ECFK: And so that was ... ah ... Dad graduated I think in '69 ... so in the early '70s.

LM: Early '70s.

ECFK: Yup, because my sisters is two, three years older than me. So yeah, early '70s.

LM: And he worked there for a long time?

ECFK: So Dad ended up working on the base for 30 plus years.

LM: Whoa! [Laughter.]

ECFK: So he just retired. He graduated from that in 2018 something like that. So, yeah ... at least 30 something years.

LM: And so what did he do while he was there?

ECFK: So Dad ... initally he was working on one of the radars up Makaha Ridge, and he was working on one of the radars on Mānā, and then he ended up jumping on board with the ... he became a civil service worker. So he worked for a detachment for the Navy that came out of Keyport, Washington, but they had a station on PMRF (Pacific Missile Range Facility). So they worked on underwater targets. So he went from an electrician technician in that shop to becoming a quality assurance specialist and just rose the ladder, and he ended up running the shop.

LM: Wow.

ECFK: Yeah. And then he retired as that.

LM: Awesome. So you're familiar with the Mānā, PMRF area?

ECFK: Yeah. I used to work there too ...

LM: Oh ...

ECFK: ... back in the early 2000s.

LM: What did you do over there?

ECFK: So I started there as a security guard. I forget what year it was, but early to mid-2000s. And then I ended up moving to the supply group, and then ended working there 2018 ... I think. And then I went into teaching.

LM: Teaching ... and you teach where now?

ECFK: Now I teach here. Nah, I work for them (Aloha Aina Poi Factory). I was teaching at Chiefess Middle for couple years, and right before COVID hit, and through COVID. And then ... ended up jumping on board with Kaina guys and Kumano (Kumano I Ke Ala, an organization with a vision to empower a sustainable west Kaua'i and restore its cultural resources) ... not after COVID but during that one year of COVID and kind of throughout the school system.

LM: Yeah.

ECFK: And then ending up moving with Kaina guys. I been here for what ... two years now. Two, three years, something like that.

LM: Nice. Do you have maybe a favorite 'Ōlelo No 'eau [Hawaiian Proverb]?

ECFK: I like the *No'eau* [proverb] that talks about not all knowledge is in one *hālau* [house or *hula* instruction, school].

ECFK/LM: Oh ... 'A'ohe pau ka 'ike i ka hālau ho'okahi [all knowledge is not taught in the same school].

ECFK: I like it because ... of course you not going learn everything in one place. You gotta be able to be in that space, in yourself that you can be open to, and seeing what get for learn, and using what you learn from different spaces, and making one space for yourself for be able to hone all those things you learn.

LM: I forgot to ask you ... so you and your 'ohana [family] live on this side now? Do you guys live over here?

ECFK: So me and my 'ohana live in Waimea Valley, Alawai Road ... three kids and a wife. We been here since 2012. So leaving Kekaha was kind of trippy for me. All I knew was Kekaha. I mean I been to Waimea, we play through Waimea. Living in a different town, for me was kind of a trip. Even

moving across the park from where you grew up ... is kind of trippy. When me and my wife got married, we was living in Kekaha, she was teaching in Kekaha. So just that kind of new experiences for me was kind of trippy.

LM: And growing up, was there any kind of ... did you guys go fishing with your 'ohana [family], or any kinds of things you guys practiced?

ECFK: So we grew up camping a lot ... ironically, on PMRF (Pacific Missile Range Facility). My father's shop was right next to Nohili Ditch, and so we used to camp a lot over there. We used to throw net in the ditch, you know ... fish through that opening in the reef. The ditch empties into the ocean, so we would swim a lot in that area. And then, as I got older, me and my daughter and her friends used to go dive all through that side coming down.

LM: What would you guys catch when you guys would go dive? What is the typical things you would see?

ECFK: *Nenue* [chub fish, also known as rudder or pilot fish (*Kyphosus bigibbus*, *K. vaigiensis*)], *pāpio* (s) [named for the young stage of (crevally) fish], *ulua* (s) [certain species of crevalle, jack or pompano, an important game fish and food item], *moi* (s) [threadfish (*Polydactylus sexfilis*)]. If we in the ditch, then talapilas

LM: [Chuckles.] And still get.

ECFK: Still get. Well, I haven't fished there for long time, and the way ... back then the base was allowing access to the beach ... different than what it is now yeah? But I do know from the different times we would go in the early 2000s, had still a good amount of fish. The base shutting down that shore access to the water ... for a time ... during COVID, helped the population, I think ... you know ... flourish ... so ...

LM: Mmhmm. So what about ... I know you work here, but what about your 'ohana [family], do they ... was your kūpuna [ancestors] mahia 'i or farmers ... did they grow anything?

ECFK: So what I heard ... so actually my mom's dad ... my mom is from Maui ... Hana and Ke'anae ... Kaupō too ... all her family is from that side. Her dad was one full-Chinese man, and he used to

farm kalo [taro] at Ke'anae. So I remember growing up ... me and my sisters would go when we

were younger ... my mother would send us to Maui for how ever long. It seemed like forever ...

so we used to go play with him, farm with him. But I think we did more playing than farming ...

you know ... so that's Mom's side. And then Dad's side, I remember him telling me stories of him

going with his grandmother to the ocean to harvest limu [Seaweed] ... so somewhat of a water

people. I am not too familiar if they were like traditional fishermen.

LM: Yeah.

ECFK: Lā 'au lapa 'au [Hawaiian medicinal plants] ... I know he would go often times with her to the

ocean and pick up limu [seaweed] ... and go mauka [towards the mountain] to grab the ... kanu

[plant] or whatever. But interestingly enough, I had a conversation with Dad about his family's

ancestors, and what not. So he told me a story about his grandmother, or great-grandmother was

born with one image of a shark on her back. And so his mo'olelo [story] came out to be about ... I

think even in the name ... had one shark name about it. Anyway, something tied to the ocean what

he was trying to get at.

LM: You know ... you take your 'ohana to the beach and stuff, do you see a lot of those ... you talked

about limu [seaweed] ... do you still see a lot of those resources over here, on this side?

ECFK: Yeah, I think so. I mean ... nowadays I take my kids to the ocean ... a lot of playing ... you know.

But because my kids are more ma'a [accustomed] at their age, than I was at their age about mea

Hawai'i [Hawaiian things] and everything else. And so am I now, than I was 10, 12, 15 years ago

... you know. We're able to recognize stuff, and we're able to talk about it. Talking about

abundance wise ... I'm sure it's not as abundant as it was before which a lot of things are not as

abundance as it was before right. So ... to answer that questions, no.

LM:

[Laughter.]

ECFK: But still get some.

LM: Yes. I know you started to share *mo'olelo* [story]. I'm gonna show you a list of *wahi pana* [storied places] that Kaumaka put together. I don't know if there is anything you might want to share about any of these places. You can just look through it, it's a few pages long. Is there any story, that brings anything to mind?

ECFK: [Looking through list of places—long pause]. I recognize a lot of the names. For me ... what comes to mind ... a lot of reference ... and I recognize a lot of these names because of them ... from young kid they would go out and what not. Just among their conversations of where they go and what they do. Some of the names come out. And even ... you know ... some of the slangs ... not slangs ... what you call 'em ... when they shorten the names and whatnot ...

LM: Oh ... yeah, yeah ... the newer names.

ECFK: Yeah, you know how we all do that?

LM: Shorten it or change it to you know ... Haole [Caucasian]. [Laughter.]

ECFK: Yeah. So ... as far as these guys ... for me, myself ... it brings up images of growing up. And we used to ride bike all through out the ridge lines above Kekaha, and behind the school ... all the sugarcane roads. We would ride ... we were little boys ... not knowing that these are the place names of those areas growing out. It was just a dirt road, and we would play ... you know. But now, looking at it and knowing ... I do wish I knew more of that place names growing up ... and so anyway.

LM: No ... I was going to say growing up to now ... I was going to ask you what kinds of changes have you seen throughout the landscape over time?

ECFK: Landscape-wise ...

LM: Or resources ... or both.

ECFK: So, both ... I think landscape-wise ... definitely. I grew up around the sugarcane field lands...landscape. Seeing that transition out ... from sugarcane ... corn ... and whatever diversified ag they are doing now. In my current mind's eye ... I cannot say it's a welcome view ... you know .... it is what it is. And then resources part ... definitely there is a lack of resources ... water to be specific that was more abundant back then because of the fields. Had sugar, that's why had water ... not that's why had water, but that's why water was abundant but not necessarily for the right reasons.

LM: So ... I guess regarding this area ... or like even Mānā ... how would you envision this area or what recommendations would you give regarding site management protection or what do you forsee this area in the future? How do you envision this place?

ECFK: Nah ... would be awesome ... if we can find one state of being where what restoration how it used to be would look like. Because you figure ... all through here ... all kinds of *lo'i* [taro pondfields] fields even through here ... all kinds of *loko i'a*, fishponds, through here ... just in Waimea. And then a plain between here and Kekaha was all marsh ... even here to Mānā was all marsh. Knowing we no can tell everyone, "Okay pack up all your houses and move out because we going let all the water back in." You know that's not reasonable. But finding a way where we can restore some water to the plains ... you know. Because it's like you said ... it's like we all know ... we move all the invasive species, the natives going come back, naturally going come back ... right. And then naturally going be able to manage the 'āina [land] the way its supposed to be. Ideally would be beautiful for see some kind of ... you know ... the two exists together where they both are able to thrive.

LM: Unify.

ECFK: Yeah. Understanding on the human side ... that's a *kūleana* [responsibility, rights, and privilege] to take care of this place. You here because that was here before. You not here because in spite of ... you know what I mean. So anyway, some kind of water restoration to the plains. And be able to have space for traditional farming to happen on a large or small scale, because I think for us ... for Kumano being in an education system througout the west ... it's bringing to life in the kids eyes, "I no gotta go work Big Save ... you can learn for farm, and live off of the farming ... and undertand

how to take care of yourself ... and have Amazon on your phone at the same time." You know nothing wrong with that, we gotta ... Anyway ...

LM: No ...

ECFK: You know what I mean ... ah?

LM: Yeah.

ECFK: Ideally, that is where we should be going. But there is a lot of red tapes and hula hoops to dance around.

LM: Are you familiar with the mo'olelo [story] of Ola?

ECFK: Yes.

LM: Could you share or any *mo 'olelo*?

ECFK: What about Ola you want me to share?

LM: Anything you wanted to share, or even *Menehune* [legendary race of small people who worked at night, building fishponds, roads, temples; if the work was not finished in one night, it remained unfinished], or if there are any other *mo 'olelo* you wanted to share connected to this area.

ECFK: Well ... for us ... for Kumano I coordinate education outreach for the schools at Kumano ... and this current year, we are using Ola's *mo'olelo* with Kekaha School's fourth grade. We get on continuous ... for the fourth grade level. Long story short, we been talking to them about Ola. We go to the school, we give one little blurb about Ola, then they come visit our farm ... now we in the space of Ola. We can connect their brains and their eyes with what they heard. So I think, for us ... for me sharing Ola, and his *mo'olelo*, and what he did ... and everything that led to Waimea becoming Waimea ... we try to instill on the kids ... those different values. Anyway, just highlight

those values of self-sacrifice of the bigger picture ... you know, like the importance of water, the importance of taking care of each other. For me, I was focusing on ... taking care of each other ... having them understand that Ola did this for his people, you can do something similiar in your classroom, or in your family ... something like that. It's easy for me, for us, to relate to Ola because of the space we in ... so welcoming the kids in that same space, trying to open up their mind's eye

to what all of this means or could mean to them is important. The mo'olelo [story] or the value in

caring for others is what I try to share with them.

LM: What about cultural practices or beliefs? Anything that you and your 'ohana practice regularly or

specific places that you folks go to?

ECFK: Cultural practices ...

LM: Or traditions.

We practice *huki i ke kalo* [harvesting taro by pulling]. It's a life style. I think for us ... I cannot say specifically, but we chanters. It's important for me to expose my kids to the cultural stuff I wasn't exposed to at their age regardless as much as I grew up not being one *hula* dancer ... I don't mind my kids learning and dancing *hula*. Not only their mom likes, but they are learning, and get values that come from it the things that they learn. And I can appreciate it. And at the same token bringing them out with me like yesterday, the boys was off, so they come help us too ... Kekaha

ECFK: Traditions ... my wife dance hula [Hawaiian dance] and my kids dance hula. That is their thing.

Elementary. They ma'a [accustomed] to what we doing, so it's no longer ... you know ... I not

labeling like we practicing this culture.

LM: No it's just ... do.

ECFK: Yeah, it's just ... do.

LM: Does your wife gather anywhere like for *hula* [Hawaiian dance]?

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ECFK: She enjoys Kōke'e and pretty much wherever we go. I remember in the beginning part, when we first got married. I took her behind Berry Flats. So she never been up there before without me. She never been there before I took her there. I used to be like, "You nuts, at least get your bearings straight, you can get lost in here, people get lost." You 20 feet from the road but you wouldn't know it because you just walking in a circle ... right? I know Berry Flats was one special place for her. For our family as a whole ... it's either *mauka* [towards the mountain] or *makai* [towards the ocean]. And *makai* typically, Kekaha ... it's where I grew up, and it's what I know. But now my kids they *ma'a* [accustomed] to Waimea, here ... the river mouth ... the river mouths. My wife is more like ... she likes to see the ocean but she don't like being in the ocean too much, but she enjoys it ...

LM: I think that's pretty much all the *nīnau* [questions] that I have. If there is anything else you would like to share about Mānā, Kekaha, Waimea ... anything that might come to mind.

ECFK: I think Mānā when I used to work security for them [PMRF], we used to drive through Nohili ... all the dunes ... and I drove through there as a kid, as a high school student. Back in the day, we could drive all through there. But being on the government side of the fence and going through that space, I used to think, "Whoa, too bad the community cannot see or be back here." You know obviously you going get the bad that come with the good, you not going be able to cover it all, but we used to go from Kekaha Elementary ... up to the dunes ... and the whole *moʻolelo* ... slide down and listen to the dogs bark. But I think, that's a special place ... that whole stretch, but obviously there are a lot of special places in Hawaiʻi, but growing up on the West, and knowing like that's Niʻihau ... no can even go ... like that kind of vibe, I think ... that gotta change. We gotta ... accessible ... got to get more easy access to the space. You know ... something got to give.

LM: For sure. And then ... do you by chance have any recommendations for people we should perhaps talk to?

ECFK: You guys get age limit?

she don't enjoy being cold.

LM: I don't think so ... No.

ECFK: Danny Smith. Uncle Danny Smith.

LM: Who's Uncle Danny Smith?

ECFK: Uncle Danny was born and raise in Kekaha. His son an me is classmates, and friends from kindergarten. He's a hunter, he's a fisherman. He was working on the base ... in the '60s, '70s. Retired fire chief. He knows a lot of the West in his lifetime. He get one open-eye on both sides of the importance of culture, and what it's like growing up in the plantation era. He's able to get through all those areas, and a lot of those ridge lines ... and all those places on the paper you showed me ... guarantee he knows those places like the back of his hand. Anyway ... Danny Smith from Kekaha.

LM: Okay.

ECFK: You gotta listen good though ... he had one accident ... but it was a while back. But he is not as strong speaking as he was back then. But you going really enjoy him because he is a really nice guy.

LM: How would we get a hold of him?

ECFK: Go down the road and hang a left.

LM: [Laughter.]

ECFK: Nah ... actually Keao would know exactly where he live. He live just up the road from Keao.

LM: I don't want to take too much more of your time, but I wanted to say, *mahalo nui loa* [thank you very much] for sharing your time, your '*ike* [knowledge] and *mana* 'o [thoughts] with us ... and yeah ... I'm going to stop the recording ...

## ORAL HISTORY INTERVIEW

With

Treston "Hena" Caberto-Raco [THCR]

November 24, 2023

Wai'awa, Kaua'i

By

Hannah Kaumakamanōkalanipō Anae [HKA],

Keao NeSmith [KN],

And

Lilia Merrin [LM]

The interview took place in the *ahupua* of Wai'awa, Kona *moku* [district], *mokupuni* [island] of Kaua'i.

Recording file name IA202241\_2023-11-24\_Treston Hena Caberto-Raco .MP3

HKA: Welina kākou [greetings everyone],¹ today is November 24th, 2023. We are here in Wai'awa on the *mokupuni* [island] of Kaua'i. I am Kaumakamanōkalanipō Anae, representing International Archaeology, LLC and we are conducting a Cultural Impact Assessment interviews for the Pacific Missile Range Facility (PMRF) and Kōke'e Park Geophysical Observatory Succeeding Lease and Easement Areas. And we are also here with Keao and Lilia. And we are here with the person we are interviewing. Can you please say your full name, Hena?

THCR: Oh, my full name, Treston Michael Henakaneali'imekauimekealohapumehanakahelelaniokaua'i (Hena) Caberto-Raco.

HKA: Mahalo. And, Keao, can you say your full name?

KN: Keao NeSmith.

1: Most Hawaiian definitions were sourced from Ulukau: Hawaiian Dictionaries online (https://wehewehe.org/gsdl2.85/cgi-bin/hdict?l=en). In some instances, the subjects supplied definitions and in others, the interviewer provided a translation.

LM: Lilia Merrin.

THCR: Or you can just call me Hena, that works.

HKA: Okay, Hena. Do I have your permission ... to record this interview?

THCR: 'Ae [Yes].

HKA: Can you say it louder?

THCR: Yes.

HKA: Okay, thank you. Before we start, I'd like to say, of course, *e kala mai* [excuse me] if I seem so *maha 'oi* [brazen]. And, um, so ... it's not my intention. So, let us start this interview. So, how long has your *'ohana* [family] lived in the area?

THCR: Um, so my dad's guys were born and raised Kekaha and my grandpa ... we talking about just Wai'awa or Kekaha area?

HKA: Kekaha ... in this whole area.

THCR: Um, from plantation times, from what I believe, is when my family moved to Kekaha. So, I don't know how many years that would be but ...

HKA: Generations.

THCR: Yeah. From my great-great-grandpa maybe, they was living in Kekaha, yeah.

HKA: On both sides, your mom and ...

THCR: Uh, that's from my dad's side.

HKA: And how about your mom's side?

THCR: My mom's side, mostly Līhu'e side and then O'ahu they were from before.

HKA: Okay.

THCR: And then but from before that my 'ohana, Palakiko 'ohana, is from Maui, west Maui, and our Kahiamoe 'ohana [family] is from Kohala. My dad's side is Kohala and my mom's side is from Maui ... Lahaina side, yeah?

HKA: So are you familiar with this, I mean, you are familiar with this area. Are you familiar also with the Mānā and PMRF?

THCR: Yes, very familiar.

HKA: Okay, can you tell me about that?

THCR: Um, from early childhood memories are, you know, visiting family in Kekaha. We would be living in Kōloa and Līhu'e when I was a child but all of my 'ohana [family] lived out over here. So, every weekend or weekdays, we would come out and spend our time with the family in Kekaha. So, whether we be up mauka [towards the mountain] Kōke'e, in these hills along these valley sides hunting, or going makai [towards the ocean] surfing and fishing all on the base, the military base. Before the base used to be open so we could drive from Kekaha Beach all the way to Polihale. And just go drive right on the base, just go around and then go into Polihale. We spent a lot of time camping out there on the base and fishing ...

HKA: And what kind of fishing?

THCR: ... picking *limu* [seaweed].

HKA: Oh, what kind of limu?

THCR: Ah, *limu kohu* [one of the best liked edible seaweeds; (*Asparagopsis taxiformis*)] mostly, and we would be picking 'opihi [limpets], throwing net catching *nenue* [chub or pilot fish (*Kyphosusbigibbus, K. Vaigiensis*)], diving, lobster ... Oh, it's a beautiful reef out over here. But my childhood fondest memory was camping on the base.

HKA: And so, you mentioned, as we were walking up to Hauola Heiau [temple, place of worship], you mentioned that the trail would go to Kōke'e. So that's another place where we're looking at as well, is Kōke'e. Can you tell me about that?

THCR: Um, yeah, it's a ... You know, growing up it's just someplace that we go for recreation. And then as we got older, you know, like camping and hunting and picking *maile* [a native twining shrub, (*Alyxia olivaeformis*)] and learning about our *mauka* [towards the mountain] land and native plants and stuff like that. And as I got older, it came more of a *kuleana* [right, responsibility, privilege] to *mālama* [to take care of]. I just start learning about the native plants, I got into Hawaiian Studies at KCC (Kaua'i Community College) so I get little bit more *ma'a* [accustomed, used to] with your 'āina [land, earth], you know ... We learning about all this in school but I actually grew up with all of this stuff, so it came natural to me to be *ma'a* to all of that stuff.

HKA: Oh, nice. Um, so you also mentioned that Queen Emma would come through and ...

THCR: Yeah, so one of the stories is that she would visit with the Knudsens—the Knudsens had the ranch, Wai'awa Ranch at the time. I'm not sure what the time period was when they were doing the sugarcane but, yeah, he would lead her up from Wai'awa, up the trail to go up to Kōke'e. And a lot of that history has to go back into the Queen Emma Festival that they have in Kōke'e, where the wahine [woman, lady] would ride in on horseback and everything, so ... You know, that would be interesting to, uh, maybe do a ride with everybody one day ... [chuckling].

HKA: [Chuckling.]

THCR: We get to go and ride, you know. We do all these kind of things ... and we go hunting, we see the 'āina [land, earth] but we know the stories. But you know, the relationship is only within the people that is going, is doing that. So, people that is outside, they don't really recognize all the history that

we have back in these hills. They only know outside ... seed companies, the landfill, PMRF, they

don't really know the mauka [towards the mountain] sides. All the different bunkers that we have

up on the ridges and the heiau(s) [temples, places of worship], ... Saki Mana, get Polihale ... get

few other heiau on this side.

HKA: Nice ... So, you rode up to Kōke'e through this trail?

THCR: Yes.

HKA: You did? And what was up there? What did you see?

THCR: It's just cow trail. We have native plants, a lot of 'a'ali'i [native hardwood shrubs or trees

(Dodonaea), all species] and kukui [candlenut tree (Aleurites moluccana)] that you go through.

There's really the dry forest on this side so you won't see a lot of the native big trees that you would

see further up *mauka* [towards the mountain]. But you would see 'ilima [small to large native shrubs

(all species of Sida, especially S. fallax)], 'a'ali'i ... This place is known for having the pe'ape'a

[Hawaiian bat (*Lasiurus cinereus*)] too, yeah.

HKA: The bat ...

THCR: The bats.

HKA: The hoary bat?

THCR: At night time you see 'em flying around ... "Oh, what is that?" But they ... they fly all frantic,

yeah. So, you can kind of tell that it's those guys.

HKA: They're so tiny though, aren't they?

THCR: Yeah. I mean, they're about like three, four inches.

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HKA: Wow, that's pretty neat. So, is there ... have you ever seen any snails? You know, like our native

snails? Any up there?

THCR: Further up mauka [towards the mountain] we see snails. And I'm sure we do, down in these lower

lands too. Definitely in our lo 'i [pondfield, especially for taro] we see certain snails but we're not

too ma'a [accustomed, used to] with the native snail species. But when we started opening up lo'i

right in the valley, the first thing we noticed was all the *hinana* [young of 'o 'opu, a fish].

KN: Hinana...baby 'o 'opu.

THCR: Baby 'o 'opu [or hinana]. And it's funny that they are in the downstream because what would have

happened is they got diverted all the way from the Waimea River, go through all the way Kekaha

Ditch, go down that crazy waterfall or through the pipe, and then get spit out into the ditch line over

here.

HKA: And so how do they ... is that all hydro ...

THCR: That's ...

HKA: ... from who?

THCR: That ditch line is controlled or managed by Kekaha Agriculture Association. They manage from

Waimea River all the way to Polihale and into the base. That's the water ...

HKA: And so, what does that water feed? Who are the people that gets fed that water?

THCR: This water from the olden times was for the plantation.

HKA: And so, how about nowadays?

THCR: Nowadays would be these seed companies and, uh, but not too many ... maybe the base? I think

the water gets thrown out at Kinikini. I not entirely sure.

HKA: And so, these seed companies, what are they producing?

THCR: It's all for their test corn. I think they producing seed for the mainland.

HKA: For the corn?

THCR: Yeah, for the corn. And they were growing soybeans at one point; alfalfa, they tried to grow, but

mostly corn. A lot of the seed companies, they kind of disappeared; not too many ... I think they

... right in front they trying to do a starter program ... You see all the taro farmers? I think they get

awarded an acreage of land and if they do good, they going get awarded more land. But I also hear

that Aloun Farms going be coming in over here. So ...

HKA: They're on O'ahu.

THCR: It's kind of bittersweet. You like to see food, but at the same time farming practices is everything.

And what is the difference between monocropping farming practices between these

commercialized guys who's growing real food? They still using synthetic fertilizer, they still

spraying, so ... Yeah, we might be seeing food that you getting, but what is the growing practices,

yeah?

One of the things that we battling here in Wai'awa is the growing practices that they were using

for the plantation times. Our community calls this place Poison Valley, as opposed to Wai'awa

Valley, because of the contamination that's in this valley. They used to house their pesticides and

herbicides, and even they had, you know the telephone post. I guess they would dip the telephone

post in that kind crazy chemicals over here. So, when they shut that down in 2000, DLNR

(Department of Land and Natural Resources) just left, put up a chain-link fence and labeled it a

brownfield and said, "Nobody enter."

HKA: Yeah.

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THCR: But the problem with that is, is one State agency was labeling it as a brownfield while another agency was listing it as ag, leasing it out to my 'ohana [family]. So, in 2010, I brought this to the Hawaiian Homes Commission and I said, "What is the deal with this contamination on our side? We growing mangoes, we growing *lo'i kalo* [taro pondfield] we get 'uala [sweet potato (*Ipomoea batatas*)] all planted in the ground, gardens ..."

We were bringing up *hāumana* [students] from Kekaha Elementary School. At the time we were linked up with the fourth-grade program; it's like a leadership program. They were coming up every week. We had Boy's and Girl's Club coming up and Nā Pua No'eau kids' camp and stuff ... So, we're questioning, you know, if we're bringing up our *hāumana* ... The problem is, why does our west side community have to go all the way to the North Shore to learn about our 'āina [land] and cultural resources, when we have our own history on the west side.

HKA: 'Ae [Yes].

THCR: I cannot say we have more history because I'm *pili* [connected, associated with] to this side. I like the stories on this side ...

HKA: There is a lot.

THCR: Why we gotta go all the way Waipā for go into *lo'i kalo* [taro pondfield]? Why we gotta go, you know, Limahuli and learn about that stuff? We have all of this stuff in our backyard right over here. But our *keiki* [children] in Kekaha isn't connected. And when they are connected, maybe they connected for ... I don't want to say the wrong reasons ... you know ... recreation.

KN: Brief encounters, this kind ...

THCR: Yeah, brief encounters. But to share the oral history of the *mo'olelo* [stories] of place, connecting them to place. The name, you know, and everything like that, that is what we gotta plant in them so they get grounded into this community.

HKA: Right.

THCR: And that's the thing with Kekaha ... Before used to be a lot different because everything was open. The gates was all open and the community could just roam, pretty much. And everybody would take care. But now with the thing being locked up, people no *mālama* [to take care of]. They come in and out, they take what they like and they leave. When before, it was a different thing when everybody would take care. Everybody would take care the ditch lines, everybody would take care the watercress patches and what. They would grow their own pumpkin patches and people could come and eat. But now it's like, "Oh, the farmer stay back there ... oh, the farmer no stay. We go take his stuff and we going leave."

HKA: Yeah ... yeah.

THCR: We raising pigs, they going come steal the pigs, or if not, they get their hunting dog.

HKA: So, this 'aina [land] over here, is leased by your 'ohana [family]?

THCR: This is Hawaiian Home and we have a lease; we had a lease since 2008. But my grandpa, when the plantation was closing down, they were going into diversify ag. He teamed up with this other guy, Wally Johnson, and they had a company called Far West Ag. And they were growing all the sweet corn and watermelon going out to Kekaha. All before these corn companies came in, they was growing real food. You know, like, they had sweet corn and watermelon. So, my summers were spent in the mango orchards, and in the watermelon fields, and sweet corn fields, picking all that kind stuff. I never wanted to become one farmer.

HKA: [Laughing.]

THCR: You know like, "No way, I going be cowboy!"

HKA: Cowboy? You also surfer too ... ? [Laughing.]

THCR: Yeah. [Chuckling.] So, and then, 2005 or something like that, he ended up not ... There was a little thing and he ended up selling his part of that company, Far West Ag. So, we lost all the 'āina [land] because we weren't part of the business. Then somehow, DHHL (Department of Hawaiian Home

Lands) came back to my grandpa because Wally Johnson wasn't *kanaka* [Hawaiian native] and this was all Hawaiian Homelands. My grandpa was Hawaiian, so they asked him if he was interested in taking over inside Wai'awa Valley; we got that lease in 2008.

HKA: How much acres are you guys leasing?

THCR: We have 20 acres on this side, and eight acres in the back over there, behind the Poison House. I think part of our lease is in the Poison House but after all of the test and everything done like that, it's still under our responsibility. We just don't do anything with that until we can do the remediation, proper remediation and cleanup of that valley. We've teamed up with another nonprofit, Kaunalewa, who is working towards doing brownfield cleanup in the Kekaha community.

Wai'awa Valley is one of the contaminated sites, brownfield sites, for our community. With the regenerative farming practices we want to do here, it's *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of perfect collaboration between the farmer and the EPA (Environmental Protection Agency) cleanup. If we can do regenerative practices to the *lepo* [dirt, soil], the soil, and feed the community, and do all this cultural revitalization for our community, you know ... This *wahi* [place, location] is really, really a big player right now for the future of this west side community, I feel, in my *na'au* [bowels, gut; mind, heart affections]

HKA: Yeah ... yeah.

THCR: When we create the model, then we can spread this to the rest of the community and say, "Hey look: we can clean 'em up and can grow something." You know, we have a space for the community to come and learn and grow, yeah? Get food ...

HKA: And be connected to the 'aina [land].

THCR: Learn all the *mo'olelo* [stories] of our history. This goes back, Wai'awa's history goes back from the original inhabitants of Kaua'i to the *Menehune* [race of people, and/or legendary race of small

people] time. They get one *heiau* [temple, place of worship], Hauola Heiau, inside over here. Get many, many stories about it but one of the stories is that they talk about of ... was an *ali'i* [chief, ruler] and I guess he had collaboration or had little rule over the *Menehune* people. He was able to have them build part of the *heiau* when his son Ola came up with the idea of Kīkīaola Ditch ... I feel the Kekaha Ditch replicated the Kīkīaola Ditch, how they brought the Waimea River water to the Waimea Plains to irrigate the *lo'i kalo* [taro pondfield] over there. The Kekaha Ditch is the same thing, they just brought it all the way to the Kekaha Plains. So, this valley is all related back to ag, from before times with the *heiau*, all the way back to ag with Kīkīaola Ditch system, and then you have plantation time with the maybe not so *pono* [correct or proper procedure] practices. You know we get Poison House inside here, and now with the contamination where we gonna bring our people to next as far as agriculture and sustaining ourselves?

HKA: Did they have rice in here too?

THCR: I don't think that had rice but in the old *mo'olelo* [stories], you would hear the stories of the Mānā Plains having floating rafts of *kalo*. So, kind of like the Peru guys with the chinampa bed and stuff like that, you know. So that was really interesting, to hear all the ... I guess they dredged a lot of this; this is all wetlands.

HKA: Yeah, that's swampy lands, yeah?

THCR: Was all wetlands and you know ... when we talk to our friends that's involved with the fishponds they said, "This is the biggest fishpond on Kaua'i." Right here was all wetlands where you have, you know ... Some places you could sail canoe inside. It was navigable, they said, inside along this pali [cliff]. So, occasionally when the thing rains, I say, "Oh, yeah, it does." We would see that it could do that. But with the plantation times ... that's why we have the most pristine *lepo* [soil] over here. From turning wetlands into dry, of course your *lepo* is going to be super good. But then ...

HKA: They drained it, right?

THCR: Over time yeah, they drained the whole wetlands and then, you know, sugar plantation of course came in and their farming practices was ridiculous. You look at all the plastic they used to lay down

for drip irrigation. At first, they never had that; they would just grow the  $k\bar{o}$  [sugarcane], the sugarcane, on raised beds, kind of like flooded ... pretty much like  $m\bar{a}la$  [garden] style, like lo i kalo. Like  $m\bar{a}la$ , with the ditch around the whole field, and it would be irrigated that way. And then they came up with the drip irrigation; and then they had the heavy equipment where they would just till all that stuff in. So those are all the ag practices that has come about in the area they went plant. And then corn is there, and they were still doing that kind of same practices. What are we taking the next generation to, you know? How are we going to be feeding our people and sustaining ourselves off of this same ' $\bar{a}ina$  [land]?

HKA: So, can you name the resources you have on this 'āina?

THCR: We are currently irrigated from the Kekaha Ditch. Kekaha Ditch comes down the hill, right over there and feed into the hydro. Hydro was the first electric on Kaua'i because ... And I guess the first traffic light, was right over there where you pulled in; right over there on the paved road. That was a cane truck crossing over there, so they had a traffic light. And I guess this hydro is also running all the pumps, to pump out all of the water out of the ... 'Cause we had all kind wells, yeah. Kekaha is filled with wells. The plantation capped all those wells so they can grow their sugarcane and stuff like that.

It would make it smart if we let the water go back into Waimea and uncap the wells because we have our own wai [water] over here. All the taro farmers and the eco system, the Waimea River is the lifeline. That is what feeds everything ... eco system. When you take water away from that, everything suffers from that. So, when the water commission came down, we said, "We the furthest one west, before all these ... guys came in started farming taro ... we the furthest one west farming taro and we benefit from the Kekaha Ditch. But if you were to ask us what we would like, we have our own well water here in the valley. We could run our kalo [taro] and stuff like that off of our own well systems and we look at the larger picture; throw the water back into the Waimea River ... "So, I'd support that, even though we benefit from ... There's a big balance between it. How do we manage the water situation? I think they're going to be piping it. One of the ideas was to pipe it from Wai'awa Valley to Mānā Plains. And you see, when we walked over there, you see how much animals and life run off of this ditch line? If we were to pipe this land, or this water, all of this land going go dry and barren. Everything going make [die], all of our community that sustain

ourself off of this wild game and stuff like that. That's how our community is raised. We're rural over here.

HKA: Yeah, so what you guys had? You guys had pipi [beef, cattle] and you guys had goats too? THCR: We had deer, goats, pigs, cows ... KN: Birds ... THCR: ... ducks. We have ... KN: ... pheasants. THCR: ... 'alae 'ula [Hawaiian mud hen (Gallinula chloropus sandyicensis)], kolea(s) [Pacific golden plover (*Pluvialis dominica*)], we get the 'ūlili [wandering tattler (*Heteractitis incanus*)], we get ... 'auku'u [black-crowned night heron (Nyticorax nyticorax hoactli)]. HKA: 'Ūlili too? THCR: Yeah. HKA: 'Cause they ocean birds, yeah? So they come over here? THCR: Yeah, well, the ocean is right over there. We get ... HKA: Ae'o [Hawaiian stilt bird (Himantopus mexicanus knudseni)]? THCR: ... ae'o [Hawaiian stilt bird (Himantopus mexicanus knudseni)] and what is the ...?

Pueo [Hawaiian short-eared owl (Asio flammeus sandwichensis)] ...

KN:

THCR: Pueo [Hawaiian short-eared owl (Asio flammeus sandwichensis)], we get ... with the cliff birds, what is that?

KN: Koa'e [white-tailed tropic bird (Phaethon lepturus dorotheae)].

THCR: Koa'e [white-tailed tropic bird (Phaethon lepturus dorotheae)], koa'e kea, koa'e 'ula ...

HKA: Wow ...

KN: And then you get the invasives.

THCR: Invasives are all the bats, I mean the parrots. The parrots is a new nuisance that we have come in over the last five years, I say. You know, when we first came in, I would see them high, maybe one or two flying over. I'm like, "Oh, crap, they stay coming on this side, that's weird." Then the next year, would be little bit lower. And the next year, we see them all in the plain. The seed companies got all the grants to chase away all the parrots, like that. We would drive into seed company fields and they would be playing all kind high pitch sounds (making a sound) trying to scare the birds.

HKA: What about our native birds?

THCR: They went chase the birds right into the valley. The parrots weren't even interested in the mangoes until maybe about three years ago.

HKA: Oh, so you get parrots eating your mango over here?

THCR: Yeah.

HKA: So approximately how much mangoes you have?

THCR: We have about eight acres planted. We have about 12 varieties of mango that we growing and we're trying to do more diversified ag. We had about 15 'ulu [breadfruit (Artocarpus altilis)] trees

planted in this orchard right here, and then the *pipi* [beef, cattle] came in and ate 'em. Oh, no, we had 15 planted and KAA (Kekaha Agriculture Association), the irrigation guys, when Landis Ignacio was still here, told us that they were going to shut off the distribution line for one week; but it was shut off for about a month and a half. All of our 'awa [Kava (Piper methysticum)], lo'i kalo [taro pondfield], everything just went make [died].

It's been a year to year battle with the State agency that controls the water because we're such a small farmer. We're on Hawaiian Homelands and they manage Kekaha Ag, which is in front, so they have all the seed companies that they manage. But because we on DHHL (Department of Hawaiian Home Lands) land, we cannot be a part of their association because we not one ADC, Agrobusiness Development Corporation. By not being a part of their association, we kind of don't have a voice. And being on DHHL, we have first to water rights. These guys, they understand the law. They know that we as *kalo* farmers [taro farmers] get first to water rights but at the same time, we don't have enough community to voice for us.

HKA: That's why I can see why you like the well, yeah?

THCR: Yeah, so whenever they turn off the whatever, we have the well. We can put one storage tank inside here so we not just constantly draining the well. Whenever that storage tank comes low, it just kicks back on and sucks up water so we can sustain ourselves off of that. But that's the biggest problem that we have when they turn off the water. As a farmer in Mānā, that's the hottest place in Kaua'i. You go two days planting anything, especially when you plant a new crop; one or two days without water is going to wipe out your whole thing. Even mature tree; I get one mature tree, they went shut 'em down for two, three weeks. You see that tree?

HKA: Yeah.

THCR: *Make* [dead] 'cause the place get crispy in the summertime. It's so hot, all this grass is all new grass from the last rains we got the last two months. But before that was all brown, crispy ...

HKA: I think it's like that all over the *Pae 'Āina* [Hawaiian Islands].

THCR: Yeah, especially the west sides, you know? West Maui, west O'ahu 'cause they dry, the dry side.

HKA: Yeah ... yeah. So, your dad's 'ohana [family]. You know your kūpuna [grandparent, ancestor], were they like, um...do you have any konohiki [headman of an ahupua'a land division under the chief], or even ali'i [chief, ruler]? I mean, even maka'āinana [commoner], but you know?

THCR: We know that in Kohala, we come from mahi'ai [farmer] 'ohana [family].

HKA: Yeah.

THCR: Especially in Lahaina, we get. Come to find out I get one cousin farming *kalo* [taro] in Lahaina that we never knew, and he's one heavy activist. Not activist but taroist, you know? Planting *kalo* over there in Lahaina, Charlie Palakiko is our 'ohana [family]. So, I hear he's been feeding a lot of people after this Lahaina fires and stuff like that; you know, helping out the community. Just so happen we kind of, we don't know each other but we doing the same works throughout the *Pae* 'Āina [Hawaiian Islands], yeah.

HKA: And so, your papa, um ...

THCR: My mom's side is Palakiko, and that's where we have, that's through my mom's side, we have this lease, through that, through my mom's side.

HKA: But your grandpa is Hawaiian, right?

THCR: Yeah.

HKA: And he's from this area, right?

THCR: From Kaua'i, he was born and raised in Kaua'i. Oh, I think he was born on O'ahu and moved to Kaua'i when he was eight. But that's the Palakiko side. My mom's dad side is Kahiamoe.

HKA: Kahiamoe ... wow. And that's Big Island?

THCR: Kohala, yeah.

HKA: We might be related ... (chuckling). Can you tell me anything about the Christian *kupuna* and wife of Kaumuali'i [last independent *ali'i nui* or high chief of Kaua'i] or any of, you know ... Deborah?

THCR: Kapule?

HKA: Yeah.

THCR: I know that she was living in Wailua, in Coco Palms area, yeah. That's where her house was and stuff like that.

HKA: She was living here too, yeah, Kekaha? Like, I think she was around here. She lived in 1835, Deborah Kapule?

KN: Oh, did she live in Kekaha? I don't know.

HKA: Waimea or Kekaha, yeah? She never live in there either?

KN: I always heard them say they lived in the eastside, Wailua.

HKA: Wailua?

KN: Could be, I don't know.

THCR: With the major ali'i [chief] I knew that they were living, Kaumuali'i guys down this side, right?

KN: Waimea.

HKA: Waimea.

THCR: 'Cause this is the 'āina momona [fertile land].

HKA: Exactly.

THCR: When you one *ali'i* [chief] and you like feed your people, you going go to the place that's 'āina momona [fertile land]. Right here we get the cold wai [water] the meanest lepo [soil] and we get all the sun. You see these valleys how pristine and quiet, I can imagine how it used to be back in the olden time. Especially Makaweli side and Olokele, and all the way out this side. Right over here was known for have the loads coconut trees. All the way from Kekaha, all the way to Polihale, I think. One of the valleys over here is called Niu Valley, and they would have coconut groves and Kaunalewa had coconut groves ... That's one of the things that we like grow back.

HKA: The sugarcane, they took it all?

THCR: Um, pretty sure. I'm not ...

KN: Eventually ...

HKA: Wow, that's so beautiful. Coconut trees is so beautiful.

THCR: Yeah, bring life when no more wai [water].

HKA: Yes. So, do you have any 'ohana [family] burials that you know about? If so, where?

THCR: There's definitely 'ohana burials in here.

HKA: Around this 'āina?

THCR: Yes, in this place. There's caves inside here ... both sides, actually. I was educated on that when Aunty ... when we did that meeting with the Aipoalani and Kilauano 'ohana [family]; they are direct descendants. When you guys have your interview with Aunty Gwen, she can share more about, and how much she wants to share about that. But there's definitely *iwi kūpuna* [bones (of the) ancestors] inside here. Yeah, and a lot of the spiritual stuff connected with that side.

HKA: Nice. So, what is your favorite 'ōlelo no 'eau [proverb, wise saying]?

THCR: Oh, man ... I going have to get back to you on that one. [Chuckling.]

HKA: Okay, okay. Um ... what kind of Hawaiian traditions are practiced by you or your *kupuna*? Like you know, *hula* [Hawaiian dance] ... I mean even surfing is ...

THCR: Surfing ...

HKA: Anything you want to share?

THCR: Definitely the *mahi'ai* [farming, farmer] side. I've immersed myself in learning a lot about the native plants, a lot about the canoe plants, and just being *mahi'ai*, yeah? And I do *paniolo* [cowboy] work too. I'm the foreman for Princeville Ranch, so I do a lot of native planting out there on my own time, and ... even in here.

HKA: What kind of native plants you plant?

THCR: Um, so over here we had *koa* trees [the largest of native forest trees (*Acacia koa*)]; we have some 'ōhi'a [tree of the 'ōhi'a lehua, which is the flower (*Metrosideros macropus, M. collina subsp. polymorpha*)].

HKA: Where?

THCR: In our nursery we had 'em. But we definitely planted them out and they grow, it's just that water situation. But we planted a lot of wiliwili [a Hawaiian leguminous tree (Erythrina sandwicensis)], kukui ... We did a ... the guy, Rick from Hui Kū Maoli Ola did a study up at Pu'u 'Ōpae and he found some 'iliahi [Hawaiian sandalwood (Santalum spp.)] up there, and yeah, there's a lot of stuff inside the valley that's growing.

HKA: You know, Kaua'i is a very diverse biosystem, yeah? Do ancient Hawaiian religious practices continue in the Mānā area?

THCR: Yes, for sure.

HKA: Such as ...

THCR: Well, fishing practices. A lot of *hula hālau* [hula groups] have come out to give *ho 'okupu* [offering, tribute] out here and hear about the *mo 'olelo* [stories] of Wai 'awa and the Mānā Plains.

HKA: What is the mo 'olelo?

THCR: Uh, specific to place, whether it be here in Wai'awa or in the Mānā flats, each place has a different story, you know?

HKA: Is there any more stories about over here?

THCR: Wai'awa, can go back to the days of Kualu-nui-pauku-mokumoku [Kualu of the broken rope, he is the son of Kualu-nui-kini-akua; mentioned in the "Legend of the  $M\bar{u}$  People"], tracing it back to the *Menehune* [race of people, and/or legendary race of small people] times, when Ola was in here. That's one of my favorite stories of Ola on the west side, the *ali'i*(s) [chiefs], Ola and Kualu, because it brings it back to when that was the original peoples that was here. So, imagine living on Kaua'i where you have this barren land and how are you going to sustain yourself in this 'āina [land]?

When I got in here in 2009, I was 19-years-old out of high school. I was pau [finished] with KCC

(Kaua'i Community College) and I had the opportunity to go to Hilo with my class and everything.

I registered and transferred to go to Hilo. I was like well, I get kuleana [right, responsibility,

privilege]; if we learning about *kuleana* and what it is to do, you know, like, that was just my calling

to come back to 'aina [land].

I kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means

whatchamacallit] of roughed it for a while and cleared everything with one Weedwacker and

chainsaw. At first, I never even had Weedwacker; had machete and what not. This place, this

orchard was just almost like how you see it now [chuckling]; but was just covered. Only thing you

could go through these trees was just pig tunnels, like this. So at first we cleared it by hand, when

I first moved in here and I was just living in one tent. This is my first lo'i [taro pondfield] that I dug

by pick and shovel. All these rocks, not all of these rocks, but that big seat rock that you see right

there was all by 'ō 'ō [digging stick] and pick and shovels that we would do everything with.

HKA: Wow ... a lot of work.

THCR: Yeah, when Keao came up, all of this was ... we didn't have the machines that we have now. Over

time, it just takes a lot of time. Now we working with the nonprofit, hopefully we can start moving

things faster. But this kind work is just taking so long. And with the opportunities ahead of us in

this generation, we can just go make money easily; go work construction and do all that kind stuff.

And I did, to provide for my family in the beginning. Then when the opportunity came up to be on

the ranch, I was like, "I think I going go that direction." It's hard; hard learning one style of living

and going back to Western style. Yeah, money is important and we gotta sustain ourselves but we

can have balance. There's balance now. You can make money, provide for your 'ohana [family]

and still aloha 'āina [love of the land or of one's country] while doing that. It's just painting a

picture so that they can see it; the image that you see.

HKA: Are you familiar with the expression "Wai kahi o Mānā?"

THCR: I've heard it before.

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HKA: It's about the mixing of poi [food with a pudding texture made from the taro corm]...

THCR: Yeah, *kahi* [to rub gently with the thumb and finger, and sometimes a technique used to clean the *poi* bowl] *poi*.

HKA: Do you or your *kūpuna* [elder, ancestor] make *poi*?

THCR: Yes. We're very, very into the *taro* scene. I was part of Hui Kalo. So, as I got involved, we would get into Hui Kalo ... they would fly us over to the legislation stuffs and listen in to what is happening surrounding *taro* farming. And I actually got this grant that the Hui Kalo got, I guess it was called the Taro Purity and Security Task Force. [Laughing.] You heard about that?

HKA/KN: [Laughing.] No.

THCR: That little branch off the Hui Kalo was made when CTAHR (College of Tropical Agriculture and Human Resources) was trying to patent *kalo* [taro].

KN: Oh, right, right.

THCR: And Kaina guys and a *braddah* [Hawaiian pidgin word meaning an endearing term for brother] from Moloka'i, Hano, they said, "Eh, you guys was patenting Hāloa [son of Wākea, whose origin is from taro, and it is also a variety of long stemmed taro]?" So CTAHR awarded the Hui Kalo, which is Queen Lili'uokalani's Chapter of *kalo* practitioners in Hawai'i, they awarded the Hui Kalo \$50,000 to do any kind of research pertaining to what makes the best *poi* [taro paste/pudding]. Whether it be farming practices, growing conditions, fertilizers, inputs that you put in, you know? So, they were flying me all around Hawai'i, interviewing all these farmers, to learn their farming practices, varieties and how to make the best *poi*. Whether it be *ku'i* [to pound] or machine, you know? So, I immersed myself in that for little while, got all involved with the *ku'i* stuff, and we did a bunch of workshops in here. We did *ku'i papa* [wooden board used to pound taro to make *poi*] and *pōhaku* [stone used to pound *poi*] inside here.

HKA: So, you *ku* '*i* [to pound] your own *poi*?

THCR: Yes. So, we get one mill and papa(s) [wooden boards], yeah.

HKA: Oh, nice. So speaking of Hāloa, [son of Wākea, whose origin is from taro, and it is also a variety of long stemmed taro] can you tell me the story of Hāloa, in your own words?

THCR: Yeah. So starting from Papa [Earth mother] and Wākea [Sky father], they have a daughter Ho'ohōkūkalani. Wākea falls in love with his daughter, they have a baby which they *kanu* [plant, bury] into the ground and from there, Hāloanakalaukapalili to Wākea and Ho'ohokukalani pops up. They love the child but they know they cannot *mālama* [to take care of] so they have another child, which is *kanaka*, the first man [Hāloa]. And that is our relationship to the whole story between *kalo* [taro] and *kanaka*, and our relationship to 'āina [land].

HKA: Inside this sheet there's a lot of places, and I think maybe we can go down the list ... You can just pick out what you think you know about those places? Whether it be small or big?

THCR: [Thumbing through pages]. You know growing up a lot of these names. You hear it growing up, you know? But you never really know too much until you immerse yourself into it, like I did in here and Wa'iawa. So, I know a lot of it; a lot of it rings a bell and I know it but ... So, what you like me do? [Laughing.]

HKA: [Laughing.] If you see a name and if you want to, can add anything to that name? You know, any little information that you have. Share any type of thing you want to share about that place.

THCR: I guess from where I come from, my last 15 years is in Wai'awa, you know? What I know is here ... it's all incorporated to Mānā, I guess. Not sure ...

HKA: Okay. So, you ...

THCR: [Reading through papers] Yeah, sure, get a lot of good *mana'o* [thought, belief] in this. I guess I just have to read over it.

HKA: If anything just jumps out at you ... [chuckling] but if not, it's okay because we got plenty good information.

THCR: Oh, Pu'u 'Ōpae. There's a *mo'olelo* [stories] about Pu'u 'Ōpae, about the connection with Pu'u 'Ōpae and Alekoko fishpond. When they were building Alekoko they, um ... and that's another thing, Pu'u 'Ōpae is right above over here. So, the connection with the *Menehune* [race of people, and/or legendary race of small people] people being here and Pu'u 'Ōpae, the *mo'olelo* about the *Menehune* people building Alekoko fishpond; I think the payment of the *Menehune* was to give them one 'ōpae [shrimp] from Pu'u 'Ōpae. So that's one of the *mo'olelo* of Pu'u 'Ōpae.

HKA: So, must've been precious then the 'ōpae, yeah?

THCR: Yeah, must've had nice fresh water for grow 'opae up over there.

HKA: So, are you familiar with the Menehune trails?

THCR: Um, I know a lot of the old ... I'm not sure if it's *kahiko* [old, ancient] or what, but we do ... I know a lot of these old trails. We hunt a lot of these places. I ride horse all through these mountains so I know a lot of these old time trails. I'm not sure if it's *Menehune* [race of people, and/or legendary race of small people] trails or just old game trails. There's definitely trails alongside this *pali* [cliff] that go from here to almost Polihale.

HKA: I know this is going to seem like a strange question but, what is your insight on *Menehune*? You believe they're a race and not just mythical people, right? Do you also believe in the site of a mythical people?

THCR: Oh, yeah, I see it! I know it because of the *mo'olelo* [stories] and our *heiau* [temple, place of worship], you know? So, we cannot disregard that history. And place names in the oral history of the *heiau* and how they were built and who ordered the ... that's the *mo'olelo* of the place. That's intertwined. It's just to say, oh, Kaumuali'i was mythical ... oh, no, that buggah was real! (Chuckling.) And then we have another you know, the  $M\bar{u}$  [a legendary people of Lā'auhaelemai,

Kaua'i, often called  $M\bar{u}$ 'ai mai'a, banana-eating  $M\bar{u}$ ] and Wa [people from Southeast Asia] too, and that's different from *Menehune* [race of people, and/or legendary race of small people].

HKA: But they're also related, yeah? The  $M\bar{u}$  and the *Menehune*, yeah?

THCR: Yeah, I guess the Wa was the different one ... the screaming. The loud mouths, yeah?

KN: [Chuckling.]

HKA: They have that wild ones ... is that the one? Hairy ... kind of hairy?

THCR: Yeah. You hear a lot of stories about that in Wainiha. But the story of the chanting that would happen is Wai'awa in this ... So Haola Heiau is an amphitheater, a lot of the archeological surveys say. When they would do their heavy ceremonies at the *heiau*, the guys in Wainiha would hear 'em.

HKA: I think this is also, referring to also, they could hear it in O'ahu. At Kawainui, in Kailua.

THCR: Yes, I heard that story too.

HKA: Oh, so it's from here?

THCR: Yes, Wai'awa; this amphitheater here.

HKA: Beautiful ... beautiful.

THCR: And then, you know when us was living over here, you could hear the ocean. When you hear the ocean from over here, you know surfs up! You can go *kai* [ocean, sea] ... [laughing].

HKA: [Laughing].

THCR: Hot right now, we go surf!

HKA: You answered so many questions for me. Maybe I'll go to the *Menehune* ... is Kahālauaola is that *hālau* or canoe house built by the *Menehune*?

KN: Kahoana.

THCR: Yeah, that's in Kahoana. That's in that side *heiau* [temple, place of worship] I mean that side valley. So, in Hoea there's Hauola and then the other side is the canoe building *heiau*.

HKA: So, you know on this map, you like tell me where we stay?

THCR: We are ... [looking at maps].

HKA: Let me mark it.

THCR: Not exactly sure. Someplace over here, though.

HKA: I got other maps ... yeah, I got other maps in here too. Can you mark it for me? Oh, you know, I got other maps in there might be better. You might see ...

THCR: Yeah, I need little more references, it's kind of ... I know this place real good but ...

HKA: And then I think get the, one of them get the valleys inside. Is there one with the valleys? Get some valleys in there, no? Oh, shoot! I wish I ... actually should have done the one with all the names on top.

THCR: You know what? Here's a ... kind of hard to tell.

KN: Where is Kōke'e Road from here, that's like the next valley over, yeah?

THCR: Um, two valleys over.

KN: Two more? So, if you find Kōke'e Road, then you can go two.

THCR: Oh, yeah.

KN: The thing about this valley, it's real distinct because it funnels like this and then open wide like that with the one open ridge in the middle.

THCR: Yeah and there's a big reservoir in front too, so I trying to look for the reservoir but I can't see it.

HKA: It's not showing it on the map.

THCR: But I know we're in this area right here.

HKA: You know what, just circle that area and then put Wai'awa.

THCR: Kokole Point is right over here, so we should be ... Ho, you know where Kōke'e Road stay? Hard for tell, *brah* [Hawaiian pidgin language short for braddah or brother; hypothetically speaking].

KN: Yeah, blurry too, no?

THCR: Kokole Point is right here, right?

KN: Oh, that's all the way Polihale ... that's too far. Yeah, this is already too far.

HKA: I got some other maps too, yeah ...

THCR: Yeah 'cause look, that's Polihale already, that's the end of the road.

KN: Yeah, yeah, too far. Oh, we not even here, that's the runway. We're further down this way.

HKA: It's not even on the map?

KN: No, it's down here. It's off the charts. [Laughing.]

THCR: But I have a lot of maps I can show you. All the names of these ridges ...

HKA: There's a map I saw that has all the names of ...

THCR: Each ridge.

HKA: Yeah! I'm so like amazed that this place has like so much ...

THCR: I think that's the state map, like the DLNR (Department of Land and Natural Resources) map has that.

KN: Gay and Robinson [referring to the Gay and Robinson 1891 map].

THCR: Yeah, yeah. Mike Faye has a lot of that history too, of the old ... he's a ... he loves learning about all that old plantation history and the families like that. So maybe if you guys contact him and say, "Hey, we like to learn about all this kind stuff, can show us pictures, or ...?"

HKA: Okay, when we come ...

THCR Prior too, though, let him know before.

HKA: Yes, yes. That's what I should have done was to ask you.

THCR: Yeah, I get one whole bunch of stuff ...

HKA: So that's what we can do, Keao, we can ask him if he can bring ... that's what I usually tell people too but I forgot.

THCR: He get the old photos. He showed me an old photo of the Mānā Plains, had all cattle on the Mānā Plains. And had cowboys ranching. I think I get 'em on my phone but that was super crazy when he showed me that.

HKA: Can you send that to Keao?

THCR: So that's history of ... There's a system called Civil Pastoral Systems. As a agricultural ... it's a rotation of cows or mammals, which is goats and sheep, like that. You rotate that amongst orchards and planting methods. So the style that I feel would be most beneficial to go back to, is that style of rotational grazing and orchards and stuff like that. We look at the agricultural practices now, we just putting our people back, and back, and back. But at this point, we're smart enough to know that's not *pono* [right, proper] for the 'āina [land], you know?

HKA: They used to do that at Hualālai. Up at Hualālai on the Big Island.

THCR: Yeah, and we have all these ... You know, walking up to there, up to the *heiau* [temple or place of worship], we have a lot of the ungulate species that need to be managed. I know I don't totally agree with eradication but I definitely feel management. It needs to be, you know? So, whose *kuleana* [right, responsibility, privilege] is that? If they calling it the King's cattle ... Somebody hit one cow on State road, State is saying that's not my cow. But you go and shoot one cow for feed your family and State catch you, they arrest you. You know, it's like, what is the balance between that?

So I actually got, before working in Princeville, there was an opportunity for me to fly and work in Maui, up in Kahikinui, up in there DHHL program over there. And they were catching wild cattle and trying to do a reforestation project. But a lot of the community had backlash with that because they were saying basically that, that's our *pipi* [beef, cattle] and stuff like that. So, what is the balance between managing ungulate populations and so called conservation-native plant restoration projects? 'Cause we want to see our forest, Pu'u Ka Pele—all over here is called Pu'u Ka Pele Forest Reserve. It's not really a Kōke'e State Park area, it's the cooler land ... stay little bit down, so you don't really have the whole forest. You have forest, but it's not like the wet forest up there, wao akua [a distant mountain region, believed inhabited only by spirits (akua)] kind.

HKA: What can you tell me about Pu'u Ka Pele? Because that's also on top that list.

THCR: Oh, my goodness, that 'āina is 'āina momona up there too. Beautiful. You got crispy cold mountain air, you have all the native smelling trees in the forest; koa trees, 'ōhi'a ... I love being up over there. That's what makes me who I am, up over there.

HKA: Wow.

THCR: You can go up on there horseback or, you know ... You overlooking all of this. You overlooking the Mānā Plains, all Barking Sands, all from Polihale to Kekaha and you overlooking Lehua, Ni'ihau. You can see majority of a lot of Ni'ihau island, you know? It's amazing up over there. Yeah, maybe we gotta go ... On Sunday, we're going to the *lo'i* [taro pondfield], up Pu'u 'Ōpae if you guys want to join us.

KN: Yeah can, easy.

THCR: We going with Uncle Sean.

KN: Oh, okay. Actually, he told me about it.

HKA: Can I go up with my car?

THCR: No, you going to have to catch ride ...

ALL: [Laughing.]

KN: You're going to have to catch horse.

THCR: Yeah for sure. But up over there, that's beautiful 'āina.

HKA: For real? Oh, I would love to go if you guys would have me. [Chuckling.]

THCR: Yeah, of course. So up over there, they're talking about having a hydro—KIUC (Kauai Island Utility Cooperative) is going to develop a hydro over there. And that's, you know ... Six, seven years ago KIUC started coming up over here talk story with me to see how I felt about it. From the very beginning I said, "I don't agree with it." And then we had all kind of community meetings and none of the community was showing up. But because they was coming up, I was knowledgeable about it. KIUC would text/email me, "Hey we having meetings tonight ... " And come to find out that I didn't support it, I didn't get so many emails afterwards, you know?

But fast forward six, seven years later, it's still the same thing you. And now people are being more aware it's like you know, we were showing up to these meetings seven years ago ... just the word going out, we could've put a boot up to this and say, "Stop this." But now it's kind of advanced in their process and it's kind of what happens around the state. You see these projects pop-up, people are against it from the beginning but they still manage to get around the EIS (Environmental Impact Statement) or whatever it is you know? And then the project goes through ... To be able to give a lease to a corporation before what that land was used and intended for, which is rehabilitating *kanaka* [Hawaiian person], not rehabilitating, that's our 'āina [land]. That's what we use to feed ourselves. Like we need to be rehabilitated ... It's here, we just gotta ...

HKA: [Laughing.] If they understood like her umbilical cord is hooked, it's plugged into it.

THCR: Exactly. So yeah, that's another ... There's so many different ... All I wanted for do when I first started was for plant. This is my first taro patch you know? With pick and shovel, I dig this thing. So, I put my first *huli* [taro top, as used for planting; shoot] in the ground, I was like, that's my soil sample. The buggah grow this big so I pulling *kalo*(s) [taros], "Oh, yeah, we farming."

HKA: What kind *kalo*(s) [taros], you was planting?

THCR: I first started with one batch of Maui Lehua from Waipā. My friend Kaipo went give me one bunch of *huli* and when I went pull 'em, the buggah was like this big, maturity. Because when they grow, they grow from *huli* to mature stages, and then shrink back down when they ready for *huki* [to pull or tug]. When I *huki* these buggahs, over my head! Six feet tall because well, plus we had some shade. So, the buggahs was stretching but the corm was so big inside there! When the water is cold, you get the meanest *lepo* [dirt, soil] and ...

HKA: How does it cook, like when you cook it?

THCR: 'Ono [savory].

HKA: Oh, my goodness, I never seen kalo [taro] that big.

THCR: A lot of our youth programs we do with Nā Pua No'eau, she would ask for *kalo*, '*uala* [sweet potato], like that, so we would ... And then our community was saying, "Oh, what, you feeding our *keiki* contamination ... "So, then it went into a whole other loop hole of rabbit hole, of chasing that *mana'o* [thought, belief], you know? So, it's a big learning curve, but now we back.

HKA: Good ... good for you guys.

THCR: Yeah.

HKA: I know this interview has been taking up a while so ... Actually, you covered quite a bit of stuff of the ... Oh, yeah! How about, you know, the changes throughout? We know how the sugar industry kind of affected the 'āina [land] ... you know ... the changes ... how about the military? You want to share that too? And not just now and then ...

THCR: In some aspect you look as far as resource management, they put a *kapu* [restriction, prohibition] of going over there for a lot of people ... a lot of the public to go over there, which in some aspect could be good because when you go over there fish now, oh, plenty get. So, I see value behind that but also, military in Hawai'i and occupation of our Hawaiian Islands is something that hits the *na'au* [bowels, gut; mind, heart affections], regardless of what standpoint that is ... I know that they're starting to do more conservation efforts—I'm not really sure how that kind of stuff is happening, but ...

Also, there's a lot of burials on the base that I know of. You hear it all the time of stories that, "Oh, we want to put up one post there, one light post there." But they dig three feet. And they find  $k\bar{u}puna$  [referring to  $iwi\ k\bar{u}puna$  or bones of the ancestors]. So there's that kind of stuff. And yeah, I don't know ... I no really feel really good about it but if it's here we have to plant seeds to make it good

for us. What are the things that we going say that they can implement that'll be more cultural sensitive, or resource management sensitive? If we doing these *mauka* [towards the mountain] works, everything that happen that we doing *mauka*, if we doing work Pu'u Ka Pele Forest Reserve, they are connected. So, having the relationship between these entities, whether it be State, the military, DHHL (Department of Hawaiian Home Lands), ADC (Agrobusiness Development Corporation), Kekaha Ag, DLNR (Department of Land and Natural Resources) ... we just need more collaboration within this, from Kekaha to Polihale. Whatever entities, these seed companies, everybody is doing their own thing but that's not how it works in *ahupua'a* [land division usually extending from the uplands to the sea] style.

Wai'awa, this is the name of this *ahupua'a* [land division usually extending from the uplands to the sea] right here, Wai'awa is the most desecrated *ahupua'a* on this entire island. We have all these seed companies, the largest landfill on Kaua'i, the only landfill ... everybody's 'ōpala [trash, rubbish] comes to Wai'awa. You talk about resource management, if anything should be awarded in this community for hosting the landfill in this community, it should be projects like this that is bringing back life into the land. This is one contaminated place; this is one heavy cultural spot. Why not throw money into this kind of place? But you know, there's groups in our Kekaha community that say we going blow \$80,000 in one night for Fourth of July. And I was like, you know what I can do with \$8,000. Give me \$10 you know, we can do a lot. So, there are those kind of things that I feel, oh, my goodness ... Wai'awa, the name of the valley is Wai'awa. This *ahupua'a* is Wai'awa. We gotta put in more *mana* [spiritual energy, divine power] inside this place.

HKA: The name of this place, tell me the meaning and tell me your insight?

THCR: So, it literally translates into "bitter water," Wai'awa. I think, I don't know if that goes into the mana'o [thought, belief] of Kane and Lono sharing 'awa [kava], up over here. Some mo'olelo [stories] I've read have had that. And then others share, you know, like the Knudsen's more forward, say it was because of the stream 'cause it was dirty, or something like that. There's different interpretations of it but we know that within this well, that we have our own fresh water inside there ... life can sustain itself inside here. It's amazing when you're in a kīpuka [opening in a forest] like this and you feel so isolated but at the same time, you can survive. You get water ... it's like one oasis inside here. You get taro patches but people no see that from the outside looking

in and they just think it's *kiawe* [algaroba tree (*Prosopis pallida*)] forest. And then when they come inside they say, "Oh, this place is green ... oh, get food!"

HKA: This is like the oasis. You know, like Kaunalewa ... but this is the real oasis!

THCR: Yeah.

KN: For real ...

THCR: Yeah, and to create the model is what we're working for. We start at pa'a ka piko [the nexus or steadfast center which is the piko or navel] then we can go from here, and out. They can see this and maybe we can get little bit more acreage ... then little bit more and we work ourselves all the way to the kai [ocean, sea]. We work ourselves all the way mauka [toward the mountain]. It's so slow. I know it's happening but ...

HKA: You get the wai, you can do anything.

THCR: Exactly so, I no see that, that piping project is *pono* [correct or proper procedure] in anyway. If they going do that, leave Wai'awa out of it 'cause I no like any pipes inside here. If there's anything they can say is key to my fight like that, we no like pipe any of this water. You see how much animals live off of this? And this goes all the way to Polihale.

HKA: Yeah. I've noticed all the different scat as we were walking up.

THCR: Yeah, and that's one thing that they wanted to say too ...

HKA: To know that they're here. It lets us know that they're here not to say that it's a bad thing.

THCR: Right. They say that you know, oh, you get  $k\bar{u}kae$  [feces] in the ditch, and this and that but, eh ...

HKA: Fertilizer.

THCR: ... it's natural. It cleans itself out if you let it run. But if you put 'em in one ditch and the thing stay stagnant, or in one pipe, then the thing get bacteria.

HKA: That's a natural thing in the environment. 'Cause 'iole [rat] too, you know what I mean? So, it's not a bad thing

THCR: That's all regenerative practices. As far as ... if you concentrate them in the one area, then it becomes sick, like cancer. But if you have free roaming, everything is free, fluid. And that's the way it is now, that's the way it's been, and that's the way it should be.

HKA: Mahalo [thanks] for your time and I think I can stop this interview at this time.

## ORAL HISTORY INTERVIEW

With

James Kanohoanu Nakaahiki III [JKN]

November 26, 2023

Pu'u 'Ōpae, Kaua'i

By

Hannnah Kaumakamanōkalanipō Anae [HKA]

And

Keao NeSmith [KN]

Recording file name IA202241\_2023-11-26\_James Kanohoanu Nakaahiki.MP3 (Note: The interview took place on the mountain in the Pu'u 'Ōpae around *lo'i kalo*. Children can be heard playing in the background at times.)

HKA: Welina kākou [greetings everyone], today is November 26, 2023, we are on the mokupuni [island] of Kaua'i, we are in the Kona moku [district], at Pu'u 'Ōpae.

JKN: Pu'u 'Ōpae.

HKA: Pu'u 'Ōpae specifically. I am Kaumaka Anae representing Internationa Archaeology, LLC. And we are conducting a Cultural Impact Assessment interview for the Pacific Missile Range Facility (PMRF) and Kōke'e Park Geophysical Observatory Succeeding Lease and Easement Areas. And I am here with Keao and Uncle ...

JKN: James Nakaahiki the third.

HKA: And he has said full name ... we know Keao (NeSmith) ... and do I have your permission to interview you ... record this interview ... ?

Most Hawaiian definitions were sourced from Ulukau: Hawaiian Dictionaries online (https://wehewehe.org/gsdl2.85/cgi-bin/hdict?l=en). In some instances, the subjects supplied definitions and in others, the interviewer provided a translation.

JKN: Yes.

HKA: Mahalo [Thanks], before we start ... I would like to say, e kala mai [excuse me] if I seem so maha 'oi

[brazen]. [Chuckles.] It is not my intention.

JKN: No, no, no problem.

HKA: Okay. Let us begin this interview. Uncle James, how long has your 'ohana [family] lived in the area?

JKN: Whoa. Good question. I'm 68 years old today, and my dad before me, and his dad before him ... I'm

third genertation, Nakaahiki the third. The number of years I cannot state exactly. It's too many,

it's a lot. Is it safe for me to say a hundred years, maybe more.

HKA: 'Ae [Yes]. Are you famliar with the Mānā area and maybe PMRF?

JKN: Yes, I am.

HKA: Can you tell me about that?

JKN: As for I know, to my knowledge ... in a nutshell, they were called the Mānā Plains. All the land below

us [relative to the interview location up the mountain at Pu'u 'Opae], was all rice paddies, and it

was all marsh land. Before the base and everybody else came about, then the Sugar Plantation ... I

guess ... came in. They drained the whole plains to grow sugar.

HKA: You mentioned, you worked at PMRF.

JKN: I was an employee of PMRF in the '70s to late '80s. I was a firefighter out there for the PMRF Missile

Range Facility.

HKA: Have you seen any fishing out there? What kind of fish.

JKN: We used to do a lot of fishing. Shoreline fishing, thrownet fishing, gathering 'opihi [limpets],  $h\bar{a}$  'uke 'uke [an edible variety of sea urchin (Colobocentrotus atratus)], and all those shell-like

things on the shoreline ... abundant, they were very abundant.

HKA: Have you seen limu [seaweed]?

JKN: Limu, yes.

HKA: What kind?

JKN: I cannot tell you the name, the flat one, the *limu kohu* [a soft, succulent, small seaweed (Asparagopsis

taxiformis)]. Yeah. I don't know the exact name.

HKA: Does your 'ohana [family] have genealogical connects to the area or family lands?

JKN: As far as I know, according to genealogical records, I believe some of my ancestors on my grandma's

side were residents of Polihale. That would be the Aipoalani and the Kilauano 'ohana [family].

They were descendants of Saki. Saki is a group of islands out in South Polynesia ... I guess.

Supposedly, they migrated from that area ... Sakinese. There is a place called Saki Mana. There is

a settlement out there where they arrived by canoes ... I guess, yeah ... no more airplanes those

days.

HKA: So that group of islands, what type of ... is that Polynesians?

JKN: Polynesians. Yes. They were ... dark, dark people. Uncle Andy was really dark-skinned.

HKA: And where was these islands again?

JKN: Sakinese, the Sakinese group of islands ... I am not sure where it is.

HKA: Okay.

JKN: That was what I was told and led to believe.

HKA: Were your family *konohiki* [headman of an *ahupua* 'a land division under the chief; land or fishing rights under control of the *konohiki*] or had fishing rights, or like *haku* 'āina, (which are) land

managers, or ali'i [chiefs]?

JKN: Not that I know of. We were just gatherers.

HKA: Do you know of any 'ohana [family] burials? If so, where?

JKN: Yes, I do know of some. It's right by the area going to Queen's Pond. Queen's Pond Beach used to

be where only the Queens used to go back in royalty days, they were the only ones allowed to swim

in that pond. It was a saltwater pond specifically for queens.

HKA: And where is it located?

JKN: On the road to Polihale, you can't miss it. There is a monkeypod tree that's there. There is an

intersection in the road that splits off, you take a left, you go up for about a quarter mile, before

you climb over the dunes before you get to the beach, to the right of that, they are marked graves

over there. There is iwi [the bones of the dead] in those dunes over there. Supposedly, they belong

to the Kilauano 'ohana and Aipoalani, I believe.

HKA: These queens that used to go there, were they like Deborah Kapule, Kamahelei, and maybe Queen

Emma she used to come visit, yeah?

JKN: I'm not sure.

HKA: Now we are going to get into some Hawaiian traditions and cultural practices. What kinds of

Hawaiian traditions is practiced by you or your kūpuna [elders, ancestors]? Mālama 'āina [caring

for the land], hula [Hawaiian dance], lei [necklace made out of flowers, leaves, and/or shells, etc.]

making, 'oli [chant], any type of form?

JKN: Right now pretty much, I am into mālama 'āina. As far of other cultural and arts, I'm not ...

HKA: So what do you guys do on this 'āina, here?

JKN: On this farm here?

HKA: Pu'u 'Ōpae, yes.

JKN: We are trying to grow *kalo* [taro], and raise some live stock.

HKA: Such as?

JKN: Sheep. We are experimenting with sheep right now. There is a lot of wild cattle roaming around, but we haven't gone that far into ranching and stuff. Basically, right now, it's just *lo'i* [taro pondfields] and maintaining the irrigation system. Trying to maintain the ditch and irrigation system for future followers, whoever wants to be part of the land, work the land, and grow food.

HKA: How much acres do you guys mālama [take care of] here?

JKN: I believe it's 231 acres. The 231 is further down. We have a lease for 231 acres, but right now it's only maybe five acres that we actually fenced in.

HKA: And so that building is part of it too?

JKN: Yes.

HKA: What is over there?

JKN: That's just our shed, our storage and work shed.

HKA: I noticed you guys *mālama* different plants in the area as well.

JKN: Yeah, we trying to. That was here when we came here. People prior to us were trying to raise protea. We just *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of took it over, and whatever survived. It seems to be thriving right now. Basically, we are going to do canoe crops, so right now, we get one 'ulu [breadfruit (Artocarpus altilis)] tree over there that we trying to grow.

HKA: I notice ... I seen some 'uhaloa [a small, downy, American weed (Waltheria indica var. americana)].

JKN: 'Uhaloa [a small, downy, American weed (Waltheria indica var. americana)], yeah. There is some the kine too, it grows wild, what's the name of that ... 'a 'ali'i [Native hardwood shrubs or trees (Dodonaea, all species)] ... yes.

HKA: Yes.

JKN: It *kine* of grows wild here for whatever reason. We had one person come up here, he's a ... he works for the National Botanical Society or Gardens. He pretty much pointed it out to us. I didn't know what the thing look like. I never pay attention when I went to school. Now I going learn the hard way. Now I gotta learn all over again.

HKA: Yeah, join the club. So, of course, you practice this at Pu'u 'Ōpae, do you practice any kind of 'oli [chant] or cultural protocol?

JKN: I do. I was reminded by a great aunty of ours, not even blood related but we call her aunty, Aunty Mahi Poepoe. She was from Moloka'i. She was a pretty powerful lady. She could ... believe it or not ... she could see, she could feel, she could ... yeah ... we learned a lot from her. She came over and she made it her mission to bring awareness to the 'ohana [family] what needs to be done. She pointed out a lot of places to us like Polihale, Waimea, Kōke'e ... so yeah. Actually, when we went down to Polihale over there by the Queen's Pond, she made us do a protocol. You offer prayer and then you throw pa'akai [Hawaiian salt, rock salt]. She said the pa'akai is part of the earth it opens up the portal ... as they would say ... to get in touch with the spirits. Ask for permission to enter, and ... what your intentions are ... why you are here. Then when you leave you do the opposite, you give thanks, and give pa'akai again to close the portal ... I believe.

HKA: Yeah, make sense to me. Was any of your kūpuna [ancestors, elders] mahi 'ai or farmers?

JKN: Not that I know of.

HKA: How about *lawai'a* [fishermen]?

JKN: Yeah, I had uncles. I had an uncle, he was a fisherman.

HKA: Where he used to fish?

JKN: All over. A lot at Polihale, on the base ... yeah. He was a net fisherman. He used to surround *akule* [big-eyed or goggle-eyed scad fish (*Trachurops crumenophthalmus*)]. Thrownet fisherman. That would be my Uncle Benny. We call him Uncle Benny. His real name is Benjamin. That's one of my dad's brothers. My dad had one, two, three ... big family ... five brothers ... I think ... and couple sisters. But never get to know all of them because we were like babies when some of them passed and moved away.

HKA: So he used to go akule fishing?

JKN: My Uncle Benny, yeah. He always brought the family together to go akule fishing. He go surround and *hukilau* [a seine; to fish with the seine. *Lit.*, pull ropes (*lau*)], or they pick up with the boat if no can bring it to shore. Then we all used to go to his house and *hemo* [unfasten, loosen] fish. Whatever you *hemo* is yours. He never did sell one fish ... not one fish ... it was all given away. But he used to do it often, every weekend if he could.

HKA: He only surround or he go 'upena kiloi [throw net] too, like throw net?

JKN: Throw net. He was a net fisherman.

HKA: He go like what *nenue* [chub fish, also known as rudder or pilot fish (*Kyphosus bigibbus*, *K. vaigiensis*) ...

JKN: Yeah. *Nenue*, *moi* [threadfish (*Polydactylus sexfilis*)] ... *kala* [surgeonfish, unicorn fish, Teuthidae], palani [a surgeonfish (*Acanthurus dussumieri*)] ... Yeah, he had the eye. Couple of my other uncles used to go too. But my dad wasn't so much fisherman.

HKA: Any paniolo, cowboys in your family ... or raised cattle?

JKN: Not so much. We had horses. I mean it's not like a whole pasture full of horses, but maybe one or two.

HKA: To get you guys to places.

KN: Tie 'em in the bush, yeah?

JKN: Yeah, Keao remembers.

KN: They used to break away sometimes, come inside our yard.

JKN: We used to tie the horse in the back before never had houses ... yeah ... in the homestead.

KN: We used to go feed 'em.

JKN: Yeah, that was back in the days.

KN: That was good fun.

JKN: So you guys get homestead land. I am on homestead land, yes.

HKA: Nice, and in Kekaha ... yeah?

JKN: Yeah.

HKA: Was it generational, did your father live on homestead land as well?

JKN: No, they did not. We had a big family, six of us. Plantation worker ... yeah, he couldn't afford. He

was on the list, and actually, I took his spot on the list when I became of age. Yeah, he gave me the

spot, he just couldn't afford to build Hawaiian Homes.

HKA: So he was working for the plantation, what was he doing for the plantation?

JKN: All his life, yeah. Truck driver, equipment operator, he used to drive the crane, load the cane on the

trailers, yeah.

HKA: So you were raised in that Plantation Era, can you tell me about that?

JKN: Hard work. Was hard work and poor times.

HKA: What was around those areas? I know you guys had stuff like swimming pools, communiy centers

...

JKN: Oh, yes.

HKA: Was it like a little town that the plantation started? You guys had gas station ...

JKN: Oh, the community was ... yeah. They did provide for the community. Everything was evolved

around the mill. Sugar was king. Although it wasn't the best interest for the people.

KN: For the land for sure.

JKN: But they ... that's all they had. It raised a lot of families.

KN: It kept us tight, together actually.

JKN: Yeah, so they had swimming pool. They had two pools actually, one in Mānā. I don't know if Keao remembers that one.
KN: Yeah. I even talked about it.
JKN: Mānā pool.
KN:That's the only one had the high dive.
JKN: It was down the road, yeah. Water was like I think it was spring water right above higher.
KN: Exactly. Cold too.
JKN: On the bottom of the ridge.
KN: You think Kekaha was a desert, but had cold water from the spring.
JKN: Oh, yeah.
HKA: It's different from Kekahawai'ole on Big Island
JKN: Oh, yeah.
KN: Yeah. That's all lava field.
JKN: Yeah, yeah,.
HKA: Yeah.
KN: The beach over there is nice though, Kekaha Beach.

JKN: Yeah, it was for the community, the westside. So, I was telling Keao, they were the ones maintaining all these roads and reservoir ... the plantations ... because they had sugar(cane) all up here. They had sugar(cane) at one time.

HKA: As far as you can remember, who was the *luna*(s) [foreman, overseer] of the plantation?

JKN: [Chuckles.] Who else? The Englishmen. The Caucasians, of course.

HKA: There was a lot of ethnic cultures, yeah?

JKN: Oh, yes, yes. Filipino Camp, Japanese Camp, Chinese ... Puerto Rican ... Budinkys [Puerto Rican].

KN: Portuguese.

JKN: One of my uncles was a Budinky.

HKA: They are *paniolo*(s) [cowboys] too as well.

JKN: They had a ranch. Plantation had a ranch.

KN: You remember the rodeo rink, Kekaha.

JKN: Yeah, had one arena.

KN: Mmmhmm. And the stables ...

JKN: Was thriving at one time. What ever happened?

KN: Was good on Sundays. You remember Sundays used to have rodeo?

JKN: Mmmhmm.

KN: So, we would be in church, and we could hear in the distance, you could hear the rodeo going on.

JKN/HKA: [Laughing.]

JKN: Lot of history, lot of history Kekaha.

HKA: So, are you Mormon, are you LDS (Latter-Day Saints) as well?

JKN: Yes, I am. Not too active though. [Laughter.] My church is up here. Eh, as long as you get 'em in spirit, yeah?

KN: True that.

HKA: Yeah, exactly, and to tell you the truth ... you so close.

JKN: Yeah. Too close, ah? [Chuckle].

HKA: [Chuckle]. So, your mom, what did she do?

JKN: She was a home maker. She did work at one time. The canneries. Pineapple was also king on the island at one time. So, yeah, she did do work in the cannery.

HKA: Okay.

JKN: When she wasn't having babies. You know my dad ...

HKA: Oh, yeah, you have a big family.

JKN: Yeah, six.
KN: Beautiful mom, his mom. Awesome lady. I remember her growing up.
JKN: Filipino.
HKA: Really.
JKN: Yes, full-blooded Filipino. I am Hawaiian-Filipino. Half-half.
HKA: Did any of your family gather shells to make <i>lei</i> (s) [necklaces made of flowers, leaves, shells, etc]?
JKN: Not really, my dad had some <i>puka</i> [hole or shells with holes] shells. I wasn't interested in those cultural things.
KN: Where did you guys go for <i>puka</i> shells, Polihale?
JKN: Polihale.
KN: Yeah, same like me.
JKN: Queen's Pond, with my dad.
KN: Queen's Pond.
JKN: My dad used to do shoreline fishing shoreline in his old Willy's jeep, we would drive down You could drive on the sand in those days.
HKA: Some people drive on the sand

JKN: Still yet ... HKA: Yeah, I see 'em like by Kekaha when I was walking on the beach. KN: We used to always ... that was one of the pride and joys of the westside of Kaua'i. JKN: Yeah. KN: Yeah, we could always go on the beach. JKN: I have driven from Kekaha ... KN: Go, plug in your fishing pole, camp ... all the way. JKN: ... to Barking Sands. KN: Barking Sands. JKN: Yes, all along the shoreline. But then you gotta access the base ... yeah ... you gotta go through the base roads. Some parts of the base, there is no roads along the coastline. Yeah, those were the days. KN: What kind restrictions you remember growing up because of the base for the public? JKN: Restrictions ... well you had to check in at the gate, so signing in.

JKN: Yeah, in fact when my kids were little, we actually camped by Nohili Ditch, and in front of Sandia all that.

KN: You could pass around on the beach at Nohili?

HKA: About what year was that?

JKN: Oh, shoot ... how old were they ... late '70s ... yeah, late '70s ... they were only six, seven years

old.

KN: But then they shut down, they blocked the access for a while in the '80s, '90s ... I think. You could

only go so far, then get one fence, and get the security guard, and he tell you, "You gotta go back

on the beach."

JKN: Yeah.

KN: You couldn't go around, now you can.

JKN: After more people was accessing the beach, the coastline, then they put some restrictions on it. Yeah,

and then when 9/11 came, they was like ... total shut down.

HKA: Oh, that's when it really shut down?

JKN: Yeah.

HKA: Oh, so not too long ago.

JKN: No. No.

HKA: Wow.

KN: 'Cause when growing up, church, you remember, we used to go camp over there Kinikini?

JKN: Yeah, Kinikini.

KN: Church camp.

JKN: My sons remember camping. In fact, my sons ask, "Can we go fish Kinikini?" My oldest son, still

goes on the base and still goes fishing. He said, "Well you cannot drive there anymore, you gotta

walk." You gotta park outside, and then walk in.

KN: But they get the cabins that military personnel they can stay for vacation on the beach close to the

runway. That area was totally restricted to the public. I think now can?

JKN: No, now no can.

KN: See, so ...

JKN: You still cannot.

KN: That is restricted. So, you cannot just walk on the beach, keep walking all you want, or go all the way

to Polihale, get certain points you gotta stop, and no access.

JKN: Yeah.

KN: And then to get on to Navy Housing ...

JKN: Navy Housing, yeah.

KN: ... cannot.

JKN: Cannot. There's a a blockade over by the ...

KN: You gotta get one special permit?

JKN: Yeah, you can get on to the base, but there is actually a blockade on the beach. They put a berm over

there, right by where the rifle range is. That would be ... Nohili ... no, not Nohili ... what point

that is ...

KN: Before ... that's Kokole Bay.

JKN: Kokole. Yeah, they blocked that area off ... you cannot ... drive further pass that.

HKA: Would be nice if could yeah, again?

JKN: Yeah.

KN: I remember to, they had the ... what do you call ... you remember the big boats they had with the pontoons on the beach?

JKN: Oh yeah. Like they do on O'ahu at Bellows and stuff.

HKA: Amphibious.

JKN: Yeah. Amphibious ... landing.

KN: Massive pontoon ... stay going, and get plenty of spray all around, and the thing go right on the beach.

HKA: Remind me of Normandy.

JKN: Yeah, it's like an air boat, get two big fans, and the thing just drives right up to the sand. Right up to the shore.

KN: RIMPAC (Rim of the Pacific) exercises.

JKN: But I remember when I was little, they had maneuvers right in Kekaha, right outside Kekaha, Second Ditch. They had landing crafts, you know the kind you see in the World War II movies? This barges, flat barges come in, and then the gate drops down. Yeah, they landed right there in Kekaha. They even had paratroopers.

KN: Yeah.

JKN: Jumping parachutes in the air. Mānā stretch, there were alfalfa fields, the plantation was raising alfalfa

for the cattle. They used to raise cattle before. Yeah, the military made a big presence. In fact, the

biggest presence that people remember is Uncle Joe Manini up here. His ... I don't know if you

guys remember passing that Quonset hut?

HKA: Yeah.

JKN: Yeah. So when they would do ... when they coming on shore ... can you imagine, all these big ships

out there, all these landing crafts ... you probably could see it clear from here ... I can see 'em ...

they would bring in their aircrafts, helicopters 46s, H-1s, whatever ... and they would do maneuvers

up here ... the military, a lot of things they would do was coastline and ridgeline, yeah ... that's

their mission and objections, yeah ...

KN: The Chinooks, yeah.

JKN: The Chinooks, yeah ... the 53s, 46s, and 47s. So they were landing troops up here on Hawaiian Homes

Land. Uncle Joe Manini, he wasn't for that, he did not agree, and he actually went to ... I don't

know if you guys know that ... he went to battle with them. He had his rifle with him, and he told

them to get off of his land. Yeah, he probably ... yeah.

KN: That's Eben's dad.

JKN: Eben, yeah.

HKA: So, you know any stories about Mānā, and the region?

JKN: Mānā, what would be a good story?

KN: You ever heard about the mirage?

JKN: No, I have not.
KN: Oh, the Mirage of Mānā because get the heat and stuff like that?
JKN: Oh. No.
KN: Okay.
HKA: Limaloa is the akua [divine, godly] yeah of that mirage? Have you heard about the Lohi'au, Pele, and Hi'iaka ordeal, about Kaua'i in this area, any stories about that?
JKN: Pele?
HKA: Yeah, and Hi'iaka well, actually, there are stories about Pele, but Hi'iaka too yeah, when she came to fetch Lohi'au.
JKN: I don't know that. Who was Lohi'au sister or somthing.
HKA: Lohi'au was the lover of Pele, and Pele sent Hi'iaka to come and get him
JKN: I see.
HKA: from over here.
JKN: Yeah.
HKA: And Hōpoe.
JKN: Aunty Mahi used to tell us some stories. She had some great stories, or knowledge or whatever. I remember one time she was telling us that there's a, there's a lava tube that is connected to the west

... and I'm not sure where it comes out ... but that's where they used to escape from the north shore

or whatever, if they were trapped in by enemies ... maybe it was by Lohi'au, Pele's lover or

something ... and today that's the Wet Caves in Hā'ena. There is a passageway that comes out I

forget where, Polihale probably.

HKA: From Hā'ena to over here.

JKN: Yeah.

HKA: Yeah, I believe in that. Did you hear anything about the epidemic or diseases after Contact ... you

know in the stories of your ancestors? They probably lived through that time about the epidemics

from the foreigners and the diminishing of the population? Was there any stories carried in your

'ohana [family].

JKN: Yes.

HKA: Can you tell me about that?

JKN: Ko'olau the Leper. Supposedly he is family to us. The story is that Ko'olau refused to go to Moloka'i

for whatever reason, and he fled to Kalalau Valley. I don't know why but they sent soldiers to go

get him, but they could never capture him. Pi'ilani, the wife of Ko'olau, she helped him escape. I

am not sure if they escaped to Ni'ihau or whatever but yeah ... the Legend of Ko'olau and Pi'ilani.

They eluded the soldiers, he was never caught. But one story my uncle, who was a fisherman, Uncle

Benny ... he told us when we were visiting sites and places with Aunty Mahi ... Ko'olau is buried

on Kaua'i in Kekaha. Right by the intersection.

KN: That's where their homestead was, Pi'ilani guys.

JKN: Get one papa [flat area] over there, it's a sand dune, and it's in line with Poheo. So it's Poheo Point

on Kaua'i and Poheo Point, Ni'ihau. That's what she told us. Uncle Benny told us, if we find his

rifle, we going find him ... supposedly, that's where he was buried. I believe he told us that this is

all grave sites. They used to do ... I not sure if you guys familiar with this ... kīlua(s), kīlua would

be mass imu [underground oven]. I guess, when they had a plague or something, they would burn

all these bodies so the disease don't spread. So he said that's what they did over there. I don't know

if they burned him or he was buried. They said, "If you guys find his rifle over here, that's where

you guys going find him, you going find his bones." Supposedly, that's where he was buried. Yeah,

so there was one big open pit over there Uncle Benny told us about. I guess, as a child, he had seen.

Yeah, interesting.

HKA: Do you know about the Mū [legendary people of Lā'auhaelemai, Kaua'i] and the Menehune

[legendary race of small people who worked at night, building fish ponds, roads, temples] in the

Mānā area?

JKN: *Menehune*, yeah. And the what you said *mo 'o* [water spirit, lizard]?

HKA: The  $M\bar{u}$ ?

JKN: The  $M\bar{u}$ .

HKA: Yeah, they are supposed to be connected to the Menehune yeah.

JKN: Oh, this tribe of people yeah. They not that small though from what they researched, yeah.

HKA: Yeah.

JKN: The legend is that they were little people, but they weren't that little. They were hard workers, they

don't work in the day, and they only come out at night ... for whatever reason, yeah.

HKA: Cooler.

JKN: Cooler. They smart, see how smart they was.

HKA: [Laughing.]

JKN: They could dig tunnels, yeah.

HKA: When you digging tunnels, you no need the sun.

JKN: Even the Chinese, the  $P\bar{a}k\bar{e}(s)$  [China or Chinese people], yeah.

HKA: I gave you a list of these places, if you know any of them, can you add to that?

JKN: Which one was that?

HKA: You can just go through them, take your time.

JKN: [Looking through a list of place names] This is all ...

HKA: Yeah, the different places.

JKN: This is all definitions of places.

HKA: In the back get too.

JKN: Niu Ridge is that, right over there.

HKA: So, Niu Ridge there were a lot of coconuts, I gather ... supposedly.

KN: Especially down the flat side, *makai* [towards the ocean].

HKA: Oh, maybe because they like the sand ... yeah ... the *niu* [coconut].

JKN: Niu Ridge ... I guess ... yeah, coconut. You right, okay, *niu* ... supposedly there is a canoe house on this ridge. Yes, yes.

HKA: And is that the one with the Menehune.

JKN: I'm not sure, Eben Manini, Erna's brother knows exacly where it is. There is a formation of a pahale

[enclosure in front of a house], supposedly it's a canoe hale [house]. I know Aunty Mahi once told

us that on these ridges of Polihale, they used to dig out those canoes up on top the ridge. They select

the tree, fell the tree, dig out the canoe ... they used to just slide 'em down the ridge, and launch it

at Polihale.

HKA: Used to have Kahālauaola canoe house, and it was ... in the valley of Kawa'ahiki at Pu'ukapele ...

JKN: Yeah, Pu'ukapele, right.

KN: Pu'ukapele is that way [pointing in a northerly direction].

HKA: Right?

JKN: Yeah, right up here.

HKA: This area where the canoe house was at Kahālauaola.

KN: Kahālauaola.

JKN: That might be it, but I'm sure there are more. That would be the ridge, but Polihale is couple ridges

over ... Polihale Ridge. That might be it, I'm not sure.

HKA: This is just research I was doing.

JKN: Yeah. Saki Mānā, yeah ... Saki, yeah.

HKA: If you see anything let me know. You wanna talk about if you see some place, things your remember

of those places?

JKN: Makahoa, Kaunalewa, this is all up here ... Wailau. Pu'u 'Ōpae, Shrimp Hill, I didn't know that. 'Ōpae ...

KN: [Chuckles.] 'Ōpae.

HKA: Gotta have had 'opae [shrimp] over here.

JKN: Gotta have had shrimp, if not, gotta bring 'em back.

KN: That was the favorite food of the *Menehune*. They love the 'ōpae. Pu'ukapele that's the homestead of the *Menehune*.

HKA: Yeah, so they right next to their food source yeah?

JKN: Mmhmm.

HKA: [To KN] Was it you who said about the trading of one shrimp.

KN: Hena.

HKA: Hena was saying. That was pretty cool, the trading of the shrimp. One shrimp. [Laughing.]

JKN: Yeah, amazing. [Chuckles.]

HKA: If you see anything, if anything jumps at you.

JKN: No. This is all knowledge to me, I never even know any of these things. [Chuckles.] I know that Polihale is house also spirit, yeah? *Poli* is spirit, *hale* is house. Aunty Mahi did mention it to us.

HKA: Poli can be bosom too yeah.

JKN: Poli?

KN: When you go ... especially when you come from the ocean ... you come on the boat ... you coming into Polihale ... get the two ridges ... this side get Hā'ele'ele ... look like ...

HKA: One bosom.

KN: Yeah. And everybody live down here, so that was the *hale* [house] ... so it's like when you carry one baby like this [gestures like cradling a baby] ... so that is the *hale* of the baby ... and then down the beach is all the ... po'e.

JKN: Oh, I was mistaken.

KN: But that is true because as a *leina* [or leina-a-ka-'uhane or place where spirits leap] that's where the spirits jump.

JKN: Yeah, leaping ... leaping into the other world.

HKA: Leina ka 'uhane.

KN: They follow the sunset. They come from the east side, Anahola side, they pass cross the top over here, they end up over there at Polihale, and that's where they go in the ocean. That's why one of our friends, you remember, Dana Olores.

JKN: Yes.

KN: He wen' [Hawaiian pidgin meaning went or completed an action] go *make* [to die] yeah, he had cancer, he knew he was dying, he drove his truck all the way to Polihale, he took his dogs, tied up his dogs, and sit down ...

JKN: Oh, he knew ...

KN: Yeah, he knew.

JKN: ... where his spirit needed to be to get to the next ...

KN: Typical Dana, he was like that. Heavy,  $n\bar{o}$  [intensiying part].

JKN/HKA: Yeah.

JKN: House of bosom, yeah ... make sense. That's why all the Polynesians ... the people from Polynesia would come here with there canoes. Because there is a *hula* [Hawaiian dance] platform over there. Aipoalani, they were *hula* masters, yeah.

KN: Yeah.

HKA: Geez, that's what I would like to see.

JKN: Well, it's overgrown, but if you go climb up, there is a platform.

KN: Get some more.

JKN: I don't know if the *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] guys ... Doreen ... not Doreen.

KN: Yeah, Golden.

JKN: Golden, she was trying to ...

KN: Doreen ... Nohili ... yeah, the daughter.

JKN: Trying to restore the area.

KN: With Kunane guys.

JKN: Yeah.

KN: But get some more along Nā Pali and some of the valleys, like Miloli'i, get one other heiau [place of

worship, shrine], one papa [flat area], one flat one, and that's a pahula [place where hula is danced

and ancestors are recognized]. So the Polihale one is a pahula and the Miloli'i one is another

pahula. Aunty Margaret when she was young, they used to go along the rocks, to that one, that

pahula. That's how she was educated in hula [Hawaiian dance], was Polihale and over there. But

that's for Kunane tell. Get some more pahula along the way, Nā Pali, all the whole way.

JKN: I'm the least knowledgable. I'm sorry ...

HKA: No, you giving me some good information. Alot of people think they don't have any information,

but they do, and you gave me a lot of good information.

JKN: Yeah. It's from what I can remember.

HKA: Yes. Is there anything you want to add in the historic period, the time of the plantations ... and

anything you want to add in that portion?

JKN: Not really, but maybe one thing. My 'ohana [family], the Nakaahikis they weren't luna(s) [foremen,

overseers], we were warriors, we were workers ... you know ... my tūtū [grandparent] man, if

anything, was a locomotive driver. So he used to drive the train that carried the cane, so I guess,

that was a pretty high up job driving one train ... you know. All his sons, my dad, Uncle Benny,

and all them ... they shovel all the coal in the fire box to keep the train going. They all had to shovel

the coal for him so he could drive the train and create steam, steam train ... yeah, that was my tūtū

man. But he was [chuckle] a "happy go lucky" guy.

KN: What was his name?

JKN: James.

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KN: The first.
JKN: The first.
KN: Okay.
JKN: James Kanohoanu, Kanohoanu is my middle name.
HKA: Kanohoanu.
JKN: Kanohoanu.
HKA: And what does that mean?
JKN: You gotta go ask sister Gwen. Something hard head, I don't know. We been known to be very head strong, hard headed quick tempered. Well, anyway, my $t\bar{u}t\bar{u}$ [grandparent] man, he was train driver, and I don't know if it made a bad influence on him, because he liked nice cars, new cars.
KN: He stay buried at the Hawaiian cemetery?
JKN: Yeah. So get him, my tūtū [grandparent] lady
KN: By your guys plot?
JKN: yeah and my dad right in the back.
HKA: So all your guys 'ohana [family] buried at Kekaha cemetery.
JKN: Yeah, all in one area.

KN: Ours is next to theirs. [Chuckles.]
HKA: Oh, nice. So, you guys plenty $l\bar{u}$ 'au(s) [feasts, parties]?
JKN: Yes.
KN: Mean. Uncle Benny did the best.
JKN: Yeah.
HKA: Because he get all the fish yeah?
JKN: Yeah.
KN: He get all the connections.
JKN: <i>Kālua</i> [to bake in the underground oven].
KN: <i>Kālua</i> . Even right now, all his nets still stay hanging at Uncle Benny's house.
JKN: Still hanging over there.
KN: Yeah, still hanging in his whole garage.
JKN: Yeah.
KN: All the time, if he wasn't fishing, he was fixing net.
JKN: Fixing net.

KN: Fixing net, making net, sitting in his garage going. Pass the house he was always like that.

HKA: Gotta *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] that's why, gotta patch all the time.

JKN: Yeah.

HKA: My dad did that all the time that's why.

JKN: No can have *puka* [hole] net when you go fishing.

HKA: Yeah, you no like the fish run away.

JKN: [Chuckle].

HKA: What are the good and bad changes of the military occupation and sugar industry?

JKN: The good was, it provided jobs for families to raise their families, jobs and opportunities in the work force. But the bad would be taking away all the cultural significance and practices.

HKA: How about the 'aina [land], the positive and negative?

JKN: The *āina*, whoo ... drastic changes ... I cannot say if it's good or bad ... I cannot tell right now. One bad thing is the landfill.

HKA: Can you describe the landfill as a child until now?

JKN: Yes, it wasn't that high. [Laughing.] But then again, there wasn't that much people on the island ... from 30,000, 40,000, 50,000 ... now, I don't know what it is, 60,000 probably. More people means more trash generated. And then we had couple hurricanes that really built up the landfill ... you know. Why would you want to put a landfill on a flat piece of land?

HKA: By the ocean, yeah.

JKN: By the ocean. And it has grown significantly. It's 70, 80 feet up in the air now.

HKA: It's own pu'u [hill] yeah?

KN/JKN/HKA: [Chuckles.]

JKN: Pu'u 'Ōpala [Trash Hill]. Pu'u 'Ōpala we call 'em. And then there has been a lot more urban development, but that's progress, yeah.

HKA: Progress or population.

JKN: Population.

HKA: So anything else you want to add?

JKN: No, I think I said enough. I no like say too much, I might get myself in trouble over here.

HKA: We'll end this interview right here and I want to *mahalo* [thank] you for your 'ike [knowledge] and mana'o [thoughts]. Mahalo.

JKN: You are welcome.

## ORAL HISTORY INTERVIEW

With

Sean Mokuonahiala Anadrade [SMA]

November 26, 2023

Pu'u 'Ōpae, Kaua'i

By

Hannnah Kaumakamanōkalanipō Anae [HKA]

And

Keao NeSmith [KN]

Recording file name IA202241\_2023-11-26\_Sean Mokuonahiala Anadrade.MP3. (Note: The interview took place on the mountain in the Pu'u 'Ōpae around *lo'i kalo*. Children can be heard playing in the background at times.)

HKA: Welina kākou [greeting everyone]<sup>1</sup>, today is November 26, 2023 we are on the mokupuni [island] of Kaua'i, in the Kona moku [district], and we are up here at Pu'u 'Ōpae. I am Kaumaka Anae representing International Archaeology, LLC. And we are conducting a Cultural Impact Assessment interview for the Pacific Missile Range Facility (PMRF) and Kōke'e Park Geophysical Observatory Succeeding Lease ad Easement Areas. And I am here with Sean. Sean can you say your full name.

SMA: Sean Mokunahiala Andrade

HKA: *Mahalo* [Thanks]. Do I have your permission to record this interview?

SMA: Yes.

Most Hawaiian definitions were sourced from Ulukau: Hawaiian Dictionaries online (https://wehewehe.org/gsdl2.85/cgi-bin/hdict?l=en). In some instances, the subjects supplied definitions and in others, the interviewer provided a translation.

HKA: Let us begin this interview. We are going to start with mo'okū'auhau [genealogy] and pilina

[connection] to the 'āina [land]. How long has your 'ohana [family] lived in the area?

SMA: On the west side of Kaua'i, my mom is from Waimea Valley, born and raised in Waimea. So that

is pretty much my connection as far as to the west side.

HKA: So where is your dad from?

SMA: My dad is from Kalaheo. My grandfather is Joseph Andrade ... my dad is Joseph Andrade Jr. lives

in Kalaheo, had a homestead in Kalaheo, raised cattle. So I lived most of my life in Kalaheo ... all

my life basically in Kalaheo.

HKA: Ranching, that was your dad's specialty?

SMA: Ranching growing up was ... yeah, a specialty, yeah ... the thing our family did. Actually my great-

great grandfather worked for Robinson, and was one of the luna(s) [foremen, overseers] for

Robinson back in the day when they did cattle ranching. He was also a saddlemaker, a Hawaiian

saddlemaker. That's some of the relationship on my dad's side too. My great grandparents actually

lived in Makaweli on this side which is right after Waimea. There is some connection too on the

west side from my great-great grandparents and my great-grandfather.

HKA: And so they were all Andrade as well right?

SMA: Yeah.

HKA: And your mom's 'ohana?

SMA: My mom's 'ohana is Yorkman. Actually, my grandfather came from Maui, Craddock Yorkman.

He came from Maui. My grandmother, Luka Ho'opai, she came from O'ahu, and was actually

hānai(ed) [fostered, adopted] here by the Aona family. They raised their family in Waimea Valley

... where my mother was born and raised ... I was also born in Waimea.

HKA: What did your mom's family do, and your mom as well?

SMA: My grandmother was a stay-at-home mom for the most part. My grandfather was a police chief. He was one of the first police chiefs for Kaua'i. That's what he did.

HKA: Nice.

KN: What years was that? Early 1900s.

SMA: Yeah, so he passed before I was born. I was born in '69. So I don't know. I have documents that have all that stuff, I just don't know it off the top of my head.

HKA: No worry. So how long have they lived in the area? So it was multi-generational right?

SMA: Yeah.

HKA: So what, at least five generations? At least, yeah?

SMA: Yeah, yeah.

HKA: So it is like 100 or more years ... so like you guys are *kupa* [native born, attached to a place] of this 'āina [land]. [Chuckles.] Are you familiar with the Mānā area and PMRF (Pacific Missile Range)?

SMA: I am, a little bit ... with PMRF ... and what Mānā used to be ... a little. Growing up in our younger years, having the springs accessible ... you know ... remembering of the Mānā Camp ... their own spring water swimming pool.

HKA: And that was Plantation Era.

SMA: Plantation Era. And the springs was all Plantation Era when they tried to control it and utilitize it, and eventually everything shut down. Today they capped all of that stuff. That is something I would

like to see come back. But f course, the Mānā area is a flood zone, it's a swamp. Capping off the springs and doing all that stuff, will help to keep it drier. I'd like to see it come back. I'd like to see what it once was. Back in the old days, they could actually canoe from Waimea River all the way to Mānā. Of course, today that would be probably hard to do, but I would like to see that happen.

HKA: Good if they could have a canal that actually could do that.

SMA: Yeah. Right. That would be beautiful.

HKA: Were your *kūpuna* [elders, ancestors] like *konohiki* [headman of an ahupua'a land division under the chief; land or fishing rights under control of the *konohiki*]?

SMA: Not to my knowledge.

HKA: Any ali'i [chief] in your 'ohana, ali'i line or anything?

SMA: Not to my knowledge. Not that I know of. I don't think so.

HKA: Okay. Any 'ohana burials that you know of, like even in the cemeteries, or ancient?

SMA: I do not actually. Only of current. The Hawaiian cemetery in Kekaha.

HKA: Where are your parents buried?

SMA: My parents, both of them are still alive.

HKA: Oh, I'm sorry.

SMA: My grandparents are in Kekaha cemetery. And that's on my mom's side, yeah. My dad's side is in Kalaheo cemetery, Catholic cemetery.

HKA: At the church.

SMA: Right across the church in Kalaheo.

HKA: Yeah.

SMA: Yeah.

HKA: What kind of Hawaiian traditions do you ... you *mahi'ai* [farmer] right over, so you practicing growing agriculture here ... do you practice it just here or other places?

SMA: At home. At home too. At home we have about 10 acres at home.

HKA: Where is home?

SMA: Kalaheo, in Kalaheo I've always enjoyed raising animals. So the farming part, I have always enjoyed. Doesn't matter the animal, I have always enjoyed that. As far as the farming part, I have been growing up, watching 'ohana [family], my tūtū [grandparent] man, cousins from both ends of the island, from Wainiha Valley to Makaweli Valley all raising kalo [taro]. I have always been asked to help in the lo'i(s) [taro pondfields], but as a young kid, you don't want to work in the lo'i(s). For one, I was kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of afraid of toads at a young age.

HKA: [Chuckling.]

SMA: I was like, "I'm not getting in." But it's funny, the little things I seen, I watched at the corner of my eye as a young child, I'm starting to practice some of that today. So, it's been a learning experience for me to actually start to learn how to plant kalo, raise *kalo*, so it's pretty rewarding. We still learning, we still trying to figure it out. We've had some success, I guess you can say. At first, that very first crop that we had planted and harvested, and did on our own was amazing. It was the best *poi* [a smooth paste made out of the root from usually the taro plant], I had ever eaten. It was *Lehua* [a variety of taro] ... everything just lined up, it was perfect. When we share with community

members and 'ohana [family], and people who eat *poi* daily, they could not believe it, and we had so much compliments about it reminding them of their childhood ... because that is what *poi* is supposed to taste like. Although, sometimes it doesn't look very successful and we are trying to figure out our end, but the end result is like, "Oh, my gosh." So we are trying to get to that first batch ... keep up with that first.

KN: Is this the first planting?

SMA: No, second planting.

KN: Second planting?

SMA: In this *lo'i*. That is the first.

KN: First planting on that one, the middle one or that one?

SMA: The middle one, we took out of that, we harvested out of that couple months ago.

KN: Okay.

SMA: But the first one is ...

KN: Looking good though.

SMA: Yeah, and it gets better every time. Although the flooding and stuff that we just had *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of screwed this *lo'i* [taro pondfield] up right here with all the big rains we had last week it *kine* of messed us up because we just planted too. Really screwed us up. But live and learn, we still learning about the area. We've been with Pu'u 'Ōpae anyway, I'm also with Kekaha Hawaiian Homes Association (KHHA), and I am the chairperson for this project, and we have a lease with DHHL (Department of Hawaiian Home Lands) for 231 acres total. My Uncle Gilroy Yorkman, Kawai

Warren, and a bunch of others who were part of KHHA (Kekaha Hawaiian Homelands Association) back in the day, got this lease and started the process in 2010. Over time there was a lot of red-tape dealing with the State. A lot of challenges. As you can see there is a challenge with us getting here ... you know ... trying to be here. With our project here, it kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of opened up my eyes on where I wanna be, and what I wanna do. This section here is called the nursery, Kawai guys called this the nursery. This is where a lot of learning was taking place to kine of understand the land. The land is bare, it's not very high in nutrients so we are trying to keep things organic as possible, as natural as possible. We still have a lot of work to do with reforestation. We got 75 acres of reforestation. We got 50 acres pastoral which we will do cattle, sheep, and chickens. We've got 50 acres of orchards which will be probably fruit trees and stuff like that. Ten acres in the front or so is a cultural center. We got a mix of another 20 someting acres of more lo'i(s) that we want to do. So this is just the testing and beginning stages of what we trying to get to. This is the place where ... our deal with DHHL (Department of Hawaiian Home Lands), with Hawaiian Home Lands, the deal they made back in the day was, this is where we gonna help rehabilitate Hawaiians for the day that their put on their lands. If you don't know how to farm and you want to farm, you can come here and learn. If you're gonna be here to do pastoral, we can teach you that too. That is kine of the area why we are here in a way, in this area.

HKA: So what kind of animals you are raising in Kalaheo?

SMA: In Kalaheo we have sheep, chickens, we got egg layers. We have tilapia which tilapia is actually going to be part of the system too where we going to put them into ponds, and have that water, tilapia water help nourish the ground and the plants in the area. So, that's our game plan. I also raise cattle myself. And also, I just recently stopped ... there are new owners to this lease I had in Kalaheo, and they said we could be month to month, but I wasn't comfortable with the month to month because I had 30 mother cows. Now finding 100 acres to put 100 mother cows next month is not going to happen. Instead of being stressed out about that stuff, I decided to find some place else. Everybody knew I was looking, so people started offering to buy my herd too. So I decided, it might be best if I did sell the herd. I kept all my equipment and stuff for this up here. The idea up here on the pastoral part was to upkeep, that was going to be my section until ... my Uncle Gilroy passed away, and Kawai Warren kine of passed it on to me. Now, I'm doing the overall, the whole thing. My thing was going to be the 50 acres pastoral, and I was all good with that. But now I'm

learning how to plant *kalo* [taro], take care of the Earth itself, the 'āina [land] itself. There is just a lot to do. We are trying to do it with ... our charter schools ... with those students, the *haumāna* [students] from the charter schools.

HKA: You guys ever thought about using charcoal?

SMA: Yeah, that too.

HKA: In your planting.

SMA: That too, that's another method we are looking at. The reason we went with the tilapia one is we seen a lot of gain in a lot of ways. We have fish to eat one, the waste water would help nourish everything ...

HKA: You going put 'em in the *lo'i* [taro pondfield]?

SMA: I did have 'em in this lo'i, actually. The first harvest, I put 400 hundred inside, in this lo'i.

HKA: You can grow the *kalo* on mounds

SMA: Yeah, on mounds, yeah.

HKA: And then the fish can swim all inside.

SMA: Yeah. So we did that. The only thing I'm a little bit concerned about is the eggs hatching and getting out ...

HKA: Jumping all over.

SMA: ... there is a lot of tilapia in our ditch system anyway, but I didn't want to add to that. I wanted to be a little more in control of it. We got one up here we actually going to line and raise tilapia inside.

KN: You can also do āhole [an endemic fish (*Kuhlia sandvicensis*) found in both fresh and salt water], 'anae [full-sized 'ama 'ama mullet fish]. The natives ...

HKA: 'O'opu [general name for fishes included in the families Eleotridae].

KN: Get nitrous fixing grass you can plant, it's a long grass, but the seeds underneath fix the soil. If you plant it directly around your *lo'i* [taro pondfield], then the buggah' going feed the soil into the *lo'i* too. We did that in Waimea because dry over there, that's mostly dry land. Mean, brah, the *kalo* 

[taro] huge. I would love to help.

SMA: We definitley need all that information because we are pretty much at our infancy stage. We are still learning, trying to understand, trying to do things naturally. But the tilapia, the thought was, when we harvest the tilapia, that would be a good catch for the kids too. They come with their little bamboo poles. So that would be something of excitement for the kids.

HKA: They would love that.

SMA: Yeah.

HKA: You know tilapia, it survives the world wars.

RN: You can fish 'em all you like, over harvest because the thing *make* [to die], you put 'em inside.

SMA: Yeah. That too. So we lost water, the big rains, dried up pretty quickly, we didn't have water. So during the week ... we come here every weekend ... by the time we came the following weekend, this was dry, so we had dry tilapia inside. Which ... ah ...

RN: Which is okay, you grind 'em into, you till 'em into the soil.

SMA: Yeah. So it works out that way too.

HKA: Are you familiar with Mānā and PMRF (Pacific Missile Range Facility), I asked you that question ... as a young boy, what are the changes you have seen in the area?

SMA: Since I was a younger child, it was ... accessibility for one, was a lot easier. Going back to the springs again ... I don't know if it has anything to do with PMRF ... the springs growing up, was more accessible and available for community members to go and use. We used to go actually swim in that ... up until they cemented like pipes on it, up until that point when they were ready to cap it off. I was a really young child when the last time I was there.

HKA: Was it flowing or stagnant?

SMA: Oh yeah, was flowing.

HKA: Was flowing. Gushing?

SMA: Gushing out of the pipe. Cold, very cold. Clean water. We would drink 'em. We actually went to the beach. We were camping on the base.

HKA: When was this '70s, '80s?

SMA: In the '70s, early '70s. We were camping. Our whole family was camping. My uncle Kamaile, and my uncle Gilroy took me and a couple of my other cousins, and we were all swimming that day, we jumped in the jeep, we drove through PMRF (Pacific Missile Range), went to Queen's Pond, jumped in the ocean there again, and drove back out straight to the spring water.

HKA: So refreshing.

SMA: Yeah, so refreshing. We actually rinsed off and swam there for a little bit. So that was nice as a youngster. But today, I really don't know the difference because I haven't ... I don't like going in there, so I stay away from PMRF. It seems like it's so hard to get in. It just seems that way. I don't think it is, but it just seems that way.

HKA: Yeah. You have to get the pass.

SMA: Yeah.

HKA: When it was so readily available to you.

SMA: Yeah.

HKA: Are you familiar with the expression, "Waikahi o Mānā," or the single pouring of water for the mixing of poi?

SMA: No.

HKA: You doing it now. [Laughing.] Are you also familiar about them raising *kalo* [taro] on rafts in the swampy areas of Mānā?

SMA: Yeah, I did a little research myself about Mānā ... I don't know if you call that research ... but I read stories about that happening. Back in the early days, of course, the floods would come through Mānā, and they had to find a way to keep the *kalo*. So they did it on rafts. They had trees, weaved it together, anchored it down so it wouldn't float away. I did hear of that story. They canoeing it over from Waimea to Mānā. I've read stories of migrating birds, geese, and ducks landing here by the thousands up until it dried out. I have read that. I would love to see it happen again.

HKA: And so any of your family lawai'a [fishermen], fishermen?

SMA: I guess so, but not serious fishermen. We grew up doing that too. We grew up throwing net all over the place. We grew up throwing poles and laying net. Going prawning up Makaweli and up Waimea River.

HKA: What, the prawns are big over there?

SMA: Yeah, was.

HKA: How big.

SMA: I was one little kid. [Gesturing with hands.] The body, the head was good size. They were all blue.

There used to be a lot growing up, but today ...

HKA: And where did those prawns come from ... their origin ... somebody brought them in?

SMA: Yeah, originally it was from Tahiti, Tahitian prawns. That's where it originally came from. When I was a young kid, there were so many of them that we'd come back with bags full. Even 'o'opu [general name for fishes included in the families Eleotridae] back in the day. It's definitely not like today. Once at Makaweli, I was a young child, I was able to swim with hinana [young of 'o'opu, a fish, formerly caught in nets and greatly relished] by the millions, in the river, Makaweli side. You could see them everywhere. I went underwater, opened my eyes, and I could see this shimmering all around me. I'm lucky to say that I have experienced that. I don't think that anyone has seen

hinana in that amount since I can think, I don't know.

HKA: It's just like a dream, yeah?

SMA: Yeah.

HKA: How about 'opae?

SMA: 'Ōpae [shrimp] too, Waimea River. My mom loves to eat 'ōpae, with little bit of Hawaiian salt pa 'akai [Hawaiian salt], round onion, and little bit of chili pepper. All you had to do was ... My grandmother's house was in Waimea Valley, the break water was right across, all you had to do was walk over, walk down the break water, to the river, align with buffalo grass ... walk at the edge of the buffalo grass, where it is in the water, go with the scoop net, reach over, just scoop it in the grass, and you would have like a good handful of 'ōpae. This is like Waimea River, you just saw Waimea River that close to the ocean. Just a lot yeah. My mom would sit at the kitchen table, and eat it live.

HKA: You just made my mouth water. [Chuckles.]

SMA: Those days are gone. It's gonna take a lot to bring it back. I think can.

HKA: I think get 'opae, just hidden.

SMA: I know get. There is still 'ōpae, quite a bit in Wainiha, that side of the island for sure. Some people are saying, there are still some here too. I havent gone up the valley in a long, long time. I talked to cousin Johnna Aona, "I want to take my kids up to Makaweli." She said, "Just go. Just tell them who you are if anybody questions you. Just tell them who you."

HKA: What kinds of fishes were you guys catching when you would lay net?

SMA: All kinds.

HKA: Plenty reef fish and stuff like that?

SMA: Not so much reef fish. Would be more  $p\bar{a}pio(s)$  [the young stage of growth of *ulua*, a fish].

HKA: Casting *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit].

SMA: The reason is, a lot of sand from Waimea. The places we'd lay is not by the reef, would be by the sand.

HKA: So 'ōio [ladyfish, bonefish (Albula vulpes)], yeah?

SMA: 'Ōio, some moi [threadfish (*Polydactylus sexfilis*)] ... just travelers, those sort of fish. We go crabbing too actually, a lot off of the Waimea landing.

HKA: What kind crab?

SMA: The *haole* crab [or *kūhonu* crab, An edible spotted-back crab (*Portunus sanguinolentus*)], the white crab. That used to be choke too. You would fill up ...

HKA: You guys get 'a'ama [a large, black, edible crab (Grapsus grapsus tenuicrustatus)] too, yeah?

SMA: Not so much on this side.

HKA: The rocky places.

SMA: Yeah. Mullet we used to throw net at the river mouth. Blind throws and catch mullet when we were teenagers. That too, there used to be a lot. When I got married, and I had kids, I wasn't so active. It changes yeah? So I was more active with coaching and stuff like that, more community service stuff. But I'm trying to get back like what it used to be for me as a child, geting my feet dirty.

HKA: When when you was a child, your 'ohana [family] used to gather for limu?

SMA: Not too much, not too much. That wouldn't be our family thing. When we going have one party or we are going to get together, going be, we going catch crab, we going catch prawn, 'ōpae [shrimp], 'o'opu [general name for fishes included in the families Eleotridae] that's the kind of stuff our family was gathering. Of course, had kalo [taro], other family members that was raising kalo, that was easy to get, so we didn't have to. So that was kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of our family gathering on this side.

HKA: You guys probably had a lot of pig too yeah, because you guys were raising animals too.

SMA: Yeah, yeah, actually raising animals too ... *kālua* [to bake in the ground oven] ... did a lot of that ... *laulau*, making *laulau*(s) [wrapping, wrapped package; packages of ti leaves or banana leaves containing pork, beef, salted fish, or taro tops, baked in the ground oven, steamed or broiled; any cloth, net, or leaves used as a wrapper or carrier; to wrap or carry in such bundles].

HKA: How about 'opihi [limpets]?

SMA: 'Opihi [limpets] was the favorite, up until I got gout.

SMA/KN/HKA: [Chuckling.]

HKA: As a child?

SMA: As a child, growing up, picking 'opihi was pretty easy. That too had quite a bit. Today, it's few and in between. What's different too is, all the islands are a little different. I actually worked on Maui for a little while and it was kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of amazinig to see how Maui was a little more cautious about their harvesting and gathering. 'Opihi, you could find 'opihi, big 'opihi. Over here you cannot find those, you have to go dive for 'em to find those.

HKA: So you guys *paniolo* too yeah, you said. So what kinds of Hawaiian cultural practices ... *lei* [a necklace made of flowers, leaves, and/or shells, etc.] making, *'oli* [chant], *hula* [Hawaiian dance] ... anybody in your family ...

SMA: No. The unfortunate thing was, we are part of that generation that was never taught. We would get family get togethers. As a young child, at some point in the get together at my grandmothers ... eventually the kitchen door would close, and all the kids would have to stay out. We would all try to listen to try to see what they were talking about, and everything would be spoke in Hawaiian, but it could never be passed. My mother's generation could understand Hawaiian, but cannot speak. My grandmother, they all could speak, but they never ever passed it down. A lot of that stuff died out, I guess.

KN: His grandmother was know for ... I remember her growing up too ... was known for gathering stuff for  $l\bar{u}$  'au(s) [feast, party], and stuff like that. So she was kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of known for that.

HKA: Do you know any of the *mo'olelo* [Stories] in this area? Have you you heard of the *hālau* [Long house as for canoe or hula instruction] or canoe house of the *Menehune* [Legendary race of small people who worked at night, building fish ponds, roads, temples]?

SMA: I've heard, I've read a little bit about it. I actually want to go find where it is. I want to go find some of those spots. There is stories here about *heiau*(s) [temples, places of worship] in this area too. There is supposed to be three in this area. According to old maps there are two on this side. I know they found one on this side, up this way. There is supposed to be two up this way, but I think both

of them got bulldozed when plantation days ... I think.

HKA: So what is that ridge where you thought the *heiau* [place of worship, temple] was?

KN: Niu?

SMA: Niu Ridge.

KN: Pu'ukapele too is a *heiau* site.

SMA/HKA: Yeah.

SMA: That's other things ... as our group, we talk about, we going have to go *mālama* [care for] that too. We going have to figure out where it is, open it up, in a sense so that people can understand who are passing through, can see that this is not a place to disturb or play around, or whatever it is. I don't know what it looks like. We definitely got to go *mālama* that too.

HKA: That would be good to *kilo* [observe] or watch because you might see ... if you got clear skies ... you might see certain constellations or solstice, rising of the sun and stuff ... where everything is situated on the 'āina [land]. Do you know about anything in the historic period when there was famine or diseases, some stories about that?

SMA: No, not a lot about diseases that the Hawaiians endured back in the day originally. I haven't had time to read on all that stuff.

HKA: What is your take on the sugar companies and the military their presence here, the positives and the negatives?

SMA: The positive, the plantation?

KN: And the military.

SMA: The positive, I don't know any positive in that.

HKA: How about the negative?

SMA: Just the impact they left behind. Basically, they came, took over the lands, raised their sugarcane, when the lease was up, left, along with cleaning not cleaning up, and taking care of what they should have when they left. The unfortunate part was, in my role today being part of KHHA (Kekaha Hawaiian Homes Association), being involved with the west side community, there's so much left behind. Today there is plastics littered throughout these fields from the plantation. I guess the one benefit would be, they brought water down here. There is a filter system above us that's kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of operational, there is some kind of infrastructure, piping and water going down. I guess that's a plus. But the impact of what they left behind, the land is infertile, it's left bare open for years, for the sun to beat down on it, so nothing else will grow. The microorganisms, everything in the ground ... nothing. It took me almost two years to find one worm in this whole area, one worm. We up to more today, it's been four years since we trying to understand this whole place and keep it flowing ... I guess ... keeping the water open and flowing ... and just understanding the seasons. So we think we got it down now. We think we understand it.

KN: I think a good thing to do as well is harvest earthworms. Just have earthworms.

SMA: Yeah. I am starting to, at home, within my filters in from my aquaponics, my tilapias, I'm finding a lot of those. So I am going to start figuring a way to pull it out of my filters. Anyway, the other parts of the negatives ... not only the plastics left throughout, but the metals left throughout, the poisons that we don't know about. PMRF (Pacific Missile Range Facility), the benefits maybe one of the few benefits or the only benefit there would be is, there is a military presence for Hawai'i. The negatives, where do we start ... we know that they are pumping water out most of the time to

keep the area dry and not in such a swamp zone. There is a lot of negatives of being in that location, the closure of the swamp area, that's one.

HKA: What would like to see in the future as well, and what is your concerns?

SMA: What I would like to see, my own personal opinion, I would like to see, maybe the base, PMRF (Pacific Missile Range Facility) not be here. My vision always go back to what it was. I am searching for my culture because I have been ... I guess ... denied that in a way. Yeah, so I'm trying to find, and get it back to what it once was, back in the day. I wish I lived in that era. I would like Mānā to be, what Mānā once was, a swamp area, raising kalo [taro] on rafts again. Hopefully bringing back the swamps and the migrating birds and all that stuff. Just what it once was. Open up the springs, let it flow. The other thing negative with the plantations is, all of the pesticides that is within the ground, and within the ditch ways ... within the ground, ends up in the ditchways, and naturally ends up in the ocean which kills everything there too. There are still remnants of that. I don't know how we get back to what it once was but it's going to take us removing things that's here, that was placed here years after. PMRF unfortunately, would be one to remove. I don't know why they put it there anyway to begin with. I don't know but that is my own vision. I'd like to see it removed, but I don't know if it's ever going to happen. What would be the outcome of that, I don't know. Even with all the radars and stuff ... I don't know ... all eyesores. Who know what type of radiation or whatever is being put off too. I don't know. There is a lot of stuff I don't know. I do know it's not what it once was. That's where I am with PMRF. I know that it employs a lot of our locals, I know a lot of funding comes to Kaua'i, Hawai'i, but is it all worth it? Is it all worth it for our people especially. Because we are the ones that are losing out, not any other nationality that comes here because they don't know, but we're the ones.

HKA: Mahalo [Thanks]. We will end our interview right here. I thank you so much for your time.

SMA: No, mahalo, thank you.

## ORAL HISTORY INTERVIEW

With

Edwin Ray A'alona Dela Cruz [ERAD]

November 28, 2023

Līhu'e, Kaua'i

By

Hannah Kaumakamanōkalanipō Anae [HKA]

The interview began in the Līhu'e Kaua'i, at the premises of the political center. We had to leave when it closed, so we went to a nearby park, and it rained. Most of the interview was done in HKA's rental car.

Recording file names IA202241 2023-11-28 Edwin Ray Aalona Dela Cruz(1).MP3, IA202241 2023-11-28 Edwin Ray Aalona Dela Cruz(2).MP3, and IA202241 2023-11-28 Edwin Ray Aalona Dela Cruz(3).m4a

HKA: Welina kākou [greetings everyone], today is November 28, 2023, and we are on the mokupuni [island] of Kaua'i, in the kūlanakauhale [town, city] of Līhu'e. I am Kaumaka Anae representing International Archaeology, LLC and we are conducting a Cultural Impact Assessment interview for the Pacific Missile Range Facility (PMRF) and Kōke'e Park Geophysical Observatory Succeeding Lease and Easement Areas. And I am here with A'alona Dela Cruz, and, A'alona, can you say your full name?

ERAD: Edwin Ray A'alona Dela Cruz.

HKA: And do I have your permission to record this interview?

ERAD: Yes.

Most Hawaiian definitions were sourced from Ulukau: Hawaiian Dictionaries online (https://wehewehe.org /gsdl2.85/cgi-bin/hdict?l=en). In some instances, the subjects supplied definitions and in others, the interviewer provided a translation.

HKA: *Mahalo nui* [Thank you very much]. Before we start, I would like to say, *e kala mai* [excuse me], if I seem *maha 'oi* or brazen it's not my intention, it's just for the purpose of this interview.

ERAD: Okay.

HKA: Let's begin. So, what we are going to start off with is *mo'okū'auhau* [genealogy] or your *pilina* [connection] to this 'āina [land]? How long have your 'ohana [family] lived in the area ... Waimea?

ERAD: Waimea Valley, yeah. My grandfather was born in Waimea or Makaweli. My family worked for the Robinsons. So ... long time.

HKA: And are you familiar with the Mānā and PMRF (Pacific Missile Range Facility) area?

ERAD: Yes.

HKA: And can you tell me about that area?

ERAD: As far as I know ... the PMRF was, ah ...

HKA: We are going to have to take a pause.

\*\*\*\*\*We were interupted by the security guard who informed us that the whole block closes at 4:30 pm, so we had to leave. We resumed the interview at a park nearby.\*\*\*\*

IA202241 2023-11-28 Edwin Ray Aalona Dela Cruz(2).MP3

HKA: Again, we are returning because we got kicked out from where we was. [Chuckles.]

ERAD: [Chuckles.]

HKA: And so now we are at a different park. So ... we are going to continue our interview ... and so ... how long has your 'ohana [family] lived in the area? Waimea Valley yeah?

ERAD: Waimea Valley. Makaweli with the Robinsons and Waimea ... probably from the '20s, '30s maybe.

HKA: Wow ... and so ... how about your 'ohana ... multi-generational, so ...

ERAD: My mom's side. So my mom moved back to ... She was born in Jacksonville, North Carolina, Camp Lejeune. And then they moved back to Hawai'i, O'ahu, when she was three years old. And I don't know how old she was when they moved to Kaua'i ... probably in the ... ballpark '50s probably.

HKA: Okay.

ERAD: Fifties, '60s maybe ... somewhere around there.

HKA: So where was your dad from?

ERAD: My dad is from here. My mom is from ... Well, my mom's mom come from O'ahu ... Big Island like that.

HKA: So your dad ... where did his family ...

ERAD: My grandmother was born here. Her parents were ...

HKA: What town?

ERAD: My dad is from here ... I'm sorry ... Waimea. My grandmother was born in Makaweli, east of Waimea, on the Robinson property.

HKA: Yes.

ERAD: And ... before that, her parents was from Hiroshima, Japan. My dad's dad was born in Iriga Palacinan, Phillippines, and moved to Hawai'i when he was 17 years old so about 1924 ... I think it is.

HKA: Okay ... And so ... the last question we were talking about was ... are you familiar with PMRF (Pacific Missile Range Facility) and the Mānā area, and can you tell me about that?

ERAD: Yeah. So as far as the Navy Base being there ... a lot of stories about the area ... as far as the premilitary base ... I guess ... It was an Army base, Airforce base, and now Navy, yeah. As far as the military part ... I think they been there since the '40s ... they took over ... I think was ...

HKA: And the Mānā Plains ... what do you remeber about that, and how it used to be?

ERAD: The Mānā Plains ... that whole area was mostly just sugar in my time.

HKA: Yes.

ERAD: And now it's just corn and now it's just growing wild ... and what ever else they are doing down there. But as far as the Navy part of it, I don't know what's changed ... and expansion. I know there's areas where you could go on the base freely from the beach ... you know ... stay on the beach. Since 9/11, they closed off access to driving on the beach.

HKA: Okay. And before I forget ... what is your experience ... your personal encounters ... like boating at PMRF and fishing on the Mānā side?

ERAD: You sure, you like go over this?

\*\*\*\*\*Short conversation redacted from the interview\*\*\*\*

ERAD: All and all it's pretty okay encounters. When they have missile launches, they hold us up for like an hour, and I understand why they do it in general ... But they stop us one hour prior to the launch,

and it only takes me 15 minutes to get across the range. A lot of the times, people that I know who work on the security side of it or on the base, they know me, they know the speed of my boat, and they let me through. A lot of times, no matter what they do, the Navy is like, "No, shut it down." So it kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of impedes us and my job. But also, days where I'm not working, I have never been stopped, just because ... lucky, lucky ... I guess. There was one incident where I was coming North back to Kīkīaola ... over from Nā Pali back to Kīkīaola ... and I saw the security boat standing by off of Makaha. And I maneuvered to see if they would give chase. They didn't give chase, so I kept going, and when I got to Nohili Point ... Navy police, blue lights, 50 caliber ... yelling at me, scolding me for not answering my radio, telling me the Coast Guard was trying to get ahold of me. So, I went up to the Coast Guard, same thing ... blue lights, 50 caliber ... a little confrontation there about them pointing it somewhere else versus at me. He kept it, and I said, "Can you please point that somewhere away from my 16 American passengers?" And at that point someone told him not to point it at me so ... They asked for my documents, my Captain's license ... documents, the boat documents ... handed it over to them ... and they looked through ... gave me back my documents, and I went on my way. And ... this was like 2005, '06 maybe, maybe even '07, somewhere around that time. And in 2008 I moved to O'ahu and was working doing the shuttle from Sand Island to Pier Four for the Coast Guard. And in the original exam center one day someoe asked me ... because I go by my Hawaiian name ... they asked me, "A'alona, what is your English name? What is your legal name?" I said, "Oh, Edwin Dela Cruz. They go, "Oh." I go, "Why?" Before they had a chance to answer I go, "What, PMRF [Pacific Missile Range Facility]?" And they go, "Yeah." They said the CO, XO, whoever is in charge of the base trying to get my license revoked because I ran through the range and shut down a multi-million dollar operation. Needless to say, everybody was pissed off, which is fine, but they didn't do their job, I just did what ... So they told me that the Coast Guard told the Navy that it was their fault, they messed up so they had no reason to pull my license. That's the hard part of ... me with the Navy, is stuff like that. Other than that ... besides not providing beach access for us like it used to be ... you know.

HKA: Yeah.

ERAD: Yeah, yeah.

HKA: Did you go fishing over there?

ERAD: Throughout my life we would go fishing over there. We used to fish from Kekaha Beach along the shoreline.

HKA: What kind fishing?

ERAD: Shoreline fishing, throw net ... dive.

HKA: What kind fish ... pāpio [the young stage of growth of ulua, a fish] like that for the casting?

ERAD: *Pāpio*, 'ō 'io [ladyfish, bonefish (*Albula vulpes*)], *moi* [threadfish (*Polydactylus sexfilis*)], *ta 'ape* [blueline snapper, bluestripe snapper], *to 'au* [black snapper; blacktail snapper] ... I remember when I was probably about seven or eight years old, I caught one nice, big *kūmū* [goatfish (*Parupeneus porphyreus*). *Palani* [a surgeonfish (*Acanthurus dussumieri*)], *kala* [surgeonfish, unicorn fish, Teuthidae; *Naso hexacanthus*, *N. unicornis*, *N. brevirostris*] ... we used to catch with the *līpoa limu* [bladelike, branched, brown seaweeds (*Dictyopteris plagiogramma and D. australis*)] ... put 'em on the hook throw 'em out when I go with my dad them guys.

\*\*\*\*\*The battery on the recorder was dying, so I had to use my iPhone to record the interview.\*\*\*\*

[black snapper; blacktail snapper]lueline snapper, bluestripe snapper][threadfish (*Polydactylus sexfilis*)] ...

he young stage of growth of *ulua*, a fish] ...

adyfish, bonefish (Albula vulpes)], pāpio, and you got one good kūmū [goatfish (Parupeneus porphyreus), yeah? And you guys had the līpoa [bladelike, branched, brown seaweeds (Dictyopteris plagiogramma and D. australis)] ... what kinds of other seaweeds did you guys have?Codium edule, is a green seaweed], limu kohu [a soft, succulent, small seaweed (Asparagopsis taxiformis)] ... we would pick 'opihi [limpets], hā 'uke 'uke [an edible variety of sea urchin (Colobocentrotus atratus)], wana [sea urchin, as (Diadema paucispinum) and (Echinothrix diadema)] ... I mean we did all aspects of fishing over there. To 'au [black snapper; blacktail snapper] ... I trying to

remember what kind fish had over there, but I know the ... āholehole [young stage of the āhole, Hawaiian flagtail] ... and then ... we would catch the *nenue* [chub fish, also known as rudder or pilot fish (*Kyphosus bigibbus, K. vaigiensis*) and *kala* [surgeonfish, unicorn fish, Teuthidae] ... the *palani* [a surgeonfish (*Acanthurus dussumieri*)] ... I trying to think ...

HKA: You guys did some diving too?

ERAD: A lot of diving.

HKA: You guys got like squid [referring to octopus also known as he'e or tako] too?

ERAD: He'e [octopus (Polypus sp.), commonly known as squid], lobsters ...

HKA: How about the wana, fat?

ERAD: Yeah.

HKA: Yeah.

ERAD: That's my favorite. [Chuckles.]

HKA: Me too ... Do you know if your 'ohana [family] had land in the area?

ERAD: Not here ... not ancestral land.

HKA: Besides *lawai'a* [fishing], what other practices did you guys do? Like did your parents or your mom do *hula* [Hawaiian dance]? *Lua* [Hawaiian martial arts]? Any *lei* [necklace made out of flowers, leaves, and/or shells, etc] making?

ERAD: My mom danced hula. My family are entertainers on O'ahu.

HKA: What is your mom's name again?

ERAD: Lorna Dela Cruz. Her maiden name is Shepherd. And our family on O'ahu is ... Michael Dela Cruz who has his *hālau* [*hula* group or school]. But ... my mother dance, and I am a *lua* [Hawaiian martial arts] practioner. I get am involved with a lot of cultural groups ... PVS (Polynesian Voyaging Society).

HKA: Polynesian Voyaging Society?

ERAD: Yes. I have never done any of the long voyages ... I miss the opportunities ... I had other engagements during the opportunities came up ... so ... I couldn't go. But it is nice to be involved ... And then I studied  $l\bar{a}$  'au lapa 'au [Hawaiian medicine] with Kumu [Teacher] 'Ohai.

HKA: What kinds of plants did you work with ... the *lā 'au* [plants]?

ERAD: I worked with *kauna 'oa* [a native dodder (*Cuscuta sandwichiana*), belonging to the morning-glory family, a leafless, parasitic vine, growing densely on other plants], more of the *kalika* [garlic],  $n\bar{\iota}$  'oi [chili pepper] ...

HKA: Ginger and chili pepper ...

ERAD: Chili pepper ...

HKA: What about the 'uhaloa [a small, downy, American weed (Waltheria indica var. americana), with ovate leaves and small, clustered yellow flowers], you guys get plenty? And the ilima [small to large native shrubs (all species of Sida, especially S. fallax), you guys get plenty?

ERAD: I never really get that far. I worked with him for a little while and then life, yeah ... two *keiki*(s) [children], started studying for my captain's upgrade and stuff like that ...

HKA: So what *kine* [[Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] ... you did the *kalika* [garlic], you did the ginger, and always  $n\bar{t}$  'oi [chili pepper] he uses in all his potions yeah?

ERAD: Nī 'oi and kalika is the strongest warriors ... for fight any kind of illness ... yeah.

HKA: And then of course ... the 'ōlena [turmeric (*Curcuma domestica*, also incorrectly called *C. longa*), a kind of ginger distributed from India into Polynesia], yeah?

ERAD: 'Ōlena.

HKA: It's for imflammatory ... what else you guys used to use 'em for?

ERAD: One of the things I learned, it was good for the immflammation but specifically, my son would go surfing, and he would come home with an ear infection or his ear stay sore. So, we would put some in his ear with the cotton, and we would take it out, and the next morning he's back in the water again.

HKA: So how did you guys ... make it into ...?

ERAD: We would juice it. If I couldn't get the root, I would use the (powdered) tumeric and just dillute it down. And even till today, I keep some in my icebox for my son. He old enough to go get his own, but if he cannot, I have ... my daughter, my grandson. My mom always has, and she has her little patch in her back yard. If we need, we can always go get, yeah.

HKA: How about kukui nut [candlenut tree (Aleurites moluccana)], you guys use that too?

ERAD: I never made *kukui* oil, but I do use *kukui* oil just on my skin, because I on the ocean all the time, and it comes dry. And then, the *'inamona* [relish made of the cooked kernel of candlenut (*kukui*) mashed with salt]. I made *'inamona* once before with a friend of mine on O'ahu.

HKA: You roast 'em [referring to the *kukui*]?

ERAD: Roast 'em, yeah. That was a pretty cool experience to make the 'inamona.

HKA: You have ... like some of the stuff you named, like the *limu kohu* [a soft, succulent, small seaweed (*Asparagopsis taxiformis*)], that's also an aquatic  $l\bar{a}$  'au lapa 'au [Hawaiian medicine]. That's really good too.

ERAD: Yup. The *pōpolo* [black nightshade (Solanum nigrum, often incorrectly called S. nodiflorum) a smooth cosmopolitan herb], the *pōpolo* berries, my mom always ... The weeds in the yard, I lawn mower 'em when I was younger. My mom, "Don't lawn mower that, that's the kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit], that's the medicine."

HKA: Yup, and the *pōpolo* and '*uhaloa* [a small, downy, American weed (*Waltheria indica var. americana*), good for the *hānō* [asthma, to weeze], yeah?

ERAD: We also went and harvested *māmaki* [small native trees (*Pipturus spp.*)] and 'awa [kava (*Piper methysticum*)]. Two of my *lua* [Hawaiian martial arts] brothers would go hike up behind Blue Hole Ka'āpoko, and get one area up there. So we would go and harvest the 'awa and then we would replant. And had one area up on the *pali* [cliff], all *māmaki*.

HKA: This is what *mauna* [mountain]?

ERAD: The Wailua area up behind Blue Hole Road, get the Kaʻāpoko Tunnel over there. The tunnels goes from Wailua to Hanalei. And we would ... well, I not going tell you where but ... [chuckles]. I just kidding, I just kidding.

HKA: No, no, you don't have to ... seriously.

ERAD: No, but up in that area there though, we used to go. I haven't been up there for 15 years ... I think ... maybe even more than that. Maybe 20 years we never go hike up there. I wouldn't know how it

looks. We made our own trail, so it wasn't like a beaten trail. We had to ... they knew the area where it was at ... So, we *kine* [[Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of made our own trail to find the spot.

HKA: Did you guys camp at Polihale when you guys were young?

ERAD: Yeah.

HKA: I noticed a lot of the families did that, yeah?

ERAD: Mmmhmm. Yeah, so my dad and his friends ... like Uncle Paddy Boy Mālama, we would camp there in the whole summers ... the last day of school to the first day of school ... and then more on the weekends. We would just ... I don't know how they pulled it off, camping that long. My brother and I try now, we can hardly pull off a week. Whenever they went to work, we would stay back and watch everybody. All the boats was on the beach, if too big to be on the beach, it would be anchored offshore. In the morning we eat breakfast and everybody just start loading up on the boats, and we go shell hunting, hunting, fishing ... anything and everything you can imagine. That was a typical summer at Polihale.

HKA: I noticed that was a really important place for the families. So, living in Waimea, you remember the plantation days, yeah? So was there a lot of family get togethers?

ERAD: Yeah. Now days not as much, but same thing ... everybody so busy working. A lot of ... even hānai [foster, adopted] family ... just the community getting together ... every community is family ... don't need to be blood related ... like hānai ... the Ho'okanos ... you know ... the Okadas ... I mean the names go on and on in Waimea ... Waimea Town, Waimea Valley ... you know ... the Setos, the Kagawas, that was one other close family. My dad and his friends played baseball. My dad and my uncles were all fishermen ... owned boats and stuff like that. We always got together a lot.

HKA: So you guys all used to fish together? So, did you guys do any *akule* [big-eyed or goggle-eyed scad fish (*Trachurops crumenophthalmus*)] fishing?

ERAD: Yes. A lot of *akule* [big-eyed or goggle-eyed scad fish (*Trachurops crumenophthalmus*)] fishing, but it would be from shore. We would be out to the schools (referring to schools of fish). We would meet at Polihale, and *hukilau* [a seine; to fish with the seine. Lit., pull (huki) ropes (*lau*)]. We used to go out on the boat at night and hook *akule*.

HKA: That is good fun. So, let me get back to my questions, I going ...

ERAD: [Cough.]

HKA: So, do you know if there was any religious practices in the Mānā area? Like ancient Hawaiian kind? I know there is Christianity.

ERAD: I know the *heiau* [place of worship, shrine, temple] is there, the last valley ... right where the spring is at ... the spring where they tapped, to provide the water for the ... What I was told by archaeologists and historians, that was the most sacred water out of the island of Kaua'i, and that was what they use for the showers and bathrooms at the State Park area. That's the valley right there by the *heiau* [place of worship, temple].

HKA: What's the name of the *heiau*?

ERAD: I cannot remember the name, it's just Polihale Heiau.

HKA: There is a *hula*  $p\bar{a}$  [a place where they do certain *hula* or Hawaiian dance rites and/or rituals] over there too?

ERAD: The *hula pā*, I'm not sure, but get the one in the other end, down in Kē'ē. The story I was told ...

I'm not sure how ... I wasn't there ... you know that *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of thing ... They call it like the Stairway to the Heavens [referring to Polihale Heiau] ... it was a five-tier *heiau* ... all the departing points for the *'uhane* [spirit] ... Ka'ena Point, O'ahu ... they would come to Kaua'i, go to the *heiau*, and

jump off the Pō'āina [Pō is the realm of the *akua* or god, and 'āina is land]. And then ... there is supposed to be an underwater mountain range, out at sea, straight out there, that they consider Pō'āina.

HKA: Wow ... that's interesting.

ERAD: That's an old story I have been told.

HKA: Leina-ka-'uhane [or leina-a-ka-'uhane (a place name on every island), place where spirits leaped into the nether world; lit., leap of the soul], yeah? There were supposed to be several leina-ka-'uhane here, get the Lei walo [place at an 'ulu tree where the spirits leaped into the nether world], the one with the 'ulu [breadfruit] tree ... the 'ulu grove?

ERAD: Oh, I'm not sure.

HKA: Was any of your family mahi'ai or farmers?

ERAD: Home gardens? That's about it, yeah.

HKA: What did they grow?

ERAD: My grandpa Flor and grandma Mary, on the Dela Cruz side, we had string beans, bush beans, radishes, egg plant, okra ...

HKA: Where Makaweli?

ERAD: No, Waimea Valley. Makaweli, was my grandmother when she was young.

HKA: Okay.

ERAD: We always ... we had 'uala [sweet potato] ... a lot of the vegetables and stuff ... I don't remember what the names were ... but there was like the big rooted vegetables, my father called them candy. Like one potato ... you peel 'em, you cut, and you eat. I cannot remember the name of 'em though.

HKA: Nice ... Do you know any of the *moʻolelo* [stories] like in the area? Oh, let's start off with ... you know about the *Menehune* [legendary race of small people who worked at night, building fish ponds, roads, temples]?

ERAD: Okay.

HKA: People say that they are ... a race, and people say also ... you know ... that they are a small people.

There is a race but also small mysterious people.

ERAD: Okay. Mythical.

HKA: Yeah, mythical. What is your take on that?

ERAD: Just by the stories that everyone hears. They work at night, if they didn't finish the job by sunrise, if would never be finished. And ... always thought it was a possibility ... you know. I always make fun, my father was the last *Menehune*.

HKA: [Chuckles.]

ERAD: But ... I read somewhere one article that Kaumuali'i did a census, and he counted 65 *Menehune*. So that throws off the mythical side of it. Again, I wasn't there to see them caught but ... who am I to correct?

HKA: Yeah, yeah. But a lot of people think ... they are regular people too ... so, if they did a census, and we did not find any little people in the archaeological record as well ...

ERAD: Right, right.

HKA: ... or Hawaiian record, so that is another thing, but ... yeah. I just wanted to see what was your take.

ERAD: Right, right.

HKA: How about crab and stuff?

ERAD: Yeah. I just went go Nā Pali ... go kona crab.

HKA: How big the kona crab over there? The season open, it's in season, right?

ERAD: Yeah. Some big *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit]. We got some big *kine*. We went last year ... I think we caught ... 30 something pieces, half-day ... three sets ... three strings ... three sets ... pull 'em up, go home. And then this last one we went, we got 65.

HKA: So how you prepare 'em?

ERAD: My father make 'em raw, kim chee. I like that. Or I cook ... the way I cook my lobster. All my crab and all my lobster, everything ... beer steam. I just put oil in the pot, crush the garlic, throw 'em inside ... head down, body up so all the juices, all the *shino* [Japanese for fat and essence in the head of the crab also known in Hawaiian as  $k\bar{o}hi$  or fat and richness of food] stay inside ...

HKA: Best part, the head.

ERAD: ... throw Hawaiian Salt on top ... put the cover on ... the oil start cracking ... then I shake the pot, and I pour one beer on top and let 'em steam. Yeah. [Chuckles.]

HKA: [Chuckles.] Did you guys ever make it or mix it with the wana [sea urchin]?

ERAD: No, I've never tried that.

HKA: Yeah. [Chuckles.]

ERAD: [Chuckles.]

HKA: Whoa, man. Did any of your family paniolo [cowboy, ranch]? Any ranchers?

ERAD: No, not that I know.

HKA: Mainly lawai'a yeah, mainly fishermen?

ERAD: Yeah. My dad hunted a little bit. I went hunting with my uncles, but I wouldn't consider myself a hunter. Definitely *lawai'a* [fisherman]. I would rather swim with the sharks than run with the pigs. [Chuckles.]

HKA: You guys used to eat *pipipi* [general name for small mollusks, including *Theodoxus neglectus*] or what?

ERAD: Oh, yeah. And the  $k\bar{u}pe'e$  [an edible marine snail (Nerita polita)].

HKA: Oh, and the  $k\bar{u}pe'e$  [an edible marine snail (Nerita polita)]. Get plenty  $k\bar{u}pe'e$  over there?

ERAD: Yeah. Nā Pali get couple places, but I get more on this side, the south side of the island. Yeah. You know ... thinking now about the areas where we used to camp by Nohili Point ... we used to camp there ... as long as it was the weekends and they didn't have operations ... from Friday 6:00 p.m. until Monday 6:00 a.m. we could camp. But the shoreline over there is perfect  $k\bar{u}pe'e$  grounds. And I never did ... I never know it at the time ... my father guys never did go get that. Another thing over there is the ... I cannot think of the Hawaiian name ... sea cucumber ...

HKA: Oh, the *loli* [sea slug, sea cucumber, beche-de-mer, trepang (*Holothuria spp.*)].

ERAD: The one you can eat. I thought the *loli* was the sea cucumber in general.

HKA: It is sea cucumber in general.

ERAD: And so, Nā Pali get plenty of that. Get certain areas by the base you can find it.

HKA: People don't make it now ... because they don't know how to prepare it. People don't know you can even eat that, right?

ERAD: Yeah. My dad ... makes it, and I love it.

HKA: Does he pickle it?

ERAD: Yeah. Lemon juice and shredded daikon [pickled raddish, Korean/Japanese dish], and he just sashimi [cut in thin pieces, Japanese style of slicing] the *loli*. Oh, I get one small container left, I rationing 'em. [Laughter.]

HKA: [Laughter.] Oh, my goodness, that's awesome ... see, that's why you guys basically can live off the land. You and I notice on Kaua'i, it's possible to live off the land.

ERAD: Mmmhmm.

HKA: You know ... get the *pipi* [beef, cattle] too that's roaming around up there.

ERAD: Yup, the wild *pipi*, yup.

HKA: And then you guys get ... you know ... it's sustainable ... we just gotta take care of the 'āina [land], yeah? That's the thing, we take care of the 'āina, it's sustainable ...

ERAD: Yeah.

HKA: Did any of your *kūpuna* gather shells to make *lei*(s) [necklaces made out of flowers, leaves, and/or shells, etc.] and stuff?

ERAD: My mom gather shells. My grandmother always ... My grandmother was raised with the Ni'ihauan(s) too yeah, or she had a lot of contact with them working with the Robinsons ... And so, she went to Ni'ihau when she was young, because she was the caretaker for the old lady. She would pick shells or even seeds, like the black-eyed suzies and the ... the sheep's eye ... So she would collect all these ... but never had enough to make a full lei of the seeds. But ... my mom would collect shells, not really to make *lei* ... just for decorations ... arts and crafts *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] stuff. My dad would pick puka shells [puka is hole, and puka shells are holes in the shells] from Polihale. And he made a *lei* for my mom with the Triton's Trumpet as the centerpiece, and three gray shells representing the three of us ... my mom, my dad, and me. My mom gave me that lei when I was 18 ... it was after I graduated. I have always been into picking. My mom picks puka shells at Polihale, Queen's Pond area, and towards Nohili Point. And now it's more scarce, unless you know where to go. And now that they opened up access to Nohili Point, more people are going and picking so ... for me ... I used to pick and sew  $k\bar{u}pe'e$  [an edible marine snail (Nerita polita)], I have a few kūpe 'e lei(s) [necklaces or garlands made with shells, flowers, and/or leaves, etc.] that I made for my kids when they were younger ... the smaller shells ... the bigger shells for me ... and then my daughter's mother at the time. I haven't sewn (lei) in a while ... shell (lei).

HKA: Wow ... that's something you guys used to do. That's the things I like to talk about because that's practices that happened in that area that still can happen ...

ERAD: Yes.

HKA: ... because it's still there and need to be taken cared of, especially if the military are stewards of the 'āina [land] too, yeah?

ERAD: Yes. Yes. We get 'em on record right now yeah? [Chuckles.]

HKA: Yeah. [Chuckles.] Are you familiar with the planting of *kalo* [taro] on the rafts ... you know in the swampy areas?

ERAD: So all ... from Polihale Beach to Waimea was all wetlands, was all swamp ... yeah. So, was early

aquaculture ... so what you call that ... aquaculture right?

HKA: Yeah, aquaculture ... because the fish ... use to fertilize yeah?

ERAD: Fertilize yeah. And so they talked about ... these are stories I don't know if I read or if ... A good

friend of mine is Randy Wichman, Fredrick Wichman's son, he's a historian involved with Na Pali

'Ohana ... another group I'm involved with ... Keao too ,yeah. I don't know if it was him who told

me the story, or I read the story, or somebody else told me the story about how the people at Polihale

would get the dry fish, and come to Waimea and trade for ... whatever they needed.

HKA: Kalo?

ERAD: Yeah. Somebody was telling me the story too ... their kupuna [ancestor, elder] was ... my friend,

Gene was telling me ... his kupuna was Keaweamahi, the last governess of Kaua'i and Waimea.

And his kupuna would go from the halenui [big house] at Waimea River around to Nu'alolo ... and

the only thing she would bring back from Nu'alolo ... I don't know if it was 'āholehole [young

stage of the endemic fish (Kuhlia sandvicensis) found in both fresh and salt water] or moi

[threadfish (*Polydactylus sexfilis*)].

HKA: Might be *moi* because the freshwater ... Even the 'āholehole, the freshwater.

ERAD: I'm trying to think because we were discussing it ... he probably went over because the water was

too dirty in Waimea. I don't know back then if the water was dirty like it is now. I trying to think

what kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means

whatchamacallit] ... was it 'ō'io [ladyfish, bonefish (Albula vulpes)]?

HKA: ' $\bar{O}$ 'io, get sand over there?

ERAD: Yeah.

HKA: And the 'ō' io, they like the sand ... yeah ... they bottom feeders.

ERAD: *He'e* [octopus (*Polypus sp.*), squid] that's what was. And I was telling him ... proabably because Waimea, the water is so dirty that they no can see to catch ... That's what it was *he'e*.

HKA: Is there a lot of *leho* [cowry shell] like cowry shell?

ERAD: Yeah.

HKA: You know the *he'e*, they attracted to the cowry shell yeah ... that's why you make *lūhe'e* [fishing for octopus with line and cowry lure; the octopus lure]. I have the same to at my house, where I live it's called Kaluapuleho ... they attract the *he'e* I get plenty of squid my house too.

ERAD: Oh. Wow.

HKA: Yeah.

ERAD: I made one, a lure for my brother, Kyle, he is 10 years younger than me. I forgot what project it was for. So, I helped him make.

HKA: A  $l\bar{u}he'e$  [fishing for octopus with line and cowry lure; the octopus lure]?

ERAD: Yeah. So, real ... not strong enough to use, but good enough to do a presentation for his class. Where I took one *pōhaku* [stone], I took one guava stick, sharpen the one side, I got *nī 'au* [midrib of coconut leaf or frond] for wrap 'em, and so the thing was all wobbly and everything like that, and then I put the ti leaf for like the tail. I think my stepmother still has it on the shelf. But I made one for him, and somebody heard about it, and they wanted me to make one for them ... Funny how that this just came up because my son, about a month ago sent me a video of Mike Sakamoto on his show. He goes, "Dad, I like do this, I like make this."

HKA: A *lūhe* 'e [fishing for octopus with line and cowry lure; the octopus lure]?

ERAD: Lūhe'e. I said, "Whoa, okay, I gotta' look how fo' make 'em." YouTube, look how fo' make 'em good, strong, pa'a [firm, solid]. I guess all the Indonesian, Philippines ... the videos are ... I look

but it's different from ...

HKA: Hawaiian, yeah?

ERAD: ... traditional. I bought one crafting book that showed ... from the Kaua'i Museum years ago ...

that showed how it supposed to look. And that's how I made my brother's one. I wanna get a drill

hole, and all that stuff ... but I want to make it more ... to catch it, we gotta' go more modern, but

try to stay traditional on the style so. But I gotta go look and do some research. Interesting ...

HKA: [Laughter.] Eh, try da' [Hawaiian pidgin for the] kine [Hawaiian pidgin language meaning sort of

or somewhat, and it sometimes means whatchamacallit] ... I wonder if the bamboo will work.

ERAD: Like ...

HKA: Sometimes the bamboo, you can carve out of the bamboo, yeah. I have thick bamboo.

ERAD: Okay, okay.

HKA: I don't know. [Chuckles.] Because it's easier to carve out of the bamboo, yeah? That's why they

make the Hawaiian stamps out of the bamboo.

ERAD: Right, right. I go check 'em out. I always open to suggestions to try.

HKA: But usually when it is more fresh yeah the bamboo. Then you can burn 'em or dry 'em out to make

it more hard. But when it's fresh, it's easy to carve. [Chuckles.]

ERAD: Right, right. [Chuckles.]

HKA: You know in your guys community ... did you guys often share food ... like when you guys catch fish yeah?

ERAD: Yeah. My dad and his friends would go out and catch. They were commercial fishermen.

HKA: So they used to go for 'ahi [Hawaiian tuna fishes, especially the yellowfin tuna (Thunnus albacares)]?

ERAD: Whether is it's 'ahi [Hawaiian tuna especially the yellow-fin tuna (*Thunnus albacares*)], or go dive for *menpachi* [Japanese name for 'ū'ū, all soldier-fishes of the genus *Myripristis*] ... the reef fish. And they would sell, and we also had the *hui* [group of people] who would come and get. And I think they did it ... like for me, I don't like to sell fish ... I definitely don't like to sell lobster ... even crab. I go and I catch for eat ... you know ... then if it's more than enough for me to eat ... my dad, my mom ... I call it paying taxes to my dad and my mom ... paying him for the eduation he gave me ... you know ... and my son ... what I teach my son ... pay taxes to my dad too ... and you know ... People ask me they like buy, and it's hard for me to sell. I remember one time when we were taking my kids fishing on the boat, I wanted them to know what it felt like to catch fish ... I told them catching, not fishing. I get one picture of my son ... he's probably about six or seven years old ... he leaning back and like the pole is bent and the tip stay in the water. One *nenue* [chub fish, also known as rudder or pilot fish (*Kyphosus bigibbus*, *K. vaigiensis*)] that big (gesturing with his hands.)

HKA: Wow.

ERAD: Pound for pound I think the nenue is the best fight fish. So we fill up the cooler. And my wahine [woman] at the time ... at work they asking, they like buy. I told her, "Give 'em." She came back and she told me, "He gave me \$60, \$70." I told her, "No, give 'em back, I don't want the money." He said, "No, go put gas, go buy hook." I said, "Oh, in that sense, I guess, I don't feel so bad, okay." Then one of her Tongan friends, I guess he found out ... the nenue, the humunukunuku 'ele 'ele [blue striped or black durgon; variety of the humuhumu (Rhinecanthus aculeatus, R. rectangulus)], he wanted them all, and he gave me one ... bag 'awa [kava (Piper methysticum)] ...

HKA: What is that humuhumunukunuku?

ERAD: The blue-striped durgon, humuhumunukunuku 'ele 'ele?

HKA: 'Ele'ele instead of āpua'a.

ERAD: Yeah, yeah. The black one.

HKA: I know which one you talking about.

ERAD: The one always with the *nenue* [chub fish, also known as rudder or pilot fish (*Kyphosus bigibbus*, *K. vaigiensis*)].

HKA: The *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of nice one.

ERAD: The one ... with the tail on the top and the bottom. Yeah, so he gave me couple pounds of 'awa [kava (*Piper methysticum*)]. You know, this I don't mind.

HKA: Yeah, bartering ... 'cause that's traditional. Yeah, that's good. I like that kine of communities ...

ERAD: My mom's neighbor, I would always offer him fish ... certain *kine* fish he like ... he's particular. So we give him and he would always give us smoked meat and smoked sausage. Whatever ... too much I had would go to my family first and then to *kūpuna* [elders, ancestors], yeah.

HKA: Wow. So that's neat. Do you know the *mo'olelo* [story] of Ke-one-kani-o-Nohili, which is the Resonant Sands of Nohili? Sometimes people say, that's why it's Barking Sands but ...

ERAD: Right. I know a version of the story.

HKA: Okay. Can you tell it to me?

ERAD: The one that I learned when I was really young is ... There was a fisherman, who lived at Nohili Point or that area, and he was one of the first, if not the first *kanaka* [Hawaiian person] to have dogs as pets, instead of for food. He really loved his dogs. Everyday he would tie up his dogs before he would go out and fish. He would play with his dogs, tie 'em up, and go. This was a regular thing. One day when he went out *holoholo* [another term used for "to go fishing"], a storm had blown over. It was raining so hard, he couldn't see the island. Essentially, he didn't know where he was, he never had his bearings, but he could hear his dogs barking. So, however long the storm was, finally the storm passed, and his dogs barking kept him close to home. When he came in to shore, the first thing he wanted to do was untie his dogs, and love them up because they saved his life. And he couldn't find them. He looked around, and looked around, could not find them, he heard barking, and he could not find them. And he never found his dogs till today, that is why you can hear the dogs barking.

HKA: Nice ... You talked about the *hui* [group] with the Nu'alolo 'Ohana that you are involved with, can you tell me about that?

ERAD: I been in the industry since 1992, and I worked for a company called Nā Pali Explorer. We were one of the three companies that were allowed to land at Nu'alolo ... picnic on the beach, do a narrated walk through the remains of the village at Nu'alolo, and snorkel from the beach. Part of that permit was, we would provide transportation I guess for Nā Pali 'Ohana, and while they were out there, we would bring out ice and any kinds of supplies they needed. They would make a call to whoever, and they would bring it down to the boat, and we would bring it out. At the end of the camping trip, we would load up the boat, and I mean ... the boat was full ... with cargo net and ... I was young, I was 19. So from that point, I worked for that company years and years, and just *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of built up ... got really close with Sabra and her husband ... Randy, and Vicky ... all the 'ohana [family].

HKA: And this 'ohana come from?

ERAD: This is all random people ... from the Nā Pali 'Ohana.

HKA: Where they come from, like all over Kaua'i?

ERAD: All over Kaua'i. I think Randy guys are from North Shore, and Sabra is from Līhu'e side, I'm not sure what parts of the island everybody came from ... but a lot of them was North Shore people. We had Aunty Lu Koerte from Kekaha, David, Nalani ... But over the years I built up a relationship with them, and just became a part of them. My day off, if they camping ... I go out on my boat, work, hang out, wala'au [talk story], and just enjoy. Most times, I couldn't stay overnight, so I would leave. When I could stay over night, then I would. I would stay away from them because part of the permitting, and everything like that. So, I technically wasn't there but, yeah.

HKA: Wow, that's pretty cool. So, any other organizations you belong to?

ERAD: The more we talk stories the more things come up. I think that was pretty much it ... Lua, Nā Pali 'Ohana, PVS, being involved with Kumu 'Ohai for a little while ... Yeah, I guess that's the main ones. We have our little cultural *hui*(s) [groups] like Keao, and some of our people that work with me in the industry, but we were closer even when we weren't working for the same company ... we still met each other, hung out, wala'au ... and became another 'ohana [family].

HKA: Nice. Are you familiar with Limaloa, the *akua* [divine, godly] of mirage? When you driving on the plains of Māna, and you can see this mirage? Have you ever heard about that?

ERAD: Of akua.

HKA: Yeah. Of Limaloa because there is a story of Limaloa and I think Pele.

ERAD: It's been so long since I heard stories from my uncles, but that does not ring a bell.

HKA: Okay. How about Hi'iaka and the Pele saga? Because she came over here to fetch Lohi'au [Hi'iaka fetching Pele's lover, Lohi'au on Kaua'i].

ERAD: I've heard the story, but I heard it so long ago ... once or twice ... so it doesn't stick in my head.

I'm glad you bring it up because it's stories I need to go back and research to know, but also to share.

HKA: Or connect to, yeah?

ERAD: Yeah.

HKA: Another question I was going to ask you, in fact this is the last question I am going to ask you ... what is your recommendations or things you would like to see for furture generations in the area of Mānā, PMRF (Pacific Missile Range Facility), in Kōke'e ... in the area of the project?

ERAD: Definitely better access. I guess ... you know ... we had it so good back then. And back then being pre-9/11 ... up until that point. They closed the base, and we couldn't even dive off shore, couldn't anchor offshore for couple of years or however it was. All the *manō* [shark] got a little bit more frisky, because no more boats chasing them, so it's like they took over. They (referring to the sharks) took the area back. When it first opened ... you shoot one fish, the sharks all over you already. So to be able to go back to how it was ... not that it's our space, but they were not as frisky as they were before. They more frisky than they were before and now they getting back to that not so frisky because people are utilitzing the area.

HKA: Which is a natural thing between them and human kind interaction, and that natural relationship went away because they was less interaction with the  $man\bar{o}$  [shark].

ERAD: Right, right exactly. The main thing is ... I don't want to say lenient, but get more lenient on the access like ... it's an unenforced law, you are not supposed to drive on the beach. I'm in the ... I'm not quite *kupuna* [elder], but yet for me to lug all my gear to go fishing ... the parking area is ... the shore ... you like go more down ... you going have to walk in the soft sand. You know, stuff like that ... or open up the end so we don't have to come through the base, we can drive from the side and come in ... to have access to all these spots to fish. I remeber my dad ... get all my dad's lobster holes and everything too. We went from shore with one scuba tank. We swim out on the surface, get to the spot, turn on our air, dive down, we clean the hole, come out, and fill our cooler with lobsters from couple t-bars. Now we cannot. We cannot drive to that area anymore.

HKA: So you want more access, better access ... a little more leniency?

ERAD: Yeah.

HKA: So you can do your gathering like you used to do.

ERAD: Gathering, camping ... actually I would love to camp at Nohili Point again ... on the Flats, at the grassy area before the gates and stuff. I like take my kids there, my boys like ... because all my family like to go *holoholo* [another term used for "to go fishing"]. Go camp on the beach at Majors Bay like we used to and stuff like that. We lost 'em, we lost all of that because of 9/11.

HKA: So I will end this right now. Mahalo nui [thank you very much].

ERAD: Mahalo [thanks].

## ORAL HISTORY INTERVIEW

With

Eben Kawaikea Manini [EKM]

November 27, 2023

Kekaha Neighborhood Center Pavillion, Kekaha, Kaua'i

By:

Keao NeSmith [KN]

And

Hannnah Kaumakamanōkalanipō Anae [HKA]

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KN: *Aloha nō* [intensified greeting], <sup>1</sup> this is Keao NeSmith, and I am sitting here at Kekaha Neighborhood Center Pavillion, *moku* [district] of Kona, Kaua'i ... *ahupua'a* [land section] of Kekaha. And we are sitting here with Kaumaka Anae, of International Archaeology, and I am a subcontractor under International Archaeology; and we are interviewing today. Can you say your name?

EKM: Eben Kawaikea Manini.

KN: And *mahalo nui* [thank you very much], and is there anything else we need to ... as far as the identifiers ... *pau* [finish]? Ah ... yes, and the reason we are meeting is to discuss the Lease and Easement Impact Statement for the PMRF (Pacific Missile Range Facility) Facility at Nohili, Kaua'i. And we are here to talk about what the local people of this area know about this place ... about all of this west side ... *mauka* [toward the mountain] to *makai* [toward the ocean]. Ah, so

Most Hawaiian definitions were sourced from Ulukau: Hawaiian Dictionaries online (https://wehewehe.org/gsdl2.85/cgi-bin/hdict?l=en). In some instances, the subjects supplied definitions and in others, the interviewer provided a translation.

let's start with the first question, so tell us about your mom and dad ... what are their names, and where are they from?

EKM: So my dad is Joseph Punilei Manini Sr. born and raised on the island of Kaua'i for many generations.

KN: Where?

EKM: In Waimea, Kaua'i ... majority in the valley. He was actually born in Olokele Valley which we relate to Makaweli Valley in this day and age. And my mom was born on the island of O'ahu. Her family came from Maui. And on her Hawaiian side, they were actually known to be from the Island of Nihoa, her genealogy. On her dad's side would be from Tennessee ... which I have some Native American Indian and some Caucasian background in her family. She moved over to Kaua'i back in the day before meeting my dad where they got married, and had eight children.

KN: Your mom from Nihoa, you know the family name from Nihoa?

EKM: I know her grandpa was Kealohanui.

KN: So you related to Lei Wann them guys?

EKM: My sister Erna would know exactly all of the genealogy names. But ... yes, she has family Oʻahu, Maui, and possibly Kauaʻi as well.

KN: Nihoa, because they have a Nihoa family. You're the second 'ohana [family] I came across that actually had a definite Nihoa connection. That's awesome.

EKM: That would be my mom's mother's side.

KN: And so that's Presley Wann, and the mother Lei, Aunty BG, she runs Limahuli over there. And then your dad's side born Olokele in the house?

EKM: Private house, my dad was born in Olokele Valley.

KN: And his *kūpuna* [elders, ancestors] going back are they Kaua'i too?

EKM: Kaua'i. A lot in Kaua'i and many generations.

KN: Waimea too ... area?

EKM: Majority is Waimea. Although we had 'ohana [family] also in Wainiha.

KN: See, that's why too Preseley Wann is all Wainiha too.

EKM: Yes.

KN: Could be, could be. Anyway ... *mahalo* [thanks]. And let's see ... What are your experiences with this area, as you grew up ... ah ... all the way.from say Waimea, all the way to Polihale ... Nā Pali ... *mauka* [towards the mountain] ... *makai* [towards the ocean]?

EKM: I have numerous background in this area as ... born and raised in Waimea ... in the valley. And then our family has property at Pu'u 'Ōpae. We first went up there in 1968 where, ah ... this is where I reside to this day. I been living there on property for about 20 years now, permanently. As far as growing up in my youth ... Waimea, doing sports, delivering newspaper, coming to church in Kekaha ... the Mormon Church ... the Church of Jesus Christ of Latter-Day Saints from my youth and througout my teenage years. I did sports in Kekaha as well when we had little league games throughout the west side of Kaua'i. Also, there used to be a horse arena for rodeos near the sugar mill location. So my dad would rope a lot and my siblings would do a lot of activities in the arena. Occasionally, we would do horseback riding all the way out to Mānā Camp, which used to have a swimming pool there. We would use the old governement road adjacent to the backdrop of the mountain range; from the Mānā Plains Flats we would ride all the way down. There would be a whole day of activities, usually on Saturdays, and we would swim in the pool, then ride all the way back on the highway pass the Missile Range area ... we would return back at the arena. Also,

I remember going swimming in all the freshwater swimming holes in that back section there too where the mango trees are.

KN: More Kekaha side or Polihale way?

EKM: Kekaha.

KN: Kekaha Way?

EKM: More towards ... they call it now the Magazines ... where the Magazines are for the military. The Pacific Missile Range has their bunkers possibly in there ... it's all fenced off, so it is private there, but that would be the location. Also going to Polihale for family picnics and, ah ... celebrating some of the holidays ... maybe Easter at times. I remember driving back to Queens Pond as well. I was never a very good swimmer back when I was younger, so I was not allowed to go into the rough ocean, when, at times Polihale can be rough, and then Queen's Pond would be a lot calmer and little bit safer to swim at that location. So I remember seeing a lot of the ... the old Kaua'i where we still had a lot of kauna 'oa [a native dodder (Cuscuta sandwichiana), belonging to the morning-glory family, a leafless, parasitic vine, growing densely on other plants] growing all along side the roadway going to Polihale on the dunes, the sand dunes. Where now it's a whole lot different with invasive species. As far as the base, the Pacific Missile Range Base Area, we would go on base with permitting to cut kiawe [algaroba tree (Prosopis pallida), a legume from Peru, first planted in 1828 in Hawai'i, where, in dry areas] posts, which is an introduced species of trees to make fence posts for our ranch up in Pu'u 'Opae. So we have permits to gather wood posts from the base in areas where they needed to cut back some of the invasive species encroachment on their facilities where they would be near the fuel farm or closer to the airstrip. This is again, when I was very young, and remember it going all the through almost my teenage years. Also, in the back of Kekaha where the Hawaiian Homes (Department of Hawaiian Home Lands) now has homes there, the latest improvement location, we would also cut firewood in that area. Near that location too, there used to be a firing range ... right now, I think the County calls it MacArthur Park ... would be just mauka [towards the mountain] of the MacArthur Park. So from that location back to the old Kekaha Plantation Slaughter House, in that range we would be cutting a lot of fence posts as well.

KN: That's now the area, Kekaha Gardens, yeah?

EKM: Yes, they extended it backside of Kekaha Gardens.

KN: That used to be all ponds and swamp, yeah, before?

EKM: Yes, yes. There were also some areas that significant berms that ...

KN: Many sand dunes.

EKM: Yes! My dad would say had cultural significant areas that we would not cut in those areas for respect of what is there ... whether it would be burials or it would be *heiau*(s) [place of worship, shrine] in that areas, or special locations where he would *pule* [pray] a lot, and we would be inspired, or you would have locations passed down through you, through generations prior. My grandfather, Benjamin Pinihakapunilei Manini Sr., he would go on the flatlands all in back of ... from Waimea to Kekaha when there still used to be swamp lands. And they would oar down with a flat-bottom boat where they would actually catch 'ōpae and some of the brackish-water fish that would be present in the area.

KN: I wonder what kinds of fish, like *āhole* [an endemic fish (*Kuhlia sandvicensis*) found in both fresh and salt water] maybe ...

EKM: I know it was brackish, and he used to love to throw net.

KN: Awa [milkfish (Chanos chanos)] maybe ... 'anae [full-sized 'ama 'ama mullet fish]?

EKM: Yeah.

KN: Yeah, maybe.

EKM: So he would catch fish.

KN: Mullet?

EKM: And I remember had lots of shrimp, though.

KN: Okay.

EKM: And that was the story ... he would go gather food.

KN: Because that water I remember ... the few ponds that we did see before had Kekaha Gardens was actually clear, the water I remember seeing ... so I imagine that's good environment for 'ōpae and stuff like that.

EKM: Yes. So the water clarity was clear because the land is lower than sea level with the outside sand build up from the ocean. So I was told that the water used to be brackish, and there used to be even salt solidification sometimes on the dried off dirt areas during summertime. But there was a lot of interior freshwater springs that eventually the plantations capped to allow sugarcane to grow in this very marsh area so they dug canals to dry out the land mass so it could be cultivated. Of course, this is just new generations, new ideas, new development and building. I was told through *kūpuna* [elders, ancestors] in the past that there were certain varieties of *kalo* [taro] that could grow in brackish water. And then they'd build up mounds on higher locations within this marshy, boggy area where they would actually grow *kalo*. So at least there would be food and sustainable for the people who would live adjacent to this region alongside the mountain area. Not necessarily *pali* [cliff] but higher elevation, up along the whole mountain range from Waimea to Polihale.

KN: Interesting you mention the high points, the high elevated points, because that area by Kekaha Gardens, all of this area in the historical record that was the highest point, because it came to sand dunes ... like you just said, and it would come to one mound, and on top of there in the historical record anyway, old maps like that ... is one *heiau* [place of worship, shrine] over there called, Lolomauna ... so that's interesting. I imagine that from there you get one good view looking across the plain, yeah ...

EKM: Yes.

KN: ... to all these lower spots.

EKM: Yes. The higher and lower spots may not be mounds, would be lower ... but definitely drier where some of the native birds would actually rest to be out of the water as well. My stories that was passed down through my family, my grandfather would say ... had a lot of native Hawaiian ducks in the area, possible had  $n\bar{e}n\bar{e}$  [Hawaiian goose (*Nesochen sandvicensis*), protected and rare on Maui and in Hawai'i uplands (down to 40 at one time and about 1,000 in 1978)] back in the day

too because they like to eat the swamp ... the grown wheats.

KN: Out there had 'alae 'ula [Hawaiian gallinule or mudhen (Gallinula chloropus sandvicensis), distinguished from 'alae kea reddish bill and frontal plate; endangered] ... 'alae kea [Hawaiian coot (Fulica americana alai), a marsh and pond bird, distinguished front 'alae 'ula by its ivory-

white frontal knob; endangered].

EKM: It is a good possibility all of the original native birds that may have migrated here or live here would

be in that because the food was a lot, was flourishing.

KN: But that's the kind of bird you don't see. But now they have that one area by PMRF (Pacific Missile

Range Facility) now where they trying to restore the wetland, yeah  $\dots$ 

EKM: Yes.

KN: ... and that one attracts a lot of birds ...

EKM: It does.

KN: ... which is good.

EKM: And the way that pond is designed would have been similar ... I would imagine ... to how the

interior of that pond looked like ...

KN: Must have looked like. Exactly.

EKM: ... that whole region would have been very similar.

KN: Same like me ... everytime I see that ... I think to myself, "Wow this whole area must have looked like this."

EKM: Yes, yes ... and that was passed down ... of course ... only through stories. Another story would be linked to all the 'ōpae that was linked to the whole region of this flatland, marshy areas would be ... if you look mauka [towards the mountains] where we are located to the north, there is a big hill, it is called, Pu'u 'Ōpae. The reason for the name Pu'u 'Ōpae is that this is the location where all of this 'ōpae shrimp flourished in this lowland was gathered, and exchanged on the top of that mountain ... with the mountain people ...

KN: *Menehune* [legendary race of small people who worked at night, building fish ponds, roads, temples]?

EKM: ... Menehune or other people that were there. Some people say, "Menehune is small." They're not small ... I would say, "They were maybe smaller than the migration that came with Hawai'i Loa which they may have been seven or eight feet tall." But I believe the Menehune would stand about my height, which is a little bit over six feet tall, and not little minaiture dwarfs ... that's my personal opinion.

KN: But compare to those *kanaka* [Hawaiian person or people], they would be small. [Laughter.]

EKM: They would be small, yes, smaller in stature, yes. But I found some of the artifacts up our property from ancient times, and they would fit in my hand a certain way ... so knowingly ... probably the person using it would be similar to my stature. Also, my brother has found very large adzes in the past ... kind of showing that the person that had carried it must have been very large, maybe close seven to eight feet tall and well over 300 pounds.

KN: About where, without being too specific, about where would some of these *ko'i* [axe, adze; adzelike, sharp, projecting, as a forehead], maybe *poi* pounders [stone used to pound taro into *poi*, a paste-like staple of the Hawaiian diet], would have been found?

EKM: Artifacts that I knew about would be nearing the pu'u [hill, peak] I mentioned ...

KN: Pu'u 'Ōpae?

EKM: Yes, Pu'u 'Ōpae.

KN: Okay. So up *mauka* [towards the mountain] then ... on the ridge ... on the ridge.

EKM: Yes, about five miles inland from our location.

KN: So that would mean there must have been settlements back in the day.

EKM: Yes.

KN: And it's *kauhale* [group of houses comprising a Hawaiian home, formerly consisting of men's eating house, women's eating house, sleeping house, cook-house, canoe house, etc; later the term referred to but a single house] maybe a family would live there or something, right? Is that right?

EKM: Yes, yes. Some of the archaeological sites in the museum, in the Kaua'i Museum, would show villages near this mountain range that I talk about. There is this specific energy that some people may admit to or some may not, but definitely there is different energies you would feel at times in this location where you can almost feel welcomed or almost denied to be in the location at that period of time. And I relate it more towards moon phases that can change the outcome of your presence. At times it can be very uncomfortable when you just know, "I have to leave."

KN: Would you say ... that's also the experience on other ridges, other than Pu'u 'Ōpae?

EKM: Yes.

KN: Any way going all the way to Mānā.

EKM: I have experienced that in numerous places on the island. This whole region that we are discussing today, and also in the deep Alaka'i Swamp near the summit, I've felt these energies as well, because I have worked in Conservaton professionally for 12 years. Working with rare and endangered plants and invasive species. That I was doing during my age of 40s, right now, I'm shy of 60 years old. As far as more artifact down lower, there is still some of the old, ancient walls where the people may have had homes or may have had hale [house]. I pointed out one of the hale(s) where archaeologists came down about a year and a half ago with the Department of Hawaiian Homes (Department of Hawaiian Home Lands) for their project for the hydroelectric. They measured it out, and they claimed to have found, or what we have identified as canoe hale where they would build canoes. As a little boy, I would ride my bicycle and walk a lot in this mountain range up here, and there was a lot more walls back in the day. But over the years, the plantation needed to make more sugar for their expenses ... to be more profitable, so some of the walls that were there, were eventually removed and sugarcane was planted in the areas. I did go with a few archaeologists to try and find the locations that they had actually recorded on the GPS (Global Positioning System) mapping, but all of the sites were sort of leveled down. But I will explain what I would have seen back in the day, this would have been back in the early '70s. And then now ... of course ... it's not present anymore. So future development may have to keep in mind that if something was there, they might not want to build homes on the location.

KN: What do you know about the little villages that used to be there, Mānā side, because we know about the one village by Polihale turn off, and the swimming pool, and I had a grandaunty that used to live over there too ... but I think there is at least a couple other villages, do you know much about that?

EKM: The little villages, I'm not aware of that, I can't remember, and my dad would not say too much about the actual location of the villages ... but what he would teach me is where there would be numerous burials in the sand dunes. He would teach us not to cut wood there.

KN: Is this *mauka* [towards the mountains] or *makai* [towards the ocean]?

EKM: Would be closer to ... the one I'm referring to would be right near Queen's Pond.

KN: Okay.

EKM: And *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of near Nohili Dunes.

KN: Okay.

EKM: So there are some rare and endangered plants over that berm that the State and Federal government should be protecting. And that's why I think people with trucks and ATVs should not be out there because they could easily destroy this rare species.

KN: Yeah. Well, does that also extend to military activities too then?

EKM: Yes, it should be for all. It's protection of *iwi* [human skeletal remains], or for any endangered species ... all should apply because there is a Federal law protecting it.

KN: Because we know they get RIMPAC (Rim of the Pacific) exercises, they run their troops up and down the beach, their machinery ... you know ... amphibious boats and stuff like that.

EKM: Yes, they do. They normally restrict the area to the general public when they have their ... I like to put it ... as their war games for training for military purposes. So a lot of the general public is not allowed to visit the area during their practices. But I remember growing up, I used to love to find like military bullets ... shell casings.

KN: Me too. I liked to do that too. [Chuckles.]

EKM: We would find projectiles of the head of the actual ...

KN: The lead part.

EKM: The lead part or the copperhead.

KN: Same.

EKM: Or that's what hits the sand and eventually comes out ... but then again exposed ... or the actual shell casing.

KN: Not too smart, but that was fun. [Laughter.]

EKM: Yes. But that would be present in some of these areas where it is blocked off to the general public for their practices. Also, as a Native Hawaiian, I will be honest with you ... I never been to Nohili, the *heiau* area. I know it's blocked off from Native Hawaiians, and I am a Native Hawaiian, a lawabiding one. And I never go there for any reason. Even pre ... um ...

KN: Pre-9/11 [before the attacks of September 11, 2001] when access to PMRF was not as strict.

EKM: Pre-9/11, thank you. Pre-9/11 you still needed permits to go in the area.

KN: And then after 9/11 was even worst.

EKM: And then it was lockdown ... to basically no entry for people that don't work on the premises, for families maybe ... for people that don't work ... Yet I have clearance because I work at the airport with the same FBI background checks. I work at the harbor with my transportation information pass, that I do the full-background check. I'm a legal firearms owner. I follow and abide all the rules that are set up by the government. And then I am not allowed to go to this location. I don't think it's fair as a Native *Kanaka Maoli* [Native Hawaiian, indigenous] ...

KN: From here.

EKM: Yes, from here ... and not being welcomed on my homelands.

KN: They're the *malihini* [visitors], not us.

EKM: I am hapa [half], so I can still sometimes say, "I am half."

KN: You straddle both sides. [Chuckles.]

EKM: But the thing is, I cannot enter both ways ... as a *malihini* [visitor], as my grandfather was part of the United States Navy, which is my mom's dad, Luther Curtis. He actually, was blown off his ship in Pearl Harbor, he lived and survived throughout the entire war. My dad's grandfather fought in World War I. My grandfather and his brothers would be in World War II. My uncle and dad was in the Korean War Era.

KN: Your kupuna [elder, ancestor] who was blasted off the ship in Pearl Harbor, what's his name?

EKM: So that would be my grandfather, my mom's dad, and that's how I have my *hapa* [half; half Caucasian, half Hawaiian] in me.

KN: What's his name.

EKM: Luther Curtis.

KN: Oh, Luther Curtis. All right ... that's a good story.

EKM: Yes, so he was blown off, and that's how he survived ... he was swimming in the water the entire time trying to survive, and he had PTSD (Post-traumatic Stress Disorder) for the rest of his life.

KN: Awg ... shucks.

EKM: Because of what he shared with our 'ohana [family] that a lot of what he shared was never documented in all of the movies and documentaries I see of what he witnessed was going on in the water, and was very hard for him to fall asleep at night for the rest of his life. He eventually, after the war, he lived through it, he went back to Tennessee where he ended up falling in love with his original high school sweetheart. Which my mom, and grandma was left in Hawai'i to survive, and eventually my mom, Beverly Ann Curtis Manini, came over to Kaua'i with other 'ohana, where they met my dad ... my parents met each other, and eventually got married.

KN: I have an uncle who survived Vietnam but till today he cannot sleep all through the night. He gets anxious in the middle of the night and gets up because he's ... muscle memory for him is to be on guard, so he cannot have a restful night sleeping ... PTSD (Post-traumatic Stress Disorder) from Vietnam War ... so I can relate to that. Can I ask you what you know about ... anything related to military activity at Ka'ula, Ni'ihau, and Lehua?

EKM: I've heard the military is classified so you don't always get to see it happening when it does occur, but my understanding is they would ... shoot ordinances on Ka'ula ...

KN: Ka'ula.

EKM: Yes, thank you ... on Ka'ula. They would also have permission from the Robinson Family to put a weather dome port on the northern side of the island, I believe ...

KN: Ni'ihau.

EKM: Yeah ... Ni'ihau, thank you. On Ni'ihau possible the early '80s where they had to install radars to see any encroaching enemy from the backside of Ni'ihau due to the curvature of the Earth. The satellites was not as great as it is now, so I don't think they need that feature anymore ... unless the satellites should be disarmed, and you may have to go back to traditional ways ... with scanning the radar. Also, I recall a lot of our area out here ... although it's classified, there is a lot of submarine activities in our waters around Kaua'i, but usually around Nihoa and Ni'ihau. On occasions we would be fishing back in the '80s and '90s on the fishing boat in the channel between Kaua'i and Ni'ihau, and we would see submarines that would surface. Occasionally there would be retrievals of test fire torpedos that they would retrieve that is all a part of their training that they go through, whether it's weekly, monthly, or whenever it's called upon for doing. Growing up in Waimea delivering newspaper in the community, we would have to pick up our newspaper near the area where it's called the laundromat in Waimea, right at the Hofgaard Park. Is it Hofgaard?

KN: Yeah.

EKM: Yeah, so they would drop off the newspaper there. So we would have to wait for delivery to come in before we could distribute papers throughout our zone where we deliver, and then we would see the flatbed trailers hauling the exposed test fire or dummy torpedos ... it would be exposed, and they would just haul it right on the road. And that was a normal thing as was back in the day ... a lot of the things they would do, is not like the regulations we have now. Occasionally now, if it is hauled on the road, it's on the same trailer, but it is contained. It's usually blocked off, so you cannot see what it is. So we would see the propeller on the back and the thing was ... you know ... well over 30 feet long ... and sometimes there would be two or three in back on the trailer hauling back towards the base. And sometimes I think they would pick it up at Port Allen which was retrieved after shooting. And then, I don't know if they rebuild it or ship it out, but that's all classified, but it is all part of their trainning exercises that they do possibly year round or during RIMPAC (Rim of the Pacific) when they have numerous ...

KN: Even more so, yeah?

EKM: ... impact ... I would say ... on the waters outside of Kaua'i, Ni'ihau area. And then I also remember from on top of the hill where I live, you could see helicopters landing at the base. So you would see helicopters leave from a ship and land on the island. And it could be anybody landing, it could be our alllies, whether it would be Japan, Korea, or whoever it was back in the day. They could freely come to the island, probably not even going through background checks or even having any resistance ... basically to walk freely on the land ... yet, as a Native Hawaiian we are not able to do that. Which is not fair.

KN: Can I interrupt you for a moment, just to say that we are using my laptop recorder ... I'm using the program Audacity to record this interview, but I'm running out of juice on my laptop. So if we get cut off, I'll call it a pause, and then we will switch to my iPhone, which we can use Voice Memo to record. Is that okay, because we on fire right now. We don't want to stop the groove we got going. Let me ask real fast about ... there are ... because you provided so much information, this is really awesome ... can I go back to your family one more time ... going back to your family past ... is your on either side ... ali'i [chiefly] family?

EKM: I can't really say ... but my understanding with my background is ... we were healers ... for sure ... it could be *ali'i* in possibly the healing side of things ...

KN: Okay.

EKM: Both sides ... both my mom ... on her side ... on her grandpa's side, he was a well-known healer. I know my granduncle was also a healer for using herbal medicine, or even the old way of  $k\bar{a}hea$  [to invoke, cry out].

KN: What's his name?

EKM: He would have been Herbert.

KN: Manini?

EKM: Herbert Manini, yes. He would also attend Kekaha ward church (Church of Jesus Christ of Latter-Day Saints) back in the day. He is buried on the Temple grounds in Lā'ie. Yeah, he died in the '80s I believe.

KN: Okay.

EKM: So he was one of the last ones to do the full healing of practice ...

KN: *Kāhea*?

EKM: Yeah, *kāhea*. He was capable of that. As far as my grandfather ... he's buried in the Kekaha Hawaiian Cemetery with my brother, Hōkūlani, who died as an infant.

KN: What's the name of that one?

EKM: Benjamin Pinihaka Manini Sr. He would be buried just inside where your dad is buried ... just inside, the two of them are buried there.

KN: I have a list here of some places going this way from Kekaha towards Mānā [KN showing EKM a list of place names on his laptop]... I go scroll like this ... if you could scan your eyes through some of the place names ... if anything stands out ... if you know of any story or *moʻolelo* [stories] ... or any information that you know firsthand or stuff that say your dad told you about any of these areas, can you tell us? And there is a good chance that we might get cut off, but that's okay, we'll transfer.

EKM: Okay.

KN: So starting there, and then you go down to scan the names.

EKM: Okay. And ... just for the record too, some of the names that are current may not have been the original names.

KN: Sure. Go ahead and use whatever names you know.

EKM: I just wanted to point that out because I was asked the question by another person doing research for the KIUC [Kaua'i Island Utility Cooperative] project and then he referred to an area that I did not recognize the name, but when they showed it on the map, then I related it to another name. But it's okay, I would actually tell people that every generation may change a name, and if there is another *ali'i* or chief that may take over, he may change it completely. So as long as we're talking about the same area, I think it's most important, instead of the exact location because it is still in the region we're referring to.

KN: Okay. Go for it. I just handed you a map, it's Google Earth Map of the area of Nohili, Polihale, coastal, up *mauka* [towards the mountains], not all the way up, though ... but it includes Makaha Ridge. If this helps, go through the list, and if this helps you jog your memory, then great. It's a series of maps here, mostly around the area of PMRF (Pacific Missile Range Facility).

EKM: Okay. And bear with me because I am Hawaiian but I don't speech fluent Hawaiian so I will try my best in pronouncing some of it.

KN: Okay ... give it your best shot. You can also use this [KN shows EKM a map].

EKM: I live at Pu'u 'Ōpae, and then one of these going be the valley just adjacent to me.

KN: So that's Hā'ele'ele or Hale'ie'ie?

EKM: One of that two, and then ...

KN: I believe it would be Hale'ie'ie because Hā'ele'ele is further.

EKM: So one of them ... there are actually terraces in that valley where looks like people either lived or farmed. That is the location I'm pretty sure if it is the valley I am thinking about or referring to ... that's where the plantation back in the day piped the water that came out of the springs and out of the mountain past these archaeological remains ... where I was told that people lived there, but eventually they had no water because they took that water for the Mānā Camp which house the plantation workers. So there are still walls that are in there that were from the people back in the day. There is also another link ... in the split in that ... I believe in the Mahana Valley. In there ... there were also archaeological sites that I remember seeing back in the day when I would walk all the mountain looking for military bullets ... [chuckles] ... and also, the miltary ammo cans we would find, and my dad would use it as little tool boxes ... the 30 mm and 50 mm cans that the Vietnam and Korean War Era ... they left a lot of this debris back on the property. As it comes lower, there is still some fruit trees, some Native Hawaiian orange fruit trees that are in some of these valleys that is still present till this day. A lot of them died off due to the cattle that was raised all in the same land area that the plantations raised for almost a hundred years, they had the area doing ranching. We do ranching above it in a different section of this property. There's another area that ... it's a lot right now, that's why I'm trying to think ... Kaunalewa, the Valley of Kaunalewa ... where it comes out ... that particular area has walls in that valley too.

\*\*\*Interview resumes; refer to recording IA202241\_2023-11-27\_Eben K Manini(2).MP3

EKM: On the ridge line where the plantations used to do sugarcane ... as a little boy I remember seeing walls ... and then some of the walls in this day and age is gone. It may have been pushed back or

removed for planting sugarcane. But I recall seeing numerous walls in the area in the '70s, and now maybe there's just a few left. I pointed it out to some of the archaeologists and at least one of them said it was a canoe *hale* up on the hill.

KN: Above Kaunalewa?

EKM: Above Kaunalewa to the Polihale side, on that ridge line, yeah.

KN: Okay. So that would mean, there are multiple canoe *hale*?

EKM: There should be multiple ...

KN: So, Pu'u 'Ōpae had and then this area get ... must be more, yeah?

EKM: I would think there is more along the way. In my opinion, I would think there is more because different ridge lines we would find a lot of the old artifact, the adze ... used to dig out the canoe or harvest the wood from the forest. We had back in the day, large *koa* [the largest of native forest trees (*Acacia koa*)] forest. There's areas where there's quarries, where they would make the adze with the basalt rock. So you would see all of the chippings piled up where they would actually shape the stones, the artifacts. They would turn the stone into an artifact, mostly adze for digging. And at times, we would find some unfinished, then some fully finished, and some then broken or damaged from being used, and maybe it would crack. But all of these are still present up on the 'āina [land], in these hills, and in the valleys. In Kaunalewa was a story that my dad told me about a grass hut that's supposed to be on the plains ... on the flatter area, not on the hill. And he would say ... if I see the *hale* [house, building] not to go to the *hale*. I never saw the actual grass *hale*, but I did in my lifetime twice, see another structure that is near where this *hale* should be.

KN: I have heard from Aunty Maha over here a story just like that one time when it was many years ago, like in the late '70s she told us the story of going Polihale night time because the family was camping, they had to come back grab stuff ... on their drive back through the cane roads, they got lost, because sometimes ... you know ... you got to turn yeah? They got lost and ended up going somewhere ... and in the distance they saw a house that they never seen before, but there was no

where else for them to go, and they had to approach the house ... and they got so terrified that they turned around. And that's one story ... sounds similar to your story.

EKM: Yes, very similar. The house that I saw was very large, like a mansion.

KN: Hers one too.

EKM: And it was two stories.

KN: Hers one too.

EKM: And also, I saw it twice in my life. I think ... I was between 18 and 19, the first time I saw it. And then the second time, I was near 50 years old. I saw it at least twice. The house still looked the same, yet if you come another day, the whole area back when I was 18, was sugarcane. I would tell my dad, I saw like a manager's house or something.

KN: Same. Aunty Maha's description was very much like that as well. Which is bizarre yeah ... I mean ... why a modern style house, yeah, instead of a grass house?

EKM: Yeah, in the middle of a field.

KN: But if you go in the daytime, you would never find it.

EKM: And it's all cane.

KN: Yeah.

EKM: It's just back to cane again. In the modern time, when I was about 50, it was corn. But that's the thing ... you see it ...

KN: Oh, even when it was corn?

EKM: Because when I was 50, it was corn.

KN: Yeah.

EKM: The cane was done.

KN: Yeah.

EKM: And it was there. And I couldn't understand, but I remember my dad saying don't go to it, because if it disappears, you may disappear with it.

KN: Yeah.

EKM: I don't know, what it represents, only certain people can see it ... or it's just a time when you can see it? Maybe if you're completely cleansed or *pono* [righteous, upright]?

KN: Maybe it's a similar experience to the night marchers phenomena?

EKM: Yes.

KN: How sometimes they say, "Only happen certain night, certain month, and under certain conditions but not in any other situations."

EKM: I agree ... I agree with that one though ... for sure.

KN: For the record, "My laptop has now given up ... and we are know recording on Kaumaka's device."

I don't believe we lost any of the conversation, so carry on.

EKM: Okay, so what I remember seeing that area which is on the plains and heading back towards that mountain range we are relating to ... I think ... I touched on everything on what I saw, and how I felt, and what I heard in the past ... as far as the grass hut, I never saw the grass hut, it was always

a modern structure that was magnificent ... really, really beautiful. I mean it's almost like very

attracting where one would want to go, but when I was young ... it's like you shouldn't go, because

it is like we don't live in that kind of location, and so you're not welcomed to go ... but it was

welcoming when I saw it. Another place I want to relate to is further back here more where the

traffic lights was back in the day. So there was a heiau [place of worship, shrine] on that hill as

well ... one of the  $P\bar{o}$  heiau(s) was back there.

KN:

Hukipō.

EKM: Hukipō is there too, I remember my dad sharing a story.... There's a lot of big old trees that are

still present there. There was burials in that backside hill mountain range over there, and I believe

there are still some today, iwi [human skeletal remains] inside the mountain there ... in the 'āina

[land] ... in the tunnels or caves that might be there. So that particular area ... I remember my dad

sharing a story that after they buried one of the  $k\bar{u}puna$  or men, that lived in this area, he passed

away ... what they did was, they buried him there, and they would always hear him singing. He

would sing regularly and it would be so loud, that a lot of people in Kekaha town ould not sleep

because it would be that loud.

KN:

Echo through the valley?

EKM: Echo through the valley and then come on out. So ... according to my dad, they took his body or

his iwi, and then they moved him up into Waimea Valley. I cannot tell you the exact name of the

location where they buried him, but I know if I was to drive up there or walk up there, I could tell

you exactly what valley it is in. In the location, till this day, if you go up there ... occasionally you

would hear singing in the location.

KN:

What kind of music?

EKM: It's Hawaiian. Acapella.

KN:

Hawaiian songs?

EKM: You can hear him, just singing. You can hear this language, just going. And you can be thinking like, "I'm hearing something." But I was told ...

KN: Not chanting, just singing?

EKM: Singing or chanting ... it's a combination.

KN: Okay.

EKM: And you can still hear him, and according to my dad, it's the person they moved from Kekaha to that location.

KN: Because it didn't happen before that?

EKM: It didn't happen before. Now there's also another location near where I grew up alongside the mountain, where it's right under Panini's, which is a *heiau* [place of worship, temple] up there as well. There's also singing.

KN: By where the houses are?

EKM: Yes, just below the houses.

KN: The houses took over where the *heiau* was? Is that right?

EKM: That *heiau* is present in one of the people's yards.

KN: Okay. (Chuckles.) That's the area we went the other day. \*\*\*\*\*KN speaking to HKA.\*\*\*\*\*

EBN: It may not be approachable how the property lines are ... it supposed to be a flat right by the cliff.

KN: Okay. Got it.

EBN: It looks almost like a little putting range.

KN: Yeah.

EBN: But that what I was told is the *heiau* [place of worship, temple] right there.

KN: Make sense.

EBN: Now ... there also used to be a *hale* [house] right behind it that Bishop Takahashi from the Kekaha Mormon Church would have to occasionally go up to bless, because the people living in the house couldn't go in certain rooms of the house. I think it's for whatever cultural things was happening in that period or in that state ... I want to say ... because they're not in the present yet, they are active in what they do ... they are not allowed to go into certain rooms. So, he would have to go bless, and he would see people in their home ... which was probably this home was built upon this sacred hale or whatever was there ... where they would prepare to present their offering or respectful duties to the heiau itself. But below that, we would also hear singing. So somewhere in there, there is probably a person chanting or singing that still may reside in that mountain range there. A lot of the graves there were broken into way back in the day for archaeological studies. Some of them where shipped off to the Smithsonian Institute. Artifacts and other things were disturbed. Some of the caves was exposed because we had a cattle pasture along that cliff line ... and then we would drive cattle, and we would see the exposed iwi [human skeletal remains] all in this location as well. As far as going down again back towards Polihale, I've seen two areas back in the '80s that had iwi in the upper caves, in the location where ... KIUC (Kaua'i Island Utility Cooperative) wanted to do a hydro line coming down from the upper mountain range. I mentioned it to them, my son and I went back, I could not find the exact cave anymore because there are a lot of wild goats in the area, and seems like the goats desecrated the caves where the iwi used to be. Now, I only could find bedding areas of the goats all with a lot of goat poop all in that vicinity. But I did mention to them the approximate location where it was, so if they were to put waterlines or things, maybe to avoid at least where I saw in the past out of respect. Even though it's not there, I still want to make sure we're mindful of what would have been there before the present. Along that same ridge line going Polihale from there to the Magazine location where the military base is now, there's still some significant cement areas where some of the artillery guns were set up to defend Hawai'i back in...probably during World War II. So, the platforms of the concrete are still there. I

don't know if the area was ever checked for foreign matter in the soil. This whole area there is all...supposed to be all Department of Hawaiian Homes (Department of Hawaiian Home Lands) property which is trust lands for the Native Hawaiian people. The modern maps that I've seen just a few weeks back in Waimea High School...the DLNR (Department of Land and Natural Resources) came to present their new...proposal for Kaua'i...that lands are not even declared on their personal maps...its defined as Kekaha Game Management. But it's not, it's actually Department of Hawaiian Homes trust lands for the beneficiaries. I just want to make sure on record that people know that if a State entity is making a decision to allow things to continue, that it should include the beneficiaries as well because it could easily be soiled or polluted by any other activity or unnecessary mishaps. Along this same ridge line my son and I saw debris on one of the ridges. We went over about three weeks after that ... this happened about ...

KN: Military debris or plantation debris?

EKM: Military debris. About one and a half to two years ago we went down to go check along the edge of the drop, which is little bit pali [cliff], but visible from the highway ... you will see debris that looks like house debris or hurricane debris, but actually it's a destroyed rocket that impacted the 'āina [land] right there. It's completely blown up with aluminum pieces just scattered all over the hillside. I reached out to the Pacific Missile Range. The person that called me ... within a month he was relocated or reassigned ... so, no follow-up. I called the NTSB (National Transportation Safety Board) on O'ahu, I told them the location, they asked me to contact the base ... because NTSB should know about everything that hit, I did not know if it was foreign or not, I wasn't getting a clear answer. My son and I went back down the cliff, we started walking the area, taking pictures. Some of the material had identification on it. So, it does belong to the United States. I sent that picture back to the base ... Pacific Missile Range. Eventually they contacted DHHL, Department of Hawaiian Home Lands, and ADC (Air Defense Command) representative. ADC representative contacted me saying, "Oh, it's not on Hawaiian Homes Land so don't worry about it." I mentioned to that person, I have the old map from the 1920s and from the 1990s, and both maps show that the projectile or the debris is on DHHL property ... but their new maps are showing different ... as is the new DHHL map that they posted over in Waimea High School a couple weeks back. So, it's just like their changing boundary lines for things that may have happened in the past. I remember my dad being in opposition for some of the rockets they would launch off of Nohili Dunes, because they do it quite regularly. His concern was ... there might be one that goes crazy,

and might impact us because we lived on the property. It was always said, "Don't worry about it, don't worry about it." Now I don't know if my dad knew if there was a rocket that actually impacted, because when we did our research, my son and I ... we went online to look how the debris we see, to measure out how much debris, and try to estimate what this rocket looked like ... the rocket would have been more than 40 feet tall. So, this ...

KN: Good size.

EKM: It's a good size rocket and then the one we saw that he could actually ... it was allowed for the general public to see ... it was actually launched off of a ... it was either a ship or a sub ... because they don't show the whole thing ... and it was launching off of the water...so it's coming from either a ship or a sub...and it's supposed to be like one of the earlier nuclear type mini warheads.

KN: So, you think soon after World War II era?

EKM: The model of what we saw or what we compare would have probably been Korean War or right after Korean War.

KN: Okay. Fifties, '60's?

EKM: Fifties, '60's type of rocket, because then it changed later. As a mechanic for more than 25 years, we go through a lot of fittings, aluminums, air conditioning, you name it ... lot of the material on it was almost technology from the '80s even though this rocket should have been back from the '60s ... it shows how much ahead the technology was before it came to the general public. That's what I was saying because I left ... everything I saw there ... I left ... because it is supposed to be cleaned up and people take responsibility for who it belongs to ... this is a military 'ōpala [rubbish, trash] ... it should be cleaned up because at some day or age maybe Hawaiian people will be back on the land or maybe not with an award but maybe they should be allowed to visit their home ... like I should be able to visit Nohili even though I cannot. But by changing the boundary to quiet people down, I don't think is the answer ... it's still the military needs to clean their mess. It also reflects back on O'ahu with the fuel tanks. Yeah ... jumping over to here ... my dad would tell stories how during World War II there's a fuel farm on the base, on Pacific Missile Range that has

tanks under the ground ... so my question would be ... has those tanks been checked for leakage because of its age or were they decommissioned from the ones during the war? Because my grandfather Benjamin, my dad's father, was part of the people digging up the ground to put the tanks in, and they would come across a lot of *iwi* [human skeletal remains] when they were doing that ... all they had to do was put it on the side because war was at hand ... and they somehow buried it somewhere else ... I don't know if it was all together or separately but the objective was to put that tank in the ground, and then what they did was drop bombs on top of the tank after it was buried to make sure it wouldn't blow up, but that was only with the projectiles back in that day and age. It wasn't like what we can now ... where we can shoot down like 80, 90, 100 feet even, but those are old technology. But that was things that happened on these lands where this permit is requesting a renewal of these areas ... where they have desecrated in the past ... where they restrict certain families from visiting. They have Hawaiian families working there ... don't get me wrong ... some of the Hawaiian families were there for three generations now.

KN: Yeah, but that doesn't guarantee anything, that doesn't guarantee....

EKM: It does not guarantee their ability to visit in the future. As we know after 9/11, everything tightened up. Yet for me, I only worked there one summer back in the day, and I was never hired even though I applied. I was never allowed to just visit on my own. I figure, "You know what, just stay away, that's the best thing, you're not in their way." But the thing is, we have the right to visit, especially Nohili Dunes area. It should be open for the General Public Day, like they have Fourth of July Celebration for the general public. Where's our Hawaiian Day to go and visit where they can allow us to go on?

KN: Free range.

EKM: Free range, just like Fourth of July ... this is for you show your genealogy, you show you are not a criminal, or violent person with your federal background check like I possess right now ... it's what I have because it's my job. And at least be allowed once a year if you choose ... this is the day ... then you make effort to go that day. Not go any day of the year ... I ask out of respect ... yes, you have an operation to do, but give the native people that opportunity to go once or twice a year. If there are too much people, again impact ... then we may have to divide it up in different periods because if you have *koko* [blood], you may be from anywhere on the planet ... you still have the

right to go visit ... it's your heritage. And we all related in one way or another if we truly believe in Adam and Eve ... then we all tie back in ... respectfully. Yes, but please ... they should think about like another opportunity for the Hawaiians ... not to go to the restaurant Shenanigans and watch the fireworks, but go to our cultural location, where we want to feel our ancestors ... the energy of them ... and not be chased away on the beach when you want to go down to Queen's Pond ... and they say, "This area is closed, you gotta get out of here." Because it has been pushed back more and more over time from the '80s until now. You can't go as close to Nohili as you could back in the day to even fish. But sometimes we just want to feel the *mana* [spiritual energy] of the area. As far as other locations, my dad would say had more guns going towards Polihale on the ridge lines than had.... He claims there was a small railroad track on the pali [cliff] where the guns could go from one pillbox to the other pillbox. I never scaled those cliffs or pali over there so I don't know too much about that, but he would say that the pillboxes up there was all concrete and they could run this track with the gun going from ... the turret gun going from one bunker to the other bunker, and then hide again in the bunker so it wouldn't be attacked by air ... all of this was during World War II. But I know the ones I've talked about over where I have visited within the last 10 years, are still there ... not of it was fully decommissioned ... which means, if you are a Native Hawaiian, that's 'opala [rubbish, trash] on the land ... or it changes the whole effect of the how the water will flow ... or what was there before ... or what you can do in the future ...

KN: Or gathering rights.

EKM: Yes. Because all of this now is taking away areas where vegetation could flourish, because now it's all like a concrete bed area. You said, you folks were there this past weekend so up at Pu'u 'Ōpae.

KN: Pu'u 'Ōpae.

EKM: So, as you would drive further down, almost to the drop off on the edges, that's where these things would be located. If you ever go back, you are going to see tall telephone poles ... some of the things I am talking about is right there ... all the big concrete slabs ... some of the metals are still there yet ... it's almost like you could put ammunition projectiles to hang it on racks, it's still there yet. It's history, the thing is ... is that ... is it safe to be there? Or the contaminants in the soil ... has it been tested? Or why is it still there? World War II has long passed. In the area above, we

... I, myself has found a projectile when I was about 12 or 13 years old. I did not know what I found, because I found a lot of small bullets like you spoke of earlier, but this was like the mother lode. I found the biggest bullet ever and I was so proud ... so I dug it out of the ground because I

have found shrapnel from projectiles fired probably from the ocean into inland. So, where we are

see the back half of it and a piece of metal was showing ... I dug it out of the ground, I flipped it

see the back half of it and a piece of metal was showing ... I dug it out of the ground, I hipped it

over, it was hollow. So, I thought that was a bullet, but it was not. It was actually the projectile

from the ocean inland.

KN: The test one, instead of a live one.

EKM: Yes, so the hollowed out ... after I got a size 14 boot up my butt from my dad when I brought it

home all proud ... "Dad, look what I found." And I got a swift kick in my butt, and then a slap in

the head. [Quoting his father.] "Because you know, you could have died." Because if the hollowed-

out part was solid, when I dug it, it could have blown up, and I would have been dead.

KN: Yeah.

EKM: And I did not know this. So anyway, I still have that projectile till this day. I remember the tears

and the pain up my spine from that boot giving me a swift kick, and my dad was close to 300

pounds ... so, yeah, it was a pretty good hit. [Laughter.]

KN: Yeah.

EKM: Very memorable.

KN: Sounds right.

EKM: [Quoting his father]. "Whenever you see this ... ever ... don't touch it." Part of the projectile had

like rifling on it ... where it would spin out of the gun. His theory of being an ex-military said it

probably came from the guns from the ocean, shooting inland. So, there's shrapnel throughout the

mountain range up here. I found one of the projectiles ... believe it or not ... my son, on one of his

birthdays, might have been 22 or 23 years old ... he, myself, and his girlfriend...he just wanted to

go hike down the ridge line, because he never went down there ... so I said, "Okay, we go." So, we took the whole day, we walked down ... believe it or not ... he found one too. Now, the internal part that I mentioned ... the one I found wasn't there, his was hollowed but there was a lot of pieces ... almost ball bearings all scattered on the ground. So, it was, like, it was disarmed.

KN: Like shrap ... what you call...like shotgun.

EKM: Yeah, like shotgun blast ... like thick, though ... like marbles. But it was left on the ground, it was disarmed or deactivated, but some of the remains was still on the ground. What they used to take out the core, I would guess ... yes, of the explosives ... so it made this thing unaffected of exploding ... but he wanted to take it home for his memorabilia. So, I said, "Brah [Hawaiian pidgin language short for braddah or brother; hypothetically speaking], that's a long walk." And the thing is almost like 40, 50 pounds of heavy steel. And he carried it all the way back out, because that's his. So, in our family we have two, one that I found and he found as an adult. But it's there. And occasionally you will see the, head or the trigger mechanism which is made of almost brass. When it blows, its's almost like lead, and it flies. And I found one of those on the roads when I was repairing the road. It actually, unturned ... almost like a compass with a reading ... almost like lat. (latitude) to long. (longitude) numbers ... And before my dad died, he said they turned that dial for the coordinates of where that projectile supposed to hit. So up there, like I said, eventually we are going to have Native Hawaiian there ... but little do they know ... our area was soiled by the military.

KN: Ordinance.

EKM: Ordinance. And it's still not cleaned and yet they still utilize our 'āina [land] in the modern day, but not have cleaned their 'ōpala [rubbish, trash] of the past. We all know about Kaho'olawe. We no talk about Pu'u 'Ōpae area. They talk about Waimea Valley, Mokihana ... Mokihana was also a target area ... public hunting is done there now.

KN: Yeah. And of course, Ka'ula is still happening today.

EKM: Ka'ula is happening to this day. Okay.

KN: And we don't know about Ni'ihau. They could have been doing this all along.

EKM: And Lehua as well. They might have hit Lehua.

KN: Yeah. Exactly.

EKM: So, there could be strays. But in our area, they never went in with the metal detectors to check to remove all of the unexploded ordinances. In Mokihana, they burnt the whole mountain back in the day, after the war. According to my dad, as a cowboy with Robinson, they went with the minesweepers and checked the whole mountain for any, and if they found any ... they would put a charge near it to ignite it, and if it was big they knew it was live ... and if it was small, it was a dud or not active. Well, all the years that followed, after that burning of that forest, the grass grew back ... the Provisional Government did not want the community to go there because there still could be some that snuck under the dirt at a different trajectory ... which could be underground.

KN: So prior to '59 ...

EKM: Prior to Statehood.

KN: ...Territory days?

EKM: Territory days. They allowed Robinson to use the area for their cattle for ranching ... so if the cattle steps on it, and blows ... it's a lost to cattle, and not the general public. So, my dad, as a cowboy, paniolo with Robinson, they would go in there, and occasionally they would find an ordinance. They would tie their handkerchief up in a tree ... a lot of it was haole koa [or koa haole, a common roadside shrub or small tree (Leucaena leucocephala)], and the koa was very tall so you could stand on the top of your saddle seat, and the tree would still be above your head at times.

KN: So, it was a marker.

EKM: Yes. So, you tie your handkerchief so you can see it from a distance, and then they would call the ordinance from O'ahu to come over. The cowboys would bring them back so they could identify

the target, then they would set a charge, and according to my dad ... on three occasions that he knows of ... he knows personally ... one was live, two was duds. So again, the charge is set, is a small charge ... it's a bang ... and if it doesn't increase to a big explosion, then that projectile was already disarmed or dud, maybe it got soiled from water or whatever it might be ... so it's contaminated, it can't explode. But one of the three was live. Hunting up there, I found projectiles on that mountain, and I would tell the hunters that I know ... according to my dad's story was ... you only ride your horse on the horse trails, because if you go off the trail, you might step on an exploded one that still could ignite with the wake of your animal and yourself. Now, the general public goes there weekly since the 1980s because the State of Hawai'i made it public hunting. And

nobody talks about the unexploded ordinances that could be there ... which this is all military again

KN: Can I interrupt you now only in the interest of time? So, we been like now ... almost an hour and

related with continuation of the new extended lease that Pacific Missile Range wants.

a half ... we could easily go another four hours ... [laughter] ... which is awesome ... and maybe another time we will have that opportunity. But if we can bring this interview to a close right now,

and then ... we'll provide you the transcript when we get those prepared and stuff like that ... and

then we are getting ready for another interview after this. Mahalo nui [Thank you very much]. You

the best.

EKM: Okay. Mahalo [Thanks].

### ORAL HISTORY INTERVIEW

With

Bill "Billy" Dan DeCosta [BDD]

November 28, 2023

Office of Councilman Billy Dan DeCosta, Līhu'e, Kaua'i

By

Hannnah Kaumakamanōkalanipō Anae [HKA]

Recording file name IA202241 2023-11-28 Billy Dan DeCosta.MP3

HKA: Welina kākou [greetings everyone],¹ today is November 28, 2023 we are on the mokupuni [island] of Kaua'i, in the kūlanakauhale [city or town] of ... Līhu'e ... I am Kaumaka Anae representing International Archaeology, LLC. We are conducting Cultural Impact Assessment interviews for Pacific Missile Range Facility (PMRF) and Kōke'e Geophysical Park Observatory (KPGO) Succeeding Lease and Easement Areas. I am here with Billy DeCosta, and Billy can you say your full name?

BDD: My name is Bill Dan DeCosta.

HKA: And do I have your permission to record this interview?

BDD: Yes, you have my permission.

HKA; : Before we start, I would like to say, *e kala mai* [excuse me] if I seem so *maha 'oi* or brazen, but it's not my intention it's just for this interview purposes. So let us begin. First is *mo 'okū 'auhau* [genealogy], your genealogy or *pilina* [connection] to the 'āina [land], Mānā area, or Kona area of this island which is Waimea, Kekaha ... in that area ... what is your connection?

Most Hawaiian definitions were sourced from Ulukau: Hawaiian Dictionaries online (https://wehewehe.org/gsdl2.85/cgi-bin/hdict?l=en). In some instances, the subjects supplied definitions and in others, the interviewer provided a translation.

BDD: I grew up in the area right outside of Waimea. I believe it's two miles east of Waimea called Pākala, Makaweli is another name for it. It was under the Robinson Sugar Plantation. We lived on the beach of Pākala neighborhood.

HKA: About how long have you lived there?

BDD: My dad was born and raised in Pākala. I lived there all my life until I moved away to college until I came back. I live currently on Kaua'i.

HKA: What is your familiarity of Mānā and the Pacific Missile Range Facility?

BDD: Mānā is the largest white sand beach in the state. We would go out that area during the *moi* [threadfish (*Polydactylus sexfilis*)] season, and fish for *moi*. We would throw net and get '*opihi* [limpets]. We would camp on the beach. Polihale was our retreat on the west side of the island. The east side, they would do Hā'ena and the Nā Pali Coastline, that was their retreat. So, in everybody's *moku* [district] we have an area where we culturally gather and take resources. The Mānā area was very abundant at one time. Mānā is also known for their wild goats that actually come down the beach today. We used to hunt those goats all the time. We have wild cattle in the valley. It's a very good food source. The one thing I believe that most people don't know about Mānā area that during the Plantation Era there was a cold pond ... there was a spring that ejected cold water out of the ground. After we would swim at the beach, or fish the *moi*, or throw net, or gather '*opihi* we would go take one cold shower in the cold pond.

HKA: Isn't that refreshing. So refreshing yeah?

BDD: Yeah. Those are ... I think ... memories that a lot of the kids today don't know about that was special.

Of course, the great surf in that area that ... Majors Bay and Polihale have excellent breaks out there for surfing.

HKA: So the *moi*, there must be a lot of water going into the ocean too because they like a little bit of the freshwater?

BDD: We have freshwater that actually comes up from the Nā Pali Coast. I'm not sure if we have the same

amount, Pre-Plantation, during the Plantation, and Post Plantation. I know when you take the

Zodiac Tour you would see a lot of the old waterfalls that are petroglyphed into the mountains so

you knew where the water used to flow. And then there is still some of the rivers that ... Miloli'i,

Nu'alolo ... there is still some water that comes down.

HKA: You must have seen a lot of different fish when you were growing up.

BDD: Oh, yeah. The aquatic resources on that side was very bountiful. I must say, there are still good

grounds till today actually. We do have access that the base give us and that is very important. It is

more of a controlled access. I cannot tell you if it's better or not for the community. Maybe with

the controlled access, the fishing and the gathering is more abundant. I believe maybe if it was free-

access, the abundance wouldn't be as much ... I don't know. I do know growing up, we did a lot of

self-managing ourselves. Our kūpuna [ancestors, elders] .. .as you Native Hawaiians would say ...

would tell us, "You take what you need for your family, don't take more than you need, and leave

back." So, I like to practice that till today with my own children.

HKA: So did you guys [BDD and his family] gather *limu* [seaweed]?

BDD: Limu too.

HKA: What kind of *limu*?

BDD: Ogo [limu, Manauea (Gracilaria coronopifolia), a small red seaweed], we did the red limu. A lot of

time, a lot of people don't know, the scissors is your best friend when you harvest *limu*, you don't

pull *limu*, you cut with the scissors, and you don't cut it too short. The *limu* is supposed to look like

waving fans in the air, like fingers. When you cut it too short, you can ruin the *limu* ... and when

you pull. Like to do with our sea turtles ... when you get too much sea turtles, they really over graze

the *limu*. So everything has to have a balance, yeah? I remember when I was a boy growing up until

about seven years old, we used to harvest turtle. The turtle go into the bang-bang net, get all the

fish, but we bringing the turtle home.

HKA: It's like the beef of the sea.

BDD: That's the best, better than fried chicken. Better than steak on the grill. Grandma would make a pot of turtle stew ... whoa. The fat was green, greenish-yellow. Plenty people don't know that. All of our environmentalists, they don't know that this was the ways of our generation, how we grew up.

HKA: Did your family have family lands? Where?

BDD: My parents worked for the plantation. My mom had family land up in the Kalaheo area ... acreage of land ... they were ranchers and pineapple growers. My dad guys [BDD dad's family] had a property by the ocean, but it wasn't their own property. He was a supervisor for the plantation.

The plantations brought in the Portuguese to supervise the different ethnicities throughout the Plantation Era. When the different ethnicities came, the Chinese, the Japanese, the Filipinos. They all came with their dialects, and their own ethics and morals. They became a melting pot of this diverse group of people that got along. The missionaries wanted to intervene with a nationality that could work on both sides. One with the large White land owner and two with the ethnicities. Because the Portuguese had experience with sugar plantations in the Madeira Islands, they knew how to grow and cultivate sugar. They were the luna(s) or supervisors, foremen, stuff like that ... My dad was one of them. My grandfather actucally, John Costa was the last remaining Sheriff of Pākala who had a permit to carry a firearm on his white horse. He was the sheriff that would ride around and police the town. His motto of being a sheriff was, "I don't tell people what to do, I mentor good behavior, and the community tells each other what to do. The community governs each other." And that's how we grew up right? Aunties and uncles hānai(ed) [fostered, adopted] us they tell us what to do. "Eh, boy you get too much fish in the net. Boy, one throw enough, you get 32 fish. What you going do with all that fish? No be throwing again." Before we no sell fish, nobody sell fish, maybe the 'ahi [Hawaiian tuna fishes, especially the yellow-fin tuna (Thunnus albacares)], because that's big fish, good money. All the reef fish, we poke fish, dive, the 'uhu(s) [the parrot fishes, of which Scarus perspicillatus is among the most abundant and largest], the kala [surgeonfish, unicorn fish, Teuthidae], the nenue [chub fish, also known as rudder or pilot fish (Kyphosus bigibbus, K. *vaigiensis*)]. We no sell fish.

HKA: Yeah, we share with the families.

BDD: We share. Just like pig hunting ... I'm an avid pig hunter ... if you ask anybody, not to brag but if you ask anybody, our name, the DeCostas, they noted for some of the best pig hunters on the west side ... my dad never did sell pig. They always go share. The Filipinos share the vegetables in their garden. The guys who poke the fish, the divers, they share the *uhu* [the parrot fishes, of which *Scarus perspicillatus* is among the most abundant and largest] or the *kala* [surgeonfish, unicorn fish, Teuthidae], the one with the horn. Put 'em on the grill, I don't know if you ever had that.

HKA: Yeah.

BDD: You put 'em with the guts and all on the grill.

HKA: Yeah.

BDD: Chili pepper water and vinegar ... whoa that's the best.

HKA: Sometimes I clean the *na 'au* [intestines] of the *kala*, and I put 'em in for the soup 'ono [delicious].

BDD: Woof. Nobody realize that *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] stuff. And then my mom's two first cousins, her dad's brother had two sons, and they were *paniolo*(s) [cowboys] on the west side. The plains of Mānā and Kekaha where they raise the cattle for the AMFAC Sugar Plantation. So I used to ride my horse when I was young out in those valleys overlooking Mānā and herd the cattle, put them in the corrals, take 'em out to be shipped out on the barge to go to the mainland. I had an experience growing up in that area in that *moku* [district].

HKA: You mentioned earlier, your ancestor named Addie, had the sugar ....

BDD: Yes. Addie Citrol, she was married to Jack Citrol, but Addie was a DeCosta. She married this European guy.

HKA: And how is she related to you? She is one of your great aunts?

BDD: She is one of my dad's great aunties from the Portuguese side. Addie, we believe as a family ... Addie through generations, because the Portuguese was the cultivators of sugar in the Madeira Islands, they needed a boiling point for sugar ... for some reason, I guess ... Jack ended up getting the credit for that. But we have something on our family legacy that the DeCosta Family gets residuals from this formula that they melting and cooking sugar at a certain temperature, crystalizing it. They yield a higher sweetness to the sugar. That was the C and H Sugar. Pretty interesting, we have little bit of a story. I guess, every family crest has a story ... that's a little bit of our story.

HKA: Do you know where your 'ohana [family] burials or any ....

BDD: I married a Hawaiian girl, I don't know too much aboutt the burials on the west side or any place on the island.

HKA: Or just like cemeteries ... like where your grandparents are buried?

BDD: Yeah, in Kekaha. The local cemetery outside of the Catholic church in Kekaha. And then we have the veteran's cemetery because my dad was in the military. A lot of the family members join the military so they have the veteran's in Hanapēpē. But out in Kekaha they have several cemeteries. There is a cemetery on the beach going out to Kekaha, next to the Kekaha Boat House. And if you want to talk Nā Pali and you want to talk Polihale, the cliffs going to Nu'alolo, there is a lot of those areas where royalty was buried in the caves out there. There is a lot of cultural significance of families, generations still enjoy to do a boat cruise with their family to go visit their ancestors who could easily be buried in one of those caves.

HKA: Did your family practice any type of *lā* 'au lapa 'au, Hawaiian medicine?

BDD: No.

HKA: No *koʻokoʻolau* [all kinds of beggar ticks (*Bidens spp.*), most native, a few introduced, some used medicinally by Hawaiians, as a tonic in tea] tea or *māmaki* [small native trees (*Pipturus spp.*) with broad white-backed leaves and white mulberry-like fruit]?

BDD: If it was, I don't know too much about the Native Hawaian language that you use, because the Portuguese may have another terminology that they use ... right ... growing up.

HKA: Plants maybe your grandma or parents used?

BDD: I know they used to make the tea with the *māmaki* [small native trees (*Pipturus spp.*)], and I remember that. I know the one that they call the *lonomea* [a native tree (*Sapindus oahuensis*), to 10 m high, with ovate leaves 10 by 20 and 5 by 13 cm; it is found only on Oʻahu and Kauaʻi], which was one black olive that they could make soap and it was a laxative for the stomach. Of course, the *kukui* nut [candlenut] grandma guys [grandma guys is meaning grandma and the others in the family within grandma's generation] used to use little bit of that .... in the *poke* [diced fish with other ingredients].

HKA: 'Inamona [relish made of the cooked kernel of candlenut (kukui) mashed with salt (perhaps a contraction of 'īna 'i momona, sweet garnish)].

BDD: Yeah. 'Inamona. That would help with the constipation and stuff. There is a lot of little stuff. Of course, grandma guys they weren't native Hawaiian but because they were from the same community and the different ethnicities all inter-mingling ... so maybe when my grandmother would share sweetbread from the Portuguese side, or my mom's mom Trinidad Martin Escobar, when she would share her Montecao ... a Montecao is a sugar cookie, and is almost flaky, and it's made with homemade alcohol .... so when they would bring the Montecao, the Japanese would trade the sushi ... the Filipino would trade the Pinakbet or the Dinuguan with the blood meat ... and the Native Hawaiian, they would trade the poke with the 'inamona. A couple times my grandma would have a shell lei [necklace or garland made of shells, flowers, leaves, and/or feathers etc.] on the shelf, and we would be like, "Oh grandma what is that?" "That would be from one of the Ni'ihau families sharing because they were so appreciative." At one time we would think, "That's just one shell lei, oh, easy, we can go pick the shell today." Today that thing is worth more than gold. Yeah, they worth more than gold.

HKA: That's so amazing yeah, and so beautiful gesture too.

BDD: Anything you make with your hands. A lot of people don't understand yeah ... we have the vine we call maile [a native twining shrub, Alyxia olivaeformis] and mokihana [a native tree (Pelea anisata), found only on Kaua'i, belonging to the citrus family] is the berry. I know how to pick maile. I have a funny story because my youngest boy never got into Kamehameha but when they had Founder's Day, they called me to pick *maile*, I took my boy, who never passed the interview, he was eighth grade, and I took him to go pick maile. He said, "Dad what we picking maile for?" I said, "Oh, Kamehameha Schools get Founder's Day, and your mom, she's a graduate of Kamehameha, and she like donate some *lei*(s) [necklaces or garlands made of shells, flowers, leaves, and/or feathers etc.]." He said, "Dad let the Kamehameha guys [the students and/or teachers of the Kamehameha Schools or affiliates of the school] come pick their own maile. They never let me get into Kamehameha. I stay over here picking maile, and I go public school." I said, "No, no, no boy ..." I teached my boy how to pick maile. A lot of the maile we picked, we twist with our hand, we hold tight, then we pull, and we break the stem with our fingernails so the new shoots come out. My grandpa taught me this. My grandpa always made us carry this sock, like a white sock, we call 'em a durham bag, it was a tobacco bag before. We would carry a pocket of fertilizer, we would get from the sugar plantation, everytime we take maile from the bush, we would take one small pinch of fertilizer, throw 'em down by the plant, and that would be for the next guy ... because that maile branch with the fertilizer, you already picked the maile ... but you fertilize it for the next guy. Amazing how beautiful the *maile*. Hawaiians say, "Mālama the 'āina [Care for the land], mālama what you gather." Same like when we go hunt, you catch one fat pig, and stay  $h\bar{a}pai$ , pregnant, you supposed to let 'em go. It's hard to say that and couple times I never let 'em go, because how you going take the dogs off? But you wanna try and mālama your own.

HKA: You're not going to waste it either.

BDD: Yeah. Mālama your own management of your resources.

HKA: Like mullet season, taking the mullet when the wahine [female] carrying all their eggs.

BDD: When they all carrying the eggs. You cannot do that. When you pick lobster, you look at 'em and get all that orange eggs, you got to put that lobster back. We used to take the fin, and broke one fin off the back, and you know why? So the next guy get lobster, "Eh, no more the fin." Then know that this is a mother, because sometimes they no more the eggs.

HKA: Yeah, that's true.

BDD: So that was one good practice, how we used to do it before. You might not ask me this question, but

PMRF (Pacfic Missile Range Facility) are the stewards of that land. They have a responsibility to

care for the land. I not just talking about the land, they are responsible to care for the people's

cultural gathering and harvesting rights. That's their job. They are only temporary stewards of that

place. They need to make sure that the people can still practice what they used to.

HKA: Yeah. There is a lot of people who used to fish out there.

BDD: Big time. Camping too. We used to camp out there, now we cannot camp since ... 9/11—9/11 has

long passed. Maybe it's time they open up some camping. Because 9/11 has passed. Let me tell

you, you can record me on this ... the base, I mean pass the base is Polihale State Park ... the State

gives out permits, the permits are taken online, you cannot discriminate whether you local or

whether you non-local. Mainlanders can request a permit. Sometimes Polihale State Beach no more

room for the locals to camp. But on the base, if they would give out so much local permits to people

with one driver's license, then they could let the locals go camp, so just think about that in your

cultural survey.

HKA: I will get that.

BDD: Right there, you no need get that, I tell you what it is.

HKA: Are you aware of the mo'olelo [stories] of the Menehune [Legendary race of small people who

worked at night]?

BDD: The stories? Yeah, of course.

HKA: Can you give some of your mana 'o [thoughts or beliefs]?

BDD: The Menehune(s), they're true you know. There is many stories that they built the tunnels and the

stone walls, they were actually here before the Native Hawaiians, they were a generation, they

actually got *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of moved out ... I know there are some *mo'olelo*(s) that said they lived up in the caves, higher up to escape from being over ran by the Native Hawaiians. I never really ... experienced them but the stories are very impressive. Get the one about the lizard, the lady in the water. She's a half lizard, half lady.

HKA: She's a mo'o [water spirit, lizard].

BDD: Yeah, and some people can actually see 'em.

HKA: Where is this at?

BDD: Out there on the west side, in the ocean, in the different areas. I've never experienced it.

HKA: She's in the salt water, not the fresh water?

BDD: No, freshwater.

HKA: Freshwater yeah, because the *mo* 'o, they usually in the freshwater.

BDD: I told you get the Miloli'i Stream that come down to the ocean. You get the Nu'alolo come down, so you get quite a bit of river esturary. The stream that come into the water so ...

HKA: So, that's where she lives. You know her name?

BDD: I don't know. Maybe she knows my name.

HKA: That's a good summary of the *Menehune* [Legendary race of small people who worked at night]. Have you heard about Pele, Hi'iaka, and Lohi'au saga? Hi'iaka comes to fetch Lohi'au, Pele's lover on Kaua'i?

BDD: If you refresh my memory. I used to tell a lot of stories when I was the environmental teacher, for 10 years up in Kōke'e for the Department of Education. I taught environmental studies. I know some of the stories, but I haven't taught it in a while now so I *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of forgot it. I know there was a story up in Kōke'e ... I wouldn't know where to begin ... but there is a lot of *mo'olelo*(s) [stories], I guess the Westerners call it folk tales, but I think we view it as a more true stories.

HKA: I do.

BDD: They call it the folk tales.

HKA: Yeah. *Moʻolelo*. Folklore. Are you aware of the epidemic or diseases after Contact? I know a lot of the Hawaiian population was decimated.

BDD: Common history.

HKA: Yes, common history, but in that specific area, in the moku [district] of Kona?

BDD: I honestly cannot answer that. I'm sure it happened throughout Kaua'i.

\*\*\*\*\*Stricken from the record because no information was generated about the epidemic\*\*\*\*\*

HKA: How about the Plantation Era .... you were around during that time? So what was your experience? Your family was part of that Era too right?

BDD: Yes.

HKA: Growing up during that time, how was that?

BDD: You want me to tie it to any medical history or plague? I remember growing up, we did not go to the hospital all the time. We had 'ōpū huli [a "turned stomach," believed caused by falls, especially of

small children, resulting in a kink or turning of the stomach, with attendant vomiting; a symptom

is said to be a shortening of one leg; the cure is massage and binding of the stomach; this diagnosis

and treatment are said to have been learned from the Portuguese], and the Hawaiian aunty would

come and rub 'em with here oil, salt, and bless with the ti leaf. I think the missionaries will call it

'bush' or the stomach was in a knot. The 'ōpū huli stomach they turn 'em and massage. If you go

to one western medicine, they would operate and cut the gut, and sew 'em back together. There is

so many different ... I have had injuries growing up that we blessed with the Hawaiian doctor ...

rub the shoulder and pray, and it goes away ... it's amazing. I ain't saying it's better than western

medicine, but it is an alternative. I experienced it, and the generation before experienced it. It's

because it's real.

\*\*\*\*\*Conversation stricken from the record because I was checking on his to make sure we are not going

over into his work time.\*\*\*\*

HKA: You told me about the conservation methods that you would do when you went fishing and gathering

for the lobster and stuff like that ... and the plants ...

BDD: One other one too ... when we would go hunt the goat, and there was one white goat ... we never

shoot the white goat. It was called a spotting goat. So you don't shoot the white goat because with

the naked eye, you can see the white goat 400, 500 yards away.

HKA: Really.

BDD: Yeah, never shoot any animal that is white.

HKA: Why?

BDD: Because he's the spotter for the herd.

HKA: Yeah, for the herd, that's right.

BDD: Look in the mountain with your naked eye, hard fo' [Hawaiian pidgin meaning for] see one brown

or black goat because it blends in with the topographic coloring of the geography. The white goat

stands out.

HKA; Yeah, yeah, you right. That's smart.

BDD: You know what is one other one I tell you?

HKA: Yeah, tell me. You know what, you tell me things.

BDD: Akule [big-eyed or goggle-eyed scad fish (Trachurops crumenophthalmus)], the mainland people

throw away that fish, it's a bait fish for them. The 'ō'io [ladyfish, bonefish (Albula vulpes)], they

throw away that fish, that's a bonefish ... best eating fish. The 'ō 'io, lomi 'ō 'io. My grandmother

them used to make fried fish cake, patties out of the 'ō'io. Akule, we would make poke [diced fish

with other ingredients] out of the akule, it's a poor man's poke. Dried akule in the saddle bag when

we go hunt, we get the dried akule. We get the dry akule in the dry box with only salt. There is so

much that ... I think ... a lot of people don't know, because they weren't raised like us. You went to

college in the mainland?

HKA: I went to college here and on the mainland.

BDD: You was on the mainland.

HKA: Yeah.

BDD: You notice when we are in the mainland, we are very unique. We are almost like one magnet. People

are attracted to us. Why? I always though because I was good looking. But it's not ... we are

different. Our whole mindset is different. How we take care our own kind, our people, take care

each other, take care the land. We have a connection to the land. We feed off the land. Our food

come from the land. People no understand that because for generations they paid for their food.

Granted ... I think ... the western people find our upbringing attractive, because they are like, "Who

the hell is raised like this to have this kind of a mindset?"

HKA: You right because when I was up there, I had a lot of people coming to my house.

BDD: Yeah, they find us unique. We get food, and we feed each other. No more the kine [Hawaiian pidgin

language meaning sort of or somewhat, and it sometimes means whatchamacallit]. "Oh you got to

contribute ... everybody put \$10.00 in." When we cook, we don't care about the money. We just

cook and we take care each other.

HKA: That's why they used to come my house, and I used to feed them all the time. I used to make char

siu, saimin all the time ...

BDD: I used to go fishing in the Mad River up in the Arcata area.

HKA: Yes.

BDD: Catch steel-head salmon, bring 'em home, bake 'em with mayonnaise, bacon, and if I could find lup

cheong [Chinese sausage]. Everybody would come over and eat the salmon. Steam broccoli, mash

potato. The next day, I making salmon sandwiches, like how we mix the tuna to make with

mayonnaise ... chop the onions, chop the salmon, grade the carrots, make the kine [Hawaiian pidgin

language meaning sort of or somewhat, and it sometimes means whatchamacallit] cracker dip. They

like. "What is this?" "Oh, from the salmon, from the night before." I think that's why we got along

with the Native American Indians up there, because they also strong with the land and stuff.

HKA: Get the Hoopa's yeah up there?

BDD: Yeah. They have their own little village up there. They have a reservation.

HKA: Yeah. Wilitz. They have 'em up Trinidad too. That's where they have the Indian Bingo.

BDD: Yeah.

HKA: On top those beautiful lands. So when you went to Humboldt what did you major in?

BDD: I went up there to do forestry because they have a good forestry program.

HKA: Yes.

BDD: But I ended up doing Business. [Eating the fish HKA gave him.] This is good fish, amazing.

HKA: It's naturally dried from air and sun. I no dry 'em in the dehydrator ... ah, ah.

BDD: Dehydrator. I made one dry box. My puppy just *wen'* [Hawaiian pidgin for went or completed an action] rip up my dry box. I put 'em off the ground so get the sun and the wind.

\*\*\*\*\*Conversation stricken from the record because the information does not pertain to this interview.\*\*\*\*

BDD: Before my father them guys [BDD's father and his family] cherish the Hawaiian Salt so much they only keep 'em *fo*' [Hawaiian pidgin meaning for] put steak on the grill or in the *poke* [diced fish with other ingredients].

HKA: You guys [people of Kaua'i] get the natural salt, yeah?

BDD: Yeah, big time.

HKA: I buy mine's from the store.

BDD: If I knew you was coming, I would have give you, I get at my house. I thought I was going to deal with Keao.

\*\*\*\*\*Conversation stricken from the record because the information is not pertinent to this interview\*\*\*\*

BDD: Get one other freshwater crustacean called the  $h\bar{\imath}h\bar{\imath}wai$  [endemic grainy snail (Neritinu graposa)], you know what is that?

HKA: *Hīhīwai* yes. It's like a freshwater ...

HKA/BDD: 'Opihi [Limpet].

BDD: Live under the rock in the cold water.

HKA: Somebody was saying it was in Miloli'i .... Kipi.

BDD: In the colder waters. The *Haole*(s) [Caucsians], the hippies they learned how to eat it. So they *wen'* [Hawaiian pidgin for went or completed an action] over harvest 'em. So Kipi know you stay on Kaua'i.

HKA: I was just at his house today. With him, his mom, and his dad.

BDD: They good people.

HKA: I graduated with Kipi, Kamehameha. Oh, they are wonderful people, I love those people.

BDD: I should take one picture ... look at this girl she stay knocking at my door, asking me questions.

HKA: I told him I was coming over here to see you. [Laughing.]

BDD: My wife knows Kipi, they work nurse together. He told me, he bought one place Texas yeah?

HKA: Kipi?

BDD: Yeah. He bought one place Texas, the *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] retirement place ... 10 acres. Him and the wife go back and forth.

HKA: I didn't even know that. He didn't mention that when I saw him.

BDD: Kipi get all *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit]. He retired now.

HKA: Yeah. Police yeah?

BDD: DLNR (Department of Land and Natural Resources), game warden.

HKA: Oh, yeah ...

BDD: What else I was going tell you. Even like crab, Kona crab.

HKA: You guys [people of Kaua'i] get Kona crab out here?

BDD: We get the Samoan crab [mud crab] in the river.

HKA: And you guys [people of Kaua'i] get plenty of 'a'ama [a large, black, edible crab (*Grapsus grapsus tenuicrustatus*)] of course.

BDD: Black crab, we would eat it raw. Sweet.

HKA: You gotta make sure you salt 'em ... and get really ...

BDD: Soft.

\*\*\*\*\*Conversation stricken from the record because the information is not pertinent to this interview\*\*\*\*

BDD: You know how we raised off the land ... who wasn't raised off the land, who depend on currency, they look at us as being not as wealthy as them. They have their currency, they buy their stuff, they buy this package of beef jerky or fish jerky, whatever they going buy with the currency, we never had 'em ... only now we getting that mindset. How we were raised was from the land ... you take care the 'āina [land] and it take care of you, the American currency, you no need. They like you

feel dependent on the currency. Just like the base, they want us to feel dependent that we need them. I think they need us more than we need them. If you ask me what I like see happen, I want to see them open up some camping on those beaches to local families with the IDs, and we can go back camp. I wanna see more access for surfing and for harvesting fish. They need to stop regulating so much. If you like know the hidden agenda, I tell you ... in reality that's my hidden agenda. Yeah, they provide a sense of security. Yes, they provide a whole bunch of jobs. I don't believe they should be restrictive of all the access, the harvesting, and the gathering of that area.

HKA: There was a lot (gathering and harvesting) happening, and that was a Kuleana Right.

BDD: Yeah. I not Hawaiian, but I get Kuleana Right. I been down there for three, four generations.

HKA: You were practicing that all your life until it got restricted ...

BDD: Only the new base Commander is pretty good, but the guy before this current one, they was way too strict. So I want to ask you a question.

\*\*\*\*\*Conversation stricken from the record because the information is not pertinent to this interview\*\*\*\*

BDD: What they do with all their trash?

HKA: What trash?

BDD: Take care their own trash. They put their trash in our landfill, our County.

HKA: Pu'u 'ōpala [Hill of trash].

BDD: Right next to them. We like them take care of their own trash. Maybe pay a higher fee for them to put their trash in our landfill. Be more cognitive of what they are putting in the landfill. Red Hill, the spill of fuel ... The fuel they have down there ... how secure is their fuel operation? Just stuff like that right? What else I can tell you ... I hope you enjoyed the interview.

HKA: Yes, I did. [Chuckles.]

BDD: No, no I mean you come from one generation of family when the canoe plant and animals was bought by your history of people, thousands of years ago. I'm new, I came maybe early 1900s or tip of the 1800s so only here four or five generations. I think we share a lot of the common values, ethics, and morals of the land stewardship because it is all how we were raised. My forefathers and foregrandmas came to be with yours, who was already here. You know there was a facade ... like one bullshit message. Do you know why they bought the Chinese, Japanese, and Filipinos to work the sugar plantations? Because the Hawaians never like work. They said the Hawaiians was lazy. You know why the Hawaiians never like work, you like I tell you why? Because they never understand, what they doing planting sugar, and we no even use sugar. Hawaiians no use sugar, that's a western ingredient ... you think about it. What you put sugar in? My wife, you know why she's attracted to me? The way I think, she loves my train of thought. She listen to me all day. I'm telling you something, one Kanahele man, he had green eyes, his mother slept with a whiteman. That's how they get the 'ehu [reddish tinge in hair] hair and green eyes. The Kanahele man, I think his name was Johnny, he was my father's really good friend. My father was a supervisor and before you carry 90 pound tank ... He told my father, "Willy, you guys [Willy and the supervisors] killing the kids, the tank too heavy Willy." Gotta get the kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] plastic tank. You know what the Hawaiian guy told my father ... That's when they converted to the plastic tank. It was 90 pounds, you try carry ... I carried it in the summertime ... cement ... 90 pounds, the tank filled with the Roundup. The Hawaiian they believe, they not going waste their time planting one agricultural product ...

HKA: That they not going...

BDD/HKA: ... eat.

BDD: Then the western money, *fo'* [Hawaiian pidgin meaning for] buy what? What they needed to buy? So, they not lazy it's a persona they put on the people. So they brought all this other cultural people because in their country, they were being paid peanuts and they were ran like slaves. They all ran away to come here. They were actually slaves too here. Lucky for the Chinese and Japanese who had striked. I believe they were getting paid cents per day to getting paid a dollar a day, something like that. They were only getting paid five cents per day. They strike and then they got a dollar.

And then the Portuguese came ... like I told you ... because they were the liaison between the Chinese, Japanese, and Filipinos. They were starting to ... the culture or nationalities started to bond

too tight and they could not break their code of how they run the community. That's why our local

government was always ran by Japanese, because for long time the Japanese during the Plantation

Era, had a hold on how to run things, they were very smart. So, the westerners could not break

them, they never could. That's why they bought all these white people in to bridge the gap.

HKA: That's why they were so much laws against them, to keep them down.

BDD: Suppress.

HKA: There were laws to suppress them, and it was noted in history too.

BDD: I might hurt your feelings little bit. But this is what I believe, the Hawaiian they were too smart for

the whiteman's way, but where they went wrong was they had forget what their ancestors wen'

[Hawaiian pidgin for went or completed an action] teach them. "Which was use your hand fo'

[Hawaiian pidgin meaning for] go gather and hunt to get your riches. Don't use your hand fo' one

handout." Today, the young Hawaiians stay like this. "What you going give me?" Nobody giong

give you ... you got to go get it. So, what that tells you sitting on that chair? You better go earn

what this interview is telling you. Get the rights for the people from that base, so when they apply

for their permit, the people on Kaua'i can get some of this ... back. Whatever they need back. I'm

not saying, "Open it up, have a free for all." Have one Koa group manage 'em. You know when

the moi [threadfish (Polydactylus sexfilis)] season open up, we going have access. We going have

one group of uncles and aunties that gonna take care of the clip board, and we going allow .... That's

what we like. We like camping on the beach. We like 25 permits on the weekend. We going be

camping in this area. We can drive the car on the beach. We no more that with the State. This is

what we like.

HKA: In the CIA (Cultural Impact Assessment), they'll be a section for recommendations and these things

will be listed there.

BDD: How many interview you had so far?

HKA: You are either the sixth or seventh person.

BDD: Two questions I have, anybody more interesting than me, and number two, you gave everybody fish and dry *aku* [bonito, skipjack (*Katsuwonus pelamis*)] right, how many people you interviewed *wen*' [Hawaiian pidgin for went or completed an action] sit and eat your stuff?

HKA: Nobody, only you .... Thank you for eating it right now.

BDD: Thank you for sharing. Because you know those guys, if they were really from the 'āina they would eat it, because this ... is like gold. You made 'em, this is from the 'āina, and I don't get this very often.

HKA: Awg. Thank you.

BDD: I appreciate.

\*\*\*\*\*Conversation stricken from the record because the information is not pertinent to this interview\*\*\*\*

HKA: I'll end this interview here unless you have anything else you want to talk about.

BDD: I talked about some of the surfing access, the camping on the beach, the harvesting of the *moi* [threadfish (*Polydactylus sexfilis*)], the thrownet, the fishing, 'opihi [limpets] harvest ... I not sure ... I know the base has a restaurant, I know they open it to the public, that's nice. Taking care their own trash ... being good stewards of the land with their trash. Making sure that their water source and their fuel source is very well cared for. Their fuel source cannot contaminate their water source. I'm pretty sure it's not underground, it's probably above ground. The transparency of when we have world issues ... one time we had one ... I believe practice missile launch, west side ... RIMPAC (Rim of the Pacific) ... there was one Russian boat out there, was in the newspaper, Russian boat ... the people deserve to know if there is stuff going down, and if there is this outside countries..we like know, we no like wait or hear the week after in the papers, the Russian ship was sitting outside

... we like know ... what if something happens, we want to prep and prepare. Maybe one good one would be..A night to mingle. They have a restaurant, maybe make ... A night to mingle ... the military can do a little dinner and invite the community leaders, just some community people to come down and mingle, come out with us, ask some questions. Bring some family for a day at the pool. If you going be stewards of the land, then be stewards of the community, and know your community.

### ORAL HISTORY INTERVIEW

#### With

## Michael Andreas Faye [MAF]

## November 29, 2023

Office of Mike Faye at Kekaha Agriculture Association, Kekaha (Wai'awa), Kaua'i

By

# Hannnah Kaumakamanōkalanipō Anae [HKA]

Recording file name IA202241 2023-11-29 Michael Faye.MP3

HKA: Welina kākou [greetings everyone],¹ today is November 29, 2023 we are on the mokupuni [island] of Kaua'i, in the kūlanakauhale [City or town] of ... Kekaha ... I am Kaumaka Anae representing International Archaeology, LLC. We are conducting Cultural Impact Assessment interviews for Pacific Missile Range Facility (PMRF) and Kōke'e Geophysical Park Observatory Succeeding Lease and Easement Areas. I am here with Mike, and Mike can you say your full name?

MAF: Michael Andreas Faye.

HKA: Mahalo [thanks]. Do I have your permission to record this interview?

MAF: Yes.

HKA: Before we start, I would like to say, *e kala mai* [excuse me] if I seem so *maha'oi* [brazen], but it's for the purpose of this interview.

MAF: Okay.

Most Hawaiian definitions were sourced from Ulukau: Hawaiian Dictionaries online (https://wehewehe.org/gsdl2.85/cgi-bin/hdict?l=en). In some instances, the subjects supplied definitions and in others, the interviewer provided a translation.

HKA: It is not my intention.

MAF: [Chuckle]. Okay.

HKA: [Chuckle]. Okay, so I'm going to start of with *mo'okū'auhau* [genealogy], your family, and connection to this 'āina [land]. How long has your family been in the area?

MAF: Since about 1880.

HKA: Wow, that's a long time.

MAF: Actually, longer than that ... 1850. [He uses a 10-key calculator to figure the exact years].

HKA: Two hundred something years?

MAF: No, 170 years. [Chuckles.]

HKA: [Chuckles.] So, where were your 'ohana living when they first got here?

MAF: Right here, Wai'awa. [Chuckles.] Believe it or not.

HKA: I been to Wai'awa.

MAF: The Hawaiian Homes Wai'awa up here.

HKA: Yeah, I been to Hauola Heiau.

MAF: Oh, yeah, yeah, yeah ... My wife danced there one time. They did a historic association, Kaua'i Historical Society ... I used to take them on field trips, and we went up there. Was pretty moving. [Chuckles.]

HKA: Oh. wow.

MAF: We had cleared it out. She danced for the Punuas on the other side. He (Victor Punua) did the research. I don't know what is called in Hawaiian, a chant where they recite the names of all the places and things. There is a name for it, I don't know what ... He talked to all the Hawaiian families over here and got it. They did a dance to that. [Chuckles.]

HKA: That is neat. So, you are really familiar with this area, I mean look at your maps too [referring to the maps in his very large office] ... what you remember or what your family did in this area?

MAF: Well ... it kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of started with my grandfather's uncle who was Valdemar Knudsen. Valdemar had come to Hawai'i for health reasons, wound up being hired by whichever king, which ever Kamehameha [Alexander Liholiho Kamehameha IV or Lot Kapuaiwa, Kamehameha V] ruling in the 1850s, and he became the konohiki [headman of an ahupua'a land division under the chief] of this Waimea district. Primarily, kine of like John Parker too ... rid the mountains and area of cattle ... so he, rancher went up, would harvest, and get cattle, rendered them into tallow parts of it, took care of collecting taxes, that sort of stuff. In the 1870s when Hawai'i signed the Reciprocity Treaty ... you know ... everybody jumped on the sugar market. It's kine of like hemp today. Royals and everybody ... and ... this land all out here is all Crown Land ... you know that yeah? So they wanted to grow sugar. Valdemar wrote to his nephew, my grandfather, H. P. Faye, who was in Norway. At the time ... I don't know if I have all the chronology just right but ... they were looking for workers, they being the people in Hawai'i ... looking around the world for different workers. They were trying ... seeing if they could get Europeans to come out here and be field workers. And it just happened that my grandfather's family in Norway, was a fairly successful ship builder and just kine of brokerage company. So they put out a notice for Norwegians to sign-up as contract laborers come to Hawai'i. So they signed a bunch of people up and H. P., my grandfather, H. P. Faye was selected to kine of lead the group. He brings them down here to Hawai'i. And comes across the U.S. on a train. They hit the western U.S. just as the silver boom is going off, so a bunch of Norwegians jumped ship, and they stayed there.

He brought some here, met up with his cousin ... I believe ... on Maui. And they began spreading these Norwegians out to the different plantations. Early on, when the first guys arrived, days ... his

cousin was escorting a group someplace on Maui, on east Maui ... and was crossing one of the little streams, and got washed away, and drowned, and died. So he never liked Maui after that. They wind up coming over here with the rest of them, and tries to get established here. He doesn't do very well with his uncle, and winds up working for the Robinsons ... and back to Maui.

Eventually, he obtained a Royal Lease down in Mānā, and started growing sugar around there. He came in 1880, by 1885 he had established the H. P. Faye Limited in Mānā. Prior to him getting there, there was a rice farmer out here, Pah On. So he would hire ... he would work with Pah On, provide him labor with cleaing the rocks. We got a picture of him. Right below there, where the tunnels are, and its just this rocky field [chuckles], full of rocks, and no bulldozers or anything. So anyway, he started out there, brought in some other Norwegians to help him manage it. I don't know where they got the laborers from, probably a lot of Chinese, and other Hawaiian families that were living around there. He had a house out in Mānā, eventually married a Scottish gal who was living in Kilauea, Moloa'a actually, and brought her out here. They raised eight children. Five ... I think ... were born out at Mānā, and my father and his next older brother was born at Pōki'i, right over here. And ... believe it or not ... in 1910 ... I don't know what the heck was going on ... but they packed up and took the family back to Norway. Everybody, the Japanese maids that took care of the kids, the Chinese cook [chuckles], and they go back to Norway ... and had one more kid over there. In the meantime, he's traveling back and forth to Norway one or twice a year ... beleive it or not. That didn't work out, so he wound up coming back here. And the wife stopped him at Berkley, California, my grandmother, and established herself there. The kids could go to school, college whatever. But he kept coming back and forth to Hawai'i. I think ... you know ... the 10 years or 15 years living in Mānā was way the heck out there [chuckles]. It must have been tough for her.

But in the meantime ... in the 1890s, all these independent growers of sugarcane consolidated into Kekaha Sugar Company, and he became the first manager. So I would like to tell the story that, "Here's this Norwegian coming to the Kingdom of Hawai'i, realizes the American Dream in the Republic of Hawai'i." [Chuckles.] Yeah, he choose the Hawaiian Dream, in the Republic of Hawai'i. I think one of the reasons he left ... I don't know ... if he could really fathom the American democratic democracy. He lived ... king on Norwary, king over here, strong rulers over here. But anyway ... his kids, the eldest ... So H. P. Faye during World War One, there is a really, really strong Anti-German sentiment going around. And the factory and company for Kekaha Sugar at

the time was H. Hackfeld and Co., who were mostly owned by German nationals. And the government apparently was going to take over the company because they didn't want to have the German Nationals. So he and a couple of people, he was getting wealthy at that time, got together and purchased it, and renamed it AMFAC or American Factors.

So as time goes on ... the eldest son, eventually rises and becomes the head of AMFAC ... the number two boy, runs Kekaha Sugar, which in the 1930s was considered one of the most valuable assets the territory had ... it was just spitting out money. My Uncle Lindsay (Faye) ran it from about 1930 to about 1960 ... I think..and coincidentally, his son ran it for a while. And now, I'm basically running what's left of it ... as far as ... the infrastructure and assets is concerned, not the farming part. My father ran Waimea Sugar, which is in Waimea, that H. P. had purchased along the line. That plantation had been started by the Rowell family, the missionary Rowell family ... As all these plantations, they needed water, and so they dug or installed the Waimea Ditches, basically the second ditch taking water ... you know ... out of the Waimea River ... first being the Menehune Ditch, Peekauai [pronounced: Pe'eka'uā'i], and then Waimea. And I think ... H. P. was like ... had to be super jealous of them being able to pull the water out. So, I think he purchased it with the intention of incorporating it into Kekaha. That never happened so it ran independently. He buys it in the early 1900s. By 1908, he had already designed, constructed Kekaha Ditch coming out of the Waimea Valley ... which ... you know ... brings water by way of gravity ... all the way to Polihale, it's 29 miles. So if you kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of layed it out from Kekaha to past Hanamā'ulu, all by gravity. He ran Kekaha or he had people run it for him ... then ran Waimea, and he died in 1928. As I said, the boys, the five boys in one fashion or another, continued ... you know ... within the businesses. One of the questions ... I'm the second youngest of the second youngest. So, it stretches way out. It's not my great-grandfather, it's my grandfather who did that ... so that's my paternal connection over here.

On my mother's side, she was from Honolulu. Her grandfather was Charles McCarthy. McCarthy came from ... I don't know where the hell he came from ... he winds up in Hawai'i, he winds up working for Lili'uokalani. And ... is supposedly ... I don't know how true it is ... they said that he was in charge of the palace guards at the time of the Overthrow. He was supposedly on King Street ... or something like that ... in Honolulu. He heard the marines marching, the cadence of their marching ... swoosh ... swoosh. So, supposedly he goes outside, and goes in the middle of the

road, and uses his whistle to have his troops fall in behind him, and they don't. So, he retreats to the palace and that's when Lili'uokalani says, "I'm going to be in the hands of ... the government's going to take care of me," blah, blah, blah ... you know ... "Save yourselves." He dashes out, he hides out in the boonies in Pearl City. The next child that is born there is named after ... her name is Pearl Lydia, after Lili'uokalani's name. He eventually becomes governor of the territory in the 1920s. And actually is the first person to have, the first Governor to live in Washington Place after Lili'uokalani dies. And they disburse her belongings. In fact, we have quite a bit of family in the Puget Sound area. We don't get together with that side of the family, but when we do, the conversation often is surrounding, "What are we going to do with our stuff from Lili'uokalani or 'Iolani Palace?" I usually recommend (for them) to send it back to the palace ... you know ... nowadays. They possess some stuff, yeah. For McCarthy ... I think ... he didn't really like the idea of people picking over Lili'uokalani's personal things. There is supposedly a whole list of stuff they sold. I think one of the family members has a list, and he buys a tea set ... what the hell you're gonna do with a tea set ... you know? [Chuckles.]

## HKA: [Chuckles.]

MAF: So for me, I was ... you know ... born and raised in Waimea, Saint Theresa School ... *Kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of connection to this land ... in the day ... in those days when you turn 14 or 15, you expected to work at the plantation in the summertimes ... so I started off at Waimea Sugar, me and three or four other plantation kids, boys. Then my father died when I was in high school. I sat out one year, and one of the foremen from Kekaha, saw me walking around. Hong Min Hee saw me walking around, and he goes, "Mike what you doing you not working?" Chinese guys ... you know ... "You supposed to be working." We had sold Waimea sugar to Kekaha by then. "No, no, I can get you one job." "Supposed to be only plantation employees." "No, no, no, no worry, go see Spike Roduit." [Chuckles.] So sure enough, I go in there the next Monday, I was issued by hoe, my file, and ... So I spent the next six summers ... I think ... working over here, and it was a ... You know ... I knew I wasn't going to wind up being a *huki lepo* [pull or tug dirt] or something like that. So, I took it as an opportunity to be ... you know ... out and about. Our job was ... they call us the *huki lepo* gang, and it was kind of the replant. So with sugar, after they finished harvesting, they would either plant it with a ratoon crop right ... are you familiar with that? They just let the cane come back up ...

HKA: Yeah.

MAF: ... reshape the rows, make it come up, but where the trucks went and everything, it's usally mashed down, and ground is hard as cement. We would have to go back in there and plant the seed ... the cane by hand in those areas, or wherever it was like bolohead. We hated ratoon fields because they were hard work. The planted fields, they would just ... do away with the old stools, and just replant ... with cane, those were way easier to deal with. I did that for more than six years. It was good fun. I probably walked down every square foot of this property [chuckles] at one time or another. I graduated UH (University of Hawai'i). My first real job was at Pioneer Mill, Lahaina.

HKA: What was you graduate from, what was your degree at UH?

MAF: I got a degree in finance.

HKA: Business administration?

MAF: Business administration. So, I got hired over there as a AMFAC trainee ... in the new-fangled computer, the IT (Information Technology) Department. And to be honest, when I was at UH, I paid some kid to do my deck of cards, because I couldn't make it work. [Laughing.]

HKA: [Laughing.] And so what year was this?

MAF: This was 1975. But they had a little computer, they were called Data Point Computers. It was a real small thing, 16k max of storage, but predated Microsoft, and predated Apple. It was a pretty cool machine. AMFAC was trying to get computers into each of their plantations. At that point, I did not work for the plantation, I worked for Mother AMFAC. Which is also *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of cool because we'd talk to our bosses ... there is one of us on each plantation ... we talked to our bosses about, "We gotta get together ... you know ... so we can learn." We would travel regularly to all the different plantations to compare notes and stuff. So, I got on here to Kekaha, Līhu'e ... used to be KLOPP yeah ... Kekaha, Līhu'e, Oʻahu, Pioneer, and Puna. So we would fly around and check all that *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means

whatchamacallit] of stuff out. And it got us to go in to all the departments to see if we could somehow improve the paper flow. Then I got transferred to Līhu'e Plantation. And Līhu'e eventually hired me, because I worked there for ... I don't know ... five years or something like that ... until ...

So, Waimea Sugar remained in the Faye family hands. And H. P. did something way different than most of the other *Haole* [White, Caucasian] at the time ... instead of setting it up as a trust, he set it up as a corporation. And so from small kid time, we all owned stock in this. We became very kine of corporate literate. While we kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of stayed within our family ... siloed so to speak ... still till today, there is political intrigue and stuff ... who gets on the board ... who's going to be chairman ... and all that kine of stuff. The place never made any money. Nobody got rich off of it. But the family sold the Waimea Sugar Plantation operations to Kekaha. They kept the land. 1981 ... I think it was ... '80 or '81 I got hired by Kikiaola Land Company, the successor company that owned the land underneath. It was like totally back water ... kine of a piece of property. We had the old plantation camp, the remains of the mill, the remains of the dairy, which is now Meadow Gold running it. Anyway, I kine of inherited managing that job. I hired an architect planner friend of mine, this guys Bob Fox to update an old master plan of the property that my father had created back in the early 1960s ... it's a 20-year-old plan. So, we got that thing updated, presented to a meeting, and basically the Board of Directors gave approval of it. Two weeks later, we got hit by a hurrican, the first one. 'Iwa ...

HKA: 'Iwa.

MAF: ... kine of bust everything up. But from there ... one of the elements of that master plan was a plantation style hotel. Just a one-page, eight-and-a-half-by-eleven drawing of just the concept of some camp houses, but from there we grew Waimea Plantation Cottages ... came out of that whole thing. And so, I ran that until the family got tired ... until the next hurricane came. Then we had to rebuild it all over again. The family intrigue and politics, and all that ... basically they wanted me out ... so I cut a deal with them ... I developed ... we did all the work ourselves in-house. So kine of developed the construction ... a maintainance department into a construction company. I said, "Sell me the construction company, give me a contract to do the maintenance for a couple of years, and lease me the land. I'll be out of your hair." So my wife and I formed, Kikiaola Construction.

We had Wranglers Steak House already. So from 1996 until 2018, I did Kikiaola Construction. That was *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of fun because we got into stuctural moving along the way. Currently, we do most of the structural moving in the state. I have an office on the Big Island. Moved buildings over there. Got into working on old buildings so we became experts in single-wall construction and historic buildings ... and ... all that *kine* of stuff. Then I got hired here ... I don't know if Keao mentioned ... my predecessor, this guy, Landis Ignacio had run or had been involved with running this place for like 20 years.

HKA: And this place you talking is?

MAF: Kekaha, Kekaha Ag (Kekaha Agriculture Association).

HKA: Kekaha Ag. Okay.

MAF: Kekaha Ag comes about ... you know ... when sugar went out in 2001 thereabouts ... one of the things I did when I was at Kikiaola Land Company ... we had several hundred acres of cane land ... when the long sugar leases came up, I moved them from sugar into the corn, because they were paying way more money. I just thought it was kine of a cool thing to do. I kine a think ... I had something to do with the establishment of the corn industry out here. 'Cause when the sugar went down it reminds me of ... you know ... the Oklahoma Sooners when they shot the gun, and everybody went out to grab their land claims? Kine of the same thing. These guys, on their own, partitioned the whole plantation up, and who was going to get what. Corteva, Pioneer, Syngenta, all people had leased land to ... got them going ... Wally Johnson, another guy up here ... Robinsons from across the river. They just kine of came across the river and said, "We're taking that cane," that was growing. This group of about five or six companies formed. They realized that the infrastucture was too much for any one company to handle. So they created Kekaha Ag Association to run a common infrastructure which involves all the roads, our drainage ditches, the irrigation systems, Kōke'e Ditch, Kekaha Ditch or Waimea Ditch ... whichever you want to call it ... the power plants ... what else did we do ... Pretty much that ... we got that organized ... got it ... In the meantime, the State transferred the land from DLNR (Department of Land and Natural Resources) into the new Agribusiness Development Corp. Kekaha Ag Association, which is a non ... it's a not for profit agricultural cooperative. And it's taxed by the IRS and the State. But anyway,

they formed that, Landis was running it. There is a connection there too. Landis' grandfather was my fathers's right hand field man.

HKA: So Landis is the last name?

MAF: No, Ignacio.

HKA: Ignacio, Landis Ignacio.

MAF: The Portuguese, they can either take the mother's name or the father's name right? So half of the kids, were Pavao and half of the kids took Ignacio name. Landis always had this dream to put hydro-electric plants along the Kōke'e Ditch. The Kitano hydro goes way back to the plantation days. I think my uncle probably started it, or it started when he was running the plantation I should say. It was *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of on the back burner. Landis tried to do that. By the time they tried to do that, or maybe before ... the laws of the United States and the State of Hawai'i decided who had preference to water. The water rights is a pretty complicated situation.

HKA: The land is owned by the people, but the water is a whole different thing yeah?

MAF: Yeah. So, what happened was Kauai Electric or KIUC [Kaua'i Island Utility Cooperative] did not like the idea of a competing power generation entity, so they teamed up with Hawaiian Homes who has a constitutional prior right to water. We got sued because they were wasting water. We're taking the same amount of water that were were taking like during the Plantation Era, like 50 million gallons a day, and basically spreading it around this land down here, the Mānā Plains, and then pumping it down into the ocean. So Earth Justice with several local groups sued, said, "You are wasting water." The end result was the Waimea Watershed Agreement. That was negotiated with Landis. Landis had all that possibility of hydro basically pulled out from under him. My personal feeling is that pretty much killed him, because within a few months after that settlement agreement was signed, he just dropped dead. So, they looked for somebody, took them about six or eight months. I knew some of the management people over here because my construction company did a lot of work around here, and they said, "Mike, we haven't seen your name as an applicant." I said,

"Yeah, I know, I'm having too much fun doing what I'm doing." They said, "No, no, no, you should put your name in." So I did, and I got hired. I been here ... for what ... six years now, five and half years.

HKA: So this building, you guys are going to turn this building over to the DOE (Department of Education), yeah?

MAF: That's the theory.

HKA: And so what was it before [referring to the building]?

MAF: There were three main seed corn companies. This is all the GMO (Genetically Modified Organism) research *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of stuff that people don't like. Pioneer, Syngenta, and then BASF (Badische Anilin und Soda Fabrik).

HKA: BASF is a chemical company yeah?

MAF: Yeah.

HKA: Even Monsanto right? Because they used to do the wear-dated carpet, Monsanto did. And then they did the chemical on the carpet too, BASF. I used to sell carpet that's why.

MAF: Oh ... [laughter].

HKA: [Laughter.]

MAF: For some reason BASF had an idea to do corn research. I guess there's lots of money in it. So they put this building up, designed specifically for what they wanted. In the seed corn, you have what they call 'regulated' seeds, and then 'non-regulated'. So, this building, what we see on this side, is pretty much duplicated on the other side. The other side was 'non-regulated' and this is the

'regulated' side. You can't mix them, and the Department of Agriculture really keeps a close eye on what happens. Anyway, they decided to get out of here, basically sold it for a song to a family owned, a large family owned seed company, Beck's ... Beck's Superior Hybrids. Becks ran it for a few years, and they decided to get out of here. So I thought ... I was licking my chops ... and said, "Cool, I'm gonna get this building basically for free." I was willing for offer, or have Kekaha Ag offer ... you know ... couple million for it. As soon as they saw someone being interested in it, the price started going up and up. Eventually, people convinced the DOE to buy it, because they were trying to do these ag institutes on each of the islands. They were going to have to build them from scratch, they figured each campus was going to be 20 plus million, and could get this for a quarter of that. They bought it *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of for this ag institute, but at the same time they are trying to get the farm to school program going.

HKA: Farm to table.

MAF: Farm to table. But they couldn't really make it happend because of all the procurement issues ... you know ... with State run stuff. So the best thing they thought to do, was buy this, turn it over to us to develop and manage on their behalf. So that's what we're *kine* of doing. I'm in here under a use of facilities agreement. Which is *kine* of like, if you were to go sell brownies at a football game ... you know ... [laughter].

HKA: [Laughter.]

MAF I told the guy, "This document doesn't say anything." He said, "No, no, no just use it." I said, "Oh, okay." That's why I haven't hung anything on the walls, because I don't know how long we're going to be here to be honest.

HKA: So, is the chemical companies still in this area? BASF?

MAF: No, BASF is gone. Pioneer merged with DOW Chemical. I don't know why the corn companies are mixed up with chemical companies. I don't know. They merged and then they reorganized themselves. So Dow Chemical and Pioneer Chemical ... I think ... became DOW Chemical. The

agro-science part got spun off as a wholly owned corporation called Corteva. Syngenta, across the street, huge company, got bought out by ChemChina. Those kinds of deals that go through the United States something or other. They went, "No, no, no we cannot have Chinese owning a farm right next door to PMRF." The other Syngenta property is up in Kunia, overlooking Pearl Harbor, next to Schofield Barracks. [Laughter.]

HKA: [Laughter.]

MAF: They said, "No, no, no you can't do that." Syngenta had to spin off the Hawai'i operations. Another large private family company, Hartung Brothers, bought the Syngenta interest in Hawai'i. So, that's all we got left down here, is those two companies. They are way different than they were even 10 years ago. Syngenta, across the road, is run by a young local guy, Josh Uyehara ... who is between my two children in age. Apparently, I don't remember this, but he used to come to my house, to our house, was friend of my son's, and they used to play video games and stuff. I probably must have been yelling at you guys to get out and do something healthy, instead of these stupid video games. He's my boss now. [Laughter.]

HKA: [Laughter.]

MAF: One of these borderline genius *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of people. He runs that. They are doing alfalfa, they do all kinds of stuff. Way different company. Corteva, they are moving a lot of their stuff into the shadehouses, into the greenhouses. My construction company put up a whole pile of them in different locations. It's clear that they can do their agriculture research better within these very controlled environments. When the plant gets about that big [hand gesture], they know everything they need about it. They grow some out in the fields, but way smaller footprint. Then you see how they farm versus like somebody like Aloun, big vegetable grower.

HKA: On O'ahu.

MAF: On O'ahu. They got squeezed out of O'ahu so they are here. We helped them get into ... on Robinson property, which is like gold. Extremely good, Robinson's got a lot of water, higher lands

which is way better than these plains out here. On the other side of the river. Aloun, they come in ... for them it's production, money, *kala* [money] for ... They gotta make it work. The seed companies, this is R and D (Research and Development).

HKA: BMP is Best Management Practices?

MAF: Yes, that are set up for ag. Okay, so next question. Sorry.

HKA: [Laughter.] No, no.

MAF: Long winded answer.

HKA: That's good. So growing up, did you go fishing?

MAF: I was not a water person at all.

HKA: You are totally mahi 'ai [farmer]. Did your family ranch?

MAF: We had a small ranch up in the Kalaheo area.

HKA: What did you guys raise?

MAF: Cattle. My mother wanted 10 acres to raise horses. My father said, "Horses will never make a poor man rich, and it will make a rich man poor," something like that. [Chuckles.]

HKA: [Chuckles.]

MAF: So we had horses and stuff like that. My mother was very active in saddle clubs and stuff like that. She died really, really, young. She was 46, and so I was 14 ... I think ... 15. Yeah, so she died really young, and that kind of ended that whole ranch thing. We eventually sold it. Our home was right on the water, but Waimea has really dirty water from the river. I guess my parents were really

busy. They instilled the fear of God in us, we are not to go in the ocean ... don't go in the ocean. [Chuckles.]

HKA: Do you remember the ... well you were probably around during the sugar time, the plantation time ... can you describe that time to me?

MAF: It was structured. I think everybody worked for kine [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of a purpose. Waimea Sugar was a small plantation, we only had 45 employees. Kekaha, next door, had 300. But I would call it structured. We grew up pretty much knowing the ethnic differences ... everybody teased each other about it ... about each other, but nobody disliked anybody. To me it was a great upbringing. I gotta say, I was definitely privileged because I was the plantation manager's child's son. So, my life was different from everybody else's. But you know what? We always wound up in the camp playing agates or things like that. [Chuckles.] Like I said, it was structured, your org chart was very structured ... you had a manager, you had your office staff, you had your field supe, factory supe, your supervisors, and all the people going down from there. Everybody worked ... I'm a Buza man, so I work for Mr. Buza ... or I work for Peralta, something like that. I think it was somewhat stable, because you knew you were going to get paid every week or ... I cannot remember how pay was back then. I would say, disciplined and organized ... and culturally diverse, because you had all these different people around ... from Japanese bon dances to  $l\bar{u}'au(s)$  [big feasts, parties] to Filipino things. I grew up with ... we had yard men, Joe Tsuyama, an old Japanese man, and Jose Cuaresma. Before I knew English words, I knew all the bad Japanese words and the bad Filipino words. But you grow up like that ... you think you're culturally astute to all these different things. I went to Carnegie Mellon University in Pittsburgh, kine of like the first time I left Hawai'i. And there were two groups of people I have never ever come across in Hawai'i, the Jews and Black people. Pittsburgh was half Jewish and half Black. [Laughing.] That made me kine of ... and when people come to Hawai'i how different the things are over here, because I didn't know anything about this kosher food and stuff like that, that they eat over there. I had no idea. I had a better appreciation for visitors coming over here and asking, "How come you guys eating salty seed?" Stealing money to buy Yick Lung Li Hing Mui, or the big bag \$1.75. [Laughing.]

HKA: [Laughing.] Or like mochi crunch or something. Yeah. So what is your view of the military or your interactions?

MAF: For me, we have always been supportive of the base all the way back to when we became part of the United States ... you know ... because my grandfather was out here, and the sand dunes ... he couldn't see any use for that. It was a military reserve coming into the United States. My uncle was running Kekaha Sugar or was it junior number two at the time, helps that Australlian pilot, Kingston-Smith or something like ... Flight of the Southern Cross ... out of PMRF (Pacific Missile Range Facility] ... I don't know if you know that story.

HKA: No. Can you tell me ...?

MAF: Apparently, they were trying to around the world flight. They landed the plane here, and their last leg was from here down to Kwajalein or the island that Amelia Earhart was trying to hit, some island down there. So apparently, they were getting it ready at her plantation. Of course,  $k\bar{o}kua$  [help] everything they could, fuel, food, and what ever. Apparently, the navigator liked to drink. They take off in the morning when it's cooler, so they can get more fuel into the airplane. They tried to find the navigator, and he's gone. They go up to Waimea Valley and he's in a bar at Waimea Valley. [Laughing.]

HKA: [Laughing.]

MAF: They bring him down ... "Get in the airplane." They take off on the dunes, and they built some *kine* [Hawaiian pidgin language meaning sort of or somewhat, and it sometimes means whatchamacallit] of runway on the dunes. They took the plane off, then the crowd watching it, and it sinks below the dunes. I go, "Oh, my God, the thing crashed." Struggle, struggle so close to there water, finally could get some elevation, and off it flew. They found their destination and so they didn't die or anything like that. But it's been a close relationship. I remember going out there as a kid, when they were doing the missile training and things. They would invite the community out there, and they would do this flybys and stuff. My father-in-law just passed, was a young teenager during the World War Two, and would pick up slop and stuff like that out there. *Kine* of fast forward, a lot of anit-military kind of people ... I got the Kikiaola Land Company ... I was running Kikiaola Land at the time ... I got our Board of Directors to write a public letter stating that we supported the base. We have always supported it. I have been in my Rotary Club for 40 something years. Back in the day, the Commanding Officer was always part of the Rotary, and got to be good friends with several of them. I generally have a nice pass to go out there. I don't have my CAC

(Common Access Card) card anymore, but mines get renewed all the time, either for Kikiaola Construction because we are out there doing work or because of now, our relationship. But on a larger thing, to me, it's good for the community because again it's financial stability, it gives good jobs for community people, high paying jobs, most of the positions are very stable. We fought hard because there was a period when they thought about shutting it down, and we worked hard to lobby that they keep it. I think the Base Commander at the time was a friend of mine. He explained to me what he was doing to reposition the base, and at that point ... I think it was under Point Magoo or something like that ... and got it transferred to Pear Harbor, and that's been a really good situation. The base people intergrate with the community fairly well. I think, the *Haole* [Caucasian] sailors and all that love the local girls, the local girls love the *Haole* sailors ... and vice versa. So you get a good ethnic mixing as well ... if you wanna call it that. There has never been any real pilikia [trouble] between this community and base people. People wanting to fight. There is a relatively small presence ... so, it's not like Schofield Barracks ... compared to Wahiawa. They're small, and I think the Navy programs are good stewards of the land pretty much. We actually don't like working on there because you got to go jump through too many hoops, because environmental stuff. We used to open up one of the ditches there, and it was like we just take one of our excavators, go on the base, and just do it. But you have to go through all these inspections. We can't go there because it's a nēnē [Hawaiian goose (Nesochen sandvicensis)] nesting area. But as stewards of the land, I think they're, in my opinion, they're doing as good, if not better than anybody else would. When Inouye was around, a lot of pork came this way, that was good.

HKA: I guess we can end it here. And I thank you for your time, *mahalo* [thanks].

MAF: Okay.

# APPENDIX C: CONSULTANT BIOGRAPHICAL DATA SHEET

# **Biographical Data Sheet**

Interviewer Name: Date of Interview:
Bute of interview.
Participant's first name:
Participant's last name:
Participant's middle name (if applicable):
Participant's maiden name (if applicable):
Contact information:
Mailing address:
Town:
Island:
State:
Zip Code:
Email:
Phone:
Birthdate (year):
Place born:
Gender:
Citizenship:
Ethnicity:
Language(s) can speak:
Places Lived & When:
Currently living in:
Father's name:
Mother's name:
How many siblings? What is the participant's place in family (order of siblings)?
Participant's spouse?
Name of spouse:
Birthdate of spouse:

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Birthplace of spouse:	
Children (how many and how old)	):

Ancestors:
Names of maternal ancestors:
Location of where maternal ancestor(s) lived/moved?
Years maternal ancestor(s) lived:

Name of paternal ancestors: Location of where paternal ancestor(s) lived/moved? Years paternal ancestor(s) lived:

Education:
Elementary:
Intermediate:
High School:
Other (trade school/college):

Employment: Previous jobs (title, dates, location): Current job (title, dates):

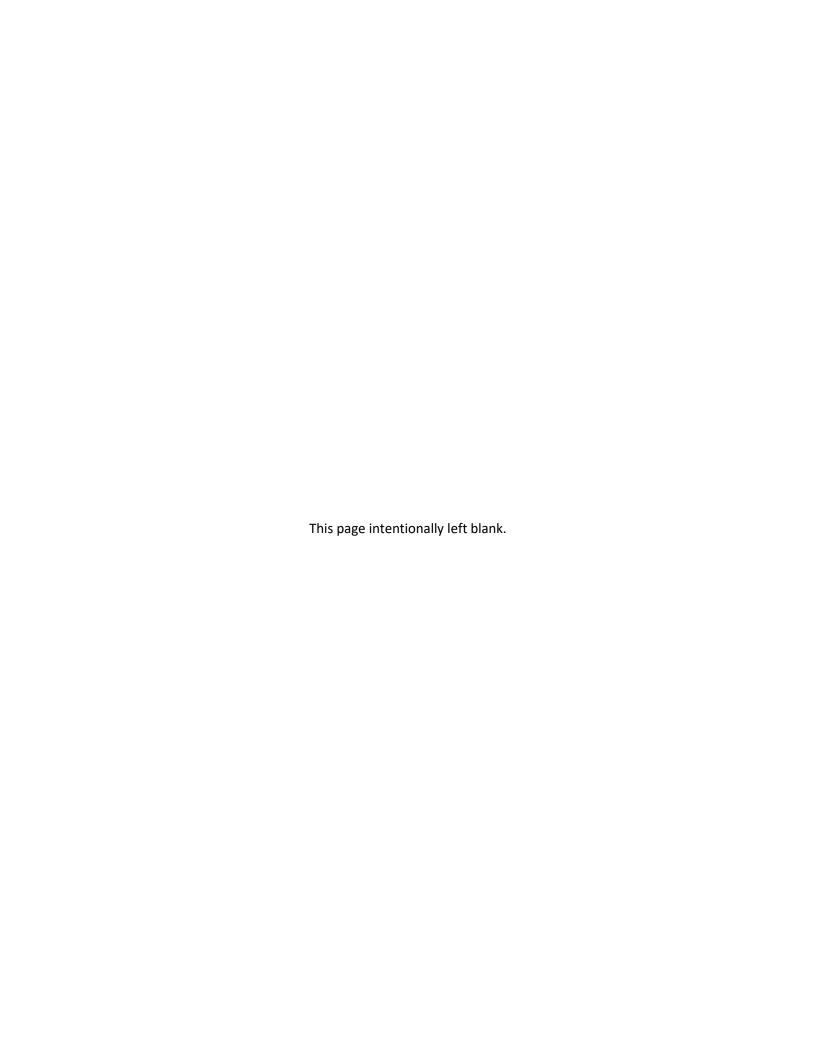
Interests/skills/hobbies: Religion: Community/professional organization involvement (past & present):

What public emergencies or natural disasters have you experienced during your lifetime?

Is there anything specific you would like me to ask you during the interview?









Historic Preservation

## **FINAL**

ARCHAEOLOGICAL INVENTORY SURVEY
OF THE NATIONAL AERONAUTICS AND SPACE AGENCY (NASA)
KŌKE'E PARK GEOPHYSICAL OBSERVATORY (KPGO)
LEASE AND EASEMENT AREAS,
WAIMEA AHUPUA'A, KONA MOKU,
ISLAND OF KAUA'I

[TMK: (4) 1-4-001:013 (POR.)]

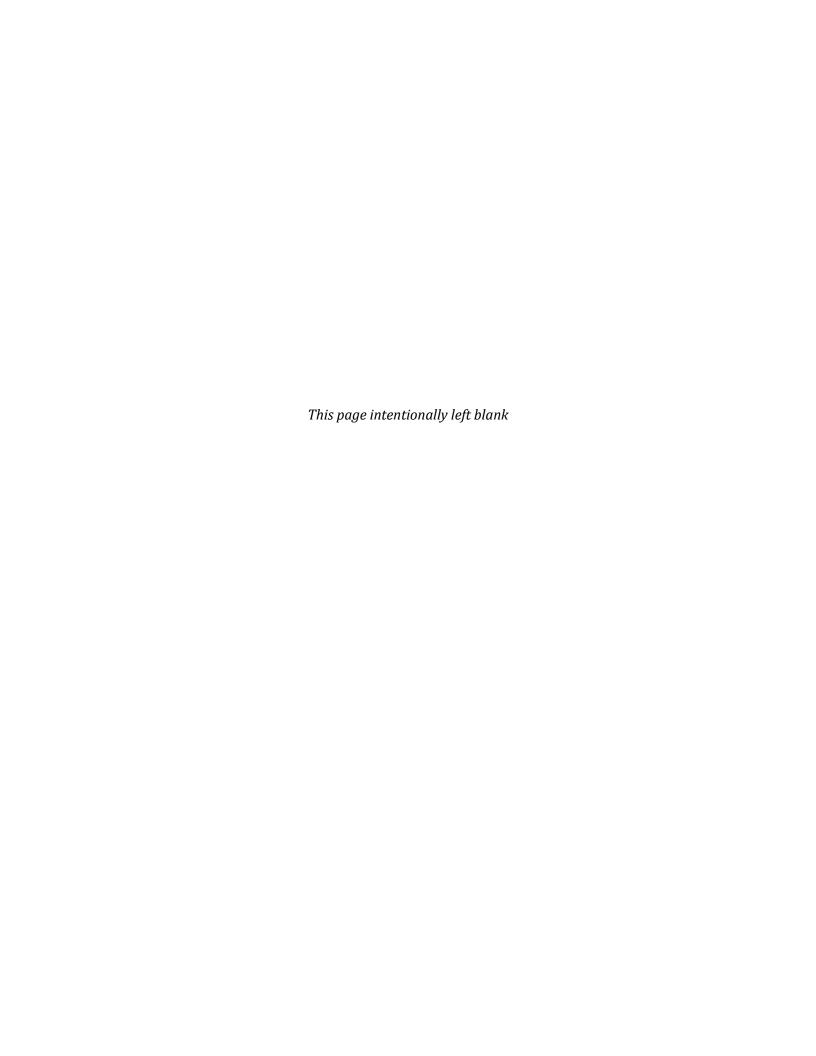


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#### **FINAL**

# ARCHAEOLOGICAL INVENTORY SURVEY OF THE NATIONAL AERONAUTICS AND SPACE AGENCY (NASA) KŌKE'E PARK GEOPHYSICAL OBSERVATORY (KPGO) LEASE AND EASEMENT AREAS, WAIMEA AHUPUA'A, KONA MOKU, ISLAND OF KAUA'I

[TMK: (4) 1-4-001:013 (POR.)]

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Department of the Navy
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and
Naval Facilities Engineering Command

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**Note:** In this report, the spellings and the use of diacritical marks (glottal stops and macrons) follow conventions issued by Pukui and Elbert (1986) and Pukui et al. (1974) with limited exceptions – spellings and diacritical marks are used as the original sources used them in quotations, titles, and proprietary names.

**Cover Image:** *SIHP 50-30-06-YYYYY (TS-002) terrace (view to south).* 



# **MANAGEMENT SUMMARY**

Reference	Archaeological Inventory Survey of the National Aeronautics and Space Agency (NASA) Kōke'e Park Geophysical Observatory (KPGO) Lease and Easement Areas,	
	Waimea Ahupua'a, Kona Moku, Island of Kaua'i [TMK: (4) 1-4-001:013 (por.)] (Irvine and Mulrooney 2025)	
Date	May 2025	
Project Number	Pacific Legacy, Inc. Job Code 4209.01	
Project Location	The National Aeronautics and Space Agency (NASA) Kōke'e Park Geophysical Observatory (KPGO) project area is located within a portion of TMK: (4) 1-4-001:013, Waimea Ahupua'a, Kona District, Kaua'i Island.	
Project Description and Related Ground Disturbance	NASA is proposing to maintain long-term use of the 23 acres of leased lands and easements for continued operation of KPGO after existing real estate agreements for these State lands are set to expire in 2030. No change in any use or maintenance of existing infrastructure is planned at KPGO, and no construction, renovation, or demolition of facilities is planned.	
Project Area Land Jurisdiction	State of Hawai'i	
Project Proponent	NASA and Pacific Missile Range Facility (PMRF) Department of the Navy	
Investigation Permit Number	Fieldwork for this project will be performed under Pacific Legacy's Hawai'i State Historic Preservation Division (SHPD) annual archaeological permit, issued per Hawai'i Administrative Rules (HAR) §13-282. Pacific Legacy's current permit for the year 2025 is 25-11.	
Agency	NASA and Department of the Navy	
Project Area Acreage	23 acres	
Document Purpose and Historic Preservation Regulatory Context	This archaeological inventory survey (AIS) is being completed as part of an Environmental Impact Statement (EIS) being prepared by the Navy and NASA to evaluate potential environmental impacts of proposed real estate agreements with the State of Hawai'i for PMRF and KPGO.	
	This document conforms with NASA and the Navy's consultation with the State Historic Preservation Division (SHPD), including Hawaii Administrative Rules (HAR) 13-281 and Hawaii Revised Statutes (HRS) Chapter 6E. It also conforms with the Antiquities Act of 1906, the Archaeological Resources Protection Act (ARPA) of 1979, ARPA implementing regulation (32 CFR Part 229), National Historic Preservation Act (NHPA) of 1966 (as amended), NRHP implementing regulations (36 CFR 800), Native American Graves Protection and Repatriation Act (NAGPRA), Department of Defense Instruction (DoDI) 4715.16, and Marine Corps Order (MCO) P5090.2A.	
Fieldwork Effort	Fieldwork was conducted from January 6 through 10, 2025 by Pacific Legacy archaeologists Emmaline Irvine, M.A., James McIntosh, B.A., and Mara Mulrooney, Ph.D. Fieldwork required ten person-days to complete. All fieldwork was conducted under the general supervision of Mara Mulrooney, Ph.D. (principal investigator).	
AIS Results	The AIS resulted in the identification of two newly identified historic properties (SIHP 50-30-06-XXXXX, TS-001 and SIHP 50-30-06-YYYYY, TS-002). SIHP -XXXXX (TS-001), consisted of 17 features associated with NASA KPGO infrastructure. SIHP -YYYYY (TS-002) consisted of a post-Contact terrace, interpreted as a temporary habitation feature. SIHP -XXXXX and -YYYYY are assessed as not significant. No mitigation is recommended at this time for SIHP -XXXXX (TS-001). SIHP -YYYYY (TS-002) has been adequately documented and is recommended for no further work.	



#### 1.0 INTRODUCTION

Pacific Legacy, Inc., under contract to Dawson, conducted an archaeological inventory survey (AIS) of the National Aeronautics and Space Administration (NASA) Kōke'e Park Geophysical Observatory (KPGO) lease and easement areas located within Kōke'e State Park, in the *ahupua'a* of Waimea, Kona District, Kaua'i Island [TMK: (4) 1-4-001:013 (por.)] (Figure 1, Figure 2).

The AIS covered a 23-acre project area/area of potential effect (APE) that is owned by the State of Hawai'i. The AIS was completed as a part of an Environmental Impact Statement (EIS) being prepared by the US Navy (Navy) and NASA to evaluate potential environmental impacts of proposed real estate agreements with the State of Hawai'i for PMRF and KPGO.

This AIS report conforms with NASA and the Navy's consultation with the State Historic Preservation Division (SHPD), including Hawaii Administrative Rules (HAR) 13-281 and Hawaii Revised Statutes (HRS) Chapter 6E. It also conforms with the Antiquities Act of 1906, the Archaeological Resources Protection Act (ARPA) of 1979, ARPA implementing regulation (32 CFR Part 229), National Historic Preservation Act (NHPA) of 1966 (as amended), NRHP implementing regulations (36 CFR 800), Native American Graves Protection and Repatriation Act (NAGPRA), Department of Defense Instruction (DoDI) 4715.16, and Marine Corps Order (MCO) P5090.2A.

# 1.1 PROJECT AREA

NASA's KPGO is located on a ridge within Kōke'e State Park. KPGO is one of the core sites for NASA's Space Geodesy Project (SGP), which maintains a global network of space geodetic observing instruments that utilize various observation techniques to collect geodetic data. NASA and the scientific community use data collected at KPGO to study ecosystems, geological hazards, sea-level change, water cycles, crustal-dynamics, and many other Earth science topics. Many of these applications rely on the long history and continuity of the geodetic data collected from the current KPGO location, which is within Kōke'e State Park near Waimea Canyon at an elevation of 3,600 feet. This location is isolated from radio broadcasts that would interfere with the sensitive measurements made by the Very Long Baseline Interferometry (VLBI) system. The location on the island of Kaua'i is also critical for tying the Hawaiian Islands into the International Terrestrial Reference Frame (ITRF), which contributes toward improving positioning and navigation accuracy around the Hawaiian Islands.

Since 1961, NASA has operated KPGO to collect geodetic data. KPGO includes five site areas (Sites A through E), which are described in more detail below.

## Site A - Former MK-74 Radio Detecting and Ranging (RADAR) Site

Site A is 5.3 acres in area and consists of four buildings and structures. Those currently enumerated are NASA Building 5539, NASA Building 5535, NASA Building 5534 and NASA Building 5536, which include technological library and flammable storage buildings. Navy assets include a former MK-74 RADAR that is currently used for storage as well as utilities and communication conduits that serve Mākaha Ridge.



#### Site B - Kōke'e Power Plant

Site B is 2.3 acres in area and consists of three buildings and structures, among them NASA Building 5540, NASA Building 1076/51/37 and NASA Building 1076/51/32. Navy assets include a diesel generator that provides backup power to Sites A, C, D, and E as well as hazardous material storage (paint, mechanical lubricating, and cleaning fluids), storage for power plant supplies and water, two 25,000-gallon diesel tanks, a fire suppression system, and an electrical transformer yard.

#### Site C - Kōke'e Communications and State of Hawai'i Facilities

Site C is 6.1 acres in area and consists of eight buildings and structures. They are NASA Building 5542, NASA Building 769, NASA Building 1076/51/39, NASA Building 1076/51/38, NASA Building 5541, one NASA Building to be determined, NASA Building 1076/51/33, and NASA Building 5544. Navy assets include communication systems, including a 200-foot free standing communication antenna tower and a 150-foot guyed antenna tower, a communication building that houses a transmitter, receiver, and network equipment that support various Navy, federal, and state/county systems, a NOAA weather radio broadcast transmitter, used for public weather information, as well as DLNR-managed facilities that support Kōke'e State Park, including a helicopter launch/landing area, maintenance building/storage building, pole barn, open storage yards/drums and vehicle storage areas, and small cinder-block shack.

## Site D - Kōke'e Telemetry and RADAR

Site D is 6.5 acres in area and consists of eight buildings and structures. They include NASA Building 5545, NASA Building 5546, two NASA Buildings to be determined, NASA Building 1076/51/26, NASA Building 783, NASA Building 5548, NASA Building 1076/51/41, as well as instruments for KPGO, including a transmitter building and multiple antennas.

## Site E - Kōke'e Park Geophysical Laboratory

Site E is 5.7 acres in area and consists of six buildings and structures. They include NASA Building 5549, NASA Building 1076/51/40, NASA Building 1076/51/29, NASA Building 1076/51/42, NASA Building 5550, and NASA Building 1076/51/30, including two main buildings housing equipment and administrative offices, two antennas mounted on tracking gears and footed in concrete, and several additional outbuildings/shelters and equipment storage areas. As with Site D, Navy does not have assets at Site E.

## 1.2 PROIECT DESCRIPTION

Navy and NASA are jointly preparing an Environmental Impact Statement (EIS) to evaluate potential environmental impacts of proposed real estate agreements with the State of Hawai'i for PMRF and KPGO. NASA currently leases or holds easements for 23 acres of land owned by the State of Hawai'i that is used for operations of KPGO. NASA has issued a Use Permit to the Navy for the use of portions of KPGO for radar, telemetry, and communications services for PMRF mission support.

The data collected at KPGO supports modern navigation technology such as Global Positioning System (GPS) that is widely used by the public, and is also used in scientific studies, spacecraft navigation, and the geolocation of Earth observations.

NASA is proposing to maintain long-term use of the 23 acres of State lands (totaling 16 acres of leased lands and 7 acres of easements) for continued operation of KPGO after existing real estate agreements for these State lands are set to expire in 2030. No change in any use or maintenance of



existing infrastructure is planned at KPGO, and no construction, renovation, or demolition of facilities is planned.

#### 1.3 Environmental Setting

Soils in the vicinity of KPGO include Kokee silty clay loam (Figure 3), which is described as follows by Foote et al. (1972):

This series consists of well-drained soils on uplands on the island of Kauai. These soils developed in material weathered from basic igneous rock, probably mixed with volcanic ash. They are gently sloping to very steep. Elevations range from 3,400 to 4,200 feet. The annual rainfall amounts to 60 to 70 inches. The mean annual soil temperature is 59° F. Kokee soils are geographically associated with Paaiki and Kunuweia soils.

These soils are used for water supply, wildlife habitat, and woodland. The natural vegetation consists of ohia lehua, puakeawe, blackberry, yellow foxtail, koa, plantain, uki uki, redwood, and associated plants.

**Kokee silty clay loam, 0 to 35 percent slopes** (KSKE) – This soil is undulating to steep and occurs on uplands. Included in mapping were some small, narrow areas of alluvial soils.

In a representative profile the surface layer, about 8 inches thick, is dark-brown silty clay loam and silt loam that has subangular blocky structure. The subsoil, about 34 inches thick, is strong-brown and dark-brown silty clay loam and silty clay that has subangular blocky structure. The substratum is soft, weathered rock. The soil is very strongly acid throughout the profile.

Permeability is moderately rapid. Runoff is medium, and the erosion hazard is slight to moderate. Roots penetrate to a depth of 20 inches or more, depending on the depth to weathered rock.

**Kokee silty clay loam, 35 to 70 percent slopes** (KSKF). – On this soil, runoff is rapid and the erosion hazard is severe.

This soil is used for water supply, wildlife habitat, and woodland. (Capability classification VIIe, nonirrigated; pasture group 12; woodland group 10). (Foote et al. 1972:71-72)

Conservation areas in the vicinity of the project area include forested lands with a wide range of tree species, including 'ōhi'a lehua (Metrosideros polymorpha), koa (Acacia koa), ohe kiko'ola (Polyscias waimeae), hala pepe (Pleomele hawaiiensis), hō'awa (Pittosporum napaliense), kalia (Elaeocarpus bifidus), māmaki (Pipturus kauaiensis), loulu (Pritchardia spp.), 'iliahi (sandalwood; Santalum paniculatum), and the Kaua'i kauila (Alphitonia ponderosa). Economically important plants that have been noted in the general area include koki'o ke'oke'o (Hibiscus arnottianus), maile (Alyxia stellata), hoi kuahiwi (Similax melastomifolia), mokihana (Melicope anisate), pōpolo (Solanum americanum), and pūkiawe (Leptecophylla tameieameiae) (Handy and Handy 1972).



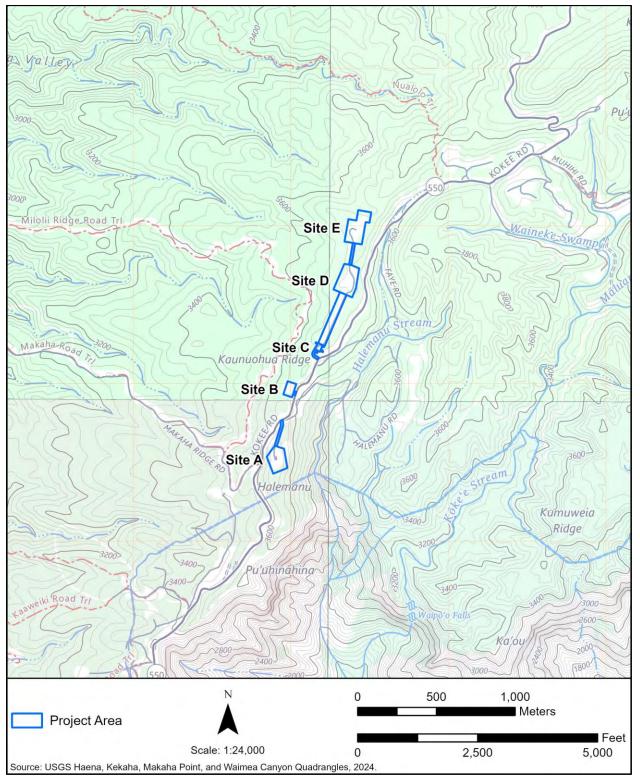


Figure 1. Location of the NASA KPGO Project Area.

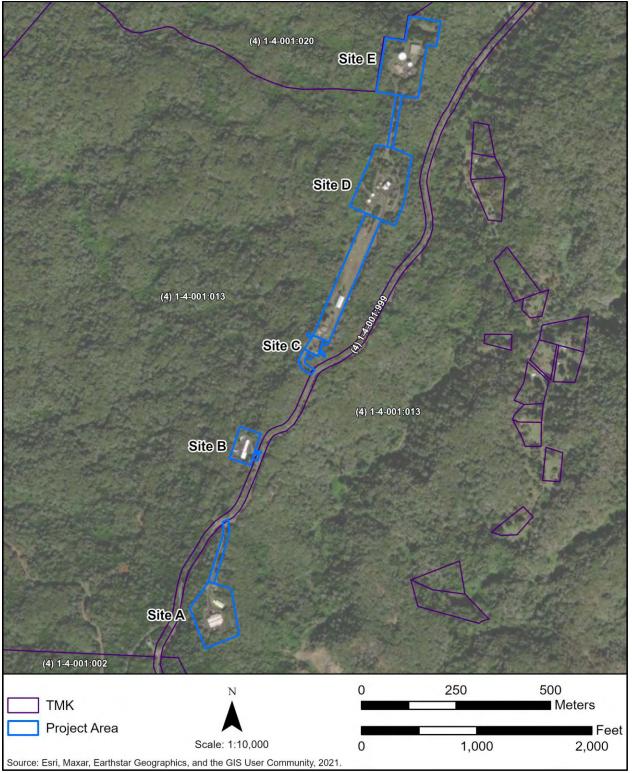


Figure 2. Location of the NASA KPGO Project Area with TMK boundaries.

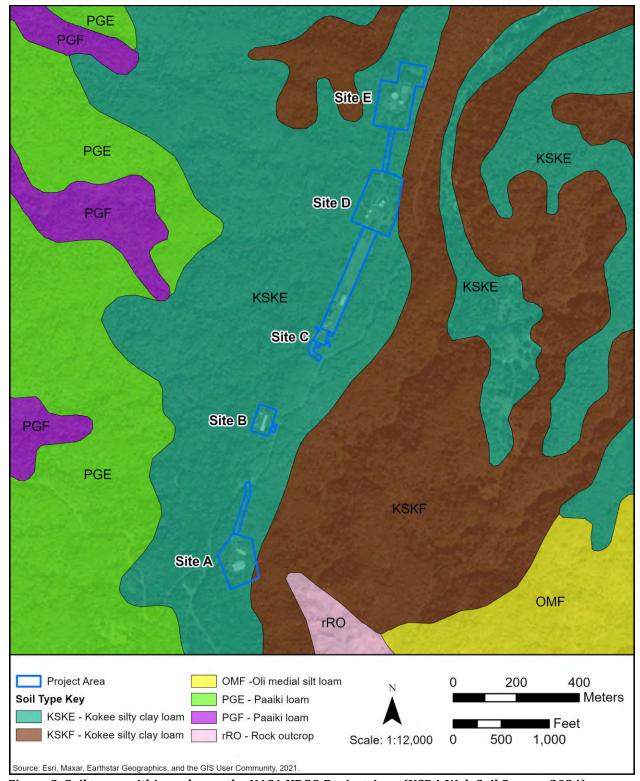


Figure 3. Soil types within and near the NASA KPGO Project Area (USDA Web Soil Survey, 2024).

#### 2.0 METHODS

## 2.1 ARCHIVAL AND BACKGROUND RESEARCH

Pacific Legacy, Inc. conducted a thorough document review for the production of this AIS report. Research for this project involved a review of historical documents, historical maps and aerial photographs, and reference materials. Relevant archaeological reports were obtained from the SHPD Library and Pacific Legacy's internal database. Historical maps were obtained from the Hawai'i State Department of Accounting and General Services (DAGS) and Pacific Legacy's internal database, relevant historical and ethnographic sources housed in the Pacific Legacy library and found through online databases including the Office of Hawaiian Affairs (OHA) Papakilo (https://www.papakilodatabase.com/) and Kīpuka (https://kipukadatabase.com/) Databases, the Hawaiian Electronic Library, Ulukau (https://ulukau.org/index.php?l=en), the Digital Archives of Hawai'i (https://digitalarchives.hawaii.gov/), and the Hawaiian Legends Index housed at the University of Hawai'i at Mānoa (https://manoa.hawaii.edu/hawaiiancollection/legends/). Information on Land Commission Awards (LCAs) was obtained from Waihona 'Āina (https://waihona.com/) and accessed through the Ulukau Māhele Database (https://ulukau.org/cgi-bin/vicki?a=p&p=intro). These resources, as well as GIS mapping, were used to identify the locations of previous archaeological surveys and synthesize the background sections of this report.

## 2.2 FIELD METHODS

Fieldwork was conducted during five consecutive days between January 6 and January 10, 2025 by Pacific Legacy archaeologists Emmaline Irvine, M.A., James McIntosh, B.A., and Mara Mulrooney, Ph.D. Fieldwork required ten person days to complete. All fieldwork was conducted under the general supervision of Mara A. Mulrooney, Ph.D. (principal investigator).

The project area was subjected to a pedestrian survey with nearly 100% coverage. Approximately 0.89 acres, or 3.9% of the project area was not accessible due to steep slopes. In these areas, field personnel conducted a visual survey from a safe vantage point. Visibility ranged from excellent to moderate, the latter due to areas of native and non-native trees and shrubs. The field crew surveyed the project area in 5-m transects. Site documentation included detailed recording with written descriptions, photography, GPS recording, plan-view mapping of all newly identified features, and development of a site database in ESRI ArcGIS Pro. Recordation also included terrestrial LiDAR scanning of selected features. An individual point location was taken for each feature (feature datum) using a sub-meter Trimble R1 GPS unit. Site boundaries were created in ArcGIS Pro as a polygon by geo-referencing the site's plan view map with feature datums and additional GPS positions. Coordinates were recorded in World Geodetic System (WGS) 1984 Universal Transverse Mercator (UTM), Zone 4 North projection.

When an archaeological feature was encountered, it was examined to determine whether it constituted an isolated element or whether it formed part of a larger complex of features. Each recognized archaeological feature or group of spatially clustered features was then assigned a temporary field number to facilitate identification.



## 2.3 GEOSPATIAL METHODS

Historical maps were georeferenced in ArcGIS Pro using the Haena, Kekaha, Makaha Point, and Waimea Canyon 7.5-minute USGS topographic quadrangles (2024). Known points were used to correlate the location of historical maps relative to these base layers; however, the location of the project area on historical maps should be considered approximate. Geospatial data was recorded in the field using a handheld Trimble R1 receiver to submeter precision, differentially corrected in real time and subsequently uploaded to ArcGIS Online. GNSS positions were collected in the field as Esri shapefiles with a WGS 1984 UTM Zone 4 projection.



#### 3.0 ARCHIVAL AND BACKGROUND RESEARCH

The project area lies in the traditional *moku* (district) of Kona, which is now part of the modern tax district of Waimea on the island of Kaua'i. The NASA KPGO Project Area is within the *ahupua'a* (traditional land division) of Waimea, which follows the traditional *mauka* to *makai* (from the mountains to the sea) pattern that extends from the upland region, including Kōke'e, to the coastal waters of Waimea.

## 3.1 TRADITIONAL HISTORY

#### 3.1.1 Traditional Boundaries

The current boundaries of Waimea Ahupua'a border Makaweli and Wainiha Ahupua'a on the northeast and east sides, Hanakāpī'ai, Hanakoa, and Kalalau Ahupua'a on the north side, and Honopū Ahupua'a on the northwest side (Figure 4).

## 3.1.2 Significant Place Names

The traditional Hawaiian place names given to significant places carry meaning and can convey much about the history of a place, its physical characteristics, the qualities of the people who resided there, and other culturally significant information. In the preface to *Place Names of Hawaii* (Pukui et al. 1976), Samuel Elbert writes:

Hawaiians named taro patches, rocks and trees that represented deities and ancestors, sites of houses and *heiau* (places of worship), canoe landings, fishing stations in the sea, resting places in the forests, and the tiniest spots where miraculous or interesting events are believed to have taken place. (Pukui et al. 1976:x)

A selection of place names associated with Waimea Ahupua'a are listed in Table 1 and depicted in Figure 5, and have been identified through Boundary Commission Testimonies, historic maps, and information received from cultural descendants. Translations and meanings of significant place names have been added to Table 1 when they could be found in existing literature (e.g., Pukui et al. 1976).

Table 1. Place Names Associated with the Area Surrounding the NASA KPGO Project Area

Place Name	Description/Significance	Source
Ahuloulu Heiau	"The volcano hill"; Heiau Complex; Pu'u; 'ili kū	USGS 1965; Office Of
Complex (Pu'u-Kapele)		Hawaiian Affairs Kīpuka
		Database
'Āwini Falls	Wailele	USGS 1965
'Āwini Stream	Stream	USGS 1965
Elekeniki Stream	Stream	USGS 1965
Elekeninui Stream	Stream	USGS 1965
Ha'ele'ele Ridge	"Blackish"; Ridge	USGS 1965
Ha'ele'ele Valley	"Blackish"; Valley	USGS 1965
Halemanu	"Bird house"; Pu'u, triangulation station	USGS 1965
Halemanu Stream	"Bird house"; Stream	USGS 1965

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Place Name	Description/Significance	Source	
Hikimoe Ridge	"Resting place"; Ridge	USGS 1965	
Hikimoe Valley	"Resting place"; Valley	USGS 1965	
Hipalau Valley	Valley	USGS 1965	
Kā'ana	"Division"; Hill	USGS 1965	
Ka'anamahuna Valley	Valley	USGS 1965	
Kā'aweiki Ridge	"Tie a little"; Ridge	USGS 1965	
Kāʻaweiki Valley	"Tie a little"; Valley	USGS 1965	
Kahelunui Valley	"Big Kahelu"; Valley	USGS 1965	
Kāhililoa	"Long feather standard"; Boundary point, pu'u	USGS 1965	
Kahoaloha Valley	"The friend"; Valley	USGS 1965	
Kaluanamaulu Valley	Valley	USGS 1965	
Ka'ou	Boundary point, pu'u	USGS 1965	
Kauaikinana Stream	Stream	USGS 1965	
Kauhao Ridge	"The scooping"; Ridge	USGS 1965	
Kaʻulaʻula Valley	Valley	USGS 1965	
Kaumuaiea (Kaumuaie)	Heiau	Office Of Hawaiian Affairs	
Heiau		Kīpuka Database; Bennett	
		1931:104	
Kaunuohua Ridge	"The altar of Hua"; Ridge	USGS 1965	
Kawaikōī Stream	"The flowing water"; Stream	USGS 1965	
Kawai'ula Valley	"The red water"; Valley	USGS 1965	
Koai'e	'ili 'āina and stream in Waimea. They are "named	Ulukau Hawaiian Place Names	
	for the koai'e (Acacia koaia) tree that was uprooted	Collection; Pukui et al.	
	by Nā-maka-o-ka-paoʻo, a Maui hero who made a	1974:114	
	war club of it."		
Koai'e Stream	Stream	USGS 1965	
Koaiki	'ili 'aina	Ulukau Hawaiian Place Names	
		Collection	
Kōke'e Stream	"To bend <i>or</i> to wind"; Stream	USGS 1965	
Kopakaka Ridge	Ridge	USGS 1965	
Kuʻia Valley	"Obstructed"; Valley	USGS 1965	
Kukui	"Candlenut lamp, light of any kind"; 'ili 'aina	Ulukau Hawaiian Place Names	
		Collection	
Kumuwela Ridge	Ridge	USGS 1965	
Laumahi	'ili 'aina	Ulukau Hawaiian Place Names	
		Collection	
Lua Reservoir	"Pit, crater, hole"; Reservoir	USGS 1965	
Mahanaloa Valley	"Very warm"; Valley	USGS 1965	
Mākaha Ridge	"Fierce"; Ridge	USGS 1965	
Maluapopoki Stream	Stream	USGS 1965	
Miloli'i	Land sections, a ridge, and a valley along the Nāpali	USGS 1965; Pukui et al.	
	coast of Kaua'i. Miloli'i means "fine twist (as sennit	1974:151-152	
	cord)" and a place on Hawai'i Island of the same		
	name was noted for its excellent sennit and an		
	expert sennit twister who lived there. An alternative		
	interpretation of the name is "small swirling,' as a		
	current."		
Moeloa Falls	Wailele	USGS 1965	



Place Name	Description/Significance	Source	
Mōhihi	A road, river, falls, and divide in Waimea Canyon,	USGS 1965; Pukui et al.	
	"probably named for a variety of sweet potato."	1974:153	
Nāwaimaka Stream	"The tears"; Stream	USGS 1965	
Noe Stream	Stream	USGS 1965	
Nu'alolo	A valley, stream, land section, and trail on the Nāpali	USGS 1965; Pukui et al.	
	coast, northwest Kaua'i, proposed as a State reserve	1974:167	
	area. The iliau, a relative of the silversword, grows		
	here		
Oneopaewa Valley	Valley	USGS 1965	
Pa'aiki Valley	Valley	USGS 1965	
Papa'alai	Boundary Point, <i>Pu'u</i>	USGS 1965	
Papa aiai Pohakuwa'awa'a			
	"Corrugated rock"; Boundary point, stone	USGS 1965	
Polihale	"House bosom"; Ridge; State park, beach, ridge, heiau, and land division, in Waimea, famous for its	USGS 1965; Pukui et al.	
	seaweed (pahapaha) used in lei. The practice is said	1974:188	
	to have been introduced by Pele's older sister, Nā-		
	maka-o-Kaha'i. Literally, the name translates to "house bosom."		
	nouse bosoni.		
Poʻo Kaeha	Pu'u	USGS 1965	
Poʻomau Stream	"Constant source <i>or</i> constant head"; Stream USGS 1965		
Poʻopoʻoiki Valley	"Small depression"; Valley USGS 1965		
Pu'u Hinahina	Boundary Point, pu'u, a hill in Waimea, perhaps	USGS 1965; Pukui et al.	
	named for one of the several hinahina plants	1974:196	
Pu'uka'ohelo	Pu'u	USGS 1965	
Pu'ukapele	a hill at Waimea Canyon, Kaua'i, upon which the	Pukui et al. 1974:198	
	Ahuloulu Heiau Complex is located. It translates		
	literally to "the volcano hill." Pukui et al. (1974:198)		
	note that it was believed that the voices of the		
	menehune here were audible on the island of O'ahu.		
	"Wawā ka Menehune i Pu'u-ka-Pele ma Kaua'i,		
	pūʻoho ka manu o ka loko o Ka-wai-nui ma Koʻolau-		
	loa, Oʻahu, Menehune speak at Puʻu-ka-Pele, birds		
	at Ka-wai Nui pond at Koʻolau Loa, Oʻahu, are		
	startled"		
Pu'ulua	"Double hill"; Pu'u, triangulation station, vent	USGS 1965	
'Ulumaika Court	Recreation area	Office Of Hawaiian Affairs	
		Kīpuka Database; Bennett	
		1931 (SIHP 50-30-06-00037)	
Wahane Valley	"Loulu palm nut"; Valley	USGS 1965	
Waiahulu	ʻili ʻaina	Ulukau Hawaiian Place Names	
		Collection	
Waiahulu Stream	Stream USGS 1965		
Waimea River	"Reddish water (as from erosion of red soil)"; River	USGS 1965	
Waineke Swamp	"Bulrush water"; Swamp USGS 1965		
Waipoʻo Falls	Wailele	USGS 1965	



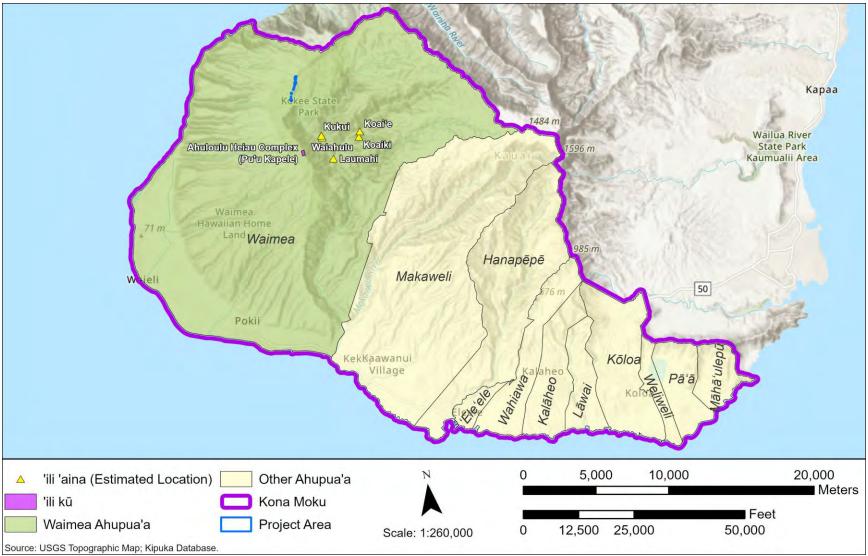


Figure 4. Ahupua'a boundaries in the vicinity of the NASA KPGO Project Area.

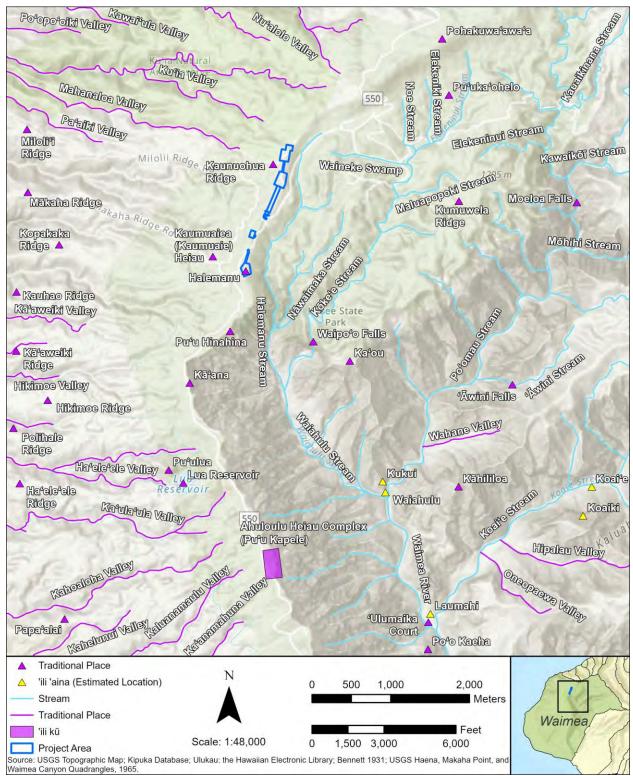


Figure 5. Place names in the vicinity of the NASA KPGO Project Area.



#### 3.1.3 Mo'olelo

Frederick B. Wichman collected *mo'olelo* (oral traditions) associated with Kōke'e State Park (Wichman 2001). These *mo'olelo* are summarized and presented in Folk et al. (2021). Several of the locales that Wichman (2001) wrote of are in the vicinity of the current project area. The reader is referred to Wichman (2001) and Folk et al. (2021) for more information on these *mo'olelo* and others. (also see Figure 4 and Figure 5 for locations of significant places in the region). *Mo'olelo* in the vicinity of the current project area are summarized by Folk et al. (2021) and those that reference significant places in the immediate vicinity of the project area are included below.

On Pu'u Hinahina (also written Pu'u-hinahina or Pu'uhinahina), a traditional place located south of the current project area:

Pu'u-hinahina (*geranium hill*) lookout is named after a native geranium that grows as a shrub or small tree that bears red and white flowers. Pu'u-hinahina is the spot where the trial of 'Elepaio took place. 'Elepaio is a small, alert, brown bird with a pert pointing tail and bright black eyes. This bird is very curious and will fly very close to anyone venturing into his territory. One day a man carrying a water container made from a gourd went to a dark spring to collect healing water for his ailing chief. After the man had filled his gourd, 'Elepaio flew down and pecked a hole into the gourd causing all of the healing water to drain out. The man became angry with 'Elepaio and threw a rock at him, hitting his leg. 'Elepaio flew off to Owl, the king of all birds, and demanded a trial to condemn the man who had hurt him. When confronted with the other birds of the forest, 'Elepaio admitted it was his own doing that had caused the man to throw a rock at him. As punishment, the birds said that from now on 'Elepaio had to show which trees were insect free. Thus if 'Elepaio picks at insects on a tree, it will be riddled with holes and be unsuitable for canoe making. (Folk et al. 2021:16; see also Wichman 2001)

On Kā'ana, a traditional place located south of both the current project area and Pu'u Hinahina:

This lookout is at the top of Ka-ana (*sadness*) ridge. It is believed that the spirits of the newly dead would come to this place before going down the ridge to the sea. At the cliffs below, the spirit would jump into the ocean and sink into Pō, the land of the dead. However, if the spirit's body had not been properly buried or correct prayers were not recited over it, the spirit could not leave this place and wandered about until the god of the dead came to swallow it. Thus, anyone living near Ka-ana built their houses with gables facing east and west, with doors north and south, so spirits would hit against the gable ends and pass around the house, or if they entered the house by one door, they could exit by the other. (Wichman 2001:12 as cited in Folk et al. 2021:16)

On, Halemanu, a traditional place located within Site A at KPGO:

Hale-manu (bird house) was the summer home of the kia manu (birdcatchers). Once a year, after the nesting season was over, the kia manu came up to the forests. They smeared gum made from the resin of breadfruit trees onto branches of flowering 'ohi'a lehua trees (Metrosideros macropus). The birds would land on the branches and get trapped by the gum. Kia manu also trapped birds by stretching nets between trees. A highly skilled catcher could hold a nectar-laden flower in his hands and catch the long-beaked bird in his fingers. Kia manu only hunted three months of the year, giving the bird population time to rebuild itself. (Folk et al. 2021:16-17; see also Wichman 2001)



On Pohaku-wa'awa'a, a traditional place located to the northwest of the current project area:

Naupaka kuahiwi (mountain naupaka) shrubs mark the landscape at this site. Here Wichman retells the story of Nau and Paka, a story of forbidden love. Nau and Paka were students at a hula school located at the north shore of Kaua'i. They both fell in love, however, such a relationship was forbidden to students. When the chiefess of the school discovered their relationship they were both killed. Nau was killed in the mountains and was transformed into naupaka kuahiwi (mountain naupaka). Paka was killed at the beach and transformed into naupaka kahakai (beach naupaka). Both flowers of these shrubs produce only half of a flower, a reminder that they are forever separated. (Folk et al. 2021:17; see also Wichman 2001)

Other *mo'olelo* associated with the Waimea area focus on the *menehune*, a "legendary race of small people who worked at night, building fish ponds, roads, temples; if the work was not finished in one night, it remained unfinished" (Pukui and Elbert 1986:246). The Kiki-a-Ola (also written as "Kīkīaola") is a cut stone-lined *'auwai* (ditch, canal) to bring water down to the Waimea flats. It is sometimes called the "Menehune Ditch." It originates somewhere above Pu'ukapele, towards Kōke'e. Pu'ukapele is located south of the current project area, *mauka* or (inland), of Waimea Town. Beckwith (1970) provided several versions of the *mo'olelo* of the construction of the *'auwai*. Ola, a son of the chief Kualu-nui-pauku-moku-moku, succeeded his father in rule over Waimea. He desired to bring water to the Waimea flats and was advised by his *kahuna* (priest, sorcerer...expert in any profession), Pi, to proclaim a *kapu* (taboo, prohibition) and summon the *menehune*. The *menehune* each brought a stone, and in one single night, the entire Kiki-a-Ola watercourse was laid (Beckwith 1970:328-329).

In another version presented by Beckwith (1970), Pi was the chief of Waimea who requested the *menehune* to construct both a dam across the Waimea River and an *'auwai* leading from it, to a place above Kiki-a-Ola. At Pi's command, the *menehune* were summoned from the mountains of Pu'ukapele (Beckwith 1970:329). According to Beckwith, the sound of the voices of the *menehune* during this construction project is the origin of the *'ōlelo no'eau:* 

2920. Wawā ka menehune i Pu'ukapele ma Kaua'i, puoho ka manu o ka loko o Kawainui ma O'ahu..

The shouts of the *menehune* on Pu'ukapele on Kaua'i startled the birds of Kawainui Pond on O'ahu.

The *menehune* were once so numerous on Kaua'i that their shouting could be heard on O'ahu. Said of too much boisterous talking. (Pukui 1983:320)

In this version of the *moʻolelo*, it was also Ola who built the three stepped *heiau*, Ahu-loulu, at the foot of Puʻukapele crater cone (Beckwith 1970:329). Ahu-loulu is located south of the current project area, *mauka* of Waimea Town.

In the *mo'olelo* gathered by Wichman (2001), presented in Folk et al. (2021), Pu'ukapele was described as a place where *koa* and *koai'e* was farmed:

The villagers of Pu'u-kāpele farmed *koa* (*Acacia koa*) and *koai'e* (*Acacia koaia*) trees. *Koai'e* was carved into paddles, farming instruments, and food bowls, while *koa* trees were used to produce canoe hulls. Because of the importance of these trees, the Kaua'i version of the legend of Laka was set here by early storytellers. In brief, the story of Laka is about a young man named Laka who is searching for his father who was lost during a trip to a distant



island. Laka is sent by his mother to Pu'u-kāpele to obtain a *koa* tree suitable for the construction of a large canoe. Once he gets to Pu'u-kāpele Laka is assisted by a group of *menehune* who build him a canoe. With his new canoe built from a *koa* tree from Pu'u-kāpele, Laka finds his lost father (Folk et al. 2021:16; see also Wichman 2001).

*Mo'olelo* specifically mentioning the area of Kōke'e are scarce.

#### 3.1.4 'Ōlelo No'eau

Hawaiian proverbs, or 'ōlelo no'eau, have been passed down through oral traditions. Many 'ōlelo no'eau have been collected and published in Hawaiian-language newspapers and other primary and secondary sources. The 'ōlelo no'eau presented below were compiled by Mary Kawena Pukui in the book entitled 'Ōlelo No'eau Hawaiian Proverbs and Poetical Sayings (Pukui 1983). These 'ōlelo no'eau often have both a literal and metaphorical meaning (called kaona). 'Ōlelo no'eau about geographical features and areas can help us to understand natural phenomenon, land use, and the history of a place. A selection of 'ōlelo no'eau pertinent to the project area and its surroundings are compiled here, along with their translations and interpretations from Pukui (1983).

A number of 'olelo no'eau reference Waimea:

777. *Hemahema Kahuwā me Waimea*. Kahuwā and Waimea are awkward.

These places are in the upland, where people are said to be awkward in handling canoes. (Pukui 1983:86)

1028. *Hoʻi ka paʻakai i Waimea.* The salt has gone back to Waimea.

Said when someone starts out on a journey and then comes back again. The salt of Waimea, Kaua'i is known for its reddish brown color. (Pukui 1983:110)

1339. *Ka i'a ho'opā 'ili kanaka o Waimea.*The fish of Waimea that touch the skins of people.

When it was the season for *hinana*, the spawn of *'o'opu*, at Waimea, Kaua'i, they were so numerous that one couldn't go into the water without rubbing against them. (Pukui 1983:146)

1591. *Ka ua nounou 'ili o Waimea.* The skin pelting rain of Waimea.

Refers to Waimea, Kaua'i. (Pukui 1983:172)

1662. *Ka wai 'ula iliahi o Waimea*. The red sandalwood water of Waimea.



This expression is sometimes used in old chants of Waimea, Kaua'i. After a storm, Waimea Stream is said to run red. Where it meets Makaweli Stream to form Waimea River, the water is sometimes red on one side and clear on the other. The red side is called *wai 'ula 'iliahi*. (Pukui 1983:179)

1775. *Ke one kapu o Kahamalu'ihi.* The sacred sand of Kahamalu'ihi.

A city of refuge for those of Waimea, Mānā, and the Kona side of Kaua'i. (Pukui 1983:190)

2531. 'Ōpā na kuku o Waimea. Weary are the sticks that hold the nets at Waimea

Weary are the legs after walking far. A line from an old chant. (Pukui 1983:276)

## 3.1.5 Settlement and Land Use

Within Waimea Ahupua'a, settlement was most densely concentrated along the coast and in the foothills of *mauka* (inland/upland) areas, with agricultural areas extending up the gulches (Bennett 1931:103; Sinoto 1978:2-6). The densely populated Mānā Plain contains a coastal dune and back beach area where temporary fishing camps were occupied while people accessed the abundant marine resources. These were linked to permanently occupied communities along the foothills (Anae et al. 2024), who also traveled to the upland portions of Kōke'e near the top of Waimea Canyon (Figure 6).

The upland area of Kōke'e was likely used as a resource gathering area, as opposed to a locale for permanent habitation or agricultural activities (Yent 1995). Several major trails traverse the area and would have connected communities along the valleys of the Nā Pali Coast (Kalalau and Nu'alolo) in the north to coastal communities in Waimea to the south. The trail network was described by Handy and Handy (1972) as follows:

More anciently the old Hawaiians used a number of overland trails. The Kamaile trail descended into Nuʻulolo [Nuʻalolo] Valley inland. There was a trail connecting Nuʻulolo with Honopu. A good trail overland connects Kalalau with Haʻena. There is a trail from Kokeʻe in the mountains above Kekaha down into Kalalau. From Polihale travelers could go on foot, with a little swimming, to Miloliʻi, and a trail connected Miloliʻi with Nuʻulolo flats. Another trail connects Miloliʻi with Kokeʻe. And there was the path (ala), said to have been built by KingʻOla, that led from Waimea Delta up the canyon to Kokeʻe, over the Alakaʻi Swamp, where it was said to have been paved with sticks (kipapa), and thence down Maunahina ridge into Wainiha by way of Kokeʻe. (Handy and Handy 1972)

In the vicinity of the KPGO area, timber and logs, particularly large *koa* trees, were harvested for canoe building and other uses (Rice 1923). Handy and Handy (1972) described these remote upland forests as an important source of natural resources, such as hardwoods, plants used for *lā'au lapaau* (medicinal and ritual uses), birds and their feathers, as well as freshwater resources such as *'o'opu* (Hawaiian freshwater goby; *Awaous guamensis*) and *'ōpae* (freshwater shrimp; *Atyoida bisulcata*). Handy (1940) noted that boggy areas of the uplands (in Alaka'i Swamp) were



used for the cultivation of *olonā* (*Touchardia latifolia*), which was cultivated for use as the "finest cordage made in the Pacific Basin" (Krauss 1993:27).

Within Kōke'e, Thrum documented two large *heiau* during his island-wide survey (Thrum 1907). Ahuloulu Heiau (State Inventory of Historic Places [SIHP] Site No. 50-30-01-00019) was documented by Thrum (1907) at Pu'u Ka Pele, approximately three miles south of the project area and also includes two clusters of habitation features, which were recorded by Bennett (1931). Kaumuaiea (Ka-unu-aiea) Heiau (SIHP Site No. 50-30-01-00022) was documented in the immediate vicinity of the project area at Halemanu (Thrum 1907; Bennett 1931; discussed in Section 3.3).



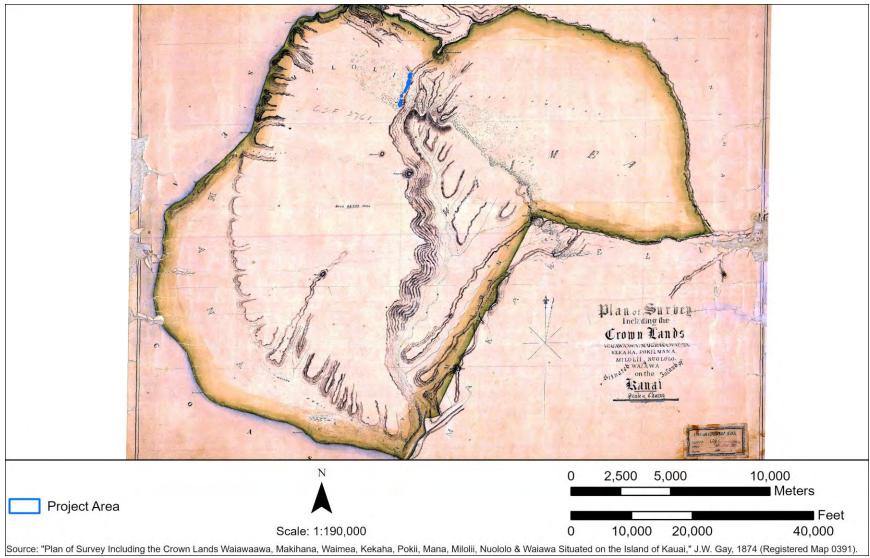


Figure 6. 1874 map by Gay (Registered Map 0391) with the NASA KPGO Project Area overlaid.



## 3.2 Post-Contact Transitions

The arrival of western naturalists, explorers, and industrialists to the shores of the Hawaiian archipelago rapidly accelerated after Captain James Cook first arrived at Waimea Harbor in 1778. When Cook arrived in Waimea, he estimated that there were 60 villages similar to Waimea across Kaua'i, with a total of 30,000 inhabitants on the island. However, it is more likely that the island supported closer to 20,000 inhabitants with fewer than 60 villages the size of Waimea (Fornander 1880:165). The subsequent centuries are often referred to as the 'post-Contact' period, demarcating a period of significant transformation in Hawai'i's history that was highly influenced by increased interactions with Europe, the United States, and other regions. The following centuries saw the unification of the archipelago and the formation of an independent, constitutional monarchy under the Kamehameha Dynasty (1810-1874), followed by the Kalākaua Dynasty (1874-1893). It also saw the introduction of a wide range of plant and animal species, foreign diseases, and a rapid influx of foreign settlers and business interests. This latter introduction ultimately brought about the overthrow and annexation of the Hawaiian Kingdom by the U.S. in the late nineteenth century, followed by statehood in the mid-twentieth century. These significant social, political, and biological transformations had diverse and wide-ranging impacts on island ecosystems, land tenure and use, and cultural practices.

# 3.2.1 Early Post-Contact Period

Beginning in the early nineteenth century, new economic enterprises had profound impacts on the area of Waimea Canyon and Kōke'e. The sandalwood trade, in particular, began to radically transform the upland forest beginning in 1810, when *maka'āinana* (commoners) were forced to abandon their *kalo* (taro; *Colocasia esculenta*) fields to cut sandalwood in the mountains, then transport it to the port of Waimea for export. The sandalwood trade was controlled by King Kaumuali'i, who exchanged it for exotic goods, including ships. The sandalwood trade lasted until the mid-1830s, when nearly all of the sandalwood that once thrived in the western Kaua'i forests had been harvested (Joesting 1984; also see Yent 1995).

In 1821, the Reverend Hiram Bingham traveled from Waimea to Hanalei along the established trail that passed through Kōke'e. He described the trail as a "narrow, winding, slippery foot-path, sometimes on sharp ridges, here ascending and there descending rugged steeps" (Bingham 1981). He mentioned that he passed several temporary shelters that he attributed to sandalwood cutters, and described the area as being uninhabited aside from those shelters.

Another individual who traversed the area was a tobacco farmer, Archibald Archer. During the early 1850s, he built the first western-style house, constructed in Kōke'e at Halemanu. Archer frequently traveled through the area, situated between his tobacco farms in Hanalei and Mānā (Damon 1931:292). Halemanu is in the immediate vicinity of Site A of the project area (Figure 8).

During the mid-nineteenth century, the area of Kōke'e was transformed further with the introduction of cattle ranching, which was initiated by Knudsen, who leased much the area that is now Kōke'e State Park, to provide beef to provision visiting whaling ships. Large-scale ranching activities in the Kōke'e area were short-lived, however, as whaling declined during the late nineteenth century and this, coupled with the overgrazing leading to environmental degradation, had negative impacts on this industry (Monahan and Powell 2005).



While the cattle industry was declining, another industry was burgeoning. The sugar industry began in the late 1800s and involved large-scale water irrigation systems (see Wilcox 1984). The Waimea Canyon-Kekaha Ditch diverted water from upland streams to irrigate sugarcane plantations that were established on the western side of Kaua'i. The Kōke'e Ditch, located directly south of the current project area, was built in 1923 by Kekaha Sugar Co. and connected to the larger network. Plantation camps were established in the uplands to house Japanese and Chinese workers who constructed and maintained the network of ditches (Yent 1995).

#### 3.2.2 The Māhele

In the mid-nineteenth century the Hawaiian Kingdom, under the leadership of King Kamehameha III (Kauikeaouli), undertook a momentous reformation of land tenure that had far-reaching and profound consequences for native Hawaiians. The impetus for this transition arose from compounding pressures from outside entities: foreign traders, merchants, missionaries, and their governments desired control of private lands and contested the prerogative of the king and *ali'i nui* (high chiefs) to distribute or revoke land rights at will according to traditional custom. The increasing danger of annexation by a European nation loomed large after the Paulet Affair in 1843, and with similar processes occurring throughout southern Polynesia. There were also unprecedented challenges with regard to integrating into a Western economic system, and the desire of the king to safeguard the rights of Hawaiians to their native lands, particularly in light of the mass loss of Hawaiians under the onslaught of introduced diseases (Van Dyke 2007:30-31; Chinen 1958:25).

In response to such pressures, Kamehameha III and his chiefs enacted the Bill of Rights in 1839, as an initial if limited attempt to define property rights. This was followed by the creation of the first constitution of the Hawaiian Kingdom in 1840, which established legislative and judicial bodies suited to addressing land ownership reformation. The Organic Acts of 1845 further organized the executive branch and defined the king's role and power in Western legal concepts. Also in 1845, the Board of Commissioners to Quiet Land Titles, commonly referred to as the Land Commission, was created. The Land Commission oversaw the adjudication of all land claims.

In December of 1847, the king and his Privy Council determined to initiate a division (*māhele*) of the kingdom's lands; this became known as the Māhele. The initial *māhele*, which transpired between January 27 and March 7 of 1848, involved the division of the lands between the king and approximately 250 *ali'i* and *konohiki*, wherein the king selected lands he would personally retain and quitclaimed all rights to the remaining land, and the *ali'i* did the same. The 1848 Māhele was recorded in a legal document titled "Buke Kakau Paa no ka mahele aina i Hooholoia i waena o Kamehameha III a me Na Lii a me na Konohiki ana" (which was later known as the *Buke Māhele*, or Māhele Book). These land claims only involved the larger land divisions consisting of *ahupua'a* and *'ili kūpono* (*'ili* situated within an *ahupua'a* but independent from it).

After the 1848 Māhele, the king retained roughly 60 percent (ca. 2.5 million acres) of the Kingdom's land ("Crown Lands"); however, he then apportioned 1.5 million acres of that land to the Government, which became known as "Government Lands." The *ali'i* ended up with between 56-74% of their original holdings, and these lands became known as "Konohiki Lands" (Kame'eleihiwa 1992:219). Notably, during the initial *māhele*, land surveys defining the boundaries of the *ahupua'a* and *'ili kūpono* land claims were not required and the claims were rewarded based on their traditional names only. In 1862, in order to address the lack of clearly defined boundaries and



emergent land disputations, the Commissioner of Boundaries was created and all *ahupua'a* and *'ili kūpono* award recipients were required to present land surveys for confirmation.

Soon after the 1848 Māhele, it became apparent that the land rights of the native Hawaiian populace, or native tenants, needed to be ensured (Chinen 1958:29). In the Kuleana Act of 1850, the legislature authorized the *maka'āinana* to claim lands which they actively cultivated or inhabited. These became known as "Kuleana Lands." Kuleana Lands were often the most fertile of the lands in Hawai'i, as claims often centered on arable or cultivable land (Chinen 1958:31). Claimants were required to provide a professional land survey to the Land Commission as well as supporting testimony for their claim. Testimony was collected from neighbors, current or previous residents of the area, and the konohiki of that area, in either 'Ōlelo Hawai'i (Native Testimony) or English (Foreign Testimony). An awarded claim was termed a Land Commission Award (L.C.Aw., or L.C.A.) and assigned a helu (number). A Royal Patent was then issued which confirmed the government's quitclaim of interest to the land (Chinen 1958:14). These land claims were recorded in ten large volumes (LCA Books 1-10) and the associated testimonies are included within an additional 50 volumes. The survey maps and descriptive testimonies provided with the land claims contain invaluable information on land use practices and resources at that time period. Ultimately, however, the majority of the lands to be set aside for the *maka'āinana* were not awarded or claimed, resulting in only 28,658 acres being distributed to the maka'āinana (Kame'eleihiwa 1992:295). Thus, much land shown as blanks on nineteenth-century maps was not necessarily unused land, but rather, land without written or illustrated legal records. Notably in this regard, not all *ali'i nui* and *ali'i* participated in the Māhele (Hopkins 2022).

The Alien Land Ownership Act, also issued in 1850, granted foreigners the right to own land. Beginning in 1845, foreigners were allowed to take the oath of citizenship, and by 1847, foreigners were allowed to hold lands but could only sell such lands to legal citizens of the Hawaiian Kingdom (Kame'eleihiwa 1992).

The majority of Waimea Ahupua'a was retained and designated as Crown Land. Most Land Commission Awards (LCAs) were awarded in the lowlands of Waimea Ahupua'a near the coastline. There are no LCAs within the current project area, nor the immediate vicinity (Figure 7).



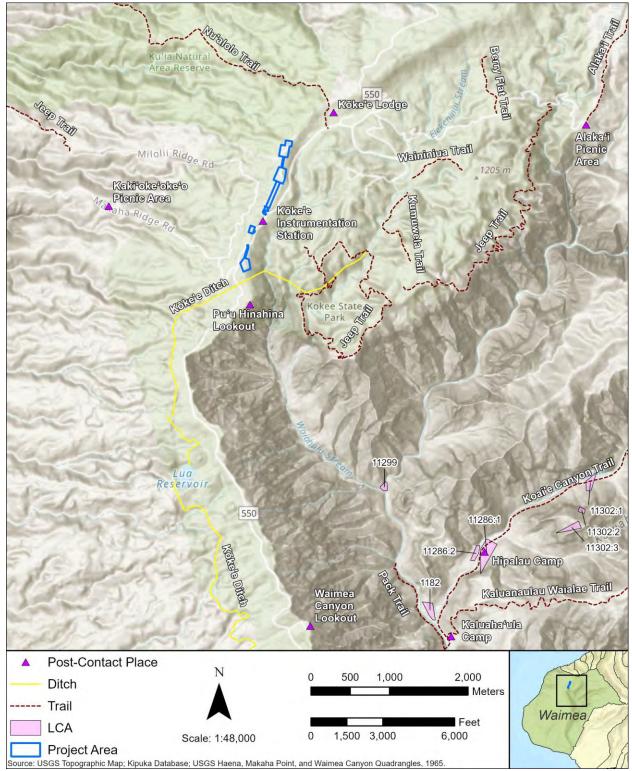


Figure 7. Map of LCAs and other post-Contact features within the vicinity of the NASA KPGO project area, identified through archival research.



## 3.2.3 Kōke'e in the 20th Century

During the early to mid-twentieth century, the area of Kōke'e was primarily used for recreational and military activities. Figure 8 depicts the project area and vicinity in 1903. Recreational activities included the construction of vacation cabins by wealthy sugar plantation owners in Kōke'e, which they would visit to escape the heat of the lowland plains during the summer months. The area was used by hunters of pigs and goats as well. In 1929, there was a push to establish forest reserves, and in 1930, a total of 755 acres were designated as the Waimea Canyon Territorial Park. Figure 9 shows that as early as 1910, forest reserves were being depicted on USGS maps.

Following the Great Depression, an effort was made to provide unemployed Americans with work, and as part of this national initiative, the Civilian Conservation Corps (CCC) Camp was constructed in 1935. From 1935 until 1943, the CCC Camp was used to house young men who planted trees and built and maintained trails in the park, as part of a massive reforestation initiative. The CCC Camp was used by the Army's Signal Corps during World War II and in 1940, the Army constructed a support camp north of the current project area. At this time, roadways were improved and lookouts at Waimea Canyon and Kalalau were established. The Army camp was dismantled in the early 1950s, and wooden buildings were taken apart or relocated for use as park buildings. One became the Kōke'e Museum, which was founded in 1953, and four park cabins and the Kōke'e Lodge were built using wood from the dismantled camp (Yent 1995).

In 1952, the Kōke'e Territorial Park was designated, with the addition of 4,451 acres from the Na Pali-Kona Forest Reserve (see Figure 9). The Board of Agriculture and Forestry oversaw the management of Waimea Canyon Territorial Park and Kōke'e Territorial Park, and additional infrastructural improvements, such as the construction of Hawaii Route 55 in 1955, which was later changed to Route 550 and is shown on Figure 10 through Figure 17 (Belluomini and Hammatt 2022). Waimea Canyon Territorial Park and Kōke'e Territorial Park were subsequently designated as Waimea Canyon State Park and Kōke'e State Park following statehood in 1959. See Figure 7, which depicts some of the named places in the vicinity of the current project area that are associated with Kōke'e State Park.

## Post-WWII Military Developments and NASA

During the 1960s, a Hawaii Air National Guard installation and a NASA Tracking Station (labeled as the "Kokee Instrumentation Station" on Figure 11) were constructed in Kōke'e as part of the National Space Program. The Hawaii Air National Guard built a radar tracking facility on the former site of the Army radar station near the Kalalau Lookout in 1961. The NASA Tracking Station's lease with the State of Hawai'i was established in 1965 and in 1992, the facility subsequently became known as the Kōke'e Park Geophysical Observatory (KPGO). NASA established a use permit and memorandum of understanding with the Navy in 2016 to provide mission support to PMRF radar, telemetry, and communications services at KPGO. Figure 10 through Figure 17 include USGS maps and aerial photographs of the project area from 1965 to 2017.



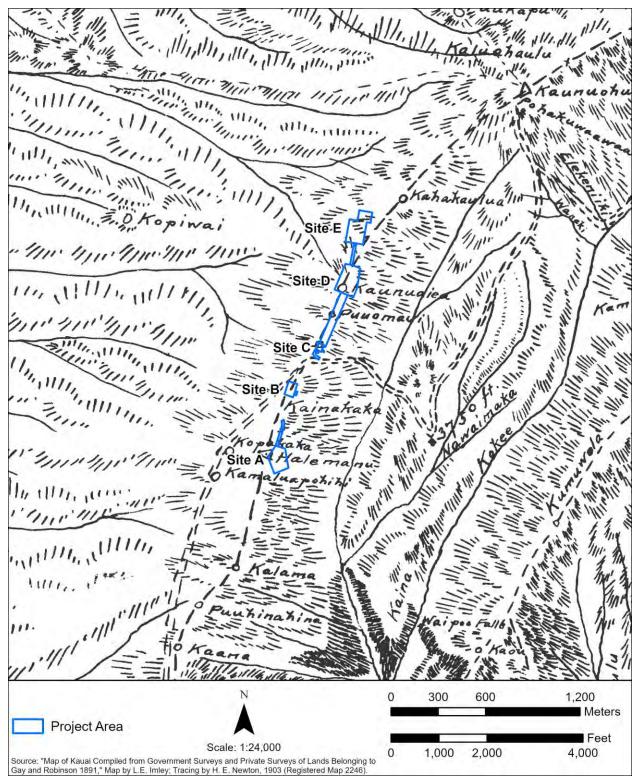


Figure 8. Portion of a 1903 map by L.E. Imley (Registered Map 2246) showing roads and place names in the vicinity of the NASA KPGO Project Area.

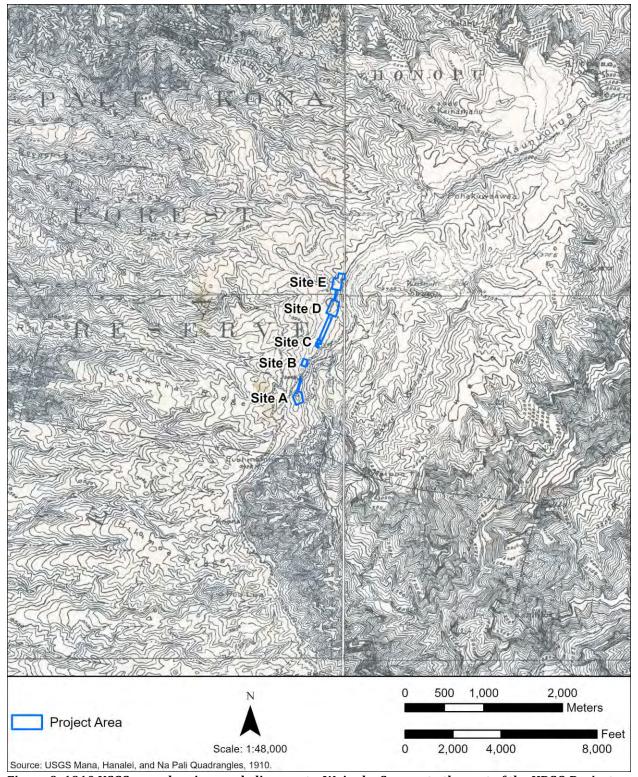


Figure 9. 1910 USGS map showing road alignments, Waineke Swamp to the east of the KPGO Project Area, and "Puuhinahina" (Pu'u Hinahina) to the southwest of the NASA KPGO Project Area.

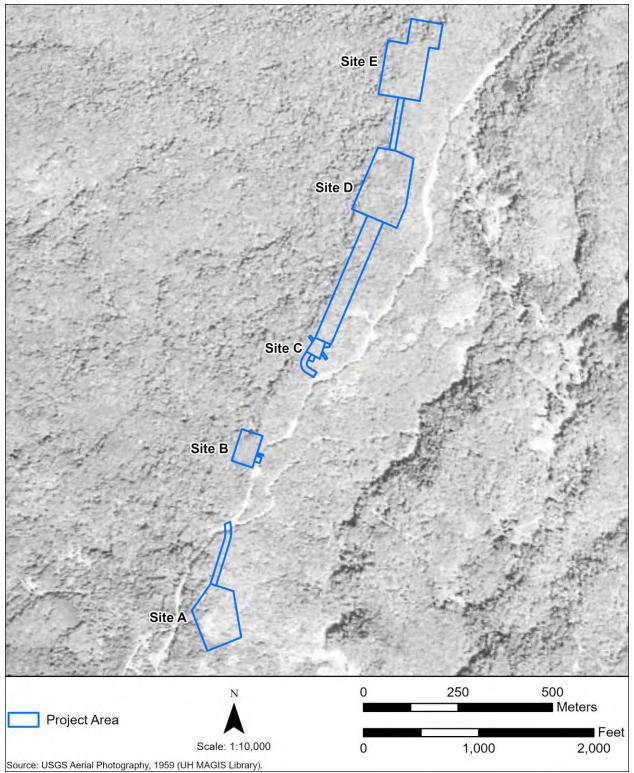


Figure 10. 1959 USGS aerial photograph showing Kōke'e Road and other road alignments in the vicinity of the NASA KPGO Project Area.

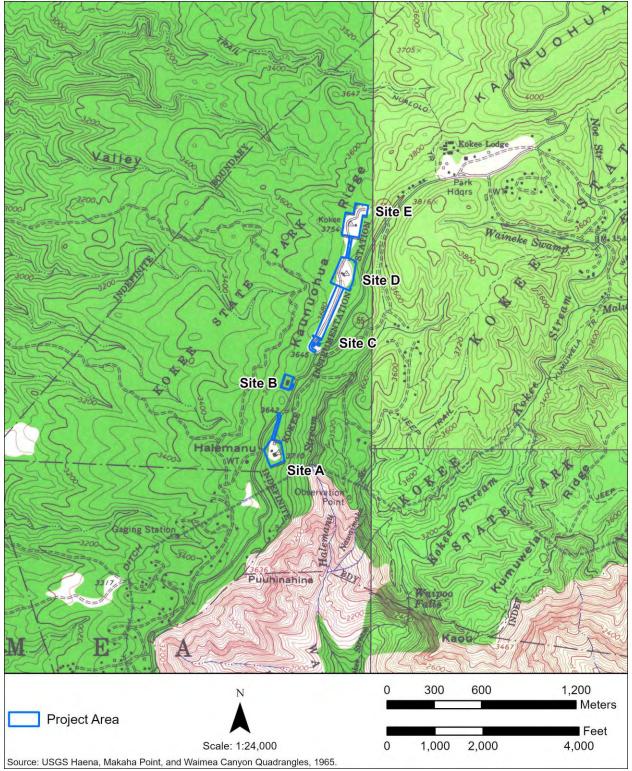


Figure 11. 1965 USGS map showing the NASA KPGO Project Area within the lands of Kōke'e State Park, with infrastructural improvements such as the paved road (Kōke'e Road/Highway 55), as well as the "Kokee Instrumentation Station" later known as KPGO. Also note the nearby "Kokee Ditch" (south of Site A).



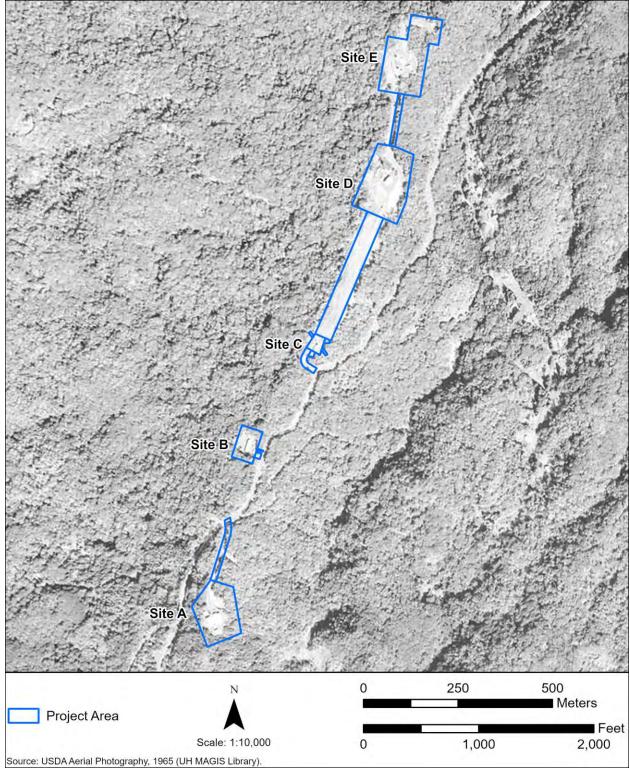


Figure 12. 1965 USGS aerial photograph showing Kōke'e Road and other road alignments in the vicinity of the NASA KPGO Project Area, as well as the development of infrastructure within the project area.



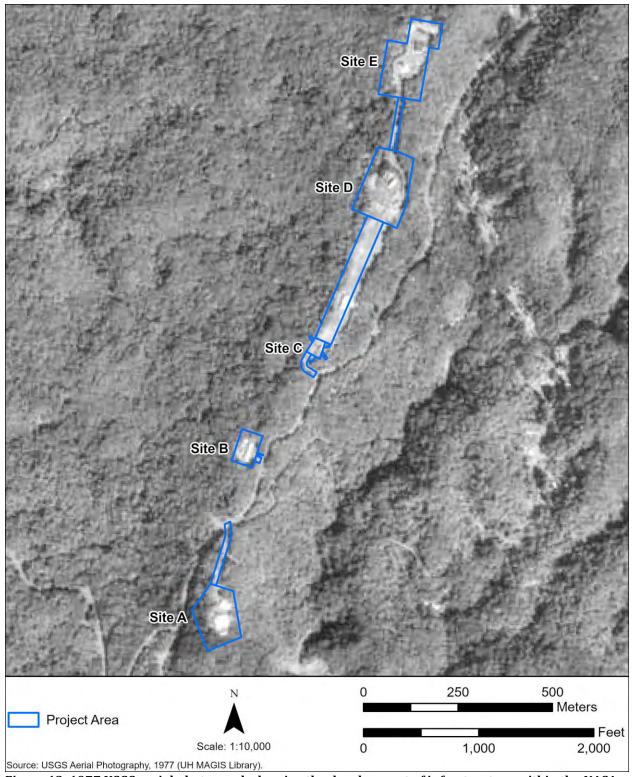


Figure 13. 1977 USGS aerial photograph showing the development of infrastructure within the NASA KPGO Project Area.

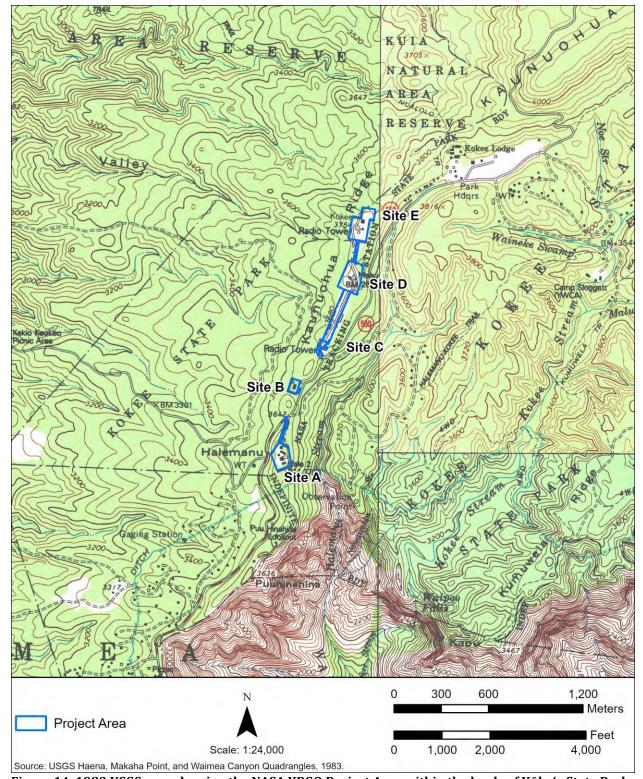


Figure 14. 1983 USGS map showing the NASA KPGO Project Area within the lands of Kōke'e State Park, with the paved road (now labeled as Highway 550), as well as the "NASA Tracking Station" later known as KPGO. Also note the nearby "Kokee Ditch" (south of Site A).



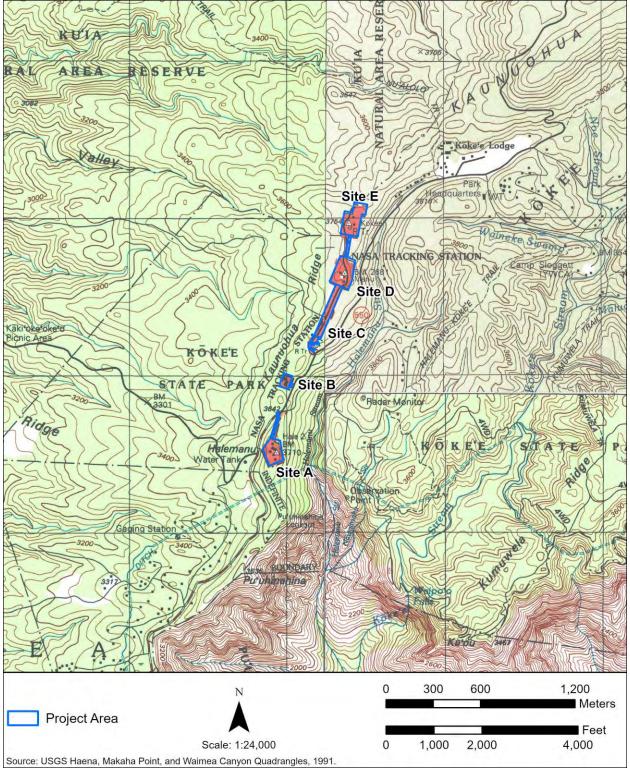


Figure 15. 1991 USGS map showing the NASA KPGO Project Area within the lands of Kōke'e State Park, with the same infrastructure that is seen on the 1983 USGS map. At this point, the area is still labeled as "NASA Tracking Station."



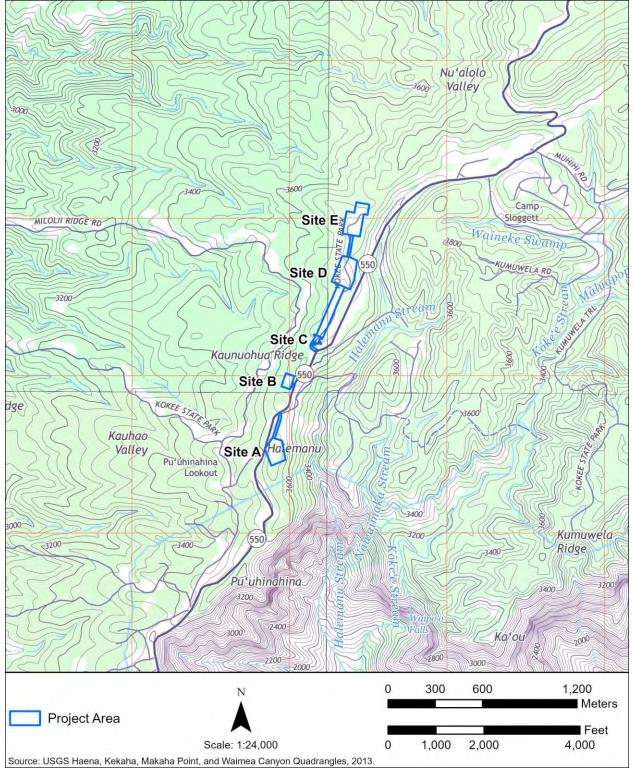


Figure 16. 2013 USGS map showing the NASA KPGO Project Area within the lands of Kōke'e State Park.

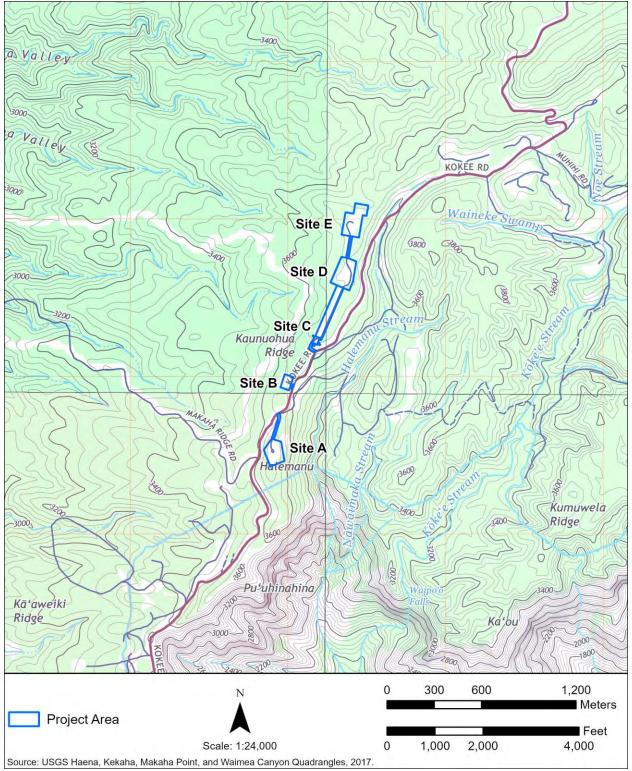


Figure 17. 2017 USGS map showing the NASA KPGO Project Area within the lands of Kōke'e State Park. The road within Site A is now visible and the road within Site E terminates in a different place than on the 2013 USGS map.



#### 3.3 Previous Archaeology

Early documentation of archaeological sites on Kaua'i include Thrum's (1907) survey of *heiau* for the island of Kaua'i and Wendell Clark Bennett's (1931) synthetic volume, *Archaeology of Kauai*. Thrum (1907) and Bennett (1931) identified numerous archaeological sites within the *ahupua'a* of Waimea, including one *heiau* that may be in the nearby vicinity (within 0.5 miles/0.8 km) of the current project area. Bennett (1931) provided the following description of the *heiau*:

Site 22. Kaumuaiea (Kaumuaie) heiau, in the forest of Milolii on the ridge of Kaumuohua.

In the forest above Halemanu is a small clearing known as Kaumuaiea. Here there are a few stones in a rough line, but not forming a platform or definite outline. Thrum describes this heiau as a small shrine and says that no platform remains to indicate its location. (Bennett 1931:104)

A total of 10 archaeological studies have been conducted within a 0.5-mile buffer around the KPGO Project Area (Table 2 and Figure 18). Table 2 provides an overview of all 10 archaeological investigations with a summary of their findings. All previously identified historic properties within the 0.5-mile buffer are described in Table 3 and pictured in Figure 19, which also contains significance assessments and mitigation recommendations. Three of the previous archaeological studies (Yent 1982; Walker and Rosendahl 1990; and Dowden and Rosendahl 1993) included a portion of the current project area and are discussed in more detail below.

# 3.4 OVERVIEW OF PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS WITHIN 0.5 MILES OF THE PROJECT AREA

A total of 4 historic properties have been identified within 0.5 miles of the current project area. Previously identified historic properties include SIHP 50-30-01-00022, Kaumuaiea Heiau (Thrum 1907; Bennett 1931); SIHP 50-30-02-02417, the Kōke'e Ditch, which was constructed for sugarcane agriculture in 1923 (Belluomini and Hammatt 2022); SIHP 50-30-02-02549, Kōke'e Road, which is a portion of Highway 55, which was originally constructed in 1910 and has since been repaired and altered (On File, SHPD); and SIHP 50-30-06-09392, the Civilian Conservation Corps (CCC) Camp, which was built in 1935 and is listed on the National Register of Historic Places (Yent 1995; Reinard and Erickson 1996; Monahan and Powell 2005).

Three of the previous archaeological studies (Yent 1982; Walker and Rosendahl 1990; and Dowden and Rosendahl 1993) included a portion of the current project area. None of these identified historic properties within the current KPGO project area, but one (Walker and Rosendahl 1990) noted a low retaining wall outside the fenced compound at Site E at KPGO and provided the following description:

The wall is located at the end of the area graded for the fenced compound of KPGO and appears to be a foundation to retard erosion or to stabilize the soil. The retaining wall appears to be of relatively recent construction and was not designated as an archaeological site. (Walker and Rosendahl 1990:5)

A location for the low retaining wall was not provided and an SIHP number was not assigned.



Table 2. Previous Archaeological Studies Within 0.5 Miles of the NASA KPGO Project Area

Reference	Type of Study	Findings
Thrum 1907	Island-wide Survey	One historic property within 0.5 miles of the project area: Kaumuaiea (Kaumuaie) heiau (SIHP 50-30-01-00022).
Bennett 1931	Island-wide Survey	One historic property within 0.5 miles of the project area: Kaumuaiea (Kaumuaie) heiau (SIHP 50-30-01-00022).
Yent 1982	Archaeological Reconnaissance	No findings.
Walker & Rosendahl 1990	Archaeological Inventory Survey	No historic properties identified. A low retaining wall was noted but not designated as an archaeological site. An Archaeological Assessment Report was submitted to SHPD.
Dowden & Rosendahl 1993	Archaeological Inventory Survey	No historic properties identified. An Archaeological Assessment Report was submitted to SHPD.
McMahon	Archaeological	One historic property identified, none within 0.5 miles of the project
1993	Reconnaissance	area.
Yent 1995	Archaeological Survey	One historic property identified: Civilian Conservation Corps (CCC) Camp (SIHP 50-30-06-09392).
Shideler et al. 2004	Literature Review and Field Inspection	No newly identified historic properties.
Yent 2004	Archaeological Inventory Survey	No historic properties identified. An Archaeological Assessment Report was submitted to SHPD.
Monahan &	Archaeological	One previously documented historic property: CCC Camp (SIHP 50-30-06-
Powell 2005	Inventory Survey	09392).
Belluomini &		
Hammatt		One historic property inspected: Kāke'e Ditch (SIHD 50-20-02-02417)
2022 (Not	Literature Peview	
Shown on		
Previous	מוום ו ופום ווואףפכנוטוו	
Archaeology Map)		NONE E DILLII Was UISLUSSEU.
al. 2004 Yent 2004 Monahan & Powell 2005 Belluomini & Hammatt 2022 (Not Shown on Previous Archaeology	and Field Inspection Archaeological Inventory Survey Archaeological	No historic properties identified. An Archaeological Assessment Repo was submitted to SHPD.  One previously documented historic property: CCC Camp (SIHP 50-30

Note: Previous studies that include the current project area are highlighted in gray.



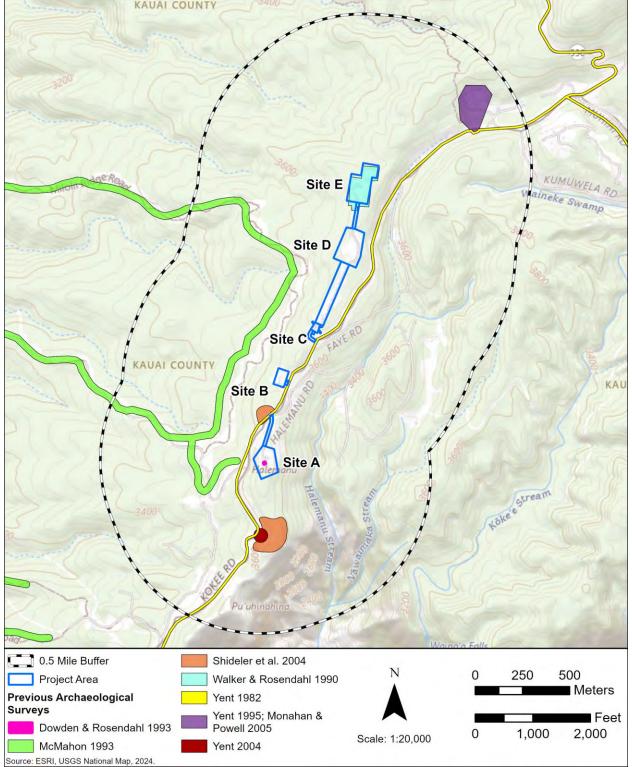


Figure 18. Previous archaeological studies conducted within 0.5 miles of the NASA KPGO Project Area.

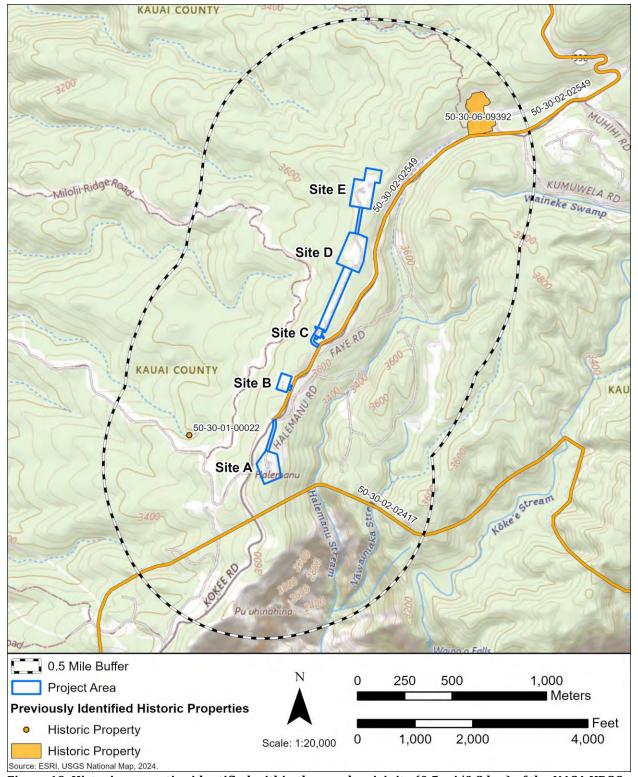


Figure 19. Historic properties identified within the nearby vicinity (0.5 mi/0.8 km) of the NASA KPGO Project Area.



Table 3. Previously Identified Historic Properties within 0.5 Miles (0.8 km) of the NASA KPGO Project Area

Site Number	Туре	Function	Age	Significance	Mitigation Recommendation	Reference(s)
50-30-01-00022	Kaumuaiea (Kaumuaie) Heiau	Ceremonial	Pre-Contact	None Provided	None Provided	Thrum 1907; Bennett 1931
50-30-02-02417	Kōke'e Ditch	Water diversion	Post-Contact	a, c, d	No Further Work	Belluomini and Hammatt 2022
50-30-02-02549	Kōke'e Road	Transportation	1910	A, C	None Provided	On File, SHPD
50-30-06-09392	Civilian Conservation Corps Camp in Kōke'e State Park	Camp	Post-Contact	A, C	Preservation (NRHP)	Yent 1995, Reinard & Erickson 1996 (NRHP Nomination Form); Monahan & Powell 2005



## 3.5 BACKGROUND SUMMARY AND PREDICTIVE MODEL

The NASA KPGO project area is located in Waimea Ahupua'a, within Kōke'e State Park on a ridge. The project area lies at an elevation of 3,600 feet above sea level, near Waimea Canyon. Much of the project area has been graded and grubbed for the KPGO facility, which has been operational since 1961. Archival research indicates that during the pre-Contact period, the upland area of Kōke'e was likely used as a resource gathering area, as opposed to a locale for permanent habitation or agricultural activities (Yent 1995). Several major trails traverse the area would have connected communities along the valleys of the Nā Pali Coast (Kalalau and Nu'alolo) in the north to coastal communities in Waimea to the south (Handy and Handy 1972).

In the vicinity of the KPGO project area, timber and logs, particularly large *koa* trees, were harvested for canoe building and other uses (Rice 1923). Handy and Handy (1972) described these remote upland forests as an important source of natural resources, such as hardwoods, plants used for *lā'au lapaau* (medicinal and ritual uses), birds and their feathers, as well as freshwater resources such as *'o'opu* (Hawaiian freshwater goby; *Awaous guamensis*) and *'ōpae* (freshwater shrimp; *Atyoida bisulcata*). Handy (1940) noted that boggy areas of the uplands (in Alaka'i Swamp) were used for the cultivation of *olonā* (*Touchardia latifolia*), which was cultivated for use as the "finest cordage made in the Pacific Basin" (Krauss 1993:27).

Thrum documented two large *heiau* within Kōke'e during his island-wide survey (Thrum 1907). Ahuloulu Heiau (SIHP 50-30-01-00019) was documented by Thrum (1907) at Pu'u Ka Pele, approximately three miles south of the project area and also includes two clusters of habitation features, which were recorded by Bennett (1931). Kaumuaiea (Ka-unu-aiea) Heiau (SIHP 50-30-01-00022) was documented approximately 400 m west of the project area at Halemanu (Thrum 1907; Bennett 1931).

Other historic properties in the vicinity of the project area include: SIHP 50-30-02-02417, the Kōke'e Ditch, which was constructed for sugarcane agriculture in 1923 (Belluomini and Hammatt 2022); SIHP 50-30-02-02549, Kōke'e Road, which is a portion of Highway 55, originally constructed in 1910, and passes through a portion of the current project area (On File, SHPD); and SIHP 50-30-06-09392, the Civilian Conservation Corps (CCC) Camp, which was built in 1935 and is listed on the NRHP (Yent 1995; Reinard and Erickson 1996; Monahan and Powell 2005).

Three previous archaeological studies (Yent 1982; Walker and Rosendahl 1990; and Dowden and Rosendahl 1993) included a portion of the current project area. None of these identified historic properties within the current KPGO project area, but one (Walker and Rosendahl 1990) noted a low retaining wall outside the fenced compound at Site E at KPGO. A location for the low retaining wall was not provided and an SIHP number was not assigned.

Based on the results of previous archaeological investigations, no pre-Contact historic properties were anticipated. Post-Contact historic properties including infrastructure relating to use of the area as Kōke'e State Park and the development of the area into NASA KPGO during the midtwentieth century were anticipated. A post-contact/modern low retaining wall that was previously identified within the project area but was not assigned an SIHP number (Walker and Rosendahl 1990) was also anticipated.



### 4.0 RESULTS OF FIELDWORK

This section presents an overview of the AIS results. Methods utilized during the project task are presented in Section 2 of this report. Individual site descriptions with illustrations and photographs are presented in Section 4.2.4 of this report and are summarized in Table 4. Previous survey results are included in the site descriptions where relevant.

### 4.1 SURVEY COVERAGE AND DESCRIPTION

The archaeological survey was undertaken to identify any historic properties and to assess whether subsurface testing was warranted. In order to ensure that all surface archaeological features present within the survey area were located and documented, pedestrian transects were undertaken in 100% of accessible portions of the survey area with field crew spaced at 5 m intervals. Visibility throughout the project area was good to fair. Portions of the project area were maintained, and vegetation had been cleared for NASA and Navy infrastructure, including roads, buildings, and equipment. This infrastructure was contained within fenced areas, made of both barbed wire and chain link fencing. Outside of the fenced areas, much of the project area included slopes which ranged from 30 to greater than 60-degree angles, and some of these areas (totaling approximately 0.89 acres, or 3.9% of the project area) were not accessible due to safety concerns (Figure 20). The inaccessible areas were visually inspected when they were not safe to traverse, and the entire project area was adequately inspected. Much of this area was densely forested with both native and non-native tree and shrub species, including koa (Acacia koa), 'Ōhi'a lehua (Metrosideros polymorpha), strawberry guava, Waiawi (Psideium cattleianum), and Himalayan blackberry (Rubus ulmifolius). Within the fenced areas, previous development included grading and grubbing, evidenced by push piles on the edges of sloped areas. The sloped areas also contained green waste debris from landscaping and clearing within the fenced areas. Recently deposited rubbish was also present in the sloped areas, especially near hiking trails associated with Kōke'e and Waimea Canyon State Parks. See Figure 21 through Figure 30 for overview photographs of the landscape within the project area.



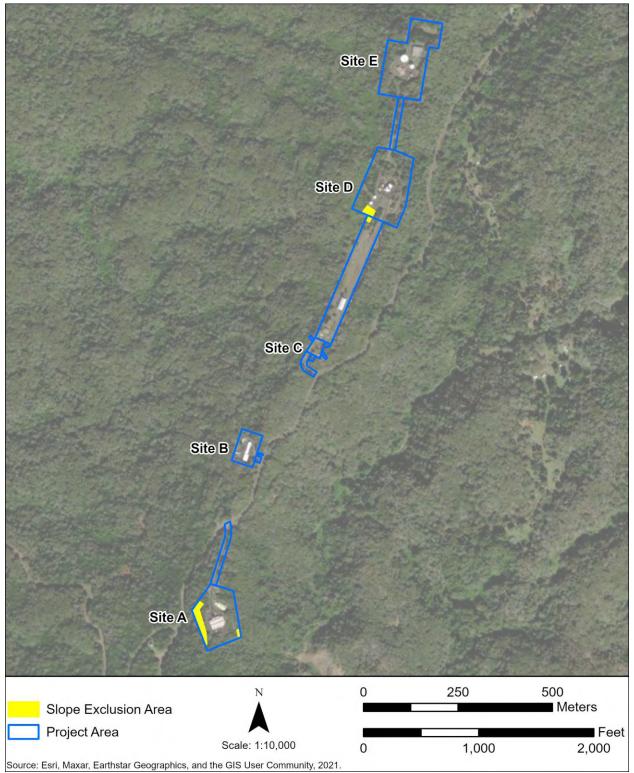


Figure 20. Slope exclusion areas in the NASA KPGO Project Area.



Figure 21. Overview photograph showing the northern portion of Site E, a mowed grass meadow outside of the fenced area with NASA KPGO infrastructure (view to northeast).



Figure 22. Overview photo of the west side of Site E, with slopes greater than 30 degrees (view to south). Pacific Legacy crewmember for perspective.





Figure 23. Overview of paved asphalt road leading to Site E (view to north).



Figure 24. Overview photo of the exterior of the fenced area at Site A, with a steep drop off and slopes of greater than 60 degrees (view to southeast). Pacific Legacy crewmember for perspective.





Figure 25. Dense vegetation conditions on eastern side of roadway at Site A (view to south). Much of the forested area around the fenced areas within the NASA KPGO Project Area were similar or denser than this.



Figure 26. Overview of the sloped, forested land outside of the fenced area at Site B (view to northwest).





Figure 27. Modern trash scattered outside of the fenced area at Site B (view to north).



Figure 28. Overview of the forested section outside of the fenced area on the east side of Site D (view to west). Pacific Legacy crewmember for perspective.





Figure 29. Overview of the forested section on the east side of the road, within Site C (view to east). Pacific Legacy crewmember for perspective.



Figure 30. Gated entrance to Site C, D, and E on the west side of SIHP 50-30-02-02549 (Kōke'e Road) (view to northwest from east side of road).



# 4.2 ARCHAEOLOGICAL SURVEY RESULTS

The AIS resulted in the documentation of two historic properties with a total of 18 features: SIHP 50-30-06-XXXXX (TS-001) and 50-30-06-YYYYY (TS-002) (Table 4; Figure 31). SIHP 50-30-06-YYYYY (TS-002) is the retaining wall that was previously documented as a recent feature by Walker and Rosendahl (1990).

Table 4. Historic Properties Identified in the NASA Kōke'e Park Geophysical Observatory Project Area

SIHP No.	Temp. Site	Fe.	Туре	Function	Age
50-30-06-XXXXX	TS-001	1	Retaining Wall	Water Control	1961 or after
50-30-06-XXXXX	TS-001	2	Concrete Slab	Building Foundation	1961 or after
50-30-06-XXXXX	TS-001	3	Channel	Water Control	1961 or after
50-30-06-XXXXX	TS-001	4	Channel	Water Control	1961 or after
50-30-06-XXXXX	TS-001	5	Retaining Wall	Water and Erosion Control	1961 or after
50-30-06-XXXXX	TS-001	6	Channel	Water Control	1961 or after
50-30-06-XXXXX	TS-001	7	Retaining Wall	Water and Erosion Control	1961 or after
50-30-06-XXXXX	TS-001	8	Channel	Water Control	1961 or after
50-30-06-XXXXX	TS-001	9	Retaining Wall	Water and Erosion Control	1961 or after
50-30-06-XXXXX	TS-001	10	Retaining Wall	Water and Erosion Control	1961 or after
50-30-06-XXXXX	TS-001	11	Retaining Wall	Water and Erosion Control	1961 or after
50-30-06-XXXXX	TS-001	12	Concrete Slab	Building Foundation	1961 or after
50-30-06-XXXXX	TS-001	13	Concrete Slab	Building Foundation	1961 or after
50-30-06-XXXXX	TS-001	14	Channel	Water Control	1961 or after
50-30-06-XXXXX	TS-001	15	Channel	Water Control	1961 or after
50-30-06-XXXXX	TS-001	16	Asphalt Pad	Equipment Foundation	1961 or after
50-30-06-XXXXX	TS-001	17	Channel	Water Control	1961 or after
50-30-06-YYYYY	TS-002	N/A	Terrace/	Temporary Habitation/	
			Retaining Wall	Erosion Control	Post-Contact

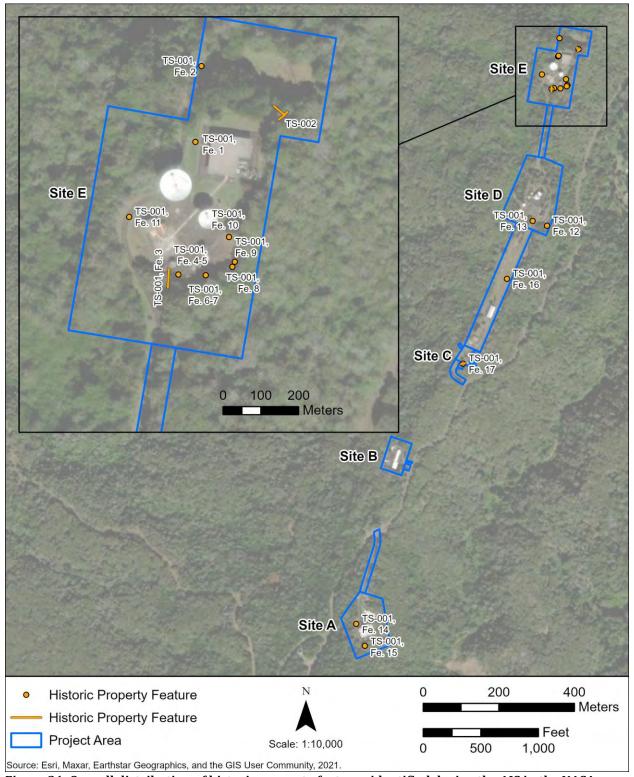


Figure 31. Overall distribution of historic property features identified during the AIS in the NASA KPGO Project Area, including Site A, B, C, D, and E.

# 4.3 MAJOR TYPES OF ARCHAEOLOGICAL SITES AND FEATURES

A wide range of archaeological features were identified during the present survey. Most of these built structures and modified natural features fall within a number of specific morphological and functional feature types, which can be clearly defined and described. A list of these feature types is provided in Table 5.

Table 5. Archaeological Feature Types within the NASA KPGO Project Area

Feature Type	Number
Asphalt Pad	1
Asphalt Road	1
Channel	7
Concrete	5
Concrete and Basalt	2
Concrete Slab	3
Retaining Wall	6
Concrete	4
Basalt	1
Concrete and Basalt	1
Basalt & Concrete Terrace	1
Grand Total	18

The most prominent feature types identified during the AIS include channel and retaining wall features. A map of the spatial distribution of feature types is provided in Figure 32.

### 4.3.1 Channel and Retaining Wall Features

A total of 13 channel and retaining wall features were identified during the AIS. These include five concrete channels, two concrete and basalt channels, four concrete retaining walls, one basalt retaining wall, and one basalt and concrete retaining wall. The features are clustered on the exterior of the chain link fence surrounding KPGO satellite and radar equipment. The features have erosion and water control functions and date to 1961 or after.



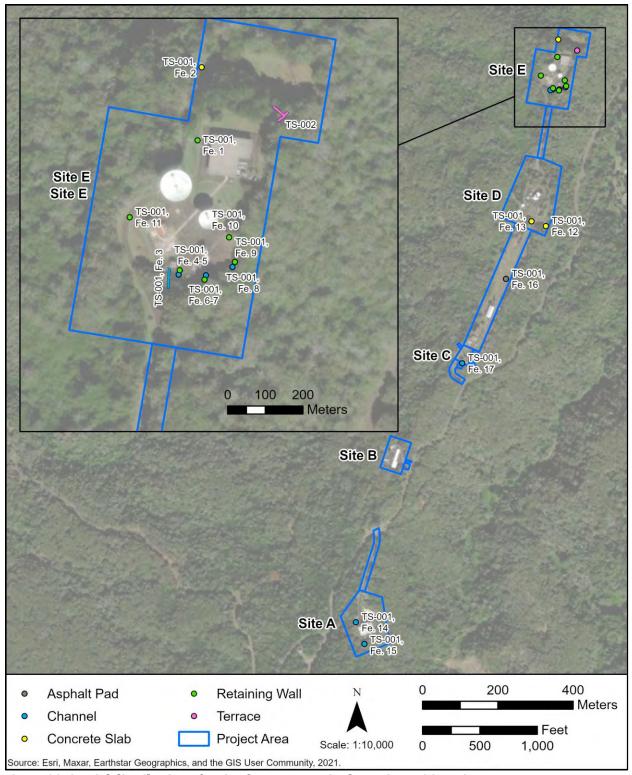


Figure 32. Spatial distribution of major feature types in the NASA KPGO Project Area.

### 4.4 HISTORIC PROPERTY DESCRIPTIONS

SIHP 50-30-06-XXXXX

TS-001

Site Type: NASA Kōke'e Park Geophysical Observatory Infrastructure Features

**Number of Features: 17** 

Dimensions: 1.61 km L x 597 m W

**Condition:** Good to Fair **Age:** 1961 or after

Function: Building and equipment foundations; transportation; and water and erosion control

Significance: not significant

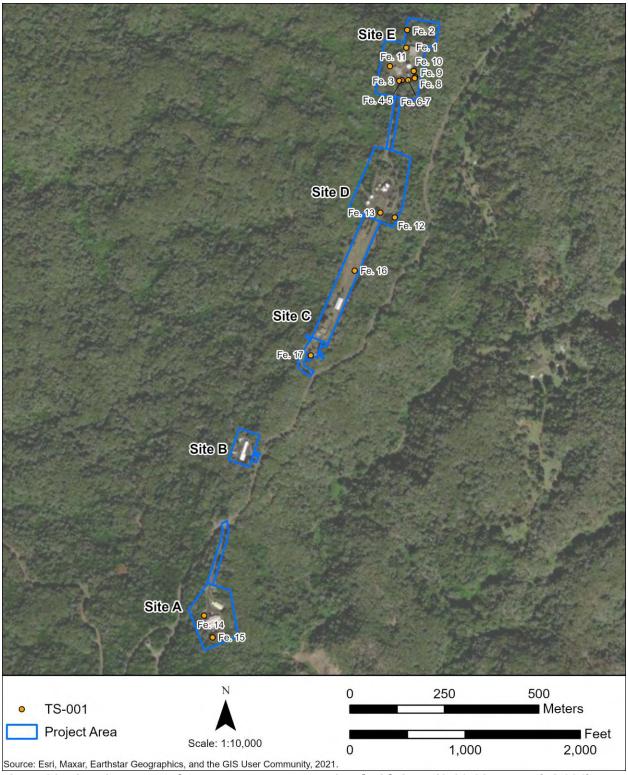
Integrity: Location, design, setting, quality of workmanship, feeling, materials, and association

# **Site Description**

SIHP 50-30-06-XXXXX (TS-001) is a complex of 17 features related to NASA KPGO infrastructure (Figure 33). The site measures 1.61 km long (north-south) by 597 m wide (east-west). All features were constructed in 1961 or after. Two features were located at Site A (Features 14 and 15), two features were located at Site C (Features 16 and 17), two features were located at Site D (Features 12 and 13), and twelve features were located at Site E (Features 1 through 11). Three features were building foundations (Features 2, 12, and 13), one feature was an equipment foundation (Feature 16), five features were related to water and erosion control (Features 5, 7, and 9 through 11), and eight features were related to water control (Features 1, 3, 4, 6, 8, 14, 15, and 17).

No cultural materials were documented at SIHP -XXXXX. SIHP -XXXXX is assessed as not significant. It possesses integrity of location, design, setting, quality of workmanship, feeling, materials, and association. No mitigation is recommended at this time.





Figure~33.~Historic~property~feature~components~associated~with~SIHP~50-30-02-XXXXX~(TS-001)~during~the~AIS~in~the~NASA~KPGO~Project~Area.



**Feature 1** (Figure 34 and Figure 35) consists of a basalt retaining wall, located within the fenced area at Site E, near the northwestern project area boundary. The basalt retaining wall is constructed of stacked angular basalt, stacked five courses high at the center, built roughly eastwest through a drainage swale running downslope (south to north). A 12-inch PVC drainage pipe is located at the center of the wall. The retaining wall functions to control water within the NASA KPGO project area. Feature 1 is associated with a wooden walkway bridge built directly over the basalt retaining wall (Feature 1). Feature 1 measures 3 m long by 0.8 m wide by 0.6 m high.



Figure 34. Site 50-30-06-XXXXX (TS-001), Feature 1, basalt retaining wall underneath wooden bridge (view to southwest).

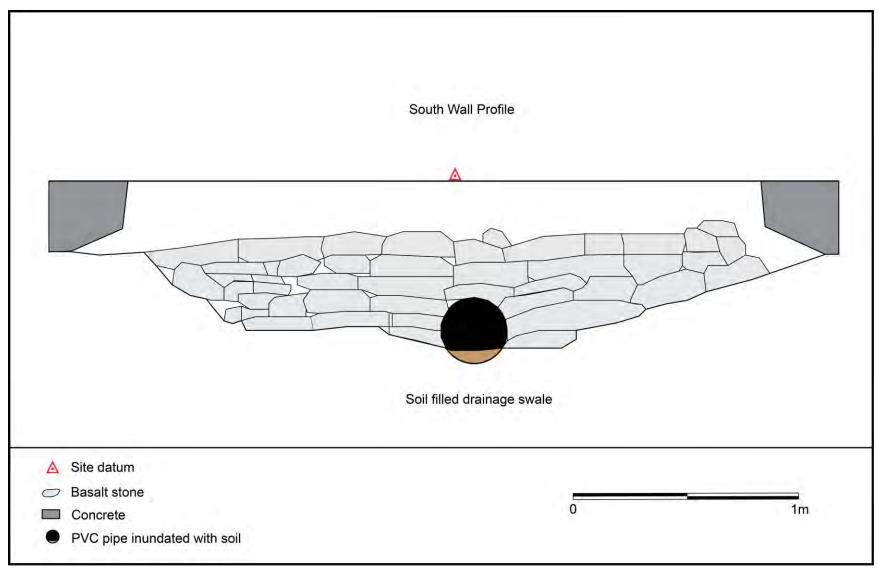


Figure 35. Wall profile of Site 50-30-06-XXXXX (TS-001), Feature 1, basalt retaining wall (view to south).



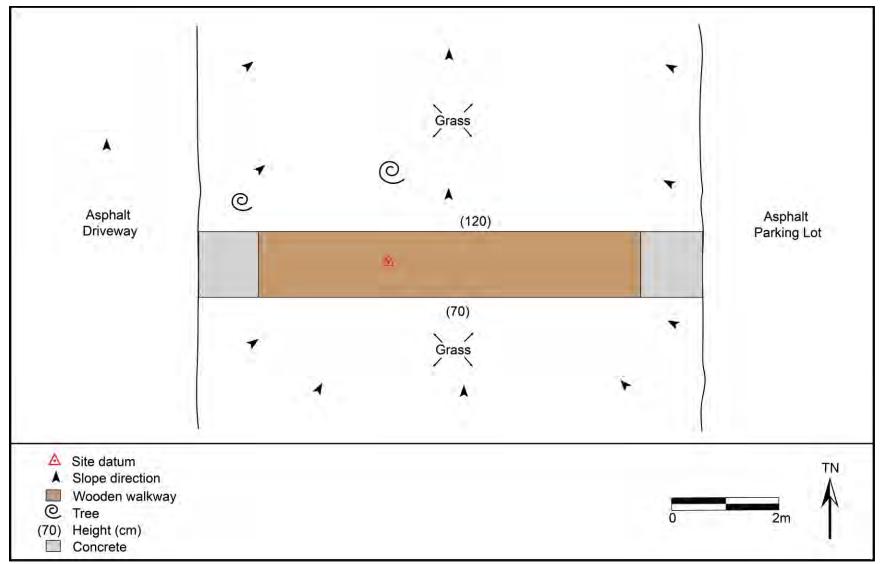


Figure 36. Plan map of SIHP 50-30-06-XXXXX (TS-001), Feature 1, basalt retaining wall, which is located directly below a wooden bridge/walkway, and is not visible on the plan view map.



**Feature 2** is a concrete slab (Figure 37 and Figure 38), located along the western edge of the northernmost project area boundary in Site E. It is located north of the lowest elevation of an asphalt driveway which originates within the area fenced by chain link fence, outside of this fenced area. The area has been cleared and is associated with NASA KPGO. Feature 2 rests on the edge of a steep drop off to the north. The concrete slab functions as a building foundation. It is constructed of concrete and has four rectangular concrete supports arranged in a square pattern. A raised rectangular concrete pad with several PVC pipes is built into the center of the slab. Electrical wiring is present on the rectangular concrete supports. It is likely associated with inactive infrastructure, such as antenna, radar, and/or satellite structures. During a conversation while conducting AIS field work, the station manager reported that there was radar and satellite equipment on the structure that was removed in the late 2000s or 2010s. Feature 2 measures 7.3 m long by 7.3 m wide and has a maximum height of 1.45 m.



Figure 37. SIHP 50-30-06-XXXXX (TS-001), Feature 2, concrete building foundation (view to west).

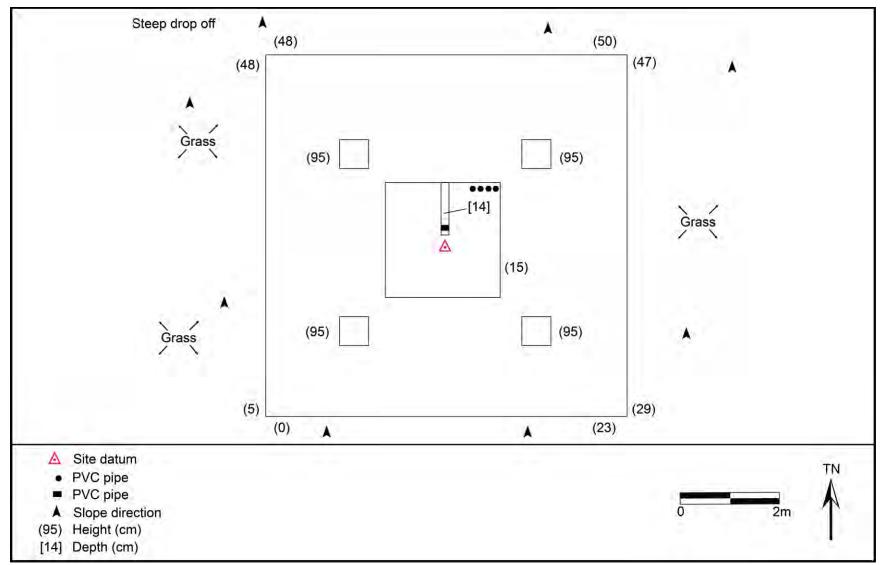


Figure 38. Plan map of SIHP 50-30-06-XXXXX (TS-001), Feature 2, concrete building foundation.



**Feature 3** is a concrete and basalt channel (Figure 39 through Figure 44) located in the southern central portion of Site E. It originates on the edge of a chain link fence, which surrounds cleared land with antenna and radar infrastructure associated with NASA KPGO. The channel is constructed of concrete and stacked basalt stone with concrete mortar. The basalt stone is medium to large cobble size and angular to subangular in nature. The wall is stacked one to two courses high and concreted in place. The channel floor is constructed of concrete. The channel is oriented on a downslope, and terminates at the base of the slope, on the eastern side of the asphalt road which runs through the center of the project area. The channel is located on a slope greater than 60 degrees. The channel functions as a water drainage feature. Feature 3 measures 12 m long by 0.8 m wide by 0.3 m high.



Figure 39. Site 50-30-06-XXXXX (TS-001), Feature 3, concrete and stone channel (view to north).





Figure 40. Site 50-30-06-XXXXX (TS-001), Feature 3, concrete and stone channel (view to south).



Figure 41. Site 50-30-06-XXXXX (TS-001), Feature 3, concrete and stone channel (view to northwest, at base).



Figure 42. Site 50-30-06-XXXXX (TS-001), Feature 3, concrete and stone channel (view to west, at top).



Figure 43. Site 50-30-06-XXXXX (TS-001), Feature 3, concrete and stone channel (view to east, at top).

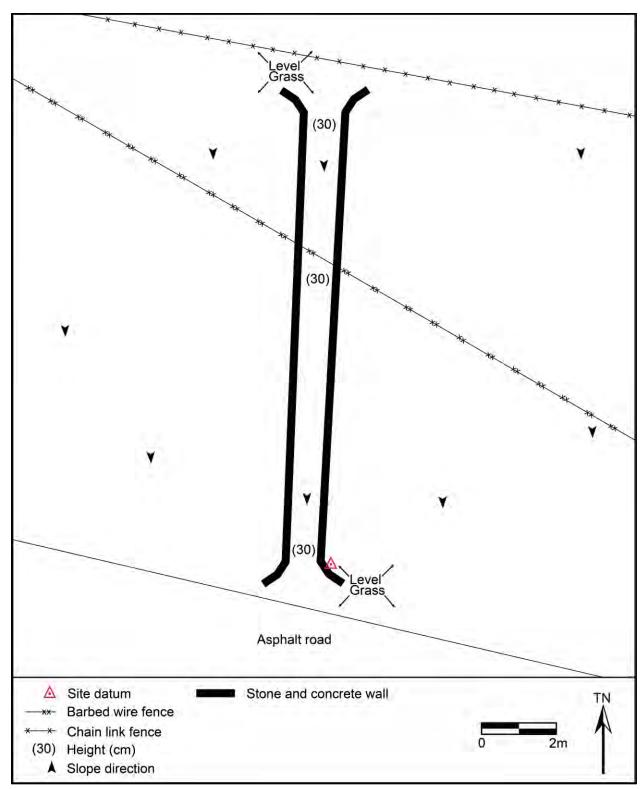


Figure 44. Plan map of Site 50-30-06-XXXXX (TS-001), Feature 3, concrete and stone channel.

**Feature 4** (concrete channel) and **Feature 5** (concrete retaining wall) are located along the southern edge of the exterior of the chain link fence in the central portion of Site E (Figure 45 through Figure 47). The chain link fence surrounds cleared land with antenna, satellite, and radar infrastructure associated with NASA KPGO. They are positioned on cleared ground, and the channel runs down the slope, terminating before the slope reaches its steepest point (over 60 degrees). Both the channel and the retaining wall are constructed from concrete and the floor of the channel is also concrete. Feature 4 measures 4.1 m long by 0.9 m wide by 0.2 m deep. Feature 5 measures 1.08 m long by 0.2 m wide by 0.2 m high.



Figure 45. Site 50-30-06-XXXXX (TS-001), Feature 4 and 5, concrete channel and retaining wall (view to northwest).



Figure 46. Site 50-30-06-XXXXX (TS-001), Feature 5, concrete retaining wall (view to north). Feature 4 (concrete channel) visible in background.

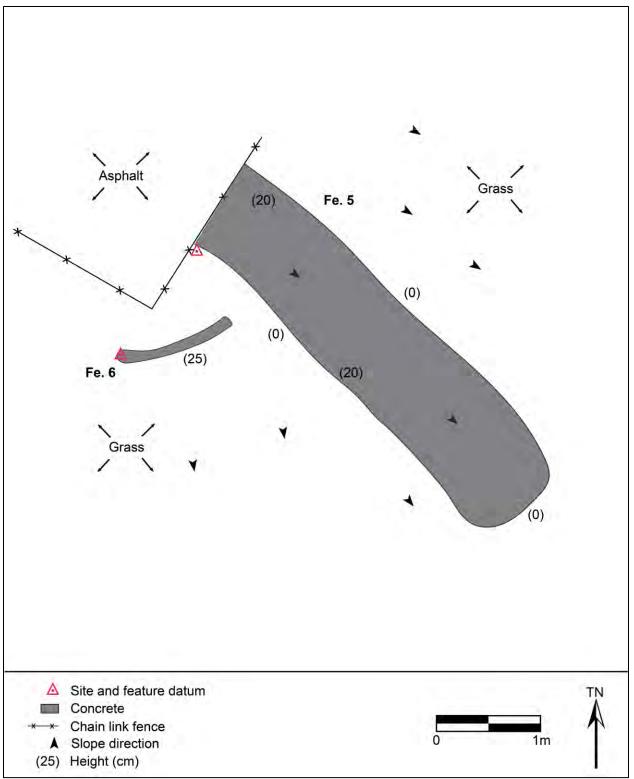


Figure 47. Plan map of Site 50-30-06-XXXXX (TS-001), Feature 4 and 5, concrete channel and retaining wall.



**Feature 6** (concrete channel) and **Feature 7** (concrete retaining wall) are located along the southeastern edge of the exterior of the chain link fence in the central portion of Site E (Figure 48 through Figure 51). The chain link fence surrounds cleared land with antenna, satellite, and radar infrastructure associated with NASA KPGO. They are positioned on cleared ground, and the channel runs down the slope, terminating before the slope reaches its steepest point (over 60 degrees). Both the channel and the retaining wall are constructed from concrete and the floor of the channel is also concrete. Feature 6 measures 2.4 m long by 1 m wide by 0.2 m deep. Feature 7 measures 1.08 m long by 0.2 m wide by 0.4 m high.



Figure 48. Site 50-30-06-XXXXX (TS-001), Feature 6 and 7, concrete channel and retaining wall (view to north).



Figure 49. Site 50-30-06-XXXXX (TS-001), Feature 6 and 7, concrete channel and retaining wall (view to west). Feature 7 is visible in the foreground and Feature 6 is visible in the background.





Figure 50. Site 50-30-06-XXXXX (TS-001), Feature 7, concrete retaining wall (view to west).

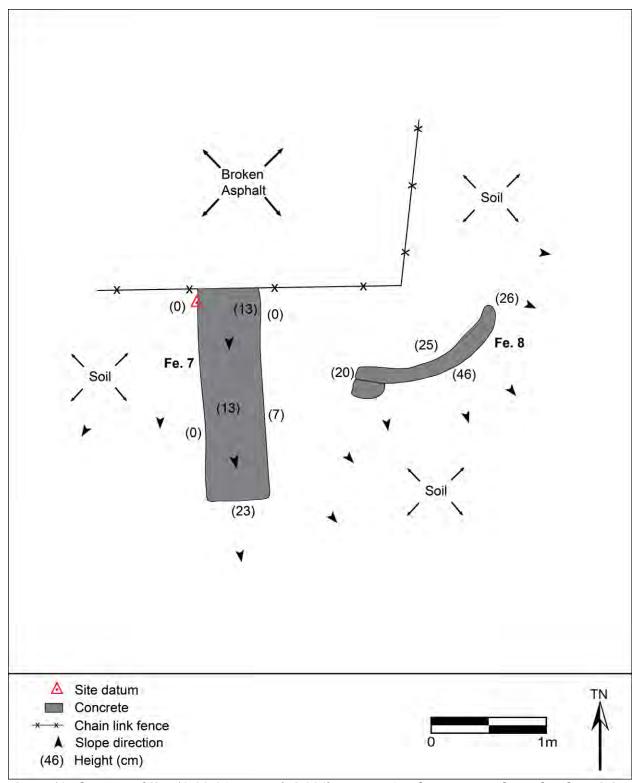


Figure 51. Plan map of Site 50-30-06-XXXXX (TS-001), Feature 6 and 7, concrete channel and retaining wall.

**Feature 8** (concrete channel) and **Feature 9** (concrete retaining wall) are located along the southeastern edge of the exterior of the chain link fence in the central portion of Site E (Figure 52 through Figure 54). The chain link fence surrounds cleared land with antenna, satellite, and radar infrastructure associated with NASA KPGO. They are positioned on cleared ground, and the channel runs down the slope, terminating before the slope reaches its steepest point (over 60 degrees). Both the channel and the retaining wall are constructed from concrete and the floor of the channel is also concrete. Feature 8 measures 2 m long by 0.9 m wide by 0.2 m deep. Feature 9 measures 1.6 m long by 0.75 m wide by 0.66 m high.



Figure 52. Site 50-30-06-XXXXX (TS-001), Feature 8, concrete channel (view to northeast).



Figure 53. Site 50-30-06-XXXXX (TS-001), Feature 9, concrete retaining wall (view to west).



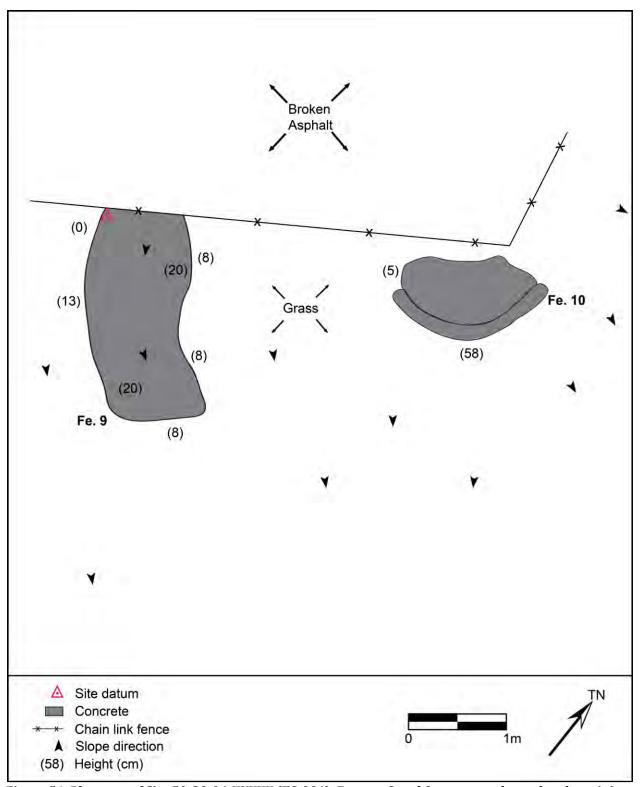


Figure 54. Plan map of Site 50-30-06-XXXXX (TS-001), Feature 8 and 9, concrete channel and retaining wall.

**Feature 10** is a concrete retaining wall, located along the southwestern edge of the chain link fence in the central portion of Site E (Figure 55, Figure 56). The chain link fence surrounds cleared land with antenna, satellite, and radar infrastructure associated with NASA KPGO. It is positioned on cleared ground and constructed of concrete. Feature 10 measures 0.84 m long by 0.1 m wide by 0.3 m high.



Figure 55. Site 50-30-06-XXXXX (TS-001), Feature 10, concrete retaining wall (view to northwest).

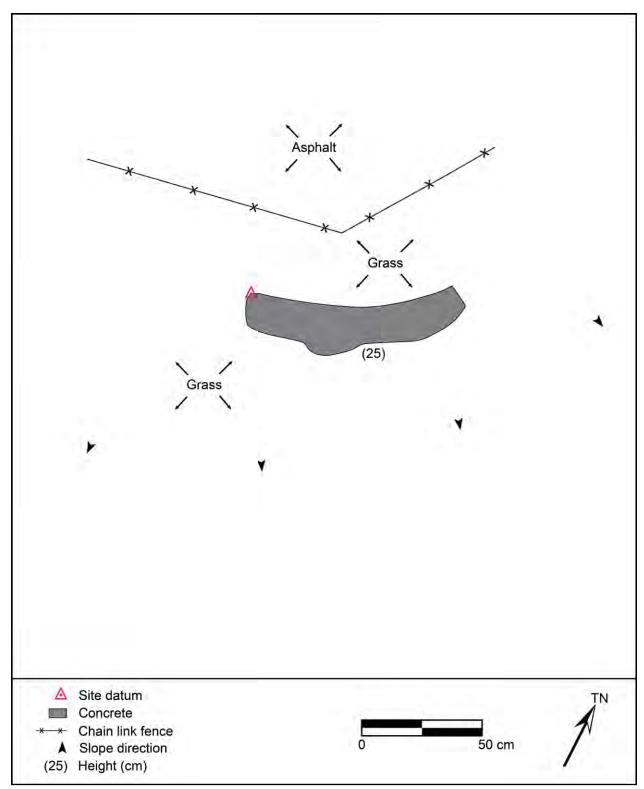


Figure 56. Plan map of Site 50-30-06-XXXXX (TS-001), Feature 10, concrete retaining wall.

**Feature 11** is a retaining wall constructed of stacked basalt stone with concrete mortar. It is located on the western edge of the chain link fence in the central portion of Site E (Figure 57, Figure 58). The chain link fence surrounds cleared land with antenna, satellite, and radar infrastructure associated with NASA KPGO. Feature 11 is located to the east of the asphalt road which runs through the center of the project area. It is located on a slight slope, on ground that has been cleared and planted with grass and landscaped. The basalt stones are medium to large cobble size and are subangular and angular in nature. The wall course is stacked two to three courses high and filled with concrete. Feature 11 measures 1.94 m long by 0.59 m wide by 0.46 m high.



Figure 57. Site 50-30-06-XXXXX (TS-001), Feature 11, basalt stone retaining wall (view to east).

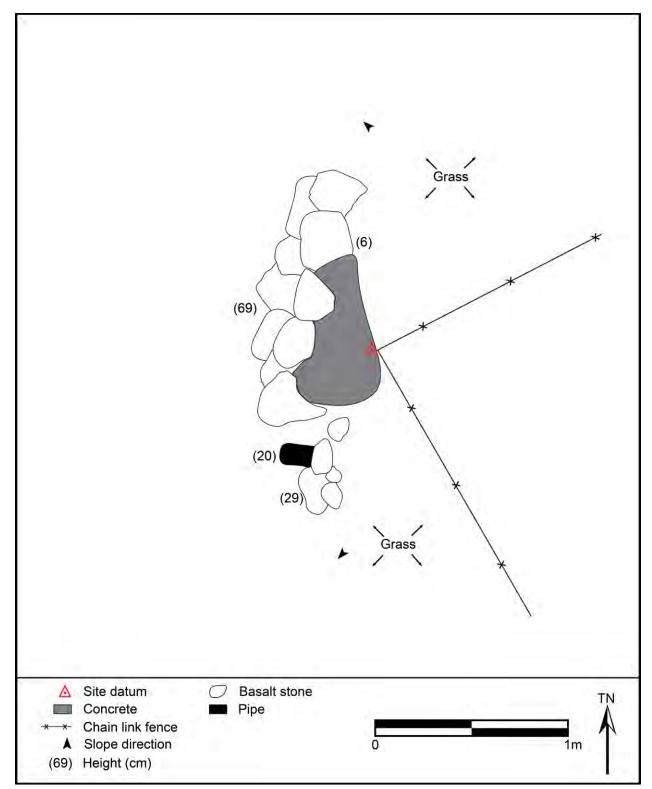


Figure 58. Plan map of Site 50-30-06-XXXXX (TS-001), Feature 11, basalt stone retaining wall.

**Feature 12** is a concrete building foundation, located in the southeastern portion of Site D, southeast and downslope of the asphalt road which passes through the central portion of the project area (Figure 59 through Figure 61), inside of the barbed wire fenced area. Feature 12 is constructed of concrete and has four rectangular raised pads on the corners, with a smaller, fifth raised pad on the northwestern side. Metal bolts and electrical wiring are present on the raised pads. It is likely associated with inactive infrastructure, such as antenna, radar, and/or satellite structures at NASA KPGO. It measures 4.4 m long by 4.4 m wide by 0.42 m high.



Figure 59. Site 50-30-06-XXXXX (TS-001), Feature 12, concrete foundation (view to northeast).



Figure 60. Site 50-30-06-XXXXX (TS-001), Feature 12, concrete foundation (view to west).



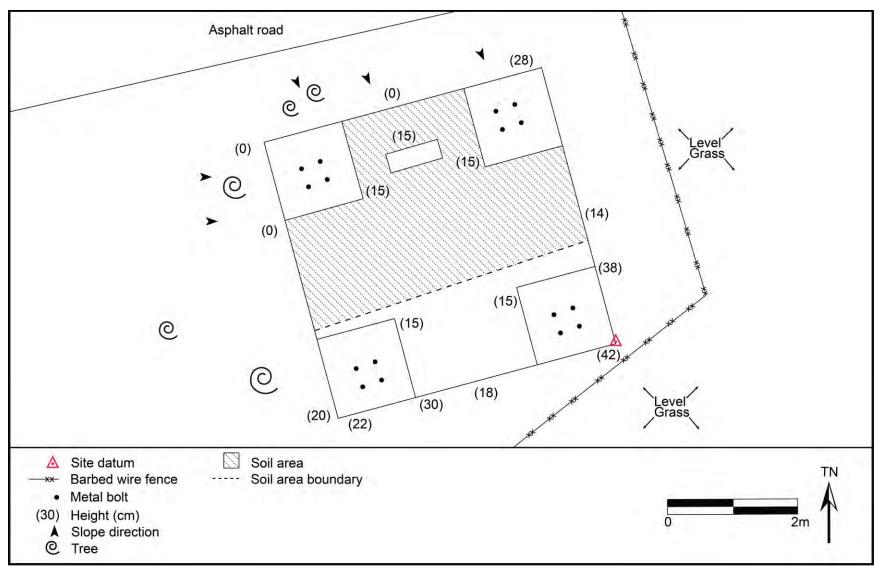


Figure 61. Plan map of Site 50-30-06-XXXXX (TS-001), Feature 12, concrete foundation.



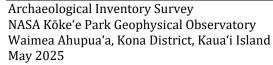
**Feature 13** is a concrete building foundation, located in the southern central portion of the project area in Site D (Figure 62 through Figure 64). It is located to the west of the western arm of the asphalt road which passes through the central portion of the project area. It is inside the barbed wire fenced area and outside of a smaller chain link fenced area, which encloses a structure and satellite, radar, and/or antenna infrastructure. Feature 13 is constructed of concrete and has exposed rebar on the top of the slab. No markings are visible. It is likely associated with inactive infrastructure, such as buildings, antenna, radar, and/or satellite structures at NASA KPGO. Feature 13 measures 2.6 m long by 1.3 m wide by 0.35 m high.



Figure 62. Site 50-30-06-XXXXX (TS-001), Feature 13, concrete foundation (view to north).



Figure 63. Site 50-30-06-XXXXX (TS-001), Feature 13, concrete foundation (view to west).





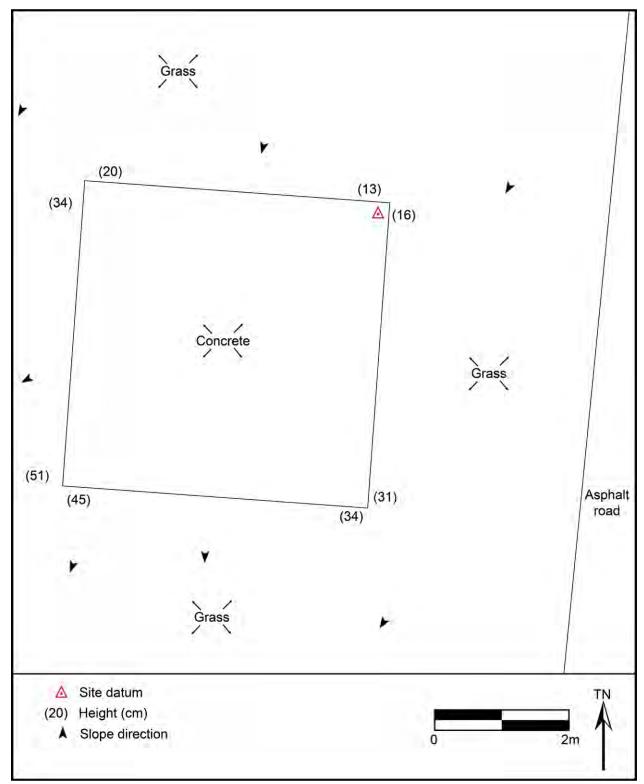


Figure 64. Plan map of Site 50-30-06-XXXXX (TS-001), Feature 13, concrete foundation.

**Feature 14** is a concrete and basalt stone channel (Figure 65 through Figure 67) that extends outside from the chain link fenced area at Site A, which surrounds cleared land with asphalt driveways, structures, and inactive radar, antenna, and satellite infrastructure associated with NASA KPGO. The station manager reported that the site was used by the US Navy, and it is currently unoccupied. Feature 14 is located on the edge, but outside of the northwestern edge of the fenced area, within the southwestern portion of the project area. The channel is constructed of concrete and terminates before the slope reaches its steepest point (over 60 degrees). The sides of the channel are constructed with basalt stone and concrete, and the floor of the channel is concrete. The channel is located on a slope greater than 60 degrees and functions to control water at KPGO. Feature 14 measures 2.6 m long by 1.3 m wide by 0.35 m high.



Figure 65. Site 50-30-06-XXXXX (TS-001), Feature 14, concrete and basalt stone channel (view to northeast).



Figure 66. Site 50-30-06-XXXXX (TS-001), Feature 14, concrete and basalt stone channel (view to southeast).

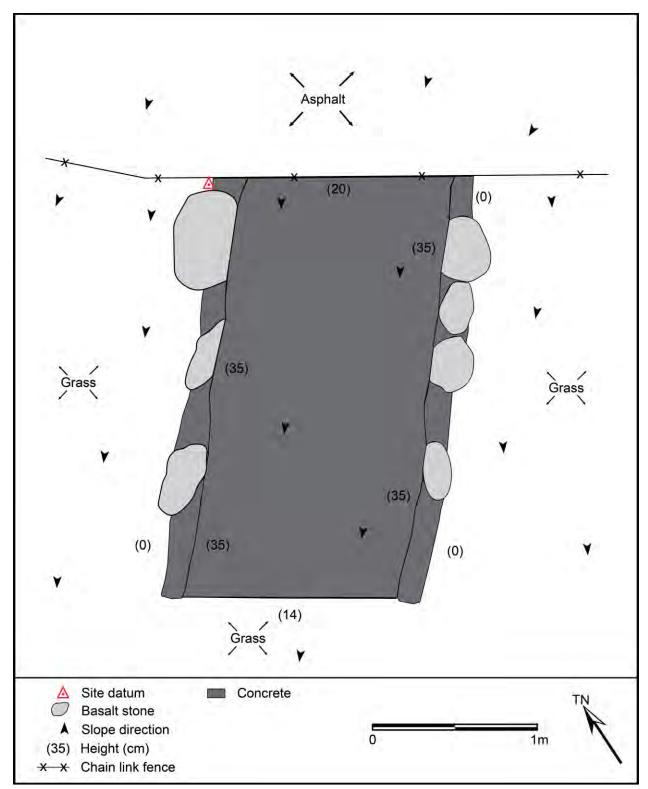


Figure 67. Plan map of Site 50-30-06-XXXXX (TS-001), Feature 14, concrete and basalt stone channel.

**Feature 15** is a concrete channel (Figure 68, Figure 69) that extends outside from the chain link fenced area at Site A, which surrounds cleared land with asphalt driveways, structures, and inactive radar, antenna, and satellite infrastructure associated with NASA KPGO. The station manager reported that the site was used by the US Navy, and it is currently unoccupied. Feature 15 is located outside of the southwestern edge of the fenced area, within the southwestern portion of the project area. Its construction is stepped, and it has two steps before terminating before the slope reaches its steepest point (over 60 degrees). The entire channel is constructed of concrete and concrete blocks. The floor of the channel is concrete. The channel is located on a slope greater than 60 degrees and functions to control water at KPGO. Feature 15 measures 2.9 mlong by 1.2 m wide by 0.85 m high.



Figure 68. Site 50-30-06-XXXXX (TS-001), Feature 15, concrete channel (view to east).

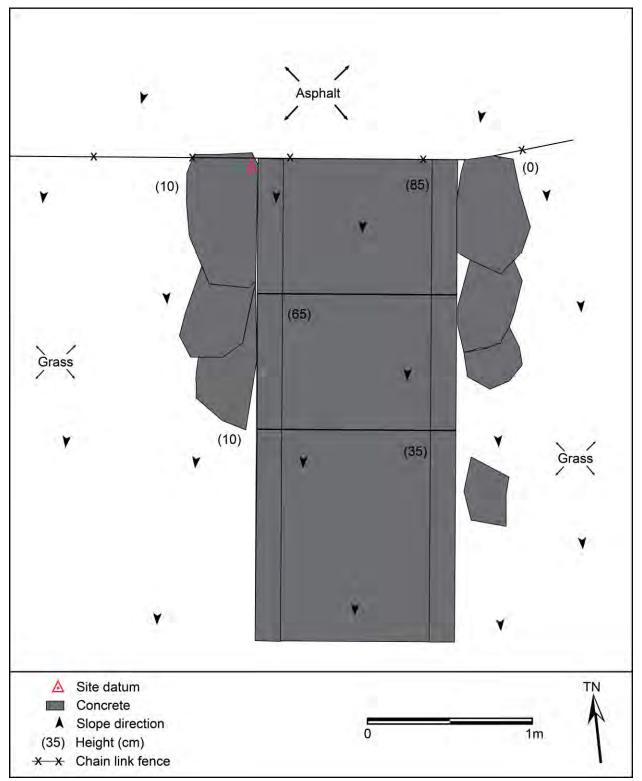


Figure 69. Plan map of Site 50-30-06-XXXXX (TS-001), Feature 15, concrete channel.

**Feature 16** is an asphalt foundation (Figure 70 through Figure 74) located in the central northern portion of Site C. It is located to the west of the asphalt road running through the project area within a mowed grass meadow within the barbed wire fenced project area. The asphalt foundation is on a berm, lower in elevation than the asphalt road, but higher in elevation than the rest of the mowed grass meadow. The asphalt foundation has three metal plates bolted to the asphalt (Figure 73). The metal plates create a tripod shape, and may be a remnant of inactive infrastructure, such as antenna, radar, and/or satellite structures associated with NASA KPGO. Feature 16 measures 6 m long by 5.5 m wide and it is flush to the ground.



Figure 70. Site 50-30-06-XXXXX (TS-001), Feature 16, asphalt foundation (view to east).



Figure 71. Site 50-30-06-XXXXX (TS-001), Feature 16, asphalt foundation (view to west).





Figure 72. Site 50-30-06-XXXXX (TS-001), Feature 16, asphalt foundation (view to northwest).



Figure 73. Site 50-30-06-XXXXX (TS-001), Feature 16, asphalt foundation, close up plan view image of metal covering on asphalt.



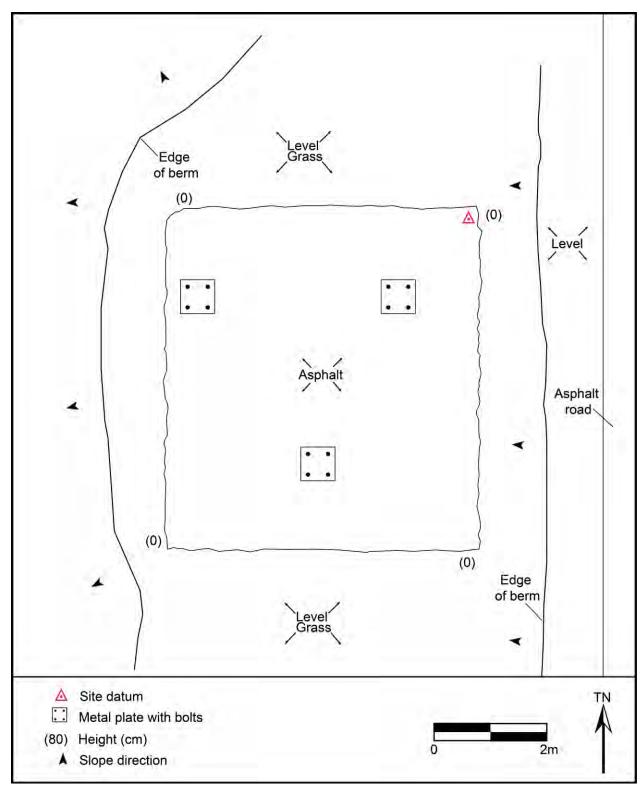


Figure 74. Plan map of Site 50-30-06-XXXXX (TS-001), Feature 16, asphalt foundation.

**Feature 17** is a concrete and basalt channel (Figure 75 through Figure 77) located in the southern portion of Site C. The channel originates on the edge of a chain link fence, which surrounds cleared land with antenna and radar infrastructure associated with NASA KPGO. The channel is constructed of concrete and stacked basalt stone with concrete mortar. The basalt stones are medium to large subangular to angular cobbles. The channel wall is stacked one to two courses high. Feature 17 is on a slope greater than 60 degrees, running northeast to southwest, and at the base of the channel (southwest), is a metal grate and a concrete and stone diversion wall, which prevents runoff from spilling directly onto the asphalt roadway, which runs roughly east-west. The diversion wall is constructed of concrete and basalt stone with concrete mortar, which is stacked four to five courses high. Feature 17 measures 12.8 m long by 1.25 m wide by 1 m high.



Figure 75. Site 50-30-06-XXXXX (TS-001), Feature 17, concrete and stone channel (view to east).



Figure 76. Site 50-30-06-XXXXX (TS-001), Feature 17, metal grate and wall at base of channel (view to east).

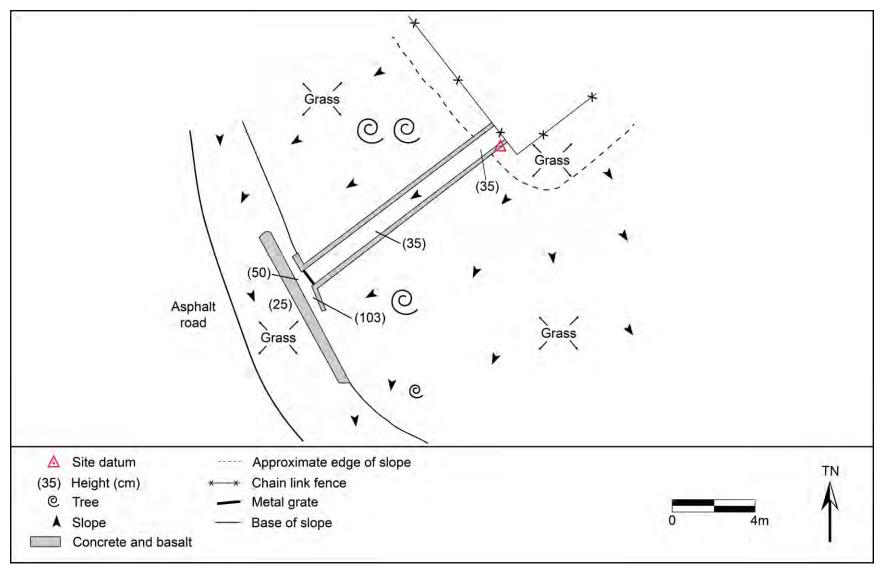


Figure 77. Plan-view map of Site 50-30-06-XXXXX (TS-001), Feature 17, a concrete and stone channel.



SIHP 50-30-06-YYYYY

TS-002

Site Type: Terrace/Retaining wall

Number of Features: 1

**Dimensions:** 8 m L x 11 m W x 0.4 m H

**Condition:** Fair **Age:** Post-Contact

**Function:** Temporary habitation/Erosion control

Significance: not significant

**Integrity:** Location

# **Site Description**

SIHP 50-30-06-YYYYY is stone terrace/retaining wall (Figure 79 through Figure 85), located in the northeastern portion of Site E (Figure 78). This is the same feature that was documented by Walker and Rosendahl (1990) as a retaining wall. It is located in a flat, grassy area, on the interface of the forest and the cleared area. It is located just outside the northeast corner of a chain link fence, which surrounds cleared land with antenna and radar infrastructure associated with NASA KPGO. The terrace is constructed of subangular and rounded stacked basalt stone and stacked one to three courses high. Concrete is included in the structure of the terrace/retaining wall on the eastern end (Figure 84). There are loose basalt stones, which have fallen from the alignment, and a secondary alignment extends to the northeast. The terrace is filled with soil and grass.

The terrace/retaining wall was interpreted as being post-Contact in origin, and the inclusion of concrete within the eastern portion of the stacked wall may indicate that it dates to the twentieth century. The terrace/retaining wall has a temporary habitation and/or erosion control function, possibly related to the period of sandalwood harvest in the area and/or the development of KPGO infrastructure.

The terrace/retaining wall is constructed of concrete and basalt stones, and the basalt stones are medium to large cobble size and are subangular and rounded in nature. The wall is stacked one to two courses high.

No cultural materials were documented at the site. SIHP - YYYYY is not significant because it is not likely to yield information important in history or prehistory. It retains integrity of location. The site has been adequately documented during this study and has low excavation potential to reveal additional information about the past. No further work is recommended.





Figure 78. Historic property feature components associated with SIHP 50-30-06-YYYYY (TS-002) during the AIS in the NASA KPGO Project Area.





Figure 79. Site 50-30-06-YYYYY (TS-002), terrace/retaining wall (view to northwest).



Figure 80. Site 50-30-06-YYYYY (TS-002), terrace/retaining wall (view to southwest).



Figure 81. Site 50-30-06-YYYYY (TS-002), terrace/retaining wall (view to west).



Figure 82. Site 50-30-06-YYYYY (TS-002), terrace/retaining wall (view to south).



Figure 83. Site 50-30-06-YYYYY (TS-002), terrace/retaining wall (view to south).



Figure 84. Site 50-30-06-YYYYY (TS-002), terrace/retaining wall (view to northwest). Note the fragments of concrete in the construction of the eastern portion of the terrace/retaining wall.



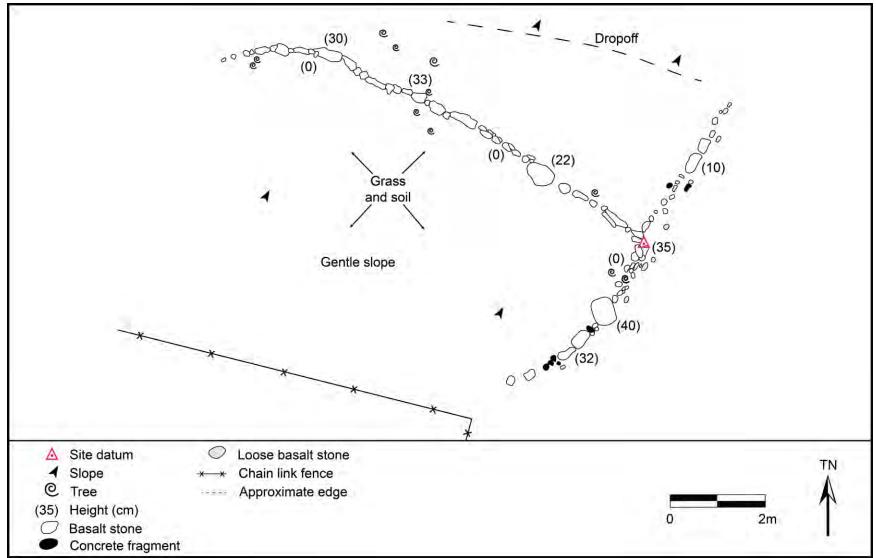


Figure 85. Plan map of Site 50-30-06-YYYYY (TS-002), terrace/retaining wall.



# 5.0 SIGNIFICANCE ASSESSMENTS

The Code of Federal Regulations, Title 36, Part 60 (36 CFR §60.4) stipulates that all identified historic properties must be assessed for their significance and states:

To be significant, a historic property shall possess integrity of location, design, setting, materials, workmanship, feeling, and association and shall meet one or more of the following criteria:

- (A) That are associated with events that have made a significant contribution to the broad patterns of our history; or
- (B) That are associated with the lives of persons significant in our past; or
- (C) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (D) That have yielded, or may be likely to yield, information important in prehistory or history.

The State of Hawai'i has developed a system for evaluating significance of historic properties under Hawai'i Administrative Rules, Title 13, Chapter 275 (HAR §13-275-6, Rules Governing Procedures for Historic Preservation Review for Governmental Projects Covered under Sections 6E-7 and 6E-8, HRS). This system is patterned after Federal Regulations 36 CFR §60.4 and is meant to provide a framework for the evaluation of significance.

To be significant, a historic property shall possess integrity of location, design, setting, materials, workmanship, feeling, and association and shall meet one or more of the following criteria as defined in HAR §13-275-6:

- Criterion "a" Be associated with events that have made an important contribution to the broad patterns of our history;
- Criterion "b" Be associated with the lives of persons important in our past;
- Criterion "c" Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;
- Criterion "d" Have yielded, or is likely to yield, information important for research on prehistory or history; or
- Criterion "e" Have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity.



# 5.1 ASSESSED SIGNIFICANCE OF HISTORIC PROPERTIES IN THE PROJECT AREA

SIHP 50-30-06-XXXXX (TS-001) is not clearly associated with specific events related to geodetic data collection that have made a significant contribution to the broad patterns of our history and is thus ineligible for listing on the NRHP (36 CFR §60.4 Criterion A)\_or HRHP (HAR §13-275-6 Criterion a). It is not associated with the lives of significant persons in our past (36 CFR §60.4 Criterion B, HAR §13-275-6 Criterion b), nor does it embody the distinctive characteristics of a type, period, or method of construction or represent the work of a master or possess high artistic values (36 CFR §60.4 Criterion C, HAR §13-275-6 Criterion c). The features that make up TS-001 are not likely to yield information important in history or prehistory (36 CFR §60.4 Criterion D, HAR §13-275-6 Criterion d). It does not have an important value to the Native Hawaiian community or another ethnic group (HAR §13-275-6 Criterion e).

SIHP -XXXXX (TS-001) does retain some integrity of location, design, setting, quality of workmanship, feeling, materials, and association. The resource is recommended not eligible for listing in the NRHP because it does not adequately convey the characteristics that would qualify it for listing in the NRHP.

SIHP 50-30-06-YYYYY (TS-002) is not clearly associated with events that have made a significant contribution to the broad patterns of our history (36 CFR §60.4 Criterion A, HAR §13-275-6 Criterion a), it is not associated with the lives of significant persons in our past (36 CFR §60.4 Criterion B, HAR §13-275-6 Criterion b), and it does not embody the distinctive characteristics of a type, period, or method of construction or represent the work of a master or possess high artistic value (36 CFR §60.4 Criterion C, HAR §13-275-6 Criterion c). As a post-contact terrace that is potentially associated with SIHP -XXXXX, NASA KPGO infrastructure, it is not likely to yield additional information important in history or prehistory (36 CFR §60.4 Criterion D, HAR §13-275-6 Criterion d). It does not have an important value to the Native Hawaiian community or another ethnic group (HAR §13-275-6 Criterion e).

SIHP -YYYYY (TS-002) does retain some integrity of location, but the design, setting, quality of workmanship, materials, feeling, and association have been compromised by activities at the NASA KPGO facility such as dumping, the inclusion of additional materials, and erosion of the terrace/retaining wall itself, all of which alter the characteristics qualifying it for listing. The resource is recommended as not eligible for listing in the NRHP because it does not adequately convey the characteristics qualifying it for listing in the NRHP.

The location and form of these historic properties provide information about how the Kōke'e area has been utilized in the post-Contact period. Information about the infrastructure associated with the NASA Kōke'e Park Geophysical Observatory and other use of the area in the post-Contact period informs our understanding of the landscape. The current proposed project will not adversely impact the two historic properties.



Table 6. Significance Assessments and Recommended Mitigation for Historic Properties Features Documented Within the NASA KPGO Project Area

SIHP No.	Fe.	Туре	Function	Age	Signifi-	Integrity	Recommended
					cance		Mitigation
50-30-06-	1-	Complex of 20 <sup>th</sup>	Building and	Post-	Not	L, D, S, Q,	No mitigation
XXXXX	17	Century NASA	equipment	1961	significant	F, M, A	recommended
(TS-001)		Kōke'e Park	foundations;				
		Geophysical	transportation				
		Observatory	; and water				
		Infrastructure	and erosion				
		Features	control				
50-30-06-	N/A	Terrace/	Temporary	Post-	Not	L	No further work
YYYYY		Retaining wall	habitation/	Contact	significant		
(TS-002)			Erosion				
			control				

## 5.2 LISTING ELIGIBILITY EVALUATION

The National Historic Preservation Act of 1966 (as amended) authorizes the Secretary of Interior to expand and maintain a National Register of Historic Places (NRHP) that contains a listing of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture. A property may be listed in the NRHP if it retains one or more aspects of integrity and one or more eligibility criteria defined in 36 CFR §60.4.

The two historic properties identified in the project area subjected to an AIS were evaluated for inclusion in the NRHP. SIHP 50-30-02-XXXXX (TS-001) and -YYYYY (TS-002) were recommended as not eligible for listing on the NRHP. The eligibility recommendations, based on 36 CFR §60.4 for the NRHP, are presented below and summarized in Table 7. SIHP 50-30-02-YYYYY (TS-002) has been adequately documented and is thus recommended for no further work. No mitigation is recommended for 50-30-02-XXXXX (TS-001).

Table 7. Recommendations of Eligibility for Inclusion in the NRHP and Mitigation Recommendations for Historic Properties Identified During the AIS of the NASA KPGO AIS Project Area

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SIHP Number	36 CFR §60.4	NRHP Eligibility	Mitigation Recommendation					
	Significance	Recommendation						
50-30-06-XXXXX (TS-001)	Not significant	Not eligible	No mitigation recommended					
50-30-06- YYYYY (TS-002)	Not significant	Not eligible	No further work					

# **5.3** Project Effect

The purpose of this AIS is to identify and document all historic properties and assess their integrity and significance. Further, it identifies potential for the project to impact significant historic properties and provides agreed-upon mitigation commitments to address the identified adverse impacts. Additionally, this report may assist the State of Hawai'i in managing the archaeological resources present within its landholdings. It provides detailed information on the location, character, and relative significance of the historic properties present within the survey area. Based on the findings of this AIS, NASA and Navy's effect determination is "No historic properties affected"



under HRS Chapter 6E, pursuant to Hawai'i Administrative Rules (HAR) §13-275-7(a)(2). Under 36 CFR 800, NASA and Navy's effect determination is "No adverse effect."

The present program of site recording was undertaken to gather information about the sites, not to mitigate any adverse impacts to these historic properties. Significance assessments and mitigation recommendations have been made to meet AIS requirements and are based on the integrity and significance of each property.

#### 5.4 MITIGATION RECOMMENDATIONS

No mitigation is recommended for SIHP 50-30-06-XXXXX (TS-001), as it will not be impacted by this project.

SIHP 50-30-06-YYYYY (TS-002) has been adequately documented during this study and has low excavation potential to reveal additional information about the past. No further work is recommended.

Neither of the two historic properties that were inventoried during the AIS will be adversely impacted by the current project, as NASA is proposing to maintain long-term use of the 23 acres of State lands (totaling 16 acres of leased lands and 7 acres of easements) for continued operation of KPGO after existing real estate agreements for these State lands are set to expire in 2030. No change in any use or maintenance of existing infrastructure is planned at KPGO, and no construction, renovation, or demolition of facilities is planned.

#### 5.5 DISPOSITION OF MATERIALS

All field records (descriptions, notes, and photographs) resulting from the AIS have been temporarily housed in the Pacific Legacy Kailua, Oʻahu office. These will be provided to the landowner once all analysis and write-up have been completed. Long-term curation specifics will be determined by the landowner, per HAR 13-276-6(a).



#### 6.0 SUMMARY AND INTERPRETATION

Pacific Legacy, Inc. completed this AIS for the 23-acre NASA Kōke'e Park Geophysical Observatory Project Area. The historic properties that were identified and recorded during the current AIS include two newly identified historic properties (SIHP 50-30-06-XXXXX and SIHP 50-30-06-YYYYY), which consist of post-Contact features (a complex of NASA KPGO infrastructure and a terrace) which function as building and equipment foundations, transportation, water and erosion control, and a temporary habitation feature. These historic properties indicate that the Kōke'e area has been, and continues to be, utilized in the post-Contact period for NASA KPGO operations and Kōke'e State Park recreation activities. No pre-Contact features were documented.

SIHP 50-30-06-XXXXX (TS-001) and 50-30-06-YYYYY (TS-002) are assessed as not significant and not eligible for listing on the NRHP. SIHP 50-30-06-YYYYY (TS-002) is recommended for no further work, as this historic property has been adequately documented. The current project will have no effect on SIHP 50-30-06-XXXXX (TS-001); therefore, no mitigation is recommended.



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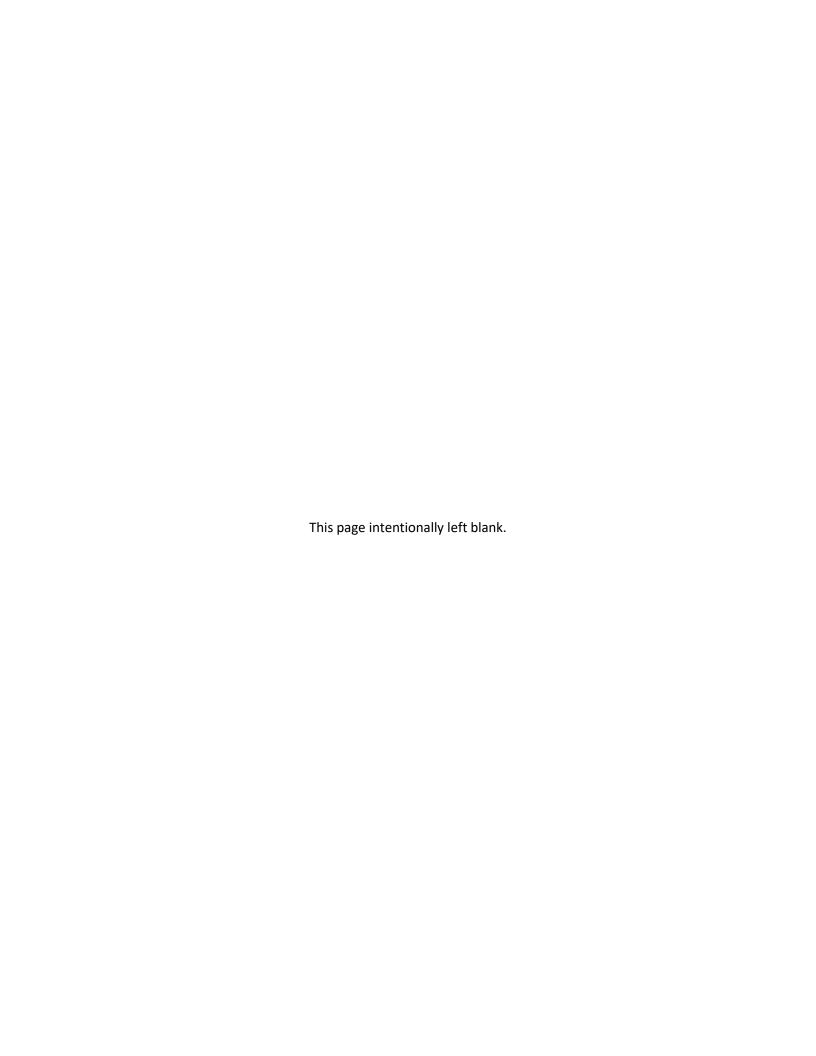
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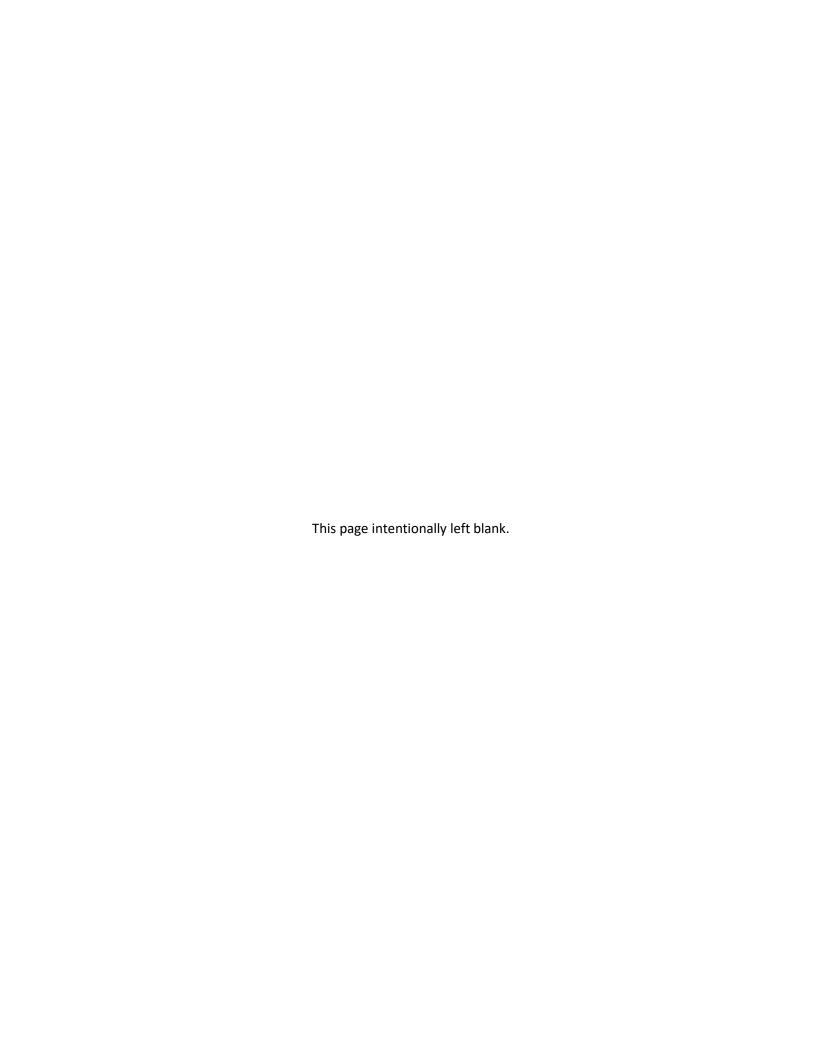
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Appendix G

Public Scoping Meeting Materials







Category	Group
Federal, state, and local elected officials	<ul> <li>Federal Elected Officials</li> <li>U.S. Senators         <ul> <li>Mazie K. Hirono</li> <li>Brian Schatz</li> </ul> </li> <li>U.S. House of Representatives</li> <li>Congressional District II: Jill N. Tokuda</li> <li>State Elected Officials</li> <li>Governor: Josh Green</li> <li>Lieutenant Governor: Sylvia Luke</li> <li>Attorney General: Anne E. Lopez</li> <li>State Senate</li></ul>
Federal, state, and local regulatory and non-regulatory government agencies	<ul> <li>Federal Agencies</li> <li>Advisory Council on Historic Preservation</li> <li>National Oceanic and Atmospheric Administration Fisheries</li> <li>U.S. Army Corps of Engineers Honolulu District</li> <li>U.S. Coast Guard District 14</li> <li>U.S. Department of the Interior, Office of Hawaiian Relations</li> <li>U.S. Environmental Protection Agency</li> <li>USFWS, Kilauea Point National Wildlife Refuge</li> <li>USFWS, Pacific Islands Fish and Wildlife Office</li> <li>USDA Forest Service, Institute of Pacific Islands Forestry</li> <li>USDA, Hawai'i and Western Pacific State Office</li> <li>U.S. Geological Survey, Honolulu Field Station</li> </ul>

Category	Group
Native Hawaii Organizations	<ul> <li>'Āina Momona (State of Hawai'i)</li> <li>Association of Hawaiian Civic Clubs (State of Hawai'i)</li> <li>Hawaiian Native Corporation (supports NHOs – State of Hawai'i)</li> <li>Ko'olau Foundation (State of Hawai'i)</li> <li>Native Hawaiian Hospitality Association (State of Hawai'i)</li> <li>Kawaileo Law A Limited Liability Law Company (State of Hawai'i)</li> <li>Council For Native Hawaiian Advancement (State of Hawai'i)</li> <li>Na Koa Ikaika Ka Lahui Hawai'i (Kaua'i)</li> <li>Na 'Ohana Papa O Manā (Kaua'i)</li> <li>EAO Hawai'i Inc. (Kaua'i)</li> <li>Nā Kuleana o Kānaka 'Ōiwi (Kaua'i)</li> <li>Hanalei River Heritage Foundation (Kaua'i)</li> <li>ALU LIKE, Inc. (Kaua'i)</li> <li>Kaua'i Kupuna Council</li> <li>Kaua'i Burial Council</li> </ul>
Community planning groups, and other community and civic organizations	<ul> <li>Community Planning Groups</li> <li>Kaua'i Planning &amp; Action Alliance</li> <li>Community Organizations</li> <li>Hui Maka'āinana O Makana</li> <li>Waipā Foundation</li> <li>Waimea Community Association</li> <li>DON Advocacy Groups</li> <li>AMVETS Department of Hawai'i</li> <li>Civic Groups</li> <li>Kaua'i Planning &amp; Action Alliance</li> <li>Hawai'i Community Foundation</li> <li>Kilauea Community Agricultural Center - Aina Ho'okupu O Kilauea</li> <li>Kaua'i Philippine Cultural Center</li> <li>Ke Kumu O Hihinui Cultural Center</li> <li>Kaua'i Museum</li> <li>Köke'e Natural History Museum</li> </ul>
Small business associations, economic development/ tourism organization, and recreational and real estate interests	<ul> <li>Economic Development Organizations</li> <li>Kaua'i Chamber</li> <li>Kaua'i Filipino Chamber of Commerce</li> <li>Tourism</li> <li>Camp Sloggett</li> <li>Waimea Japanese Cemetery</li> <li>Kaua'i Visitors Bureau (Sue Kanoho)</li> <li>Smith Family Garden Luau</li> <li>Kōke'e Lodge</li> <li>The Cabins at Kōke'e</li> </ul>
Local environmental organizations and other Non-Governmental Organizations	<ul> <li>Government Programs</li> <li>DLNR DOFAW Natural Area Reserves System</li> <li>Kaua'i Seabird Habitat Conservation Plan</li> <li>Environmental Organizations – Local</li> <li>National Tropical Botanical Gardens, Plant Extinction Prevention Program</li> </ul>

Category	Group							
	<ul> <li>Kaua'i Forest Bird Recovery Project</li> <li>Kaua'i Watershed Alliance</li> <li>Hanalei Watershed Hui</li> <li>Kaua'i North Shore Community Foundation</li> <li>North Shore Community Land Trust</li> <li>Kaua'i Invasive Species Committee</li> <li>Kōke'e Resource Conservation Program</li> <li>Keahole Defense Coalition</li> <li>Environmental Organizations – Regional/National</li> <li>Earthjustice</li> <li>Surfrider Foundation</li> <li>Sierra Club – Kaua'i Chapter</li> <li>Reef Guardians</li> <li>Save our Shearwaters</li> <li>Conservation Council for Hawai'i</li> <li>Kahea – The Hawaiian Environmental Alliance</li> <li>Hawai'i Audubon Society</li> <li>Hawaiian Islands Land Trust</li> <li>Native Hawaiian Plant Society</li> <li>Hawai'i Kiai</li> <li>Nature Conservancy - Hawai'i Chapter</li> <li>Pesticide Action Network North America</li> <li>Fishing/Diving</li> <li>Hawai'i Big Game Fishing Club</li> <li>Hawai'i Freshwater Fishing Association</li> <li>Boating/Yacht Clubs/Marinas</li> <li>Nawiliwili Yacht Club</li> <li>Kaua'i Sailing Association</li> <li>West Side Boaters Association</li> <li>Holo Holo Charters</li> <li>Catamaran Kahanu</li> <li>Captain Andy's</li> <li>Kauai Sea Tours</li> <li>Napali Odyssey</li> <li>Makana Charters</li> <li>Seasport Divers</li> <li>Nã Pali Riders</li> </ul>							
Local media outlets	<ul> <li>Blue Dolphin Charters</li> <li>Print</li> <li>Kaua'i Island News</li> <li>The Garden Island</li> <li>MidWeek Kaua'i</li> <li>The Honolulu Star-Advertiser</li> <li>Hawai'i Tribune-Herald</li> <li>Ka Wai Ola</li> </ul>							
	<ul><li>TV</li><li>KITV 4 (ABC)</li><li>KHON2 (Fox and CW)</li></ul>							

Category	Group
Individual community members (not associated with groups) interested in cultural and natural resources preservation, military use of the land, public access, etc.	<ul> <li>Hawai'i News Now</li> <li>Radio</li> <li>Kong Radio 93.5</li> <li>KHKU 94.3 FM</li> <li>KFMN FM 97</li> <li>KJMQ Jamz 98.1</li> <li>Sunny 101.3</li> <li>Hawai'i Public Radio (HPR)</li> <li>Online</li> <li>Honolulu Civil Beat</li> <li>Kaua'i Now</li> <li>Waimea Theater On-Screen Advertising</li> <li>Dennis Eguchi</li> <li>Pastor Daryl Kua</li> <li>Alethea Kaohi</li> <li>Bob Westerman</li> <li>Toni Ricci</li> <li>Lyle Tabata</li> <li>Charlie Iona</li> <li>Marissa Faye</li> <li>Josh Mori</li> <li>Keiko Napier</li> <li>Kaua Mata</li> <li>Tia Korete</li> <li>Terry Lily</li> <li>Barbara "Maka'ala" Ka'aumoana</li> </ul>
Residents, business, agricultural operations, schools, and property owners near PMRF	<ul> <li>Communities of Kekaha, Waimea, Hanapepe, Ele'ele, Port Allen, Kalaheo, Lawai, Omao, Koloa, Poipu, Kapa'a, and Līhu'e</li> <li>Schools – Kaua'i District, Waimea Complex</li> <li>Kekaha Elementary School</li> <li>Ni'ihau High and Elementary School</li> <li>Waimea High School</li> <li>Waimea Canyon Middle School</li> <li>Ke Kula Ni'ihau O Kekaha Public Charter School</li> <li>Kula Aupuni Ni'ihau A Kahelelani Aloha Public Charter School</li> <li>St. Theresa's School</li> </ul>

Legend: AMVETS = American Veterans; BLNR = Board of Land and Natural Resources; CZM = Coastal Zone Management; DLNR = Department of Land and Natural Resources; DOFAW = DLNR Division of Forestry and Wildlife; DON = Department of the Navy; NHO = Native Hawaiian Organization; OHA = Office of Hawaiian Affairs; OPSD = Office of Planning and Sustainable Development; SHPD = State Historic Preservation Division; U.S. = United States; USDA = U.S. Department of Agriculture; USFWS = U.S. Fish and Wildlife Service.

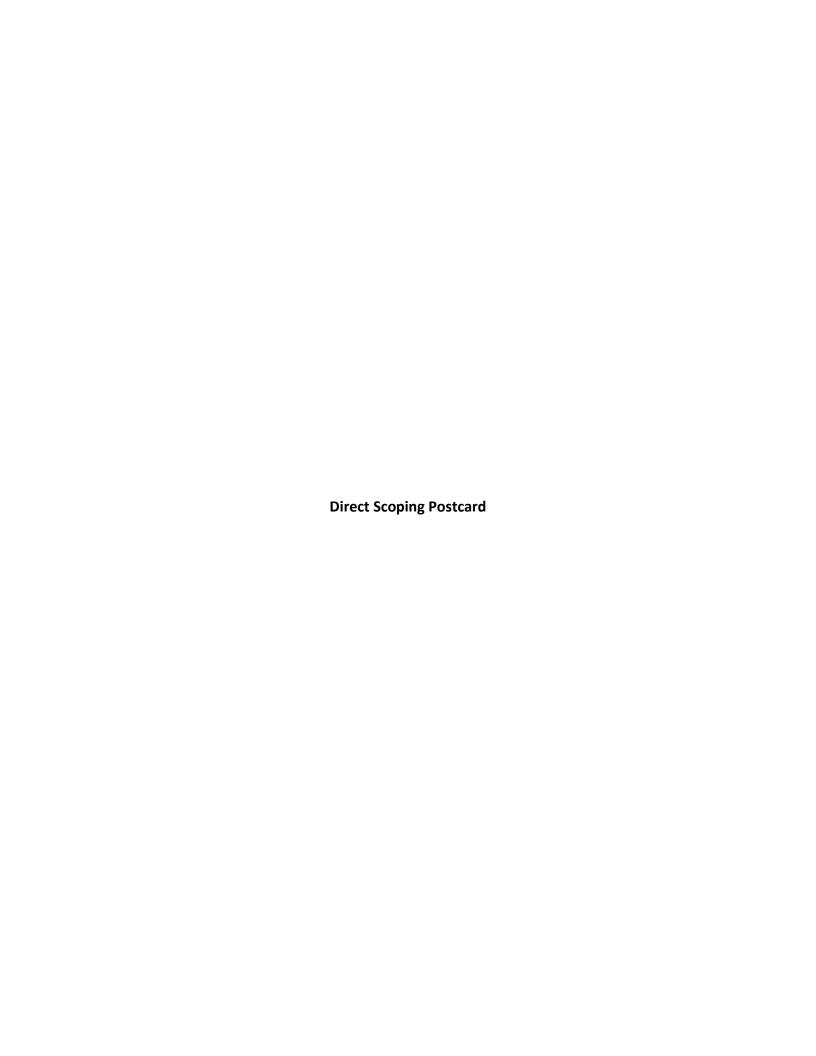
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Wildlife Office  Mr. Earl Campbell Project Leader U.S. Fish and Wildlife Service, Pacific Islands Fish and 300 Ala Moana Boulevard Room 3-122 Honolulu HI 96850  Located Project Leader U.S. Fish and Wildlife Office Room And Project Leader U.S. Fish and Wildlife Office Room And Project Islands Fish and 300 Ala Moana Boulevard Room 3-122 Honolulu HI 96850  Located Room 3-122 Honolulu HI 96813 (808) 973-9560	
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Mr. David Smith Statewide Branch Manager Department of Land and Natural Resources Division of Forestry and Wildlife Department of Land and Natural Resources Division of Forestry and Wildlife Department of Land and Natural Resources Division of Kalanimoku Building, Room 325 1151 Punchbowl Street Honolulu HI 96813	

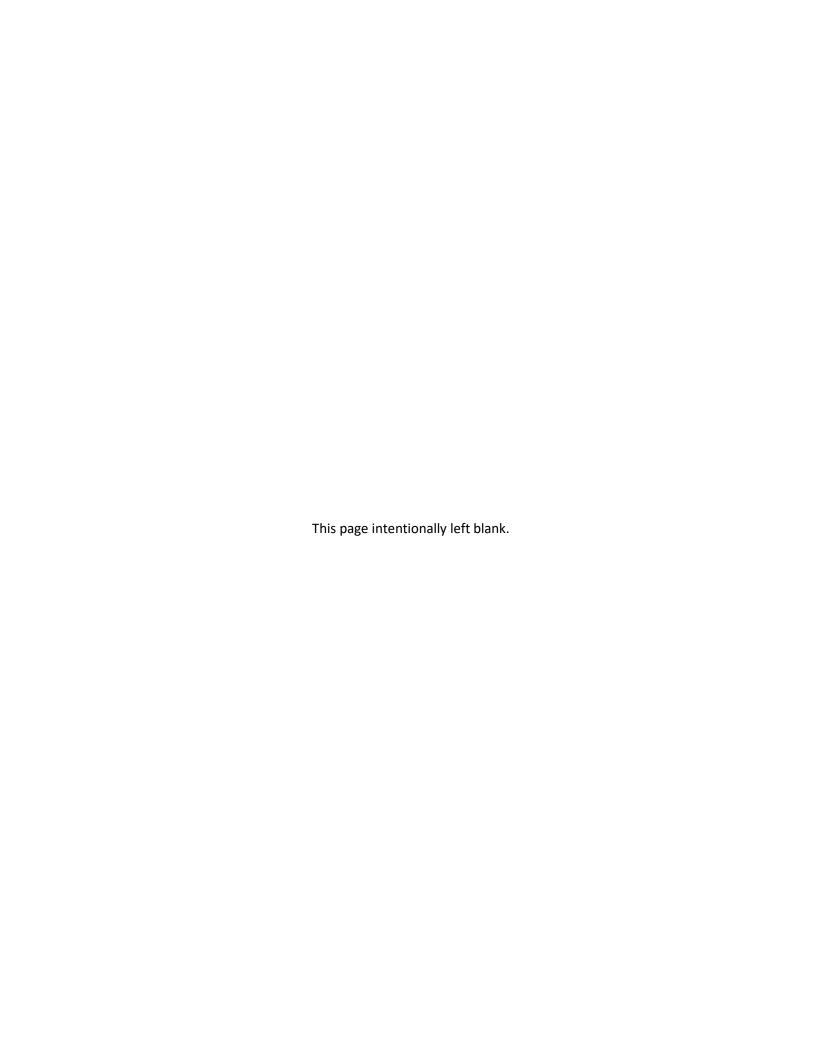
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<u> </u>		First	Last	Title	Organization Name	Address 1	Address 2	City	State	Zip	Phone	Email
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	Or.	Alan	Downer	Administrator	Department of Land and Natural Resources	Kakuhihewa Building	Suite 555	Kapolei	HI	96707	(808) 692-8015	dlnr@hawaii.gov
54					Hawai'i State Historic Preservation Division	601 Kamokila Blvd.						
					Department of Land and Natural Resources	3060 Eiwa Street	Room 208	Līhu'e	HI	96766	(808) 274-3491	
55					Land Division - Kaua'i District Office							
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56					Office of Conservation and Coastal Lands	1151 Punchbowl St.						
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57						1151 Punchbowl St.						
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58					of Aquatic Resources							
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59					of Forestry and Wildlife, Kaua'i Branch						,,	
60 1	VIs. (	Catherine A.	Taschner	Director		650 South King Street	3rd Floor	Honolulu	HI	96813		
61		Anne E.	Lopez	Attorney General	Department of the Attorney General	425 Queen Street		Honolulu	н	96813	(808) 586-1500	hawaiiag@hawaii.gov
62 1		Keith	Hayashi	Superintendent	Hawai'i State Department of Education	1390 Miller St		Honolulu	н	96813	(808) 784-6200	doeinfo@k12.hi.us
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63						601 Kamokila Blvd.					(000) 000	
-				Chief Court Administrator	Kaua'i Circuit Court	Pu'uhonua Kaulike Building		Līhu'e	н	96766	(808) 539-4909	
64						3970 Ka'ana Street			l		,	
65	+				Kaua'i District Office, Division of State Parks	3060 Eiwa Street	Suite 306	Līhu'e	н	96766	(808) 274-3444	
66	Ms s	Stacy Kealohalani	Ferreira	Chief Executive Officer	Office of Hawaiian Affairs	560 N. Nimitz Hwy.	#200	Honolulu	HI	96817	(808) 594-1835	info@oha.org
		Sharon	Ibarra		State of Hawai'i Boards and Commissions	Boards and Commissions		Honolulu	HI	96813	(808) 586-0034	boards.commissions@hawaii.gov
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67						415 S. Beretania Street		I	1			
68	+				State of Hawai'i Clean Water Branch	2827 Waimano Home Road	#225	Pearl City	ы	96872	(808) 586-4309	CleanWaterBranch@doh.hawaii.gov
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70 N	Me e	Educio	Sniffen	Director	State of Hawai'i Department of Transportation	3949 Diamond Head Road Alijaimoku Building, Room 509	869 Punchbowl Street	Honolulu	ш	96813		
70 1		Edwin Alan	Downer	Director State Historic Preservation		P.O. Box 1729	oos ruittibowi Street	Lihu'e	mi ui	96766		
<sub>71</sub>   <sup>1</sup>	or.	Alan	Downer		State of Hawai'i State Historic Preservation Division	P.O. Box 1729		rinn.e	н	96/66		
/1	-			Division Administrator	C	0.0.0.0000				05004 2250	(000) FOR 2045	
					State Office of Planning and Sustainable	P.O. Box 2359		Honolulu	н	96804-2359	(808) 587-2846	
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l l					State Office of Planning and Sustainable	P.O. Box 2359		Honolulu	HI	96804-2359	(808) 587-2846	dbedt.op.czm@hawaii.gov
73					Development, Coastal Zone Management							
I I						235 South Beretania Street	Suite 702	Honolulu	HI	96813	(808) 586-4185	dbedt.opsd.erp@hawaii.gov
74					Development, Environmental Review Program							
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75					Parks and Recreation	4444 Rice St.						
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l I	Mr.	Michael R.	Gibson	Fire Chief	Kaua'i Fire Department	Pi'ikoi Building	Suite 315	Līhu'e	HI	96766	(808) 241-4980	kfd@kauai.gov
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85				County				L				
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ı J				State of Hawaii Division of	of Forestry and Wildlife, Natural Area Reserves	1		I	1			
86				Forestry and Wildlife	System	1			1			
87	VIs.	Colleen Kelley	Heyer	President	Conservation Council for Hawai'i	P.O. Box 2923		Honolulu	HI	96802	(224) 338-6511	
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89	VIs.	Susan	Scott	President	Hawai'i Audubon Society	850 Richards St.		Honolulu	HI	96813	(808) 528-1432	office@hiaudubon.org
90 1	VIs. L	Linda	Elliott	President and Center Director	Hawai'i Wildlife Center	P.O. Box 551752		Kapa'au	HI	96755	(808) 884-5000	
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	Dr.	Jonathan	Osorio	Past Director	Kahea – The Hawaiian Environmental Alliance	P.O. Box 37368		Honolulu	HI	96837	(808) 524-8220	osorio@hawaii.edu
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93	- 1				Native Hawaiian Plant Society	P.O. Box 5021		Kahului	н	96733		info@nativehawaiianplantsociety.org
94	vis.	Lorilani	Keohokālole	Organizing Co-Director	Pesticide Action Network North America	2029 University Ave.	Suite 200	Berkelev	CA	94704	(510) 788.9020	
95 1		Robin	Mazor		Reef Guardians	3737 Kaweonui		Princeville	н	96722	(808) 651-0286	info@reefguardianshawaii.org
96	vis.	Molly	Bache	Program Coordinator	Save Our Shearwaters	7370 Kuamoo Rd		Kapa'a	н	96746	(808) 635-5117	
97		Rayne	Regush		Sierra Club of Hawai'i, Kaua'i Group			1	i i			RAYNEREGUSH@aol.com
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98 r		Wayne	Tanaka	Chapter Director		P.O. Box 2577		Honolulu	HI	96803	(808) 538-6616	hawaii.chapter@sierraclub.org
99 [	or. (	Gordon	LaBedz	Chair		P.O. Box 2195		Kapa'a	HI		(808) 635-2593	
1					The Nature Conservancy	923 Nu'uanu Avenue		Honolulu	HI	96817	(808) 537-4508	hawaii@tnc.org
100					Hawaii State Program				-			
101	VIs. E		Ka'aumoana	Executive Director	Hanalei Watershed Hui	P. O. Box 1285		Hanalei	HI	96714	(808) 346-5458	
102	Dr. I	Lisa "Cali"	Crampton	Project Leader		P.O. Box 27		Hanapēpē	н	96716	(808) 335-5078	crampton@hawaii.edu
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104						P.O. Box 1836		Koloa	HI	96756		
105		Rory	Enright	President		P.O. Box 223381		Princeville	н	96722	(808) 240-2670	info@knscf.org
լ Թ	VIr.	Lucas	Behnke	The Nature Conservancy-Kaua'i	Kaua'i Watershed Alliance	4371 Puaole Street	Suite C	Līhu'e	HI	96766	(808) 587-6257	lbehnke@tnc.org
106				Field Representative								
107					Keahole Defense Coalition							
108					Köke'e Resource Conservation Program	P.O. Box 1108		Waimea	HI	96796	(808) 335-0045	KokeeResource@gmail.com
109					Nā Kia'i Kai							

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- 1	refix	First	Last	Title	Organization Name	Address 1	Address 2	City	State	Zip	Phone	Email
110	Telix	rirst	Last				Address 2	Hanalei	State	96714	(808) 826-1053	Elliali
110		Janet L.		Limahuli Garden and Preserve Chief Executive Officer and	National Tropical Botanical Garden  National Tropical Botanical Garden, Plant Extinction	5-8291 Kuhio Highway 3530 Papalina Road		Kalāheo	HI	96741	(808) 325-1053 (808) 332-7324	1
111	Λs.	Janet L.	Mayfield			3530 Papalina Koad		Kalaneo	н	96/41	(808) 332-7324	administration@ntbg.org
111			l	Director	Prevention Program						4	
112 N	Ar.	Adam	Borrello	Executive Director	North Shore Community Land Trust	P.O. Box 1179		Hale'iwa	HI	96712	(808) 638-0338	adam@northshoreland.org
113					Hawai'i's Museum (Bishop Museum)	1525 Bernice Street		Honolulu	HI	96817		<u> </u>
114		Chucky Boy	Chock	Director	Kaua'i Museum	4428 Rice Street		Līhu'e	HI	96766		director@kauaimuseum.org
N	Λs.	Sonia	Topenio	Chairman	Kaua'i Philippine Cultural Center	P.O. Box 1961		Līhu'e	HI	96766	(808) 431-4120	kpcc2020@gmail.com
115												stopenio@msn.com
N	Λs.	Moani	Tolentino	Manager of Hawaiian Culture	Ke Kumu O Hihinui Cultural Center	1571 Poipu Road	Grand Hyatt Kauai Resort & Spa	Koloa	HI	96756	(808) 240-6362	i e
116												1
N	Λs.	Chris	Faye	Executive Director	Köke'e Natural History Museum	Hui o Laka		Kekaha	HI	96752	(808) 335-3353 direct	director@kokee.org
117						P.O. Box 100					(808) 335-9975 park	info@kokee.org
118					Smith Family Garden Luau	3-5971 Kuhio Hwy		Kapa'a	HI	96746	(808) 821-6895	
119					Waimea Japanese Cemetery							
120 N	As.	Stacy M.	Sproat-Beck	Executive Director	Waipā Foundation	5-5785A Kuhio Hwy.		Hanalei	HI	96714	(808) 826-9969	waipafoundation.org
121					Hui Mālama Polihale							huimalamapolihale@gmail.com
122					The Children of the Land	4-831 Kuhio Hwy.		Kapa'a	HI	96746	808-821-1234	1
123 N	۸r.	Walter	Ritte	Executive Director	'Āina Momona	P.O. Box 376		Ho'olehua	HI	96729		ainamomona1983@gmail.com
N	۸s.	Mervina K.M.	Cash-Kaeo	President/Chief Executive Officer	ALU LIKE, Inc.	Central Administration	Suite 200	Honolulu	HI	96819	(808) 535-6700	info@alulike.org
				·	·	Hale O Nā Limahana						1
124			1			2969 Mapunapuna Place		1	l			1
125 N	∕ls.	Dre	Kalili	President	Association of Hawaiian Civic Clubs	P.O. Box 1135	İ	Honolulu	н	96807		
126 N		Michelle	Kauhane	President	Council For Native Hawaiian Advancement	91-1270 Kinoiki Street	Suite 1	Kapolei	н	96707	(808) 596-8155	info@hawaijancouncil.org
127 N		Kanoe	Ahuna	President and Director	EAO Hawai'i, Inc.	P.O. Box 881		Līhu'e	HI	96766	(808) 631-8765	
		Kamealoha	Hanohano-Smith	Program Administrator	Hanalei River Heritage Foundation	P.O. Box 7	i	Anahola	н	96703	(808) 212-4356	khs96703@gmail.com
128	ľ								l "			
129 N	۸r.	Christopher	Dawson	Founder	Hawaiian Native Corporation	900 Fort Street Mall	Suite 1850	Honolulu	н	96813	(808) 536-5500	hleelov@hnc.org
130	ľ		1		Kaua'i Kupuna Council			1	<del>-</del>			
131	As .	Na`unanikina`u A.	Kamali`i, Esg.	†	Kawaileo Law. LLC	212 Merchant Street	i	Honolulu	н	96813	(808) 521-0005	
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133					Na Koa Ikaika Ka Lahui Hawai'i (Kaua'i)		i e	anc one		- 37	11 7455	
134 N	As .	Donna Kaliko	Santos	†	Nā Kuleana o Kānaka 'Ōiwi (Kaua'i)	P.O. Box 1541	i	Līhu'e	н	96766	808-346-0841	kaliko08@outlook.com
135 N	Ac	Mālia	Sanders	Executive Director	Native Hawaiian Hospitality Association	2201 Kalākaua Ave.	#500	Honolulu	HI	96815	(808) 628-6374	Kalikooo@odtlook.com
136 N		Margaret	Sanchez	Interim Chancellor	Kaua'i Community College	3-1901 Kaumualii Hwy.	#300	Līhu'e	ш	96766	(808) 245-8283	masanche@hawaii.edu
137 N	Ac .	Tia	Koerte	Director		P.O. Box 129		Kekaha	ш	96752	(808) 337-0481	masanche@nawan.edu
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		Hedy	Sullivan	Principal	Kula Aupuni Ni'ihau A Kahelelani Aloha Public	P.O. Box 580		Kekaha	ш	96752	(808) 337-2022	
120	ns.	neuy	Juliivali	Fillicipal	Charter School	F.O. BOX 010		Kekalla	п	50752	(808) 337-2022	i e
135		Daniel	Hamada			C/O Department of Education, Kaua'i	Suite 305	171 /		0.0700	(000) 274 2502	daniel.hamada@k12.hi.us
ľ	nr.	Daniei	паттаца	Principal	Ni'ihau High and Elementary School		Suite 305	Līhu'e	п	96766	(808) 274-3502	daniei.namada@k12.ni.us
140						Complex Area Office 3060 Eiwa Street						1
141 N			0 .:	Principal	0.71	P.O. Box 277		W 1 1		96752	(808) 337-1351	
141 1		Wendy	Castillo	Principal	St. Theresa School			Kekaha	mi			office@sttheresakauai.com
142	or.	Robin	Tinghitella		University of Hawai'i	7370-A Kuamoʻo Road		Kapa'a	н	96746	(808) 822-4984	lihue@ctahr.hawaii.edu
142				a: .	Kaua'i Agricultural Research Center	240044 11 111				00000 0070	(000) 055 0000	
142	r.	Shaya	Honarvar	Director	University of Hawai'i	3190 Maile Way		Honolulu	н	96822-2279	(808) 956-0808	honarvar@hawaii.edu
145			. "		Pacific Cooperative Studies Unit	ores u. l. in l				0.070.0	(000) 000 0000	
	Ar.	Ray	Carvalho	Interim Principal	Waimea Canyon Middle School	9555 Huakai Rd.		Waimea	HI	96796	(808) 338-6830	1
144 145 N		** **				0.0.0.000				96796	ext. 102	
145	AS.	Mahina	Anguay	Principal	Waimea High School	P.O. Box 339		Waimea	HI	30730	(808) 338-6800	Mahina.Anguay@k12.hi.us
			-	President	Hanapepe Economic Alliance	4111 Noho Rd.	Suite A	Koloa	HI	96756	808-286-4176	
147					Kānehūnāmoku Voyaging Academy	47-705 Kamehameha Hwy.	Unit A	Kāne'ohe	н			info@kanehunamoku.org
148 N		Mark	Perriello	President/CEO	Kaua'i Chamber of Commerce	4268 Rice Street		Līhu'e	HI	96766	(808) 245-7363	mark@kauaichamber.org
149 N		Laurie	Yoshida	Chairman	Kaua'i Economic Development Board	P.O. Box 3921		Līhu'e	HI	96766	808-245-6692	info@kedb.com
150 N		Cyndi	Ayonon	President	Kaua'i Filipino Chamber of Commerce	P.O. Box 3618		Līhu'e	HI	96766		info@kauaifilipinochamber.org
151 N	Ar.	Allan	Smith	Chairman	Kaua'i Island Utility Cooperative	4463 Pahee St.	Suite 1	Līhu'e	HI	96766	808-246-4300	info@kiuc.coop
7	Т		1		Kaua'i Sea Rider Adventure Tours	3417 Po'ipū Rd., #105	P.O. Box 853	Kõloa	HI	96756	808-742-7422	reservations+ksr@islandactivitygroup.com
152			1			l		1	l			_
153 N	As.	Sue	Kanoho	Executive Director	Kaua'i Visitors Bureau	4473 Pahe'e Street	Suite F	Līhu'e	HI	96766	(808) 245-3971	kauai@hvcb.org
154	i				Kekaha Agriculture Association	8297 Kekaha Rd.		Kekaha	HI		808-337-9262	_
155					Kōke'e Lodge	P.O. Box 565		Waimea	н	96796	(808) 335-6061	info@kokeelodge.com
156 N	۸r.	Mark	Paikuli-Stride		Luluku Farmer's Association	45-559c Luluku Rd.		Kāne'ohe	HI	96744		
157	i				The Cabins at Köke'e, Akamai Hawaii Properties	P.O. Box 1198		Waimea	HI	96796	(808) 652-6852	
N	Ar.	Eric	Nordmeire		West Kaua'i Business and Professional Association	P.O. Box 903		Waimea	ні	96796		
158			l			1		I	l			1
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159			Cambeilh		Camp Sloggett	1		I	l		ext. 236	
160	apt.	Rob	McGuckin	President	Hawai'i Big Game Fishing Club	P.O. Box 471	i	Kailua-Kona	HI	96745		info@hbgfc.org
ı	۸r.	Lance	Marugame		Hawai'i Freshwater Fishing Association	330 Walker Ave.	İ	Wahiawa	н	96786	(808) 927-3264	hffabass@gmail.com
161	ľ		1		j	l		1	l			Immarugame@hotmail.com
	As.	Emma Emalia	Keohokalole	Secretary-Treasurer	'Ohana Keohokālole	P.O. Box 565	i	Kāne'ohe	HI	96744	808-371-3398	eek4@hawaii.edu
162 N			Kaohelaulii	, , , , , , , , , , , , , , , , , , , ,	Aha Moku Council Kaua'i - Mano O Kalanipo	2249 Kuai Rd.	i	Köloa	HI	96756	808-742-9575	terriehayes@gmail.com
162 N	Ar.	Lewellyn 'Billy'		<del> </del>	Ahahui Kiwila Hawai'i O Mo'ikeha	P.O. Box 1383		Kilauea	н	96754		The state of the s
163 N	Ar.	Lewellyn 'Billy'	I			P.O. Box 2865		'Ewa Beach	HI	96706	(808) 888-0410 main	admin@amvets-hawaii.org (main)
	Ar.		Lazarus	State Commander	AMVETS Department of Hawai'i		i	E-va Deacii	l	20,00		
163 N	Ar.	Lewellyn 'Billy'  Donovan Andrew	Lazarus	State Commander	AMVETS Department of Hawai'i	F.O. BOX 2803					(808) 382-6835 direct	donovan@amvets-hawaii.org (direct)
163 M 164 M 165	Ar.		Lazarus	State Commander	·			Waimes	ы	96796	(808) 382-6835 direct	donovan@amvets-hawaii.org (direct)
163 N	Ar.		Lazarus	State Commander	Boys and Girls Club, West Kaua'i	4590 Ola Rd.		Waimea Līhu'e	HI	96796	808-320-8353	donovan@amvets-hawaii.org (direct)
163 M 164 M 165 M 166 M	Ar.	Donovan Andrew		State Commander	Boys and Girls Club, West Kaua'i Church of Jesus Christ of Latter-Day Saints	4590 Ola Rd. 4580 Ehiku St.		Līhu'e	HI HI	96766	808-320-8353 808-425-7010	
163 M 164 M 165 M 166 M	Ar. Ar.		Lazarus  Cummings	State Commander	Boys and Girls Club, West Kaua'i Church of Jesus Christ of Latter-Day Saints E Ola Kākou Hawai'i	4590 Ola Rd. 4580 Ehiku St. P.O. Box 315		Līhu'e Kalāheo	HI HI	96766 96741	808-320-8353	donovan@amvets-hawaii.org (direct) mana.eolakakouhawaii@gmail.com
163 M 164 M 165 166 167 168 M 169 169	Ar. Ar. As.	Donovan Andrew Roslyn	Cummings		Boys and Girls Club, West Kaua'i Church of Jesus Christ of Latter-Day Saints E Ola Kākou Hawai'i E Ola Mau Na Leo O Kekaha	4590 Ola Rd. 4580 Ehiku St. P.O. Box 315 8130 Elepaio Rd.	#200	Līhu'e Kalāheo Kekaha	HI HI HI	96766 96741 96752	808-320-8353 808-425-7010 808-652-9918	mana.eolakakouhawaii@gmail.com
163 M 164 M 165 166 167 168 M 169 169	Ar. As.	Donovan Andrew		State Commander  Descendent	Boys and Girls Club, West Kaua'i Church of Jesus Christ of Latter-Day Saints E Ola Kākou Hawai'i	4590 Ola Rd. 4580 Ehiku St. P.O. Box 315 8130 Elepaio Rd. c/o Denise e DeCosta	#308	Līhu'e Kalāheo	HI HI HI HI	96766 96741	808-320-8353 808-425-7010 808-652-9918	
163 M 164 M 165 166 167 168 M 169 169	Ar.  Ar.  As.	Donovan Andrew Roslyn	Cummings		Boys and Girls Club, West Kaua'i Church of Jesus Christ of Latter-Day Saints E Ola Kākou Hawai'i E Ola Mau Na Leo O Kekaha	4590 Ola Rd. 4580 Ehiku St. P.O. Box 315 8130 Elepaio Rd.	#308	Līhu'e Kalāheo Kekaha	HI HI HI HI	96766 96741 96752 96744	808-320-8353 808-425-7010 808-652-9918	mana.eolakakouhawaii@gmail.com

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Н	D (*)	F'	11	eral.	Q	A.I.I	Address	614	Ct - t -	71	Discussion of the control of the con	Email
$\vdash$		First	Last	Title	Organization Name	Address 1		City	State		Phone	Email
	Mr.	Micah	Kāne	Chief Executive Officer	Hawai'i Community Foundation	4268 Rice Street	Suite K	Līhu'e	HI	96766	(808) 245-4585	
172				& President								
173					Hawai'i Health Systems Corp. Kaua'i Region	P.O. Box 669		Waimea	HI	96796		
174		Dawn N.S.	Chang, Esq.	Chair	Ho'okano Family Land Trust	P.O. Box 6280		Kāne'ohe	HI	96744	808-539-3583	dnschang@kuiwalu.com
175						4491 Rice St.		Līhu'e	HI		808-240-0100	info@hoolalahui.org
176	Mr.	Presley	Wann	President	Hui Maka'āinana O Makana	P.O. Box 1225		Hanalei	HI	96714		info@huimakaainanaomakana.org
177	Mr.	Jonathan Kānekoa	Kukea Shultz	Executive Director	Kākoʻo ʻŌiwi	P.O. Box 5307		Kāne'ohe	HI	96744	808-741-3403	info@kakoooiwi.org
178		Mark	Hubbard	Chair	Kaua'i Planning & Action Alliance	2959 Umi Street	Suite 201	Līhu'e	HI	96766	(808) 632-2005	kpaa@kauainetwork.org
179	Dr.	Sarah	Styan	Founder, President & CEO	Kaua'i Community Science Center	P.O. Box 60		Waimea	HI	96796	808-431-4332	info@kauaicsc.org
	Ms.	Malia	Nobrega-Olivera		Kaua'i Council of the Association of Hawaiian Civic	Moku o Manokalanipō		Hanapēpē	HI	96716		malianob@gmail.com
180					Clubs	PO Box 383						
181	Ms.	Lynn Maile	Taylor	President and CEO	Kaua'i Sea Farm	P.O. Box 746		Kalāheo	HI	96741	808-645-0527	info@kauaiseafarm.com
					Kekaha Host Benefits Program Citizen Action							info@kekahahcb.net
182					Committee.							
П	Mr.	Jose	Felix-Keamoai	President	Kekaha Pop Warner			Lāwa'i	HI	96765	808-651-6573	josefelix808@gmail.com
1 1						c/o Kaua'i Pop Warner						
183						P.O. Box 1264						
1 1					Kilauea Community Agricultural Center - Aina	P.O. Box 1023		Kīlauea	HI	96754	(808) 652-1857	nfo@ainahookupuokilauea.org
184					Hoʻokupu O Kilauea							
185	Ms.	D. Ululani	Bierne-Keawe	Pelekikena	Koʻolauloa Hawaiian Civic Club	P.O Box 532		Hau'ula	HI	96717	808-548-9774	Khcc532@gmail.com
186	Mr.	Charles	Naumu	President	Ko'olaupoko Hawaiian Civic Club	P. O. Box 664		Käne'ohe	HI	96744		KoolaupokoHCC@gmail.com
187		Kevin K.J.	Chang, Esq.	Executive Director	Kua'āina Ulu 'Auamo	47-200 Waihe'e Rd.	c/o Key Project	Kāne'ohe	HI	96744	808-672-2545	info@kuahawaii.org
188	i				KVMH Auxiliary Association	P.O. Box 337		Waimea	HI	96796	808-338-9488	
П	i i	Lani	Ma'a Lapilio, Esq.		Ma'a 'Ohana	P.O. Box 6087		Kāne'ohe	HI		808-540-5741	lani@aukahi.com
189	l l		,, _5q.	1					l		•	
190	Mr.	Kamealoha	Smith	Board Member	Mahamoku Ohana Council	P.O. Box 510015		Keālia	HI	96751	808-212-4356	khs96703@gmail.com
191					Malama Anahola	P.O. Box 7		Anahola	н	96703		
192	Ms.	Sara	Bowen	Executive Director	Mālama Hulē'ia	P.O. Box 7		Līhu'e	н		808-626-5210	sara.ed@malamahuleia.org
		Abigail K.	Nishida		Na Ku'auhau 'o Kahiwakaneikopolei	P.O. Box 5411		Kāne'ohe	н	96744		
194	Mr.	Noa	Mau-Espirito	1	Na Mookupuna O Wailua	6200 Olohena Rd.	Unit A	Kapa'a	н	96746	808-855-5575	nkeliiua@gmail.com
195		Keith & Bruce	Robinson	i	Ni'ihau – Ni'ihau O Kahele Lani	P.O. 232		Kaumakani	н	96747	808-335-3500	niihauisland@hawaiiantel.net
-00	Ms.	Liberta	Albao		Queen Deborah Kapule Hawaiian Civic Club	P.O. Box 164		Кара'а	н	96746		
197	1113.	Liberto	711000		Ruff Ryderz Baseball	9555 Huakai Rd.		Waimea	HI		808-651-5250	ruffryderzbaseballkauai@gmail.com
137	Ms.	Robin Puanani	Danner	Chairman	Sovereign Councils of the Hawaiian Homestead	P.O. Box 646		Anahola	ы	96703	808-431-4067	info@hawaiianhomesteads.org
198	1413.	NODIII I danam	Danner	Cidiiiidii	Associations	1.0.00.040		raidifold	l'''	30703	000 432 4007	mioe novaliamonic steads.org
199	Rev. Fr.	Edwin	Conselva	Pastor	St. Theresa Catholic Church	P.O. Box 159	8355 Kaumualii Hwy.	Kekaha	н	96752	808-337-1548	
200	Mr	Lance Kamuela	Gomes	Konohiki Chief	Wahiawa Ahupuaa LCA 7714B Apana 6 RP 7813	P.O. Box 382	osss kaamaan mwy.	Kalāheo	HI		808-631-1737	kamuela@live.com
201	Mr.	Jesse	Cummings	NOTIONIAL CITE	Wai Koa Kaua'i	P.O. Box 315		Kalāheo	HI	96741	808-651-1468	jessekekoacummings@yahoo.com
202					Waimea Theater	9691 Kaumualii Hwy.		Waimea	HI		808-338-0282	,
203		Mike	Faye	President	West Kaua'i (Waimea) Rotary	9852 Kaumualii Hwy.		Waimea	HI	96796	808-639-3900	
204			,-		West Kaua'i Lions Organization	P.O. Box 665		Hanapëpë	HI	96716		
205				Pastor	West Kaua'i United Methodist Church	P.O. Box 298		Kekaha	HI	96752	808-337-1464	westkauaiumc@gmail.com
206					Westside Christian Center	8041 Kekaha Rd.		Kekaha	HI	96752		8
207	Ms.	J. Kaeo	Bradford	Cultural Consultant	Kaunalewa	8447 'Elepaio Rd.		Kekaha	HI		(808) 256-8839	jkaeo.bradford@yahoo.com
207	1415.	3. NGC0	Diddioid	cultural consultant	Blue Dolphin Charters	Port Allen Marina Center	7B	'Ele'ele	ш	96705	(808) 335-5553	Raco.bradiord@yanoo.com
208					bide boipiiii Charters	4353 Waialo Road	76	Lie eie		30703	(800) 333-3333	
209	Captain	Andv			Captain Andy's	P.O. Box 876		'Ele'ele	ы	96705	(808) 335-6833	fun@napali.com
210	Mr	Lani	Swain	Cantain	Catamaran Kahanu	4353 Waialo Road		'Fle'ele	HI		(808) 645-6176	captainkahanu@gmail.com
211		Luiii	Swan	Captani	Holo Holo Charters	P.O. Box 50940		'Ele'ele	HI	96705	(808) 335-0815	reservations@holoholocharters.com
212					Kaua'i Sailing Association	P.O. Box 3786		Lihu'e	HI		(808) 346-6051	kauaisailing@gmail.com
213					Kaua'i Sea Tours	4353 Waialo Road	2B	'Ele'ele	HI	96705	(808) 335-5309	info@kauaiseatours.com
214					Kikiaola Westside Boaters Club	P.O. Box 986		Kekaha	HI	96796	(000) 000	
215				İ	Makana Charters	4516 Alawai Road		Waimea	н		(808) 338-9980	info@makanacharters.com
216	Mr.	Brandon	Elsasser	Captain	Nā Pali Riders	9600 Kaumuali'i Highway		Waimea	н	96796	(808) 742-6331	napaliriderskauai@gmail.com
	Mr.	Aaron	Taylor	Captain	Napali Odyssey	Kīkīaola Small Boat Harbor		Līhu'e	н	96766	(808) 652-0823	napaliodyssey@gmail.com
217				l <sup>*</sup>	1	2494 Niumalu Road			l			
218	Mr.	leff	lakus	Commodore	Nawiliwili Yacht Club	P.O. Box 3661		Līhu'e	н	96766	(808) 264-4845	commodore@nawiliwiliyachtclub.org
219					Seasport Divers	2827 Poipu Road		Koloa	HI	96756	(808) 742-9303	COMMODUTE COMMONWAITY DELICATION OF THE COMMON AND
220				i	West Side Boaters Association	o.pa nodo				- 37.30	,, 3303	
221	Mr.	Lvle	Tabata	Partner/RME	B&T Contractors, LLC	P.O. Box 662111		Līhu'e	н	96766		
222	Mr.	-	Kua	Pastor	Westside Christian Center Assembly of God	P.O. Box 593		Kekaha	н		(808) 482-1717	
223		Dennis	Eguchi		The state of the s				ľ		()/	
224	Ms.	Marissa	Fave						<del>                                     </del>			
225		Charlie	Iona						<del>                                     </del>			
226	1411.	Alethea	Kaohi & Ohana						<b>†</b>			
227		Tia	Koerte						<b>†</b>			
228	Mr.	Terry	Lilv	Biologist					<b>†</b>			
229		Kaua	Mata						i –			
230	Mr.	Josh	Mori	1					i –			
231	Ms.	Keiko	Napier						i –			
232	Mr.	Toni	Ricci	1					i –			
233									<b>†</b>			
234		Kealoha	Takahashi		AEA	444 Rice St	Suite 330	Līhu'e	н	96766	(808) 652-7088	elderlyaffairs@kauai.gov
235	Mr.	Randy	Wichman		Kaua'i Historical Society	P.O. Box 1778		Līhu'e	н		(808) 245-3373	info@kauaihistoricalsociety.org
236		Sarah	Peters		Kaumuali'i Hawaiian Civic Club	P.O. Box 231		'Ele'ele	н	96705	//	kaumualiihawaiiancivicclub@gmail.com
237	Mr.	Clisson Kunane	Aipoalani	President (Pelekikena )	Na 'Ohana Papa O Manā (Kaua'i)	P.O. Box 675		Kekaha	н		(808) 337-1219	aipoalani@icloud.com
238		Kealii	Aguiar			P.O. Box 828		Kekaha	н		(808) 282-0179	a.pos.cine icioud.com
239		Kipi	Akana	i e		P.O. Box 828 P.O. Box 174	4657 Kane Rd	Hananene	HI		(808) 639-4276	
240		Maxine	Akita	i		P.O. Box 1025	Name na	Kekaha	HI	96752	(808) 337-1800 (808) 431-4471 (808) 337-1539	
241	Mr	Allen	Arquette	i		9810 Menehune Pl		Waimea	HI	96796	(808) 651-2330 (808) 338-1548	
	Mr.	Wayne "Buddy" M.	Avudan, Sr.	i		4549 Keola St		Kekaha	HI	96752	(808) 337-1565 (land) (808) 651-0552 (cell) (808)	
242		ync baudy ivi.	, addin, 31.	1					Γ"	- 3. 32	337-000 (land)	l
2-72					1						337 000 (minu)	

Prefi 43	fix F											
43		First	Last	Title	Organization Name	Address 1	Address 2	City	State	Zip	Phone	Email
		Billy	DeCosta	THE	organization runne	2-4021 Kaumuali'i Hwy	710010352	Koloa	HI	96756	(808) 639-8533	
		Aalona	DelaCruz			6830-A Kawaihau Rd		Kapa'a	HI	96746	(808) 639-1645	
45 Mr.		Dennis Y.	Eguchi			P.O. Box 337		Kekaha	н	96752	(808) 346-1399 (808) 337-1466 (808) 337-1479	
46 Mr.		Michael "Mike"	Fave			P.O. Box 849		Waimea	HI	96796	(808) 693-3900 (808) 338-1192 (808) 338-1833	
47 Ms.		Christine "Chris"	Faye			P.O. Box 550		Kekaha	HI	96752	(808) 639-5270 (808) 337-1005	
48 Mr.		Basilio	Fuertes			P.O. Box 634		Waimea	HI		(808) 482-1165 (808) 337-1273	
49 Ms.		Rhonda	Furtado			P.O. Box 885		Hanapepe	н		(808) 212-7030	
50 Mr.	S	Stephen	Hansen			3913 Ulu Alii St		Kalaheo	HI		(808) 332-9744 (808) 337-9516 (808) 332-0000	
51	C	Canen	Hookano			P.O. Box 1721		Koloa	HI	96756	(808) 635-2966	
52	L	Leinaala	Jardin			P.O. Box 61		Kalaheo	HI	96741	(808) 639-9033	
53	Α	Andy	Kahale			P.O. Box 623		Waimea	HI	96796	(808) 724-4502	
54	R	Rosemable	Kanahele			P.O. Box 863		Kekaha	HI	96752	(808) 212-4744 (cell) (808) 337-2018 (land)	
55		Hiipoi	Kanahele								(808) 212-5392	
56		Aletha	Ka'ohi			P.O. Box 774		Waimea	HI	96796	(808) 338-0213 (808) 338-1447 (808) 338-1708	
57		Galen	Ka'ohi			P.O. Box 109		Waimea	HI		(808) 338-966 (808) 338-1447 (808) 338-1708	
58		Anya	Ka'ohi			P.O. Box 109		Waimea	HI	96796	(808) 652-0813 (206) 383-2400 (808) 338-1447	
59		Keola	Karratti			79S3 Ho'omau St		Kekaha	HI		(808) 482-0856	
oU Mr.		Anthony	Kauahi			P.O. Box 247		Kekaha	HI		(808) 639-3285 (808) 337-2812 (808) 337-1943	
61	S	Sabra	Kauka			P.O. Box 3870		Līhu'e	н	96766	(808) 652-1978 (808) 246-6381 (808) 246-8899	
31		Rovina	Kilauano			P.O. Box 152		Kekaha		96752	(808) 337-1823 (231) 591-4344 (336) 260-3805	
62	R	KOVINA	KIIAUANO			P.O. BOX 152		кекапа	mi	96/52	(808) 337-1823 (231) 391-4344 (330) 200-3805	
62 14-		Brian	Kimura			P.O. Box 815		Waimea		96796	(808) 651-6201	
64 64		Erna	Kimura Komabayashi			P.U. BOX 815		waimea	п		(808) 278-8378	
65 Mr.		Troy	Lazaro			P.O. Box 889		Kekaha	ы		(808) 346-3572 (808) 337-1859	
66		Kaina	Makua			P.O. Box 633		Waimea	HI		808-346-9463 (808) 338-9898	
67		Mayrose	Munar			8562 Elepaio Rd		Kekaha	HI	96752	(650) 670-7831	
68 Ms.		Eileen	Nakaahiki			P.O. Box 503		Waimea	HI	96796	(808) 645-0387 (808) 338-1576 (808) 645-0382	
Ms.	G	Gwyn	Nakaahiki			S069 Ho'omau St	P.O. Box 989	Kekaha	HI	96752	(808) 651-4749	
69			Cardejon									
70	R	Renee	Naumu			P.O. Box 324		Kekaha	HI	96752		
71	K	Keao	NeSmith	Director, Culture and Linguistics		1216 Wilder Ave	Unit 202	Honolulu	HI	96822		info@kaunalewa.org
72		lay	Niau			P.O. Box 327		Kaumakani	HI		(808) 240-0400 (land)	
73		Malia	Nobrega-Olivera			P.O. Box 383		Hanapēpē	HI	96716		malianob@gmail.com
74 Ms.		Angelina	Pahulehua			7961 Iwipolena Rd		Waimea	HI		(808) 337-2070 (808) 346-2070 (727) 420-3117	
75		Kimo	Perry			P.O. Box 245		Līhu'e	HI	96766	(808) 346-3353 (808) 635-4242	
76 Ms.		Sandy	Quinsaat			P.O. Box 322		Kalaheo	HI	96741	(808) 634-5387 (808) 332-7452 (808) 651-6775	
77		Leiana	Robinson			P.O. Box 690011		Makaweli	HI		(808) 652-4730 (808) 338-1784 (808) 338-1155	
78 Mr. 79 Ms.		Calvin Abigail	Shirai Silva			P.O. Box 596 P.O. Box 421		Waimea Waimea	Ini		(808) 635-0154 (808) 338-1749 (808) 338-0509 (360) 628-1044 (808) 966-9263 (360) 264-4406	
79 Ms. 80 Mr		Abigaii Glen	Silva			P.O. Box 421 P.O. Box 851		'Ele'ele	ml ui	96795	(808) 346-0456 (808) 631-1685 (808) 245-7771	
81 Mr.		David "Duke" R.	Wellington			P.O. Box 851 P.O. Box 356		'Ele'ele	HI		(808) 639-8088 (808) 335-5454 (808) 245-7771	
82 Ms		Naomi	Yokotake			P.O. Box 1383		Kīlauea	HI	96754	(000) 000 0000 [000] 000-3434	ahahuimoikeha@gmail.com
83 Ms		Carol	Yotsuda			2502 Niumalu Rd		Līhu'e	HI		(808) 635-3039	ananamowena@gman.com
84		Blossom	Young			P.O. Box 575		Waimea	HI	96796	(808) 431-1713	
-		Ann Wooten/Bob				P.O. Box 1162		Kekaha	н	96752	(808) 337-2083 (808) 337-9586 (808) 337-1385	
85		Westerman							1			
86	T f			Branch Manager	Hanapēpē Public Library	4490 Kona Rd		Hanapēpē	HI	96716		
87	i			Branch Manager		478 S King St		Honolulu	HI	96813		
88	1			Branch Manager	Kapa'a Public Library	4-1464 Kuhio Hwy		Kapa'a	HI	96746		
89				Branch Manager	Koloa Public and School Library	3451 Poipu Rd		Koloa	HI	96756		
90				Branch Manager	Līhu'e Public Library	4344 Hardy St		Līhu'e	HI	96766		
91				Branch Manager	Princeville Public Library	4343 Emmalani Dr		Princeville	HI	96722		
				Branch Manager	Waimea Public Library (Kaua'i)	9750 Kaumualii Hwy		Waimea	HI	96796		





# E Pane Maí Ka Nonoi O Nohili Answering the requests of Nohili

# U.S. Navy Pacific Missile Range Facility and NASA Kōke'e Park Geophysical Observatory Real Estate Environmental Impact Statement

The Navy and NASA invite you to participate in the environmental planning process and submit comments.

The U.S. Department of the Navy (Navy) and the National Aeronautics and Space Administration (NASA) are jointly preparing an Environmental Impact Statement (EIS) to evaluate the potential environmental impacts of proposed real estate agreements with the State of Hawai'i for the Pacific Missile Range Facility (PMRF) and the Kōke'e Park Geophysical Observatory (KPGO). The Navy and NASA invite you to participate in the environmental planning process.

The Navy proposes to maintain long-term Department of Defense use of 8,348 acres of State of Hawai'i lands on Kaua'i for operational continuity and sustainment of the military readiness mission. The Navy operates on 410 acres of the total acres leased from the State. The majority of the leased and easement areas remain intentionally undeveloped as they are used as an encroachment buffer and security for the facility's mission. NASA proposes to maintain long-term use of 23 acres of State of Hawai'i land on Kaua'i for continued operations of KPGO. The Proposed Action is needed because existing real estate agreements for these State lands are set to expire between 2027 and 2030.







The Navy and NASA will host public scoping meetings at three locations on Kaua'i. Attend any of the public scoping meetings to talk story, learn more, and submit written or oral comments. Your voice is important to this planning process. Meetings will be held from 5 to 8 p.m. HST at the following locations:

# **Public Scoping Meetings:**

Tuesday, June 4, 2024

Kaua'i Veterans Center, 3215 Kaua'i Veterans Memorial Hwy., Līhu'e

Wednesday, June 5, 2024

Kekaha Neighborhood Center, 8130 Elepaio Rd., Kekaha

Thursday, June 6, 2024

Sheraton Kaua'i Coconut Beach Resort, 650 Aleka Loop, Kapa'a

# **Agenda:**

5 to 8 n.m.

Information stations – meet the project team, talk story, and ask questions. Visit the comments station to provide a written or oral comment.

6 to 6:30 p.m.

Project presentation by Navy and NASA.

For more information, visit PMRF-KPGO-EIS.com

Naval Facilities Engineering Systems Command, Hawai'i

Environmental OPHEV2

Attention: PMRF and KPGO RE EIS Project Manager, Ms. Kerry Wells

400 Marshall Road, Building X-11

Pearl Harbor, HI 96860

### **Public Comment Period**

The Navy and NASA are initiating a public scoping period under the National Environmental Policy Act and Hawai'i Revised Statutes (HRS) Chapter 343 to receive comments on the scope of the EIS. Members of the public are encouraged to participate in the environmental review process by providing input on the proposed real estate action including potential alternatives, environmental or cultural concerns, information the public would like the Navy and NASA to know, and any other information the public would like to see addressed in the EIS. The scoping meetings will also serve as an opportunity to obtain public input concerning potential effects to historic properties pursuant to Section 106 of the National Historic Preservation Act and HRS Section 6E-42. Your voice is important to this planning process.

The public scoping period begins *May 8, 2024* and ends *June 17, 2024*. Please attend a public scoping meeting and visit the project website to learn more.

For language assistance or special accommodations, contact the PMRF Public Affairs Officer at (808) 335-4740 or PMRFPublicAffairs@us.navy.mil. Requests for language assistance or special accommodations should be made at least seven days prior to the public meeting.

### **Submit Comments in Person, Online, or by Mail**

Submit comments by June 17, 2024.

Pearl Harbor, HI 96860

The public may submit comments in any of the following ways:

- In person at a public scoping meeting
- Through the project website at PMRF-KPGO-EIS.com
- By email to info@PMRF-KPGO-EIS.com
- By mail, postmarked by June 17, 2024 to the following address: Naval Facilities Engineering Systems Command, Hawai'i Environmental OPHEV2 Attention: PMRF and KPGO RE EIS Project Manager, Ms. Kerry Wells 400 Marshall Road, Building X-11

The Navy and NASA propose to evaluate potential environmental impacts to the following resource areas. The public is invited to provide input on these and other resources that should be considered in the EIS.

### Social Environment

- Archaeological and historic resources
- Cultural practices
- Visual resources
- Public health and safety
- Land use
- Socioeconomics
- Environmental justice

### **Physical Environment**

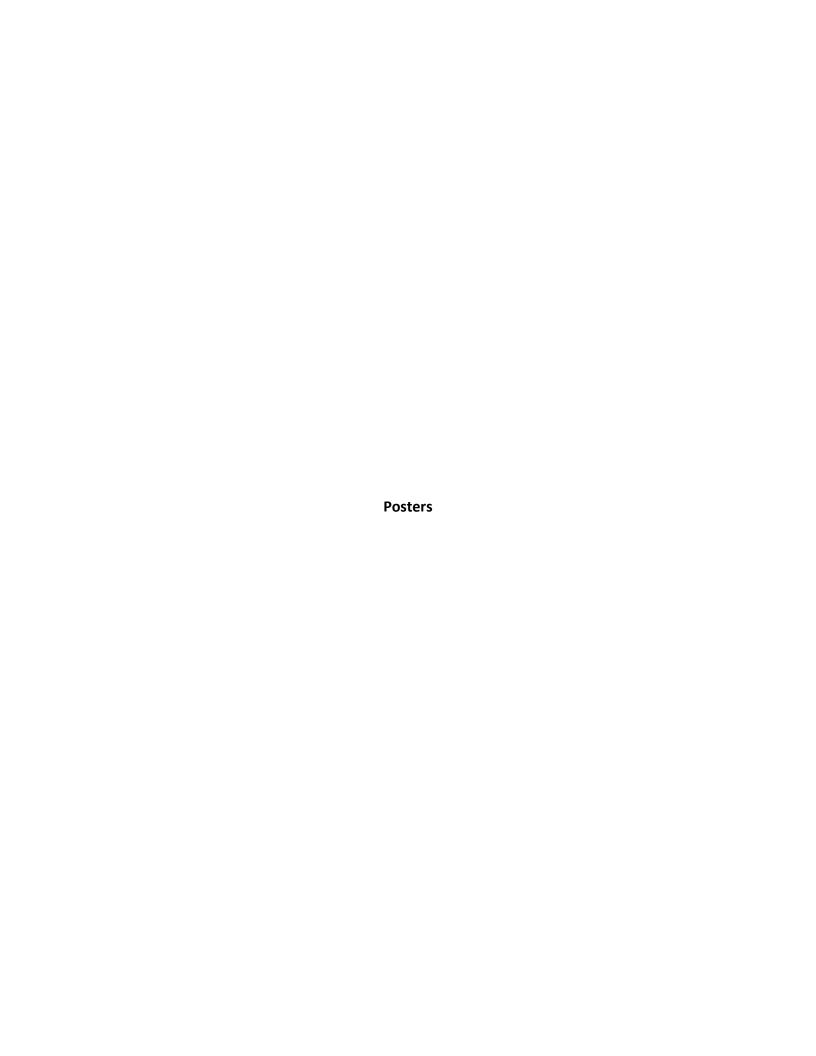
- Air quality and greenhouse gases
- Water resources

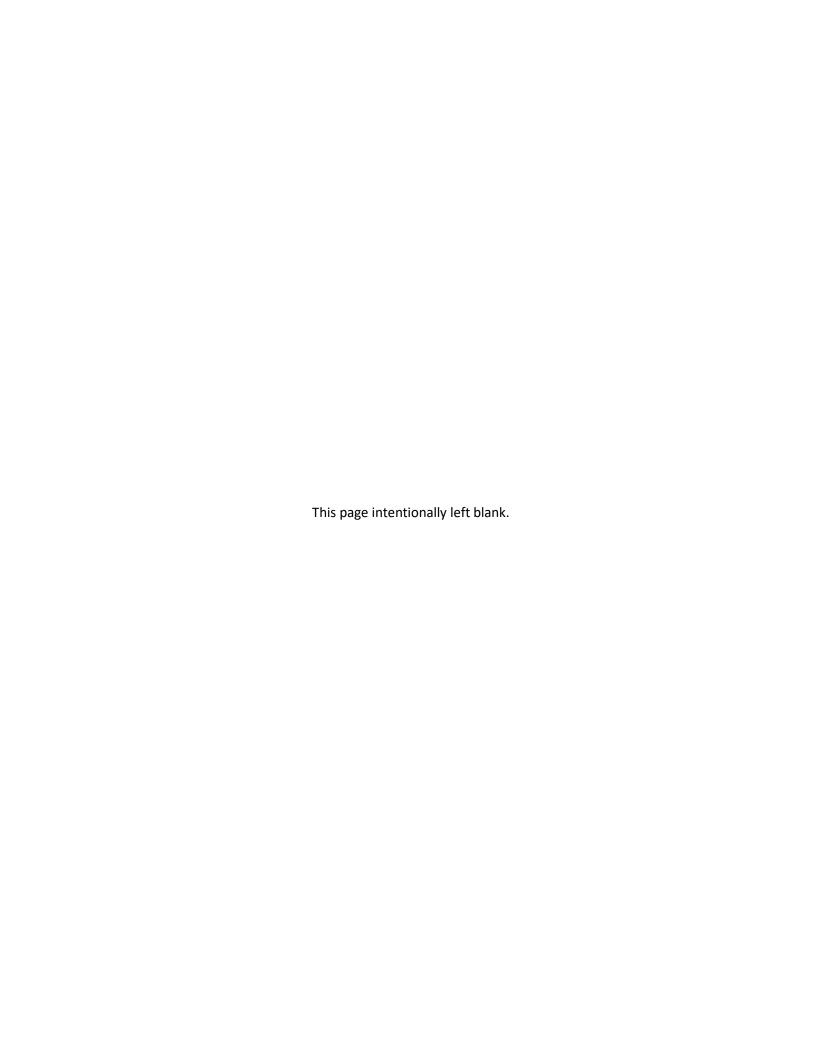
### **Biological Environment**

Biological resources

### **Built Environment**

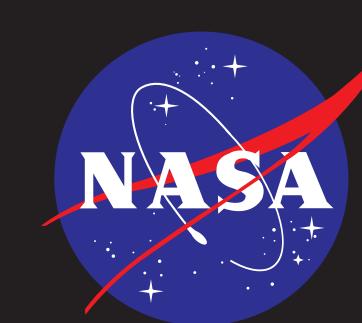
- Utilities
- Transportation
- Hazardous materials and wastes











E Pane Maí Ka Nonoí O Nohílí Answering the requests of Nohili

U.S. Navy Pacific Missile Range Facility and NASA Kōke'e Park Geophysical Observatory Real Estate
Environmental Impact Statement

# Alona and McIcome







# Why We Are Here Tonight

- The Navy and NASA will evaluate the potential environmental impacts of proposed real estate agreements with the State of Hawai'i, Department of Land and Natural Resources for the Pacific Missile Range Facility and Kōke'e Park Geophysical Observatory.
- The scoping meetings will also serve as an opportunity to obtain public input concerning potential effects to historic properties pursuant to Section 106 of the National Historic Preservation Act and Hawai'i Revised Statutes Section 6E-42.
- This is the beginning of the environmental planning process.
- The Navy and NASA invite you to participate and to provide your comments.
- Your comments can help the Navy and NASA evaluate potential environmental impacts.





# About the Navy Pacific Missile Range Facility (PMRF)



PMRF is the world's largest instrumented multi-domain training and testing facility. What makes PMRF unique is its ability to simultaneously support surface, subsurface, air, and space operations.



Personnel at PMRF engage and actively participate with the community.



On Kaua'i, the Navy is the largest high-tech employer and third largest overall employer. Most of the 900 personnel at PMRF are civilians, including many from the local community. PMRF contributes approximately \$150 million annually in salary, contract goods, and services to the local economy.

Navy and NASA enter into real estate agreements with the State of Hawaii

Navy establishes Natural Resources Management Plan for PMRF Navy establishes Integrated Cultural Resources Management Plan for PMRF

Navy establishes Readiness and Environmental Protection Integration Program projects for PMRF

Lua Kupapa'u O Nohili (crypt) is constructed

1964 - 2007

1988

1998

2014

2019

2027 - 2030

Current real estate agreements expire

PMRF and KPGO Timeline



# About the Kōke'e Park Geophysical Observatory (KPGO)



The Kōke'e Park Geophysical Observatory (KPGO) is located on a remote ridge within Kōke'e State Park in the western portion of Kaua'i.





NASA operates KPGO to collect geodetic data about the Earth's shape, orientation in space, and gravity. This data supports modern navigation technology such as the Global Positioning System (GPS) that is used every day in a wide variety of devices, from handheld smartphones to satellites. This data is also used for scientific studies, spacecraft navigation, and the geolocation of Earth observations.



NASA's lease

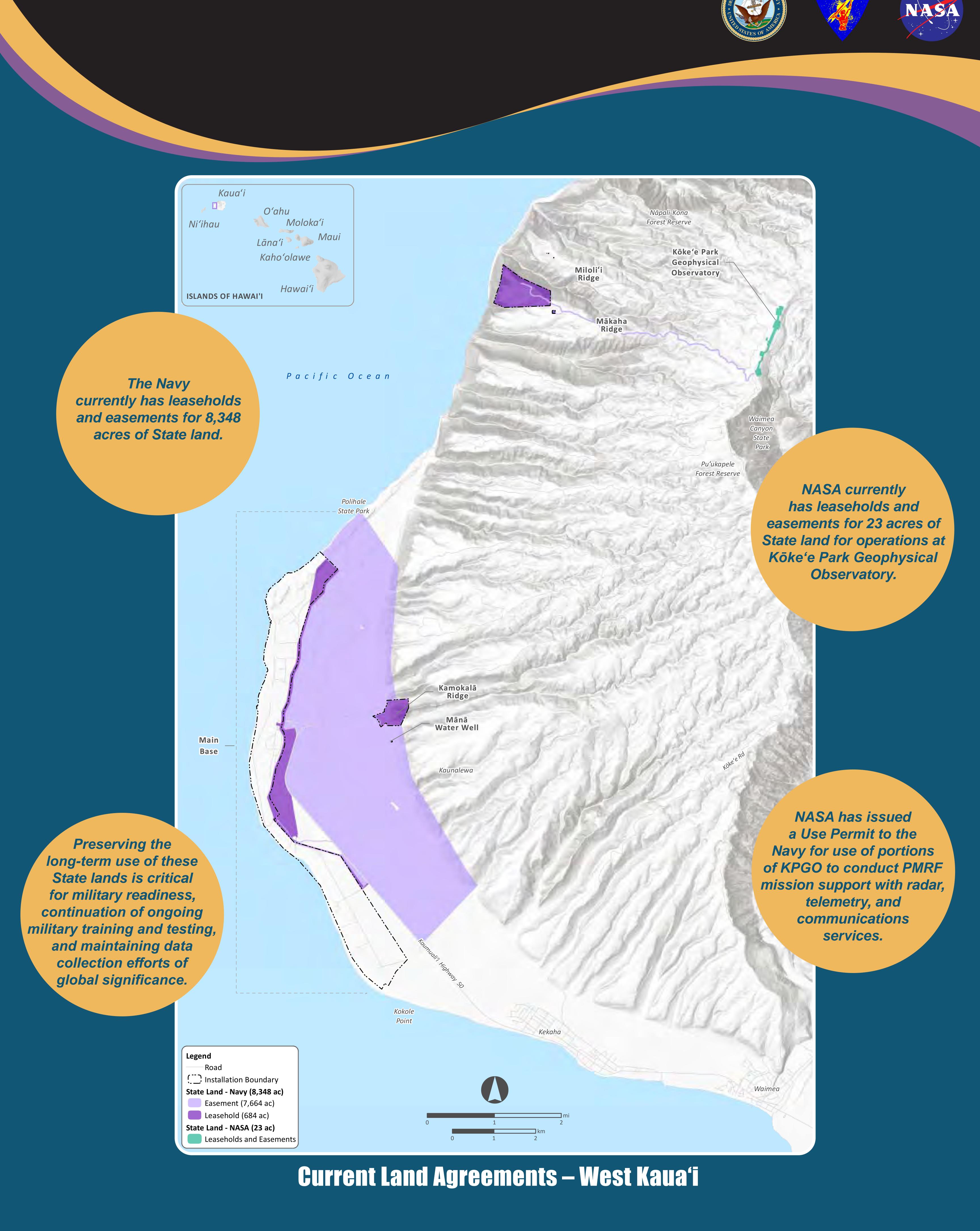
geodetic site.



Continued operations at KPGO would ensure that data-related operations of global and local significance can continue, allowing multiple agencies' missions to persist without interruption.

RASA's Space
Geodesy Project
maintains a global
network of space geodetic
observing instruments. The
network is comprised of
sites around the world
that use four primary
observation
techniques.

NASA has issued a Use Permit to the Navy for use of portions of KPGO to conduct PMRF mission support with radar, telemetry, and communications services.





# PROPOSED ACTION

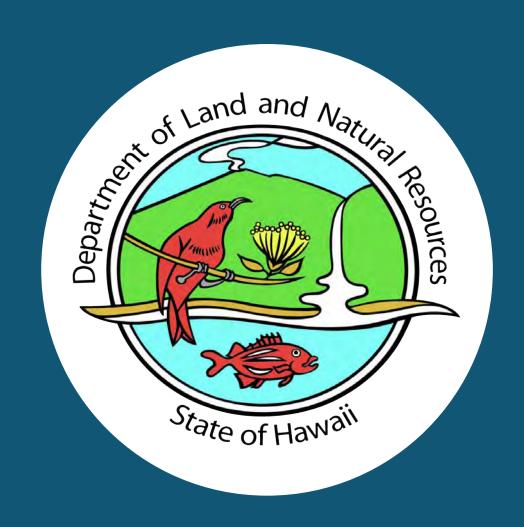
- The Navy proposes to maintain long-term Department of Defense use of 8,348 acres of State lands on Kaua'i for operational continuity and sustainment of the military readiness mission.
- The 8,348 acres is comprised of:
  - 684 acres of leaseholds
  - 7,664 acres of easements
- NASA proposes to maintain long-term use of 23 acres of leased lands and easements on Kaua'i for continued operation of Kōke'e Park Geophysical Observatory (KPGO).

The Navy and NASA existing real estate agreements for State lands were established in 1964 and 1965 and are expiring between 2027 and 2030.

The Navy operates on 410 acres of the total acres leased from the State of Hawai'i. The remaining acres are used as buffer zones, conservation areas, infrastructure, and access corridors.

# ALTERNATIVES

• Alternative 1: Succeeding Current Real Estate Agreements. The Navy and NASA would apply to the State of Hawai'i Department of Land and Natural Resources for new long-term real estate agreements in the same manner, similar duration, and for the same uses as the current leases and easements.



- Alternative 2: Fee Simple Acquisition of Current Real Estate Agreements for Leaseholds. The Navy and NASA would pursue fee simple acquisition of 700 acres (684—Navy, 16—NASA) of leaseholds, and otherwise obtain use of the remaining acreage as described in Alternative 1.
- Alternative 3: No Action Alternative. The Navy and NASA would not seek any real estate agreements for the State lands on Kaua'i after expiration of the leases and easements between 2027 to 2030.

The Navy and NASA propose to evaluate the potential environmental impacts of each of these alternatives in the Environmental Impact Statement.



# ENVIRONMENTAL RESOURCES

The Navy and NASA propose to evaluate potential environmental impacts for each of the alternatives on the following resource areas. The public is invited to provide input on these and other resources that should be considered in the Environmental Impact Statement.

# Social Environment

- Archaeological and historic resources
- Cultural practices
- Visual resources
- Public health and safety
- Land use
- Socioeconomics
- Environmental justice

# Physical Environment

- Air quality and greenhouse gases
- Water resources

# Biological Environment

Biological resources

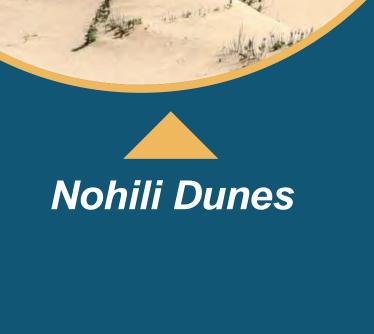
# **Built Environment**

- Utilities
- Transportation
- Hazardous materials and wastes



at PMRF

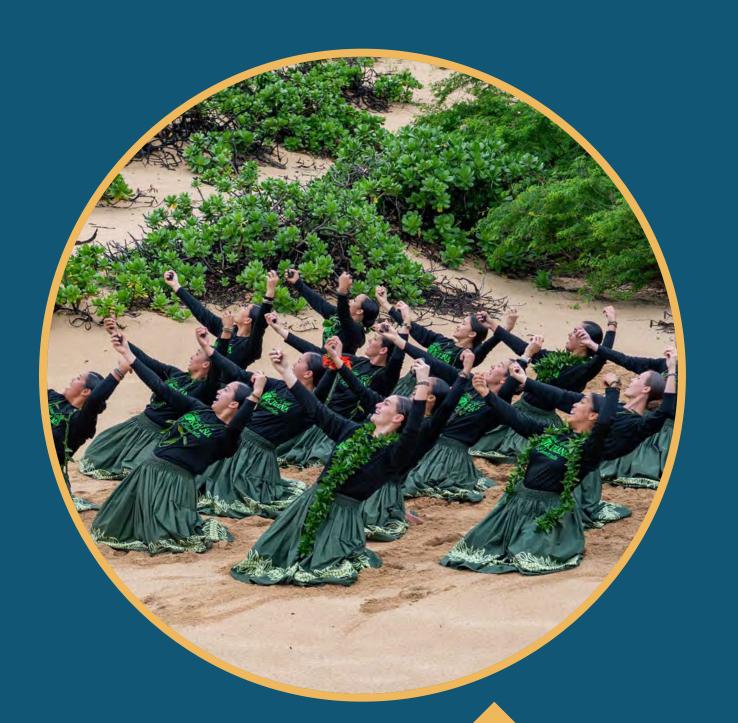








Sea turtle on beach at PMRF



PMRF hosts Hālau Hula at Nohili Dunes

Sea turtle hatchling



# CONSERVATION AND COMMUNITY Stewardship and Care of the Land

Personnel who work at the Pacific Missile Range Facility (PMRF) take great pride in their role as caretakers of the cultural and natural resources they are entrusted with.



The Lua Kupapa'u O Nohili (crypt) preserves and honors iwi kūpuna (ancestral remains) found on PMRF



Mānā Town Japanese cemetery from the sugar plantation days

# NATURAL RESOURCES CONSERVATION THROUGH PARTNERSHIPS



Conservation of

Honopū Valley

sensitive species at

# CLEAN ENERGY AND RESILIENCY THROUGH RENEWABLE ENERGY PROJECTS



Solar facility and battery energy storage system at PMRF

# COMMUNITY SERVICE



PMRF celebrates with the community at Kekaha Family Fun Day



Local scientists and

students take part in

natural resource surveys

PMRF hosts the community at Earth Day events

E Pane Maí Ka Nonoí O Nohílí Answering the requests of Nohili



# NEPA/HEPA/Historic Preservation Process and Community Involvement

# WE WANT TO HEAR FROM YOU

The National Environmental Policy Act (NEPA); Section 106 of the National Historic Preservation Act (NHPA); Hawai'i Revised Statutes (HRS) Chapter 343 and Hawai'i Administrative Rules (HAR) Chapter 11-200.1, collectively referred to as the Hawai'i Environmental Policy Act (HEPA); and HRS Section 6E-42 require federal agencies and the State of Hawai'i Department of Land and Natural Resources, respectively, to:

- Consider the environmental impacts of proposed projects.
- Consider the potential effects of their actions on historic properties and look for ways to avoid, minimize, or mitigate them.
- Get early public input on resources and alternatives to be evaluated.

# COMMUNITY INVOLVEMENT

Opportunities for formal public participation in the EIS process occur during two stages:

- 1. During the scoping period, following publication of the Notice of Intent (NOI) and the Environmental Impact Statement Preparation Notice (EISPN).
- 2. During the public comment period following publication of the Draft EIS.

The Navy and NASA value and welcome your input.



Public
participation helps
the Navy, NASA, and
Department of Land and
Natural Resources make
informed decisions.

Thank you for your participation.



# How to Submit Comments

# Submit Comments in Person, Online, or by Mail

Submit comments by *June 17, 2024*. The public may submit comments in any of the following ways:

- In person at a public scoping meeting
- Through the project website at PMRF-KPGO-EIS.com
- By email to info@PMRF-KPGO-EIS.com
- By mail, postmarked by *June 17, 2024* to the following address:

Naval Facilities Engineering Systems Command, Hawai'i Environmental OPHEV2

Attention: PMPE and KPGO PE FIS Project Manager, Me

Attention: PMRF and KPGO RE EIS Project Manager, Ms. Kerry Wells 400 Marshall Road, Building X-11 Pearl Harbor, HI 96860



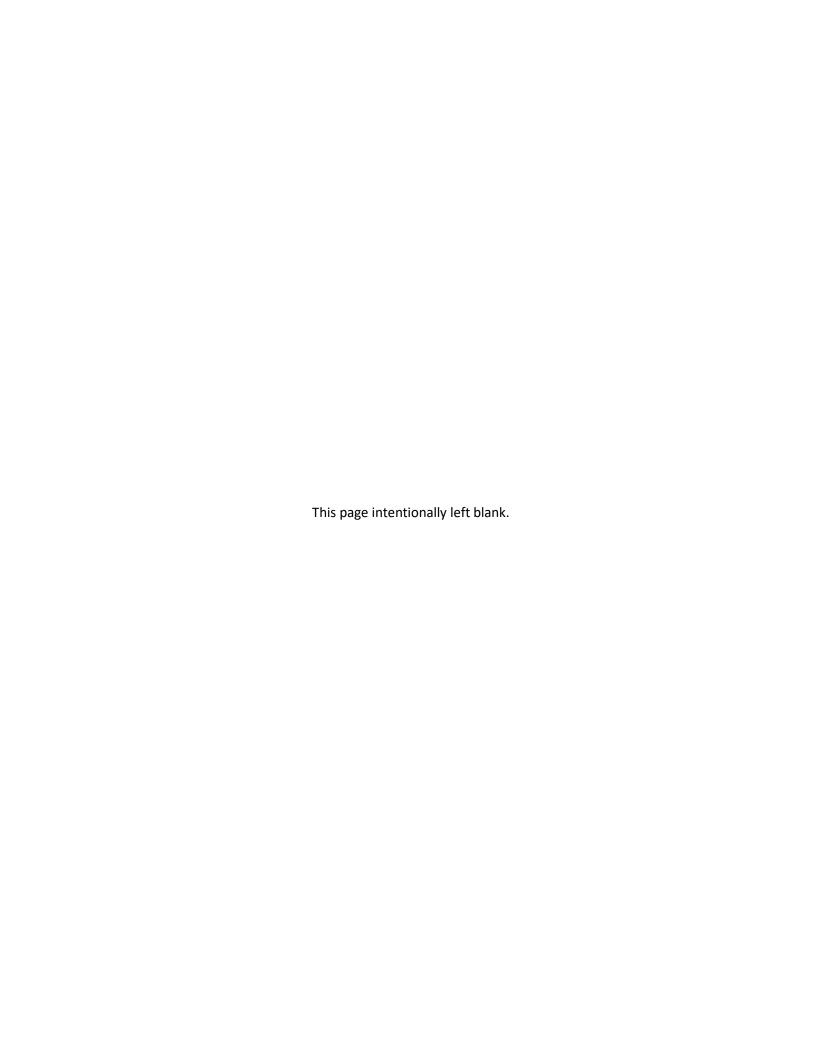






For language assistance or special accommodations, ask a representative at today's meeting, or contact the PMRF Public Affairs Officer, at (808) 335-4740, or PMRFPublicAffairs@us.navy.mil.





# U.S. Navy Pacific Missile Range Facility and NASA Kōke'e Park Geophysical Observatory Real Estate Environmental Impact Statement



# Public Scoping Fact Sheet

# Public Scoping Meeting Schedule

Attend any of the three public scoping meetings to talk story, learn more, and submit comments. Your voice is important to this planning process.

DATE	LOCATION	AGENDA
Tuesday, June 4, 2024	Kaua`i Veterans Center 3215 Kaua`i Veterans Memorial Hwy, Līhu`e	• 5 to 8 p.m. Information stations – meet the project team, talk story, and ask questions. Visit the comments station to
Wednesday, June 5, 2024	Kekaha Neighborhood Center 8130 Elepaio Road, Kekaha	provide a written or oral comment.  • 6 to 6:30 p.m. Project presentation by Navy and NASA.
	Sheraton Kaua`i Coconut Beach Resort	MEETING TIME:
Thursday, June 6, 2024	650 Aleka Loop, Kapa`a	5 to 8 p.m. HST

### Please Check In!

Scoping is the public's opportunity to provide comments to help the Navy and NASA focus their analysis.

Please visit the project website at PMRF-KPGO-EIS.com

# Welcome

The U.S. Navy (Navy) and the National Aeronautics and Space Administration (NASA) are jointly preparing an Environmental Impact Statement (EIS) to evaluate the potential environmental impacts of proposed real estate agreements with the State of Hawai'i for the Pacific Missile Range Facility (PMRF) and the Kōke'e Park Geophysical Observatory (KPGO). The Navy and NASA invite you to participate in this environmental planning process.

# What are the Navy and NASA Proposing?

The Navy currently leases or holds easements for approximately 8,348 acres of State of Hawai'i land primarily for passive encroachment buffer as well as for mission readiness, access, and utilities for PMRF on Kaua'i. The Navy proposes to maintain long-term Department of Defense use of the 8,348 acres of State of Hawai'i lands on Kaua'i for operational continuity and sustainment of the military readiness mission.

The Navy operates on 410 acres of the total acres leased from the State of Hawai'i. The remaining acres are used as buffer zones, conservation areas, infrastructure, and access corridors.

NASA currently leases or holds easements for 23 acres of State of Hawai'i land for operations of KPGO. NASA has issued a Use Permit to the Navy for use of portions of KPGO to conduct PMRF mission support with radar, telemetry, and communications services.

NASA operates KPGO to collect geodetic data about the Earth's shape, orientation in space, and gravity. This data supports modern navigation technology such as the Global Positioning System (GPS) that is used every day in a wide variety of devices, from handheld smartphones to satellites. In addition, this data is used for scientific studies, spacecraft navigation, and the geolocation of Earth observations.

NASA proposes to maintain long-term use of the 23 acres of leased lands and easements for continued operation of KPGO. The Proposed Action is needed because existing real estate agreements for these State lands are set to expire between 2027 and 2030.

On Kaua'i, the
Navy is the largest
high-tech employer and
third largest overall employer.
Most of the 900 personnel at
PMRF are civilians, including
many from the local community.
PMRF contributes approximately
\$150 million annually in salary,
contract goods, and services
to the local economy.



Figure 1. Project Map

# **Action Alternatives**

# Alternative 1: Succeeding Current Real Estate Agreements.

Under this alternative, the Navy and NASA would apply to the Department of Land and Natural Resources for new long-term real estate agreements in the same manner, similar duration, and for the same uses as the current leases and easements. The Navy's agreements would include 684 acres of land leased exclusively by the Navy and 7,664 acres of easements. NASA's agreements would include 16 acres of land leased exclusively by NASA, 7 acres of easement lands, and would continue its Use Permit with the Navy. This alternative would not change any use or maintenance of existing infrastructure and would not involve construction, renovation, or demolition of facilities.

# Alternative 2: Fee Simple Acquisition of Current Real Estate Agreements for Leaseholds.

Under this alternative, the Navy and NASA would pursue fee simple acquisition of 700 acres (684 acres for Navy use and 16 acres for NASA use) of leaseholds, and otherwise obtain use of the remaining acreage as described in Alternative 1. The new Navy fee simple land of 684 acres would include 392 acres of land at the Main Base, 89 acres at Kamokalā Ridge, 0.29 acre at the Mānā Water Well, 0.015 acre at Miloli'i Ridge, 203 acres at Mākaha Ridge, and the NASA fee simple land would include 16 acres at KPGO. This acreage would be transferred from ownership by the State of Hawai'i to the United States. This alternative would not change any use or maintenance of existing infrastructure and would not involve construction, renovation, or demolition of facilities.

# Alternative 3: No Action Alternative.

Under the No Action Alternative, the Navy and NASA would not seek any real estate agreements for the State lands on Kaua'i after expiration of the leases and easements between 2027 to 2030. The current real estate agreements for 8,348 acres with the Navy and 23 acres with NASA would expire. All existing infrastructure would be removed, or abandoned in place, from Navy and NASA leased and easement lands.

# Preliminary Environmental Resources to be Studied

The Navy and NASA propose to evaluate potential environmental impacts for each of the alternatives on the following resource areas. The public is invited to provide input on these and other resources that should be considered in the EIS.

# Social Environment

- Archaeological and historic resources
- Cultural practices
- Visual resources
- Public health and safety
- Land use
- Socioeconomics
- Environmental justice

# Physical Environment

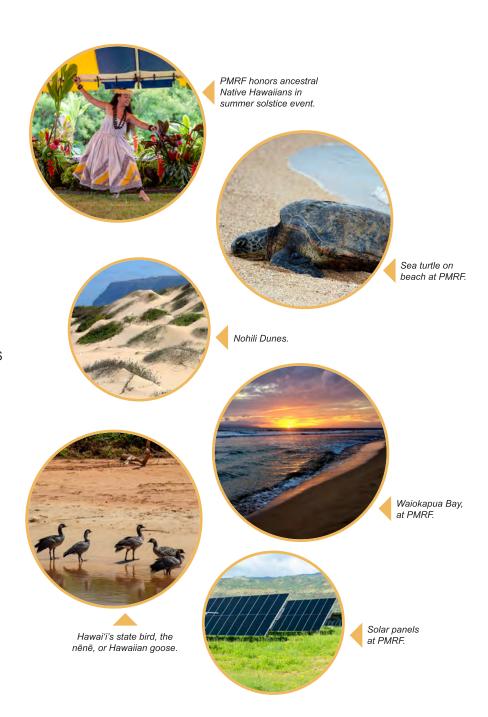
- Air quality and greenhouse gases
- Water resources

# Biological Environment

Biological resources

# **Built Environment**

- Utilities
- Transportation
- Hazardous materials and wastes



# About the Navy Pacific Missile Range Facility and NASA Kōke'e Park Geophysical Observatory

# Pacific Missile Range Facility

PMRF is the world's largest instrumented multi-domain training and testing facility. What makes PMRF unique is its ability to simultaneously support surface, subsurface, air, and space operations. For portions of PMRF, the Navy has lease agreements with the State of Hawai'i for 8,348 acres, comprised of 684 acres of leaseholds and 7,664 acres of easements. The Navy operates on 410 acres of the total acres leased from the State. The majority of the leased and easement areas remain intentionally undeveloped as they are used as an encroachment buffer and security for the facility's mission. For more information, visit

https://cnrh.cnic.navy.mil/Installations/PMRF-Barking-Sands/

PMRF engages and actively participates with the community. Personnel who work at PMRF take great pride in their role as caretakers of the cultural and natural resources they are entrusted with. As the third largest employer on Kaua'i, many of the personnel are from the community.

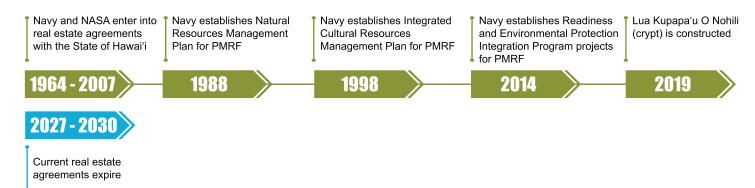
# Kōke'e Park Geophysical Observatory

NASA's Kōke'e Park Geophysical Observatory (KPGO) is located on a remote ridge within Kōke'e State Park. NASA operates the observatory to collect geodetic data that contributes to daily measurements of the Earth's orientation in space and rotation. This data is used for scientific studies and a wide variety of positioning and navigation applications. For more information, visit

https://space-geodesy.nasa.gov/NSGN/sites/KPGO/KPGO.html

Preserving
the long-term
Department of Defense
and NASA use of these
State lands is critical for military
readiness, continuation of ongoing
military training and testing, and
maintaining data collection efforts
of global and local significance.
It also ensures the continued
conservation management by
the Navy and NASA of
natural and cultural
resources on
these lands.

# PMRF and KPGO Timeline



# What is the Space Geodesy Project at KPGO?

The Space Geodesy Project (SGP) maintains a global network of space geodetic observing instruments. The network is comprised of sites around the world that use four primary observation techniques:

- Very Long Baseline Interferometry (VLBI)
- Satellite Laser Ranging
- Doppler Orbitography by Radiopositioning Integrated on Satellite (DORIS)
- Global Navigation Satellite System (GNSS)

The International Terrestrial Reference Frame (ITRF) is determined by the observations made from the instruments listed above and is the foundation for virtually all Earth observations and georeferenced data used by society. This data is fundamental for:

- Positioning and navigation in space/air and on land/sea
- Tracking sea level changes
- Tsunami early warning systems
- Volcano deformation measurements
- Predicting flood patterns
- Studying glacier dynamics

# What is KPGO?

The Kōke'e Park Geophysical Observatory (KPGO) is one of the core sites for NASA's SGP. The mission of KPGO is to collect geodetic data to support the geolocation of Earth observation from both land and space as well as scientific investigations of the Earth's surface and interior.

# Why is KPGO Important?

NASA and the scientific community use the data collected by KPGO to study ecosystems, water cycles, geological hazards, sea-level change, crustal-dynamics, and many other Earth science topics. Many of these applications rely on the long history and continuity of the geodetic data collected from the current KPGO location.

# Why Kōke'e State Park?

KPGO is in Kōke'e State Park at an elevation of 3,600 feet near the Waimea Canyon, isolated from radio broadcasts that would interfere with the sensitive measurements made by the VLBI system. The location on the island of Kaua'i is also critical for tying the Hawaiian Islands into the ITRF that contributes towards improving positioning and navigation accuracy on and around Hawai'i.

# Stewardship and Care of the Land

Personnel who work at PMRF take great pride in their role as caretakers of the cultural and natural resources they are entrusted with.

E Pane Maí Ka Nonoí O Nohílí Answering the requests of Nohili

# NATURAL RESOURCES CONSERVATION THROUGH PARTNERSHIPS

# Conservation of Laysan albatross through translocation program. Conservation of green sea turtles and their nests.

Conservation of sensitive

species at Honopū Valley.

# **CULTURAL RESOURCES PRESERVATION**



The Lua Kupapa'u O Nohili (crypt) preserves and honors iwi kūpuna (ancestral remains) found on PMRF.



Mānā Town Japanese cemetery from the sugar plantation days.









In 2023, the Department of Defense Readiness and Environmental Protection Integration (REPI) program awarded \$5.29 million to natural resource conservation projects on Kaua'i. Approximately \$26.7 million was awarded for all of Hawai'i.

# NEPA/HEPA/Historic Preservation Process and Community Involvement

The Navy and NASA are jointly preparing the EIS pursuant to the National Environmental Policy Act (NEPA). The EIS will also be used by the Hawai'i Department of Land and Natural Resources under Hawai'i Revised Statutes (HRS) Chapter 343 and Hawai'i Administrative

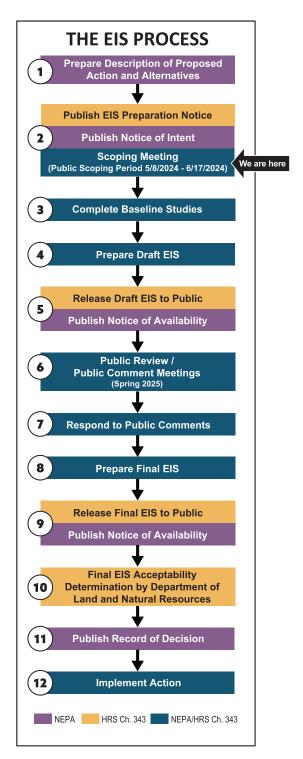
Rules Chapter 11-200.1, collectively referred to as the Hawai'i Environmental Policy Act (HEPA), in its decision making as to whether and what type of real estate agreement it may grant the Navy and NASA.

The EIS Process diagram (at right) illustrates the stages of public involvement in the NEPA and HEPA environmental processes. The public involvement processes for NEPA and HEPA for this EIS are running concurrently to meet the requirements for both state and federal laws and regulations.

The NEPA/HEPA scoping meetings will also serve as an opportunity to obtain public input concerning potential effects to historic properties pursuant to Section 106 of the National Historic Preservation Act (NHPA) and HRS Section 6E-42.

## Community Involvement

The Navy and NASA are initiating a public scoping process to receive comments on the scope of the EIS. Members of the public are encouraged to participate in the environmental planning process by providing input on the proposed real estate action including potential alternatives, environmental or cultural concerns, information the public would like the Navy and NASA to know, and any other information the public would like to see addressed in the EIS, and the project's potential to affect historic properties pursuant to Section 106 of the NHPA and HRS Section 6E-42.



The Navy and NASA are proud contributing members of the local community. The Navy and NASA value and welcome input from the community, as well as the chance to share, communicate, and inform the community about the EIS and the need for the real estate agreements.

Opportunities for formal public participation in the EIS process occur during two stages:

- 1. During the scoping period, following publication of the Notice of Intent (NOI) and the Environmental Impact Statement Preparation Notice (EISPN).
- 2. During the comment period following publication of the Draft EIS.

## What is Scoping?

Scoping occurs at the beginning of the NEPA/HEPA process to help the Navy and NASA understand community-specific concerns regarding the Proposed Action and the planned analysis. Scoping encourages the participation of other federal, state, and local agencies, Native Hawaiian Organizations, environmental, cultural, and other groups, and the general public. Scoping helps determine what should be studied in this EIS including the alternatives and resources to be analyzed.

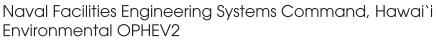
# How to Submit Comments

Submit Comments in Person, Online, or by Mail.

Submit comments by *June 17, 2024*. The Navy and NASA encourage the public to attend a public scoping meeting and to visit the project website to learn more.

The public may submit comments in any of the following ways:

- In person at a public scoping meeting
- Through the project website at PMRF-KPGO-EIS.com
- By email to info@PMRF-KPGO-EIS.com
- By mail, postmarked by June 17, 2024 to the following address:



Attention: PMRF and KPGO RE EIS Project Manager, Ms. Kerry Wells 400 Marshall Road, Building X-11

Pearl Harbor, HI 96860









For language assistance or special accommodations, contact the PMRF Public Affairs Officer, at (808) 335-4740 or PMRFPublicAffairs@us.navy.mil.

Notes:	

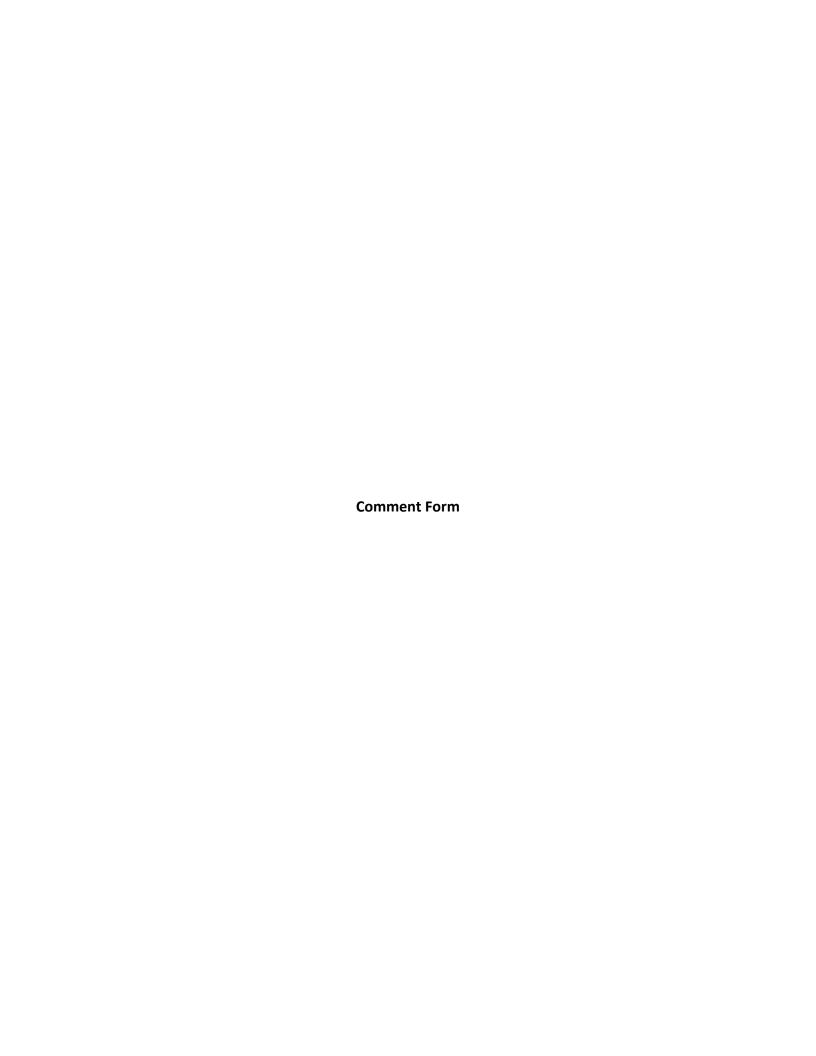


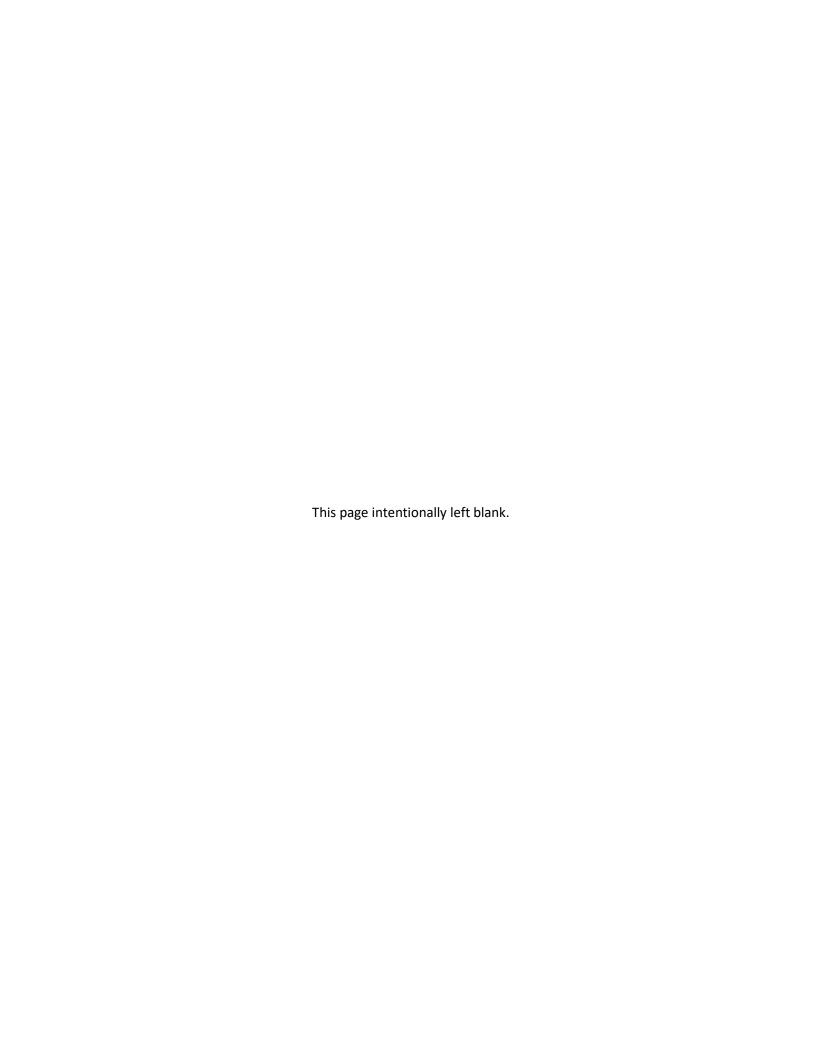




We appreciate your time and interest.

For more information visit the project website at PMRF-KPGO-EIS.com











# **Public Scoping Meeting Comment Form**

	ect representatives available at tonight's meeting and to visit the website for project updates. The public may comments in any of the following ways:
•	In person at a public scoping meeting Through the project website at PMRF-KPGO-EIS.com By email to info@PMRF-KPGO-EIS.com By mail, postmarked by June 17, 2024 (see address below)
	** Please Print Clearly ** Additional Space is Provided on Back **
	Please provide your mailing address to receive future notifications about the project.
1.	Name:
2.	Organization/Affiliation (if applicable):
2	Mailing Address:

Please turn in this form at a public scoping meeting, submit online at <a href="MRF-KPGO-EIS.com">PMRF-KPGO-EIS.com</a>, send by email to info@PMRF-KPGO-EIS.com or mail to:

Naval Facilities Engineering Systems Command, Hawai'i, Environmental OPHEV2
Attn: PMRF and KPGO RE EIS Project Manager, Ms. Kerry Wells
400 Marshall Road, Building X-11
Pearl Harbor, HI 96860

home addresses, e-mail addresses, or telephone numbers.

** Please Print Clearly **								

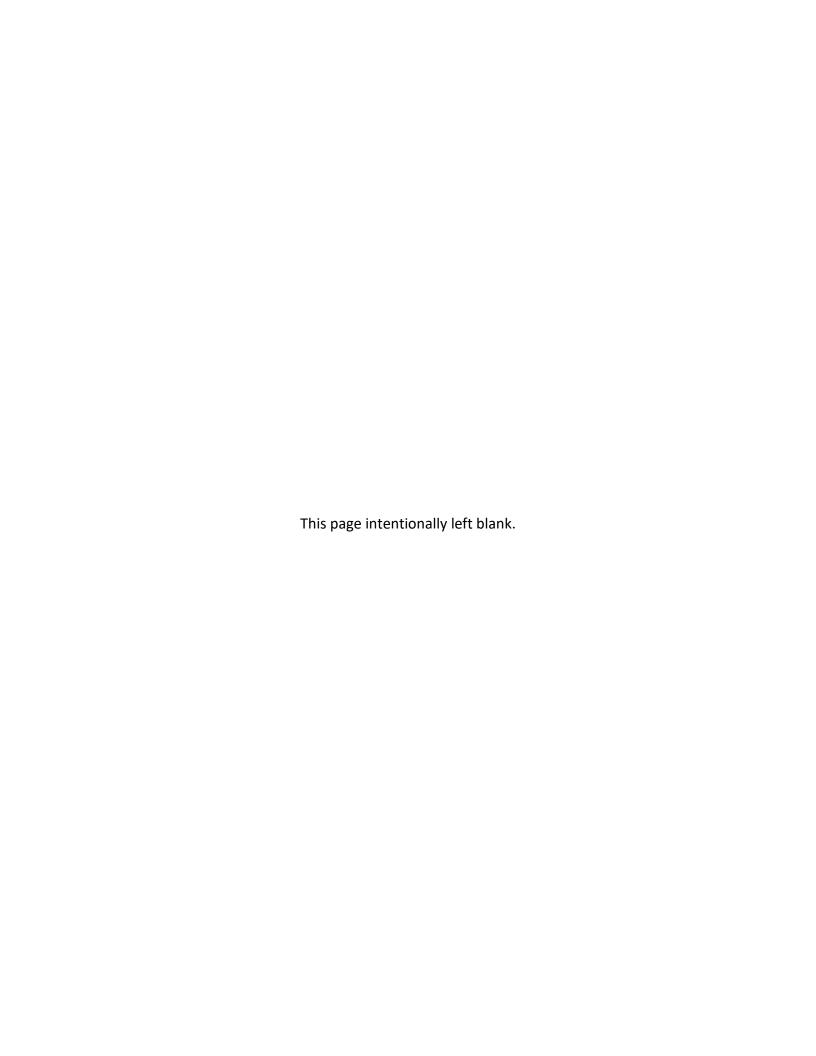
YOUR INPUT MATTERS Visit PMRF-KPGO-EIS.com

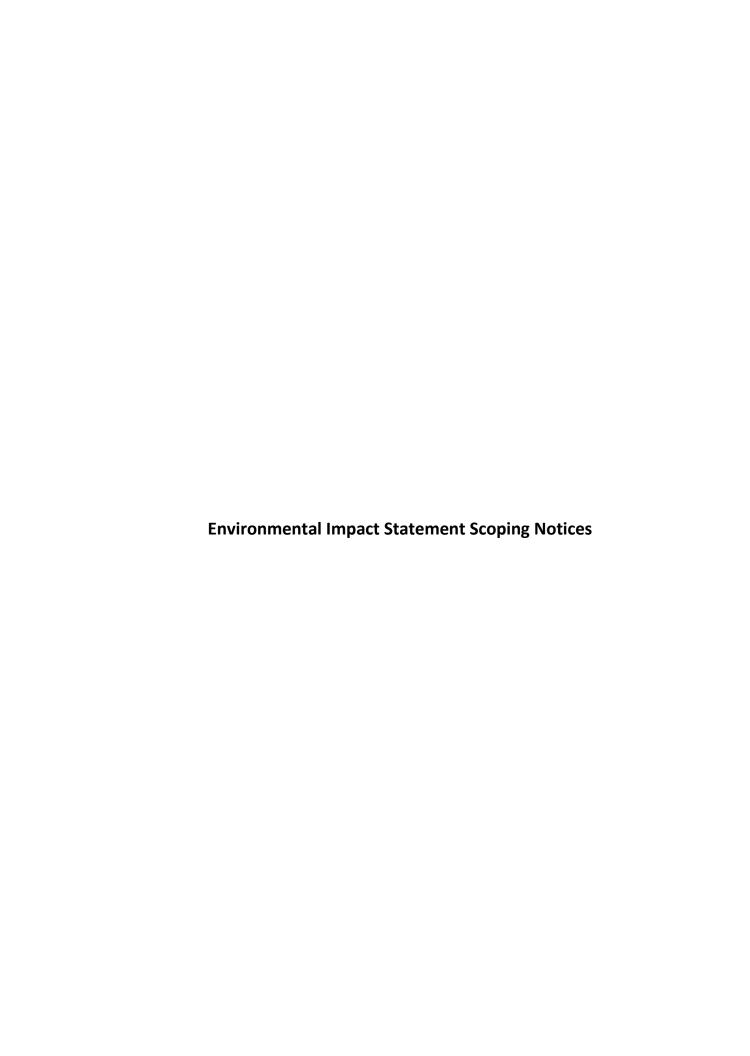


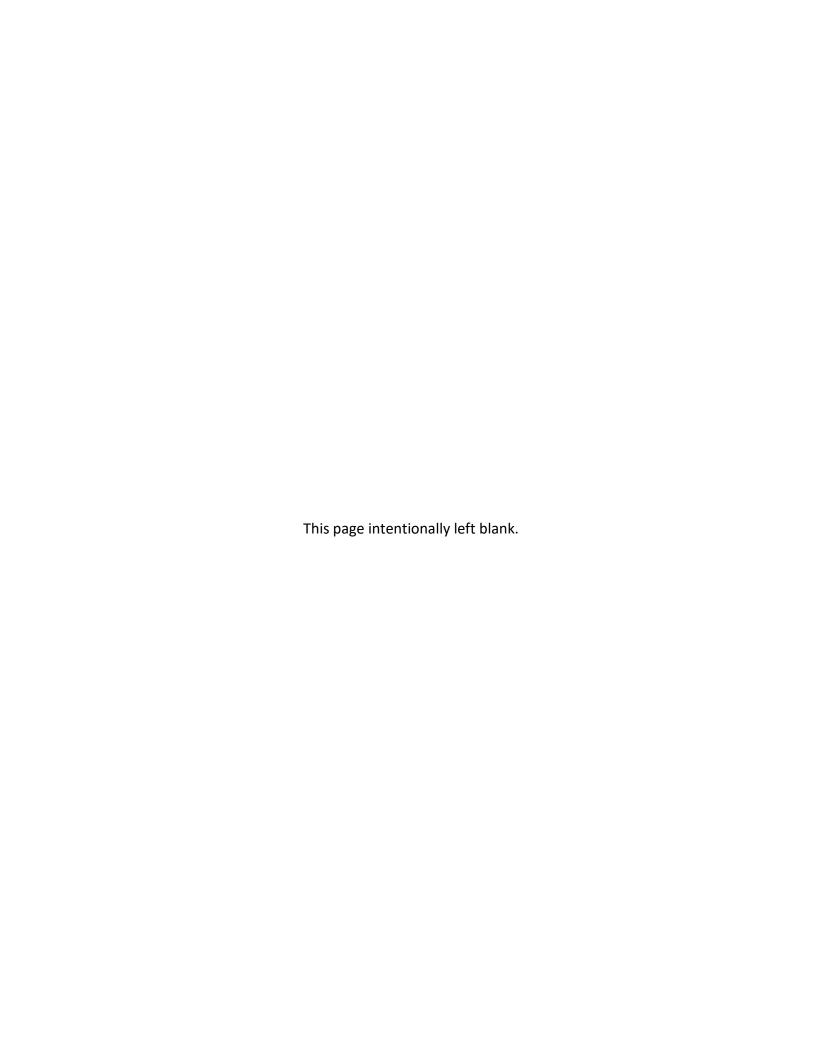
Scan QR code for project website

# Appendix H

**Environmental Impact Statement Notices** 







# SEVENTEUL A SUNRISE TO SUNSET LOOK AT SOME OF THE BIGGEST EVENTS ON KAUA'I

EMAIL APANG@MIDWEEK.COM

# YOGA MORNING

Participate in a yoga practice and a class at the Hanalei farmers market in Hale Halawai 'Ohana O Hanalei. Learn from international yoga and meditation teacher Mary Susan Stults. The farmers market will run from 9:30 a.m. to noon. Admission is \$25.



PHOTO COURTEST GETTY IMAGES/ AJA KOSKA

Saturday, May 25, 10-11:30 a.m. For more info, visit eventbrite.com (search "Yoga at the Farmers' Market in Hanalei, Hawaii")

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### **DOG THERAPY**

Youth ages 12-18 are welcome to destress with Gus Gus the mini goldendoodle at Līhu'e Public Library. Gus Gus

will visit with his owner, Jeff. Attendees can pet, sit, talk to and hang out with the pup. A same-day signup is required and limited slots are available.

Thursday, May 23, 2:30-3:30 p.m. For more information, call 808-241-3222

26 MAY

## MAKERS MARKET

Every fourth Sunday of

the month, the Wailua Bay Creators Fair takes over Hilton Garden Inn Kauai Wailua Bay. Vendors sell everything from art, clothing and accessories to photography, wood carvings, home decor and so much more — and it's all Kaua'i-made. There will also be live entertainment and food for purchase.

Sunday, May 26 8:30 a.m.-1 p.m. For more information, visit aohawaii.com.



## **Drivers**

Full Time Service Driver UNITEK SOLVENT SERVICES an Employee Owned Company. Starting pay Type 3 \$20/hr. CDL \$24.00+ Call (808)864-6870 Answers To This Week's

## SUDOKU PUZZLE

6	4	2	7	1	9	5	3	8
9	5	1	2	8	3	7	6	4
3	7	8	5	6	4	2	9	1
7	3	9	1	2	8	6	4	5
1	2	4	6	3	5	8	7	9
8	6	5	9	4	7	1	2	3
2	9	6	3	5	1	4	8	7
4	1	7	8	9	6	3	5	2
5	8	3	4	7	2	9	1	6

## Answers To This Week's



# Answers To This Week's SPOT 10 DIFFERENCES



U.S. Navy Pacific Missile Range Facility and NASA Kōke'e Park Geophysical Observatory Real Estate Environmental Impact Statement



The Navy and NASA invite you to participate in the environmental planning process and submit comments.

The U.S. Department of the Navy (Navy) and the National Aeronautics and Space Administration (NASA) are jointly preparing an Environmental Impact Statement (EIS) to evaluate the potential environmental impacts of proposed real estate agreements with the State of Hawai'i for the Pacific Missile Range Facility (PMRF) and the Kōke'e Park Geophysical Observatory (KPGO). The Navy and NASA invite you to participate in the environmental planning process.

The Navy proposes to maintain long-term Department of Defense use of 8,348 acres of State of Hawai'i lands on Kaua'i for operational continuity and sustainment of the military readiness mission. The Navy operates on 410 acres of the total acres leased from the State. The majority of the leased and easement areas remain intentionally undeveloped as they are used as an encroachment buffer and security for the facility's mission. NASA proposes to maintain long-term use of 23 acres of State of Hawai'i land on Kaua'i for continued operations of KPGO. The Proposed Action is needed because existing real estate agreements for these State lands are set to expire between 2027 and 2030.

The Navy and NASA will host public scoping meetings at three locations on Kaua'i. Attend any of the public scoping meetings to talk story, learn more, and submit written or oral comments. Your voice is important to this planning process. Meetings will be held from 5 to 8 p.m. HST at the following locations:

#### PUBLIC SCOPING MEETINGS

Tuesday, June 4, 2024 Kaua'i Veterans Center 3215 Kaua'i Veterans Memorial Hwy, Līhu'e Wednesday, June 5, 2024 Kekaha Neighborhood Center 8130 Elepaio Road, Kekaha Thursday, June 6, 2024 Sheraton Kaua'i Coconut Beach Resort 650 Aleka Loop, Kapa'a

<u>AGENDA</u>

5 to 8 p.m.
Information stations – meet the project team, talk story, and ask questions. Visit the comments station to provide a written or oral comment.

6 to 6:30 p.m.

Project presentation by Navy and NASA.

The Navy and NASA are initiating a public scoping period under the National Environmental Policy Act and Hawai'i Revised Statutes (HRS) Chapter 343 to receive comments on the scope of the EIS. Members of the public are encouraged to participate in the environmental planning process by providing input on the proposed real estate action including potential alternatives, environmental or cultural concerns, information the public would like the Navy and NASA to know, and any other information the public would like to see addressed in the EIS. The scoping meetings will also serve as an opportunity to obtain public input concerning potential effects to historic properties pursuant to Section 106 of the National Historic Preservation Act and HRS Section 6E-42. Your voice is important to this planning process.

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Submit Comments in Person, Online, or by Mail. Submit comments by *June 17, 2024*. The public may submit comments in any of the following ways: In person at a public scoping meeting, through the project website at PMRF-KPGO-EIS.com, by email to info@PMRF-KPGO-EIS.com, or by mail, postmarked by *June 17, 2024* to the following address: Naval Facilities Engineering Systems Command, Hawai'i, Environmental OPHEV2, Attention: PMRF and KPGO RE EIS Project Manager, Ms. Kerry Wells, 400 Marshall Road, Building X-11, Pearl Harbor, HI 96860.

#### SALARY

Continued from A1

student performance rank in the top 10 nationwide. "That is a direct result from the su-perintendent, his team, our teachers, our principals and

teachers, our principals and vice principals," he said. However, Ward earlier called Hawaii s public education system mediocre. "I would be willing to pay \$500 million or \$100 million, or \$10 million, or \$10 million, or whatever it takes to get us in the top five or the top 10 in the nation," Ward said. "Right now we can't even read and do math in third grade.

Ward said he would support increasing the superintendent's salary if the performance was worthy

"I'm not sure we've agreed to reward something that otherwise is mediocrity,"

Ward said.
Currently, the state Board
of Education does not have a
suggested salary for the superintendent.

perintendent.
Former BOE Chair Warren
Haruki previously said
during a public meeting that
the BOE should consider es-stablishing a salary commis-sion to review the
superintendent's salary.
State Rep. Trish La Chica
(D, Waipio-Milliani) — vice
chair of the House Education
Committee — emphasized

chair of the House Education Committee—emphasized that SB 3207 does not call for an immediate raise. The su-perintendent would still be subject to a thorough review process by the BOE. "This is really a policy of ensuring stability in our lead-ership," she said. Woodson later told the Honolulu Star-Advertiser that he's in 'robust and very strong support' of SB 3207 or 588 207

strong support" of SB 3207 and called Hayashi a "very hard worker."

The perception of those in opposition to the bill. Woodsaid, does not align with

He thanked Hayashi's team and his leadership in reading scores in the top 10 nationwide, and praised Ha-yashi's "particular sprinting of how he worked during the

fires."

If the superintendent's salary cap doesn't increase,
Woodson said other salary
problems could arise for positions including the assistant superintendent and deputy superintendent, whose pay are linked to the superintendent's.

"That would have compounding negative impacts because then you have the complex-area superintendents, whose pay is aligned with the deputies and assistants, and then you have principals and vice principals," Woodson said. "It would basically force all the compensation down to the school level, potentially downward. That is the wrong

direction."

La Chica said during the
House floor session that reducing the superintendent's
salary back to \$150,000 could trigger an exodus of "great dministration and t leader" who oversee 20,000 employees

Vanessa Otts, a former DOE teacher for 5-1/2 years testified in writing that the superintendent should not be entitled to higher pay.

be entitled to higher pay. However, she also doesn't want other administrators' pay to be limited. "If the superintendent's salary reverts to \$15,0000 adter his contract expires in 2025, then anyone making more than that would also have a salary reduction be-cause there's a rule that none of the Superintendent's sub-ordinates can earn more than the boxes." Ofts wrote. than the boss." Otts wrote.

Otts then told the Star-Advertiser that raising the salary cap could be a good idea if the Legislature pro-

vides data in support.

During a March House Education Committee meeting, ucation Committee meeting, Haruki pointed out that among six other school dis-tricts of comparable size and student enrollment, Hayashi has the lowest salary at \$248,000.

\$248,000. Among the six other districts, the second-lowest-paid superintendent earns \$280,000. Others are paid \$310,000, \$330,000, \$380,000 nd \$598,000 — in Georgia's Gwinnett County, Haruki

But Otts said Havashi's salary of \$248,000 earns him more than 30 0ther state superintendents across the

country.

"This session, they were saying how there's no money for important things in the Department of Education and all they seem to be interested in is raising the salaries of people who are already making six figure salaries," Otts said. "It researed like they can the design of the salaries of people who are already making six figure salaries," Otts said. "It researed like the wanted to the salaries of the salaries of the salaries of the salaries of the salaries of the salaries of the salaries." salaries," Otts said. "It seemed like they wanted to raise the salaries simply so that they could raise all the other salaries underneath



PHOTOS BY CINDY ELLEN RUSSELL / CRUSSELL@STARA

#### **CAMERAS**

Continued from A1

on Thursday. "The majority of the victims for these crimes are tourists." According to Resolution 64, "tourists are known to

leave cameras, sunglasses wallets, purses and other valuables in their vehicles while visiting the scenic points, making the vehicles

points, making the vehicles susceptible to unauthorized entry into a motor vehicle violations (i.e. break-ins), thefts, and subsequent financial fraud and other related crimes. Although auto burglaries are seasonal — with more incidents occurring during the summer as visitors arrive to the island — on average, HPD receives about 50 car break-in reports monthly, he said. nonthly, he said. But as far as HPD's

sought-after camera tech nology to catch thieves or avert crimes, Lynch said it's not anything new. "It's the same as being used in Chi-natown and in Waikiki," he

added.
Still, East Oahu's surveil-lance cameras will be a bit different.
Instead of being attached to street lights or poles at fixed locations in urban Honolulu, HPD wants to Honolulu, HPD wants to lease portable trailers that will feature cameras atop a mastlike pole. "These cameras are the

things you kind of see in Home Depot or Lowe's parking lot or even Longs



Moiliili: there's the white trailer with the blue light on it, and it's got the tall mast,' Lynch told the committee. These cameras are deterrents, in the sense that when the bad guys know

when the bad guys know when someone is watching, they change their behaviors or they go somewhere else." The cost to the city will be about \$3,000 a month per security trailer, according to Lynch. Video footage gleaned from these mobile cameras will be a proper to identify event the company of the company of the cameras will be a proper to identify event the company of the company of the company of the cameras will be a proper to identify events.

will be used to identify sus cts. "If we can identify them, then we can go after them and prosecute them for the crime that they committed in front of the

camera," he said. Lynch said this program Lynch said this program could be applied to other spots around Oahu. "Within the rules and the laws, they can be moved into other areas, and they can assist us in the same way the private sector uses them to protect their assets," he said.

Committee Chair Val

Okimoto asked whether someone could steal the largely unattended mobile

"Well, they secure them." Lynch replied, adding, "What we used to do is take the tires off the trailer and put them on blocks. That way they can't take them

why or the transfer of the model the project's man benefit is that HPD will not be using city-owned expression of the same them, said Lynch. "And so, if they get damaged or stolen or whatever ... it's on the leasing company. ... If it's broken or damaged, they pull the old one out, and they bring us a new one that's readvit no So New and they bring us a new on that's ready to go. So we don't have to deal with the maintenance or the fixing or the repairing or any of that."

And he stressed it would be premature for the city to own this equipment.
"There's a huge avenue of

rastructure required to have these cameras," he said, noting, "Footage is recorded and remotely monitored."

monitored."

Okimoto also asked how the video footage would be

the video footage would be reviewed, by HPD or others "Part of the lease is actu-ally somebody sitting there watching it, not one of us," Lynch said, alluding to HPD's ongoing staffing shortage of more than 400 shortage of more than 400 officers. "It's somebody with this leasing company that we would be dealing with. we would be dealing with. That's another attractive grab for us in the sense that it's cheaper to have this per-son do that than it would (be for the police). And then there's rules about us watching and stuff like that." Lynch noted recorded video footage would only cover daylight hours. "Be-cause at night these (crimes) don't happen," he added.

The Halona Blow Hole parking lot is one of the sites being considered for the mobile video sur-veillance cameras to de-ter vehicle break-ins. Above, Jasmin Plateer and Elizabeth Schirn-hofer, both visiting from Austria, took a selfie Tuesday at the blow Tuesday at the blow hole. At left, a camera towers over the Moiliili Longs Drugs parking lot.

Council Chair Tommy V Council Chair Tommy Wa-ters — whose Council dis-trict covers East Honolulu — told the Honolulu Star-Advertiser that HPD has allocated \$64,000 toward this pilot project for fiscal year 2025 only, which begins July 1. "Public safety remains curt ton projects to 2023.

our top priority. In 2023 alone, 225 vehicle break-ins were reported at East Hono-lulu lookouts," Waters said via email. "The propo resolution aims to tackle the disturbing criminal ac tivities at East Honolulu's

scenic lookouts." But HPD's proposed sur-

willance program has drawn mixed reactions. Via written testimony, East Oahu resident Maddy Walsh said she backed the idea "because I believe it will enhance my own safety will enhance my own safe and peace of mind, deter theft and other crimes in these areas, and act as an efficient use of Hawaii's lav enforcement res

"While the language of this resolution seems to be targeted more toward: helping tourists, I think this resolution will have an overall positive impact on the safety and peace of mind of locals like me who leave their cars unattended to hike and visit these East Oahu sites." she said

Oahu sites," she said. Oahu resident Natalie Iwasa said she opposed the project. "Concerns I have with

overt government surveil-lance include the impact it has on people, e.g., 'the chilling effect' of public surveillance," Iwasa wrote ii her public testimony. "It can cause people to decide against exercising their ba-

sic rights, like freedom of speech or peaceful protest.' In spite of privacy con-cerns, Waters said the proj-

cerns, Waters said the project has received other levels of support.

"Within the East Oahu communities, my understanding is that the Hawaii Kai Neighborhood Board and community members support the pilot project," he said. "Additionally, the Waislay & It Meistheshood. Waialae-Kai Neighborhood Board requested overt video monitoring for the Diamond Head Lookouts at

amond Head Lookouts at the April 18, 2024, meeting." Although Resolution 64 was heard, Okimoto post-poned the item. After the meeting, Jame Schaedel, Okimoto's policy adviser, said the resolution was de-ferred for amendments and will return May 23 for fur-ther review. ier review. Meanwhile, HPD did not

meanwhile, HPD did not immediately respond to questions over which company will contract with the city to lease these security trailers.

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# Oʻahu housing market bounces back in April

HONOLILLI — O'ahu's housing market rebounded in April with year-over-year gains after mostly slumps in March.

Sale volume and median prices both rose for single-family houses and condominiums in April compared with the same month in 2023, according to data re-leased Monday by the Honolulu Board of Realtors.

The single-family home market had bigger gains, with a 26 percent jump in sales to 262 in April from 208 a year earlier, and a 10 percent rise in the median sale price to \$1,100,000 from \$999,995.

For condos the number of sales edged up 2.6 percent of sales edged up 2.6 percent of sales edged up 2.6 percent of all in April from 420 a year earlier while the median price increased 5.6 percent to

The gains in April fol-owed mostly year-over-ear decreases in March year decreases in March. For sales the declines in March ranged from 2.5 per

homes to 22.5 percent for condos.
Median prices in March were mixed, with a 1.5 percent tick higher for single-family homes and a 6.7 percent drop for condos. The median price is a point at which half the sales were for more and half were for less. Fran Gendrano, president of the Honolulu Board of Realtors and principal broker at KFG Properties Inc., said in a statement that despite the momentum change, sales remained at softened levels compared with recent years.

years.
The report from the trade association said



CINDY ELLEN RUSSELL / STAR-ADVERTISER

This duplex property with a combined five bedrooms and four bathrooms on a 3,672-square-foot lot in Liha sold in April for \$1.1 million, which also was the median sale price for all single-family homes sold on O'ahu in April.

O'ahu in April.

based on a 12-month moving average of sales, April's average trailed the pre-pandemic moving average in 2019 by about 26 percent for single-family homes and 18 percent for condos, and was about 40 percent be-

30-year fixed rate rising to 172 percent hast week from 6.6 percent in January, Gendrano said the positive movement in Oahu's housing market from March to April is a good sign.

"The month-over-month rise in sales indicates buyers are active in the market despite higher mortgage rates," she said. Chad Takesue, chief operating officer for local real estate brokerage firm Locations, said in a Monday company report that Oahu's housing market is "muted but stable." Takesue expects steady sales and moderate price increases to continue through summer months that represent the peak home-buying season. "Pent-up buyer demand is counteracting the dampening effects of higher mortgage rates and economic uncertainty," he said

me softness in the condo some softness in the conde market has been due to challenges in the cost and availability of property in-surance but that this situa-tion is expected to be temporary because con-straints in the affordability and availability of sin-gle-family homes will drive activity in the condo mar-ket.

activity in the condo mar-ket.
Generally, levels of inven-tory of homes for sale and buyer demand continue to favor sellers.
Inventory of homes for sale at the end of April would be depleted in 2.8 months for single-family homes and 4.2 months for condos if no new inven-tory were added and de-mand stayed at the monthly average from the past 12 months, according to the Board of Realtors report.

# 'Compulsive gambler' asks for 30-month federal sentence

A Kona man who bilked 45 investors in his online lei business out of \$1.2 million to fuel a high-stakes gambling habit in Las Vegas is asking a federal judge to sentence him Wednesday to 2-1/2 years in prison. Newton Kaleo Okamoana Deleon, 48, is a 'compulsive gambler,' and his habit ted him 'down a path of destruction' that cost him his career as an educator, his marriage and a relationship with his three children, his attorney, Michael Green United States of the control of the control of the prison of the control of the con

From at least 2017 and continuing through Decem-ber 2020, Deleon used money from his investors to pay for his wagering ad-diction.
When he was up big, De-leon wrote to senior U.S.

When he was up big, De-leon wrote to senior U.S. District Judge Hellen Gill-mor that he "lived a whole month in the Penthouse suite at the Bellagio. I was gambling everyday. I'd lose, then I'd get more money (through the fraudulent ac-tivity associated with the case) and I went on thint, I was up \$600,000 in two days... I bought two Rolexes and two cars, a Chevy Tahoe and a Chevy Chevy Tahoe and a Chevy Traverse ... and in less than 24 hours I lost all the money. I had to go back to the dealer to return my

His gambling got so se-

vere that at one point De-leon was "living in his car with no money for shelter." After losing \$300,000 in Las Vegas in 2020, Deleon wrapped the cord of a blow dryer around his neck and tried to lill himself. Green also asked that De-leon be required to undergo treatment for addiction. Deleon was on super-vised release in California where he lived before sen-tencing, but has been in custody since Jan. 22 at the Metropolitan Detention Center, Jos Angeles. Deleon was allegedly ar-rested Jan. 22 in Santa Ana, Callif., "for an offense in vio-

Calif., "for an offense in vio-lation of federal, state, or local law while on pretrial release, in violation of the standard conditions of pretrial release," according to federal court records.

Deleon was arrested following a fight with his fiancee, which Deleon described as a "loud verbal argument" in a letter to Gill-

Prior to his arrest, Deleon, who earned under graduate and master's degrees, was working for the Vista Unified School District in North San Diego providing online classes to students enrolled in Ad-

vanced Placement biology and AP environmental science courses.
In 2018, with his "marriage in shambles," Deleon concocted a scheme to fuel his gambling habit where investors would put \$5,000 into his business for a period of three months and get at least \$7,500 back. In the agreements he asked investors to sign with his business, leiorders. com. Deleon would repay the investors their "principal loan investment plus a sub-stantial return within a set time frame, usually approximents." time frame, usually approxi-mately one month," accord-ing to a federal criminal information authored by Assistant U.S. Attorney Re becca A. Perlmutter and

filed Sept. 6. "(Deleon) also promised to repay a return of profit ranging from approximately 10 percent to 40 percent and additional fees ranging between approximately \$100 to \$500 per day if the principal and return were not repaid by the agree ment's designated approximate one-month period." Deleon "well knew that he would not be able to repay the principal" or additional return promised in the

Deleon allegedly told investors that he needed investment funds to buy "flowers and supplies for lei purchase orders that he already had executed with third parties," like well-known casino hotels in Las Vegas, according to federal court records.

court records.

He told one investor that once the lei were delivered to the third parties, the third parties would "take approximately one month to pay" Deleon and that Deleon would then "repay the principal investment loan and snift the profil" with and split the profit" with

and split the profit "with the investors as a return. He created loan agree-ments and promissory notes to give the "false ap-pearance of legitimate fi-nancial transactions upon which investors could rely."

Deleon used "unautho-rized and false branded logos and forged signatures' to fool investors into buying Deleon's story that he had large business lei or-

ders with third parties Deleon entered into a plea agreement with the U.S. Department of Justice on Sept. 25 to plead guilty to "engaging in a wire fraud scheme and artifice to defraud and engaging in mon-

property derived from specified unlawful activity." In exchange, federal pros-ecutors agreed not to file additional charges related to the wire fraud scheme, including any "aggravated identity thet charges." based on the information now known to the govern

ment.

He is facing up to 20
years in federal prison, up
to a \$250,000 fine and three years of federal probation after he gets out on the wire fraud charges and up to 10 years, a fine of up to \$250,000 and three years of supervised release on the property transaction

In an April 30 letter to Gillmor, Deleon apologized to the "victims who I hurt emotionally, financially and morally. I am very sorry for taking advantage of their kindness and honesty to commit the crimes I am guilty of. I am sorry for us ing the trust they had in me by taking their hard earned money and using it to feed my gambling addic

"There is no excuse for my action and for what I have done to all of them I take full responsibility, wrote Deleon.





in 14K Yellow, White or Rose Gold \$599



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# nation&world



The U.S. has stepped up its criticism of Israel, saying it's not doing enough to protect Palestinian civilians in the Gaza Strip. People inspected an impact crater Wednesday at the site of a building bombed by Israel in Rafah, in the southern Gaza Strip.

# U.S. delays weapons shipment to Israel over invasion concerns

Defense Secretary Lloyd Austin said the U.S. has paused the supply of "high-payload" munitions to Israel over concerns about a po-tential military offensive on the Gazan city of Rafah. The delivery was sup-posed to contain 3,500 bombs, split roughly evenly between 2 0000 count and

between 2,000-pound and 500-pound explosives, according to a senior administration official. Austin, speaking separately, said no final decision has been made on the shipment.

made on the snipment. Israel needs to account for the protection of civil-ians in Rafah, where the U.S. wants "no major conflict to take place," Austin told a Senate Appropriations panel Wednesday, Washington is worried about the damage worried about the damage the large bombs could inflict on dense urban areas like Rafah, where about 1.4 mil-lion Palestinians are sheltering from Israel's war with

Hamas. Austin said a 2,000-pound

Austin said a 2,000-pound bomb could do a lot of "collateral damage." Israell Prime Minister Benjamin Netanyahu's office declined to comment on the weapons delay, and it's un-clear if it will have much impact on the military's operations in Gaza. Still, it speaks to growing tensions between Netanyahu and President Loe Biden, who's President Joe Biden, who's voiced opposition to an attack on Rafah and reaffirmed that message in a call

between the leaders Monday, Privately, Israeli officials have expressed deep frus-tration and warned their U.S. counterparts the delay could jeopardize cease-fire and hostage negotiations at a crucial moment, according to a person briefed on the discussions. The Israelis told U.S. officials that pres-sure should be put on Hamas, not on Israel, the person added, declining to

person added, declining to be named in order to detail the sensitive discussions The U.S. has stepped up

The U.S. has stepped up its criticism of Israel in re-cent months, saying it's not doing enough to protect ci-vilians and allow aid into the besieged Palestinian territory, parts of which the United Nations says are on the verge of famine. "There have been far too many ca-sualties in this battle space," Austin said.

At the same time. Biden has said his support for Israel is ironclad, and he's defended its right to pursue a strategy of destroying Hamas, an Islamist group

Hamas, an Islamist group backed by Iran. Austin was questioned about the weapons ship-ment by members of the congressional panel. "Does this not send the wrong message to our ally Israel and embolden Iran and Iran-nian-backed groups?" asked Sen. Jerry Moran, a Kansas Republican. "We should not signal to our enemies that our support is conditional." our support is conditional.' Republican Sen. Susan Collins of Maine called the pause "a decision that most members of Congress would

€ NCUA

take issue with."
But the Biden administration signaled it might hold
up other shipments to Israel. In a briefing Wednesday, State Department
spokesman Matthew Miller
said the U.S. was "reviewing
other potential weapon systems," although he declined
to go into detail.
Biden's decision on the
arms supplies marks one

arms supplies marks one of the most significant mo-ments of discord between Israel and its most important ally since Hamas' Oct. 7 assault, which started the war. Hamas, designated a terrorist organization by the U.S., killed 1,200 people and abducted roughly 250 when its fighters stormed into southern Israel from Gaza.

Israel's retaliatory bom-Israel's retaliatory bom-bardment and ground offen-sive on the Mediterranean enclave have killed almost 35,000 people, according to the Hamas-run health

ministry. This week, Israel told

residents in some parts of eastern Rafah to move out immediately in a possible prelude to an assault. It unged them to travel north to a "humanitarian area" near the Gazan city of Khan Younis, much of which has been destroyed, Israel says it's working to ensure there will be enough tents, food and medicine for the civilians.

Israel's military also took control of and closed the Rafah border crossing be tween Gaza and Egypt on

civilians.

tween Gaza and Egypt on Tuesday, It's the main entry point for aid going into Gaza and the United Nations said it should be reopened quickly. On Wednesday, Israel reopened the nearby Kerem Shalom crossing and said trucks with humanitarian supplies were moving into Gaza. For now, Israeli officials are saying their operations in Rafah are limited tions in Rafah are limited and are downplaying the no-tion that a full-on offensive

### Airstrikes further strain Ukrainian energy system

By Anastasiia Malenko and Pavel Polityuk

KYIV, UKRAINE >> Russian missiles and drones struck nearly a dozen Ukrainian er ergy infrastructure facilities Wednesday, causing seriou damage at three Soviet-era thermal power plants and blackouts in multiple regions, officials said.

Ukraine's air force said it shot down 39 of 55 missiles and 20 of 21 attack drones used for the attack, which piles more pressure on the energy system more than two years after Russia launched its full-scale

"Another massive attack on our energy industry!" Energy Minister German Galushchenko wrote on the Telegram app. Two people were injured in the Kyiv region and one was hurt in the Kirovohrad region, Interior Minister Ihor Klymenko said. Galushchenko said

power generation and transmission facilities in the Poltava, Kirovohrad, Zaporizhzhia, Lviv, Ivano Frankivsk and Vinnytsia

Frankivsk and Vinnytsia regions were targeted. Some 350 rescuers raced to minimize the damage to energy facilities, 30 homes, public transport vehicles, cars and a fire station, the interior ministry said.

National power grid operator Ukrenergo said it was forced to introduce electricity cut in mine ze.

electricity cuts in nine re-tions for consumers and that it would expand them nationwide for businesses during peak evening hours

until 11 p.m.
Ukrenergo CEO Volody-Ukrenengo CEO Volody-myr Kudrytskyi, inter-viewed by the Ukrainska Pravda media outlet, said electricity imports would not make up for power shortages. He said hydro-power stations had also been hit, clarifying an earlier company statement omit-ting hydro stations from the list of affected facilities. Russa's defence ministry said it struck Ukraine's

said it struck Ukraine's military-industrial complex and energy facilities in retal-iation for Kyiv's strikes on

President Volodymyr Zelenskyy noted the at-tacks were launched on the day Ukraine marks the end of World War II. "This is how the Kremlin marks the end of World War

II in Europe, with a massive strike, attempting to dis-rupt the lives of our people with its Nazism," he said in

his nightly video address In an earlier online address, Zelenskyy singled out what he said was the West's limited progress in curbing Russian energy re-enue and some countries

enue and some countries that attended President Vladimir Putin's inauguration for a fifth term in the Kremlin on Tuesday.
Fighting Nazism back then, he said, was "when humanity unites, oppose Hitler, instead of buying his oil and coming to his inauguration" inauguration."

#### Convicts to serve

Convicts to serve
Ukraine's parliament
passed a bill Wednesday
that will allow some convicts to serve in the military in exchange for the
possibility of parole at
the end of their service,
a move aimed at replenishing the army's depleted
ranks after more than two
years of war.
The bill must still be
stimed into law by Zelen-

The bill must still be signed into law by Zelenskyy. It was not immediately clear if he would do so, given the sensitivity of the matter.

The policy echoes a practice used by Russia which has committed tens of thousands of convicts to the war, allowing it to gain the war, allowing it to gain the upper hand in bloody assaults by sheer force of numbers. While Russia has enlisted all manner of prisoners, the Utrainian bill says that those convicted of premeditated murder, rape or other serious of fenses will not be eligible — although some lawmakers said involuntary manslaughter convictions could be considered. could be considered

The New York Times

U.S. Navy Pacific Missile Range Facility and NASA Kōke'e Park sical Observatory Real Estate Environmental Impact Statement



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# Johnson survives Greene's ouster attempt

Carl Hulse and Kayla Guo

WASHINGTON, D.C. — Speaker Mike Johnson on Wednesday easily batted down an attempt by Rep. Marjorie Taylor Greene of Georgia to oust him from his post, after Democrats linked arms with most Re-publicans to fend off a sec

publicans to fend off a second attempt by GOP hard-liners to strip the gavel from their party leader.

The vote to kill the effort was an overwhelming 359-43, with seven votting 'present.' Democrats flocked to Johnson's rescue, with all but 39 of them voting with Republicans to block the effort to oust him.

Members of the minority party in the House have never propped up the other party's speaker, and when the last Republican to hold the post, Kevin McCarthy, faced a removal vote last fall, Democrats voted en masse to allow the motion to move forward and then to jettison him, helping lead to his historic ouster.

This time, the Democratic support made the critical difference, allowing Johnson, who has a minuscule majority, to avoid a removal vote alongether. While for weeks Greene had appeared to be on a political island in her drivet to get rid of yet another GOP speaker, 11 Republicans ultimately voted to also under support smade the critical distand in her drivet to get rid of yet another GOP speaker, 11 Republicans ultimately voted to also under the conditions of the description of the condition of the description of the condition of the c

cans ultimately voted to low her motion to move forward.

That was the same number of Republicans who voted in October to allow the bid to remove McCar-thy to advance — but back then, they were joined by every Democrat.

then, they were joined by every Democrat.

"I appreciate the show of confidence from my colleagues to defeat this mis-guided elfort," Johnson told reporters shortly after Wednesday's vote.
"As I've said from the beginning and I've made clear here every day, I intend to do what I believe to be the right thing, which is what I was elected to do, and I'll let the chips fall where let the chips fall where they may. In my view, that

is leadership."

"Hopefully," he added,
"this is the end of the personality politics and the frivolous character assassi-nation that has defined the

118th Congress." The lopsided vote solidi-The lopsided vote some fied the dynamic that has defined Johnson's speaker-ship, like McCarthy's be-fore him: Each time the Republican leader has been faced with a critical



Rep. Marjorie Taylor Greene (R-Ga.) speaks to reporters outside the Capitol in Washington, D.C., after at-tempting to oust House Speaker Mike Johnson (R-La.) from his post on Wednesday, May 8, 2024.

Greene said, reading from

She concluded with the official call for his removal:

"Now, therefore be it re-solved that the office of the

speaker of the House of Representatives is hereby

declared to be vacant." It marked the second

time in less than a year that Republicans have

speaker, coming about seven months after GOP

Democratic support, in re-moving McCarthy.

Greene had seemed to hes-itate over whether she

secutive days, she met for hours with Johnson,

rebels succeeded, with

Earlier in the week

would actually call the ouster vote. For two co

sought to depose their own

her resolution

tempting to oust House sp task, such as averting a government shutdown or a catastrophic default on the nation's debt, he has relied on a bipartisan coalition of mainstream lawmakers to steer around far-right op-position and provide the votes to accomplish it. The result has been the empowerment of Demo-

votes to accomplish it.
The result has been the
empowerment of Democrats at the expense of the
hard right, the very phenomenon that Greene
raged against as she rose
on the House floor Wednes on the House noor wednes day — drawing boos from some of her colleagues — to lay out a scathing case against Johnson and what she called the "uniparty" he empowered. "Our decision to stop

Mariorie Taylor Greene from plunging the House of Representatives and the country into further chaos is rooted in our commitment to solve problems for everyday Americans in a bipartisan manner," Rep. Hakeem Jeffries of New York, the Democratic leader, told reporters shortly after the vote. "We will continue to govern in a reasonable, responsible and results-oriented fash-

ion, and put people over politics all day and every day."

Greene's move to oust Johnson came roughly three weeks after the speaker pushed through a long-stalled \$95 billion na-

long-stalled 595 billion na-tional security spending package to aid Israel, Ukraine and other U.S. al-lies over the objections of Greene and other right-wing Republicans who staunchly opposed sending additional aid to Ukraine.

Lawmakers loudly jeered forene as she called up the resolution and read it aloud. As she recited the measure, a screed that lasted more than 10 minutes, Republicans lined up on the House floor to shake Johnson's hand and pathin on the back.

"Given a choice between advancing Republican priorities or allying with Democrats to preserve his own personal power, Johnson regularly chooses to ally himself with Democrats," Greene said, reading from the properties of

mained cool to their en-treaties, and told reporters that he was not negotiating with Greene and Massie. That put Greene, whose combative political brand is premised on her unre-

lenting appetite to fight with the establishment of her party, out on a limb. She had little choice but

to call up a vote she knew would fail, but had been threatening for weeks. Even after Jeffries made it clear that Democrats would vote to block any ouster attempt, she was still determined to undermine Johnson publicly and force Democrats to bail

him out. "This is exactly what the American people needed to see," she told reporters on the House steps after

the vote. "I didn't run for Congress to come up here and join the uniparty, and the uniparty was on full display today."
"The Democrats now control Speaker Johnson," she added. Just 32 Democrats and

Just 32 Democrats voted

to allow Greene's motion to move forward, while another seven voted "pres-ent," registering no position.

Greene initially filed the motion against Johnson in late March, just as lawmak-ers were voting on a \$1.2 trillion spending bill he pushed through the House over the opposition of the over the opposition of the majority of Republicans. She called the move a "betrayal" and said she

wanted to send the left the threat dangling for Johnson plowed ahead

anyway, putting together an aid package for Ukraine — a move Greene previously said was a red line that would prompt her to seek his ouster, but which did not lead her to immediately make good on her threat.

"I'm actually going to let my colleagues go home and hear from their con-stituents," Greene said fol-

that Republicans would join her bid to get rid of Johnson after getting an Johnson arter getting an earful from voters irate about the foreign aid bill. Instead, many of them heard just the opposite and returned to Washington voicing skepticism

Thursday, May 9, 2024 • A7

and returned to Washington voicing skepticism
about removing Johnson.
If she had been successful Wednesday, Greene
would have prompted only
the second vote on the
House floor in more than
100 years on whether to
oust the speaker.
When Rep. Matt Gaetz of
Florida instigated McCarthy's removal in October,
such a spectacle had not
been seen in the chamber
since 1910.
But this time, Greene
had a more difficult time
finding support for removing the speaker.
House Republicans were
wary of throwing the
chamber into another perriod of chaos like the one
that paralyzed the House
for weeks after McCarthy's
ouster, and have privately
seethed about the public
disarray Greene's threat
has sown.
Even ultraconservatives

has sown.
Even ultraconservatives
like Gaetz expressed uneasiness with firing another speaker, suggesting
that the move risked handing over control of the
House to Democrats given Republicans' rapidly nar-rowing margin of control. Former President Donald

Trump also came to John-son's defense, urging Re-publicans on social media minutes after the vote to kill Greene's effort, arguing that polling showed Repub-licans doing well in the No-vember elections, and that a show of division would undermine the party.
"If we show DISUNITY,

which will be portrayed as CHAOS, it will negatively affect everything!" he

He called Johnson "a good man who is trying very hard," but did not slam the door altogether on the idea of removing

him.
"We're not in a position'
"with such a to do so now, with such a small Republican majority in the House, Trump wrote "At some point, we may very well be, but this is not the time."

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# Kauai's Religious **Services Directory**

Call 808-245-0432 to place your ad.



Sunday Worship Service 8am and 10am 3-3100 Kuhio Hwy, Lihue 808-245-9673 • cclihue.com cclihue@gmail.com

West Kauai United Methodist Church Sunday worship at 9:30AM - Where Love is lst, 3rd, and 5th Sundays - Kaumakani "Cane Fields" 2nd and 4th Sundays - 8563 Elepaio Rd, Kekaha 808-337-1464

## **Calvary Chapel Lihue**

3-3100 Kuhio Hwy, Lihue I (808) 245-9673

**Christ Memorial Episcopal Church** 2509 Kolo Rd, Kilauea Sunday Services | 8am & 9:30am

**West Kauai United Methodist Church** 8563 Elepaio Rd. Kekaha I (808) 337-1464

# **Around the**

#### **General Assembly to back** Palestinian membership

UNITED NATIONS >> The United Nations General Assembly today is set to back a Palestinian bid to become a full U.N. men ber by recognizing it as qualified to join and sending the application back to the U.N. Security Council to "reconsider the matter favorably."

The Palestinians are reviving their bid become a full U.N. member — a move that would effectively recognize a Pales-tinian state — after the U.S. vetoed it in April in the 15-member U.N. Security Council.

#### Japan to allow commercial hunting of large fin whales

hunting of large fin whales

Tokros-Japan will add large fin whales
to its list of commercial whaling species,
government spokesperson Yoshimasa Hayashi said Thuraday, five years after leaving an international body that regulates the
commercial hunt of the marine mammals.
Japan resumed commercial whaling in its
territorial waters and exclusive economic
zones in 2019, after withdrawing from the
International Whaling Commission.
This week its Fisheries Agency sought
public comment on a draft revision of its
aquatic resource control policies that
would allow commercial catching of in

aquanc resource control policies that would allow commercial catching of fin whales. Whales are important food resources and should be sustainably utilized, based on scientific evidence," said Hayashi, the chief cabinet secretary, referring to widening the allowable catch to include fin whales.

#### Camera footage released of police killing Black airman

Under mounting pressure to offer a justification for the fatal police shooting of a U.S. Air Force senior airman in his apartment last week, a Florida sheriff Thursday

released body camera footage of the deadly encounter. The footage shows Senior Airman Roger Fortson, 23, answering the door of his apartment in the Florida Panhandle and

apartment in the Florida Panhandle and immediately being shot by a deputy from the Okalosas County Sheriffs Office. The video also shows that Fortson was holding a gun, and authorities have maintained that the deputy "reacted in self-delense." The release of the footage came amid growing questions from the airman's family and their lawyers who had accused the deputy of entering the wrong apartment, on to knocking or announcing himself and of bursting through the door.

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# Justices rule against women whose cars were confiscated

washington>> The Supreme Court on Thursday made it harder for people whose property had been seized by police to argue for its swift return.

By a 6-3 vote, the court

By a 6-3 vote, the court ruled against two Alabama women who had sought prompt hearings to recover cars they owned that had been taken by police in con-nection with crimes committed by others.

"After a state seizes and "After a state seizes and seeks civil foreiture of per-sonal property, due process requires a timely forfeiture hearing but does not require a separate preliminary hearing." Justice Brett Kavanaugh wrote for the majority. In dissent, Justice Sonia Sotomayor said the major-ity had adopted a wooden approach to a pressing problem.

"The majority today holds quires the minimal check of retention hearing before a police officer deprives an innocent owner of her car for months or years," Sotomayor wrote.

Even as the court rejected ne women's argument that



By a 6-3 vote Thursday, the Supreme Court ruled that innocent owners of cars seized by police are not enti-tled to an immediate hearing to reclaim their vehicles.

the Constitution requires streamlined procedures, five justices expressed grave misgivings about the prac-tice of confiscating property said to have been used to commit crimes, known as civil asset forfeiture. The court ruled in two cases. One of them started star Islains Culture boughts

after Halima Culley bought a 2015 Nissan Altima for her son to use at college. He w pulled over by police in 2019 and arrested when they found cannabis. They also

seized Culley's car.
That same year, Lena Sutton lent her 2012 Chevrolet
Sonic to a friend. He was

stopped for speeding and

stopped for speeding and arrested after police found methamphetamine. Sutton's car was also seized.

Alabama law in effect at the time let so-called innocent owners reclaim seized property, and both women ultimately persuaded judges to return their cars. It took more than a very in each. more than a year in each case, though there was some dispute about whether the women could have done more to hasten the process

Culley and Sutton filed class actions in federal court saying they should have been afforded prompt in-terim hearings to argue for

the return of the vehicles while their cases moved forward. Lower courts ruled against them. Kavanaugh wrote that the Constitution's due process clause does not require the preliminary hearing the women sought. "Culley and Sutton's argument for a separate preliminary hearing appears in

ment for a separate prelimi-nary hearing appears in many respects to be a back-door argument for a more timely hearing so that a prop-erty owner with a good defense against forfeiture can

fense against forfeiture can recover her property more quickly," he wrote. "But the court's precedents already require a timely hearing." Alabama has since amended its forfeiture law to allow owners of seized property to request expe-dited hearings.

ted hearings. "Our decision today doe: not preclude those legisl tively prescribed innova-tions," Kavanaugh wrote Rather, our decision simply addresses the baseline pro tection of the due process

Chief Justice John Rob erts and Justices Clarence Thomas, Samuel Alito, Neil Gorsuch and Amy Coney Barrett joined the majority

## Ukraine attacks Russian oil facilities

By Constant Meheut

KYIV. UKRAINE >> Ukrainian drones struck two oil depots and a refinery across Russia in a 24-hour period, includ-ing one deep in Russian ter-ritory, officials on both sides said Thursday, as Kyiv

said Thursday, as Kyiv presses a campaign aimed at hampering the country's millitary operations and puting strain on its most important industry. Radiy Khabirov, head of Russia's Bashiria region, near Kazakhstan, said a drone hit the Netfeshim Salavat oil refinery, one of the country's largest, around midday Thursday, sending olumes of smoke sending olumes of smoke sending olumes of smoke sending olumes of smoke sending olumes of smoke sending olumes of smoke sending plumes of smoke into the sky. The facility is more than 700 miles from

the Ukrainian border, in a sign that Ukraine is increas-ingly capable of striking far-ther into Russia.

An official from Ukraine's special services, speaking on condition of anonymity to discuss sensitive military matters, said Ukraine was matters, said Ukraine was behind the assault. The official said Ukraine was shore some shore of the order strates overlight that hit oil depots in Russia's Krasnodar region, southeast of Ukraine. The strikes follow some 20 similar attacks since the beginning of the year. Military analysts say they are an attempt by Ukraine to disrupt the Russian military's lodistical routes and

tary's logistical routes and combat operations by tar-geting the facilities that

supply fuel for its tanks. hips and planes.

Ukrainian officials also

hope the strikes can undermine the Russian energy complex, which is at the core of the country's econ-omy and war effort omy and war effort —
accounting for about onethird of Russia's federal
budget revenue — although
it is too early to say
whether they can have
any serious impact.
The U.S. government has
publicly urged Ultraine to
stop its attacks on Russian
oil refineries out of concern
that they could affect global
oil markets.
But Ultraine has instead
doubled down on its strat-

doubled down on its strat-egy. In April, Ukraine struck Russia's third-largest refin-Russia's third-largest refin-ery, about 800 miles from its finery hit Thursday is also one of Russia's biggest, with a capacity to process 10 million metric tons of oil a year, according to Gazprom, its owner. Ukraine's rationale for

these attacks appears to be these attacks appears to be that by disrupting Russian military logistics, it could buy time for Ukrainian troops on the battlefield, who are outnumbered, un-dergunned and steadily los-ing ground to Russian forces. In recent months Ukraine has increasingly relied on asymmetrical tactics to dis-rupt Russian operations, in-cluding sabotage activities against railway infrastruc-

ture and ammunition

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For more information visit PMRF-KPGO-EIS.com

## In Budapest, China's Xi hails ties with Hungary

By Andrew Higgins

warsaw, Poland >> Chi-nese President Xi Jinping on Thursday found another safe zone in a continent increasingly wary of his coun-try, meeting in Budapest with Hungarian Prime Minister Viktor Orban, the European Union's perennial odd man out as a vocal supporter of warm relations with both China and Russia.

with both China and Russia. As happened at his previous stop in Serbia, Xi recived a red-carpet welcome and was spared from protesters. After their talks Thursday ended, Xi and Orban held what was billed as a news conference, but it consisted of their reading statements without taking questions, a format preferred by the Chinese leader. They pledded to elevate

They pledged to elevate already-friendly relations to an "all-weather comprehensive strategic partnership"
— a sharp divergence from
the view of China held by

the view of China held by the European Union, of which Hungary is a member, as "a partner for cooperation, an economic competitor and a systemic rival." Orban, under fire from many fellow European leaders for pushing what he calls a "policy of peace" in Ukraine — effectively a demand that its president, Volodymyr Zelenskyy, capitulate to avoid further

bloodshed — offered "special thanks" to Xi for "the steps that the People's Republic of China is taking to create peace."

China has declined to

condemn Russia's full-scale invasion of Ukraine and according to the United States, has helped Russia's military continue its as-sault on Ukrainian territory by providing satellite imag ery to Russian forces, along with jet fighter parts, mi-crochips and other dual-

crochips and other dual-use equipment.

"Our voice, the voice of Hungary, is a lonely voice in Europe. Today, Europe is on the side of war. The only ex-ception is Hungary, which calls for an immediate cease fire and peace negotiations," Orban said, applauding China's own vague peace China's own vague peace plan, announced in 2023.

With nothing to announce on Ukraine beyond calls for With nothing to amounce on Ukraine beyond calls for peace, Hungary and China focused on economic cooperation. The Hungarian foreign minister, Peter Sziljarto, announced 18 Joint projects, including a high-speed rail-way to the international airport from downtown Budapest and a new rail line across the country to transport electric cars, batteries and other products from Chinese factories planned for eastern Hungary to European markets in the West. They also agreed to cooperate on nuclear energy projects.

War Memorial Convention

Hall, starting at 11:30 am.

Francisco 'Cisco'

Francisco "Cisco" Cam-

Campos Jr.

#### obituaries

H. Wallace 'Wally' **Jaynes** 

#### 1935-2024

A very good son, brother, a wonderful husband, a proud and loving dad, grand dad, great granddad and a strong, true and for-ever friend. A



spected God and country. Best not for-get a kind and loving friend

Jaynes of animals.

Waly lived his life learning and doing what needed to be done and willingly facing what ver challenges life presented. A man of many interests, Wally loved working, diving, flying, reading and music; played guitar, bongos and keyboard. Wally started his early working career in the logging industry of Northern California, by the ago of 19, he owned his own log hauling truck. He often worked two and sometimes three jobs while raising a family, his boys Kenny, Steve and Dean. Wally was a master carpenter, a builder and a contractor. Living in the Laguna Beach area was a major part of his life, he was naturally a water enthusiast and took up diving with his friends long before diving became such a popular sport. Diving and construction transitioned him to underwater construction and owning his own underwater constr work required to build out the Dana Point Harbor and other projects along the So. California coast.

Strangely enough this led to Wally starting a career in photography. When under-water photos were needed for a 3-mile underwater pipeline job, he rented an underwater camera and successfully (with 15 minutes of instructions from the camera store owner) took the photos reques along with the doing the mechanical drawings he always provided for the job. (Wally's mom, Virginia was a wonderful artist who worked for Walt Disney and Walter Lantz back in the day, and his brother Ken

was a Military man who taught him mechanical drawing.) From that experience Wally enrolled in So. Coast College to study pho tography, soon to open his own rental darkroom. The Darkroom soon became a Laguna Beach icon of some

Sayina scale to America Store, custom printing, studio, wedding and event photography, videography, videography, videography, videography, videography, videography, unterests and skills. He designed, drew plans and built two homes for us and was a skilled furniture and cabinet maker.

At the age of 44 he met and soon married his wife Doris, then adding two teenage boys to his family, David and John Estrada became his boys, and they were blessed to have him as a father and friend. Wally should have written a book. He had a great memory of his many adventures and could tell story after story.

Wally was a patriot at heart. Wally's lowe of the country was hest expressed in his love of and 40 plus years as a volunteer with the Air Porce Auxiliary, Civil Air Patrol. He loved the challenge of flying search and rescue missions, and among those missions his best moment was when finding a crash site with the plane crew alive and walting for rescue (most 'flinds' don't have such happy endings). He is ending his career with Civil Air Patrol al. L. Colonel

Air Patrol as Lt. Colonel with many years as Safety Officer in both California and here in Hawai'i. Wally would say the best part of life was being a friend and helping others. That is what really sums up his life. And of course, being the best husband and father ever. Love you for-

A Celebration of his Life A Celebration of his Life will be held on Thursday May 16, 2024, at St. Cather-ine's Church with visitation beginning 8:30 a.m., funeral mass beginning at 10 a.m. and burial to follow at St. Catherine's Kealia Ceme-

tery.
In lieu of flowers the fam-In lieu of flowers the fam-ily requests donations be made to Kaua'i Hospice in memory of Wally Jaynes. Kaua'i Memorial Gardens and St. Catherine's Church assisted the family with ar-

rangements.

#### Michael Miyuki Cardinez

The family requests casual attire and welcomes flowers. Please come, talk story Michael Miyuki Cardinez and enjoy heavy pupu and desserts with his 'Ohana. Borthwick Kaua'i Mortu-ary assisted the 'Ohana with arrangements.



known for his ready smile and servant heart, peace fully left for Paradise on Feb. 28, 2014.

He was an active member in the Kauari on Aug. 13, 1949. He served in the United States Navy for four years before becoming a Radar Technician at Makaha Ridge, Koke'e from where he rettred.

Michael was preceded in passing by his father Steven Cardinez, mother Eve-lyn (Oyakawa) Estrada, which was preceded in passing by his father Steven Cardinez, mother Eve-lyn (Oyakawa) Estrada, Green Cardinez, Marchael Cardinez, sister Lydia Castillo, prother-in-law David Banquel and the mother of his children, Monda Haney,

He is survived by his brothers Charcnec (Carmen) Cardinez of California, Amolo (Ces) Delos Reyes of Kaumakani, James (Angela) Delorida, Alex (Shari) Cardinez of Iforida, Alex (Shari) Cardinez of California, Sisters Frances Bunao of Lihu'e, Carol (Burt) Gonsalves of California, Alicia Estrada of Hanama ulu, Cella Marie Mancia of Oregon, Nelda Banquel of Hanapee and his stepmother Evelyn "Nana' Cardinez of Kaumakani (who sally passed on March 14, 2024).

Michael also leaves be-

hind his children Kalei (Alden) Cardinez of Hanama'ulu, Kananiokala Hanama ulu, Kananiokaia (Harvey) Makekau of Hana-ma'ulu, Mikey (Carolan) Cardinez of Kapa'a and TC (Andrea) Cardinez of Wailua. He will remain a constant guide to his be-loved grandchildren Cobie Cardinez, Megan Rego, Ke-ona Nakamura, Kaiona Naona Nakamura, kamura, Ricky Rego, Namoa Cardinez, Auree Cardinez, Daniel Makekau and Sherilyn Makekau as well as his most precious great grandchildren Taiden Cardinez, Tia Cardinez, Kawehi Rego and Kamaile-lauli'i Yap and his grand pups Hale, Nani, Pepe, Ma-li'e, Li'i, Hema and Lilo. Michael is also survived by numerous cousins, nieces

A celebration of his life will be held on Tuesday, May 28, 2024, at the Kaua'i

and nephews.

retired as a baggage supervisor for United Airlines in 2016.

2016.

He is survived by his five daughters Tasha (Tommy) Stetter of Illinois, Leanna Campos (Rueben Games) of Waimea, Leilani Campos of Honolulu, Laola Campos (Chad Ishida) of Waimea, Noe Campos (Kawai Noe Campos (Kawai Rapozo) of Waimea, grand-children Jacey (Mana) Alquiza, Drayden, Jaycob, Daylen (Brennan) Ferrara, Pomai, Malu, Ezekiel, Ezra,

Pomal, Malu, Ezeklel, Ezra, lovry, Kayee, great-grad-children Kayzee-Marie, Tyson, Taelyn-Marie, Kaine, Irie Reign, sister Fely Dement of Hanapepe, numerous uncles, aunts, nieces, nephews and cousins. A service will be held on Sunday, May 12, 2024, at the Garden Island Mortuary in Lawa'i, beginning at 2 p.m., and burial will be on Monday, May 13, 2024, at 11 a.m. at Kaua'i Veterans Cemetery in Hanapepe. The family suggests casual attire and requests that flowers be omitted. Garden Island Mortuary assisted family with arrangements.

#### births

Rachel Medeiros and Stephen Emayo greeted their daughter, Selena Evangeline Emayo, weighing 7 pounds, on March 14, 2024, at Kauai Veterans

Fridav. May 10, 2024 • A7

- Memorial Hospital.

  Naleigh and Nathan Smith greeted their daughter, Emma Nanea Smith, weighing 7 pounds, 11 ounces, on March 2, 2024, at Kauai Veterans
- Marn 2, 2004, at Kaual Veterans Memorial Hospita.

  Dennis Fachdrik and Raini Henry-Erukriki greeted their fifth child a girk, 
  Söylar Bethany Fackdrik, weighing 
  7 pounds, 39 euroes, on March 3, 
  20024, at Wizow Medical Center.

  Dennis and Riley Harrington greeted 
  their third child, a boy, Rull Blannes 
  Ryohe Harrington, weighing 7 pounds, 
  14 euroes, on March 4, 2003, at Willcox Medical Center. Mrs. Harrington is 
  the former Roam Todor.

  Melicisa Vega-Guerpo and Romeo 
  Guerpo greeted their son, Aven Guerpo, 
  weighing 8 pounds, 7 ounces, 
  on March 6, 2002, at Kausi Veterans 
  Memorial Hospital.
- on March b, 2024, at Kausi Veterans Memorial Hospital.

  Stevie and Heather Sokel-Lutz greet-ed their fourth-child, a boy, Hudey Kaito Itsuo Sokei-Lutz, weighing 8 pounds, 5 ounces, on March 7, 2024, at Willozx Medical Center.

  Anais Werkmeister-Baumann and Ka'mi Hermosura greeted their son, Kekela Hermosura-Werkmeister,
- weighing 7 pounds, 4 ounces, March 8, 2024, at Kauai Vetera Memorial Hospital







#### U.S. Navy Pacific Missile Range Facility and NASA Kōke'e Parl Geophysical Observatory Real Estate Environmental Impact Statement



The Navy and NASA invite you to participate in the environmental planning process and submit comments

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The Navy and NASA will host public scoping meetings at three locations on Kaua'i. Attend any of the public scoping meetings to talk story, learn more, and submit written or oral comments. Your voice is important to this planning process. Meetings will be held from 5 to 8 p.m. HST at the following locations:

PUBLIC SCOPING MEETINGS **AGENDA** 

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Project pres

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245-0433



# **NEWS OF THE WEIRD**

# **Brown Bear, Brown Bear And 2 Driving Fools**

Moira Gallacher, Charmian Widdowson, were touring Romania in April, enjoying a drive through the Carpathian Mountains, People reported. They happened upon two brown bears and stopped to get a picture with them. Then, Widdowson pulled up to the

Scottish woman, bear for another photo-op.

"I rolled down the win- had to eat my friend." 72, and her friend, dow; I thought he wanted to be friends," Widdowson told STV News. "He started getting into the car and bit my friend."

She said she thought the bear approached because he heard the women talking about getting something to eat.



**How These Bandits Roll ILLUSTRATION BY MARK GALACGAC** 



"I think he ... decided he underneath; although the bear

thick jacket with two layers

clamped down on her hand Gallacher was wearing a with its jaws, she escaped Shopping Cart Spree with minor wounds.

In other Weird happenings:

On April 9, investigators

caught their targets in a puzzling money-making scheme in Rochelle Park, New Jersey.

SEE PAGE 7

## U.S. Navy Pacific Missile Range Facility and NASA Kōke'e Park **Geophysical Observatory Real Estate Environmental Impact Statement**



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Tuesday, June 4, 2024 Kaua'i Veterans Center 3215 Kaua'i Veterans Memorial Hwy, Līhu'e

Wednesday, June 5, 2024 Kekaha Neighborhood Center 8130 Elepaio Road, Kekaha

Thursday, June 6, 2024 Sheraton Kaua'i Coconut Beach Resort 650 Aleka Loop, Kapa'a

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5 to 8 p.m. Information stations - meet the project team, talk story, and ask questions. Visit the comments station to provide a written or oral comment.

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# SEVENTEUL A SUNRISE TO SUNSET LOOK AT SOME OF THE BIGGEST EVENTS ON KAUA'I

EMAIL APANG@MIDWEEK.COM

**1** JUNE

### **MUSIC CONCERT**

Ebb & Flow Arts presents Duo Diorama, featuring violinist Minghuan Xu and pianist Winston Choi, at St. Michaels All Angels Episcopal Church in Līhu'e. The concert will also

feature works by Béla Bartók, Alfred Schnittke, Dmitri Shostakovich, John Corigliano, Augusta Read Thomas and Robert Pollock. Admission is free.

Saturday, June 1, 7 p.m. For more info, visit ebbandflowarts.org

2 JUNE

### **FOOD FESTIVAL**

Enjoy dishes prepared by more than 25 island chefs, various musical entertainment groups and more at Taste of

Hawai'i at Smith's Tropical Garden in Kapa'a. Gate admission is \$200 and advance tickets on eventbrite. com are \$165.

Sunday, June 2, 11:30 a.m.-3:30 p.m. Purchase tickets at eventbrite.com (search "Taste of Hawaii is the ultimate Sunday Brunch by Rotary Club of Kapaa")



American Red Cross

The Hawaii Red Cross is on call 24/7 and responds to a disaster every four days.

Public service or MidWeek

You can help at redcross.org/Hawaii



# PRIDE PARADE

A Pride Parade to kick off Pride Month starts on Rice Street at Vidinha Stadium and ends at Historic County Lawn, where there will be a festival following the parade. Expect food trucks, small business and craft vendors, community resources, and live entertainment.

Saturday, June 1, 9 a.m.-2 p.m. For more info, visit kauaiprideparade.com



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5 to 8 p.m.

Information stations – meet the project team, talk story, and ask questions. Visit the comments station to provide a written or oral comment. <u>AGENDA</u>

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THE GARDEN ISLAND

## Serial criminal can keep \$12.5M settlement

HONOLULU — The All Sayear-old man awarded \$12.5 million after he sued the city following injuries suffered in a 2021 police pursuit appeared in court Wednesday to face federal charges that he used a ghost gun while selling methamphetamine in

methamphetamine in Waianae. It is the second time Jonaven Perkins-Sinapati was arrested on drug and gun charges this month. Despite the criminal charges, there is no chance the city can recoup any of the \$12.5 million awarded Perkins-Sinapati in the civil case.

Perkins-Sinapati in the civil case.
"The City's settlement agreements are generally not contingent upon future conduct but are intended to compensate plaintiffs for verifiable damages resulting from negligent acts of the City or its employees and/or to resolve cases in the best interests of the City," according to a statement to the Honolulu Star-Advertiser from Scott Humber, Mayor Rick Blangiardi's communications director. "The Perkins-Sinapati settlement agreement did not include a contingency provision for future criminal conduct."
Perkins-Sinapati, a con-

nal conduct."
Perkins-Sinapati, a convicted felon with more than 40 arrests and cita-

tions, was charged by criminal complaint Satur day with possession with intent to distribute 50 grams or more of a mix-ture or substance contain-ing a detectable amount of

ture or substance containing a detectable amount of methamphetamine and possessing a firearm in furtherance of a drug trafficking crime, according to federal court records. A hearing on the U.S. Department of Justice's motion to detain Perkins-Sinapati without bail until trail is scheduled for June 4 before U.S. Magistrate Judge Rom A. Trader. Among the reasons cited by the government that Perkins-Sinapati should be held without bail is that he is a danger to the community, a flight risk and "the alleged of fenses were "committed on release pending felony trial," according to the motion authored by Assistant U.S. Attorney Barbara Eucker.

U.S. Attorney Barbara a Lu-cker.
Perkins-Sinapati's attor-ney, Michael Green, did-not immediately return a Star-Advertiser request from comment.
A preliminary hearing on the federal charges is scheduled for Sept. 9 in Trader's court.
On May 23, the Honolulu Police Department got an anonymous tip that Perkins-Sinapati was oper-ating a black Jaguar sport utility vehicle and was wanted on an outstanding

cording to a federal crimi-

nal complaint. Perkins-Sinapati rerkins-sinapati was previously charged in state court May 7 with sev-eral firearm and ammuni-tion offenses, third-degree promotion of a dangerous drug, and second-degree reckless endangering. He is scheduled for an arraignment and plea in

arraignment and plea in that case on Monday at 8:30 a.m. At this time there is no court determination deferring one prosecution until resolution of the other.

On May 23, an HPD officers aw the black Jaguar SUV and witnessed a passenger throw a dark bag out of the window. The officer recovered the bag and allegedly found 108 grams of methamphetamine.

In the bag, the officer also allegedly found a loaded, homemade 9mm pistol, "bearing no manufacturer number nor serial number," 14 rounds of 9mm Luger ammunition, and four rounds of 40-caliber Smith and Wesson HPD pulled Perkins-Sinapati over at the intersection of Farrington Hghway and Lualualel Homestead Road.

The officer saw ammunition in the cup holder of the Jaguar. HPD arrested him and his passenger on suspicion of multiple stated him and his passenger on suspicion of multiple stated him and his passenger on suspicion of multiple stated.

gun charges.
A fanny pack found in the car allegedly had 48 grams of methamphetmine in it

Perkins-Sinapati f rerkins-sinapati faces enhanced penalties if con-victed in state court be-cause he has prior felony convictions for car theft, robbery and promotion of a dangerous drug

on May 4 at about 1:13
pm., Perkins-Sinapati allegedly fired a gun in a residential area near Ewa
Makai Middle School.
The city agreed to pay
\$12.5 million to PerkinsSinapati, the driver of a
car that crashed on Sept
12, 2021, in Makhah during
a pursuit by Honolulu police officers who allegedly
left the scene, only to return and pretend they
were not involved in the
pursuit.
Three Honolulu Police
Department officers are
awaiting trial for allegedly
causing the high-speed
chase and crash and coveering it up.
Officers Joshua J.S. Nahulu, 37, Erik X.K. Smith,
25, and Jake R.T. Bartolome, 35, were fired by
the department in February. A fourth officer, Robert G. Lewis III, whose age
was not released, also
acces criminal charges in
connection with the crash
and cover-up.
All four entered notgulty pleaso on March 23,
gulty pleaso on March 23,

guilty pleas on March 23, 2023, and go to trial Oct. 7

#### obituaries

#### Brian S. Kubota

Memorial services for Brian S. Kubota will be at Immanuel Lutheran Church at 3 p.m. on Friday, May 31, 2024. Brian died Sunday, May 19, 2024. He will be laid to rest at Oak Hill Cemetery in Lawrence, Kan-



Brian Shigeo Kubota was born in Waimea, Kaua'i, Hawai'i, on March 16, 1943, to Shigeomi and Bernice Aiko (Hamamura) Kubota. He attended Koloa Grammar School and Kaua'i High School in Lihu'e, Hawai'i. He graduated from lowa State University, Ames, lowa, with a degree in Landscape Architecture and Urban and Regional Planning. He married Virginia (Ginny) Gutz on April 29, 1967 in addition to his wife, he is survived by his children: Vicki, Chicago, Illinois, and Jeff, Lawrence, Kansas. Also surviving are siblings: Adele (Don) Stevens, Honolulu, Hawai'i; Louella Rita, Makawao, Maui, Hawai'i; Sue Kubota, Honolulu, Hawai'i; and Burt (Debra) Kubota, Koloa, Kauat, Hawai'i. He was also Uncle to eight nieces and nephews.

also Uncle to eight nieces and nephews.

After graduating from Iowa State University, Brian was employed by Howard, Needles, Tammen & Ber-gendoff from 1966-1969. He then moved to Law-rence, Kansas, and worked for the city as the Assistant Planning Director. In 1970 he joined the partnership of Robertson, Peters, Erickson, and Williams and also worked as Assistant Professor of Ar-chitecture from 1972-1973. In 1978 he established Landplan Engineering, a branch of Peters, Kubota, Glenn. Some of Brian's well-known urban design projects are Downtown Lawrence, Maupintour Travel Service (International Headquarters Building), Lawrence City Hall, Alvamar Country Club Broken Arrow and South Junior High Schools, Law broken Arrow and South Julior right Schools, Law-rence Public Library and Trailridge Apartments. Al-vamar West Golf Course, Orchards Golf Course, Holcomb Park and Buford M Watson, Jr. Park are additional site plans he designed. Brian won awards for Maupintour, Lawrence Town Center, Lawrence City Hall, and the Federal Office Building, Topeka Brian served as National President and Vice Presi

Kansas.

Brian served as National President and Vice President of ASLA (American Society of Landscape Architects) and many boards and task forces throughout the years. He also served as ASLA Prairie Gateway Chapter trustee for several terms. He attained Fellowship status in ASLA due to his contributions, professional accomplishments, attitude, and character. He was President of the Boys' Club, Board Member of the Lawrence Chamber of Commerce, and Building Committee Member/Consultant of Immanuel Lutheran Church. He was also a Consultant of Corpus Christi Catholic Church and St. Lawrence Catholic Center.

After retiring from Landplan Engineering, he developed The Villas, one of Lawrence's first empty-nester, single-family home developments and The Cove, a townhouse empty-nester development. He's been a consultant for numerous developers. Brian and Ginny spent many winters in Naples, Florida. He also loved to golf and enjoyed trips on his Harley-Davidson motorcycle. Many family vacations were spent with relatives in Hawaii and exploring other parts of the country. A little-known fact about Brian is that he enjoyed single kanoke.

ploring other parts of the country. A little-known fact about Brian is that he enjoyed singing karaoke

In lieu of flowers, the family suggests memorials to Immanuel Lutheran Church, 2104 Bob Billings Pkwy, Lawrence, KS 66049 or Visiting Nurses of Douglas County, P.O. Box 1260. Lawrence, KS 66044.

#### Rev. Dr. Harold 'Doc' Itsuo Ayabe

Rev. Dr. Harold "Doc" Itsuo Ayabe, 89, of Kaneohe



Rev. Dr. Harold "Doc" Itsuo Ayabe, 89, of Kaneohe, former pastor of Windward Missionary Church and retired Department Chair and Professor Emeritus of Educational Psychology at the University of Hawai' I Manoa, went home to be with his Lord and Savior, Jeaus Christ, on May 14, 2024. Doc was born on Dec. 29, 1934, in Lawa'i, Kaua'i, Hawa'i. He is survived by daughter Rev. Dr. Ayabe siter Kikumi Kay Harada, sisters-in-Hama Chikuma, Lillian Nishihara, hanai grand-daughter Dr. Corrie Voshimura Fang, numerous nieces and nephews.

He was preceded in death by his wife, the love of his life, Ann Satoko (Nishihara) Ayabe, daughter Dr. Cheryf Emiko Milanio, parents Shohachi and Kikuo (Nagano) Ayabe, older brothers Katsumi, Keiso Hend at Kalihi Union Church Main Sanctuary, 2214 N King Street, Honolulu, Hawai'i on Wednesday, June Arrangements provided by Hosoi Garden Mortuary, Flowers by Beretania Florist.

Michael Manzano A higania

#### Michael Manzano Abigania

Michael Manzano Abigania, of Mission Viejo, Cali-fornia, Joving husband, father, grandfather, brother, and friend, went to be with the Lord on Sunday, March 17, 2024. He was born in Vigan, Ilocos Sur, Philippines on June 8, 1952. Michael is survived by his wife, Arminda Pascual Abigania: dawthers, Sharry (Graphia, L.), Matthaus,

Abigania; daughters, Sherry (Franklin Jr.) Matthews, Michelle (Victor) Abigania-Libunao, Melany (Eric) Abigania-Chun; grandchildren, Makana, Kainani Li-bunao, Malia, Micah, Jacob, Jade Matthews; brothers, Louis (Edith) Abigania, Robert (Doris) Abigania Richard (Tess) Abigania, Glenn (Sharon) Abigania, Reynold Abigania; sisters, Nancy Abigania, Vicky Abigania, Christine (Bernard Sr.) Mabini, Alice (Reggie) Hunt, and Brenda (Ho-Tai) Zerba.

Michael was preceded in death by his parents Rufo and Mary Abigania and sister Cynthia Dela

Family and friends are invited to a Celebration of Church located in Ele'ele, at 10 a.m. Casual attire is



U.S. Navy Pacific Missile Range Facility and NASA Köke'e Park Geophysical Observatory Real Estate Environmental Impact State



The Navy and NASA invite you to participate in the environmental planning process and submit comments

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PUBLIC SCOPING MEETINGS

650 Aleka Loop, Kapa'a

AGENDA 6 to 6:30 p.m. entation by Navy and NASA. Project p

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For more information visit PMRF-KPGO-EIS.com

#### EARTHWEEK: DIARY OF A CHANGING WORLD

For week ending Friday

#### Orange rivers

Scientists say melting Scientists say meltin permafrost is likely turning dozens of Alaskan rivers and streams Alaskan rivers and streams an orange color. The new rusty hue is believed to be caused by minerals once frezen in the soil now flushing into previously crystal-clear waterways. Researchers from the U.S. Geological Survey, the National Park Service and the University of Colifornia Durine author. of California, Davis, say the degraded rivers and stream could have significant implications for drinking water and fisheries in Arctic water-sheds. "We (now) see a lot of different types of metals or timerent types of metals in these waters," said re-searcher Taylor Evinge. "One of the most dominant metals is iron. That's what is causing the color change."

#### **Earthquakes**



The Tongan capital and other low-lying areas were evacuated due to fears of a tsunami following a massive undersea temblor that rocked the is-

also felt in Vanuatu. Taiwar northwestern Myanmar and from northern Morocco to Spain's Costa del Sol. already caused global tem-peratures to rise 1.26 degrees • Typhoon Ewiniar's fury in the northeastern Philippines

#### Bird flu vaccine

A new Dutch study finds that bird flu vacinds that bird flu vac-cines given to Jaying hens are effective and could soon be used to protect poul-try from a virus that has rav-aged birds and other species around the world. The tests were carried out at two farms and showed the vaccine was effective against the virus for eight weeks after vaccina-tion. Egg prices have soared as the highly pathogenic avian influenza killed or forced the culling of millions of forced the culling of millions of poultry around the world. Since there is a threat of the

H5N1 strain of bird flu mutating to more easily infect peo-ple, researchers say swift vaccine development would be our best protection.

#### Warming yardstick

Researchers at Brit-ain's University of Leeds have concluded that three individual years of very high global average temperatures will be enough to say that the world has breached the 15-degree Cel-sius climate warming goal set out in the 2015 Paris Agree-ment. Carbon emissions have

above pre-industrial levels, killed at least seven pe above pre-industrial levels, with some years almost reaching 1.5 degrees. 'Once you've crossed the 1.5 degree threshold in your annual temperature changes on three occasions (consecutive or not), it's very likely that we will have crossed the Paris Agreement 1.5-degree level,' said climate expert Lawrence Jackson. amid flooding, toppled trees and fierce wind.

## **Tropical cyclones**

Cyclone Remal left at least 65 people dead across eastern India and Bangladesh, one of the

#### Vanished glaciers

Vanisnee glaciers

Venezuela has become the first country in the Americas to lose all of its glaciers due to global heating. The six former glaciated peaks in the state of Merida were once a source of great pride and the origin of legends that relate them to mythical white eagles. The International Climate and Cryosohere Climate and Cryosphere

Glacier, also known as La Corona or "the crown," is already too small to be classi-fied as a glacier any longer. "Our tropical glaciers began to disappear in the 1970s and to disappear in the 1570s and their absence is felt," astro-physicist Alejandra Mello told the TV network Tele-mundo. "It is a great sadness, and the only thing we can do is use their legacy to show children how beautiful our Sierra Nevada once were."

By Steve Newman

#### **Iceland** eruption

Iceland's restive Reykjanes Peninsula produced its fifth eruption since December and the most powerful since the volcanic area became the volcanic area became active again three years ago. The country's Met Office said lava fountains reached 115 feet in height. Residents of the small fishing town of Grindavik were forced to evacuate yet again as lava surged from the new fissure. The nearby Blue Lagoon geo thermal spa was also closed and evacuated again.

Distributed by Andrews Mc Initiative recently declared that the remaining Humboldt Meel Syndication; @MMXXIV Earth Environment Service

## Make peace with nature, official warns

By Jake Spring

SAO PAULO >> The world must make peace with na-ture or risk fueling more global conflicts like the war in Gaza, the president of the upcoming United Nations COP16 biodiversity summit

said Friday. The October summit in Colombia is charged with ne gotiating next steps to imple-ment the landmark 2022 ment the landmark 2022
Kunning-Montreal accord—
likened to the Paris Agreement on climate change, but for nature—in order to address the drastic decline in 
biodiversity globally.
Climate change, does not biodiversity globally.
Climate change, does not be desired to a 
69% decline in global wildlife 
populations since 1970, according to nonprofit WWF.
Colombia's environment 
minister, Susana Muhamad.

minister Susana Muhamad. laid out her priorities as COP16 president, along with a warning if the world fails



An aerial view shows deforested land in Brazil during "Operation Green Wave," conducted by a Brazilian environmental agency.

to reform global governance to solve problems like the climate crisis.

The situation currently in Palestine, where humanity is observing how a people of the world is being crushed millitarily. And there's not even the capacity of the U.N. to provide the humanitarian relief, "Muhamad said the "suumatierian relief," Muhamad said during a five-minute speech Multilateral institutions. during a five-minute speech at the Atlantic Council think

Multilateral institutions

with unprecedented chal-lenges like climate change and must be overhauled or risk the world slipping into rule by the strong through violence, Muhamad said. Colombia's top priorities for COP16 include an "in-

reform the global financial system that will allow develpping countries to make ng environmental commitments without taking on more debt, she said.

Countries must submit Countries must submit biodiversity targets before the summit. Colombia will prioritize working with U.N. officials to measure how those commitments line up with 2030 goals in the Kunming-Montreal agreement, she said.

Colombia also will seek to boost the participation of In-

boost the participation of In digenous people and tradi-tional communities in the process, by organizing three pre-summit events giving them an opportunity to lobby governments.

#### NOTICE REGARDING FILES OF DECEASED ATTORNEY

#### CLAYTON C. IKEI

Current and former clients of Clayton C. Ikei may attempt to recover their client files and funds. The Hawaii Supreme Court appointed Fric Lee Niemeyer as Trustee to collect and inventory Mr. Iker's client files and funds and return them to his clients. Such clients may respond to this notice within the next 90 days using the information below. Trustee prefers Email but will respond regardless. Trustee will destroy unchaimed files after the set time.

ERIC LEE NIEMEYER 700 Richards St., Ste. 1108 Honolulu, Hawai'i 96813 e-mail: hawaii.lawyer@hotmail. Telephone: (541)840-2840

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## U.S. Navy Pacific Missile Range Facility and NASA Köke'e Park Geophysical Observatory Real Estate Environmental Impact Statement



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For more information visit PMRF-KPGO-EIS.com





Please contact us if you have \$1,000 or more to invest



Gareth I Kaneshiro, AAMS™, CRPC™

# Trump sees 'breaking point' for U.S. if he gets jail time

By Susan Heavey

WASHINGTON >> Donald Trump said Sunday he would accept home confinement or jail time after his historic con-viction on criminal charges by a New York jury last week but that it would be tough for the public to accept

the public to accept.

Trump is scheduled to be sentenced July 11, four days before Republicans gather to formally choose their presi dential nominee to face Dem-ocratic President Joe Biden in November's election.

November's election. Prison time is rare for people convicted in New York state of felony fashification of business records, the charge Trump, the Republican presidential candidate, faced at his trial. The maximum sentence for such a charge is four years' imprisonment. "I'm not sure the public would stand for it," the former president told Fox News of a potential prison sentence.

sentence. "I think it'd be tough for the public to take. You know

Thinka to six objective to take. You know, at a certain point there's a breaking point." Trump has vowed to appeal his conviction by the New York jury, which found him guilty of 34 felony counts over falsifying documents to cover up a payment to silence a porn star ahead of the 2016 election.

To succeed on appeal, Trump, 77, must demonstrate that Justice Juan Merchan made significant errors overseeing the trial.

His lawyers have said they expect to take the case to the expect to take the case to the

expect to take the case to the Supreme Court, On Sunday, Trump, who tried to oust Merchan from the case, repeated allegations of bias by the judge and the district

by the judge and the district attorney in the case.
"The United States Su-preme Court MUST DECIDE" Trump wrote on social media. Trump plans to appeal after his July 11 sentencing date, his lawyers say. If an ap-peal in New York state courts proves unsuccessful, he could appeal to the Supreme Court. Trump's attorneys would have to persuade at least four of the court's nine iustices to hear his case.



ormer President Donald Trump on Sunday said he was not sure the U.S. public yould stand for it" if he were to receive a prison sentence for his felony busi-ess fraud conviction. Trump headed to a news conference Friday in New York.

To prevail, Trump would then have to demonstrate that the state prosecution violated his federal constitu tional rights and that his legal team followed proper proce-dures during earlier stages of his legal proceedings.

#### 'Speak out against this'

"Speak out against this' Trump has used his con-viction to step up his fund-raising efforts but has not otherwise sought to mobilize his supporters, in contrast to his comments protesting his 2020 loss to Biden that were followed by a deadly attack by his supporters on Jan. 6, 2021, on the U.S. Capitol. Asked what Trump sup-porters should do if he were

porters should do if he were jailed, Republican National Committee Co-Chair Lara Trump told CNN, "Well. they're gonna do what they've done from the beginning, which is remain calm and protest at the ballot box on November 5th. There's nothing to do other than

make your voices heard loud and clear and speak out against this." Some Trump supporters have hung U.S. flags upside down following the verdict. The inverted flag has been a symbol of distress or protest in America for over 200 years. At least one Democratic

lawmaker expressed concern Sunday about the potential

for Trump's supporters to respond violently to his respond violently to his conviction. "His base listens to him.

They don't listen to Lara Trump. And this is another

Trump. And this is another dangerous appeal to violence," Democratic U.S. Rep. Adam Schiff told CNN. But U.S. House Speaker Mike Johnson, a Trump ally, said any response must be lawful. "We are the rule-of-law party—chaos is not a conservative value. We have to fight back, and we will with everything in our arsenal. But we do that within the conflies of the rule of law, Johnson told 'Fox News Sunday."

The matter is unlikely to be resolved before the No-vember presidential election, when Trump will seek to take back the White House from back the White House from Biden Opinion polls show a close race between the two men and suggest that his con-some Republican voters and independents. In other developments: >> Roughly a day since joining TikTok, Trump had attracted 3 million followers on the short video social me-dia platform that he tried to ban as president on national

ban as president on national security grounds.
Biden's election campaign

is already on TikTok, with

over 340,000 followers, although Biden has signed a bill that would ban the app, which is used by 170 million Americans, if its Chinese owner, ByteDance, fails to

owner, Bytelance, laits to divest it. Trump posted a launch video on his account, which has the address @realdon-aldtrump, on Saturday night. The video, which has more than 56 million views, showed Trump greeting fans at an Ultimate Fighting Championship fight in Newark, N.J. Stars Trump on Sunday denounced Larry Hogan, the Republican Senate candidate in Maryland, for urging Americans to "respect the verdict".

icans to "respect the verdict against Trump — criticizing a prized recruit who has given the party a chance of winning a seat that has reliably been

a seat that has reliably been held by Democrats. Hogan "doesn't deserve the respect of anyone in the Republican Party at this point, and quite frankly any-body in America, if that's the way you feel, "Trump, who is married to Trump's son Eric, said in an interview on CNN. She did not directly answer follow-up questions about whether the Republican Party would continue to Party would continue to support Hogan

The New York Times contributed to this report

# **Around the**

#### Netanyahu aide says Israel accepts Biden's Gaza plan

JERUSALEM >> An aide to Prime Minister Benjamin Netanyahu confirmed Sunday that Israel had accepted a framework for winding down the Gaza war now being advanced by U.S. President Joe Biden, scribed it as flawed and in need of much more work.

In an interview with Britain's Sunday Times, Ophir Falk, chief foreign policy ad-visor to Netanyahu, said Biden's proposal was "a deal we agreed to — it's not a good rly want the hostage

#### Rising heat could worsen Gaza Strip crisis, U.N. warns

Aid groups remain unable to deliver "ba-sic necessities" including tents and clean drinking water to millions of Palestinians in the Gaza Xirip as temperatures rise and diseases spread, a United Nations humani-tarian official said Sunday, as talks contin-ued about reopening a critical border crossing that has been closed for weeks. Scott Modercon a seation officials

Scott Anderson, a senior official at UNRWA, the main U.N. agency aiding Pales tinians in Gaza, told CBS News on Sunday that the trickle of supplies has not been enough to meet people's basic needs.

#### **Boeing and NASA reschedule** Starliner debut for Wednesday

Staffnier debut for weeniesualy Boeing and NASA said Sunday their teams are preparing the first crewed launch of the new Starliner space capsule Wednesday after scrubbing its imaugural test flight Saturday. The craft will carry two astronauts to the International Space Station. NASA said its teams traced the problem encountered during Saturday's countdown to a ground power sunuly.

#### Teacher placed on leave over 'mock slave auction' in class

Affith grade teacher in Massachusetts who held a "mock slave auction" and used a racial stir in a classroom has been placed on paid administrative leave, the district superintendent said.

The mock auction was held in January during a history lesson, the superintendent of Public Schools of Northborough and Southborough, Gregory Martineau, said in a letter to parents dated Wechesday, In Agritt the teacher read a book to the class and used a racial slur not in the book.

Star-Advertiser news services

## **Hunter Biden to begin** trial today in gun case

By Glenn Thrush

Biden will go on trial on gun charges Monday in Delaware within walking distance of his father's campaign headquarters in Wilmington, less than a Donald Trump's felony conviction in New York

A year ago the younger Biden seemed unlikely to face trial on the weapon charges he was facing ove a firearm application that a mearm application that prosecutors say was falsified, or from more serious charges of failing to pay taxes from overseas business activities at a time when he was using drugs and alcohol heavily and spending lavishly.

But a plea deal, which of-fered him some immunity from prosecution and did not include prison time, im-ploded in July. The judge in the case punched holes in the agreement, to the de-light of Trump's Republican night of Frump's republican allies in Congress who tried to scuttle that deal and have portrayed Biden's legal problems as equivalent to those of their party's 2024 presidential candidate in an effort to impeach President Joe Biden.

e biden. Still, it is the son — not e father — who will be on trial twice during an election

He is set to report to the

fourth-floor courtroom of Judge Maryellen Noreika when jury selection begins today at 9 a.m. in a trial ex-pected to last three to five days. The other, set to begin in September, involves a sehis failure to file returns for

a number of years. In September a federal grand jury charged Hunter Biden with three felonies: lying to a federally licensed gun dealer, making a false claim on the federal firearm application used to screen applicants and possessing an illegally obtained gun for 11 days, from Oct. 12 to 23, 2018. "Hunter Biden possessed

"Hunter Biden possesses a firearm while knowing he was an unlawful user of or addicted to any stimulant, narcotic drug or any other controlled substance, in vie lation of federal law," prose cutors said.

If convicted, Biden could face up to 25 years in prison and 750,000 in fines. But and \$750,000 in fines. But nonviolent first-time offend-ers who have not been accused of using the weapon in another crime rarely get serious prison time for the charges. In fact, legal experts say it is more likely a sentence could include a central element of the original plea deal: mandatory enrollment in a firearm diversion program intended version program intended to reduce incarceration rates for the least serious

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For more information visit PMRF-KPGO-EIS.com

# Red Hill tank ventilation rattles some residents

HONOLULU — The Navy has begun tank ventilation and air quality monitoring at the Red Hill fuel storage

at the Red Hill fuel storage facility. Navy Closure Task Force-Red Hill announced on its mobile app last week that the state De-partment of Health had ap-proved its plans to begin

partment of Health had approved its plans to begin cleaning operations and venting of the facility's Tank No. 8.

It's the latest step in the closure process of the Red Hill facility, but some residents are nervous about potential health and environmental risks as the plan moves forward.

Walter Chun, a member of the Red Hill Community Representation Initiative, said in an email that the Navy's plan to 'intentionally discharge the vapor and particulates from the 12.5M gallon fuel tank at Red Hill ... to the environment (risks) human exposures to hazardous substances, especially for children and infants, and pose a potential wildfire risk for the nearby residential neighborhoods."

The Navy task force has

instailed nine air quality monitoring stations around Red Hill's perime-ter, including the at Hal-awa Correctional Facility. Navy officials said the sta-tions will monitor air quality as well as atmospheric data such as air speed and

data such as air speed and wind direction.
"NCTF-RH has worked closely with DOH to ensure ventilation of the tanks is done in a manner that will not pose a risk to human health," said task force deputy commander.

that will not pose a risk to human health," said task force deputy commander Rear Adm. Marc Williams in a statement included in the news release on the app. "Our team is committed to safely decommissioning the facility, and tank wentilation operations get us another step closer to this goal." In November 2021, JP-5 jet fuel stored at Red Hill tainted the Nay's Oahu water system that serves 93,000 people. The facility sits just 100 feet above a critical aquifer which most officials warend the fuel posed a serious risk to Oahu's water supply. The Nay for its part insisted the World War Il-era facil-

ity was safe and critical for national security. After months of resist-

national security.
After months of resisting a state emergency order to drain the tanks, in March 2022 the Pentagon announced that Red Hill would be defueled and permanently shut down. It took a joint military task force nearly a year to make repairs and upgrades to the aging facility and the pipelines connecting them to Joint Base Pearl Harbor-Hickam to safely extract over 104 million gallons of fuel from the tanks.

Repairs concluded in summer 2023 and by March the defueling task force had removed most of the fuel with the exception of residual sludge within the tanks that would require deeper cleaning to remove.

The defueling task

quire deeper cleaning to remove.

The defueling task force's commander Vice Adm. John Wade told the Honolulu Star-Advertiser in an exit interview before NCTF-RH took over operations that while the removal of the fuel got one major risk out of the way, many more dangers remain before the closure process is over.

"Defueling had its own

challenges and risks, closure and long-term envi-ronmental remediation would be notified. Members of the CRI ronmental remediation will bring new challenges and new risks," Wade said. "So it's critical to the ... health of the workers and the community and the environment to focus on safety."

have been critical of offi cials, accusing them of withholding information withholding information and dodging questions. The Navy has in turn argued that CRI members have been aggressive and disrespectful. The EPA has called for a mediator to be brought in to manage the dispute.

brought in to manage the dispute. "Although the CRI raised concerns with the allowance of discharging contaminants and pollutants in March 2024, both the Navy and EPA ignored these concerns," said Chun. "Their focus since March was attempting to control the CRI meetings. Our focus in Hawaii must narrow in on the practices to allow intentional contaminants and pollutants to harm people and the environment."

the community and the environment to focus on safety."

During the February meeting of the Red Hill Community Representation Initiative, the facility's former fuel director Shannon Bencs attended and asked officials how they will approach community safety as they try to clear out gases and chemicals. "Now that you've defueled the tanks and the pipelines, now there's poisonous toxic fumes in those tanks, and the only way to vent them out is through the top of Red Hill and then through the (vents)." Bencs said, warning that it will be "extremely toxic, and it will flow down to Halawa Valley and down to Pearl Harbor."

Rear Adm. Stephen Bar-Rear Adm. Stephen Barthan people and the electronic to the provision ment."

The CRI put out a public notice Wednesday night that said venting operations would begin the next day and will continue until all 14 tanks that held fuel are degassed, with operations set to take place daily between 6 a.m. and 8 p.m. and advising "the discharge from the tanks is

not filtered or captured. There is a risk of exposure

Monday, June 3, 2024 • A5

There is a risk of exposure to toxic fumes from the discharge. People are advised to be vigilant about their health."

The CRI advised that people living or working in the vicinity of Moanalua, Salt Lake, Halawa Correctional Facility, and all miliary housing surrounding tary housing surrounding the Red Hill fuel tanks should be aware and rec-ommended people con-sider limiting time outdoors and wearing

outdoors and wearing masks.

In a Thursday media release, state health officials said their conditional approval of the venting plan requires the Navy to notify the public at least 12 hours before the start of venting a tank, and that it immediate notify the Health Department if it detects an "exceedance" of expected chemicals in the air and stop the venting.

The approval also limits the number of tanks that may be vented in a calendary ser to six, the number of tanks that may be vented at any time to two, and requires the Navy to notify DOI within 24 hours of starting to vent a second tank.

### Green: Maui wildfire victims have until June 15 to register for One 'Ohana Fund

Kacie Yamamoto

Families who lost a loved one, or people who suffered serious injury, in the August wildfires or Maui now have until June 15 to submit a registration form for the One 'Ohana Fund, Gov. Josh Green an-

nounced Friday.
The deadline for registered claimants to submit completed claim forms is

The extension will give Maui wildfire survivors more time to decide whether they want to seek compensation through the fund.

Announced in Novem-ber, the \$175 million One Ohana Fund was designed to allow those eligible to participate in settlements and avoid lengthy and uncertain litigation for claims of vildfire-induced losses The fund aims to provide money to affected families and individuals quickly.

Payments to surviving family members who lost loved ones will be \$1.5 million, while settlements

for people who suffered severe injuries will vary. The deadline for appli cations was last extended to May 31 at the beginning

cations was last extended to May 31 at the beginning of May.
"From the time we introduced the fund in November, our intention was to provide families with a timely option that would potentially allow healing and recovery more quickly." Green said in a news release.
"The response from the survivor community last time we extended the deadline was encouraging, and I want to respect the requests of other survivors and their counsel to have additional time to determine what is right for their families."

The fund enompasses contributions from Hawaiian Electric (475 million), the state of Hawaii (855 million), Charter/Spectrum (\$2.5 million), Hawaiian Telcom (\$2.5 million), Hawaiian Telcom (\$2.5 million), Hawaiian Telcom (\$2.5 million), Hawaiian Telcom (\$2.5 million), Hawaiian Telcom (\$2.5 million), Hawaiian Telcom (\$2.5 million), Hawaiian Telcom (\$2.5 million), "Survivors and their at-

million).

"Survivors and their attorneys have been asking

for additional time to complete their submis-sions of claims to the fund," retired Judge Ron-ald Ibarra, who serves as the fund's administrator. said in the release

"We all believe that this compassionate extension is aligned with the mission of the fund, to give survivors the option of seeking compensation without the risks that accompany litigation.

The fund began accepting applications March 1. and since then it has re ceived 48 registrations from families who have lost loved ones and 17 registrations from injured urvivors, according to the release

The fund is already pro cessing these claims, and the extension will not delay this process for claims already submitted.

lbarra said the program expects to begin making payments to those approved within the next 60 to 90 days.

Honolulu-based attor-ney Richard M. Sakoda, revenite and the sacron was a constraint of the sacron was a c

Phase Lof the One Phase I of the One 'Ohana Fund focuses on providing compensation to families who lost loved ones and to people se-verely injured in the fires. Phase II will involve the settlement of commercial and residential property

anns. The Mani wildfires killed at least 101 people and destroyed or damaged almost 3,000 struc-Applications and more information for

information for the fund can be found at www. mauicompensationfund.



bor."
Rear Adm. Stephen Barnett, commander of Navy
Region Hawaii, told Bencs,
"that is something that
we'll be working through
as far as the ventilation,"
and that the Navy would

Here to Help.

8 years and the beatings got progressively worse. She decided it was time to get out and find a safer environment to raise her two-year-old daughter. She turned to Domestic Violence Action Center for

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U.S. Navy Pacific Missile Range Facility and NASA Kōke'e Park Geophysical Observatory Real Estate Environmental Impact State



The Navy and NASA invite you to participate in the environmental planning process and submit comments

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The Navy proposes to maintain long-term Department of Defense use of 8,348 acres of State of Hawai'i lands on Kaua'i for or the vary proposes of maintain largeterin Department of the military readiness mission. The Navy operates on 410 acres of the total acres leased from the State. The majority of the leased and easement areas remain intentionally undeveloped as they are used as an encroachment buffer and security for the facility's mission. NASA proposes to maintain long-term use of 23 acres of State of Hawai'i land on Kaua'i for continued operations of KPGO. The Proposed Action is needed because existing real estate agreements for these State lands are set to expire between 2027 and 2030.

The Navy and NASA will host public scoping meetings at three locations on Kaua'i. Attend any of the public scoping meetings to talk story, learn more, and submit written or oral comments. Your voice is important to this planning process. Meetings will be held from 5 to 8 p.m. HST at the following locations:

PUBLIC SCOPING MEETINGS

650 Aleka Loop, Kapa'a

AGENDA

6 to 6:30 p.m. entation by Navy and NASA. Project pr

ting a public scoping period under the National Environmental Policy Act and Hawai Statutes (HRS) Chapter 343 to receive comments on the scope of the EIS. Members of the public are encouraged to participate in the environmental planning process by providing input on the proposed real estate action including potential alternatives, environmental or cultural concerns, information the public would like the Nary and NASA to know, and any other information the public would like to see addressed in the EIs. The scoping meetings will also serve as an opportunity to obtain public input concerning potential effects to historic properties pursuant to Section 106 of the National Historic Preservation Act and HRS Section 6E-42. Your voice is important to this planning process.

The public scoping period begins May 8, 2024, and ends June 17, 2024. Please attend a public scoping meeting and visit the project website to learn more. For language assistance or special accommodations, contact the PMRF Public Affairs Officer, at (808) 335-4740 or PMRFPublicAffairs@us.navy.mil. Requests for language assistance or special accommodations should be made at least seven days prior to the public meeting.

Submit Comments in Person, Online, or by Mail. Submit comments by June 17, 2024. The public may submit comments in any of the following ways: In person at a public scoping meeting, through the project website at PMRF-KPGO-EIS.com, or by mail, postmarked by June 17, 2024 to the following address: Naval Facilities Engineering Systems Command, Hawai'i, Environmental OPHEV2, Attention: PMRF and KPGO RE EIS Project Manager, Ms. Kerry Wells, 400 Marshall Road, Building X-11, Pearl Harbor, HI 96860 For more information visit PMRF-KPGO-EIS.com

# nation&world

# Biden to sign order letting him seal border

Joe Biden will sign an executive order today halting certain asylum claims at the U.S.-Mexican border until ossings fall dramatically a sweeping attempt to curl the flow of migrants and address one of his biggest lia bilities ahead of November's election with Republican

Donald Trump. The move would effec-The move would effec-tively prevent new asylum claims by migrants who walk across the border until levels drop by roughly two-thirds of where they stand today, according to people familiar with the matter, who requested anonymity to de-tail the plans before they are publicly announced.

The measure would kick in once levels hit roughly 2,500 crossings per day be-tween ports of entry. U.S. authorities recorded about 4,300 encounters per day in April with undocumented migrants between ports of entry, the most recent data available. That means the administration can move quickly to bar a large swath of asylum claims, though the policy is sure to be chalenged in court. Lawmakers and others have been invited to the White House for an event authorities recorded about

to about 1.500 a day, th people said. The Associated Press reported earlier on the president's plans. The order is Biden's most

aggressive move yet to ad-dress the crisis on the U.S.-Mexican border, which has seen record levels of migrants and taxed communi-ties across the country struggling to deal with influx of new arrivals. A bi influx of new arrivals. A bi-partisan Senate plan that would have given Biden sim-ilar powers was blocked by Republicans earlier this year at Trump's behest, denying the president a political win and prompting him to act unilaterally. Today's order is politi-salteristic, the till barke oriti

cally risky. It will invite criti-cism from Biden's left flank, which has blasted moves to ramp up deportations as an inhumane approach to the crisis. That has the potential crisis. That has the potential to stymic his efforts to shore up an electoral coalition already riven by divisions over his handling of the Israel-Hamas war and overarching concerns over his age and fitness to serve a second term.

But the move underscores how the administration has been compelled to act alone to address an issue that has become a centerpiece of the



President Joe Biden is expected to sign an executive order today letting him temporarily seal the U.S. border with Mexico to migrants when crossings surge. Biden boarded Air Force One as he departed Monday for Connecticut from Delaware Air National Guard Base in New Castle, Del.

2024 election. The action could allow Biden to high light how Republicans killed the bipartisan bill.

Trump has hammered Biden on the border, ramping up attacks on immi-grants and spotlighting violent crimes allegedly violent crimes allegedly committed by people who crossed the border. Polls show a close race between Trump and Biden, and vot-ers say the border and immi-gration are critical issues. Biden's timing reflects an effort to deter an increase in crossings that typically hap-pens in summer and early tap-

fall right before the election. and comes amid a political transition in Mexico.
Outgoing Mexican President Andres Manuel Lopez

Obrador has taken steps to Obrador has taken steps to curb crossings. His succes-sor, Claudia Sheinbaum, who was elected the next leader Sunday, doesn't take office until Oct. 1, and it is unclear what actions she will continue to take. The U.S. administration has said it has no reason to expect a change. Border crossings have al.

hange.
Border crossings have already fallen from the nigns seen in late 2023, and Biden

weeks to tighten immigra-tion rules and drive down those numbers further. In May the administration proposed a rule that would allow the U.S. to expedite expulsions of undocumenter migrants seeking to claim

migrants seeking to claim asylum in certain cases, though the change will only affect a small percentage of those caught on the border. Biden will look to enact some of the changes under Section 212(f) of the Immigration and Nationality Act, a disputed authority that will surely invite legal

challenges. Trump's action on immigration while pres dent, including his contro-versial travel ban, also and tested the boundari of the law. Some of his mea sures were overturned in court, limiting the options

vailable to Biden. The American Civil Liber ties Union led the charge against the Trump adminis tration's attempt to block asylum in 2018. The group has signaled that it is ready

has signaled that it is ready to challenge any order that to challenge any order that Top Department of Home-land Security Officials have stressed the limits of execu-tive action. More broadly, the White House has argued the main constraint on ad-dressing the situation at the border is a lack of funding sud-theffine issues Ditche and staffing — issues Biden can't address on his own. The White House has re peatedly said any executive action it takes will not match the power that a bill passed by Congress would have. Still, Republicans have

Stili, Republicans nave criticized the expected move. "It's too little too late," House Speaker Mike Johnson told Fox News on Sunday. "The only reason he's doing that is because the polls say that it's the biggest issue in America."

## Trump's harder line on immigration appears to resonate, polls show

By Jazmine Ulloa

WASHINGTON >> Former President Donald Trump has described his plans to re-move large numbers of im-migrants lacking permanent legal status from the coun-try if elected to a second term by citting the mass de-portations under President Dwight D. Eisenhower in the 1950s. In that initiative, federal

In that initiative federal agents and law enforcemer officers used military techniques such as sweeps, raids and surveillance check points — as well as a blunt form of racial profiling — to round up workers living in the country illegally and load them onto buses and boats. As many as 1.3 million people were expelled, mostly Mexican and Meximostly Mexican and Mexican American workers, some
of whom were U.S. citizens.
Crucial to the initiative —
named Operation Wetback,
for the racial slur — was intense anti-inmigrant sentiment. Officials at the time
used that sentiment to justify family separations and
overcrowded and unsanitassed conditions are conditions. tary detention co practices that the Trump administration would deploy decades later in its own im migration enforcement

As the 2024 presidential election heats up, some Latino advocacy and immigrant-rights groups are sounding the alarm that Trump's tactics could amount to a repetition of a sordid chapter of American history. But recent polling shows that Trump's position on immigration appears to be resonating. About half of Americans have said they would support mass depor tations of immigrants in the

tations of immigrants in the country illegally, according to a CNN poll conducted in January by the research firm SSRS. Authorities have reported record numbers of migrant apprehensions at the southern border for three straight years, including 24 million apprehensions in the fiscal year that ended in September, Although the numbers have dropped sharply in rehave dropped sharply in re-cent months, immigration remains an albatross for President Joe Biden: Even some Democratic mayors have complained that they need help from the federal government to contend with the migrant populations in

the migrant populations in their cities. Trump's restrictive ap-proach to immigration, both legal and illegal, helped push Americans of various political stripes to support more permissive policies. During his first term Trump narrowed the path to asylum, sharply reduced the numbers of visas and refugee admissions and enacted a

admissions and enacted a travel ban on people from several countries, most of which had Muslim majorities. His administration rolled back protections for immigrants brought into the country illegally as children and it separated migrant fam ilies at the southern border. By the time he left the White House, more Amer cans favored increasing im-migration for the first time in six decades of Gallup polling

But more recent surveys om Gallup and others have found that the number of people who believe immi-gration is generally benefi-cial to the country's culture and economic growth has been slowly eroding from a recent high. A small but growing minority of Ameri-cans are increasingly con-cerned about its impact on drugs, crime, taxes and na-tional identity. An open-ended Gallup poll released April 30 found that for the third straight month, most Americans

onth. most Americans cited immigration as the most important problem facing the United States. That was the longest stretch that the issue had topped the list in the survey's 24-year history. A Gallup poll released Friday showed in

It is not just illegal immi-gration causing consterna-tion. A different poll in March from The Associated Press-NORC Center for Public Af-fairs Research found that Americans have become more worried about immi grants in the country legally committing crimes, though many studies have found no

correlation between immi gration and crime, regard-less of whether people

less of whether people entered the country legally. In February a nationwide New York Times/Siena College poll showed that 49% of voters either strongly or somewhat supported making it harder for migrants at the southern border to seek asylum in the United States, slightly more than the 43% who either strongly or somewhat opposed doing so.

As Democrats and Republicans have drifted furt apart on immigration, Re-publicans are far more likely

concern.
A Pew study in February found that 70% of Republicans described the challenges at the southern border as a "crisis," compared of the concentration lenges at the southern border as a "crisis," compared with just 22% of Democrats. Another poll in 2023 from Gallup showed 73% of Republicans wanted immigration to be decreased. By contrast, only 18% of Democrats said they wanted the same. Republicans were als far more likely to see immigrants as worsening the country's social and moral. country's social and moral values, job opportunities and taxes.

U.S. Navy Pacific Missile Range Facility and NASA Kōke'e Park Geophysical Observatory Real Estate Environmental Impact Sta



The Navy and NASA invite you to participate in the environmental planning process and submit comm

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Tuesday, June 4, 2024 • A5

# City land donation proposed for homes

HONOLULU — For the third time in two decades, city officials are seeking to make residential use out of

make residential use out of a large parcel of vacant city land in Kailua. Two Honolulu City and in Kailua. Two Honolulu City Council members plan to introduce a resolution on Tuesday, June 4, proposing to largely give the 10-acre site, valued at \$10.5 million, to the state Department of Hawaiian Home Lands (DHHL) so the agency can develop about 20 single-family homesteads for beneficiaries.

homesteads for beneficia-ries.

If successful, the plan would dispose of an un-used properly in the Kala-heo Hillside area that the city has owned for 63 years, and establish the first DHH. homestead in Kailua.

Two prior attempts, however, have failed. And some adjacent neighbors previously have opposed development of housing on the parcel despite it be-ing zoned for single-family housing.

Council member Esther Kla'aina, whose district in-cludes Kailua, has au-thored the resolution with Council Chair Tommy Wa-ters.

Kiaʻaina said Friday that the proposal represents historic opportunity for the city to establish the first-ever DHHL community in Kailua and to honor Prince Kuhio, who was pivotal in establishing the homestead program and the City and County of Ho-

"Through this city land transfer, we hope to ad-dress the critical need for housing on Oʻahu while helping our Native Hawai ian community," she said in a statement. "Establish ing a Hawaiian homestead in Kailua will ensure that Native Hawaiians can con-



This vacant 10-acre parcel in the Kalaheo Hillside area of Kailua, Hawai'i, has been owned by the Cit Honolulu since 1961 and is zoned for residential use. A pair of Honolulu City Council members prop-largely gifting the land to the state Department of Hawaiian Home Lands for homestead use. owned by the City of

tinue to live and thrive in this special place." Honolulu Mayor Rick Blangiardi endorsed the

proposal.
"This initiative is consis-"This initiative is consis-tent with the city's firm commitment to address O'ahu's affordable housing O'ahu's affordable housing crisis by partnering with other organizations that share the responsibility and desire to facilitate the availability of affordable housing for Native Hawaiians — a community significantly impacted by the rising costs of land on O'ahu," he said in a statement.

The effort by Kia'aina and Waters represents a third try in the past two decades by city officials to have the land once slated for an elementary school to become housing.

The city bought the property from Kaneohe Ranch in 1961 to provide

the state Department of H.
land for an envisioned Kalaheo Elementary School.
At the time the city was in
charge of building schools.
In the years since newschool development was
transferred to the state
Department of Education,
plans for Kalaheo Elementary were abandoned because four existing
elementary schools in the
area — Aikahi, Kaliua, Kainalu and Mokapu — were
sufficient.

sufficient.
With no need for a school on the site, the state Board of Education approved the city's desir to dispose of the parcel, which has views of the ocean and borders 18 homes along with the Kai-lua Assembly of God church below roughly 200 acres of preservation land.

In 2006, city leaders identified the site as one of a dozen city properties suited for low-income or homeless transitional

homeless transitional housing.
But that effort, which envisioned contributing the land to a public-private development partnership at little cost to produce 60 multifamily homes, was never realized despite motivation to help address a critical need for affordable housing.
Another plan was floated in 2015 to sell the property for fair market value to a private developer via sealed bids. The Council's then-chair, Ernie

oper via sealed bids. The Council's then-chair, Ernie Martin, introduced a resolution to seek bidders, but that effort fizzled as well.

Martin's plan encoun-tered pushback from area residents who expressed concerns with issues that included traffic and land stability Ikaika Anderson, who at

the time was the area's representative on the

Council, reported that an Council, reported that an overwhelming message from Kalaheo Hillside resi-dents was that the city shouldn't sell the land to the highest bidder for resi-dential development. "The community op-poses development and any sale," Anderson said at the time. Hawaii's affordable housing crisis has only

Hawaii's affordable housing crisis has only gotten worse over the past two decades. At the same time, DHHL has a lot of capital to expand its homestead development

The state Legislature in 2022 appropriated \$600 million for the agency to mainly develop home-steads for beneficiaries, who must be at least 50 percent Hawaiian to diectly receive 99-year land leases for \$1 a year from DHHL but must pay for or build their own houses.

About 28,700 applicants are on DHHL's wait list for homesteads, and the agency aims to use the \$600 million to produce 2,180 lots. Most of these lat development projects. lot development projects are large-scale, such as 450 lots at East Kapolei II

Asia risa a basis loss.

Asia risa a basis loss.

Laiopua Villages on Havillages on Holokalages of the Havillages of the

like this."

The resolution proposes to mainly give DHHL the land as an important public purpose.

City property tax assessors value the land at \$10.5 million. The resolution proposes a sale price of \$495.323. This amount, according to the resolution to the resolution to the resolution. according to the resolu-tion, represents the city's cost for previously ex-DHHL as part of the city's

NASA

#### obituaries

#### Reynaldo Jacinto Abrigo

Reynaldo Jacinto Abrigo passed away on May 17, 2024, in Lihu'e at the age of He was born on April
 17, 1970, in the Philippines. He was a cook.

He was a cook. He was preceded in death by father Ramon

Abrigo. He is survived by mother Charito Abrigo, daughter Mina (Ferdie) Guerrero sons Reyson Abrigo, Kasen Abrigo, sister Maribel (Lito) Mejia, brother Nino (Jodi) Abrigo, two grandchildren, numerous nieces

and nephews.
A service is Thursday,
June 13, 2024, at Immacu-June 13, 2024, at minacu-late Conception Church in Lihu'e. Visitation begins at 8:30 a.m., Mass at 10 a.m., and burial to follow at Ka-lapaki Bay Memorial Park. Borthwick Kaua'i Mortu-ary is assisting the family with arrangements.

#### Susan Pedronan Andrade

Susan Pedronan Andrade passed away on May 18, 2024, in Alea, O'An ua the age of 83. She was born on July 6, 1940, in Bangui, Ilo-cos Norte, Philippines. She was a supply clerk and nurse aide. She was preceded in death by husband Alfred Andrade, parents Gregorio Pedronan and Luisa Pe-dronan, brothers Marcello Pedronan and Elpidio Pe-dronan.

She is survived by brother Flor Pedro ters Nives Soriano and Helen Pedronan.

A service is Saturday, at 10 a.m. June 15, 2024, at Holy Cross requested

Catholic Church in Kalaheo. Visitation begins at 8:45 a.m., Mass at 9:45 a.m and burial to follow at Holy Cross Catholic Church

Borthwick Kaua'i Mortu ary is assisting the family with arrangements.

#### Michael Manzano Abigania

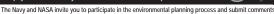
Michael Manzano Abiga-



Vigan. Ilocos Sur PhilipAbigania pines on June 8, 1952
Michael is survived by his wife, Arminda Pascual Abigania, daughters, Mathews, Michael le (Victor) Abigania-Libunao, Melany (Errc) Abigania-Chun; grandchildren, Makana, Kainani Ilbunao, Malla, Micah, Jacob, Jade Matthews, brothers, Louis (Edith) Abigania, Robert (Doris) Abigania, Robert (Doris) Abigania, Gensol (Edith) Abigania, Gensol (Edith) Abigania, Gensol (Edith) Abigania, Sisters, Nancy Abigania, Sisters, Nancy Abigania, Vicky Abigania, Sisters, Nancy Abigania, Vicky Abigania, Sisters, Nancy Abigania, Vicky Abigania, Gensol (Edith) Abigania, May Abigania, Gensol (Edith) Abigania, Gensol (Edith) Abigania, Gensol (Edith) Abigania, Gensol (Edith) Abigania, Gensol (Edith) Abigania, Gensol (Edith) Abigania and sister Cynthia Dela Cruz. Family and friends are invited to a Celebration of Life on Saturday, June 8, at St. John's Episcopal Church located in Ele'ele, at 10 a.m. Casual attire is requested.

at 10 a.m. Casual attire is

## Geophysical Observatory Real Estate Environmental Impact Statement



The U.S. Department of the Navy (Navy) and the National Aeronautics and Space Administration (NASA) are jointly preparing an Environmental Impact Statement (FIS) to evaluate the potential environmental impacts of proposed real estate agreements with the State of Hawaii for the Pacific Missile Range Facility (PMRF) and the Köke e Park Geophysical Observatory (KPGO). The Navy and NASA invite you to participate in the environmental planning process.

The Navy proposes to maintain long-term Department of Defense use of 8,348 acres of State of Hawai'i lands on Kaua'i for operational continuity and sustainment of the military readiness mission. The Navy operates on 410 acres of the total acres leased from the State. The majority of the leased and easement areas remain intentionally undeveloped as they are used as an encroachment buffer and security for the facility's mission. NASA proposes to maintain long-term use of 23 acres of State of Hawai'i land on Kaua'i for continued operations of KPGO. The Proposed Action is needed because existing real estate agreements for these State lands are set to expire between 2027 and 2030.

The Navy and NASA will host public scoping meetings at three locations on Kaua'i, Attend any of the public scoping meetings to talk story, learn more, and submit written or oral comments. Your voice is important to this planning process. Meetings will be held from 5 to 8 p.m. HST at the following locations:

PUBLIC SCOPING MEETINGS

6 to 6:30 p.m. entation by Navy and NASA.

The Navy and NASA are initiating a public scoping period under the National Environmental Policy Act and Hawari Revise Statutes (HRS) Chapter 343 to receive comments on the scope of the EIS. Members of the public are encouraged to participate in the environmental planning process by providing input on the proposed real estate action including potential alternatives, environmental or cultural concerns, information the public would like the Navy and NASA to know, and any alternatives, environmental or cutual ordinents, incomments in the policy would need be revery and reverse to whom, and any other information the public would like to see addressed in the EIS. The scoping meetings will also serve as an opportunity to obtain public input concerning potential effects to historic properties pursuant to Section 106 of the National Historic Preservation Act and HRS Section 6E-42. Your voice is important to this planning process.

AGENDA

The public scoping period begins May 8, 2024, and ends June 17, 2024. Please attend a public scoping meeting and visit The purpose solving pendo degrils way 2, 224, and et also 2016 17, 2024. The case alteria to puriss. Solving investigation in the project website to learn more. For language assistance or special accommodations, contact the PMRF Public Affairs Officer, at (808) 335-4740 or PMRFPublicAffairs@us.navy.mil. Requests for language assistance or special accommodations should be made at least seven days prior to the public meeting.

Submit Comments in Person, Online, or by Mail. Submit comments by June 17, 2024. The public may submit comments in any of the following ways: In person at a public scoping meeting, through the project website at PMRF-KPGO-EIS.com, by email to info@PMRF-KPGO-EIS.com, or by mail, postmarked by June 17, 2024 to the following address: Naval Facilities Engineering Systems Command, Hawait, Environmental OPHEV2, Attention: PMRF and KPGO RE EIS Project Manager, Ms. Kerry Wells, 400 Marshall Road, Building X-11, Pearl Harbor, HI 96860. For more information visit PMRF-KPGO-EIS.com



# SEVENTEUL A SUNRISE TO SUNSET LOOK AT SOME OF THE BIGGEST EVENTS ON KAUA'I

EMAIL APANG@MIDWEEK.COM



# POKE FEST

The fourth annual Kaua'l Poke Fest returns to Köloa Landing Resort with celebrity chef Sam Choy. The festival will feature live entertainment, 20 professional and amateur chefs and more than 600 pounds of fresh 'ahi poke. Proceeds will go toward Hawai'l Community Foundation's Maui Strong Fund.

Saturday, June 8, 2-7 p.m.
To purchase tickets, visit bit.ly/4bT49yc

# 8 JUNE

## **COMIC CON**

Enjoy a day full of fun family entertainment at Kaua'i Comic Con 3, which takes place at Royal Sonesta Kaua'i Re-

sort (3610 Rice St.) in Līhu'e. Comic cans can expect special guests, a cosplay contest and other activities. The event also features an array of vendors offering a range of merchandise and collectibles. Tickets are \$25 for adults and free for children age 12 and under when accompanied by a paying adult.

Saturday, June 8, 11 a.m.-6 p.m. For more info and ticket purchases, visit kauaicomicconvention.com

# 8 JUNE

#### **ART EXHIBIT**

Kaua'i Society of Artists' annual art exhibit, Washed Up, will have its opening reception at 2600 Kaumuali'i Hwy. in

Līhu'e. Attendees can view unique artworks created out of marine debris cleaned up off of Kaua'i shorelines. Admission is free.

Saturday, June 8-Friday, June 28 For more info, visit kauaisocietyofartists.org Answers To This Week's

### SUDOKU PUZZLE

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## Answers To This Week's



#### Answers To This Week's

## SPOT 10 DIFFERENCES



## U.S. Navy Pacific Missile Range Facility and NASA Köke'e Park Geophysical Observatory Real Estate Environmental Impact Statement



The Navy and NASA invite you to participate in the environmental planning process and submit comments.

The U.S. Department of the Navy (Navy) and the National Aeronautics and Space Administration (NASA) are jointly preparing an Environmental Impact Statement (EIS) to evaluate the potential environmental impacts of proposed real estate agreements with the State of Hawai'i for the Pacific Missile Range Facility (PMRF) and the Kōke'e Park Geophysical Observatory (KPGO). The Navy and NASA invite you to participate in the environmental planning process.

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#### PUBLIC SCOPING MEETINGS

Tuesday, June 4, 2024 Kaua'i Veterans Center 3215 Kaua'i Veterans Memorial Hwy, Līhu'e

Wednesday, June 5, 2024 Kekaha Neighborhood Center 8130 Elepaio Road, Kekaha Thursday. June 6, 2024 Sheraton Kaua'i Coconut Beach Resort 650 Aleka Loop, Kana'a

#### AGENDA

5 to 8 p.m. Information stations – meet the project team, talk story, and ask questions. Visit the comments station to provide a written or oral comment.

6 to 6:30 p.m.
Project presentation by Navy and NASA.

The Navy and NASA are initiating a public scoping period under the National Environmental Policy Act and Hawai'i Revised Statutes (HRS) Chapter 343 to receive comments on the scope of the EIS. Members of the public are encouraged to participate in the environmental planning process by providing input on the proposed real estate action including potential alternatives, environmental or cultural concerns, information the public would like the Navy and NASA to know, and any other information the public would like to see addressed in the EIS. The scoping meetings will also serve as an opportunity to obtain public input concerning potential effects to historic properties pursuant to Section 106 of the National Historic Preservation Act and HRS Section 6E-42. Your voice is important to this planning process.

The public scoping period begins *May 8, 2024, and ends June 17, 2024*. Please attend a public scoping meeting and visit the project website to learn more. For language assistance or special accommodations, contact the PMRF Public Affairs Officer, at (808) 335-4740 or PMRFPublicAffairs@us.navy.mil. Requests for language assistance or special accommodations should be made at least seven days prior to the public meeting.

Submit Comments in Person, Online, or by Mail. Submit comments by June 17, 2024. The public may submit comments in any of the following ways: In person at a public scoping meeting, through the project website at PMRF-KPGO-EIS.com, by email to info@PMRF-KPGO-EIS.com, or by mail, postmarked by June 17, 2024 to the following address: Naval Facilities Engineering Systems Command, Hawai'i, Environmental OPHEV2, Attention: PMRF and KPGO RE EIS Project Manager, Ms. Kerry Wells, 400 Marshall Road, Building X-11, Pearl Harbor, HI 96860.



# No ka Hōʻola ʻŌlelo Hawaiʻi ma ka Heʻenalu



Na Kaʻiwakīkahapono L. Foster, Grade 12 S.M. Kamakau Public Charter School

A 'au mālie Eia mai ka makakai he'enalu Kai hehe'e kākala o ka moku 'Auhea 'oukou e nā hoa he'enalu, nā hoa haku mele, nā hoa aloha 'ōlelo, aloha lāhui. O'ahu o Kākuhihewa Ko'olauloa, Ko'olaupoko

Aia nō Kona, Aia nō 'Ewa Aia 'o Waialua, Aia 'o Wai'anae Aia ka piko i Kūkaniloko Hānau 'ia nā ali'i Kani mai 'o 'Ōpuku me Hāweo Ola nā mamo o Kākuhihewa

kēia mahina e hoʻohanohano ai kākou i ko kākou ʻōlelo makuahine, ka ʻōlelo Hawaiʻi, haʻaheo au e hāpai i kēia lono hoʻohauʻoli hauli.

I ka makahiki i hala iho nei, ua hoʻokumu ko Kamakau i ka pūʻali heʻenalu ʻōlelo Hawaiʻi piha, mua loa o ko Hawaiʻi pae ʻāina, o kēia au. A komo mākou ma nā hoʻokūkū heʻenalu ʻāpuni ʻo kō Oʻahu pae ʻāina. A paio aku paio mai mākou me nā kula kiʻekiʻe ʻē aʻe, e like hoʻi me kō Kamehameha, kō Punahou, kō Kahuku, kō Waialua, kō Waiʻanae, a pēlā wale aku.

Ma ka wā iā Kākuhihewa, aia kekahi kūlana nalu kaulana āna i he'e ai. 'O ia 'o Mākāhā, i Kou, i Honolulu.

"Kū ka puna, ke koʻa i uka

Ka mākāhā o ka nalu o Kākuhihewa

Ua 'ō 'ia, nohāhā ka papa"

Aloha nō! 'A'ole ho'i i kama'āina nā maka o kēia hanauna i ia kūlana nalu. 'A'ole paha i kama'āina nā pepeiao o kēia hanauna i ke kani ha'iha'i o ia po'inanalu. 'A'ole paha i kama'āina nā ihu o kēia hanauna i ke ea 'ehukai ke pā mai ka makani Kona. 'A'ole nō ho'i i pae kēia hanauna ma ua nalu ala no ke kūkulu 'ia o kekahi pā pōhaku pale kai ma laila. Minamina!

Eia nō na e ka manawa e 'au, pae, a he e nei i mua. Ola nō kēia mau lama 'ālohilohi o ka wā i hala ma o nā mo olelo, nā mele hīmeni, me nā mele oli. No kākou, nā mamo 'ōlelo Hawai'i o kēia hanauna ke kuleana e ho 'āla i nā inoa o kēia mau wahi i ola ma o nā mele, ma nā waihona no ono o, ma nā na au, a ma nā waha ho i o kēlā me kēia kanaka o Hawai'i pae 'āina.

No laila e nā hoa, eia nō mākou, ko Kamakau e kū nei i ka welo o kēia 'ohana 'ōlelo Hawai'i ma ka ho'ōla 'ana i ka 'ōlelo Makuahine ma kā mākou mau hana like 'ole, e la'a ho'i me ka hoe wa'a me ka he'e nalu.

Ola nā iwi iā kākou Ola ka inoa 'o Mākāhā! Ola ka 'ōlelo! Ola ka lāhui! ■

# U.S. Navy Pacific Missile Range Facility and NASA Kōke'e Park Geophysical Observatory Real Estate Environmental Impact Statement



The Navy and NASA invite you to participate in the environmental planning process and submit comments.

The U.S. Department of the Navy (Navy) and the National Aeronautics and Space Administration (NASA) are jointly preparing an Environmental Impact Statement (EIS) to evaluate the potential environmental impacts of proposed real estate agreements with the State of Hawai'i for the Pacific Missile Range Facility (PMRF) and the Kōke'e Park Geophysical Observatory (KPGO). The Navy and NASA invite you to participate in the environmental planning process.

The Navy proposes to maintain long-term Department of Defense use of 8,348 acres of State of Hawai'i lands on Kaua'i for operational continuity and sustainment of the military readiness mission. The Navy operates on 410 acres of the total acres leased from the State. The majority of the leased and easement areas remain intentionally undeveloped as they are used as an encroachment buffer and security for the facility's mission. NASA proposes to maintain long-term use of 23 acres of State of Hawai'i land on Kaua'i for continued operations of KPGO. The Proposed Action is needed because existing real estate agreements for these State lands are set to expire between 2027 and 2030.

The Navy and NASA will host public scoping meetings at three locations on Kaua'i. Attend any of the public scoping meetings to talk story, learn more, and submit written or oral comments. Your voice is important to this planning process. Meetings will be held from 5 to 8 p.m. HST at the following locations:

#### **PUBLIC SCOPING MEETINGS**

Tuesday, June 4, 2024 Kauaʻi Veterans Center 3215 Kauaʻi Veterans Memorial Hwy, Līhuʻe Wednesday, June 5, 2024 Kekaha Neighborhood Center 8130 Elepaio Road, Kekaha Thursday, June 6, 2024 Sheraton Kaua'i Coconut Beach Resort 650 Aleka Loop, Kapa'a

#### **AGENDA**

5 to 8 p.m.
Information stations – meet the project team, talk story, and ask questions. Visit the comments station to provide a written or oral comment.

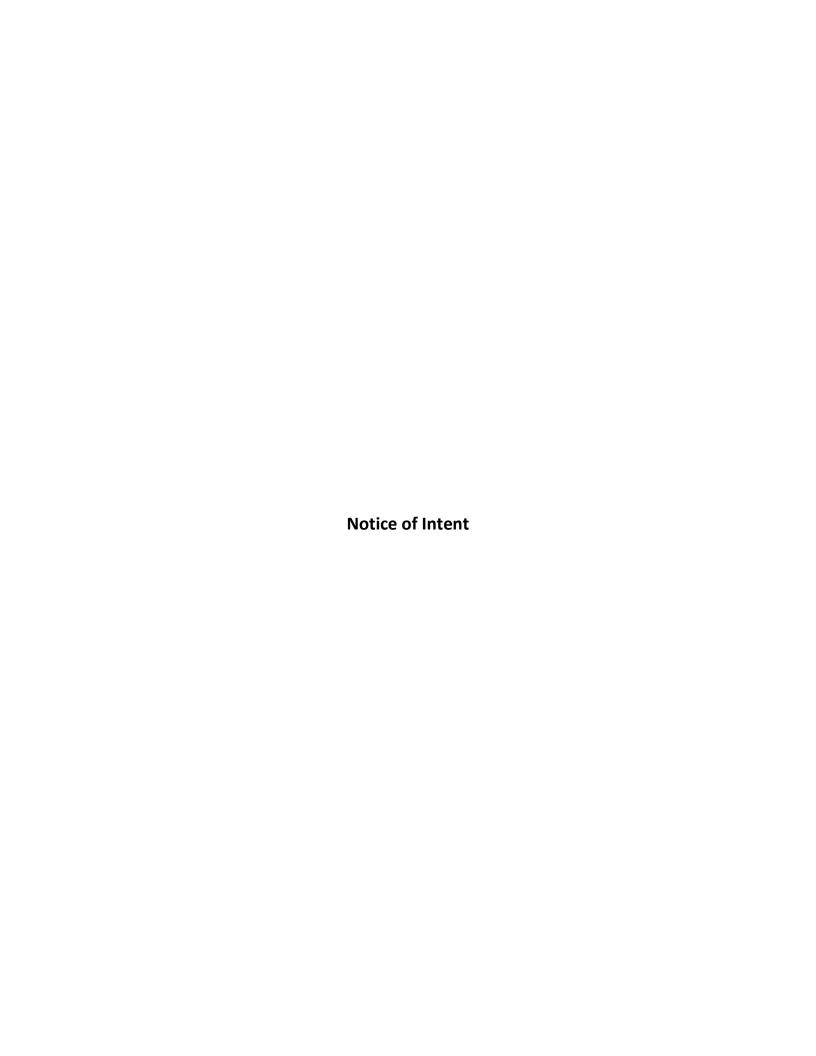
6 to 6:30 p.m.

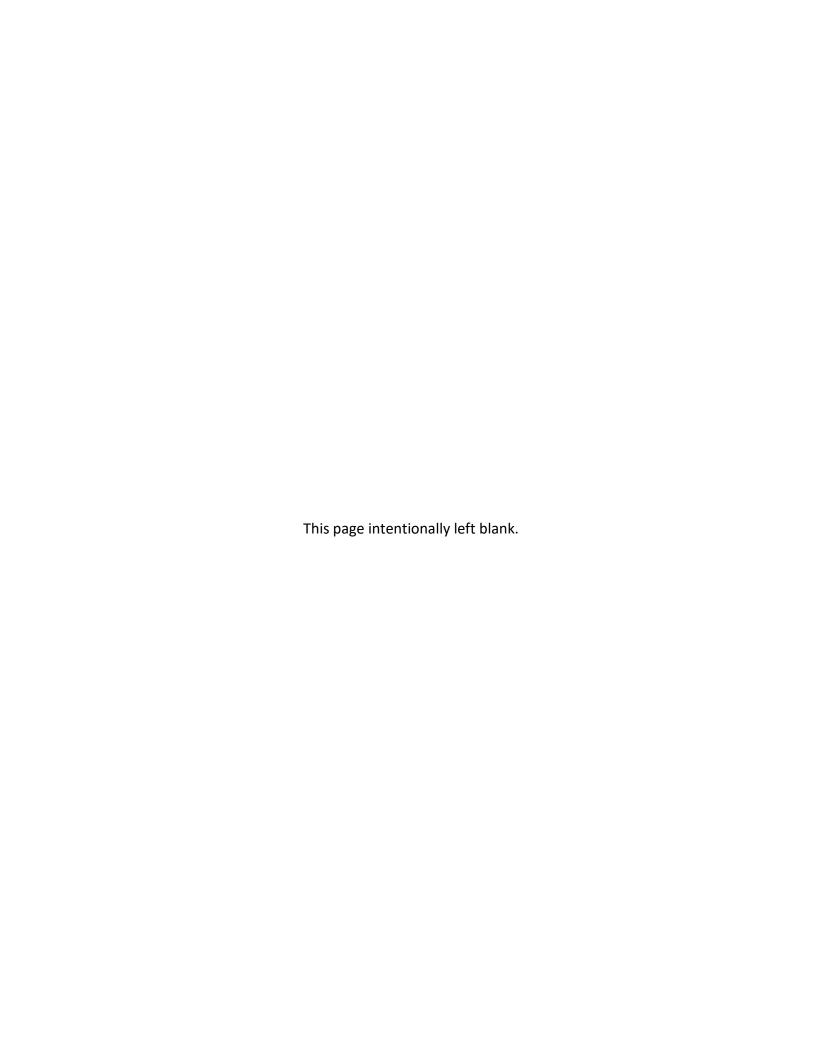
Project presentation by Navy and NASA.

The Navy and NASA are initiating a public scoping period under the National Environmental Policy Act and Hawai'i Revised Statutes (HRS) Chapter 343 to receive comments on the scope of the EIS. Members of the public are encouraged to participate in the environmental planning process by providing input on the proposed real estate action including potential alternatives, environmental or cultural concerns, information the public would like the Navy and NASA to know, and any other information the public would like to see addressed in the EIS. The scoping meetings will also serve as an opportunity to obtain public input concerning potential effects to historic properties pursuant to Section 106 of the National Historic Preservation Act and HRS Section 6E-42. Your voice is important to this planning process.

The public scoping period begins *May 8, 2024, and ends June 17, 2024*. Please attend a public scoping meeting and visit the project website to learn more. For language assistance or special accommodations, contact the PMRF Public Affairs Officer, at (808) 335-4740 or PMRFPublicAffairs@us.navy.mil. Requests for language assistance or special accommodations should be made at least seven days prior to the public meeting.

**Submit Comments in Person, Online, or by Mail.** Submit comments by *June 17, 2024*. The public may submit comments in any of the following ways: In person at a public scoping meeting, through the project website at PMRF-KPGO-EIS.com, by email to info@PMRF-KPGO-EIS.com, or by mail, postmarked by *June 17, 2024* to the following address: Naval Facilities Engineering Systems Command, Hawai'i, Environmental OPHEV2, Attention: PMRF and KPGO RE EIS Project Manager, Ms. Kerry Wells, 400 Marshall Road, Building X-11, Pearl Harbor, HI 96860.





including the agenda, is available on the DHB website, https://www.health.mil/dhb. A copy of the agenda or any updates to the agenda for the June 4, 2024, meeting will be available on the DHB website. Any other materials presented in the meeting may also be obtained at the meeting.

Purpose of the Meeting: The DHB provides independent advice and recommendations to maximize the safety and quality of, as well as access to, health care for DoD health care beneficiaries. The purpose of the meeting is to provide progress updates on specific tasks before the DHB. In addition, the DHB will receive information briefings on current issues related to military medicine.

Agenda: The DHB anticipates receiving updates from the DHB Public Health Subcommittee's tasking on Effective Public Health Communication Strategies with DoD personnel and the DHB Trauma and Injury Subcommittee's tasking on Prolonged Theater Care. The DHB also anticipates receiving briefings about the National Center for Disaster Medicine and Public Health and the Health of the Force Report.

Meeting Accessibility: Pursuant to 5 U.S.C. 552b and 41 CFR 102–3.140 through 102-3.165, this meeting is open to the public from 12:00 p.m. to 5:30 p.m. on June 4, 2024. The meeting will be held by videoconference/ teleconference. The number of participants is limited and is on a firstcome basis. All members of the public who wish to participate must register by emailing their name, rank/title, and organization/company to dha.dhb@ health.mil or by contacting Dr. Clarice Waters at (703) 275–6003 no later than Tuesday, May 28, 2024. Once registered, participant access information will be provided.

Special Accommodations: Individuals requiring special accommodations to access the public meeting should contact Dr. Clarice Waters at (703) 275–6003 at least five (5) business days prior to the meeting so that appropriate arrangements can be made.

Written Statements: Any member of the public wishing to provide comments to the DHB related to its current taskings or mission may do so at any time in accordance with section 10(a)(3) of the FACA, 41 CFR 102–3.105(j) and 102–3.140, and the procedures described in this notice. Written statements may be submitted to the DHB's Designated Federal Officer (DFO), CAPT Clausen, at shawn.s.clausen.mil@health.mil.

Supporting documentation may also be included, to establish the appropriate historical context and to provide any necessary background information. If

the written statement is not received at least five (5) business days prior to the meeting, the DFO may choose to postpone consideration of the statement until the next open meeting. The DFO will review all timely submissions with the DHB President and ensure they are provided to members of the DHB before the meeting that is subject to this notice. After reviewing the written comments, the President and the DFO may choose to invite the submitter to orally present their issue during an open portion of this meeting or at a future meeting.

Dated: May 6, 2024.

#### Aaron T. Siegel,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2024–10123 Filed 5–8–24; 8:45 am]

BILLING CODE 6001-FR-P

#### **DEPARTMENT OF DEFENSE**

#### **Department of the Navy**

# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Notice of Intent To Prepare an Environmental Impact Statement for Pacific Missile Range Facility and Kōke'e Park Geophysical Observatory Real Estate

**AGENCY:** Department of the Navy (DON), Department of Defense (DoD), and National Aeronautics and Space Administration (NASA).

**ACTION:** Notice.

**SUMMARY:** Pursuant to the National Environmental Policy Act (NEPA) of 1969 and regulations implemented by the Council on Environmental Quality, the Department of the Navy (DON) and National Aeronautics and Space Administration (NASA), the DON and NASA announce their intent to prepare an Environmental Impact Statement (EIS) to evaluate the potential environmental effects associated with the continued long-term DoD use of 8,348 acres of State lands on Kauai, Hawaii for operational continuity and sustainment (in support of continued military training, testing, and facility operations) at the Pacific Missile Range Facility (PMRF), and the continued long-term NASA use of 23 acres of State lands on Kaua'i, Hawaii in support of continued operations (including measurements of the Earth's rotation and local land motion) at Kōke'e Park Geophysical Observatory (KPGO). DATES: The 40-day public scoping period begins on May 8, 2024, and extends to June 17, 2024. Comments

must be postmarked or submitted

electronically via the project website no later than 11:59 p.m. Hawaii Standard Time (HST) on June 17, 2024 for consideration in the Draft EIS. Public scoping meetings are planned as follows:

- June 4, 2024, from 5:00–8:00 p.m. HST at Kaua'i Veterans Center, 3215 Kaua'i Veterans Memorial Highway, Līhu'e
- June 5, 2024, from 5:00–8:00 p.m. HST at Kekaha Neighborhood Center, 8130 Elepaio Road, Kekaha
- June 6, 2024, from 5:00–8:00 p.m. HST at Sheraton Coconut Beach Resort, 650 Aleka Loop, Kapa'a

The purpose of the scoping period is to provide the public with information related to the Proposed Action, its purpose and need, environmental resources to be analyzed in the EIS, the NEPA and HEPA process, consultation under NHPA, and public involvement opportunities. The DON and NASA are providing a web-based platform, as well as public scoping meetings for the public to learn about the Proposed Action and alternatives and to provide scoping comments. Comments must be postmarked or submitted electronically via the website no later than 11:59 p.m. HST on June 17, 2024 for consideration in the Draft EIS.

ADDRESSES: The DON and NASA invite all interested parties to submit scoping comments on the EIS or information regarding historic properties or Section 106 consulting party interest through the project website at <a href="http://www.PMRF-KPGO-EIS.com">http://www.PMRF-KPGO-EIS.com</a> or by mail to: Naval Facilities Engineering Systems Command, Hawaii, Environmental OPHEV2, Attention: PMRF and KPGO RE EIS Project Manager, Ms. Kerry Wells, 400 Marshall Road, Building X–11, Pearl Harbor, HI 96860.

#### FOR FURTHER INFORMATION CONTACT:

DON: Commander, Navy Region Hawaii, Attn: Mr. Danny Hayes, Environmental Public Affairs Specialist, by telephone (808–473–0662) or email (danny.r.bxhayes6.civ@us.navy.mil).

NASA: Shari A. Miller, NASA; EIS Project Manager, by telephone (757–824–2327) or email (Shari.A.Miller@nasa.gov).

#### SUPPLEMENTARY INFORMATION:

As the proposed action involves State lands, the EIS will be a joint NEPA, Hawaii Environmental Policy Act (HEPA) (as governed by Hawaii Revised Statutes [HRS] chapter 343), and Hawaii Administrative Rules (HAR) section 11–200.1 (implementing HRS chapter 343) document; therefore, the public scoping processes will run concurrently and will jointly meet NEPA and HEPA

requirements. The DON and NASA are initiating a 40-day public scoping process to receive comments on the scope of the EIS including identification of potential alternatives and environmental concerns, information and analyses relevant to the Proposed Action, issues the public would like to see addressed in the EIS, and the project's potential to affect historic properties pursuant to section 106 of the National Historic Preservation Act (NHPA) of 1966. DON's action proponent for this proposal is Commander, Navy Region Hawaii.

The DON's purpose for the Proposed Action is to maintain long-term DoD use of 8,348 acres of State lands (including leaseholds and easement lands) on Kaua'i, Hawaii for operational continuity and sustainment of the military readiness mission. NASA's purpose for the Proposed Action is to maintain long-term use of 23 acres of State land on Kaua'i, Hawaii for continued operations of KPGO. The Proposed Action is needed because the existing real estate agreements are set to expire between 2027 and 2030. Preserving the long-term DoD and NASA use of these State lands is critical for military readiness, continuation of ongoing military training and testing, and maintaining data collection efforts of global significance. It also ensures the continued conservation management by the DON and NASA of natural and cultural resources on these lands.

For the Hawaii Department of Land and Natural Resources (DLNR), in addition to its role as the lessor of State lands, the proposed real estate action presents an opportunity for the agency to secure a revenue source to support its management of public lands and associated environmental and conservation programs. Fees from leases and easements are put into a State fund as required by law.

By ensuring continued DON and NASA operations on Kaua'i, the real estate action would also preserve local jobs and income for the residents of Kaua'i, financially contribute to the overall economic well-being of Kaua'i, and maintain continued conservation management of natural and cultural resources on State lands at no cost to the State of Hawaii.

The DON and NASA have identified two preliminary action alternatives to carry forward for analysis in the EIS, along with the No Action Alternative.

Alternative 1 (Succeeding Current Real Estate Agreements): The DON and NASA would apply to DLNR for new long-term real estate agreements in the same manner and for the same uses as the current leases and easements.

Alternative 2 (Fee Simple Acquisition of Current Real Estate Agreements for Leaseholds): The DON and NASA would pursue fee simple acquisition of 700 acres (684—DON, 16—NASA) of leaseholds, and otherwise obtain use of the remaining acreage as described in Alternative 1.

Alternative 3 (No Action Alternative): The DON and NASA would not seek any real estate agreements for the State lands on Kaua'i after expiration of the leases and easements between 2027 to 2030. The current real estate agreements for 8,348 acres with the DON and 23 acres with NASA would expire. All existing infrastructure would be removed, or abandoned in place (as determined by the existing real estate agreements), from the DON and NASA leased and easement lands.

Consistent with Council on Environmental Quality regulations and HAR section 11–200.1–24(b), the scope of the analysis for the alternatives in this EIS is proportionate to the potential for environmental impacts. The following 13 resources have a potential for impacts and are analyzed in this EIS: archaeological and historic resources, cultural practices, biological resources, land use, socioeconomics, environmental justice, water resources, utilities, public health and safety, air quality and greenhouse gases, transportation, hazardous materials and wastes, and visual resources. The EIS will analyze measures that would avoid, minimize, or mitigate environmental effects. The DON and NASA will conduct coordination, consultation, and permitting activities required by the NHPA, the Endangered Species Act, the Clean Water Act, the Coastal Zone Management Act, Hawaii Revised Statues chapter 183C and HAR chapter 13-5, HAR chapter 6E, and other laws and regulations determined to be applicable to the project.

This EIS will satisfy both Federal and State of Hawaii requirements and provide the necessary analyses to allow the DON, NASA, and DLNR to consider the environmental effects of the Proposed Action and alternatives as part of their decision-making. The DON and NASA encourages Federal, State, and local agencies, and interested persons to provide comments concerning the alternatives proposed for study and environmental issues for analysis in the EIS, as well as to identify specific environmental resources the DON and NASA should consider when developing the Draft EIS. The DON and NASA will prepare the Draft EIS and will include analyses of potential effects to the resources the DON, NASA, and the commenting public have identified.

All comments received during the public scoping period will be considered during EIS preparation.

Comments must be postmarked or submitted electronically by email to info@PMRF-KPGO-EIS.com. and/or electronically through the EIS website at www.PMRF-KPGO-EIS.com. Comments must be posted by 11:59 p.m. HST on June 17, 2024.

After the scoping period, the DON and NASA will develop the Draft EIS. The DON and NASA intend to release the Draft EIS in summer of 2025, the Final EIS in spring of 2026, with a Record of Decision signed in late spring of 2026.

Dated: May 6, 2024.

#### Emily A. Pellegrino,

Program Analyst, Directives and Regulatory Team, National Aeronautics and Space Administration.

#### I.E. Koningisor.

Lieutenant Commander, Judge Advocate General's Corps, U.S. Navy, Federal Register Liaison Officer.

[FR Doc. 2024-10167 Filed 5-8-24; 8:45 am] BILLING CODE 3810-FF-P

## **DEPARTMENT OF ENERGY**

#### **Federal Energy Regulatory** Commission

#### Combined Notice of Filings #1

Take notice that the Commission received the following electric rate filings:

Docket Numbers: ER23-2764-004. Applicants: Northeastern Power & Gas, LLC.

Description: Tariff Amendment: Amendment to 12 to be effective 9/25/

Filed Date: 5/3/24.

Accession Number: 20240503-5171. Comment Date: 5 p.m. ET 5/24/24.

Docket Numbers: ER24-1420-001. Applicants: Sierra Estrella Energy Storage LLC.

Description: Tariff Amendment: Response to Deficiency Letter to be

effective 3/18/2024. Filed Date: 5/3/24.

Accession Number: 20240503-5097. Comment Date: 5 p.m. ET 5/24/24.

Docket Numbers: ER24-1421-001. Applicants: Superstition Energy Storage LLC.

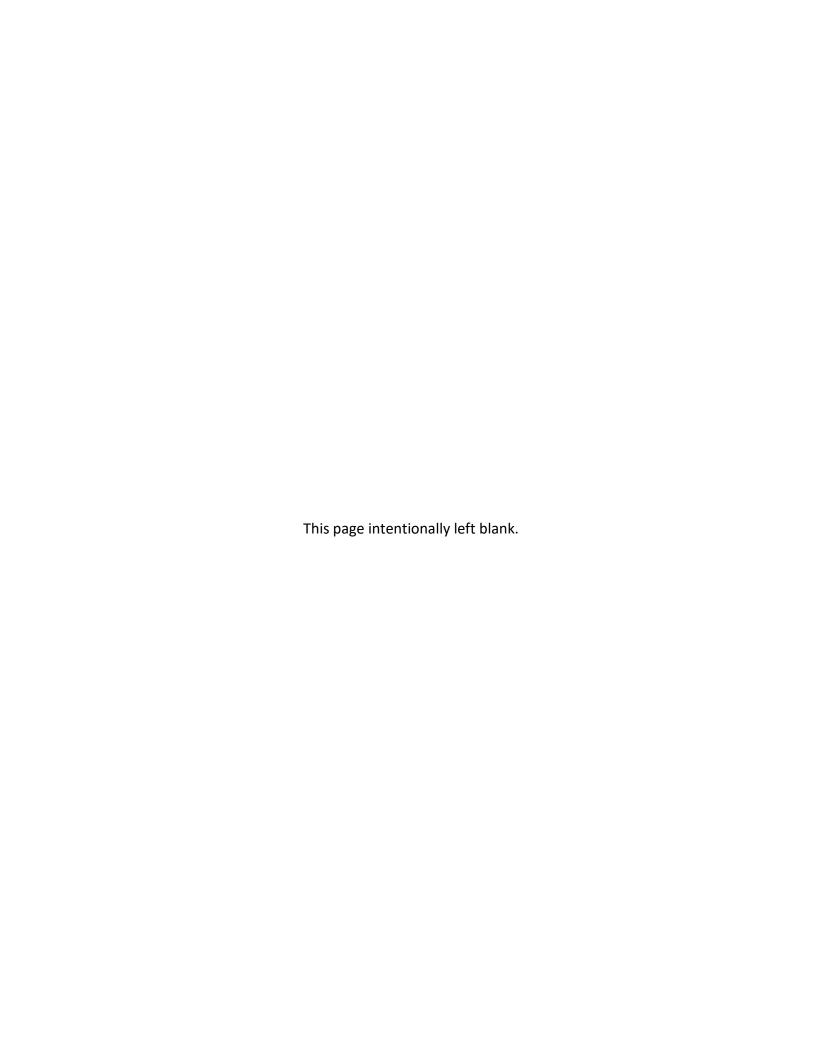
Description: Tariff Amendment:

Superstition Energy Storage LLC submits tariff filing per 35.17(b): Response to Deficiency Letter to be effective 3/18/2024.

Filed Date: 5/3/24.

Accession Number: 20240503-5098.





JOSH GREEN, M.D. GOVERNOR | KE KIA'ĀINA

**SYLVIA LUKE**LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA





### STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I DEPARTMENT OF LAND AND NATURAL RESOURCES KA 'OIHANA KUMUWAIWAI 'ĀINA

P.O. BOX 621 HONOLULU, HAWAII 96809 DAWN N.S. CHANG

CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

RYAN K.P. KANAKA'OLE FIRST DEPUTY

DEAN D. UYENO DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE
MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND OCOSTAL LANDS
CONSERVATION AND RESOURCES
ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

April 29, 2024

Mary Alice Evans, Acting Director Office of Planning and Sustainable Development c/o Environmental Review Program 235 South Beretania Street, Room 702 Honolulu, Hawai'i 96813

SUBJECT:

Publication of the Environmental Impact Statement Preparation Notice (EISPN) for the Proposed Pacific Missile Range Facility and Kōke'e Park Geophysical Observatory Real Estate Project Located in Kekaha, West Kaua'i on the Island of Kaua'i, Further Identified as Tax Map Key(s): (4)1-2-001:001, 006, & 010; (4)1-2-002:001, 010-013, 015, & 024-030; (4) 1-2-016:011; (4) 1-4-001:002, 013, 014, & 999; and (4) 2-1-003:018

#### Dear Ms. Evans:

With this letter, the Department of Land and Natural Resources (DLNR) submits the Pacific Missile Range Facility and Kōke'e Park Geophysical Observatory Real Estate Environmental Impact Statement Preparation Notice (EISPN) for publication in the next available edition of The Environmental Notice on May 8, 2024. The applicants for the action are the United States Department of the Navy (U.S. Navy) and the National Aeronautics and Space Administration (NASA).

The DLNR has coordinated with the applicants to determine the appropriate level of environmental review for the action. So as to not overlook any potentially significant impact to the natural and/or human environment, an Environmental Impact Statement will be prepared pursuant to Hawai'i Revised Statutes (HRS) §343-5(e) and Hawai'i Administrative Rules (HAR) §11-200.1-14(d)(2).

The required publication form and files have been provided electronically via the "Online Submittal Form" on the Office of Planning and Sustainable Development, Environmental Review Program website. The submittal includes a .pdf file of the EISPN and .zip file containing a shapefile of the project's location boundary. Concurrent with the electronic submittal and as required by HAR §11-200.1-5(4)(B), paper copies of the EISPN have been submitted to the nearest state library (Waimea Public Library, Kaua'i) and the Hawai'i Documents Center (Hawai'i State Library, O'ahu).

Pursuant to HAR §11-200.1-23(10)(c), publication of the EISPN in *The Environmental Notice* initiates a 30-day public comment period for parties to provide comments regarding potential effects of the proposed action. A Notice of Intent for the project will also be published in the Federal Register. The applicants are preparing a single EIS compliant with both the Hawai'i Environmental Impact Statements law (HRS Chapter 343) and the National Environmental Policy Act as allowed under HAR §11-200.1-31.

Should you have any questions, please contact Mr. Russell Tsuji, Land Division Administrator at (808) 587-0422.

Sincerely,

Dawn N.S. Chang,

Chairperson

From: webmaster@hawaii.gov

To: <u>DBEDT OPSD Environmental Review Program</u>

Subject: New online submission for The Environmental Notice

**Date:** Wednesday, May 1, 2024 8:41:33 AM

#### **Action Name**

Pacific Missile Range Facility and Kōke'e Park Geophysical Observatory Real Estate Environmental Impact Statement

#### Type of Document/Determination

Environmental impact statement preparation notice (EISPN)

#### HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds
- (2) Propose any use within any land classified as a conservation district

#### **Judicial district**

Waimea, Kaua'i

#### Tax Map Key(s) (TMK(s))

```
(4) 1-2-002:001; (4) 1-2-002:012; (4) 1-2-002:015; (4) 1-2-002:027; (4) 1-2-002:028; (4) 1-2-001:006; (4) 1-2-016:011; (4) 1-4-001:999; (4) 1-2-002:029; (4) 1-2-002:030; (4) 2-1-003:018; (4) 1-2-001:001; (4) 1-2-002:024; (4) 1-2-002:025; (4) 1-2-002:026; (4) 1-4-001:002; (4) 1-4-001:013; (4) 1-4-001:014; (4) 1-2-002:013; (4) 1-2-001:010; (4) 1-2-002:011; (4) 1-4-001:013
```

#### **Action type**

Applicant

#### Other required permits and approvals

Numerous

#### Discretionary consent required

Use of State land

#### **Approving agency**

Department of Land and Natural Resources, Land Division

#### Agency contact name

Russell Tsuji

#### Agency contact email (for info about the action)

dlnr.land@hawaii.gov

#### Email address or URL for receiving comments

info@PMRF-KPGO-EIS.com

#### Agency contact phone

(808) 587-0419

#### Agency address

1151 Punchbowl Street Room 220 Honolulu, Hawaii 96813 United States Map It

#### **Public Scoping Meeting information**

6/4/2024, 5-8pm 3215 Kaua'i Veterans Memorial Highway, Līhu'e

#### **Accepting authority**

State of Hawaii Board of Land and Natural Resources

#### **Applicant**

United States Department of the Navy

#### **Applicant contact name**

Kerry Wells

#### **Applicant contact email**

info@PMRF-KPGO-EIS.com

#### **Applicant contact phone**

(808) 473-0662

#### **Applicant address**

400 Marshall Road Building X-11 Pearl Harbor, Hawaii 96860 United States Map It

#### Is there a consultant for this action?

Yes

#### Consultant

Cardno GS-AECOM Pacific Joint Venture

#### Consultant contact name

Michele Lefebvre

#### **Consultant contact email**

info@PMRF-KPGO-EIS.com

#### **Consultant contact phone**

(808) 791-9872

#### **Consultant address**

737 Bishop Street Suite 3050 Honolulu, Hawaii 96813 United States Map It

#### **Action summary**

The Navy proposes to retain the use of 8,348 acres of State lands on Kaua'i, Hawai'i, for operational continuity and sustainment (in support of continued military training, testing, and facility operations) at Pacific Missile Range Facility (PMRF). NASA proposes to retain the use of 23 acres of State lands on Kaua'i, Hawai'i, in support of continued operations including measurements of the Earth's rotation and local land motion at Kōke'e Park Geophysical Observatory (KPGO).

#### Attached documents (signed agency letter & EA/EIS)

- 240429-ERP-Transmittal-Letter-for-PMRF-EISPN-RUSH-part-1-signed.pdf
- PMRF-and-KPGO-RE-EIS-Version-Report-EISPN-1May2024.pdf

#### **Action location map**

• PMRF-and-KPGO-Real-Estate-EIS-Location-Boundary.zip

#### **Authorized individual**

Michele Lefebvre

#### Authorization

• The above named authorized individual hereby certifies that he/she has the authority to make this submission.

### **ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE**

for

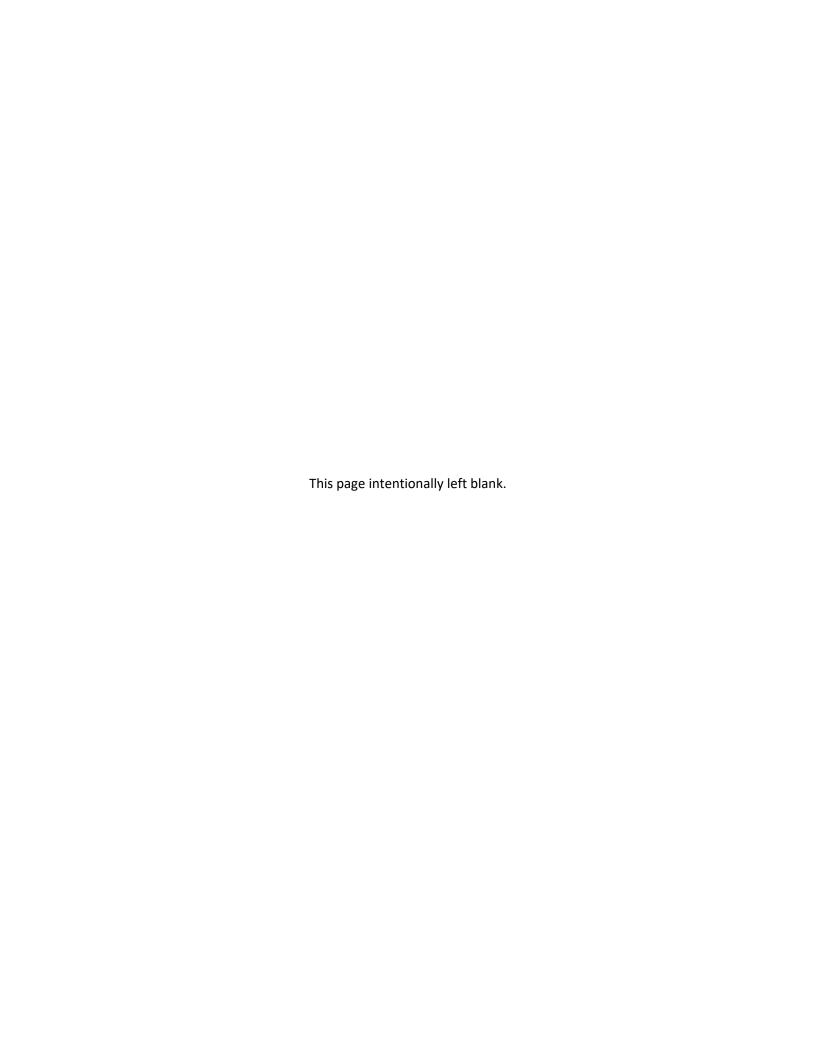
# PACIFIC MISSILE RANGE FACILITY AND KŌKE'E PARK GEOPHYSICAL OBSERVATORY REAL ESTATE

KAUA'I, HAWAI'I

May 2024







## **Project Information Summary (Abstract)**

**Project Name:** Pacific Missile Range Facility and Kōke'e Park Geophysical Observatory Real Estate

**Environmental Impact Statement** 

Applicants (Joint Lead Agencies under NEPA):

United States Department of the Navy

National Aeronautics and Space Administration

Naval Facilities Engineering Systems

Administration

Command

Goddard Space Flight Center

Environmental OPHEV2 400 Marshall Road Building X-11 34200 Fulton Street Wallops Island, VA 23337, Contact: Shari Miller

Pearl Harbor, HI 96860

Phone: 757-824-2327

Contact: Kerry Wells

Email: Shari.A.Miller@nasa.gov

Phone: 808-473-0662 Email:info@PMRF-KPGO-EIS.com

Approving Agency:

Department of Land and Natural Resources, Land Division

1151 Punchbowl Street, Room 220

Honolulu, Hawai'i 96813 Phone: 808-587-0419 Email: dlnr.land@hawaii.gov

**Accepting Authority:** 

State of Hawaii Board of Land and Natural Resources

**Planning Consultant:** 

Cardno GS-AECOM Pacific Joint Venture

Local Office: Stantec GS Inc. 737 Bishop Street, Suite 3050

Honolulu, HI 96813 Contact: Michele Lefebvre Phone: 808-791-9872

County of Kaua'i, Hawai'i

Email: info@PMRF-KPGO-EIS.com

Location:

District: Waimea

Tax Map Keys: (4) 1-2-002:001, (4) 1-2-002:012, (4) 1-2-002:015, (4) 1-2-002:027, (4) 1-2-002:028,

(4) 1-2-001:006, (4) 1-2-016:011, (4) 1-4-001:999, (4) 1-2-002:029, (4) 1-2-002:030, (4) 2-1-003:018, (4) 1-2-001:001, (4) 1-2-002:024, (4) 1-2-002:025, (4) 1-2-002:026, (4) 1-4-001:002, (4) 1-4-001:013, (4) 1-4-001:014, (4) 1-2-002:013, (4) 1-2-001:010,

(4) 1-2-002:010, (4) 1-2-002:011, (4) 1-4-001:013

Land Area: Navy lease area and easements: 8,348

acres

NASA lease area and easements: 23

acres

**Recorded Fee Owner:** State of Hawai'i

**Existing Use:** Navy Uses: Antenna structures, ordnance

storage/assembly facilities, missile tracking and surveillance facilities, water well, undeveloped land used for safety

zone buffers, drainage management, roadways, and access to utilities

NASA Uses: Kōke'e Park Geophysical Observatory, antenna structures, data collection systems, and supportive

in frastructure

State Land Use District: Agricultural, Conservation

**Zoning:** Agricultural, Conservation, Open Space, Special Treatment – Ecological

Flood Zone Designation: A, AE, D, VE, X

**Proposed Action:** The Navy proposes to retain the use of 8,348 acres of State lands on Kaua'i,

Hawai'i, for operational continuity and sustainment (in support of continued military training, testing, and facility operations) at Pacific Missile Range Facility (PMRF). NASA proposes to retain the use of 23 acres of State lands on Kaua'i, Hawai'i, in support of continued operations including measurements of the Earth's rotation and local land motion at Kōke'e Park Geophysical Observatory (KPGO).

HRS Chapter 343 Trigger(s):

Proposed use of state or county lands, propose any use within any land classified as

a Conservation District

#### **Project Summary:**

The United States (U.S.) Department of the Navy (Navy) and the National Aeronautics and Space Administration (NASA) as applicants and joint lead agencies have prepared this Environmental Impact Statement Preparation Notice (EISPN) and a separate Notice of Intent (NOI) to Prepare an Environmental Impact Statement (EIS) in accordance with the following: the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] 4321 et seq.), as amended by the Fiscal Responsibility Act of 2023 (Public Law [P.L.] No. 118-5, div. C, tit. III, 321(b), 137 Stat. 10, 40 (amending NEPA § 107) (2023) (codified at 42 U.S.C. § 4336a); Council on Environmental Quality, Navy and NASA policies and regulations; and Hawai'i Revised Statutes (HRS) Chapter 343 and Hawai'i Administrative Rules (HAR) § 11-200.1. The Navy proposes to retain the use of 8,348 acres of State lands on Kaua'i, Hawai'i, for operational continuity and sustainment (in support of continued military training, testing, and facility operations) at the Pacific Missile Range Facility (PMRF). NASA proposes to retain the use of 23 acres of State lands on Kaua'i, Hawai'i, in support of continued operations including measurements of the Earth's rotation and local land motion at Koke'e Park Geophysical Observatory (KPGO). The Proposed Action is needed because the existing real estate agreements for these lands are set to expire between 2027 and 2030. The Navy and NASA are considering two action alternatives and the No Action Alternative. The Draft EIS will evaluate potential environmental impacts associated with these alternatives. The following resource areas are evaluated: archaeological and historic resources, cultural practices, biological resources, land use, socioeconomics, environmental justice, water resources, utilities, public health and safety, air quality and greenhouse gases, transportation, hazardous materials and wastes, and visual resources.

# Pacific Missile Range Facility and Kōke'e Park Geophysical Observatory Real Estate

# **Environmental Impact Statement Preparation Notice**

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# **Abbreviations and Acronyms**

ACHP	Advisory Council on Historic Preservation	ICRMP	Integrated Cultural Resources Management Plan
AFFF	Aqueous Film Forming Foam	INRMP	Integrated Natural Resources
APE	Area of Potential Effects		Management Plan
ARPA	Archaeological Resources Protection Act	ITRF	International Terrestrial Reference Frame
AT	Anti-Terrorism	KISC	Kaua'i Invasive Species Committee
BMP	Best Management Practice	KPGO	Kōke'e Park Geophysical Observatory
CEQ	Council of Environmental Quality	MBTA	Migratory Bird Treaty Act
CFR	Code of Federal Regulations	MOA	Memorandum of Agreement
CIA	Cultural Impact Assessment	NAAQS	National Ambient Air Quality
CNRH	Commander, Navy Region Hawaiʻi		Standards
СО	Carbon Monoxide	NAGPRA	Native American Graves Protection
COMNAVREG	Commander, Navy Region		and Repatriation Act
CRM	Cultural Resources Management	NASA	National Aeronautics and Space Administration
CZMA	Coastal Zone Management Act	Nava	
DAR	Division of Aquatic Resources	Navy NEPA	Department of the Navy
DHHL	State of Hawai'i Department of		National Environmental Policy Act National Historic Preservation Act
	Hawaiian Home Lands	NHPA	
DLNR	Department of Land and Natural	NMFS	National Marine Fisheries Service
	Resources	NO <sub>2</sub>	Nitrogen Dioxide
DoD	Department of Defense	NOA	Notice of Availability
DOFAW	DLNR Division of Forestry and Wildlife	NOAA	National Oceanic and Atmospheric Administration
DOH	Hawai'i Department of Health	NOI	Notice of Intent
DORIS	Doppler Orbitography and Radio-	NRHP	National Register of Historic Places
	positioning Integrated by Satellite		Ozone
EIS	Environmental Impact Statement	O₃ OPNAVINST	Office of the Chief of Naval
EISPN	Environmental Impact Statement	OPNAVINSI	Operations Instruction
EO	Preparation Notice  Executive Order	PA	Programmatic Agreement
ESA	Endangered Species Act	P.L.	Public Law
ESQD	Explosive Safety Quantity Distance	PCB	Polychlorinated Biphenyl
GHA	Ground Hazard Area	PFAS	Per- and Polyfluoroalkyl Substances
GHG	Greenhouse Gas	PM	Particulate Matter
GNSS	Global Navigation Satellite System	PM <sub>2.5</sub>	Particulate Matter Less than or Equal
			to 2.5 Microns in Diameter
GPS	Global Positioning System	PM <sub>10</sub>	Particulate Matter Less than or Equal
HAR	Hawai'i Administrative Rules		to 10 Microns in Diameter
HEPA	Accepted Term for Hawai'i Revised Statutes Chapter 343	PMRF	Pacific Missile Range Facility
HRS	Hawai'i Revised Statutes	RADAR	Radio Detecting and Ranging

RDT&E	Research, development, test and	SOS	Save Our Shearwaters
	evaluation	T&E	Test and Evaluation
REPI	Readiness and Environmental	U.S.	United States
	Protection Integration	U.S.C.	United States Code
SECNAVINST	Secretary of the Navy Instruction	USCB	United States Census Bureau
SGP	Space Geodesy Project	USEPA	United States Environmental
SHPD	State Historic Preservation Division		Protection Agency
SHPO	State Historic Preservation Office	USFWS	United States Fish and Wildlife
SLUD	State Land Use District		Service
$SO_2$	Sulfur Dioxide	VLBI	Very Long Baseline Interferometry
SOP	Standard Operating Procedure		

### 1 Purpose of and Need for the Proposed Action

This chapter provides the following: an introduction and overview of the project; the project location, background, purpose of and need for the Proposed Action; scope of analysis; relevant laws and regulations; and public and agency participation.

#### 1.1 Project Introduction and Overview

The United States (U.S.) Department of the Navy (Navy) and the National Aeronautics and Space Administration (NASA) are joint lead agencies and are preparing a Draft Environmental Impact Statement (EIS) in coordination with the Hawai'i Department of Land and Natural Resources (DLNR) (Hawai'i Administrative Rules [HAR] § 11-200.1-23 (a)(4)). The EIS will evaluate the potential environmental consequences of the Navy's and NASA's proposal to retain the use of 8,348 acres and 23 acres, respectively, of State lands including leaseholds and easement lands on Kaua'i, Hawai'i, for operational continuity and sustainment (in support of the military's continued and ongoing military training, testing, and facility operations) at the Pacific Missile Range Facility (PMRF), and NASA's continued operations including measurements of the Earth's rotation and local land motion at Kōke'e Park Geophysical Observatory (KPGO).

The Navy's current real estate agreements with DLNR include 684 acres of leaseholds and 7,664 acres of easement lands, for a total of 8,348 acres. These existing Navy real estate agreements with DLNR are set to expire between 2027 and 2030. The Navy's current leases and easements are primarily used for passive encroachment buffers, as well as for mission readiness (see Section 1.2 and Appendix D), access, and utilities at the following five general locations: Main Base, Kamokalā Ridge, Mānā Water Well, Miloli'i Ridge, and Mākaha Ridge. No ground-based training occurs on these parcels. The Navy's 8,348 acres of leaseholds and easement lands are part of the larger PMRF installation.

NASA's current real estate agreements with DLNR include 16 acres of leaseholds and 7 acres of easement lands, for a total of 23 acres. NASA uses the land for operations at KPGO that include collecting and coordinating geodetic data that contribute to daily measurements of the Earth's rotation and orientation in space. NASA issued the Navy a Use Permit in 2016 for portions of KPGO to conduct radar, telemetry, and communications services in support of PMRF operations. In addition to their mission operations, the Navy and NASA also conduct environmental management and stewardship activities on these lands.

These leases and easements collectively comprise the Project Area that will be analyzed in the EIS.

Figure 1-1 depicts an overview of general locations for PMRF and KPGO (Main Base, Kamokalā Ridge, Mānā Water Well, Miloli'i Ridge, Mākaha Ridge, and KPGO) on the Island of Kaua'i. The Project Area includes leaseholds and easement lands within these locations; it does not include the 1,933 acres of federally owned fee simple lands.

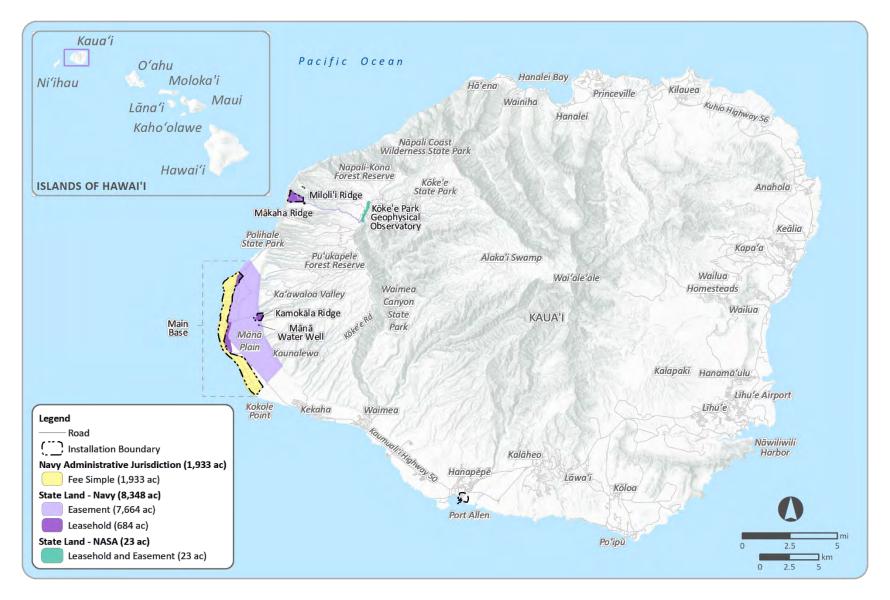


Figure 1-1 General Location

The Navy and NASA have jointly prepared this document and a separate Notice of Intent (NOI) to prepare an EIS in accordance with federal and state law including: the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] 4321–4370), as amended by the Fiscal Responsibility Act of 2023 (Public Law [P.L.] No. 118-5, div. C, tit. III, § 321(b), 137 Stat. 10, 40 (amending NEPA § 107) (2023) (codified at 42 U.S.C. § 4336a)); the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] §§ 1500–1508); Navy and NASA regulations and policies for implementing NEPA (32 CFR § 775, 14 CFR § 1216, OPNAVINST 5090.1E, and NPR 8580.1A, 32 CFR); all applicable federal environmental laws and agency guidance listed in Appendix B; Hawai'i Revised Statutes (HRS) Chapter 343 (the state law governing preparation of an EIS and commonly referred to as "HEPA"); and HAR § 11-200.1 (implementing HRS Chapter 343).

As requested by and in coordination with DLNR, the Navy and NASA identified that an EIS is the appropriate level of environmental review for the Proposed Action (HAR § 11-200.1-23 (a)(5)) (Lauren Yasaka e-mail message to Kerry Wells, email title: Lauren Pacific Missile Range Facility and Kōke'e Park Geophysical Observatory Real Estate EIS, January 18, 2024). HAR § 11-200.1-14(d)(2) supports this determination, which provides "[if the] proposing agency or approving agency determines, through its judgment and experience that an EIS is likely to be required, then the proposing agency may choose to prepare, or an approving agency may authorize an applicant to prepare, an EIS in accordance with subchapter 10, beginning with preparation of an EISPN." Additionally, due to the nature of the Proposed Action, the Navy and NASA concur with DLNR's determination that an EIS is likely to be required. An EIS also helps ensure that input from the public and agencies is integrated into the process of assessing environmental impacts of the Proposed Action and conducting fully informed decision making.

DLNR's mission is to "[e]nhance, protect, conserve and manage Hawai'i's unique and limited natural, cultural and historic resources held in public trust for current and future generations of the people of Hawai'i nei, and its visitors, in partnership with others from the public and private sectors" (Hawai'i DLNR, 2024). DLNR is also responsible for issuing and managing leases of State lands (agricultural, pasture, commercial, industrial, governmental, and resort leases). DLNR's responsibilities include managing and maintaining the state's coastal lands and waters, water resources, conservation and forestry lands, historic sites, small boat harbors, parks, and recreational facilities. DLNR also performs public safety duties (e.g., flood and rockfall prevention), maintains unencumbered public lands, and enforces the agency's rules and regulations.

For this Proposed Action, DLNR is responsible for issuing leases and easements to the Navy and NASA. DLNR is the agency with the responsibility for approving the real estate action since the State lands are under the management of DLNR's Land Division. DLNR is required to conduct an environmental review of this Proposed Action because the Navy and NASA are proposing the continued use of State lands (HRS § 343-5(a)(1), (2), (4)). Pursuant to HRS § 343-5(h): "[w]henever an action is subject to both the National Environmental Policy Act of 1969 (Public Law 91-190) and the requirements of this chapter, [DLNR] shall cooperate with federal agencies to the fullest extent possible to reduce duplication between federal and state requirements. Such cooperation, to the fullest extent possible, shall include joint environmental impact statements with concurrent public review and processing at both levels of government. Where federal law has environmental impact statement requirements in addition to but not in conflict with this chapter, [DLNR] and agencies shall cooperate in fulfilling these requirements so that one document shall comply with all applicable laws." Under HAR § 11-200.1-28, DLNR, as the accepting authority for HEPA,

evaluates whether the EIS fulfills the intent of HRS Chapter 343. In addition, during review of the EIS, DLNR will consider HRS Title 12, Chapter 171 (Hawai'i's land lease law).

#### 1.2 Project Area

PMRF is located approximately 100 miles from O'ahu on the northwest coast of the Hawaiian island of Kaua'i (refer to Figure 1-1). KPGO is located within Kōke'e State Park on the island of Kaua'i, at an elevation of approximately 3,600 feet above sea level near Waimea Canyon.

The Project Area overview is shown in Figure 1-2. Current real estate details for the Main Base, Kamokalā Ridge, and Mānā Water Well portions of the Project Area are shown in Figure 1-3. Mākaha, Miloli'i Ridge, and KPGO portions of the Project Area are shown in Figure 1-4.

The Project Area consists of the following:

- <u>Main Base</u>: leaseholds (392 acres) and easement lands (7,267 acres), located adjacent to the fee-simple lands at the installation, used for PMRF operational support, utilities and flood control, and as safety buffers;
- <u>Kamokalā Ridge</u>: leaseholds (89 acres) and easement lands (355 acres) used for ordnance storage, utilities access, and tsunami evacuation;
- Mānā Water Well: leaseholds (0.29 acre) used as the primary potable water source for PMRF;
- Mākaha Ridge: leaseholds (203 acres) and easement lands (42 acres) used for missile tracking and surveillance;
- Miloli'i Ridge: leaseholds (0.015 acre) used for radar and telemetry activities; and
- <u>KPGO</u>: leaseholds (16 acres) and easement lands (7 acres) used for surveillance and tracking, as well as NASA geodetic data collection and backup power generation.

#### 1.3 Background

#### 1.3.1 Historic Land Use at PMRF

The history of the Mānā Plain is complex, with the earliest known traditional Hawaiian archaeological site at PMRF dating to the eleventh century (NAVFAC Pacific, 2012). Appendix A provides a more detailed summary of land use history at PMRF.

Traditionally, the people of Mānā were noted as fishermen. It is likely that permanent settlements were concentrated at the inland edge of the Mānā Plain, where houses, temples, and agricultural complexes were built in the foothills at the base of the cliffs, on high ground overlooking the wetlands and coastline. Small seasonal fishing communities were scattered along the coast. The people of Mānā developed and maintained brackish water loko pu'uone fishponds in the wetlands of the Mānā Plain. Inland of the wetlands, they grew sweet potatoes and gourds on the fertile strip of land at the foot of the pali. The coastal dunes of the Mānā Plain, particularly at Nohili, were the burial grounds of ancient Hawaiians. Several important heiau were located at Mānā. These heiau include Polihale, where rites associated with departing souls were conducted, and 'Elekuna, which King Kalakaua and his priests visited many times in the nineteenth century.

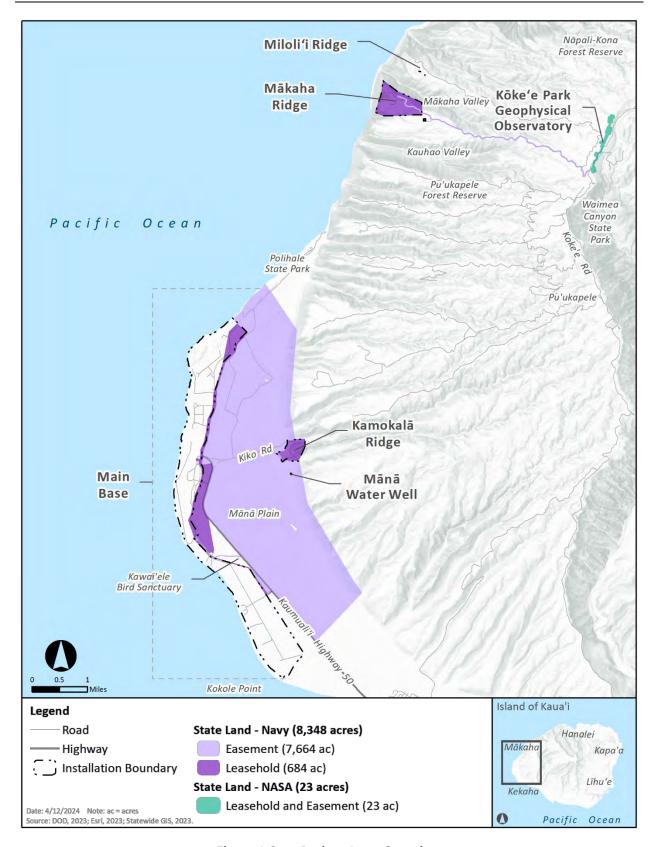


Figure 1-2 Project Area: Overview

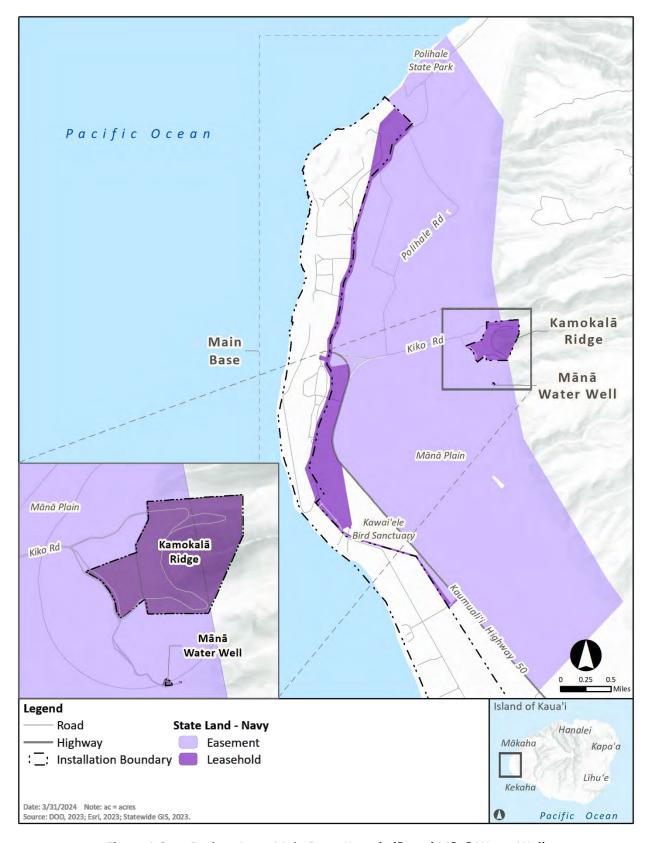


Figure 1-3 Project Area: Main Base, Kamokalā, and Mānā Water Well

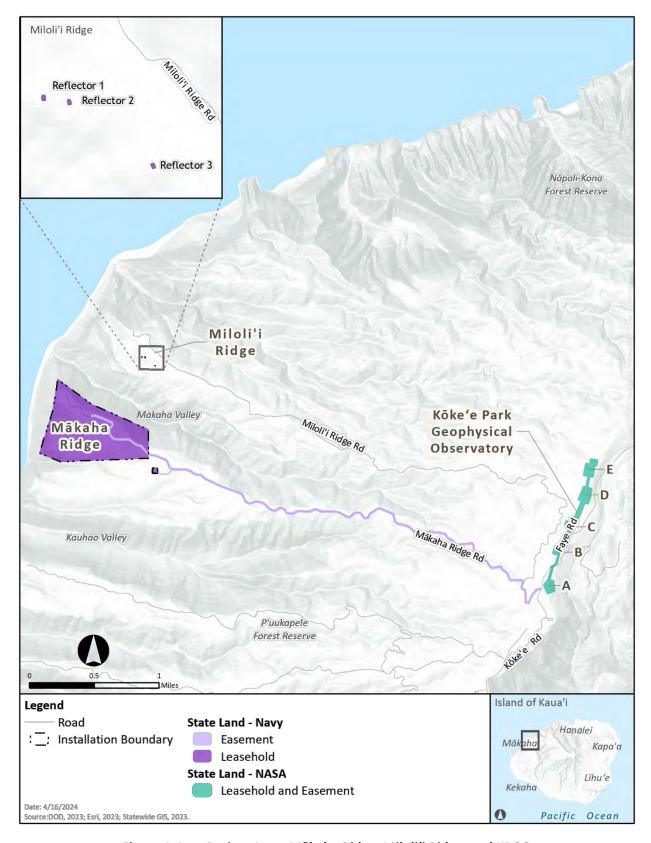


Figure 1-4 Project Area: Mākaha Ridge, Miloli'i Ridge, and KPGO

The Māhele of 1848 placed the ahupua'a of Waimea, including the Mānā Plain, into the possession of the Crown, and shortly afterwards the Crown leased these lands for commercial agriculture, such as livestock grazing, rice production, and sugarcane cultivation. As these agricultural ventures grew over the next three decades, contract laborers from China, then Japan, and finally the Philippines were brought to the area. Plantation camps were built to house the laborers. Mānā Camp eventually included a school, three stores, a company office, and a post office. Much of the wetlands were drained or filled to create more arable land for sugarcane cultivation under the Kekaha Sugar Company, Ltd., which was formed in 1898. Commercial sugarcane cultivation continued through the twentieth century.

In the 1920s, an airstrip was built by the Territory of Hawai'i. Beginning in 1940, the U.S. military acquired the airstrip and surrounding land to develop Barking Sands Army Air Base. During World War II, units from all branches of the armed forces and the Hawai'i National Guard were assigned to the base. The base was transferred to the Air Force in 1948. During the 1950s, the facility was redesignated Bonham Air Force Base, and the Navy, as a tenant of the base, began testing, evaluating, and training sailors on using guided missile systems. In 1958, the Navy's activity was named the Pacific Missile Range Facility as part of a newly designated larger Pacific Missile Range used by the Department of Defense (DoD) and NASA (NAVFAC Pacific, 2012). It was during this period that the Air Force transferred Bonham Air Force Base (which had been redesignated Bonham Auxiliary Landing Field) to the Navy. The transfer was finalized in 1966, at which time the entire installation became PMRF. A more detailed history of land use at PMRF is in Appendix A.

#### 1.3.2 Historic Land Use at KPGO

Desktop and documentary research for historic land use at KPGO is ongoing. The Draft EIS will include additional information on historic land use at KPGO.

#### 1.3.3 Navy Mission at PMRF

PMRF is the world's largest instrumented multi-environment range, capable of simultaneously supporting surface, subsurface, air, and space operations. As a Major Range and Test Facility Base, PMRF is part of the designated core set of DoD Test and Evaluation (T&E) infrastructure and associated workforce components that must be preserved as a national asset to provide T&E capabilities to support the DoD acquisition system. PMRF's unique location includes broad ocean areas to the north, south, and west with a relatively isolated and encroachment-free environment that safely and effectively supports these operations, as well as Navy Fleet training, as analyzed in the NEPA document titled *Hawaii-Southern California Training and Testing Final EIS/OEIS* (Navy, 2018).

The Navy's primary military mission at PMRF is to provide integrated range services in a modern, multi-threat, multi-dimensional environment that ensures the safe evaluation and execution of research, development, test and evaluation (RDT&E) missions. These capabilities are critical for DoD's ability to achieve its statutory Title 10 military readiness requirements<sup>1</sup>, to provide commercial entities with the ability to conduct commercial T&E activities (see 10 U.S.C. § 4175 providing for the use of T&E installations by commercial entities), and Title 51 national and commercial space program requirements

<sup>&</sup>lt;sup>1</sup> The legal basis for the roles, missions, and organization of each of the services are set forth in 10 U.S.C. § 7062 (Army), 10 U.S.C. § 8062 (Navy), 10 U.S.C. § 8063 (Marine Corps), 10 U.S.C. § 9062 (Air Force), and 10 U.S.C. § 9082 (Space Force).

by supporting commercial space activities (see 51 U.S.C. §§ 50504, 50901—50909 authorizing commercial space launch and reentry activities).

Activities at PMRF are monitored with real-time tracking and command/control capabilities located at or connected to the land-based PMRF facilities. This unique facility provides a realistic environment for training and testing in the use of surface, subsurface, air, and space weapons systems as well as land-based weapons systems located at the Main Base. The Navy conducts missile systems tests and has supporting facilities to track and evaluate these tests from the ocean floor to the outer atmosphere.

PMRF's space, air, surface, and subsurface tracking are accomplished from radar sites at multiple elevations. PMRF is linked to other range and data-processing facilities and can transmit real-time training and testing data anywhere in the world. The Navy, Air Force, Army, Marine Corps, allied foreign forces' RDT&E programs, and other non-DoD agencies (including NASA and commercial entities), all utilize PMRF's unique capabilities.

On Kaua'i, the Navy is the largest high-tech employer and third largest overall employer. It employs approximately 900 military and civilian personnel and contributes approximately \$150 million annually in salary, contract goods, and services to the local economy. Moreover, as described in Section 1.3.6, *Environmental Management and Stewardship*, the Navy actively manages the natural and cultural resources at PMRF for the leased and easement lands.

#### 1.3.4 NASA KPGO Space Geodesy Mission

Geodesy is the science of the Earth's shape, orientation in space, and gravity, and underpins modern navigation technology such as the Global Positioning System (GPS) that is used every day in a wide variety of devices, from handheld smartphones to satellites. NASA's Space Geodesy Project (SGP) was initiated to develop and maintain a global network of space geodetic observing instruments. The network is composed of core sites around the world that use four primary space-geodetic observation platforms: the Very Long Baseline Interferometry (VLBI), the Satellite Laser Ranging, the Doppler Orbitography by Radiopositioning Integrated on Satellite (DORIS), and the Global Navigation Satellite System (GNSS). The SGP maintains the International Terrestrial Reference Frame (ITRF), which is the foundation for virtually all Earth observations and georeferenced data used by society. Additionally, the SGP is fundamental for spacecraft tracking, as well as terrestrial, airborne, and maritime navigation. The scientific disciplines that rely on these data include sea level change, earthquake early warning systems, volcano deformation, flooding patterns, and glacier dynamics.

One of the core sites for NASA's SGP is KPGO, located within the Kōke'e State Park. The observatory sits at an elevation of approximately 3,600 feet above sea level near Waimea Canyon. KPGO is composed of five sites (Sites A through E), all of which have differing technologies and supportive infrastructure to collectively aid in the observatory's responsibilities. The mission of KPGO is to host three of the four primary geodetic platforms of NASA's SGP: VLBI, DORIS, and GNSS. KPGO collects these geodetic data to support satellites globally, and is a critical component of the SGP as part of its global network of space geodetic observatories.

KPGO consists of 16 acres of State leaseholds and 7 acres of easement lands (see Figure 1-4). The Navy holds a Use Permit and Memorandum of Understanding with NASA for portions of KPGO to utilize

NASA's facilities for the purpose of conducting PMRF mission support with radar, telemetry, and communications services at the NASA facilities.

#### 1.3.5 Navy and NASA Use of State Lands

The Navy and NASA began leasing property on Kaua'i from the State of Hawai'i in 1964 and 1965, respectively. The Navy required the land to develop sophisticated testing, evaluation, and training of military weapons systems at PMRF. Since then, PMRF's mission has expanded in response to new technologies and geopolitical threats. NASA's lease began in 1965 when KPGO was part of the NASA Manned Space Flight Network. Since that time, KPGO has supported many NASA and other projects with a variety of equipment. It is a highly versatile and multifunctional geodetic site.

Navy and NASA uses of the lease and easement areas that will be analyzed in the EIS are summarized in Table 1-1 and depicted in Figures 1-3 and 1-4. Appendix D includes details about Navy and NASA activities at KPGO (see Figure 1-4). A detailed and current list of leases and easement uses is included in Appendix D with a description of current activities and operational elements.

Table 1-1 Navy and NASA Activities on Leaseholds and Easement Lands

Area <sup>1</sup>	ole 1-1 Navy Agency	y and NASA Activities on Leaseholds and Easement La  Description of Activities	Figure Number
Main Base	Navy	The Main Base includes the following: 1,933 acres of fee simple land, 392 acres of leaseholds, and 7,267 acres of easement lands. The systems that support activities on the Main Base are integrated across fee simple land, leaseholds, and easements. The Main Base is the principal operations area for PMRF and supports surface, subsurface, air, and space activities. Activities on the leased parcels at the Main Base include ordnance assembly, operation and maintenance of drainage ditches and pumps to protect adjacent land from flooding, travel along roadways, and accessing utilities. Additionally, undeveloped land serves as safety zone buffers for missile/target launch operations and explosives safety.  GHA safety arcs have a radius between 6,000 and 10,000 feet from the missile launch location; the public is excluded from being within this area prior to, during, and immediately following a launch. For the portion of the GHA on leased lands adjacent to the Main Base, the Navy works with DLNR Division of State Parks to establish safety controls during missile launches and restricts entry to the southern portion of Polihale Beach Park prior to launches.  Explosives storage and munitions assembly locations have ESQD arcs for explosives safety zones based on quantities and types of ammunition stored in magazines, being transported, and staged on ordnance handling pads. ESQD arcs overlay ground areas of restricted non-ammunition-related facilities and activities located on an easement subject to a MOA	1-3
Kamokalā Ridge	Navy	with DLNR.  Kamokalā Ridge includes 444 acres consisting of the following: 89 acres of leaseholds and 355 acres of easement lands. Kamokalā Ridge provides ordnance storage for the Navy, Hawai'i Air National Guard, Department of Energy, and other military commands with requirements for training and storage. The site consists of ordnance storage magazines that have been excavated into the cliff face of Kamokalā Ridge. The magazines provide secure storage for Class 1.1 explosives. Activities on easements at Kamokalā Ridge include roadways to access utilities and ordnance storage. This area also serves as a tsunami evacuation site.	1-3

Area <sup>1</sup>	Agency	Description of Activities	Figure Number
Mānā Water Well	Navy	The Mānā Water Well includes 0.29 acre of leaseholds. Activities on leased land include maintenance and use of the Mānā Water Well, which is the primary source of potable water for PMRF and critical to all activities at the facility.	1-3
Miloliʻi Ridge	Navy	Miloli'i Ridge includes 0.015 acre of leaseholds. Activities at Miloli'i Ridge leaseholds include passive use of the frequency shift reflectors (a specific type of antenna system), which work with the radar and telemetry stations on Mākaha Ridge. The reflectors help calibrate and operate the radar systems used at the Main Base.	1-4
Mākaha Ridge	Navy	Mākaha Ridge consists of 245 acres composed of 203 acres of leaseholds and 42 acres of easement lands. The Mākaha Ridge Tracking Station serves as PMRF's secondary missile tracking and surveillance station. The station has tracking and surveillance radars as well as primary telemetry systems for the range. The site is also used by other agencies to test new radar technologies. Due to the sensitivities of the technology and the erosion rate at Mākaha Ridge, public access is restricted at this location.  Activities on easement lands at Mākaha Ridge include	1-4
KPGO	Navy and NASA	roadways to and around the features.  KPGO consists of 16 acres of leaseholds and 7 acres of easement lands. The Navy has a Use Permit for Sites A through D which support surveillance and tracking.  Navy infrastructure at KPGO supports tracking radars as well as command and control systems.  Sites A through E support KPGO activities which include collecting and coordinating geodetic data and contributing to daily measurements of the Earth's orientation in space and rotation. The diesel generator at Site B provides backup power to Sites A, C, D, and E.	1-4

Note: <sup>1</sup>See Figures 1-3 and 1-4.

Key: DLNR = Department of Land and Natural Resources; ESQD = Explosive Safety Quantity-Distance; GHA = Ground Hazard Area; KPGO = Kōke'e Park Geophysical Observatory; MOA = Memorandum of Agreement; NASA = National Aeronautics and Space Administration; PMRF = Pacific Missile Range Facility.

#### 1.3.6 Environmental Management and Stewardship

The Navy manages natural and cultural resources on PMRF including leased and easement lands. Conservation management of natural and cultural resources is a priority for both stewardship and mission readiness. This includes activities such as protecting the endangered Hawaiian monk seal (*Neomonachus schauinslandi*), green sea turtle (*Chelonia mydas*), wetlands, archaeological sites, iwi kupuna (sensitive human remains), and historic buildings and structures. The Navy also protects natural and cultural resources, including native Hawaiian sacred resources, against encroachment. PMRF's awareness of the importance of Native Hawaiian cultural values is embodied in PMRF's slogan: E Pane Mai Ka Nonoi O Nohili – Answering the Requests of Nohili.

Table 1-2 lists Navy funded and managed natural and cultural programs on State lands.

Table 1-2 Navy Programs on State Lands

Program	Description
REPI Projects	<ul> <li>Mitigation for the effects of sea level rise on agricultural land on the Mānā Plain by:         <ul> <li>creating an open floodable space to reduce the quantity and improve the quality of stormwater runoff discharged from agricultural drainage ditches into the nearshore environment at PMRF;</li> <li>reducing the threat erosion poses to PMRF infrastructure; and</li> <li>promoting the regeneration of historic wetland habitat for endemic and endangered Hawaiian waterbirds.</li> </ul> </li> <li>https://www.repi.mil/Portals/44/Documents/Buffer_Fact_Sheets/Navy/PMRF_BarkingSands.pdf</li> </ul>
PMRF INRMP	Natural resource management that includes erosion management, invasive plant management, native plant management, federally listed plant species management (at Mākaha Ridge), wildland fire management, nuisance and invasive animal management, special-status species management, terrestrial invertebrate and pollinator management, data collection, database and records management, outdoor recreation, and natural resources awareness, education, and training.
PMRF ICRMP	Cultural resource management, including implementation of the cultural resources management program and oversight of all cultural resource operations and activities at the range.  Nohili Dunes, at the Main Base, is a spiritual place for Native Hawaiians where their ancestors were buried as an ascending point to lani (heaven). The Navy, in collaboration with Na 'Ohana Papa O Mana, respectfully re-inters exposed remains in the Lua Kupapau O Nohili crypt located on base.
Agricultural Preservation Initiative	Ensures agricultural land areas surrounding the installation remain in agricultural use, which is compatible with PMRF operations.

Key: ICRMP = Integrated Cultural Resources Management Plan; INRMP = Integrated Natural Resources Management Plan; PMRF = Pacific Missile Range Facility; REPI = Readiness and Environmental Protection Integration.

Specific Navy environmental stewardship activities that occur on leased and easement lands at PMRF and KPGO are presented in detail in Section 2.5, *Best Management Practices* (see Table 2-6), and include:

- Responding to requests for public access and for cultural access to individuals and organizations.
- Maintaining ungulate exclusion fencing for erosion control at Mākaha Ridge.
- Out-planting and managing native plants in areas identified as having erosion and soil compaction issues.
- Improving and protecting habitat for the federally endangered Ni'ihau panicgrass (*Panicum niihauense*) and Hawaiian picture-wing fly (*Drosophila musaphilia* and *D. sharpi*).
- Continuing predator control to protect Migratory Bird Treaty Act (MBTA)-listed species including Laysan albatross (*Phoebastria immutabilis*).
- Working with the PMRF Archery Club to control ungulate populations at the Kamokalā Ridge site.
- Conducting observations to identify feral cats at Kamokalā Ridge (with possibility of expanding cat trapping if necessary).

- Removing deadfall in high-risk fire areas including near the Main Base missile launch site and the Kamokalā Ridge Magazines and replanting with native, low fire risk species.
- Coordinating with U.S. Fish and Wildlife Service (USFWS), Division of Forestry and Wildlife (DOFAW), PMRF Air Ops, and PMRF Public Works to update and implement nēnē (*Branta sandvicensis*) management procedures.

See Chapter 2, Section 2.5 for a more detailed description of Navy and NASA Best Management Practices (BMPs) and management strategies for natural and cultural resources.

#### 1.4 Purpose of and Need for the Proposed Action

The Navy's purpose of the Proposed Action is to maintain long-term DoD use of 8,348 acres of State lands (including leaseholds and easement lands) on Kaua'i, Hawai'i, for operational continuity and sustainment of the military readiness mission. NASA's purpose of the Proposed Action is to maintain long-term use of 23 acres of State lands (including leaseholds and easement lands) on Kaua'i for continued operations of KPGO. The Proposed Action is needed because the existing real estate agreements for these State lands are set to expire between 2027 and 2030. Preserving the long-term DoD and NASA use of these State lands is critical for military readiness, continuation of ongoing military training and testing, and maintaining data collection efforts of global significance. It also ensures the continued conservation management by the Navy and NASA of natural and cultural resources on these lands.

For DLNR, in addition to its role as the lessor of State lands, the proposed real estate action presents an opportunity for the agency to secure a revenue source to support its management of public lands and associated environmental and conservation programs. Fees from leases and easements are put into a State fund as required by law.

By ensuring continued Navy and NASA operations on Kaua'i, the real estate action would also preserve local jobs and income for the residents of Kaua'i, financially contribute to the overall economic well-being of Kaua'i, and maintain continued conservation management of natural and cultural resources on State lands at no cost to the State of Hawai'i.

#### 1.5 Scope of Environmental Analysis

The EIS will evaluate the potential environmental effects of the Proposed Action and alternatives that includes current activities that occur on leaseholds and easements, including the No Action Alternative. The EIS will satisfy both federal and State of Hawai'i requirements and provide the necessary analyses to allow the Navy, NASA, and DLNR to consider the environmental effects of the Proposed Action as part of their decision making.

Consistent with CEQ regulations and HAR § 11-200.1-24(b) the scope of the analysis for the alternatives in the EIS will be proportionate to the potential for environmental impacts.

#### 1.6 Relevant Laws and Regulations

The Navy and NASA are preparing this EIS in accordance with applicable federal and State of Hawai'i laws, statutes, regulations, and policies applicable to implementation of the Proposed Action. A

description of the Proposed Action's consistency with these laws, policies, and regulations, as well as the names of regulatory agencies responsible for their implementation, is described in Appendix B.

### 1.7 Public and Agency Participation and Intergovernmental Coordination

Public participation is a key component of the EIS process (Figure 1-5). Opportunities for public input and participation in the EIS process occur during two stages:

- During the scoping period, following the joint publication of the NOI (40 CFR 1501.7), and the Environmental Impact Statement Preparation Notice (EISPN) (HAR § 11-200.1-23); and
- During the comment period following publication of the Draft EIS.

Figure 1-5 illustrates the stages of public involvement in the NEPA and HEPA environmental processes. Table 1-3 provides a summary of public engagement for these processes, and Appendix C provides a list of interested parties who were contacted as part of scoping. The public involvement processes for NEPA and HEPA for this EIS are running concurrently to meet the requirements of both State of Hawai'i and federal laws and regulations.

#### 1.7.1 Scoping

Public scoping meetings during the scoping period for this EIS will be held on June 4, 5, and 6, 2024, from 5:00–8:00 p.m. at the Kaua'i Veterans Center in Līhu'e (3215 Kaua'i Veterans Memorial Highway, Līhu'e), Kekaha Neighborhood Center (8130 Elepaio Road, Kekaha), and Sheraton Kaua'i Coconut Beach Resort (650 Aleka Loop, Kapa'a), respectively (Table 1-3). Public scoping will serve as an opportunity to obtain input from the community, agencies, and other stakeholders regarding the issues and resources they would like to see addressed and analyzed throughout the EIS process, as well as identify reasonable alternatives. The public is invited to provide oral and written comments at the scoping meetings. The scoping meetings will also serve as an opportunity to obtain public input concerning potential effects to historic properties pursuant to Section 106 of the National Historic Preservation Act (NHPA) and HRS § 6E-42.

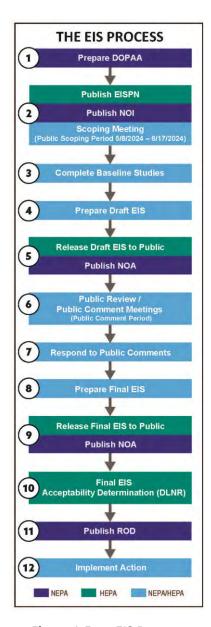


Figure 1-5 EIS Process

Methods to solicit public input during the scoping period for this EIS include notification, publication of project information, and invitations to participate in scoping. Additionally, a joint notice will be published on May 8, 2024, in *The Garden Island, MidWeek Kaua'i*, and *The Honolulu Star-Advertiser* announcing the publication of the EISPN and NOI and the date and time of the scoping meetings.

Description Date May 2024 Notification letters sent to stakeholders (individuals, agencies, and organizations) NOI published in the Federal Register (NEPA), EISPN Published in The Environmental Notice May 2024 (HEPA) Public website available: http://www.PMRF-KPGO-EIS.com May 2024 June 2024 Public scoping meetings on Kaua'i: Kekaha, Līhu'e, and Kapa'a NOA of Draft EIS for public review Summer 2025 Public meetings for Draft EIS: Kekaha, Līhu'e, and Kapa'a • Draft EIS public review period closes Publication of NOA for Final EIS in the Federal Register (NEPA), Publication of Final EIS Winter 2025 (NEPA, HEPA) and DLNR Decision in The Environmental Notice (HEPA) Winter 2025 30-day wait period Spring 2026 Publication of Record of Decision (NEPA)

Table 1-3 Public Engagement under NEPA and HEPA

Key: DLNR = Department of Land and Natural Resources; EIS = Environmental Impact Statement; EISPN = Environmental Impact Statement Preparation Notice; HEPA = Accepted Term for Hawai'i Revised Statutes Chapter 343; NEPA = National Environmental Policy Act; NOA = Notice of Availability; NOI = Notice of Intent.

Letters with similar information will be sent to individual, agency, and organization stakeholders (Appendix C). Stakeholders consist of agencies with a regulatory role, individuals and organizations interested in the project, and elected officials whose jurisdiction includes PMRF and KPGO.

#### 1.7.2 Draft EIS

All comments received during the public scoping period will be considered during EIS preparation. A summary of public comments and responses to substantive scoping comments will be provided in the Draft EIS.

#### 1.7.3 Final EIS

Substantive public comments on the Draft EIS will be considered in the development of the Final EIS. A detailed summary of public comments, revisions made to the Draft EIS in response to comments, and responses to substantive comments will be provided in the Final EIS.

#### 1.7.4 Intergovernmental Coordination

The Navy and NASA are consulting with USFWS and National Marine Fisheries Service (NMFS) in compliance with the Endangered Species Act (ESA) Section 7 for federally listed species. The Navy and NASA are coordinating with DLNR's DOFAW regarding potential impacts to state-listed species pertaining to the leased lands under the Proposed Action. The Navy and NASA are also consulting with the Hawai'i State Historic Preservation Officer (SHPO) as part of their NHPA requirements and coordinating with the DLNR, State Historic Preservation Division (SHPD) to satisfy HRS § 6E-42 requirements. The Navy is coordinating with the State of Hawai'i Office of Planning and Sustainable Development, Planning Division under the Coastal Zone Management Act (CZMA). The Navy and NASA will coordinate with DLNR, Office of Conservation and Coastal Lands, as applicable, as part of any Conservation District Use Permit application. Applicable State of Hawai'i and federal laws, regulations, and policies are described in Appendix B.

### 2 Proposed Action and Alternatives

This chapter includes a description of the Proposed Action, the screening factors used to determine reasonable alternatives, alternatives carried forward for analysis, alternatives considered but eliminated from detailed analysis, and BMPs included in the Proposed Action.

#### 2.1 Proposed Action

The Navy proposes to retain the use of 8,348 acres of State land on Kaua'i in support of continued and ongoing military training and testing at PMRF. NASA proposes to retain the use of 23 acres of State land on Kaua'i in support of maintaining data collection efforts of global significance at KPGO. The Proposed Action includes current operations that occur on leased and easement lands.

#### 2.2 Alternative Screening Process

NEPA's implementing regulations provide guidance on the consideration of alternatives and require rigorous exploration and objective evaluation of reasonable alternatives. Only those alternatives that meet the purpose and need of the Proposed Action and are deemed reasonable following the application of alternatives screening criteria are carried forward for detailed analysis in the Draft EIS, as is the No Action Alternative.

For NEPA and HEPA, an EIS "shall describe in a separate and distinct section discussion of the alternative of No Action as well as reasonable alternatives that could attain the objectives of the action" (HAR § 11-200.1-24(h) and 40 CFR 1502.14(c), respectively).

The screening factors used to select reasonable alternatives that would allow the Navy and NASA missions to be fulfilled are:

- 1. Maintain long-term use of State land currently used to support DoD and NASA missions on Kaua'i;
- 2. Preserve current DoD and NASA operations on Kaua'i;
- Retain existing DoD and NASA infrastructure on Kaua'i; and
- 4. Support DLNR management of public lands and associated environmental and conservation programs on Kaua'i.

All screening factors must be met for an alternative to be considered reasonable. Table 2-1 identifies the five alternatives considered.

Table 2-1 Description of Alternatives Identified

Table 2.1 Description of Attendances facilitated			
Alternative Name	Alternative Description		
Alternative 1: Succeeding Current Real Estate Agreements	The Navy and NASA would apply to DLNR for new long-term real estate agreements in the same manner and for the same uses as the current leases and easements.		
Alternative 2: Fee Simple Acquisition of Current Real Estate Agreements for Leaseholds	The Navy and NASA would pursue fee simple acquisition of 700 acres (684–Navy, 16–NASA) of leaseholds, and otherwise obtain use of the remaining acreage as described in Alternative 1.		
Alternative 3: No Action Alternative	The Navy and NASA would not seek any real estate agreements for the State lands on Kaua'i after expiration of the leases and easements between 2027 to 2030. The current real estate agreements for 8,348 acres with the Navy and 23 acres with NASA would expire. All existing infrastructure would be removed, or abandoned in place (as determined by the existing real estate agreements), from the Navy and NASA leased and easement lands.		
Alternatives Considered by	ut Not Carried Forward for Detailed Analysis		
Succeeding Leases and Easements Except for Current Leases at Mākaha Ridge and KPGO	The Navy and NASA would obtain succeeding leases and easements on leased land not currently located in the State of Hawai'i's Conservation District. These would include leases at the Main Base, Kamokalā Ridge, Mānā Water Well, and Miloli'i Ridge, but would not include succeeding leases or easements at Mākaha Ridge or KPGO.		
Succeeding Leases Only with No Easements	The Navy and NASA would only obtain succeeding lease agreements and not succeeding easements. These would include succeeding leases at the Main Base, Kamokalā Ridge, Mānā Water Well, Miloli'i Ridge, Mākaha Ridge, and KPGO, but not easements at the Main Base, Kamokalā Ridge, or Mākaha Ridge.		

Key: DLNR = Department of Land and Natural Resources; KPGO = Kōke'e Park Geophysical Observatory; NASA = National Aeronautics and Space Administration; PMRF = Pacific Missile Range Facility.

Table 2-2 summarizes the application of the screening factors to these alternatives and the results. Two alternatives met all screening factors: (1) extend succeeding current real estate agreements in their present form, and (2) fee simple acquisition of all leased parcels. Section 2.3 includes a description of alternatives carried forward for detailed analysis and Section 2.4 includes a description of alternatives considered but eliminated from detailed analysis.

Table 2-2 Screening Evaluation Factors and Results

Table 2-2 Screening Evaluation Factors and Results						
	Alternatives Carried Forward for Detailed Analysis				nsidered but Not ard for Detailed alysis	
Screening Factors	Alternative 1: Succeeding Current Real Estate Agreements <sup>1</sup>	Alternative 2: Fee Simple Acquisition of Current Real Estate Agreements for Leaseholds <sup>2</sup>	Alternative 3: No Action Alternative <sup>3</sup>	Succeeding Leases and Easements Except for Current Leases at Mākaha Ridge and KPGO <sup>4</sup>	Succeeding Leases Only (Current Easements are Not Renewed) <sup>5</sup>	
Maintain long- term use of State land currently used to support DoD and NASA missions on Kaua'i	Yes	Yes	No	No	No	
Preserve current DoD and NASA operations on Kaua'i	Yes	Yes	No	No	No	
Retain existing DoD and NASA infrastructure on Kaua'i	Yes	Yes	No	No	No	
Support DLNR management of public lands and associated environmental and conservation programs	Yes	Yes	Yes–with limitations	Yes	Yes–with limitations	
Alternative Carried Forward	Yes	Yes	Yes <sup>6</sup>	No	No	

*Notes*: See Section 2.3 for detailed analysis of alternatives carried forward and Section 2.4 for alternatives considered but eliminated from detailed analysis.

Key: DLNR = Department of Land and Natural Resources; DoD = Department of Defense; KPGO = Kōke'e Park Geophysical Observatory; NASA = National Aeronautics and Space Administration.

<sup>&</sup>lt;sup>1</sup>See Section 2.3.1, Alternative 1: Succeeding Current Real Estate Agreements.

<sup>&</sup>lt;sup>2</sup>See Section 2.3.2, Alternative 2: Fee Simple Acquisition of Current Real Estate Agreements for Leaseholds.

<sup>&</sup>lt;sup>3</sup>See Section 2.3.3, Alternative 3: No Action Alternative.

<sup>&</sup>lt;sup>4</sup>See Section 2.4.1, Succeeding Leases and Easements Except Current Leases at Mākaha Ridge and KPGO are Not Renewed.

<sup>&</sup>lt;sup>5</sup>See Section 2.4.2., Succeeding Leases Only (Current Easements are Not Renewed).

 $<sup>^6\</sup>mbox{Carried}$  forward per NEPA and HEPA requirements.

#### 2.3 Alternatives Carried Forward for Detailed Analysis

The screening analysis resulted in two action alternatives (Alternatives 1 and 2), depicted in Figures 2--1 and 2-2. Alternative 3 is the No Action Alternative, which will be carried forward for analysis in the Draft EIS (Section 2.3.3, *No Action Alternative*) as required by NEPA and HEPA. This alternative is depicted in Figure 2-3.

A comparison of these alternatives is provided in Table 2-3, which lists the acres of leaseholds and easements under existing conditions.

#### 2.3.1 Alternative 1: Succeeding Current Real Estate Agreements

Under this alternative, the Navy and NASA would apply to DLNR for new long-term real estate agreements in the same manner, similar duration, and for the same uses as the current leases and easements (see Table 1-1 and Appendix D). The Navy's agreements would include 684 acres of land leased exclusively by the Navy and 7,664 acres of easements (for a total of 8,348 acres). NASA's agreements would include 16 acres of land leased exclusively by NASA, 7 acres of easement lands (for a total of 23 acres) and would continue its Use Permit with the Navy.

Securing the new real estate agreements from DLNR must occur prior to expiration of the current real estate agreements to ensure uninterrupted operation of all federal agency missions. Under this alternative, there are no proposed changes to the type or frequency of current activities occurring on state leased and easement lands. This alternative would not change any use or maintenance of existing infrastructure and would not involve construction, renovation, or demolition of facilities. This alternative would also preserve the Navy and NASA-funded natural and cultural resource management activities on the leased and easement lands.

The leased areas are currently used for safety buffers, Anti-Terrorism (AT) security requirements (Main Base), ordnance storage-related facilities (Kamokalā Ridge), potable water (Mānā Water Well), radar and telemetry related facilities (Miloli'i and Mākaha Ridges), and data collection and tracking (KPGO). The easement areas are currently used for utilities, roadways, and as encroachment buffers for Navy activities on fee simple lands. Many of these easements also preserve existing land use and prevent incompatible development that would affect the ability of PMRF to meet its mission requirements.

Under this alternative, the Navy and NASA would maintain succeeding agreements for the current real estate agreements, and this alternative meets all screening factors (see Section 2.2, *Alternative Screening Process*).

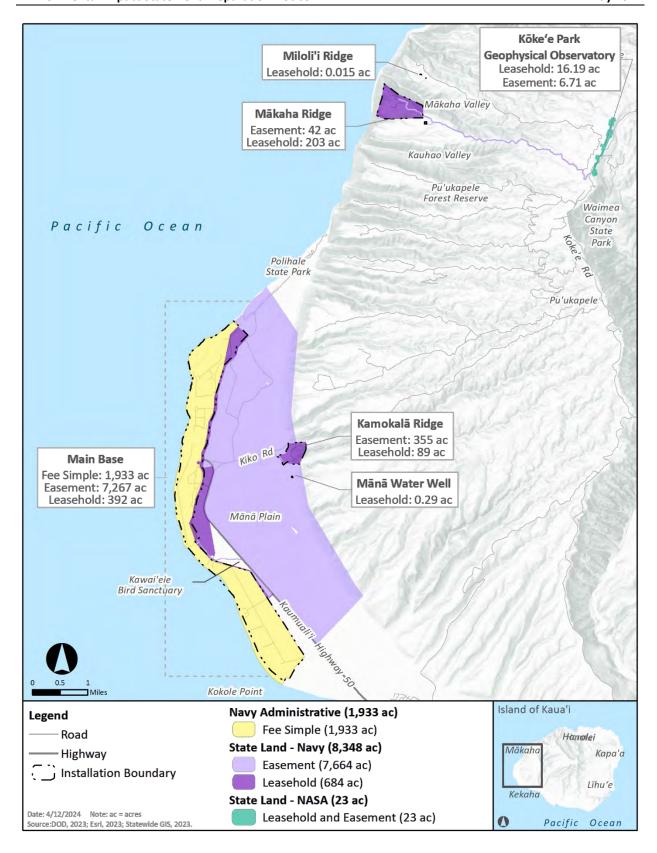


Figure 2-1 Alternative 1: Succeeding Current Real Estate Agreements

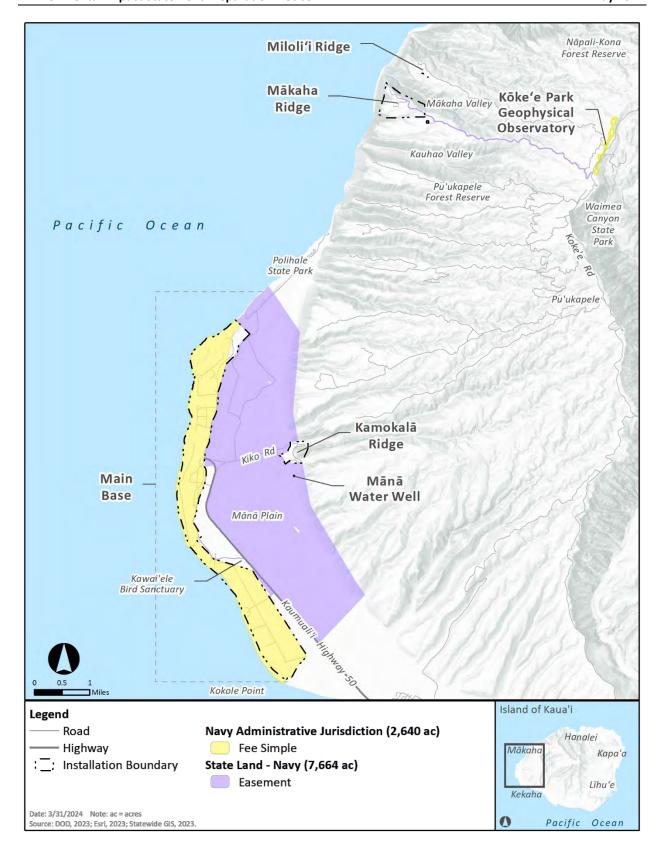


Figure 2-2 Alternative 2: Fee Simple Acquisition of Current Real Estate Agreements for Leaseholds

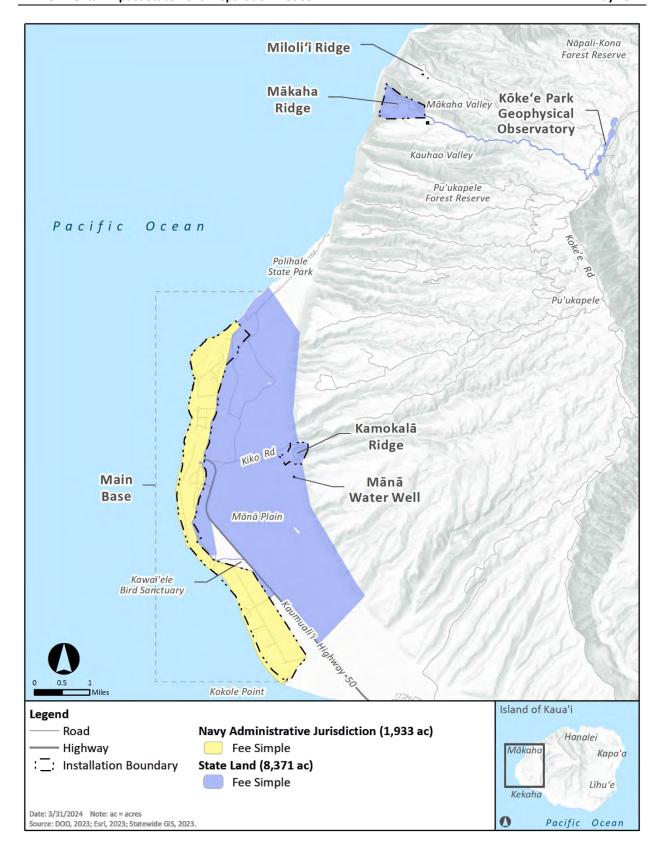


Figure 2-3 Alternative 3: No Action Alternative

Table 2-3 Comparison of Alternatives: Navy and NASA Land Status and Acreages by Location

	Existing Conditions/Alternative 1 (acres)			Alternative 2 (acres)			Alternative 3 (acres)					
Location	Lease- hold	Ease- ment	Fee Simple	Total	Lease- hold	Ease- ment	Fee Simple	Total	Lease- hold	Ease- ment	Fee Simple	Total
Navy										-		
Main Base	392	7,267	1,933	9,592	NA	7,267	2,325	9,592	NA	NA	1,933	1,933
Kamokalā Ridge	89	355	NA	444	NA	355	89	444	NA	NA	NA	NA
Mānā Water Well	0.29	NA	NA	0.29	NA	NA	0.29	0.29	NA	NA	NA	NA
Miloli'i Ridge	0.015	NA	NA	0.015	NA	NA	0.015	0.015	NA	NA	NA	NA
Mākaha Ridge	203	42	NA	245	NA	42	203	245	NA	NA	NA	NA
Total	684	7,664 <sup>1</sup>	1,933	10,281	NA	7,664	2,617	10,281	NA	NA	1,933	1,933
NASA												
KPGO	16	7	NA	23	NA	NA	23	23	NA	NA	NA	NA
Total	16	7	NA	23	NA	NA	23	23	NA	NA	NA	NA

Note: 17,664 acres includes 7,491 acres of Restrictive Use Easements and 173 acres of Utility and Roadway Easements.

Key: KPGO = Kōke'e Park Geophysical Observatory; NASA = National Aeronautics and Space Administration; NA = not applicable.

Under Alternative 1, in addition to the operational missions, Navy and NASA natural and cultural resource activities and responsibilities on these lands would continue as currently conducted (see Section 1.3, *Background*). This includes continued Navy funding and managing resource management actions and public use programs (see Section 1.3.6, *Environmental Management and Stewardship*); pursuing Readiness and Environmental Protection Integration (REPI) projects; continuing general natural resource management as identified in the PMRF Integrated Natural Resources Management Plan (INRMP); and continuing cultural resource management as identified in the PMRF Integrated Cultural Resources Management Plan (ICRMP).

Additionally, the Navy and NASA would continue to adhere to applicable federal and state laws as well as policies and regulations applicable to Navy and NASA regarding investigation, removal, and cleanup of hazardous and toxic materials and wastes.

The six locations are shown in Figure 2-4 (Main Base), Figure 2-5 (Kamokalā Ridge and Mānā Water Well), Figure 2-6 (Miloli'i Ridge), Figure 2-7 (Mākaha Ridge), and Figure 2-8 (KPGO).

# 2.3.2 Alternative 2: Fee Simple Acquisition of Current Real Estate Agreements for Leaseholds

Under this alternative, the Navy and NASA would pursue fee simple acquisition of 700 acres (684 acres for Navy use and 16 acres for NASA use) of leaseholds, and otherwise obtain use of the remaining acreage as described in Alternative 1. The new Navy fee simple land of 684 acres would include 392 acres of land at the Main Base, 89 acres at Kamokalā Ridge, 0.29 acre at the Mānā Water Well, 0.015 acre at Miloli'i Ridge, 203 acres at Mākaha Ridge, and the NASA fee simple land would include 16 acres at KPGO. This acreage would be transferred from ownership by the State of Hawai'i to the United States.

This alternative would not change any use or maintenance of existing infrastructure and would not involve construction, renovation, or demolition of facilities. The activities at these sites would continue as currently used (see Section 1.3, *Background* and Section 2.3.1, *Alternative 1: Succeeding Current Real Estate Agreements*). The land would be managed in perpetuity by the Navy and NASA according to federal requirements. Under this alternative, Navy and NASA activities and responsibilities on these lands would continue as currently conducted (see Section 1.3, *Background* and the description above for Section 2.3.1, *Alternative 1: Succeeding Current Real Estate Agreements*). Under this alternative, the Navy would continue to operate at KPGO under the Use Permit with NASA.

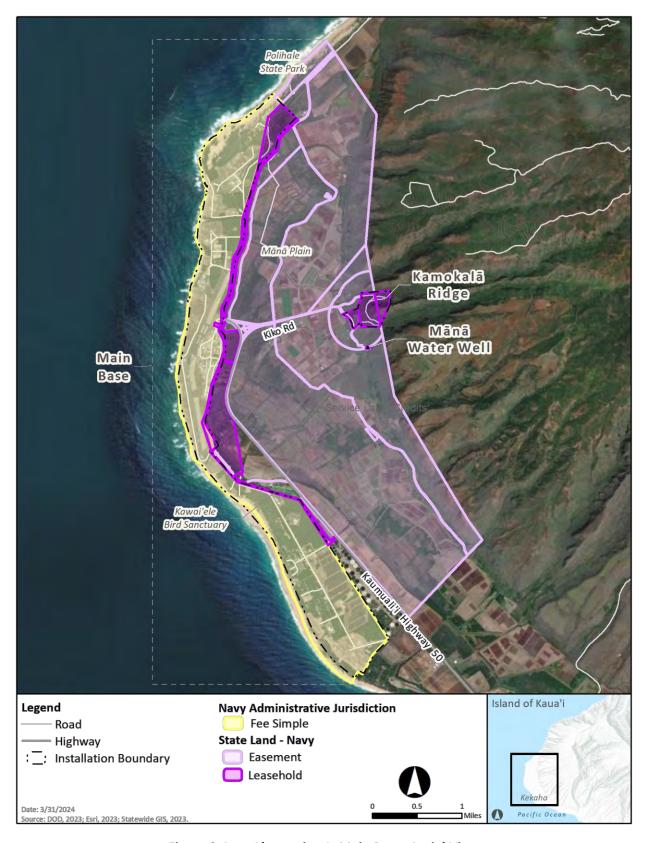


Figure 2-4 Alternative 1: Main Base: Aerial View

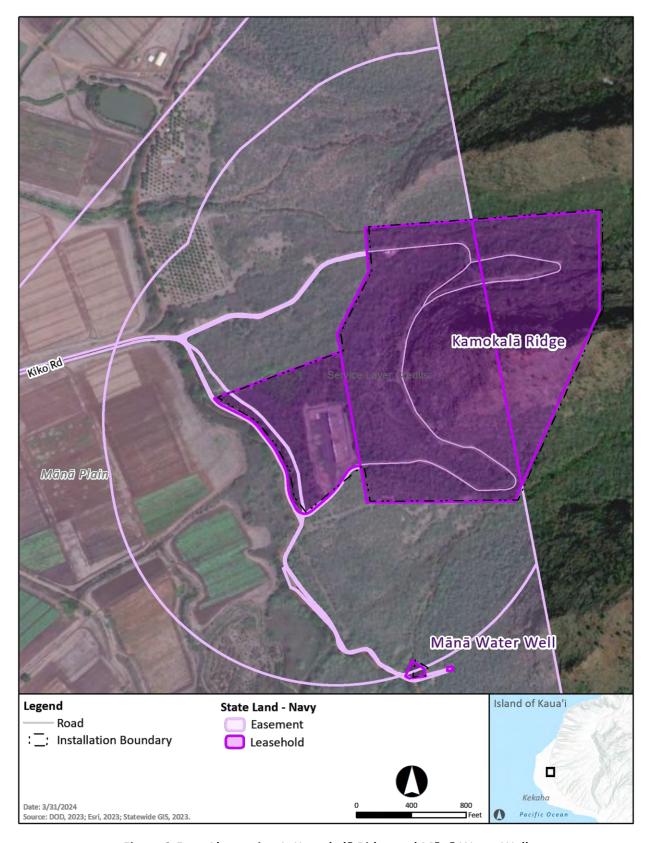


Figure 2-5 Alternative 1: Kamokalā Ridge and Mānā Water Well



Figure 2-6 Alternative 1: Miloli'i Ridge

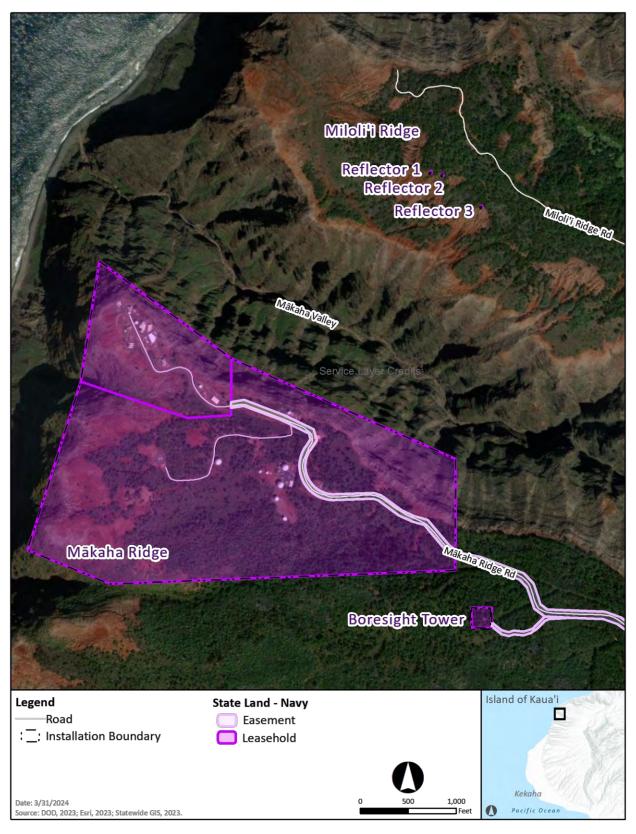


Figure 2-7 Alternative 1: Mākaha Ridge

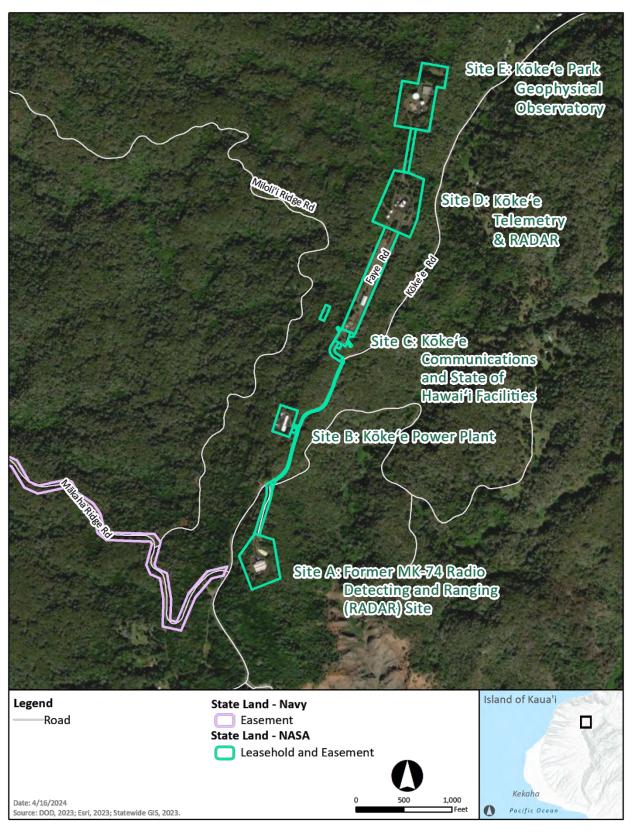


Figure 2-8 Alternative 1: KPGO

By acquiring the leased parcels, this alternative meets the purpose and need of the Proposed Action, secures the long-term Navy and NASA use of State lands near Navy lands on Kaua'i, and preserves the long-term use of State land for military readiness and continuation of Navy activities, as well as NASA's current geodetic activities. This alternative also meets all of the screening factors (see Section 2.2, *Alternative Screening Process*). It would result in federal ownership of land that is currently leased from the state, which would allow the Navy to maintain long-term use of DoD land on Kaua'i, preserve current DoD operations, and retain existing DoD infrastructure. Under this alternative, the Navy and NASA would continue current management of natural and cultural resources on these lands, which are consistent with DLNR's environmental and conservation programs.

### 2.3.3 Alternative 3: No Action Alternative

Under the No Action Alternative, the Navy and NASA would not seek any real estate agreements for the State lands on Kaua'i after expiration of the leases and easements between 2027 to 2030. The current real estate agreements for 8,348 acres with the Navy and 23 acres with NASA would expire. All existing infrastructure would be removed, or abandoned in place, from Navy and NASA leased and easement lands.

Under the No Action Alternative, the Navy would not be able to conduct a substantial portion of training and testing events because of the loss of safety and buffer areas for missile and target launches and access to critical infrastructure necessary to support ongoing operations at PMRF. This includes Mānā Water Well (the primary potable water source for operations at the Main Base), support facilities at Mākaha Ridge, ordnance storage at Kamokalā Ridge, utility infrastructure and roads at the Main Base, secondary and operation access roads to the Main Base and Mākaha Ridge, frequency shift reflectors at Miloli'i Ridge, utility and drainage easements, and the secondary access gate necessary for ensuring a safe route for ordnance transport to and from the Main Base. The Navy would not be able to calibrate instrumentation and antennas used to ensure safety on the range, resulting in a loss of support to surface, subsurface, air, and space operations. Loss of Navy radar and telemetry systems at KPGO would also limit effectiveness during data collection and could result in safety issues related to tracking on the range. The loss of ordnance storage at Kamokalā Ridge would prohibit the Navy from supporting certain missions at PMRF. The loss at KPGO would impact NASA's ability to maintain a global network of space geodetic observatories that work together to maintain a stable terrestrial reference system contributing to NASA missions, military and civilian navigation, and the scientific community.

In addition, the environmental management and stewardship currently conducted by Navy and NASA on leased land and by the Navy on easement lands would no longer occur (see Section 1.3.6, *Environmental Management and Stewardship*).

The sections below provide details about the No Action Alternative in relation to state actions and responsibilities, as well as federal actions and responsibilities (DoD and NASA). A more detailed description of impacts by lease and easement from the No Action Alternative are included in Appendix E. The No Action Alternative does not meet the purpose and need (see Section 1.4, *Purpose of and Need for the Proposed Action*). However, the analysis associated with the No Action Alternative is carried forward as required by NEPA and HEPA for comparative purposes.

### 2.3.3.1 State Actions and Responsibilities

The No Action Alternative would result in the State of Hawai'i assuming full control and management of the leased and easement lands after expiration of the leases and easements in 2027, 2029, and 2030. This would result in DLNR assuming sole responsibility, including funding, for the natural and cultural resources and public activities that are presently maintained by the Navy on the leased and easement lands.

### 2.3.3.2 Federal Actions and Responsibilities

Under this alternative, there would be a considerable change in how the Navy uses its fee simple property, and for NASA, its operations at KPGO would cease, severely impacting the SGP. The existing leases and easements impose certain obligations on the Navy and NASA prior to returning the property to the State. These obligations include reforestation, removal of signs, demolition and removal of existing and abandoned structures, and removal of surface weapons used in connection with DoD training activities.

### 2.3.3.2.1 Navy Actions and Responsibilities

### **PMRF Training and Testing Mission**

Under the No Action Alternative, the Navy would conduct only a portion of its current mission at PMRF. Without succeeding long-term real estate agreements, most of the current training and testing could not occur, resulting in an irreplaceable loss of capabilities that would severely diminish the military value of PMRF and cause severe disruption to the DoD mission and negatively impact national security.

A summary of impacts to the Navy is provided in Table 2-4.

Table 2-4 Impacts to PMRF Training and Testing Mission from the No Action Alternative

Activities	Impact to Mission from the No Action Alternative
Missile/Target Launches	The loss of required setback distances and easement areas would substantially reduce essential safety buffer zones required for training and testing missions as well as for preventing incompatible development. Without these setbacks and safety buffer zones, operations at the Main Base could not continue as currently conducted. Only a limited set of aerial targets could potentially be launched without the land needed for safety buffer zones.
Encroachment Planning	The loss of required setback distances and easement areas would eliminate the ability of the Navy to maintain encroachment buffers that help prevent real estate development around the installation incompatible with the PMRF training and testing mission.
Facility Use and Management	The Navy would have no access to critical infrastructure facilities that support operations at Mākaha Ridge (including a guard shack, a Frequency Interference Control Building, Maintenance Facility, Telemetry Building, a boresight tower, telemetry antennas, water tanks, a laboratory, radar sites, communications, a power plant, antennas, and a helicopter pad), ordnance storage at Kamokalā Ridge, 22 buildings with utility infrastructure and roads at the Main Base, secondary and operation access roads to the Main Base, access roads to Mākaha Ridge, and frequency shift reflectors at Miloli'i Ridge, as well as utility and drainage easements. This alternative would also result in the loss of the Navy's environmental management and Stewardship programs described in Section 1.3.5, Environmental Management and Stewardship.

Activities	Impact to Mission from the No Action Alternative
Flood Protection	Loss of drainage easements could impact range and daily operations until drainage
FIOOU FIOLECTION	management is established to prevent flooding of adjacent agricultural lands.
	Buildings at the Main Base located on leased lands are strategically located and
Support Facilities and	cannot be moved; therefore, the loss of these buildings and the utility easements
Utilities Transmission	that support them would result in losing the ability to conduct missions at PMRF
Othices Transmission	associated with this infrastructure. Loss of utility easements would impact all range
	and daily operations unless new utility connections could be established.
	Loss of access to the Mānā Water Well would result in severe impacts to daily
	operations as it is the primary source of all potable water for PMRF. Without
Potable Water	access to a steady, reliable source of potable water, there would be effects on
	overall living conditions and PMRF would not have water for a myriad of
	operations, such as for supply chillers and fire suppression.
	With the loss of Mākaha Ridge, most of the training and testing operations would
	cease since there would be an inability to calibrate instrumentation and antennas,
	which would limit effectiveness during data collection and could result in safety
	issues related to tracking on the range. This would result in a loss of support to
Instrumentation	surface, subsurface, air, and space operations. Loss of frequency shift reflectors at
	Miloli'i Ridge would result in the inability to calibrate instrumentation and
	antennas, which would limit effectiveness during data collection and could result in
	safety issues related to tracking on the range. Loss of radar and telemetry systems
	at KPGO would also limit effectiveness during data collection and could result in
	safety issues related to tracking on the range.
	With the loss of ordnance storage at Kamokalā Ridge, the base would not be able
Ordnance Storage/	to meet explosive safety storage requirements and could not support certain
Management	missions at PMRF. Without storage, the missile assembly building could not be
	used since there would be no safe place to store the assembled munitions.
	Loss of access roads at the Main Base located on State land would result in impacts
	to operations, since the secondary access gate is utilized by personnel during peak
	commute times and is used as a primary access point when the primary access
Access	gate is closed. The loss of the ordnance gate would result in shifting of ordnance
	transport through the primary gate, which could result in impacts to safety and
	would limit access to and from the base during times when ordnance is being
	transported.
_	Loss of Site B, which includes the back-up plant diesel generator for Sites A, C, D,
Power	and E, would impact the source of reliable power when systems at KPGO are
	supporting range operations.

Key: KPGO = Kōke'e Park Geophysical Observatory; PMRF = Pacific Missile Range Facility.

### Navy Environmental Management and Stewardship

Under the No Action Alternative, environmental management and stewardship activities conducted by the Navy on lease and easement lands would cease. These activities include, but are not limited to, REPI projects, implementation of the PMRF INRMP and PMRF ICRMP, as well as the Agricultural Preservation Initiative.

### 2.3.3.2.2 NASA Actions and Responsibilities

Under the No Action Alternative, NASA would lose access to Sites A through E at KPGO. Without succeeding long-term real estate agreements, all of NASA's current activities at KPGO would cease. This would result in a loss of capabilities to the larger SGP which includes a global network of interconnected

instruments that are the foundation for Earth observations and georeferenced data used by virtually all of society. A summary of impacts to the NASA mission from this alternative is provided in Table 2-5.

Table 2-5	Impacts to NASA Activities from the No Action Alternative

NASA Activities	Impact to NASA Activities from the No Action Alternative
Space Geodesy Project	Without use of KPGO Sites A through E, NASA would lose its northern Pacific VLBI and DORIS stations, and two GNSS stations, substantially reducing the capability of
	NASA's global SGP to support the following: spacecraft tracking; as well as military
	and civilian terrestrial, airborne, and maritime navigation; and the scientific
	disciplines that rely on the data produced at KPGO.

Key: DORIS = Doppler Orbitography and Radio-positioning Integrated by Satellite; GNSS = Global Navigation Satellite System; KPGO = Kōke'e Park Geophysical Observatory; NASA = National Aeronautics and Space Administration; SGP = Space Geodesy Project; VLBI = Very Long Baseline Interferometry.

The loss at KPGO would impact NASA's ability to maintain a global network of space geodetic observatories that work together to maintain a stable terrestrial reference system which provides the foundation for virtually all other Earth observations and georeferenced data used by society. It is fundamental for spacecraft tracking, as well as terrestrial, airborne, and maritime navigation. The scientific disciplines that rely on these data include areas of study such as sea level changes, earthquake early warning systems, volcano deformation, flooding patterns, and glacier dynamics. This loss would impact NASA missions, military and civilian navigation, the scientific community, and society overall.

The No Action Alternative would not meet the purpose of and need for the Proposed Action; however, as required by NEPA and HEPA, this alternative is carried forward for analysis in the Draft EIS. The No Action Alternative will be used to analyze the consequences of not undertaking the Proposed Action and will serve to establish a comparative baseline for analysis.

### 2.4 Alternatives Considered but Not Carried Forward for Detailed Analysis

As part of the alternative identification process, agencies are required to describe the alternatives considered but eliminated from detailed analysis and to provide a brief discussion of the rationale for not studying the alternative in detail. The following alternatives were considered but not carried forward for detailed analysis because they do not meet the purpose and need for the Proposed Action.

# 2.4.1 Succeeding Leases and Easements Except Current Leases at Mākaha Ridge and KPGO are Not Renewed

Under this alternative, the Navy would obtain succeeding leases and easements on leased land not currently located in the State of Hawai'i's Conservation District, except for leases at Polihale State Park. These would include leases at the Main Base, Kamokalā Ridge, Mānā Water Well, and Miloli'i Ridge, but would not include succeeding leases or easements at Mākaha Ridge or KPGO. Under this alternative, the Navy would not have access to the secondary missile tracking and surveillance station. Without this secondary operations area, the Navy could not conduct radar tracking, telemetry receiving/recording, frequency monitoring, or target control and would lose access to the land with the buildings and facilities located there. Without leaseholds at KPGO, NASA operations, including support of navigation systems and spacecraft tracking, would cease. This alternative does not meet screening factors (1) maintain long-term use of land currently used to support DoD and NASA missions on Kaua'i, (2) preserve

current DoD and NASA operations on Kaua'i, and (3) retain existing DoD and NASA infrastructure on Kaua'i.

### 2.4.2 Succeeding Leases Only (Current Easements are Not Renewed)

Under this alternative, the Navy and NASA would only obtain succeeding lease agreements and not succeeding easements. These would include succeeding leases at the Main Base, Kamokalā Ridge, Mānā Water Well, Miloli'i Ridge, Mākaha Ridge, and KPGO, but not easements at the Main Base, Kamokalā Ridge, Mākaha Ridge, and KPGO. Without succeeding easements, the Navy would lose required setback distances that provide essential safety buffer zones required for training and test missions, access roads, and utility easements. Without access to or use of the roads, the Navy would not be able to access the leaseholds located at Kamokalā Ridge, Mānā Water Well, or Mākaha Ridge. Additionally, the Navy would not be able to continue environmental management or stewardship programs. This alternative does not meet screening factors (1) maintain long-term use of land currently used to support DoD and NASA missions on Kaua'i, (2) preserve current DoD operations, (3) retain existing DoD infrastructure, and (4) support DLNR management of public lands and associated environmental and conservation programs. Under this alternative, NASA could also not continue its mission.

### 2.5 Best Management Practices

BMPs are policies, practices, and measures the Navy uses to reduce the environmental impacts of designated activities, functions, or processes. Although these actions mitigate potential impacts by avoiding, minimizing, or reducing/eliminating impacts, they are distinguished from potential mitigation measures because these actions are (1) existing requirements for the Proposed Action; (2) on-going, regularly occurring practices; or (3) not unique to this Proposed Action. More specifically, these conservation measures are inherently part of the Proposed Action and are not potential mitigation measures proposed as a function of the environmental review or approval process for the Proposed Action.

Table 2-6 lists currently used PMRF and KPGO BMPs which include Standard Operating Procedures (SOPs) from the ICRMP and resource management strategies from the INRMP, as well as those established by the applicable regulations, policy, and other installation SOPs. Proposed mitigation measures to minimize the impacts of the Proposed Action will be discussed in the Draft EIS. Under the No Action Alternative, the Navy and NASA would not continue the BMPs and management strategies listed in Table 2-6 on leaseholds and easement lands.

NASA's contractor operates KPGO (Site E) in accordance with the Environmental Management Plan under the Space Exploration Network Services and Evolution contract. Implementation of the Environmental Management Plan includes the following steps: implementation of the plan; evaluation, checking, and corrective action; environmental planning and impact process (see Table 2-6); water management; air quality management; and waste management.

Table 2-6 PMRF and KPGO Best Management Practices and Resource Management Strategies

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
PMRF – Cultural Res	sources Management (CRM)	1	
CRM-1	Impacts to historic properties	ICRMP SOP # 1: NHPA Section 110 Compliance. The Navy has an ongoing management responsibility to identify, preserve, and protect the significant cultural resources at PMRF. Section 110 mandates agencies to assume responsibility for the preservation of historic properties under their jurisdiction and, to the maximum extent feasible, use historic properties available to the agency.	Ongoing and future activities.
CRM-2	Impacts to historic properties	ICRMP SOP #2: Coordination with Natural Resources Management. DoD Instructions 4715.03 and 4715.16 and Office of the Chief of Naval Operations Instruction (OPNAVINST) 5090.1E require that cultural resources management programs be integrated with natural resources programs. This coordination is meant to make certain, to the maximum extent feasible, that the Navy complies with all applicable Executive Orders and federal natural and cultural resources statutory and regulatory requirements. The PMRF CRM is responsible for the coordination of cultural and natural resources at PMRF and conducting NHPA Section 106 reviews in conjunction with NEPA reviews and Section 7 of the ESA. SOP #2 of the ICRMP describes this process at PMRF.	Ongoing and future activities.
CRM-3	Impacts to historic properties	ICRMP SOP #3: Cultural Resources Data Management. The Navy maintains an effective data management system to facilitate compliance with Sections 106 and 110 of the NHPA as well as NEPA and requirements for curating federally owned and administered archaeological collections (36 CFR Part 79). SOP #3 of the ICRMP describes the Cultural Resources Data Management program at PMRF.	Ongoing and future activities.
CRM-4	Impacts to historic properties	ICRMP SOP #4: NHPA Section 106 Compliance. Section 106 of the NHPA is a process designed to ensure that historic properties are taken into account during the planning and execution of federal undertakings. SOP #4 describes the integration of the Section 106 process of the NHPA, implemented by regulations of the ACHP (36 CFR Part 800), as well as ARPA and the provisions of the Commander, Navy Region Hawai'i (CNRH) PA for Navy undertakings in Hawai'i that is followed at PMRF.	Ongoing and future activities.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
CRM-5	Impacts to historic properties	ICRMP SOP #5: ARPA Compliance. Per this Act, it is a federal offense to excavate, remove, damage, alter, or otherwise deface archaeological resources on federal lands without authorization. The sale, purchase, exchange, transport, or receipt of archaeological resources obtained in violation of this law also is a federal offense. SOP #5 of the ICRMP describes the enforcement of ARPA at PMRF.	Ongoing and future activities.
CRM-6	Impacts to historic properties and traditional Hawaiian cultural resources	ICRMP SOP #6: Native Hawaiian Consultation. Consultation is mandated by federal laws, including the NHPA, American Indian Religious Freedom Act, NAGPRA, and ARPA. Consultation is also mandated by the MOA among the U.S. Navy, PMRF, Hawai'i SHPO, and ACHP regarding activities proposed within the 1998 PMRF Enhanced Capacity Final EIS, DoD Directive 4710.03, and CNRH PA. SECNAVINST 4000.35A also specifies that appropriate consultation will be initiated with Native Hawaiians "whenever the [Navy] conducts or supports undertakings that may affect any National Register resource, whether [Navy]-managed or not." SOP #6 describes this process at PMRF.	Ongoing and future activities.
CRM-7	Cultural resource protection	ICRMP SOP #7: Management of Historic Properties. In cases in which Navy undertakings will have effects or adverse effects on cultural resources, the PMRF CRM will activate the Section 106 consultation process with the Hawai'i SHPO and the ACHP. If the project, however, meets The Secretary of the Interior's Standards for the Treatment of Historic Properties, including preserving, rehabilitating, restoring, and reconstructing historic buildings, the undertaking may be determined to be exempt from the full Section 106 consultation process. The PMRF CRM must consult with CNRH, the Hawai'i SHPO, ACHP, and Native Hawaiian organizations regarding any effects to historic properties as a result of base activities, and shall also refer to, and comply with, existing MOAs, PAs, and The Secretary of the Interior's Standards for the Treatment of Historic Properties.	Ongoing and future activities.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
CRM-8	Cultural resource protection	ICRMP SOP # 8: Monitoring During Construction and/or Ground-Disturbing Activities. Archaeological monitoring will be conducted during construction and/or ground-disturbing activities within areas of potential effect identified as archaeologically sensitive areas. The primary responsibility for carrying out this BMP lies with on-site managers of the undertaking, professional archaeological monitors, the PMRF CRM, and the Navy Region Hawai'i Historic Preservation Officer. SOP #8 of the ICRMP describes this process, and a copy of the SOP should be provided to all on-site managers and supervisors who are carrying out work in archaeologically sensitive areas.	Ongoing and future activities.
CRM-9	Cultural resource protection	ICRMP SOP# 9: Inadvertent Discovery of Archaeological Remains. Inadvertent discovery refers to the unintentional discovery of archaeological resources during the course of operations at PMRF. On-site managers of undertakings, the PMRF CRM, and the Navy Region Hawai'i Historic Preservation Officer are responsible for planning for subsequent discoveries through PAs pursuant to 36 CFR Part 800, Section 800.14(b) (agency program alternatives) or other agreement documents when a survey indicates that historic properties are likely to be discovered during implementation of an undertaking. PMRF shall make reasonable efforts to avoid, minimize, or mitigate adverse effects to such properties until a mitigation plan is carried out. SOP #9 of the ICRMP describes this process, and a copy of the SOP should be provided to all onsite managers and supervisors who are carrying out work that could result in inadvertent discovery of remains.	Ongoing and future activities.
CRM-10	Cultural resource protection	ICRMP SOP #10: Inadvertent Discovery of Human Remains. Inadvertent discovery refers to the unintentional discovery of human remains during the course of operations at PMRF. In 2011, the Navy and Na Ohana Papa o Mana executed a NAGPRA CA to address all federal agency land management activities that could result on the intentional excavation or inadvertent discovery of NAGPRA items. The CA documents the process for carrying out the requirements of 43 CFR 10, Subpart B for standard consultation procedures, determination of custody, treatment, and disposition of NAGPRA items. SOP #10 of the ICRMP describes this process, and a copy of the SOP should be provided to all on-site managers and supervisors who are carrying out work that could result in inadvertent discovery of human remains.	Ongoing and future activities.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
CRM-11	Cultural resource protection	ICRMP SOP #11: Curation. The Navy's cultural resources responsibilities include providing for the curation of artifact collections and historical documents recovered from agency-owned or -leased property as required under 36 CFR Part 79, 36 CFR Part 1220, and 36 CFR Part 1228, as well as SECNAVINST 4000.35A and OPNAVINST 5090.1E.	Ongoing and future activities.
CRM-12	Cultural resource protection	ICRMP SOP #12: Use of Historic Properties. In accordance with Section 110 of the NHPA and SECNAVIST 4000.35A, the Navy should use available historic buildings to the maximum extent feasible (while preserving their historic character and function) prior to new construction, lease, or the acquisition of buildings used to carry out its responsibilities as long as reuse does not conflict with the mission of the Navy. SOP #12 of the ICRMP provides uniform guidelines for PMRF staff and tenants/users when planning projects that involve demolition, removal, or replacement of a historic building or structure that is listed, or is eligible for listing, in the NRHP, or has not been evaluated for eligibility.	Ongoing and future activities.
CRM-13	Cultural resource protection	ICRMP SOP #13: Historic Asset Management Process. The HAMP is a project planning tool that provides access to information and a standard method to support compliance with the NHPA and NEPA. Once a proponent identifies project requirements, the HAMP tools guide the proponent through steps to identify project alternatives that will have the least effect on built-environment historic properties, including reuse/rehabilitation, new construction, or demolition footprint reduction.	Ongoing and future activities.
CRM-14	Cultural resource protection	ICRMP SOP #14: Emergency Situations. Provides guidelines in the event of (1) emergencies involving imminent threat to national security, to life or property, or a declaration of a natural disaster, and (2) damage to sites from natural actions such as erosion.	Ongoing and future activities.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
CRM-15	Cultural resource protection	ICRMP SOP #15: Public Involvement and Outreach. The PMRF CRM routinely coordinates with CNRH and the Hawai'i SHPO on cultural resources management issues. Additionally, DoD Instruction 4715.16 states, "all installations with cultural resources will have a public outreach program." PMRF has an active and robust public outreach program, ranging from educational programs to facilitating public access to culturally important sites. Outreach visitors and participants have included, and will continue to include, local residents and Hawaiian descendants, plantation, and military community members; Native Hawaiian organizations; congressional delegations; officials from DoD and the Missile Defense Agency, as well as state and county officials; and local school groups and a myriad of nongovernmental organizations.	Ongoing and future activities.
CRM-16	Cultural resource protection	ICRMP SOP #16: Public and Cultural Access. SOP #16 provides guidelines and procedures for responding to requests for public access and for cultural access to individuals and organizations, including any Native Hawaiian organization that attaches cultural significance to historic properties on PMRF.	Ongoing and future activities.
CRM-17	Cultural resource protection	ICRMP SOP #17: Permits, Leases, and Contracts. SOP #17 provides standardized ARPA statements for inclusion in permits, leases, contracts, or other legal agreements between CNRH and other military branches, government agencies, individuals, businesses, or organizations. It is based on ARPA and OPNAVINST 5090.1E. The primary responsibility for implementing this SOP lies with real estate, contracting, and legal staff preparing permits, leases, contracts, or other legal agreements	The Proposed Action and future activities.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
PMRF – Natural Res	sources <sup>2</sup>		
Soil management	Impacts to soils	<ul> <li>Conduct general monitoring for coastal dune habitat and soil compaction issues annually to prevent and minimize the potential for soil degradation.</li> <li>Mitigate and prevent soil erosion of coastal dune habitat by outplanting, establishing, and monitoring native dune building plants in areas identified as having erosion issues.</li> <li>Implement additional security measures such as increased signage and roping off specific areas to alleviate undue pressures from off-road vehicle presence, especially in Nohili Dune areas.</li> <li>Maintain Mākaha Ridge ungulate exclusion fencing for erosion control.</li> <li>Outplant native, drought tolerant plants in areas identified as having erosion and soil compaction issues. Ensure that a regular monitoring schedule and a sufficient irrigation system are in place until plants are well established.</li> </ul>	Ongoing and future activities.
Designated critical habitat	Impacts to designated critical habitat for panicgrass	<ul> <li>Work to improve protection, habitat, and/or consider outplanting Ni'ihau panicgrass.</li> <li>Protections will be aimed at preventing unauthorized off-road vehicle use, and invasive plant removal and to demonstrate benefit to the species.</li> <li>Outplant native species and remove invasive species in areas with suitable Ni'ihau panicgrass habitat and ensure an irrigation system is in place until plants become well established.</li> <li>Consider undergoing the approval process to outplant the endangered Panicum niihauense in the effort to remove or reduce amount of PMRF property designated as critical habitat for the species. Coordinate with federal and state partners to secure material for outplanting if pursued.</li> </ul>	Ongoing and future activities. Construction.
Hawaiian picture- wing fly management	Impacts to Hawaiian picture-wing flies	<ul> <li>Conduct surveys every 5 years to assess presence/absence of endangered Hawaiian picture-wing fly species at and directly adjacent to KPGO.</li> <li>Conduct invasive plant removals annually in areas near known Hawaiian picture-wing fly habitat to promote native tree health and propagation and reduce introductions of invasive species into adjacent habitat due to Navy operations.</li> </ul>	Ongoing and future activities.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
Marine nearshore management	Impacts to nearshore environments	<ul> <li>Establish a monitoring program for the nearshore environment of PMRF to inform future management decisions and monitor changes over time.</li> <li>Partner with DLNR Division of Aquatic Resources (DAR) to incorporate regular monitoring site(s) in PMRF's nearshore waters into the state's regular monitoring schedule, as feasible.</li> </ul>	Ongoing and future activities.
Monk seal management	Impacts to Hawaiian monk seals	<ul> <li>Continue to ensure that Security reports sightings of monk seals during daily patrols at PMRF beaches and erects signage and barricades if observed where people frequent.</li> <li>Continue to report observations of hauled-out Hawaiian Monk Seals to NOAA as soon as possible and provide high-quality photos to assess seal health, identification, and aid in population abundance monitoring.</li> <li>Conduct regular surveys approximately 5 times per week on beaches near the Nohili Ditch outfall and Diver's Landing for monk seal presence, and all other beaches approximately twice per week.</li> <li>Continue to conduct surveys through partnership with NOAA Fisheries for Hawaiian Monk Seals on Ni'ihau.</li> </ul>	Ongoing and future operations.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
Sea turtle management	Impacts to sea turtles	<ul> <li>Continue to partner with Security in ensuring daily patrols of PMRF's beaches for sea turtles to collect observational data and check for stranded, injured, or entangled turtles.</li> <li>Conduct surveys by biologists approximately 5 times per week on beaches near the Nohili Ditch outfall and Diver's Landing for sea turtle presence and ensure that marine surveys in nearshore areas quantify sea turtles and potential foraging or resting habitat.</li> <li>Continue to survey beaches for sea turtle nesting activity during the nesting season, protect all nests observed with ropes and signage, mitigate light attraction issues on beaches, and coordinate with DAR to excavate nests.</li> <li>Continue to encourage good communication between Security and natural resources staff regarding sea turtle activity on PMRF beaches to reduce negative impacts to the species from Security beach patrol vehicles.</li> <li>Develop and use USFWS-approved outreach, educational materials, and signage with the objective to educate and provide information to residents, recreational users, visitors, and staff about proper procedures and acceptable activities within sea turtle habitat and how to act when coming in contact with sea turtles.</li> </ul>	Ongoing and future operations.
Marine mammal management	Impacts to marine mammals	<ul> <li>Continue to report all observations of marine mammal strandings or deaths to NMFS and assist in response efforts.</li> <li>Range users continue to adhere to protective measures for all training and testing per requirements under <i>Hawaii-Southern California Training and Testing Final EIS/OEIS</i> authorizations.</li> </ul>	Ongoing and future operations.
Ungulate management	Impacts to natural resources habitats ESA terrestrial species	<ul> <li>Maintain efficacy of ungulate-proof fence at Mākaha Ridge.</li> <li>Conduct regular monitoring for ungulates inside the fence, as well as vulnerable areas along the fence.</li> <li>Maintain Mākaha Ridge fence for erosion control.</li> </ul>	Ongoing and future operations.
Predator management	Impacts to MBTA species and Laysan albatross	Continue base-wide predator control to protect MBTA-listed species including Laysan albatross; monitor for pigs, dogs, and cats in known breeding areas prior to the albatross breeding season and increase control efforts as needed.	Ongoing and future operations.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
Predator management	Impacts to monk seals	<ul> <li>Continue base-wide predator control to remove feral cats and collaborate with partners on studies regarding toxoplasmosis at PMRF to inform these efforts; conduct outreach about the disease and its effects on wildlife and human health.</li> </ul>	Ongoing and future operations.
Predator management	Impacts to natural resources	<ul> <li>Work with the PMRF Archery Club to control ungulate populations at the Kamokalā Ridge site by implementing trapping and baiting stations if the animals become a nuisance to Navy operations or pose a risk to protected species.</li> <li>Conduct observations to identify feral cats at Kamokalā Ridge and consider expanding cat trapping if use is consistent or becomes a nuisance.</li> </ul>	Ongoing and future operations.
Wildland fire management	Impacts to natural resources	<ul> <li>Remove deadfall (woody debris) in high-risk areas including near the Barking Sands missile launch site and the Kamokalā Ridge Magazines and replant with native, low fire risk species.</li> </ul>	Ongoing and future operations.
Wildland fire management	Impacts to natural and cultural resources	Coordinate with the PMRF Fire Department on developing updates to the existing Fire Management Plan.	Ongoing and future operations.
Nēnē management	Impacts to nēnē	<ul> <li>Coordinate with USFWS, DOFAW, PMRF Air Ops, and PMRF Public Works to annually review and update the PMRF Nēnē Management Plan.</li> <li>Work with PMRF Air Ops and USDA-WS to insure nēnē hazing efforts are increased prior to and during the breeding season with the possibility of including weekends, especially if a nēnē pair has been regularly observed on or near the airfield.</li> <li>Collaborate with DOFAW to have all nēnē that hatch at PMRF banded and pursue permission and permits for PMRF natural resources staff to band birds if allowable.</li> </ul>	Ongoing and future operations.
Nēnē management	Impacts to nēnē	<ul> <li>Continue to conduct regular, standardized surveys for n\u00e4n\u00e4 at PMRF Barking Sands, M\u00e4kaha Ridge, and KPGO sites to effectively detect n\u00e4n\u00e4 nests and inform management and determine habitat types that attract the species.</li> </ul>	Ongoing and future operations.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
Nēnē management	Impacts to nēnē	<ul> <li>Continue to communicate with facilities maintenance personnel about nēnē nest locations and collaborate to develop effective protective measures for the species and ensure that no vegetation removal or other persistent disturbances occur within 100 feet of nest sites and goslings to reduce risk of take.</li> <li>Support regular outreach to PMRF visitors and personnel on the importance of not providing food and water to nēnē and develop outreach material aimed at increasing awareness of the species.</li> </ul>	Ongoing and future operations.
Nēnē management	Impacts to nēnē	<ul> <li>For all new construction at Barking Sands, including construction for tenant or customer DoD commands or other federal agencies, concrete, asphalt, gravel, xeriscaping, or native vegetation that does not act as a nēnē attractant, rather than lawn, will be installed in open areas surrounding buildings and parking areas to decrease attraction of nēnē.</li> </ul>	Construction.
Waterbird risk management	Impacts to waterbirds, public health, and safety	<ul> <li>Continue to coordinate closely with Facilities Maintenance regarding restrictions on vegetation removal practices within a 100-foot radius of waterbirds or their nests.</li> <li>Discourage waterbird presence and nesting at the oxidation pond complex by maintaining vegetation at a height of less than 6 inches and by funding the installation of exclusionary measures.</li> <li>Continue to coordinate with Facilities Maintenance to obtain environmental data on the oxidation pond regularly to better inform causes of avian botulism outbreaks and identify high-risk conditions that require management actions.</li> <li>Coordinate with Public Works to develop oxidation pond flushing protocols in response to avian botulism outbreaks or high-risk conditions.</li> <li>Coordinate with Facilities Maintenance on all oxidation pond complex construction and restoration plans.</li> <li>Supplement ongoing water quality testing to detect particulates and soluble chemicals in waters at PMRF. Testing should be conducted at least quarterly.</li> </ul>	Ongoing and future operations.
Waterbird risk management	Impacts to waterbirds	<ul> <li>Replace and improve waterbird crossing signage at PMRF as needed to reduce risk of vehicle strikes, evaluate efficacy of signs, and explore new tools to reduce vehicle strikes.</li> </ul>	Ongoing and future activities.
Waterbird Risk management	Impacts to waterbirds	<ul> <li>Continue to conduct regular monitoring for Hawaiian waterbird species at Barking Sands to effectively detect and reduce impacts to nests.</li> </ul>	Ongoing and future activities.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
MBTA management	Impacts to MBTA species	<ul> <li>Continue to incorporate monitoring of shorebirds, cattle egrets (Bubulcus ibis), and black-crowned night herons (Nycticorax nycticorax) at wetland sites. Record opportunistic observations of barn owls (Tyto alba) and pueo (Asio flammeus sandwichensis) at all other areas of base to inform control measures for non-native species and protective measures for native species.</li> <li>Keep track of non-native songbird species at PMRF and their numbers by participating in the annual Audubon Christmas Bird Count.</li> </ul>	Ongoing and future activities.
MBTA management	Impacts to MBTA species	<ul> <li>Continue to advise development projects at PMRF that have potential to negatively impact native MBTA species and their habitat on how to avoid impacts.</li> <li>Advise development projects at PMRF on how to avoid creating habitat and foraging availability for non-native MBTA species at PMRF especially near the PMRF airfield.</li> </ul>	Ongoing and future activities.
Laysan albatross management	Impacts to Laysan albatross	<ul> <li>Coordinate with DOFAW on potential new albatross release sites.</li> <li>Work with partners to ensure that as many albatross eggs as possible stay on Kaua'i and find new suitable egg relocation locations.</li> <li>Closely monitor re-sights of translocated albatross by working with partners on the north shore of Kaua'i to enter data into the Airtable application database.</li> </ul>	Ongoing and future activities.
Laysan albatross management	Impacts to Laysan albatross	<ul> <li>Continue the PMRF Laysan Albatross Egg Swap program.</li> <li>Continue to translocate albatross to the north shore of Kaua'i from January–April.</li> <li>Support research on PMRF albatross populations that increases the understanding of their behavior as it relates to the PMRF airfield.</li> </ul>	Ongoing and future activities.
Shearwater management	Impacts to shearwater nesting	<ul> <li>Enhance wedge-tailed shearwater (Ardenna pacifica) habitat in areas far from the PMRF airfield and human presence and develop deterrent measures for burrows in areas of human traffic and near the airfield.</li> <li>Research and work with facilities and Morale, Welfare, and Recreation to implement methods for discouraging wedge-tailed shearwater burrowing in the immediate vicinity of the PMRF Beach Cottages.</li> <li>Continue to implement protective measures that prevent the crushing of burrows in the beach cottages area (e.g., signage, temporary rope fencing, wooden burrow tents, outreach materials in cottages).</li> </ul>	Ongoing and future activities.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
Shearwater management	Impacts to shearwater populations	<ul> <li>Conduct annual wedge-tailed shearwater population surveys in the Kinikini Ditch, beach cottages, and Nohili Dune areas.</li> <li>Work with partners to collect additional data that supports adaptive management on PMRF and regional conservation objectives for shearwater species.</li> </ul>	Ongoing and future activities.
Bat management	Impacts to Hawaiian hoary bat (pupping season)	<ul> <li>Tree trimming/removal activities shall be conducted outside of the bat pupping season of June 1 to September 15 to the maximum extent practicable to avoid and minimize effects of base infrastructure, operations, and maintenance.</li> <li>Conduct follow-up acoustic surveys for Hawaiian hoary bats every 5 years.</li> <li>In situations where trimming or removal of a tree with a known bat roost is determined necessary, the Navy shall work with the USFWS to develop and implement an SOP for bat roosting surveys.</li> </ul>	Ongoing and future activities. Construction.
Invasive plant species management	Impacts to natural resources	<ul> <li>Native vegetation shall be used as practicable, and recommended by agencies, for revegetation efforts.</li> <li>Ensure species identified as invasive in Hawai'i are not utilized for outplanting, landscaping, or erosion control efforts. Develop a Landscaping Guide to include in all base contracts and integrate into the installation appearance plan.</li> </ul>	Ongoing and future activities.
Invasive plant species management	Impacts to natural resources	<ul> <li>Ensure early detection and a rapid response to invasive plant species in sensitive areas.</li> <li>Conduct removal of invasive plant species in sensitive areas, monitor for re-growth, and restore with outplantings, if necessary, with a target of 80% reduction in invasive species within the areas of concern.</li> </ul>	Ongoing and future activities.
Invasive animal species management	Impacts to natural resources	<ul> <li>Include biosecurity requirements and provisions in Base Operating Support (BOS) and construction contracts to ensure invasive ants, frogs, and other non-native wildlife are not introduced via equipment or landscaping efforts.</li> </ul>	Ongoing and future activities. Construction.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
Invasive animal species management	Impacts to natural resources	<ul> <li>Increase outreach to base personnel on reporting and early detection for invasive species not yet established at PMRF. Ensure all observations or reports of high-risk invasive species are communicated to KISC and to all other appropriate agencies.</li> <li>Increase outreach with all personnel on PMRF about the hazards of feeding feral/invasive species and assist in the enforcement of such policies by practicing good communication with Security.</li> </ul>	Ongoing and future activities.
Invasive animal species management	Impacts to natural resources	<ul> <li>Conduct surveys to improve baseline knowledge of populations of invasive animals at PMRF.</li> <li>Conduct ant surveys to assess presence of invasive ants including the little fire ants (Wasmannia auropunctata) at the Nohili Dune's wedgetailed shearwater colony. If little fire ants are detected, report to KISC and implement active control by using granular bait after fledglings have left the area.</li> <li>Continue to partner with the Hawai'i Department of Agriculture to ensure Coconut Rhinoceros Beetle (Oryctes rhinoceros) traps are checked and maintained at PMRF.</li> </ul>	Ongoing and future activities.
Endangered seabird management	Impacts from night lighting (disorientation/fallout)	<ul> <li>Whenever feasible, exterior night lighting shall include bat- and bird- friendly design features such as shielded lights (to reduce ambient light), use of motion detectors and/or other automatic controls, and lighting design that uses shields to prevent light from shining upward into the sky.</li> </ul>	Ongoing and future activities.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
Endangered seabird management	Impacts from exterior facility lighting	<ul> <li>Exterior lighting shall be architecturally integrated with the character of all structures, energy efficient, and shielded or recessed so that direct glare and reflections shall be confined, to the maximum extent feasible, within the boundaries of the site. Shielded lighting directs rays toward the ground, and the light source, whether bulb or tube, shall not be visible from adjacent properties.</li> <li>Exterior lighting shall be directed downward and away from adjacent properties.</li> <li>Parking and security lighting shall consist of full-cutoff fixtures, which permit no upward light, unless a different cutoff classification is specifically authorized through the architectural review process.</li> <li>Obtrusive light shall be minimized by limiting outdoor lighting that is misdirected, excessive, or unnecessary, and light required for the development shall be directed downward to minimize spill over onto adjacent properties and reduce vertical glare or up-lighting.</li> </ul>	Ongoing and future activities.
Native plant habitat management	Impacts to native plant communities	<ul> <li>Continue to update baseline floral surveys to improve understanding of plant communities at PMRF.</li> <li>Ensure post-planting care, including irrigation, invasive plant removal, and long-term monitoring and maintenance is implemented for all native plant restoration projects.</li> </ul>	Ongoing and future activities.
Native plant habitat management	Impacts to pollinators	<ul> <li>Identify suitable locations for planting native Hawaiian plants, particularly those that benefit native pollinators in support of national pollinator objectives.</li> <li>Ensure that plant communities found to support native terrestrial invertebrate species are protected, enhanced, and that construction or removal projects have minimal effects on these populations.</li> </ul>	Ongoing and future activities. Construction.
Terrestrial invertebrate management	Impacts to pollinators	<ul> <li>Conduct species inventory at additional PMRF sites and conduct monitoring for native invertebrate species.</li> </ul>	Ongoing and future activities.
Terrestrial invertebrate management	Impacts to pollinators	<ul> <li>Coordinate all use of pesticides by natural resources staff with the NAVFAC PAC Pest Management Consultant (PMC) and ensure that all applicators have received appropriate certifications.</li> <li>Ensure that treatments will not have negative effects on protected species. Prohibit the use of neonicotinoids at PMRF sites.</li> </ul>	Ongoing and future activities.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability
Endangered seabird management	Impacts to seabirds	<ul> <li>Continue to host a Save Our Shearwaters (SOS) aid station at PMRF and monitor station during business days with SOS monitoring on weekends and holidays.</li> <li>Advise various tenants on PMRF on appropriate safety lighting that is less attractive to endangered seabirds (i.e., motion sensing lights that go off after a set time period, shielded lights, facing light away from the coast, lower lumen, and lower to the ground).</li> <li>Provide a 10-year calendar to mission planners with high-risk dates for endangered seabird fall out.</li> </ul>	Ongoing and future activities.
Endangered seabird management	Impacts to seabirds	<ul> <li>Continue to fund and implement surveys to assess seabird strikes at KPGO Site C.</li> <li>Minimize the potential for death or injury of seabirds due to collisions with PMRF communication towers located at KPGO Site C.</li> </ul>	Ongoing and future activities.
Endangered sea bird management	Impacts to seabirds from night lighting (disorientation/fallout)	<ul> <li>Continue to promote base-wide awareness and implementation of the PMRF Dark Skies Program through annual trainings.</li> <li>Continue Dark Skies implementation in areas adjacent to colonial nesting grounds at high elevation nesting sites during critical fledging timeframes.</li> <li>Conduct systematic ground searches for fallen out seabirds after high-risk night operations.</li> </ul>	Ongoing and future activities.
Public health and safety management	Impacts to public health and safety	<ul> <li>Continue to restrict access during missile testing and launches at the restricted easement adjacent to Barking Sands.</li> <li>Adhere to applicable regulations and policy to limit interaction with vessel traffic when range activities occur.</li> </ul>	Ongoing and future operations.
Public health and safety management	Impacts to public health and safety	<ul> <li>PMRF will coordinate with the Agribusiness Development Corporation to ensure compliance with the Clean Water Act and other environmental regulatory requirements where there is a nexus with federal monies or property.</li> </ul>	Ongoing and future operations.

Best Management Practice	Impacts Reduced/Avoided	Description of Best Management Practices and Management Strategies	Applicability				
KPGO – Environment	KPGO – Environmental Management Plan <sup>3</sup>						
Endangered Species	Impacts to endangered and threatened species	Space Exploration Network Services and Evolution (SENSE) has surveyed the endangered and threatened species around the area. Any changes to SENSE operations or construction activities are planned with the consideration of endangered and threatened species impacts to minimize or eliminate the effects on wildlife. SENSE leverages local agencies for guidance on current regulatory requirements and reduction of impacts.	Ongoing and future operations.				

ACHP = Advisory Council on Historic Preservation; ARPA = Archaeological Resources Protection Act; BMP = Best Management Practice; BOS = Base Operating Support; CA = Comprehensive Agreement; CFR = Code of Federal Regulations; CNRH = Commander, Navy Region Hawaii; COMPACFLT = Commander, U.S. Pacific Fleet; CRM = Cultural Resources Management; DAR = Division of Aquatic Resources; DOD = Department of Defense; DOFAW = Division of Forestry and Wildlife; DOI = Department of the Interior; EIS = Environmental Impact Statement; ESA = Endangered Species Act; HAMP = Historic Asset Management Process; ICRMP = Integrated Cultural Resources Management Plan; KISC = Kaua'i Invasive Species Committee; MBTA = Migratory Bird Treaty Act; MOA = Memorandum of Agreement; NAGPRA = Native American Graves Protection and Repatriation Act; NAVFAC PAC = Naval Facilities Engineering Systems Command Pacific; NEPA = National Environmental Policy Act; NHPA = National Historic Preservation Act; NMFS = National Marine Fisheries Service; NOAA = National Oceanic and Atmospheric Administration; NRHP = National Register of Historic Places; OPNAVINST = Office of the Chief of Naval Operations Instruction; PA = Programmatic Agreement; PMC = Pest Management Consultant; PMRF = Pacific Missile Range Facility; SECNAVINST = Secretary of the Navy Instruction; SENSE = Space Exploration Network Services and Evolution; SHPO = State Historic Preservation Office; SOH = Safety and Occupational Health; SOP = Standard Operating Procedure; SOS = Save our Shearwaters; USDA-WS = United States Department of Agriculture-Wildlife Services; USFWS = United States Fish and Wildlife Service.

Sources: <sup>1</sup>NAVFAC Pacific, 2012.

<sup>2</sup>NAVFAC Pacific, 2023.

<sup>3</sup>Space Exploration Network Services and Evolution, 2023.

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## 3 Project Setting

This chapter provides a preliminary overview of the project setting, or existing environmental conditions, for the resources within the State land (leaseholds and easement lands) at PMRF and KPGO. The Draft EIS will include further details on the existing conditions and potential effects of the Proposed Action and alternatives, as well as measures to minimize or mitigate these potential environmental effects.

The EISPN provides a preliminary overview of existing conditions relevant to the analysis of the Proposed Action and alternatives. The following 13 resources will be analyzed in the Draft EIS: archaeological and historic resources, cultural practices, biological resources, land use, socioeconomics, environmental justice, water resources, utilities, public health and safety, air quality and greenhouse gases, transportation, hazardous materials and wastes, and visual resources.

### 3.1 Archaeological and Historic Resources

The term "historic resource" as used in both NEPA and HEPA applies broadly to a variety of resources such as historic buildings, historic districts, archaeological sites, traditional places, and traditional ways of life. Several federal laws and regulations address cultural resources, including the NHPA and the Archaeological Resources Protection Act (ARPA), as well as agency-specific instructions and policies. The NHPA defines a historic property as any "prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the National Register of Historic Places (NRHP), including artifacts, records, and material remains related to such a property or resource." Hawai'i State law also regulates historic properties in HRS Chapter 6E. Under HRS Chapter 6E, historic properties include any building, structure, object, district, area, or site, including heiau (a Hawaiian sacred temple) and underwater site, which is over 50 years old; and burial sites, defined as any specific unmarked location where prehistoric or historic human skeletal remains and their associated burial goods are interred, and its immediate surrounding archaeological context. Through the HRS Chapter 6E-42 review process, historic properties are assessed for "significance" as defined in HAR § 13-284-2 before project effects are analyzed.

Under the NHPA, the affected environment for historic properties is called the Area of Potential Effects (APE). The APE is defined in 36 CFR § 800.16(d) as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist." Under HRS Chapter 6E, the affected environment for cultural resources is referred to as a "Project Area," which is defined in HAR § 13-284-2 as "the area the proposed project may potentially affect, either directly or indirectly" and includes "not only the area where the proposed project will take place, but also the proposed project's area of potential effect."

The NEPA/HEPA impact analysis will be conducted within the NHPA APE and the HRS-6E Project Area to determine potential impacts on historic resources. These areas are the same and comprise the leaseholds and easement lands at the Main Base, Kamokalā Ridge, Mānā Well, Miloli'i Ridge, Mākaha Ridge, and KPGO. The APE for the Proposed Action is depicted as the State lands shown in Figure 1-2.

The Draft EIS will characterize the affected environment for cultural resources for Navy and NASA leasehold and easement lands. The document will identify cultural resources and assess the impacts resulting from implementation of the Proposed Action and alternatives to those cultural resources. Surveys are currently being conducted to identify cultural resources. These resources will be evaluated

for NHPA eligibility and HRS Chapter 6E significance. Both the Navy and NASA are responsible for managing historic properties under their control. PMRF's NHPA responsibilities are governed by the Commander, Navy Region (COMNAVREG) Hawai'i Programmatic Agreement (PA) with the SHPO and the Advisory Council on Historic Preservation (ACHP) (NAVFAC Pacific, 2012). Analysis of potential impacts to cultural resources will be conducted in accordance with the PA. The Draft EIS will evaluate potential impacts to archaeological and historic resources from implementation of the Proposed Action and alternatives.

#### 3.2 Cultural Practices

The State of Hawai'i has an affirmative obligation to preserve and protect Native Hawaiians' customary and traditional rights to the extent feasible under the Hawai'i State Constitution, Article XII, Section 7.

Hawaii Session Law H.B. No. 2895, known as "Act 50", provides that "there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawai'i's culture, and traditional and customary rights" (H.B. No. 2895). Act 50 requires state agencies and other developers to assess the effects of proposed land use or shoreline developments on the "cultural practices of the community and State" as part of the HEPA environmental review process. In *Ka Pa'akai O Ka 'Āina v. Land Use Commission*, 94 Hawai'i 31, 7 P.3d 1068 (2000), the Hawai'i Supreme Court provided government agencies an analytical framework to ensure the protection and preservation of traditional and customary Native Hawaiian rights while reasonably accommodating competing interests. HEPA requires including natural or human-made resources of historic, cultural, archaeological, or aesthetic significance in this assessment.

Traditional land uses near the Project Area include habitation, subsistence activities, burial, and travel. It is likely that permanent settlements were concentrated at the inland edge of the Mānā Plain. Small fishing communities, possibly limited to temporary camps, were scattered along the coast. The people of Mānā were noted fishermen, taking advantage of the rich waters of the channel between Kaua'i and Ni'ihau. Fishing was not confined to the ocean and shoreline of Mānā, but also included the swamps and ponds on the coastal plain, where wild resources could be obtained alongside those raised through aquaculture. The coastal plain was a source of natural resources that were collected and used for a variety of purposes, including 'a'ali'i shrubs for firewood, hi'aloa and other plants for medicine, and makaloa and neki for weaving. The coastal dunes of the Mānā Plain were the burial grounds of ancient Hawaiians. Past and present cultural practices have been identified through prior consultation with Native Hawaiian Organizations and other stakeholders.

A Cultural Impact Assessment (CIA) will be prepared for the Proposed Action consistent with HEPA and Act 50 (Session Laws of Hawai'i, H.B. No. 2895), and will follow the State of Hawai'i's 1997 *Guidelines for Assessing Cultural Impacts*. The CIA will collect information relating to the practices and beliefs of Native Hawaiians who have knowledge of the Project Area. The area evaluated for the proposed CIA will be larger than the area associated with implementation of the Proposed Action to account for cultural practices that may be affected but are not included within the boundaries of the Project Area. Consequently, a large portion of the Mānā Plain inland from the Main Base will be included in the CIA. The information used in the CIA will be obtained through ethnographic and oral history interviews with knowledgeable organizations and persons such as traditional cultural practitioners, and through archival research that will include Hawaiian language sources. The assessment will consider cultural practices

and beliefs related to subsistence (e.g., fishing, gathering, and agriculture), habitation, commercial activities, access issues, recreation, religious/spiritual activities, and customs. Previously documented traditional cultural and other historic properties that are essential to these cultural practices and beliefs will be included in the analysis. The analysis conducted in the CIA will be incorporated into the Draft EIS.

### 3.3 Biological Resources

The Draft EIS will include a description of the biological resources in the Project Area. It will also include a discussion of known occurrences and potential habitat for species that are federally listed as endangered or threatened, habitats with substantial populations of native plants or animals, and designated critical habitats. Currently flora and fauna surveys, as well as wetland delineations, are being conducted in the area of interest.

Undeveloped leased lands at the Main Base comprise scrubland vegetation, sparse wetlands, and rolling sand dunes; easement areas include agricultural plains containing an interconnected system of irrigation ditches (Figure 3.3-1). Elevations at the Main Base range from sea level to 60 feet above sea level. Agricultural fields in the Project Area consist of both fallow and active landscapes with predominantly non-native vegetative scrub in and around the fields. Isolated wetland features support ESA-listed waterbirds, including the Hawaiian coot (*Fulica alai*), Hawaiian duck (*Anas wyvilliana*), Hawaiian gallinule (*Gallinula galeata sandvicensis*), Hawaiian stilt (*Himantopus mexicanus knudseni*), and Hawaiian goose or nēnē (*Branta sandvicensis*). ESA-listed plant species, including lau'ehu (*Panicum niihauense*) and 'akoko (*Euphorbia celastroides*), occur within coastal vegetation communities. The state-recognized endemic Hawaiian short-eared owl or pueo (*Asio flammeus sandwichensis*) has been observed; however, it is only state-listed as endangered on O'ahu. The endangered Hawaiian monk seal (*Neomonachus schauinslandi*), threatened green sea turtle (*Chelonia mydas*), and endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) have been observed in the coastal regions of the Main Base. Hawaiian stilts and Hawaiian yellow-faced bees (*Hylaeus* sp.) have also been observed in coastal areas adjacent to the Main Base.

Kamokalā Ridge is above adjacent agricultural lands with limited features that could provide ESA-listed flora or fauna habitat. Elevations at Kamokalā Ridge range from 240 to 320 feet above sea level. Vegetation, though sparse and lacking diversity, is consistent throughout steep cliff areas. Non-native and native trees provide canopy, while non-native scrub provides sparse understory amongst rocky terrain. The Hawaiian hoary bat, the state's only terrestrial ESA-listed mammal, has been observed in the Kamokalā Ridge area.

Mānā Well, located southeast of Kamokalā Ridge, is a small area containing an underground aquifer that provides potable water to the Main Base at an elevation of 120 feet above sea level. Mānā Well is in proximity to unmanaged lands with no known restoration efforts at the location, potential habitat for protected species is minimal.

The reflectors on Miloli'i Ridge are situated amongst mixed coastal cliff vegetation, containing sparse native species at elevations from 1,760 to 1,790 feet above sea level. Much of the canopy comprises non-native trees with a mixed understory consisting of native and non-native shrubs and grasses.



Figure 3.3-1 Vegetation Types

Mākaha Ridge, with its diverse topography, varies in landscape and vegetation. Elevations at Mākaha Ridge range from 1,400 to 1,850 feet above sea level. Its features include eroded ridges with ruderal vegetation, as well as non-native canopies with dense understory patches. The following five federally listed plants have been documented within the coastal cliff plant communities at Mākaha Ridge: Ni'ihau lobelia (*Lobelia niihauensis*), makou (*Peucedanum sandwicense*), Hawai'i scaleseed (*Spermolepis hawaiiensis*), dwarf iliau (*Wilkesia hobdyi*), and mā'oli'oli (*Schiedea apokremnos*). The Hawaiian hoary bat and nēnē are ESA-listed species that have been observed in the region, as well as the state-listed pueo. ESA-listed seabirds including Newell's shearwater (*Puffinus auricularis newelli*), Hawaiian petrel (*Pterodroma phaeopygia sandwichensis*), and the band-rumped storm petrel (*Oceanodroma castro*) have the potential to fly over Mākaha Ridge or utilize the area.

KPGO consists of maintained landscaped grass, planted fruit trees, and non-native shrubs surrounding isolated building structures located along Kaunuohua Ridge, 3,700 feet above sea level. Mixed vegetation is sparse and consists of native and non-native plant communities. The Hawaiian hoary bat, nēnē, Hawaiian petrel, Newell's shearwater, band-rumped storm petrel, Hawaiian picture-wing fly (*Drosophila musaphilia* and *Drosophila sharpi*), and 'akoko are ESA-listed species present in the montane mesic forest region dominated by native trees. Rare state-recognized endemic forest birds such as scarlet honeycreeper or 'i'iwi (*Vestiaria coccinea* syn. *Drepanis coccinea*), 'apapane (*Himatione sanguinea*), and 'amakihi (*Chlorodrepanis stejnegeri*) have been observed in the region. Critical habitat for bluegrass (*Poa mannii*), 'akoko (*Euphorbia halemanui*), 'aiakeakua (*Solanum sandwicense*), *Xylosma crenatum*, *Dubautia latifolia*, 'aiea (*Nothocestrum peltatum*), and Hawaiian picture-wing fly (*D. musaphilia*), occur outside of KPGO, along the western region of Kaunuohua Ridge.

The Draft EIS will evaluate potential impacts to biological resources from implementation of the Proposed Action and alternatives.

### 3.4 Land Use

The State of Hawai'i has a unique system of classifying and managing lands in which both state and county agencies hold distinct responsibilities. The State Land Use Law (HRS § 205) classifies all lands in Hawai'i into one of four State Land Use Districts (SLUDs): urban, rural, agricultural, and conservation. The land that is leased and in easement by the Navy and NASA is classified as a conservation or agricultural district. The conservation district is further divided into five subzones: limited, resource, general, protected, and special. Navy and NASA leased and easement lands lie within the following conservation subdistricts: limited, resource, and general. In addition, each county has its own classification system of zoning districts that complement the SLUD designations. The County of Kaua'i Zoning for the Project Area includes agriculture, conservation, open space, and special treatment – ecological. Table 3.4-1 summarizes SLUD and zoning designations in the Project Area.

Table 3.4-1 State Land Use Districts and Zoning Designations in and Surrounding the Project Area

Geographical Area	Tax Map Key Parcel <sup>1</sup>	County of Kauaʻi Zoning	State Land Use Districts	Conservation Subzone	Owner
Main Base	1-2-002:001, 011, 012, 013, 015, 024, 025, 026, 030; 1-2- 016:011	Agriculture, Op en Space, Conservation, Special Treatment— Ecological	Agriculture, Conservation	Limited, General Subzone	State of Hawai'i, U.S. Government
Kamokalā Ridge	1-2-002:001, 027, 029	Agriculture, Open Space	Agriculture	None	State of Hawaiʻi
Mānā Well	1-2-002:028	Open Space	Agriculture	None	State of Hawaiʻi
Miloli'i Ridge	1-2-001:006	Conservation	Conservation	Resource Subzone	State of Hawaiʻi
Mākaha Ridge	1-2-001:001, 006, 010; 1-4- 001:002, 013, 014, 999	Conservation	Conservation	Resource Subzone	State of Hawaiʻi
KPGO	1-4-001:013	Conservation	Conservation	Resource Subzone	State of Hawaiʻi

Note: <sup>1</sup>Some Tax Map Key Parcels may be only portions or included for more than one geographical area.

Legend: KPGO = Koke'e Park Geophysical Observatory; U.S. = United States.

Source: State Land Use Law (Chapter 205, Hawai'i Revised Statutes).

The Main Base consists of the fee simple lands held by the U.S. Government. Mānā Plain is east of the Main Base and is utilized for agriculture and is bordered by the Kekaha Game Management Area (which encompasses Kamokalā Ridge and Mānā Well). The southern boundary for the Main Base ends at Kokole Point. Miloli'i Ridge and Mākaha Ridge are located within the Pu'u Ka Pele Forest Reserve managed by DLNR, DOFAW. Adjacent to Mākaha Ridge, KPGO is located within Kōke'e State Park, which is managed by DLNR, State Parks Division. Both are accessible by Kōke'e Road (Figure 1-2).

Land uses in the Project Area include public beach access, local and federal government activities, agriculture, hiking, hunting, and other public uses. Highway 50 (also known as Kaumuali'i Highway) is the primary public access route through the Main Base (Figure 1-2).

The Draft EIS will evaluate potential impacts to land use from implementation of the Proposed Action and alternatives.

#### 3.5 Socioeconomics

The area that will be considered for socioeconomic analysis is the County of Kaua'i.

**Population Characteristics.** In 2021, the population of the County of Kaua'i was 73,247, representing approximately 5 percent of the total population for the state. The population of the County of Kaua'i grew 9.2 percent from 2010 to 2021. This growth rate was faster than for the state (6.9 percent) and U.S. (6.8 percent) over the same period. Table 3.5-1 shows 2010 and 2021 population data.

Table 3.5-1 Population of the County of Kaua'i, State of Hawai'i, and United States (2010 and 2021)

Location	2010	2021	Percent Change
United States	308,745,538	329,725,481	6.8
State of Hawai'i	1,360,301	1,453,498	6.9
County of Kaua'i	67,091	73,247	9.2

Sources: U.S. Census Bureau, 2010, 2022a.

Employment Characteristics. In 2021, 36,294 individuals in the County of Kaua'i were employed in the civilian labor force and 239 individuals in the armed forces (U.S. Census Bureau [USCB], 2022b). The three largest civilian-employed industries in the County of Kaua'i in terms of workforce employed are arts, entertainment, recreation, accommodations, and food services (23.1 percent); educational services, health care, and social assistance (17.8 percent); and retail trade (11.4 percent) (USCB, 2022b). PMRF is currently the largest high-tech and third-largest overall employer on Kaua'i with nearly 1,000 personnel, including defense personnel and civilian contractors (State of Hawai'i Department of Business, Economic Development, and Tourism 2023). The median household income for the County of Kaua'i was \$86,287 compared to the statewide median household income of \$88,005 (USCB, 2022b). In 2021, the Bureau of Labor Statistics reported an 8.1 percent unemployment rate in the County of Kaua'i, which is higher than the U.S. (5.3 percent) and the State of Hawai'i (6.0 percent) (Bureau of Labor Statistics, 2021, 2023).

The Draft EIS will include an analysis of potential socioeconomic impacts from implementation of the Proposed Action and alternatives.

# 3.6 Environmental Justice

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs agencies to address environmental and human health conditions in minority and low-income communities. Environmental justice addresses the disproportionate and adverse impacts of a federal action on low-income or minority populations. The intent of the order and related directives and regulations is to ensure that low-income and minority populations do not bear a disproportionate burden of adverse impacts resulting from federal actions.

EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, directs each federal agency to make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children, and ensure that its activities and standards address disproportionate risks to children that result from environmental health or safety risks.

Impacts associated with environmental justice would be to disadvantaged communities that could be adversely affected by the Proposed Action. The West Kaua'i Community Plan was adopted in 2020 and guides the long-term development, growth, and maintenance in the Waimea-Kekaha and Hanapēpē-'Ele'ele districts. The West Kaua'i Community Plan recognizes that challenges, such as a lack of housing to the growing effects of climate change, will negatively impact vulnerable households disproportionately (County of Kaua'i, 2020). The potential disadvantaged communities would be identified based on the spatial distribution of low-income and minority populations in the Project Area. As defined by the Environmental Justice Guidance under NEPA (CEQ, 1997), minority populations include persons who identify themselves as Asian, Native Hawaiian or other Pacific Islander, Native American or Alaskan Native, Black (not of Hispanic origin), or Hispanic or Latino. A minority population

exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. In addition, a minority population also exists if there is more than one minority group present and the minority percentage, when calculated by aggregating all minority persons, meets one of the above thresholds (CEQ, 1997).

The Draft EIS will consider whether there are such disadvantaged communities on West Kaua'i within the vicinity of PMRF and, if so, assess whether the Proposed Action results in disproportionate and adverse impacts on environmental and human health conditions in minority and low-income communities. Potentially disadvantaged communities will be identified by comparing communities on West Kaua'i within the vicinity of PMRF to demographic and socioeconomic indicators for the County of Kaua'i as a whole.

#### 3.7 Water Resources

Water resources include surface water (e.g., streams, lakes, rivers, and wetlands), groundwater, floodplains, and coastal waters, which comprise watershed hydrology.

Mean annual rainfall at the Main Base is approximately 20 inches. The developed water system, consisting of three human-made open irrigation ditches through the agricultural lands on Mānā Coastal Plain draining into the Pacific Ocean, is fed by upland streams, surface waters, and associated sediment. Wetlands, floodplains, mudflats, and shallow ponds are present along the lowlands and coastal regions (Figure 3.7-1). The only natural wetland habitat on the Main Base comprises estuarine and marine systems along the shoreline region. A human-made sewage oxidation pond complex is located on the southern portion of the Main Base.

Mean annual rainfall in the Kamokalā Ridge area is 20 inches. Surface water from Nahomalu Valley (north) and Ka'awaloa Valley (south) of Kamokalā Ridge drains into the Mānā Plain. A basal unconfined dike aquifer is located in the Waimea Aquifer Sector within the Kekaha Aquifer System (Figure 3.7-2).

Mean annual rainfall in Mānā is approximately 20 inches. Mānā Well, located at the southeastern end of Kamokalā Ridge, pumps water upwards from a below-ground aquifer. The water from the well is properly treated before it is piped into the PMRF drinking water distribution system. Drinking water on the Main Base is provided by Mānā Well, as well as the County of Kaua'i's Waimea-Kekaha system.

Mean annual rainfall on Miloli'i Ridge is 30 inches. Due to the rocky, stony, and volcanic makeup of the terrain on Miloli'i Ridge, runoff is rapid and erosion is prevalent. There are no perennial water features and no groundwater resources.

Mean annual rainfall at Mākaha Ridge is 30 inches. Due to the rocky, stony, and volcanic makeup of the terrain on Mākaha ridge, runoff is rapid and erosion is prevalent. There are no perennial water features, only intermittent streams in the region. Two aquifers, both part of the Waimea Aquifer Sector of the Kekaha Aquifer System, are beneath this site (Figure 3.7-2).

Mean annual rainfall on the Kaunuohua Ridge at KPGO ranges from 50 to 60 inches. Surface water runoff is medium due to highly-eroded volcanic terrain on the ridgeline, and generally follows a northwesterly/southeasterly course. Numerous streams are located around the base of the mountains. One unconfined dike aquifer, located in the Waimea Aquifer Sector within the Kekaha Aquifer System, lies beneath KPGO.

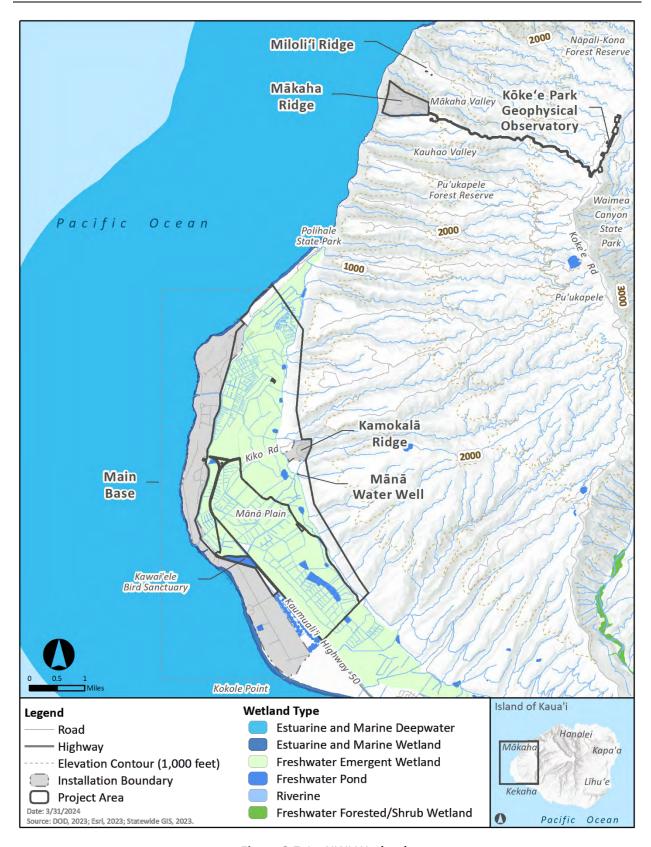


Figure 3.7-1 NWI Wetlands



Figure 3.7-2 Aquifers

The Draft EIS will evaluate potential impacts to water resources from implementation of the Proposed Action and alternatives.

## 3.8 Utilities

There are utility leases and easements included as part of the Proposed Action. Utility systems' usage, available supply capacity, and the overall real property condition of the utility systems will be analyzed. The primary utilities that will be assessed in the Draft EIS are potable water, wastewater, electrical, and communications.

Potable water for the Main Base lease areas comes primarily from Mānā Water Well. Potable water resources for Kamokalā Ridge, Mākaha Ridge, and KPGO are supplied by either existing wells or municipal sources from several reservoirs. The Navy treats water from all sources, except water provided by the State of Hawai'i (Navy, 2008).

Wastewater services for PMRF include domestic sewage treatment facilities and a collection system that services PMRF (Navy, 2008). The Kamokalā Ridge, Mākaha Ridge, and KPGO wastewater utility supply and uses will be identified in the Draft EIS.

Primary electric power is supplied to the Main Base, Kamokalā Ridge, and Mānā Water Well by purchase from the Kaua'i Island Utility Cooperative and a 14-megawatt solar facility with a 70 megawatt-hour battery energy storage system on the Main Base (Figure 3.8-1). KPGO power is supplied by a Navy-operated power plant at Mākaha Ridge. Electricity is provided through both overhead and underground transmission lines. Emergency diesel backup generators provide alternate power when needed at KPGO. Communications infrastructure for the Main Base, Kamokalā Ridge, Mākaha Ridge, and KPGO consist of cable, fiber optics, cellular towers, and communications towers.

The Draft EIS will analyze potential impacts to utilities from implementation of the Proposed Action and alternatives.



Photo courtesy of U.S. Navy, November 16, 2021.

Figure 3.8-1 Solar Facility and Battery Energy Storage System

## 3.9 Public Health and Safety

Public health and safety pertains to activities, occurrences, and training, and RDT&E activities that have the potential to affect the well-being, safety, and health of the public.

NASA operates KPGO in accordance with the Environmental Management Plan under the Space Exploration Network Services and Evolution contract. To ensure operations at KPGO do not result in impacts to public safety or the environment, the Environmental Management Plan describes procedures for the following: environmental planning; risk assessment; spill prevention; operational controls; education, training, awareness, and competency; evaluation, checking, and corrective action; water management; air quality management; and waste management.

Range Safety at PMRF is controlled by Range Control, which is responsible for hazard area surveillance and clearance and control of all operational areas. Range Control maintains real-time surveillance, clearance, and safety at all PMRF areas. The PMRF Range Safety Officer is responsible for establishing Ground Hazard Areas (GHAs) and Launch Hazard Areas over water. The Ground and Launch Hazard Areas for missile launches are determined by size and flight characteristics of the missile, as well as individual flight profiles of each flight test. Data processed by ground-based or onboard missile computer systems may be used to recognize malfunctions and terminate missile flight. Before a launch is allowed to proceed, the Navy uses input from ship sensors, visual surveillance from aircraft and range safety boats, radar data, and acoustic information to ensure the offshore range is clear of vessels and aircraft.

PMRF operates pursuant to Range Commanders Council 321, *Common Risk Criteria for National Test Ranges*. Range Commanders Council 321 sets requirements for minimally acceptable risk criteria to occupational and non-occupational personnel, test facilities, and non-military assets during range operations.

Ordnance safety includes procedures to prevent premature, unintentional, or unauthorized detonation of ordnance. All programs require an Explosive Safety Approval before ordnance is allowed on PMRF or used on a test range. This approval involves a detailed analysis of the explosives and of the proposed training and RDT&E activities. The analysis also covers procedures and facilities for surveillance and control, an adequacy analysis of movement and control procedures, and a design review of the facilities where the ordnance items will be handled.

PMRF transports ordnance by truck from Nāwiliwili Harbor to the Main Base along Highway 50 (Figure 3.9-1). The barges carrying ordnance are met at Nāwiliwili Harbor by trained ordnance personnel and special vehicles for transit and delivery to PMRF. PMRF Instruction 8023.G controls the handling and transportation of ammunition, explosives, and hazardous materials on the facility. All ordnance is transported in accordance with PMRF Instruction 8023.G and U.S. Department of Transportation regulations.

Ambulance and Class II Emergency Medical Technician services are provided by Emergency Medical Technicians assigned to Crash/Fire. These contractor-operated services are available to military, civil service, and non-government personnel at PMRF, 24 hours a day, 7 days a week. More extensive emergency medical services are available from the West Kaua'i Medical Center in Waimea, 10 miles from PMRF's main gate (Figure 3.9-1).

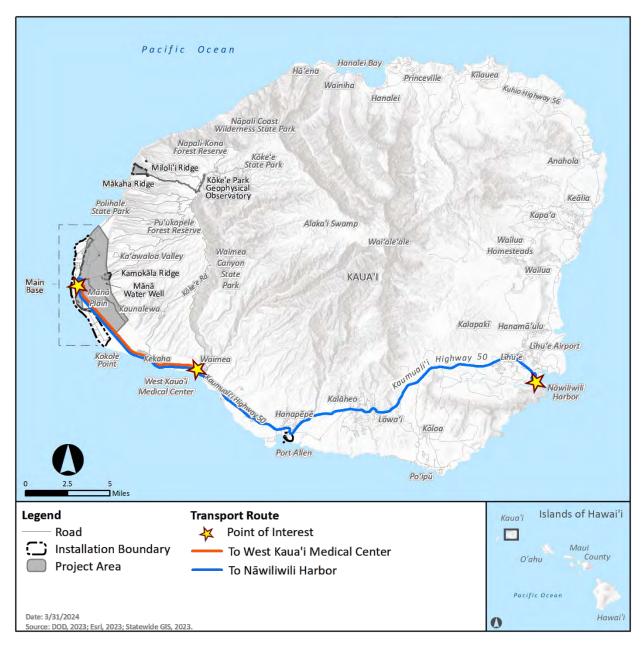


Figure 3.9-1 Ordnance Transport Route and Emergency Medical Services Route

Fire service at the Main Base includes PMRF Crash/Fire equipment located at the Air Traffic Control Tower. Personnel are trained to respond to activities such as aircraft firefighting and rescue in support of airfield operations, hazardous material incidents, confined space rescue, and hypergolic fuel releases, plus structure and brush firefighting, fire prevention instruction, and fire inspections.

The Draft EIS will evaluate potential impacts to public health and safety from implementation of the Proposed Action and alternatives.

### 3.10 Air Quality and Greenhouse Gases

# 3.10.1 Air Quality

The U.S. Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) for the criteria pollutants sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), ozone (O<sub>3</sub>), lead, particulate matter (PM) measured less than or equal to 10 microns in diameter (PM<sub>10</sub>), and PM less than or equal to 2.5 microns in diameter [PM<sub>2.5</sub>]).

The Hawai'i Department of Health (DOH), Clean Air Branch regulates and monitors air pollutants under HAR Chapter 11-59, Ambient Air Quality Standards, and HAR Chapter 11-60.1, Air Pollution Control. Based on ambient air monitoring results, the island of Kaua'i is designated unclassified/attainment for all criteria pollutants (USEPA, 2023). The Clean Air Branch currently operates one monitoring station on the island of Kaua'i approximately 1.0 mile downwind of Nāwiliwili Harbor to measure SO<sub>2</sub> emissions from cruise ships (DOH, 2023).

The prevailing winds on Kaua'i (known as trade winds) blow in from east-northeast and prevail approximately 9 months of the year. When there is volcanic activity, trade winds blow volcanic fog ("vog") from Hawai'i Island volcanoes. When trade winds are absent for prolonged periods, vog travels up the island chain and can affect air quality by increasing levels of airborne SO<sub>2</sub> and PM<sub>2.5</sub>.

Sources of air emissions from the Navy include vehicle traffic, diesel-fuel powered generators, aircraft, power generation, and rocket launches. Sources of air emissions from NASA include vehicle traffic and the diesel power generator.

The Draft EIS will assess the potential impacts to air quality from implementation of the Proposed Action and alternatives.

### 3.10.2 Greenhouse Gases

Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). Global climate change is impacting temperature, precipitation, wind, sea level, and other elements of Earth's climate system. The recent buildup of GHGs in the atmosphere from human activities has changed the earth's climate and has resulted in adverse effects to human health and welfare, and to ecosystems.

Sea level rise, altered rainfall patterns, and rising ocean and air temperatures result from climate change. These changes impair access to clean water and healthy food, undermine human health, threaten the cultural and built environment, exacerbate inequities, and disrupt economic activity and diversity of ecosystems in Hawai'i (U.S. Global Change Research Program, 2023).

The Draft EIS will analyze potential impacts from GHGs and climate change from implementation of the Proposed Action and alternatives.

# 3.11 Transportation

The roadways used to access or in the vicinity of PMRF include Highway 50, Kōke'e Road, Kao Road/Kiko Road, Mānā Road, Mākaha Ridge Road, and Miloli'i Ridge Road.

Highway 50 is a principal arterial roadway providing regional mobility in the western part of Kaua'i. It begins in Līhu'e and ends in the vicinity of PMRF, where it is a two-lane, undivided roadway with painted shoulders along both sides of the road. There are median left turn lanes at selected intersections along Highway 50.

Kōke'e Road branches north from Highway 50 in Waimea and provides access from Kekaha to Waimea Canyon State Park and Kōke'e State Park. It also provides access to the KPGO site. In the vicinity of the KPGO site, it is a two-lane, undivided roadway with grass shoulders along both sides of the road.

The Draft EIS will analyze the potential impacts of the Proposed Action and alternatives on the roadway facilities in the vicinity of the PMRF and KPGO sites along with multi-modal facilities, such as pedestrian, bicycle, and public transit facilities.

### 3.12 Hazardous Materials and Wastes

Hazardous materials are currently utilized or present on lease and easement lands at KPGO, the Main Base, and Mākaha Ridge.

Hazardous materials present on the Main Base leased area include the following: cleaning agents, solvents, lubricating oils, jet fuel, diesel fuel, propane, gasoline, aqueous film forming foam<sup>2</sup> (AFFF), chlorine, used oil, and paint. No known components within the Main Base leased area contain polychlorinated biphenyls (PCBs). PMRF's management and disposal procedures for used oils and fuels are in its Hazardous Waste Management Plan. Most waste is collected and containerized at the Main Base leased area for direct offsite disposal through the Defense Reutilization and Marketing Office, which also provides for the transportation and disposal of the waste to a final disposal facility.

PMRF uses gasoline and diesel fuel to power trucks and equipment across leasehold areas. Table 3.12-1 includes a summary of fuel storage on PMRF leased lands and KPGO.

Hazardous materials on Mākaha Ridge include diesel storage tanks and oil storage tanks. Used oil is taken to the Main Base to be recycled.

KPGO Site B has multiple diesel fuel tanks used for emergency power generation. Site B also has a hazardous material storage facility which holds paint, oil, mechanical lubricating fluids, and cleaning

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<sup>&</sup>lt;sup>2</sup> Based on guidance from the Assistant Secretary of the Navy, DON has strict firefighting performance requirements for AFFF formulations to protect the safety of our personnel and the public in the event of an emergency. DON amended the MILSPEC in September 2017 setting limits for PFOS and PFOA at the lowest levels of quantitation while maintaining fire-fighting performance requirements. DON is in the process of removing legacy AFFF and replacing it with new MILSPEC compliant AFFF. DON has also implemented system requirements to ensure DON installations and facilities are tested and certified in a manner that does not allow the release of legacy AFFF into the environment. MIL-PRF-32725 limits per- and polyfluoroalkyl substances (PFAS) to 1 part per billion, and Section 322 of the National Defense Authorization Act for Fiscal Year 2020 requires DoD to stop using AFFF containing PFAS on all installations by 1 October 2024.

substances. Used oil is taken to the Main Base to be recycled. NASA's Environmental Management Plan for KPGO describes waste management processes including handling of solid waste, recyclable materials, hazardous waste management, hazardous waste shipment, universal waste management, asbestos management, PCBs, and compliance with the Emergency Planning and Community Right-to-Know Act.

Table 3.12-1 PMRF Leased Area and	<b>KPGO Fue</b>	Storage Locations
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Fuel Storage Types	Quantity	Capacity (nominal capacity) in gallons	Details
Diesel ASTs	2	8,000	Mākaha Ridge
Diesel AST	3	275	Mākaha Ridge
Diesel USTs	1	25,000	KPGO Site B
Diesel USTs	2	500	KPGO Site B
Diesel ST	2	55	KPGO Site B
Diesel ST	1	244	KPGO Site B
Diesel ST	1	256	KPGO Site B

Key: AST = aboveground storage tank, UST = underground storage tank, ST = Storage Tank.

PMRF has a pollution prevention plan for all sites on Kaua'i, which follows the Navy's Consolidated Hazardous Materials Reutilization and Inventory Management Program for controlling, tracking, and reducing hazardous materials use and waste generation. Current programs involve waste elimination from toner cartridges, mercury from mercury lamps, and acid/lead batteries and asbestos management. Asbestos is managed in accordance with the base asbestos management plan which requires all structures on leased and easement land areas to be surveyed, and any asbestos removed by a certified asbestos contractor prior to disturbance/construction. Lead-based paint waste removal follows Department of Energy protocols, and all facilities on PMRF leased lands follow the lead-based paint management plan.

The Draft EIS will evaluate potential impacts to hazardous materials and wastes from implementation of the Proposed Action and alternatives.

### 3.13 Visual Resources

The discussion of visual resources includes the natural and built features of the landscape visible from viewpoints that contribute to an area's visual quality. Under NEPA, federal agencies should consider visual impacts of proposed projects on scenic resources, historic properties, and scenic experiences of public who view the landscape. Aesthetics and views of proposed projects at PMRF and the NASA lease area are mainly guided by the Kaua'i County General Plan (County of Kaua'i, 2018) or the West Kaua'i Community Plan (County of Kaua'i, 2020). Both plans include policies to preserve scenic views of ocean, coastline/beach areas, mountains, and other elevated landforms.

The Main Base leaseholds and easements are situated on the west coast of Kaua'i on the Mānā Coastal Plain (refer to Figure 1-2). The leased and easement areas in this area are relatively flat and consist primarily of agricultural and other undeveloped, partially-vegetated lands. The ridges that run east of these areas are the dominant view from the Main Base. The Pacific Ocean and coastlines can be viewed from higher elevation vantage points. Kaumuali'i Highway (Highway 50) is the main paved roadway in this area. Typical views from the highway include mixed vegetation and agricultural areas along both

sides of the road, with the mountains visible in the distance to the east, if travelling northbound on Kaumuali'i Highway toward Barking Sands Beach and Polihale State Park. The facilities on these leaseholds and fee simple lands are visible to the west for some stretches when travelling northbound on Kaumuali'i Highway.

The Kamokalā Ridge leaseholds are located upland from the Main Base. The ordnance storage facility and paved access roads are the primary human-made structures in the area. Vegetation of various heights is adjacent to both sides of the access roads. Obscured views of the Pacific Ocean and coastlines occur from certain vantage points along the roadway. Due to its higher elevation and the relatively dense vegetation in this area, the ordnance storage facility is not visible from the Main Base, Kaumuali'i Highway, or other public roads west of the Kamokalā Ridge lease area.

The Mānā Water Well is approximately a quarter mile south of the Kamokalā Ridge area. The well is located at the point where the topography changes from flat to steep mountain cliffs. The site is reached by an access road from Kiko Road (Figure 1-4). Mountain views are dominant from this location because the nearest cliff line is less than a quarter mile from the well. No ocean or coastline views are available from this location.

Miloli'i Ridge and Mākaha Ridge are both finger ridges of the Nāpali Coast on the west-northwest side of Kaua'i within Pu'ukapele Forest Reserve areas. The Miloli'i Ridge lease area is approximately 8 miles north of the Main Base. Views of the Pacific Ocean and coastlines are not available due to dense vegetation coverage at this site. The facilities at Miloli'i Ridge are not visible from public vantage points because of its secluded location.

The Mākaha Ridge area is located on the cliffs of the Nāpali Coast State Wilderness Park, approximately 1 mile south of Miloli'i Ridge. Mākaha Ridge is accessed via the Mākaha Ridge Road (refer to Figure 2-7), which can be accessed by the public up to a gate outside of the radar site. Mākaha Ridge Road has forest vegetation lining both sides of the road, obstructing a view of any vista. The radar facilities are only partially visible from the segment of the Mākaha Ridge Road near the radar site gate.

The NASA lease area is located at the Kōke'e Park, approximately half a mile northeast of Mākaha Ridge Road. The site can be accessed through Kōke'e Road and Faye Road. Site facilities are located on landscaped or paved areas. The site is surrounded by taller forest vegetation. The heavily vegetated setting and mountain views are the main scenic resources from this area. The NASA facilities are partially visible to Kōke'e State Park visitors while traveling along Mākaha Ridge Road.

As part of the visual resources impacts evaluation, the Draft EIS will discuss visual resources in detail from the perspectives of dominant landscape features, visual diversity, elements of line, color, form, and texture, historic and cultural importance, as well as overall landscape character. The Draft EIS will evaluate potential impacts to visual resources from implementation of the Proposed Action and alternatives.

# 4 Consistency with State and Local Government Plans and Policies

The Draft EIS will evaluate the Proposed Action's conformance with relevant state and local land use plans and policies.

# 4.1 Land Use Laws

The Draft EIS will include a discussion of the Proposed Action's conformance with relevant federal, state, and County of Kaua'i land use plans, policies, and controls.

### 4.2 Hawai'i State Plan and Hawai'i State Functional Plans

The Hawai'i State Plan, codified as HRS Chapter 226, establishes a set of themes, goals, objectives, and policies that are meant to guide the state's long-term growth and development activities. The Hawai'i State Plan also provides a basis for determining priorities, allocating limited resources, and improving the coordination between State and County plans, policies, programs, projects, and regulatory activities. These goals seek to promote a strong economy, a desired physical environment, and nourished community life. The State Plan also establishes objectives for each goal. The Proposed Action meets the statewide objectives by encouraging federal expenditures and national defense that is consistent with "Hawai'i's social, environmental, and cultural goals by building upon dual-use and defense applications" (HRS § 226-9). As stewards of the natural and cultural environment, the Navy and NASA work to enhance Hawai'i's scenic assets, natural beauty, and multi-cultural resources pursuant to HRS § 226-12.

The State Plan (HRS § 226-65) also initiated the Hawai'i 2050 Sustainability Plan to serve as long-range planning to achieve sustainability and climate adaptation goals, principles, and policies. Published in 2008, the plan reinforces the goals and objectives of the State Plan (above) in terms of economic, physical, and community sustainability with the objectives of promoting these sectors through renewable energy, water conservation, and increased food security, among others; an approach fully supported by the Proposed Action (Sustainability Task Force, 2008).

The Statewide Planning System identified in HRS Chapter 226 also requires State Functional Plans, which implement state and county actions. There are 13 Functional Plans used to assist with establishing the policies, statewide guidelines, and priorities within a specific field of activity when such an activity or program is proposed, administered, or funded by any state agency. Due to the nature of the leased and easement lands that fall under the Proposed Action, multiple Functional Plans may be applicable for the Draft EIS, including the Agriculture Functional Plan, the Conservation Lands State Functional Plan, the Historic Preservation State Functional Plan, and the Recreation State Functional Plan. All of these applicable Functional Plans were developed in 1991.

# 4.3 Kaua'i County General Plan, West Kaua'i Community Plan, Kaua'i Island Plan

The Kaua'i County General Plan underwent a comprehensive update in 2018 and serves as the county's guiding policy framework for growth, land use, and development issues. The Project Area falls within the Waimea-Kekaha Planning District and land uses include agriculture, natural preserve, and parks and recreation. The Proposed Action fits within this General Plan's future land use concept and is consistent with applicable goals and policies (County of Kaua'i, 2018). As stated in the Kaua'i County General Plan, Section 3.3 fostering High Tech and Clean Tech Jobs:

The Pacific Missile Range Facility (PMRF), located on the West Side, is one of the foremost aerospace test sites in the United States. PMRF leverages Kaua'i's location in the center of the Pacific Ocean for the benefit of aerospace and space launch testing .... Historically, PMRF has been the driving force behind the establishment of technology-based business on Kaua'i. PMRF's continued vitality contributes significantly to Kaua'i's high technology industry and provides opportunities for supportive businesses and entrepreneurs (County of Kaua'i, 2018).

Land uses at PMRF are consistent with the 2020 West Kaua'i Community Plan, and include the following three general areas: Hanapēpē, Kekaha, and Waimea uplands (County of Kaua'i, 2020). The project is consistent with the applicable policies regarding heritage resources, resiliency, and shared spaces in the West Kaua'i Community Plan. As stated in the West Kaua'i Community Plan, Part IV: Other Communities and Significant Areas:

Over the decades, PMRF has increased its connection with Kekaha and the West Kaua'i Community, such as development of the Junior Professional Program for high school students, restoration of the Kawai'ele Bird Sanctuary, establishment of protocols for the care and internment of inadvertently uncovered iwi, and support and partnership with local businesses and nonprofits (County of Kaua'i, 2020).

A separate Kaua'i Island Plan, last updated in 2004 and produced by the State of Hawai'i Department of Hawaiian Home Lands (DHHL), covers lands owned by the DHHL, which includes 15,061 acres adjacent to the Project Area in Waimea (DHHL, 2004) (Figure 4-1). PMRF is located in the coastal plain below the DHHL Mānā Plain property, and just north of State of Hawai'i Department of Hawaiian Home Lands Kekaha tracts. The project is consistent with land use plans for these two areas.

## 4.4 List of Potentially Required Permits, Consultations, Reviews, and Approvals

The Navy and NASA will prepare the Draft EIS with input, analysis, and review from the public and local, state, and federal agencies. The anticipated permits, consultations, reviews, and approvals required for implementation of the Proposed Action will depend on the features of the selected alternative. The list of anticipated permits and approvals in Table 4-1 will be refined as alternatives are developed. Input on other processes that may be necessary will be requested from government agencies and other participants as part of this environmental review process.

The Draft EIS will list all permits, consultations, reviews, and approvals necessary to implement the Proposed Action, including those overarching requirements listed in Table 4-1. Because the Proposed Action is a land management proposal, the associated permits and approvals are related to land use arrangements and resource management.

Table 4-1 Potential Required Permits, Consultations, Reviews, and Approvals for the Proposed Action

Potential Required Permits and Approvals	Regulatory Agency
Approval of request for new real estate agreements (HRS Chapter 171)	BLNR
Conservation District Use Application (HAR Title 13, ch. 5)	DLNR, Office of Conservation and Coastal Lands
NHPA (54 U.S.C. section 100101)	ACHP and the Hawai'i SHPO
ESA (16 U.S.C. section 1531 et seq.)	USFWS and NMFS <sup>1</sup>
CWA (33 U.S.C. section 1344)	USEPA and Hawai'i State Department of Health
CZMA, Subpart C	Hawai'i Office of Planning and Sustainable
(16 U.S.C. section 1451, et seq.)  Hawai'i Historic Preservation Review  HRS Chapter 6E-42 and HAR Chapter 13-275	DEVElopment DLNR, SHPD

Note: Bold text in table indicates approvals necessitating HRS Chapter 343 environmental review.

Key: ACHP = Advisory Council on Historic Preservation; BLNR = Board of Land and Natural Resources; CWA = Clean Water Act;
 CZMA = Coastal Zone Management Act; DLNR = Department of Land and Natural Resources; ESA = Endangered Species
 Act; HAR = Hawai'i Administrative Rules; HRS = Hawai'i Revised Statutes; NHPA = National Historic Preservation Act;
 NMFS = National Marine Fisheries Service; SHPD = State Historic Preservation Division; SHPO = State Historic Preservation Officer; U.S.C. = United States Code; USEPA = U.S. Environmental Protection Agency; USFWS = United States Fish and Wildlife Service.

<sup>&</sup>lt;sup>1</sup> This is pending review of monk seal haul-out on easement land; additional review of ESA species is covered in the *Hawaii-Southern California Training and Testing Final EIS/OEIS* (Navy, 2018).

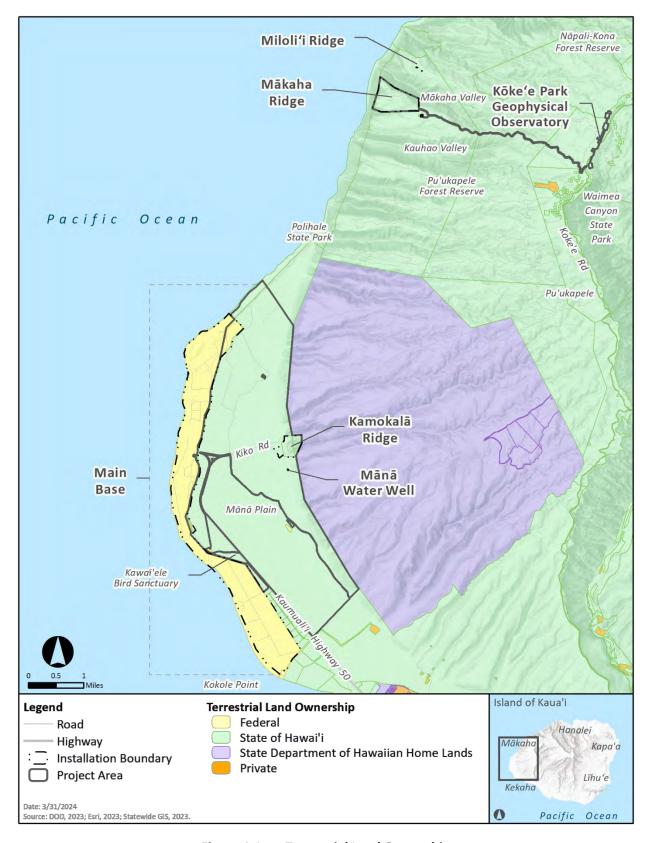


Figure 4-1 Terrestrial Land Ownership

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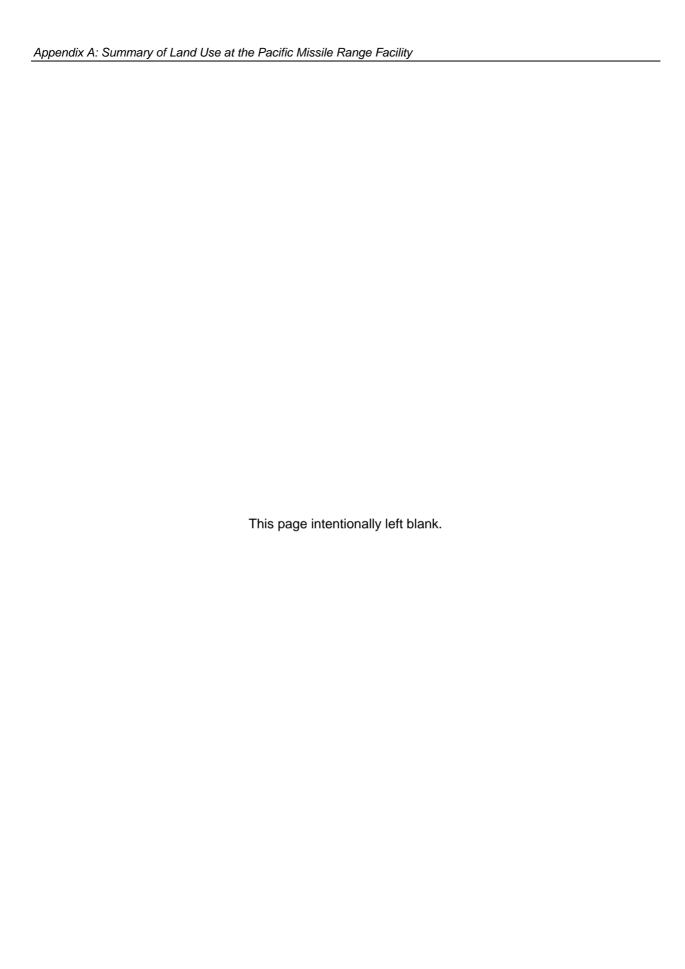
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Appendix A
Summary of Land Use at the Pacific Missile Range Facility



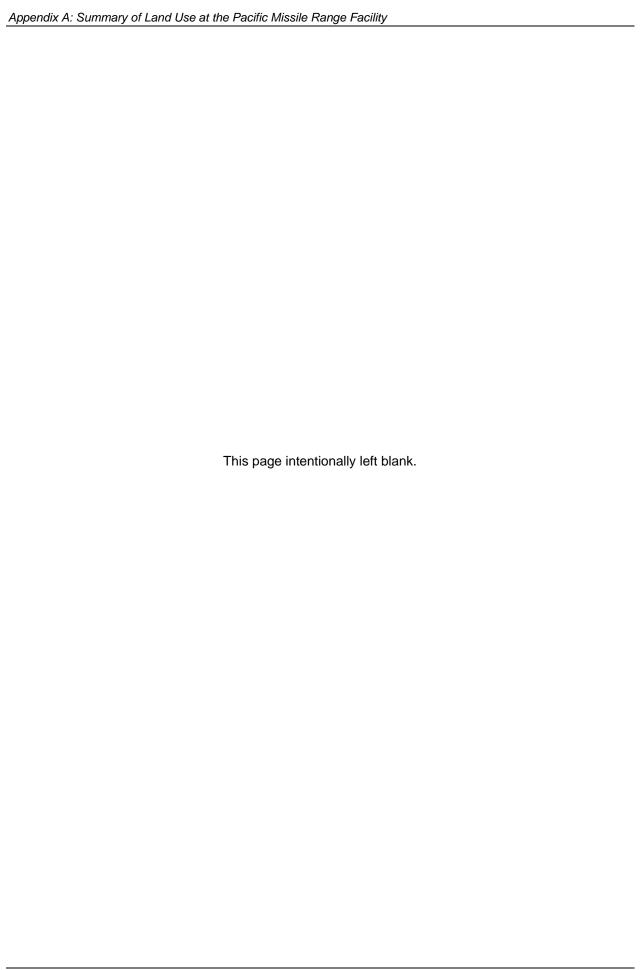
# **ACRONYMS AND ABBREVIATIONS**

ft foot or feet Department of the Navy, United States ha hectare Navy **ICRMP PMRF** Pacific Missile Range Facility Integrated Cultural Resources Management Plan **United States** U.S. km kilometer WWII World War II m meter

# **GLOSSARY OF HAWAIIAN LANGUAGE WORDS**

Hawaiian Spelling <sup>a</sup>	Definition
ʻaʻaliʻi	Hawaiian hopseed, <i>Dodonaea viscosa</i> ; native shrubs and small trees
	land division usually extending from the uplands to the sea, so called
ahupua'a	because the boundary was marked by a heap (ahu) of stones surmounted
anupua a	by an image of a pig (pua'a), or because a pig or other tribute was laid on
	the altar as tax to the chief
heiau	temple, shrine
	small, downy, American weed, Waltheria indica var. americana; leaves
hi'aloa	and inner bark of root are very bitter and are used for tea or chewed to
	relieve sore throat
koa	the largest of native forest trees (Acacia koa), with light gray bark,
Noa	crescent-shaped leaves, and white flowers in small, round heads
konohiki	headman of an ahupua'a land division under the chief
loko	pond, lake, pool
makaloa	a perennial sedge, Cyperus laevigatus
mauka	toward the mountain, or inland
neki	great bulrush
pu'uone	pond near the shore connected to the sea by a stream or ditch; sand dune

<sup>&</sup>lt;sup>a</sup> Adapted from Mary K. Pukui and Samuel H. Elbert, 1986, *Hawaiian Dictionary*, University of Hawai'i Press, Honolulu, unless otherwise noted.



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# 1 Introduction

# 1.1 Project Scope

The Pacific Missile Range Facility (PMRF) consists of approximately 10,281 acres (ac), of which approximately 1,933 ac are United States (U.S.) fee simple lands under the administrative jurisdiction of the U.S. Department of the Navy (Navy). The balance of 8,348 ac is state land comprised of 684 ac of leaseholds and 7,664 ac of easements.

No active training or testing occurs on state-owned property. Infrastructure that supports PMRF operations is located in the leaseholds. The easement areas provide safety buffer zones for training and testing missions and prevent incompatible development. The existing leases and easements were acquired from the State of Hawai'i, Department of Land and Natural Resources, and will expire between 2027 and 2030. The Navy is proposing to secure continued long-term Department of Defense use to support continued operational and mission requirements at PMRF. See Figure 1 and Figure 2 for the project areas of this summary.

The project consists of land that PMRF currently leases or has an easement for from the State of Hawai'i.

# 1.2 Project Location

The entirety of the project area is on the western edge of Waimea Ahupua'a, Kona District, Kaua'i Island. The Controlled Industrial Area encompasses the Mākaha Ridge Tracking Station, Mākaha Ridge Road, boresight tower adjacent to Mākaha Ridge Road, and several large parcels east of PMRF Barking Sands on the Mānā Plain. The three primary study locations include Barking Sands, Mākaha Ridge Road and Kamokalā Ridge and portions of the surrounding area.

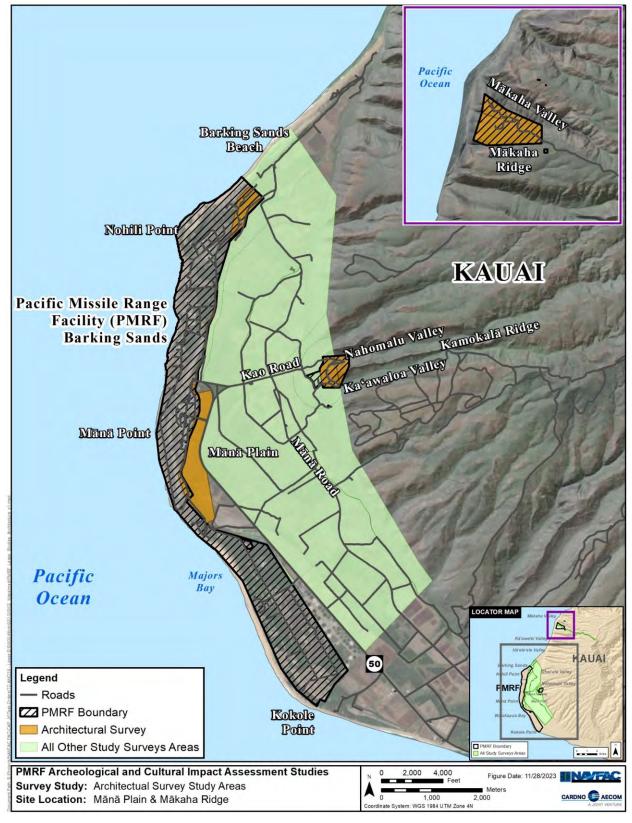


Figure 1 Architectural survey areas in relation to PMRF Installation boundary and other survey areas.

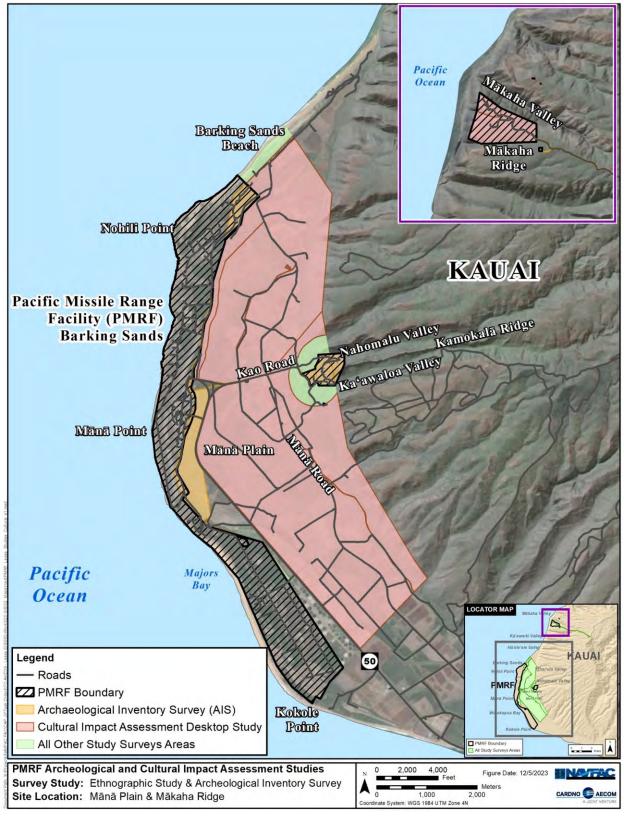
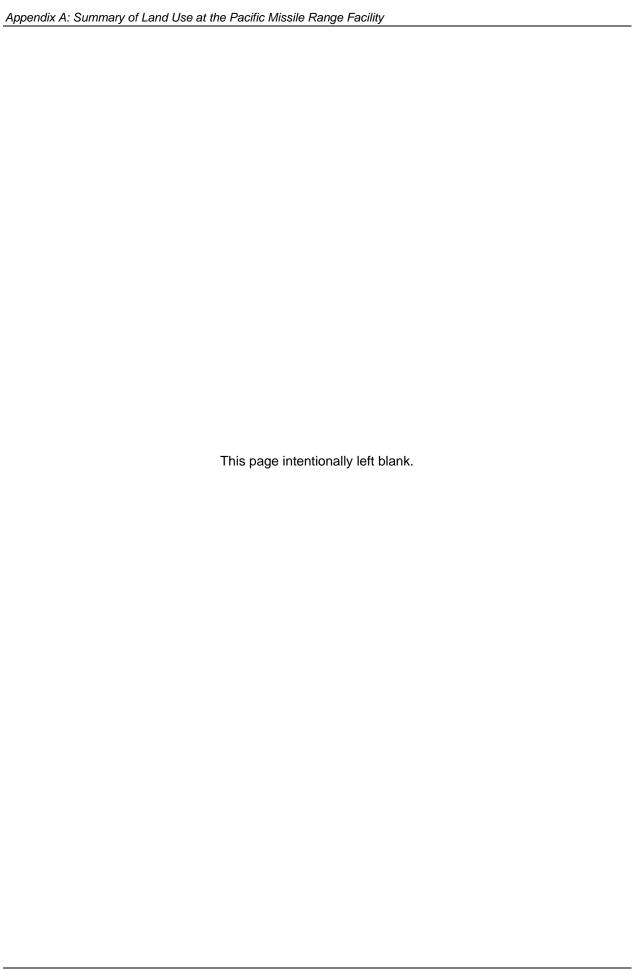


Figure 2 Archaeology survey and Cultural Impact Assessment study area in relation to PMRF Installation boundary.



# 2 Background

This section presents background information to contextualize the current project and summarizes the physical environment, cultural and historical context, and previous archaeological research. Much of this information has been adapted from the 2005 and 2012 Integrated Cultural Resources Management Plans (ICRMPs) for PMRF (SEARCH 2012; Tomonari-Tuggle and Yoklavich 2005), Bell and Morrison (2009), Knecht and Rieth (2016). Clark et al. (2015) is a synthesized report summarizing information from previous ICRMPs and recent archaeological investigations and is also a common source for this background information. More detailed information about PMRF and the surrounding area can be found in the ICRMPs.

# 2.1 Physical Environment

PMRF occupies over 2,454 ac (993.5 ha) in five separate areas of the island of Kaua'i: Barking Sands, Mākaha Ridge, Kōke'e, Kamokalā Ridge on the west side, and Port Allen on the south shore. Barking Sands and Port Allen are coastal locations. Mākaha Ridge and Kōke'e are situated on the central mountain mass of the island. Kamokalā Ridge is at the inland edge of the Mānā Plain at the base of the central mountain. The current cultural project is within and around the west side components of PMRF, which is the primary focus of this summary.

PMRF Barking Sands (the installation) covers more than 2,134 ac (864 ha) on the Mānā Plain. The installation occupies most of the coastal fringe of the plain, extending 7.77 miles (mi) (12.5 kilometers [km]) from Kokole Point in the south to Polihale State Park in the north. At its northern and southern boundaries, the installation is slightly over 0.62 mi (1 km) wide, narrowing to less than 0.31 mi (0.5 km) in the central portion. The northern two-thirds of the plain is a complex of three key physiographic features: coastal dune and back beach sands formed by aeolian and wave action, an arc of alluvial/colluvial deposition at the inland edge of the plain, and wetlands in the intermediate area. The southern third of the plain, in contrast, has a low dune, with relatively level soils extending back to the edge of the central mountain.

PMRF Mākaha Ridge Facility encompasses approximately 245 ac (99 ha) of a prominent Nā Pali ridgeline that overlooks the Mānā Plain. The ridge rises from 1,246.72 feet (ft) (380 meters [m]) to 1,853.67 ft (565 m) above sea level with an overall slope from east to west. The terrain surrounding the facility is steep, dropping quickly to the ocean along the west side and into narrow V-shaped drainages along the north and south sides.

PMRF Kamokalā Ridge is just inland from the Mānā Plain, in an area where the ancient 492.13 ft (150 m) to 656.17 ft (200 m) high sea cliffs have been incised by narrow, steep-walled gullies. The more gently sloped foothills at the base of the cliffs and mouths of the gullies have formed alluvial and colluvial arcs that project seaward. Kamokalā Ridge is bound by Nahomalu Valley to the north and Kaʻawaloa Valley to the south.

Rainfall across the survey area is very low, with mean annual precipitation averages of 15 to 20 inches (38–50.8 centimeters), increasing to 36 inches (91.44 centimeters) at Mākaha Ridge Tracking Station and gradually increasing further along Mākaha Ridge to the east with an average of 48 inches (121.92 centimeters) (Giambelluca et al. 2013). Most rain falls between October and April. The aridity of this region is caused by its location in the rain shadow of Mount Kawaikini and Mount Wai'ale'ale (Tuggle and Tomonari-Tuggle 1997:37). The average minimum annual temperature occurs in January and is approximately 71°F, and the average maximum temperature occurs in August and is 78°F (Giambelluca et al. 2013).

Numerous soil types are found in the survey area due to the variation in terrain (Figure 3 and Figure 4). The following soil descriptions are adapted from Foote et al. (1972).

Along the coastal survey areas, five primary soil series are present. The Jaucas series, and Jaucas loamy fine sand (JfB), soils are excessively drained, calcareous soils that occur as strips on coastal plains. These soils develop by alluvial and aeolian deposition of sand formed from coral and seashells. Jaucas loamy fine sand (JfB, 0–8 percent slopes) occurs on old beaches and windblown sand deposits in the western and southern areas of Kaua'i. The Kaloko series, and Kaloko clay (Kf) and clay loam (Kfa), are poorly drained soils on coastal plains. These soils developed in alluvium derived from basic igneous rocks; the alluvium has been deposited over marly lagoon deposits. The Mamala series, and Mamala stony silty clay loam (MnC), 0-12% slopes, consist of shallow, well-drained soils along coastal plains. These soils formed in alluvium deposited over coral limestone and consolidated calcareous sand. The Lualualei series, and Lualualei clay (LuA), 0-2% slopes, consist of well-drained soils on coastal plains, alluvial fans, and talus slopes. These nearly level to gently sloping soils developed in alluvium and colluvium. The Nohili series, and Nohili clay (Nh), are poorly drained soils on coastal plains. These soils developed in alluvium that was deposited over marly lagoon deposits. Also present within this area are fill lands, which are low-lying or wetland areas that have been filled with bagasse and slurry from sugarcane processing, and dune lands, which are hills and ridges of sand drifted and piled by wind.

Along Kamokalā Ridge, two primary soil series are present. The Kekaha series, and Kekaha extremely stony silty clay loam (KOYE), 0-35% slopes, consist of well-drained soils on alluvial fans and flood plains that developed in alluvium washed from upland soils. The Waiawa series, and Waiawa extremely rocky clay (WJF), 30-80% slopes, are well-drained, very shallow, extremely rocky upland soils. These soils developed in colluvium and material weathered from basic igneous rock. Also present within this area are rubble lands, where 90 percent or more of the surface is covered by stones and boulders at the base of steep slopes.

Along Mākaha Ridge, five primary soil series are present. The Paaiki series, and Paaiki loam (PGE and PGF) 6-70% slopes, consists of well-drained soils on dissected uplands. These soils developed mainly in material weathered from basic igneous rock but partly in volcanic ash and ejecta. The Oli series, and Oli silt loam (OME and OMF), 10-70% slopes, consists of well-drained, moderately deep to deep soils on uplands. These soils developed in volcanic ash deposited over basic igneous rock. The Mahana series, and Mahana silt loam (MaD and MaE) 12-35% slopes, consists of well-drained soils on uplands. These soils developed in volcanic ash. The Puu Opae series, and Puu Opae silty clay loam (PwC and PwD), 8-40% slopes, consists of well-drained soils on uplands. These soils developed in material weathered from basic igneous rock. The Niu series, and Niu silty clay loam (NcC and NcD), 6-35% slopes, consists of well-drained soils on uplands. These soils developed in material weathered from basic igneous rock, possibly mixed with volcanic ash.

### 2.2 Traditional Land Use

Traditional land uses near the survey area include habitation, subsistence activities, burial, and travel. These topics are briefly summarized in the following sections.

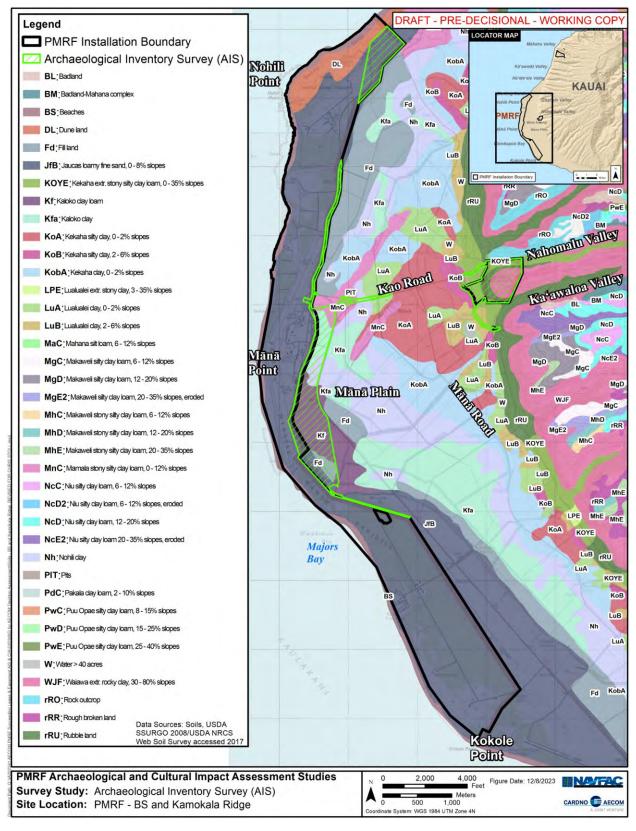


Figure 3 USDA soil classes in the vicinity of the survey area at Barking Sands and Kamokalā Ridge.

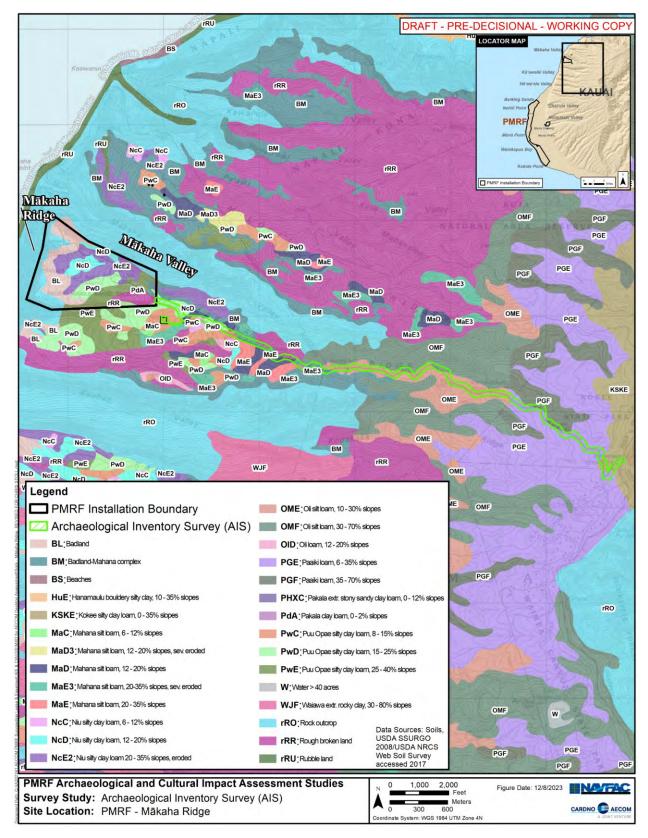


Figure 4 USDA soil classes in the vicinity of the survey area at Mākaha Ridge.

### 2.2.1 Settlement on the Mānā Plain

Wichman (1991:12), in relaying the story of Polihale, a konohiki (headman of an ahupua'a land division under the chief), describes the Mānā area in pre-Contact times as:

... a land that stretched from the western cliffs of Na Pali to the eastern boundary shared with Waiawa. Mānā is a land of long white beaches with the ocean on one side and a large swamp that teemed with birds on the other. Inland of the marsh was a fertile strip of land where sweet potatoes and gourds were grown. Above these fields cliffs rose stiff backed, broken wide by valleys down which constantly flowed fresh spring or rain water. The ridges, covered with sandalwood and koa (*Acacia koa*) trees, stretched into the mountains wreathed with cold and misty rain.

It is likely that permanent settlements were concentrated at the inland edge of the Mānā Plain, where houses, temples, and agricultural complexes were built in the foothills at the base of the cliffs, on high ground overlooking the wetlands and coastline.

Small fishing communities, possibly limited to temporary camps, were scattered along the coast, concentrating near optimal localities such as breaks in the reef where canoes could be launched or where reefs provided rich habitat for near-shore marine resources. Some camps were located on the protected, lee sides of the high dunes from Nohili Point to Polihale. Bennett (1931:102) observed house sites marked "by single rows of stones ... or by low walls" along the inland side of the dunes. Flores and Kaohi (1992:44) suggest that the sites on the inland side of the high dunes may have been permanent homes for:

... Those families whose time was mostly occupied with fishing ... [The dunes] provided them protection from ocean storm waves, flood waters, and strong on-shore winds—yet, still close enough to easily access the ocean resources. Taro was cultivated in portions of Kolo Swamp that were adjacent and mauka of these house sites.

# 2.2.2 Resource Collection and Subsistence

The people of Mānā were noted as fishermen, taking advantage of the rich waters of the channel between Kauaʻi and Niʻihau. Fishing was not confined to the ocean and shoreline of Mānā, but also included the swamps and ponds on the coastal plain. The swamp areas of Limaloa, Kawaiele, Nohili, and Kolo were utilized as brackish water loko puʻuone fishponds (Kikuchi 1987:5, 9; Kilauano 1991).

Although their modern forms are clearly related to the plantation era, the Nohili Ditch and the Kawaiele Ditch may have had earlier iterations as traditional Hawaiian ditches related to the functioning of the inland ponds for aquaculture. The Mānā Plain ponds were formed by water accumulating behind the dune berms with the natural ponds enhanced by excavation of channels through the dunes to allow the flow of ocean water into the ponds during high tide (Kikuchi 1987:9). The wetlands were also a place where wild resources could be collected.

Taro, sweet potato, bananas, and other food crops were also grown in and at the mouths of the narrow gulches that fed onto the plain; however, the aridity of the plain limited the amount of farming. Pukui (1983:271) writes of the proverb "Ola i ka 'ai uwahi 'ole o ke kini o Mānā, the inhabitants of Mānā live on food cooked without smoking." She says that in ancient days, the people of Mānā "did very little poi-making, except in a place like Kolo, where taro was grown" (see also Kilauano 1991). Handy (1940:61) notes that "wet taro has been grown at the northern end of the Mānā swamp, near the Barking Sands." However, most Mānā people exchanged fish and dryland products (like gourds) with taro producers from other parts of the island. Thus, because "all the taro cooking and poi-making was done elsewhere, the people of Mānā were said to live on 'smokeless food'" (Pukui 1983:271).

The coastal plain was a source of natural items that were collected and used for a variety of purposes. These included 'a'ali'i shrubs for firewood, hi'aloa and other plants for medicine, and makaloa and neki for weaving. The neki and makaloa were used in plaiting mats and other articles, the fashioning of which was called moena makaloa.

### 2.2.3 Burials

Hawaiians share a special connection to birthplace and homeland. As a consequence, burials were often placed close to households and those that have passed away are still considered to be part of the living family system (Flores and Kāohi 1992: 207). According to the Hawaiian tradition, upon death, the spirit travels to a leaping-off place where it is then assisted in its journey to the next realm by its 'aumakua (Puku'i 1972: 40, cited in Flores and Kāohi 1992: 206). Burials form an incredibly important part of the Hawaiian spiritual world and many Hawaiians feel the spirit resides near the physical remains of the bones. When burials are disturbed, the spirit is insulted, resulting in shame and humiliation to the living descendants (Puku'i 1972: 109 cited in Flores and Kāohi 1992: 206).

The coastal dunes of the Mānā Plain were the burial grounds of ancient Hawaiians. Human skeletal remains have been found in the sands of PMRF Barking Sands, as well as in mixed sandy soils nearly 1 km inland, from the north end of the installation to Waiokapua Bay and Kokole to the south. References to burials in the Nohili area appear in oral traditions and literature (e.g., Fornander 1917).

In addition to burial locations, the spiritual significance of the Mānā Plain is also evidenced by the presence of several important *heiau*, most notably Polihale and 'Elekuna *heiau*. 'Elekuna was known as a particularly important and special *heiau* that King Kalakaua and his priests visited many times (Flores and Kāohi 1992: 45). Polihale *heiau* was a site of religious observance where rites associated with departing souls would be carried out. A sacred spring in a nearby cliff was used for purification of those souls making their journeys into the next realm (Flores and Kāohi 1992: 45).

## 2.2.4 Transportation

There were two primary traditional land routes across the Mānā Plain: one along the shoreline and the other along the base of the cliffs and ridges. Other trails ran inland from the coastal plain to the mountains. People also traveled by canoe, particularly going to and from the valleys of the Nā Pali coast, by launching from beaches with unobstructed reefs and passageways such as at Palaiholani, Keanapuka, Poʻoahonu, Keawanaiʻa, and Polihale.

An unusual means of travel in this area is noted in historical accounts that describe the Mānā Plain after heavy flooding from Kona storms. These accounts note that one could travel by canoe from Waimea to Kolo through Mānā swamps and marsh lands. Faye (1981) recalls that "in a low bottomed canoe you could row for miles on this lake.... The canoe would tip over and if you were very short you wouldn't be able to touch bottom, but if you were taller, you could sort of tread over."

## 2.3 Historical Land Use

Historical land uses in this area include agriculture and U.S. military activities.

## 2.3.1 Agriculture

Early Western explorers were not particularly interested in the Mānā Plain, which was described as a hot and dry place with large sections of marshland (Portlock 1789:170-171; SEARCH 2012). The inhabitants of Mānā largely lived in the traditional ways of their ancestors until the 1848 Māhele, which wrought wideranging social changes and provided for private land ownership. Shortly after the Māhele, commercial agricultural practices were brought to the Mānā Plain by leases on crown lands to Archibald Archer and

eventually Valdemar Knudsen, and practices included grazing cattle, harvesting timber, and cultivating crops such as tobacco, coffee, fruit, rice, and sugarcane (Jones 1992:6; Sweeney 1994:10; SEARCH 2012).

As commercial crop cultivation increased, so, too, did the number of agricultural workers. The majority of these agricultural workers came from China, Japan, and the Philippines. With the influx of agricultural workers, the need for workers' housing increased, and according to Smith (1989:4), the first camp for housing agricultural workers dates to 1852. As agricultural production on the Mānā Plain expanded, much of the marshland was filled in or drained to provide more arable land, with increasing amounts of land being converted to sugarcane cultivation. Much of this was operated by the Kekaha Sugar Company, Ltd, which was formed in 1898 by Knudsen and L'Orange and continued operations through the 20th century (SEARCH 2012).

At Kamokalā Ridge, the area developed in the mid-nineteenth century for cattle grazing and ranching as well as commercial sugar and rice plantations. Plantation workers lived in camps throughout Mānā Plain, including between Kamokalā Ridge and PMRF, and railroad lines extended through fields connecting the agricultural goods to the wharf at Waimea. Plantation operations in the area had all closed by 2000 (TEC Inc.–JV 2011a).

# 2.3.2 U.S. Military

The following section provides a brief historical overview of U.S. Military land use in the three primary survey areas.

# 2.3.2.1 Barking Sands

One of the first non-agricultural land uses in the study area was an airstrip. This facility was established by the Territory of Hawai'i in 1921 and constructed by 1928 on a portion of the land that would later become PMRF Barking Sands (SEARCH 2012). The landing field at Barking Sands was not intended to be a commercial airport due to its distance from Waimea but was considered a good location as a stopover for transpacific flights. However, the airfield was seldom used and poorly maintained. Figure 5 shows the location of the landing field in 1935.

In 1940, the airfield at Barking Sands was designated for military use by the U.S. Army (SEARCH 2012). The airfield was expanded by 2,058 ac (832.8 ha) in 1941, quadrupling in size. Figure 5 shows the location of the landing field in 1935 and Figure 6 shows the airfield in 1941, before U.S. involvement in World War II (WWII). The massive land acquisition occurred primarily to the north and south of the existing airstrip along the coast. In May 1942, following the Pearl Harbor attack, the airfield became Barking Sands Army Air Base (TEC Inc.—JV 2011a). Figure 7 shows the landing field in 1943 after the expansion and improvements were completed. After its establishment as an Air Base, Barking Sands was used for flight training and aircraft refueling as the U.S. became involved in WWII (SEARCH 2012). In 1943, Kamokalā Ridge underwent construction, and 10 tunnel magazines with monorail transportation were built for bomb storage. As World War II progressed, Barking Sands was designated as a Combat Crew Replacement Center in 1944, establishing the base as an aircraft maintenance center and training grounds for crew prior to deployment to the Pacific Theater (SEARCH 2012). After World War II ended in 1945, base activity gradually decreased.

The late 1940s saw a decline in military activities as Barking Sands was transferred from the Army to the U.S. Air Force, becoming Barking Sands Air Force Base in 1948 (SEARCH 2012). The U.S. Navy established PMRF at the airfield in 1958 after using the area in 1956 for training operations on Regulus guided missiles, the first major Cold War mission at Barking Sands. The Atomic Energy Commission was a major tenant on base and created the Kauai Test Facility in the early 1960s, operated by Sandia

National Laboratories. Mākaha Ridge, a northern outpost near Waimea Canyon, was developed by the Navy in 1966 to aid the new Barking Sands Tactical Underwater Range and to house radar and telemetry facilities (SEARCH 2012).



Figure 5 Barking Sands Landing Field in 1935. Source: National Archives.



Figure 6 Barking Sands Army Air Base in 1941. Source: National Archives.



Figure 7 Barking Sands Army Air Base in 1943. Source: National Archives.

## 2.3.2.1 Kamokalā Ridge

The naval facilities at Kamokalā Ridge were developed in 1942-43, shortly after the attack on Pearl Harbor (SEARCH 2012). As PMRF Barking Sands was expanded to include strategic offensive facilities to provide service, equipment, and maintenance for B-24 bombers heading into the Pacific, several critical facilities were built underground to provide greater protection from aerial attacks. It was during this initial construction phase that the Kamokalā Ridge magazines were dug out of its basalt cliffs, some with monorails to transport munitions (TEC Inc.—JV 2011a) in 1943 (see Figure 8 and Figure 9). Records also indicate that during the 1960s, the Navy stored High Altitude Sounding Projectile (HASP) boosters in the hard-rock magazines at Kamokalā Ridge as part of Cold War missions at PMRF (SEARCH 2012). Between 1966 and 1992, the Hawaii Air National Guard occupied portions of PMRF and, during this period, acquired one of the 10 hard-rock magazines to use for storage of weapons and ordinance. Two large, earth-covered missile magazines were constructed at Kamokalā Ridge in 2002 (TEC Inc.—JV 2011a).

Known extant historic-era built resources within Kamokalā Ridge include 10 National Register of Historic Places-eligible tunnel magazines (Facilities 1-10) (SEARCH 2012). Kamokalā Ridge is accessed via the Ordnance Gate of Barking Sands and Kamokalā Ridge Road, which follows its original 1942 alignment and includes an extant vehicular bridge (Facility 20) (TEC Inc.–JV 2011a).

## 2.3.2.2 Mākaha Ridge

Mākaha Ridge was formally developed by the Navy in 1966 to aid the new Barking Sands Tactical Underwater Range and to house radar and telemetry facilities (SEARCH 2012). Construction at Mākaha

Ridge was a large undertaking and required extensive development of the landscape, including the installation of access roads (Weitze 2008). The site is accessed by the Mākaha Ridge Access Road, which is a long, narrow, paved road located in the forested lands stemming from Kōke'e Road to the southeast (TEC Inc. 2011a).

Prior to the Cold War, one facility existed at Mākaha Ridge, The Command Control Transmit Van Site (Building 200531) was constructed in 1946. Facilities built during the Cold War on Mākaha Ridge included a communications facility (Building 708), power station (Building 711), tracking radar (Building 713), and surveillance radar (Building 715) (Weitze 2008). A filling station (Building 733) was added in 1960. A helicopter pad was installed on the western portion of the Mākaha Ridge site sometime after 1966.

Several additional facilities were added between 1967 and 1970, including a telemetry facility (Building 725) and three telemetry towers (Buildings 726, 727, and 728) (see Figure 10 and Figure 11) (Weitze 2008, SEARCH 2012). An electric and communication maintenance shop (Building 742) was added to Mākaha Ridge in 1983. Mākaha Ridge, in combination with the Barking Sands Tactical Underwater Range and PMRF launch complex, comprised a National Missile Range and an underwater range (TEC Inc. 2011a). These ranges were used to train personnel in nuclear submarines operations and anti-submarine warfare during the Cold War era, and Mākaha Ridge supported naval weapons tests and evaluations during Navy fleet exercises (SEARCH 2012). Prior historic building surveys conducted at Mākaha Ridge include Dowden and Rosendahl in 1993, Drolet et al. in 1996, and Maly and Wulzen in 1997.



Figure 8 Example of Kamokalā Ridge missile magazine. Source: Tomonari-Tuggle and Yoklavich (2005).

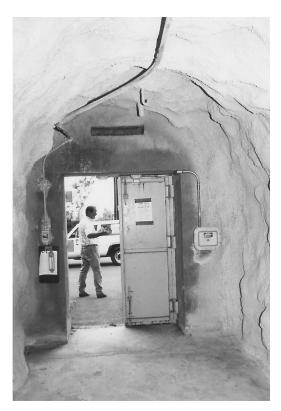


Figure 9 Example of Kamokalā Ridge missile magazine. Source: Tomonari-Tuggle and Yoklavich (2005).



Figure 10 Mākaha Ridge Tracking Station in the 1960s. Courtesy of PMRF.



Figure 11 Mākaha Ridge Tracking Station with Mākaha Ridge Road in the background.

Courtesy of PMRF.

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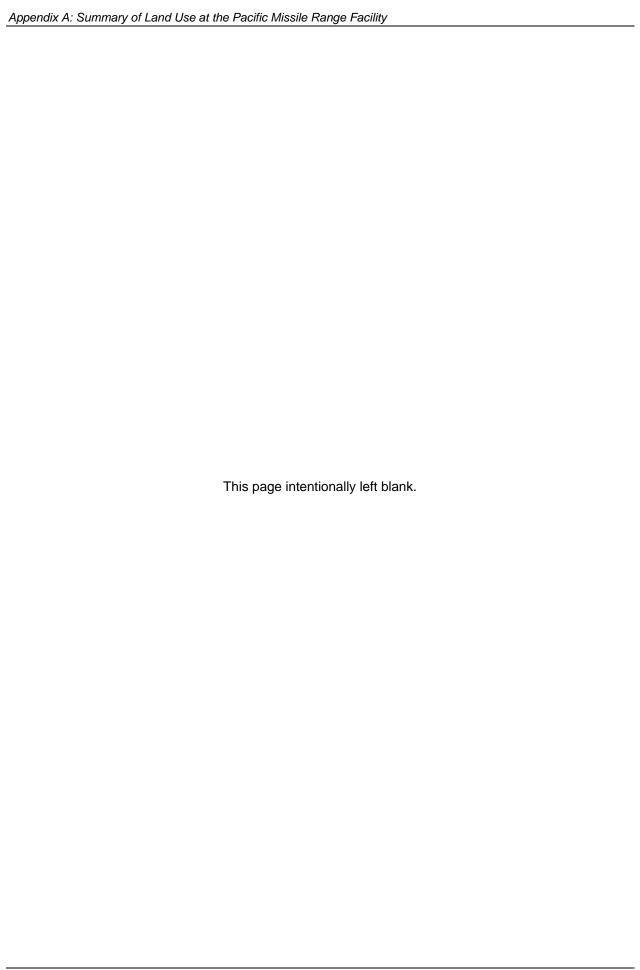
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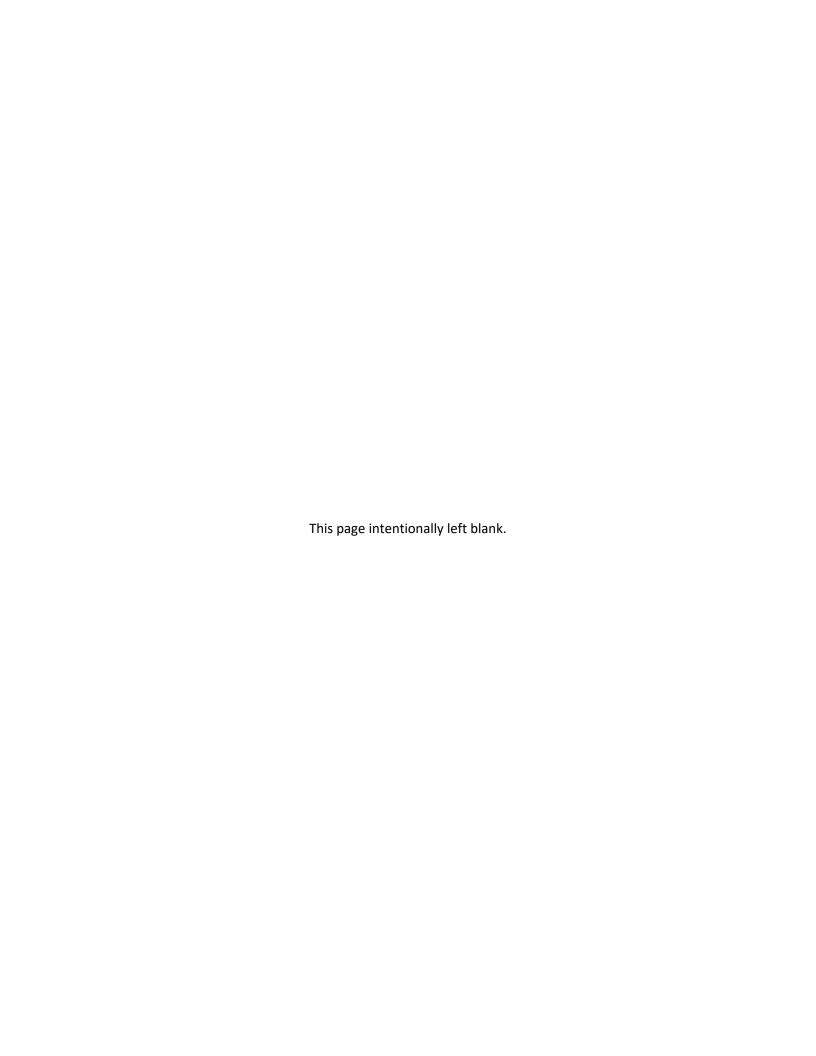
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Appendix B Regulatory Setting



Agency	Federal, State, Local, and Regional Laws; Land Use Plans; Policies; Controls; and Guidance	Relevance to the Proposed Action	Relevant Resources	Status of Compliance
County of Kauaʻi	Kauaʻi Kakou – Kauaʻi County General Plan	The Kaua'i General Plan serves as the county's guiding policy framework concerning growth, land use, and development issues. The plan seeks to enhance and improve Kaua'i's physical and natural environment and overall quality of life. The plan is built upon a countywide vision and goals statement and sets forth key objectives and actions.  The General Plan underwent a comprehensive update in 2018.  Although the development plan does not apply to projects on federal property, protection of mountain and ocean views that benefit the visual quality of the ROI should be considered.	Visual Resources and Land Use	This EIS was developed in accordance with the guidance in this plan.
County of Kaua'i Transportation Agency – The Kaua'i Bus	County of Kaua'i Transportation Agency standards for public transit operation (physical and operational) and DTS Roadway and Traffic Operations Guidelines	County of Kaua'i Transportation Agency operates the Kaua'i Bus, the public transit system that provides service to PMRF.	Traffic	The Proposed Action analyzed in this EIS would be implemented in accordance with these standards.
CEQ; Navy	NEPA; CEQ NEPA implementing regulations; Navy procedures for implementing NEPA (42 U.S.C. § 4331; 40 CFR parts 1500-1508; 32 CFR part 775)	Regulations applicable to and binding on all federal agencies for implementing the procedural provisions of NEPA.	All Resources	This EIS has been prepared in accordance with the President's revised CEQ Regulations implementing NEPA and Navy NEPA procedures effective for actions initiated after September 14, 2020. Preparation of this EIS and provisions for its public review are being conducted in compliance with NEPA.
CEQ	NEPA 40 CFR § 1502.16(a)(10)	States that environmental consequences should include "economic and technical considerations, including the economic benefits of the proposed action," where applicable.	Socioeconomics	Following these regulations, the socioeconomic analysis in this EIS evaluates economic benefits of the Proposed Action.
CEQ	NEPA 40 CFR § 1508.1(g)(1)	States that effects include "aesthetic, historic, cultural, economic (such as the effects on employment), social, or health" effects.	Socioeconomics	Following these regulations, the socioeconomic analysis in this EIS evaluates how elements of the human environment such as population, employment, housing, economic activity, and local government revenue might be affected by the Proposed Action.

Agency	Federal, State, Local, and Regional Laws; Land Use Plans; Policies; Controls; and Guidance	Relevance to the Proposed Action	Relevant Resources	Status of Compliance
CEQ	NEPA 40 CFR § 1508.1(m)	States that the human environment means "comprehensively the natural and physical environment and the relationship of present and future generations of Americans with that environment."	Socioeconomics	Following these regulations, the socioeconomic analysis in this EIS uses this definition for the human environment.
CEQ	Environmental Justice Guidance Under the National Environmental Policy Act	Guidance document to assist federal agencies with their NEPA procedures so that environmental justice concerns are effectively identified and addressed in accordance with EO 12898.	Environmental Justice and Protection of Children	This EIS was developed in accordance with this guidance.
CEQ	Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews	Guidance to assist federal agencies in their consideration of the effects of GHG emissions and climate change when evaluating proposed federal actions in accordance with NEPA.	All Resources	This EIS was developed in accordance with this guidance.
CEQ	Fiscal Responsibility Act of 2023, PL 118-5	Amendments to NEPA	All Resources	This law was used to determine the joint status of NASA and Navy for the preparation of this EIS.
CEQ and Office of Science and Technology Policy	EO 13840 Ocean Policy to Advance the Economic, Security, and Environmental Interest of the U.S.	Ensure protection, maintenance, and restoration of the health of the ocean.	Water Resources; Marine Biological Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with this Order.
CNRH	IAP	The IAP is a guidance document that provides aesthetic and functional direction in site design, architecture, landscape architecture, and signage for new development and renovation efforts. The IAP helps to protect and preserve the installation's natural and historic integrity and ensures a unified appearance for each installation and continuity across the region.	Visual Resources	This EIS was developed in accordance with the guidance in this plan.
DLNR-SHPD	Hawai'i Revised Statutes 6E-42	Project requires compliance with state laws for preservation of historic properties.	Cultural Resources	Compliance with this law will be conducted.
DoD	DoD Inst. 4715.06 – Environmental Compliance in the United States	Establishes policies, assigns responsibilities, and provides procedures for achieving and maintaining environmental compliance in the U.S.	Hazardous Materials and Wastes	The Proposed Action analyzed in this EIS would be implemented in accordance with these standards.

Agency	Federal, State, Local, and Regional Laws; Land Use Plans; Policies; Controls; and Guidance	Relevance to the Proposed Action	Relevant Resources	Status of Compliance
DoD	DoD Inst. 6050.05 – DoD Hazard Communication Program	Manages hazardous substances to minimize health and environmental risks and operational costs. Provides known hazard information to military personnel and civilian employees using hazardous chemicals, including engineered nanomaterials.	Hazardous Materials and Wastes	The Proposed Action analyzed in this EIS would be implemented in accordance with these standards.
DoD	NAVSUP Pub. 573 (DLA Instruction 4145.11) – Storage and Handling of Hazardous Materials	Procedures for the receipt, storage, and handling of hazardous materials and wastes by DoD components, installation, and activities.	Hazardous Materials and Wastes	The Proposed Action analyzed in this EIS would be implemented in accordance with these standards.
DoD	Defense Explosives Safety Regulation 6055.09	Establishes explosives safety standards for the DoD that are designed to manage explosives related risk associated with DoD operations and installations by providing protection criteria.	Hazardous Materials and Wastes	The Proposed Action analyzed in this EIS would be implemented in accordance with these standards.
DoD	DoD Directive 4710.03, Consultation with Native Hawaiian Organizations (October 25, 2011, incorporating Change 1, August 31, 2018)	Provides policy, prescribes procedures, and assigns responsibilities for the management of archaeological and historic resources located in and on waters and lands under DoD control. It is the policy of DoD to integrate historic preservation requirements with the planning and management of activities under DoD control.	Cultural Resources	Consultation with NHOs, if required for compliance with NHPA according to the Programmatic Agreement, would be conducted in accordance with this directive.
DoD	Danger Zone and Restricted Area Regulations (33 CFR part 334)	Hazardous materials and wastes exposure, including MEC.	Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in accordance with these standards.
DoD	Final Military Munitions Rule (40 CFR part 266, Subpart M)	Hazardous materials and waste exposure, including MEC.	Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in accordance with these standards.
DoD	Naval Ordinance Safety and Security Activity Instruction 8020.15E. Explosives Safety Review, Oversight, and Verification of Munitions Responses	Munition exposure.	Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.
EPA; DoD	CWA (33 U.S.C. §§ 1313, 1314, 303(d), 305(b) and most recent 304(a) list)	Mitigates impacts to surface water from construction activities and discharge to navigable waters.	Hazardous Materials and Wastes; Water Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.

Agency	Federal, State, Local, and Regional Laws; Land Use Plans; Policies; Controls; and Guidance	Relevance to the Proposed Action	Relevant Resources	Status of Compliance
EPA; HDOH-CWB	CWA section 402, NPDES Program (42 U.S.C. § 7401 et seq.); Hawai'i Water Quality Standards (HAR 11- 55; HRS Chapter 342D) *includes NPDES and SWPPP	Regulates discharges of pollutants from point source to WOTUS and requires compliance with standards, limitations, and regulations. NPDES permits authorized discharges of stormwater associated with construction and industrial activities.	Hazardous Materials and Wastes; Water Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with these standards.
EPA; HDOH-CWB	CWA section 401 (33 U.S.C. § 1341; 40 CFR §§ 121.2(a)(3), (4), and (5) Water Quality Certification); Hawai'i Water Quality Standards (HAR 11- 54; HRS Chapter 342D)	Any federally authorized activity that may result in any discharge into state waters requires a Water Quality Certification. Water pollutants that enter state waters from all sources, point or non-point, shall comply with applicable requirements as established in HAR, Chapter 11-54.	Marine Biological Resources; Water Resources; Public Health and Safety; Geological Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with these standards.
EPA	Title 40 CFR et seq.: Protection of the Environment	EPA protects human health and the environment.	Hazardous Materials and Wastes; Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.
EPA	40 CFR § 125.94	Compliance with BTA Standards.	Water Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with these standards.
EPA	National Primary Drinking Water Regulations 40 CFR part 141	Affects management of water sources by way of setting standards for drinking water quality. Groundwater quality and quantity are regulated under several statutes and regulations, including the Safe Drinking Water Act.	Water Resources; Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.
EPA	Energy Independence and Security Act; PL 110-140 section 438	Federal agencies are required to reduce stormwater runoff from federal development and redevelopment projects to protect water resources.	Water Resources; Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.

Agency	Federal, State, Local, and Regional Laws; Land Use Plans; Policies; Controls; and Guidance	Relevance to the Proposed Action	Relevant Resources	Status of Compliance
EPA	RCRA 42 U.S.C. § 6901 et seq. and 40 CFR parts 260-272 as relates to hazardous waste management	Hazardous materials and wastes exposure. The EPA controls hazardous waste including generation, transportation, treatment, storage, and disposal of hazardous waste.	Hazardous Materials and Wastes; Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in compliance with this Act.
EPA	Toxic Substances and Disease Registry – CERCLA 42 U.S.C. §§ 9601–9675; 40 CFR parts 300– 311; 40 CFR part 373	Hazardous materials and waste exposure.	Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in compliance with this Act.
EPA	Pollution Prevention Act of 1990 (42 U.S.C. §§ 13101–13109)	Hazardous materials and waste exposure.	Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.
EPA	Emergency Planning and Community Right-to-Know Act of 1986 (42 U.S.C. § 11001 et seq.; 40 CFR parts 350–372)	Hazardous materials and wastes exposure. Helps communities plan for chemical emergencies and requires industry to report on the storage, use, and releases of hazardous substances to federal, state, and local government.	Hazardous Materials and Wastes; Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in accordance with this Act.
EPA	EO 13045, Protection of Children from Environmental Health Risks and Safety Risks	Health and safety of children (vulnerable population).	Public Health and Safety; Environmental Justice and Protection of Children	The Proposed Action analyzed in this EIS would be implemented in accordance with this Order. The EIS includes an analysis to determine if federal actions would have disproportionate human health or environmental impacts to children.
EPA	Federal Insecticide, Fungicide, and Rodenticide Act of 1996 (7 U.S.C. § 136 et seq.)	Hazardous materials and waste exposure.	Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.
EPA	Federal Environmental Pesticide Control Act of 1972 (7 U.S.C. §§ 136–136y)	Hazardous materials and waste exposure.	Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.
EPA	Federal Facilities Compliance Act of 1992 (PL 102–386)	Hazardous materials and waste exposure.	Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.

Agency	Federal, State, Local, and Regional Laws; Land Use Plans; Policies; Controls; and Guidance	Relevance to the Proposed Action	Relevant Resources	Status of Compliance
EPA	Noise Control Act of 1972 (PL 92-574, 42 U.S.C. § 4901 et seq.) and Amendments of 1978 (PL 95-609)	Establishes a national policy to promote an environment for all Americans free from noise that jeopardizes their health and welfare.	Noise; Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in compliance with this Act.
EPA	40 CFR part 50	NAAQS.	Air Quality	The Proposed Action would not cause a violation of the NAAQS.
EPA	40 CFR part 60	New Source Performance Standards.	Air Quality	The Proposed Action analyzed in this EIS would be implemented in accordance with these standards.
EPA	40 CFR parts 61-63	NESHAPs.	Air Quality	The Proposed Action analyzed in this EIS would be implemented in accordance with these standards.
EPA	40 CFR part 70	State Operating Permits.	Air Quality	The Proposed Action analyzed in this EIS would be implemented in accordance with these requirements.
EPA	Memorandum addressing Children's Health through Reviews Conducted Pursuant to the NEPA and section 309 of the Clean Air Act	Memorandum on addressing the Protection of Children from environmental health risks and safety risks in NEPA and section 309 Clean Air Act Reviews in accordance with EO 13045.	Environmental Justice and Protection of Children	The Proposed Action analyzed in this EIS would be implemented in accordance with this Order. The EIS includes an analysis to determine if federal actions would have disproportionate human health or environmental impacts to children.
Federal Law	National Historic Preservation Act (NHPA), as amended (54 U.S.C. 300101 et seq.).	Establishes national policy for the preservation of historic properties. Section 106 of the NHPA requires federal agencies to consider the effects of proposed undertakings, mitigate adverse effects of projects, and afford the ACHP and interested parties the opportunity to comment.	Cultural Resources	Compliance with the NHPA will be conducted according to the 2012 COMNAVREG Hawaii Programmatic Agreement and any applicable amendments.
Federal Law	Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. §§ 3001- 3013).	Provides for the protection and repatriation of Native American and Native Hawaiian human remains and cultural items discovered on federal or tribal lands or currently curated by federal or federally assisted curation facilities.	Cultural Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with this law and its implementing regulation.
Federal Law	Archaeological Resources Protection Act of 1979 (16 U.S.C. §§ 470aa-470II).	Provides for the protection of archaeological resources and sites on public and Indian lands by requiring permits from the federal land manager for excavation or removal of archaeological resources.	Cultural Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with this law and its implementing regulation.

Agency	Federal, State, Local, and Regional Laws; Land Use Plans; Policies; Controls; and Guidance	Relevance to the Proposed Action	Relevant Resources	Status of Compliance
Federal Law	American Indian Religious Freedom Act of 1978 (42 U.S.C. § 1966)	Establishes the policy of the United States to protect and preserve the rights of American Indians, Eskimos, Aleuts, and Native Hawaiians to believe, express, and exercise their traditional religions.	Cultural Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with this law and its implementing regulation.
FEMA	Floodplain Management, EO 11988	Requires federal agencies to avoid long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development. Flood potential of a site is usually determined by the 100-year floodplain, which is defined as the area that has a 1 percent chance of inundation by a flood event in a given year.	Water Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with this Order.
HDOH	CWA section 401 (33 U.S.C. § 1341, 40 CFR §§ 121.2(a)(3), (4), and (5) Water Quality Certification); Water Pollution Control Act (33 U.S.C. § 1251 et seq.)	Any federally authorized activity that may result in a discharge into state waters requires a Water Quality Certification. Potential impacts from the Proposed Action through impacts on water quality. The Kawai'ele Pumping Station as well as Canal discharge may fall under these regulations.	Marine Biological Resources; Hazardous Materials and Wastes	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.
HDOH	22 HAR Title 11, Chapter 59	State AAQS.	Air Quality	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.
HDOH	22 HAR Title 11, Chapter 60.1	Air Pollution Control.	Air Quality	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.
HDOH	Hawaiʻi Underground Storage Tanks Act HAR 19-342L	Regulations pertaining to underground storage tanks, which includes hazardous substances release.	Hazardous Materials and Wastes	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.
HDOH	Solid Waste Management Control HAR 11-58	Establishes minimum standards governing design, construction, installation, operation, and maintenance of solid waste disposal, recycling, reclamation, and transfer systems.	Hazardous Materials and Wastes	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.
HDOT	HDOT traffic operational and safety standards and HDOT roadway design standards	Regional and sub-regional roadways providing access to PMRF are under the jurisdiction of HDOT, specifically Kuhio Highway.	Traffic	The Proposed Action analyzed in this EIS would be implemented in accordance with these standards.

Agency	Federal, State, Local, and Regional Laws; Land Use Plans; Policies; Controls; and Guidance	Relevance to the Proposed Action	Relevant Resources	Status of Compliance
NASA	NASA's Procedures for Implementing NEPA, 14 CFR part 1216, et seq.	Regulations governing NASA's compliance with NEPA and CEQ's 40 CFR parts 1500–1508.	All Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.
NASA	NASA Environmental Management, NPD 8500.1	NASA's environmental management policy	All Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with these policies.
NASA	NASA National Environmental Policy Act Management Requirements, NPR 8580.1	Establishes procedures and responsibilities for complying with requirements of NEPA, CEQ's implementing regulations, EO 12114 – Environmental Effects Abroad of Major Federal Actions, and NPD 8500.1.	All Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with these requirements.
Navy	PMRF Installation Development Plan	Land use constraints.	Land Use	This EIS was developed in accordance with the guidance in this plan.
Navy	OPNAVINST 11010.40	Establishes an encroachment management program to ensure operational maintenance that has direct bearing on land use planning on installations.	Land Use	The Proposed Action analyzed in this EIS would be implemented in accordance with these guidelines.
Navy	OPNAVINST 11010.36C	Provides guidance administering the AICUZ program, which recommends land uses that are compatible with noise levels, accident potential, and obstruction clearance criteria for military airfield operations.	Land Use	The Proposed Action analyzed in this EIS would be implemented in accordance with these guidelines.
Navy	OPNAVINST 3550.1A	Provides guidance for the RAICUZ program. This program includes range safety and noise analyses and provides land use recommendations that are compatible with Range Compatibility Zones and noise levels associated with military range operations.	Land Use	The Proposed Action analyzed in this EIS would be implemented in accordance with these guidelines.
Navy	OPNAVINST 5090.1 Environmental Readiness	Provides guidance for the management of the environmental, natural, and cultural resources for all Navy ships and shore activities.	Cultural Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with these guidelines.
Navy	Environmental Readiness Program Manual (OPNAV-M 5090.1)	Navy's policy guidance for environmental readiness. It discusses requirements, delineates responsibilities, and issues policy guidance for the management of the environmental, natural and cultural resources for all Navy ships and shore activities.	All Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with this manual.

Agency	Federal, State, Local, and Regional Laws; Land Use Plans; Policies; Controls; and Guidance	Relevance to the Proposed Action	Relevant Resources	Status of Compliance
Navy	SECNAVINST 4000.35B Department of the Navy Cultural Resource Program	Provides clarification on the responsibilities for management of historic buildings, structures, districts, archaeological sites and artifacts, historic ships and aircraft, and other cultural resources.	Cultural Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with these guidelines.
Navy	SECNAVINST 11010.14B Department of the Navy Policy for Consultation with Federally Recognized Indian Tribes, Alaska Native Tribal Entities, and Native Hawaiian Organizations	Provides policy, procedures, and responsibilities when consulting with representatives of federally recognized Indian tribes, including Native Hawaiian Organizations.	Cultural Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with these guidelines.
NAVFAC	PW6 600-01, Public Works Utilities Criteria for Design and Construction of Electrical, Sewer, and Water, April 10, 2006	Utilities design criteria.	Utilities	The Proposed Action analyzed in this EIS would be implemented in accordance with these requirements.
NAVFAC	PW6 600-01 Public Works Utility Criteria for Design and Construction of Water Utilities	Utilities design criteria.	Utilities	The Proposed Action analyzed in this EIS would be implemented in accordance with these requirements.
NOAA; SOH, Office of Planning and Sustainable Development	National Coastal Zone Management Act (16 U.S.C. § 1451, 15 CFR part 930); Coastal Zone Management Act section 307(c)(1), HRS Chapter 205A – Coastal Zone Management	Federal actions or activities that affect any land or water use or natural resource of the coastal zone are to be carried out in a manner consistent to the maximum extent practicable with the enforceable policies of federally approved state coastal management program.	Hazardous Materials and Wastes; Land Use; Water Resources; Geological Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with this Act to the extent practicable, consistent with the enforceable policies of Hawai'i's federally approved coastal management program.
NOAA NMFS; USFWS; SOH, DLNR	ESA (16 U.S.C. § 1531 et seq.); State of Hawai'i Endangered Species Laws (HAR 12-124, Exhibit 2 and HRS § 195D)	Potential impacts to federally and state listed species.	Terrestrial Biological Resources; Marine Biological Resources; Land Use	Informal consultation with NMFS and USFWS has been initiated and is ongoing, and the Proposed Action analyzed in this EIS would be implemented in compliance with the ESA. Potential impacts to state-listed species are addressed in this EIS. This is pending review of monk seal haul-out in the leasehold area; additional review of ESA species is covered in the Hawaii-Southern California Training and Testing EIS.

Agency	Federal, State, Local, and Regional Laws; Land Use Plans; Policies; Controls; and Guidance	Relevance to the Proposed Action	Relevant Resources	Status of Compliance
NOAA NMFS; SOH, DLNR; EPA	EO 13089, Coral Reef Protection	All federal agencies whose actions may affect U.S. coral reef ecosystems shall: (a) identify their actions that may affect U.S. coral reef ecosystems; (b) utilize their programs and authorities to protect and enhance the conditions of such ecosystems; and (c) to the extent permitted by law, ensure that any actions they authorize, fund, or carry out will not degrade the conditions of such ecosystems.	Marine Biological Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with this Order.
NOAA NMFS; HDOH	EO 12088, Federal Compliance with Pollution Control Standards	Ensures federal compliance with applicable pollution control standards. Related to impacts from sediment resuspension and runoff due to operations.	Marine Biological Resources; Water Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with this Order.
NOAA NMFS	Section 305 of the Magnuson- Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.)	EFH is not expected but could be designated in the study area.	Marine Biological Resources	The project is within areas designated as EFH; therefore, the Navy will provide NMFS with a written assessment of the effects of the Proposed Action on EFH. This analysis is covered in the Hawaii-Southern California Training and Testing EIS.
NOAA NMFS	Marine Mammal Protection Act (16 U.S.C. § 1361-1407)	Presence of one marine mammal, Hawaiian monk seal ( <i>Neomonachus schauinslandi</i> ), which is known to appear in study area.	Marine Biological Resources	Informal consultation with NMFS has been initiated under the ESA.
OSHA	Occupational Safety and Health Act of 1970 (PL 91-596); OSHA Occupational Noise Exposure (29 CFR § 1910.95)	Workforce safety, including occupational noise exposure limits.	Public Health and Safety; Noise	The Proposed Action analyzed in this EIS would be implemented in accordance with these requirements.
Office of the President	EO 11990, Protection of Wetlands (42 FR 26961, May 24, 1977)	Requires federal agencies to adopt a policy to avoid long- and short-term adverse impacts associated with destruction and modification of wetlands and to avoid the direct and indirect support of new construction in wetlands whenever there is a practicable alternative.	Water Resources; Hazardous Materials and Wastes	The Proposed Action analyzed in this EIS would be implemented in accordance with this Order.

Agency	Federal, State, Local, and Regional Laws; Land Use Plans; Policies; Controls; and Guidance	Relevance to the Proposed Action	Relevant Resources	Status of Compliance
Office of the President	EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations (59 FR 7629; February 16, 1994)	Requires agencies to identify and address any disproportionately high and adverse human health or environmental effects their programs, policies, and activities may have on minority populations and low-income populations.	Environmental Justice and Protection of Children	The Proposed Action analyzed in this EIS would be implemented in accordance with this Order. The EIS includes an analysis to determine if federal actions would have disproportionate human health or environmental impacts on low income populations, minority populations, or the Native Hawaiian population.
Office of the President	EO 13045, Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885; April 23, 1997)	Requires agencies to identify and assess environmental health risks and safety risks that may disproportionately affect children and ensure that their policies, programs, activities, and standards address those disproportionate risks.	Environmental Justice and Protection of Children; Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in accordance with this Order.
Office of the President	EO 13112, Invasive Species (64 FR 6183; February 3, 1999)	Requires federal agencies whose actions may affect the status of invasive species to identify those actions and use relevant programs and authorities to prevent and manage the introduction of invasive species in consultation with the Invasive Species Council.	Terrestrial Biological Resources; Marine Biological Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with this Order.
Office of the President	EO 14008, On Tackling the Climate Crisis at Home and Abroad (86 FR 7619; January 27, 2021)	Amends EO 12898 by updating the interagency working group and requiring the working group to report back with recommendations to improve environmental justice.	Environmental Justice and Protection of Children	The Proposed Action analyzed in this EIS would be implemented in accordance with this Order. The EIS includes an analysis to determine if federal actions would have disproportionate human health or environmental impacts on low income populations, minority populations, or the Native Hawaiian population.
State of Hawai'i - Office of Planning and Sustainable Development (OPSD)	Coastal Zone Management Act Section 307/CZM Program	The national Coastal Zone Management Act (CZMA), Section 307, requires federal agency activities and development projects affecting any coastal use or resource to be undertaken in a manner consistent to the maximum extent practicable with the state's CZM program. The CZM area encompasses the entire state because there is no point of land more than 30 miles from the ocean, a definite land-sea connection exists throughout the state. The project exists within the CZM area.	All Resources	A CZM federal consistency review and application will be completed and submitted to the State of Hawai'i CZM program office.

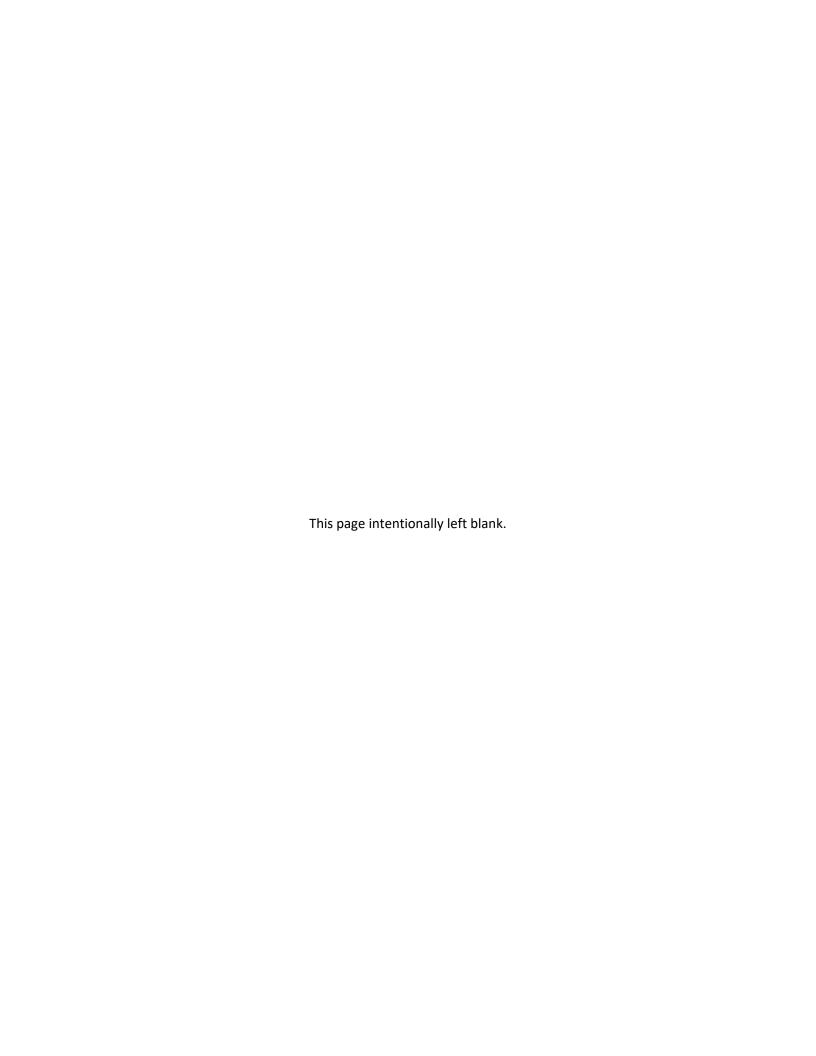
Agency	Federal, State, Local, and Regional Laws; Land Use Plans; Policies; Controls; and Guidance	Relevance to the Proposed Action	Relevant Resources	Status of Compliance
State of Hawai'i – Department of Land and Natural Resources (DLNR)	Hawai'i Revised Statutes Chapter 343 commonly referred to as The Hawai'i Environmental Policy Act ("HEPA"). The trigger for compliance is the use of state lands.	The State of Hawai'i Department of Land and Natural Resources will be the accepting agency for the EIS document for Hawai'i Revised Statutes Chapter 343.	All Resources	This EIS was developed in accordance with the Hawai'i Revised Statutes Chapter 343
SOH	Hawai'i Administrative Code Title 19, 342F Noise Pollution	Describes environmental noise levels appropriate for noise sensitive land uses.	Noise	The Navy will consider state regulations for noise-sensitive land uses. Sources of noise and the associated sensitive receptors in the human environment are analyzed in this EIS.
USDA, NRCS	Farmland Protection Policy Act (7 U.S.C. §§ 4201-4209 7)	Requires federal agencies to evaluate the adverse effects of their activities on farmland, which includes prime and unique farmland and farmland of statewide or local importance, and to consider alternative actions that could avoid adverse effects.	Geological Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with this Act. The EIS includes an analysis to determine if federal actions would have adverse effects on farmland, which includes prime and unique farmland and farmland of statewide or local importance.
USDOT	49 CFR §§ 171.1-172.558	Regulates and ensures the safe and secure movement of hazardous materials to industry and consumers by all modes of transportation, including pipelines.	Hazardous Materials and Wastes	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.
USDOT	USDOT Hazardous Materials Ground Transport Regulations/Hazardous Materials Transportation Act (49 CFR parts 100–185)	Transportation safety; hazardous materials and waste exposure.	Public Health and Safety	The Proposed Action analyzed in this EIS would be implemented in accordance with these regulations.
USFWS	Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703–712)	Potential impacts to bird species protected by the Act.	Terrestrial Biological Resources; Land Use	The Proposed Action analyzed in this EIS would be implemented in accordance with this Act.

Agency	Federal, State, Local, and Regional Laws; Land Use Plans; Policies; Controls; and Guidance	Relevance to the Proposed Action	Relevant Resources	Status of Compliance
USFWS	EO 13186: Responsibilities of Federal Agencies to Protect Migratory Birds	Potential impacts to migratory birds.	Terrestrial Biological Resources	The Proposed Action analyzed in this EIS would be implemented in accordance with this Order.

Key: § = section(s); AAQS = ambient air quality standards; ACHP = Advisory Council on Historic Preservation; AICUZ = Air Installation Compatible Use Zone; BTA = Best Technology Available; CEQ = Council on Environmental Quality; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; CNRH = Commander Navy Region Hawaii; CWA = Clean Water Act; CWB = Clean Water Branch; DLA = Defense Logistics Agency; DLNR = Department of Land and Natural Resources; DOD = Department of Defense; DTS = Department of Transportation Services; ECF = entry control facility; EFH = Essential Fish Habitat; EIS = Environmental Impact Statement; EO = Executive Order; EPA = U.S. Environmental Protection Agency; ESA = Endangered Species Act; FEMA = Federal Emergency Management Agency; FR = Federal Register; GHG = greenhouse gas; HAR = Hawai'i Administrative Rules; HDOH = Hawai'i Department of Health; HDOT = Hawai'i Department of Transportation; HRS = Hawai'i Revised Statutes; IAP = Installation Appearance Plan; Inst. = Instruction; MEC = munitions and explosives of concern; Navy = U.S. Department of the Navy; NAAQS = National Ambient Air Quality Standards; NAVFAC = Naval Facilities Engineering Systems Command; NAVSUP = Naval Supply Systems Command; NEPA = National Environmental Policy Act; NESHAP = National Emission Standards for Hazardous Air Pollutant; NHPA = National Historic Preservation Act; NMFS = National Marine Fisheries Service; NOAA = National Oceanic and Atmospheric Administration; NPD = NASA Policy Directive; NPDES = National Pollutant Discharge Elimination System; NPR = NASA Procedural Requirement; NRCS = Natural Resources Conservation Service; OPNAVINST = Office of the Chief of Naval Operations Instruction; OSHA = Occupational Safety and Health Administration; PL = Public Law; Pub. = Publication; RAICUZ = Range Air Installation Compatible Use Zone; RCRA = Resource Conservation and Recovery Act; ROI = region of influence; SECNAVINST = Secretary of the Navy Instructions; SH

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Appendix C
List of Interested Parties Contacted During Scoping



Category	Group
Federal, state, and local elected officials	<ul> <li>Federal Elected Officials</li> <li>U.S. Senators         <ul> <li>Mazie K. Hirono</li> <li>Brian Schatz</li> </ul> </li> <li>U.S. House of Representatives</li> <li>Congressional District I: Ed Case</li> <li>Congressional District II: Jill N. Tokuda</li> <li>State Elected Officials</li> <li>Governor: Josh Green</li> <li>Lieutenant Governor: Sylvia Luke</li> <li>Attorney General: Anne E. Lopez</li> <li>State Senate</li></ul>
Federal, state, and local regulatory and non-regulatory government agencies	<ul> <li>Ross Kagawa (Councilmember)</li> <li>Federal Agencies         <ul> <li>Advisory Council on Historic Preservation</li> <li>National Oceanic and Atmospheric Administration Fisheries</li> <li>U.S. Army Corps of Engineers Honolulu District</li> <li>U.S. Coast Guard District 14</li> <li>U.S. Department of the Interior, Office of Hawaiian Relations</li> <li>U.S. Environmental Protection Agency</li> <li>USFWS, Kilauea Point National Wildlife Refuge</li> <li>USFWS, Pacific Islands Fish and Wildlife Office</li> <li>USDA Forest Service, Institute of Pacific Islands Forestry</li> <li>USDA, Hawai'i and Western Pacific State Office</li> <li>U.S. Geological Survey, Honolulu Field Station</li> <li>National Park Service</li> </ul> </li> </ul>

Category	Group
	State Agencies  Department of Agriculture Agribusiness Development Corporation DLNR DLNR BLNR DLNR DOFAW DLNR LAND DINSION (Kaua'i District) DLNR CCCL (Conservation District) DLNR SHPD DLNR DIVISION of State Parks DLNR Commission on Water Resource Management Department of Transportation OHA OHA, Kaua'i Burial Council Department of Health, Clean Water Branch OPSD OPSD, Environmental Review Program OPSD, CZM Program Department of Business, Economic Development and Tourism Department of Hawaiian Homelands Department of Hawaiian Homelands Department of the Attorney General Department of Defense (State of Hawai'i) Boards and Commissions Kaua'i Circuit Court Kaua'i District Office, Division of State Parks Hawai'i State Parks Regional/Local Agencies County of Kaua'i Departments: Parks and Recreation Water Kaua'i Emergency Management Agency Fire Police Economic Development Planning Public Works Transportation County of Kaua'i Office of Boards and Commissions University of Hawai'i System Kaua'i Community College Kaua'i Agricultural Research Center Advisory Council on Historic Preservation Office of the Deputy Under Secretary of Defense for Installations and Environment Small Business Administration Office of Native Hawaiian Relations

Category	Group
Native Hawaii Organizations	<ul> <li>'Āina Momona (State of Hawai'i)</li> <li>Association of Hawaiian Civic Clubs (State of Hawai'i)</li> <li>Hawaiian Native Corporation (supports NHOs – State of Hawai'i)</li> <li>Ko'olau Foundation (State of Hawai'i)</li> <li>Native Hawaiian Hospitality Association (State of Hawai'i)</li> <li>Kawaileo Law A Limited Liability Law Company (State of Hawai'i)</li> <li>Council For Native Hawaiian Advancement (State of Hawai'i)</li> <li>Na Koa Ikaika Ka Lahui Hawai'i (Kaua'i)</li> <li>Na 'Ohana Papa O Manā (Kaua'i)</li> <li>EAO Hawai'i Inc. (Kaua'i)</li> <li>Nā Kuleana o Kānaka 'Ōiwi (Kaua'i)</li> <li>Hanalei River Heritage Foundation (Kaua'i)</li> <li>ALU LIKE, Inc. (Kaua'i)</li> <li>Kaua'i Kupuna Council</li> <li>Kaua'i Burial Council</li> </ul>
Community planning groups, and other community and civic organizations	<ul> <li>Community Planning Groups</li> <li>Kaua'i Planning &amp; Action Alliance</li> <li>Community Organizations</li> <li>Hui Maka'āinana O Makana</li> <li>Waipā Foundation</li> <li>Waimea Community Association</li> <li>DON Advocacy Groups</li> <li>AMVETS Department of Hawai'i</li> <li>Civic Groups</li> <li>Kaua'i Planning &amp; Action Alliance</li> <li>Hawai'i Community Foundation</li> <li>Kilauea Community Agricultural Center - Aina Ho'okupu O Kilauea</li> <li>Kaua'i Philippine Cultural Center</li> <li>Ke Kumu O Hihinui Cultural Center</li> <li>Kaua'i Museum</li> <li>Kōke'e Natural History Museum</li> </ul>
Small business associations, economic development/ tourism organization, and recreational and real estate interests	<ul> <li>Economic Development Organizations</li> <li>Kaua'i Chamber</li> <li>Kaua'i Filipino Chamber of Commerce</li> <li>Tourism</li> <li>Camp Sloggett</li> <li>Waimea Japanese Cemetery</li> <li>Kaua'i Visitors Bureau (Sue Kanoho)</li> <li>Smith Family Garden Luau</li> <li>Kōke'e Lodge</li> <li>The Cabins at Kōke'e</li> </ul>
Local environmental organizations and other Non-Governmental Organizations	<ul> <li>Government Programs</li> <li>DLNR DOFAW Natural Area Reserves System</li> <li>Kaua'i Seabird Habitat Conservation Plan</li> <li>Environmental Organizations – Local</li> <li>National Tropical Botanical Gardens, Plant Extinction Prevention Program</li> </ul>

Category	Group
	<ul> <li>Kaua'i Forest Bird Recovery Project</li> <li>Kaua'i Watershed Alliance</li> <li>Hanalei Watershed Hui</li> <li>Kaua'i North Shore Community Foundation</li> <li>North Shore Community Land Trust</li> <li>Kaua'i Invasive Species Committee</li> <li>Köke'e Resource Conservation Program</li> <li>Keahole Defense Coalition</li> <li>Environmental Organizations – Regional/National</li> <li>Earthjustice</li> <li>Surfrider Foundation</li> <li>Sierra Club – Kaua'i Chapter</li> <li>Reef Guardians</li> <li>Save our Shearwaters</li> <li>Conservation Council for Hawai'i</li> <li>Kahea – The Hawaiian Environmental Alliance</li> <li>Hawai'i Audubon Society</li> <li>Hawaiian Islands Land Trust</li> <li>Native Hawaiian Plant Society</li> <li>Hawai'i Wildlife Center</li> <li>Nā Kia'i Kai</li> <li>Nature Conservancy - Hawai'i Chapter</li> <li>Pesticide Action Network North America</li> <li>Fishing/Diving</li> <li>Hawai'i Big Game Fishing Club</li> <li>Hawai'i Freshwater Fishing Association</li> <li>Boating/Yacht Clubs/Marinas</li> <li>Nawillwill Yacht Club</li> <li>Kaua' Sailing Association</li> <li>West Side Boaters Association</li> <li>Holo Holo Charters</li> <li>Catamaran Kahanu</li> <li>Captain Andy's</li> <li>Kauai Sea Tours</li> <li>Napali Odyssey</li> <li>Makana Charters</li> <li>Seasport Divers</li> <li>Nā Pali Riders</li> </ul>
Local media outlets	<ul> <li>Blue Dolphin Charters</li> <li>Print</li> <li>Kaua'i Island News</li> <li>The Garden Island</li> <li>MidWeek Kaua'i</li> <li>The Honolulu Star-Advertiser</li> <li>Hawai'i Tribune-Herald</li> <li>Ka Wai Ola</li> <li>TV</li> </ul>
	<ul><li>KITV 4 (ABC)</li><li>KHON2 (Fox and CW)</li></ul>

Category	Group
Individual community members (not associated with groups) interested in cultural and natural resources preservation, military use of the land, public access, etc.	<ul> <li>Hawai'i News Now</li> <li>Radio</li> <li>Kong Radio 93.5</li> <li>KHKU 94.3 FM</li> <li>KFMN FM 97</li> <li>KJMQ Jamz 98.1</li> <li>Sunny 101.3</li> <li>Hawai'i Public Radio (HPR)</li> <li>Online</li> <li>Honolulu Civil Beat</li> <li>Kaua'i Now</li> <li>Waimea Theater On-Screen Advertising</li> <li>Dennis Eguchi</li> <li>Pastor Daryl Kua</li> <li>Alethea Kaohi</li> <li>Bob Westerman</li> <li>Toni Ricci</li> <li>Lyle Tabata</li> <li>Charlie Iona</li> <li>Marissa Faye</li> <li>Josh Mori</li> <li>Keiko Napier</li> <li>Kaua Mata</li> <li>Tia Korete</li> <li>Terry Lily</li> <li>Barbara "Maka'ala" Ka'aumoana</li> </ul>
Residents, business, agricultural operations, schools, and property owners near PMRF	<ul> <li>Communities of Kekaha, Waimea, Hanapepe, Ele'ele, Port Allen, Kalaheo, Lawai, Omao, Koloa, Poipu, Kapa'a, and Līhu'e</li> <li>Schools – Kaua'i District, Waimea Complex</li> <li>Kekaha Elementary School</li> <li>Ni'ihau High and Elementary School</li> <li>Waimea High School</li> <li>Waimea Canyon Middle School</li> <li>Ke Kula Ni'ihau O Kekaha Public Charter School</li> <li>Kula Aupuni Ni'ihau A Kahelelani Aloha Public Charter School</li> <li>St. Theresa's School</li> </ul>

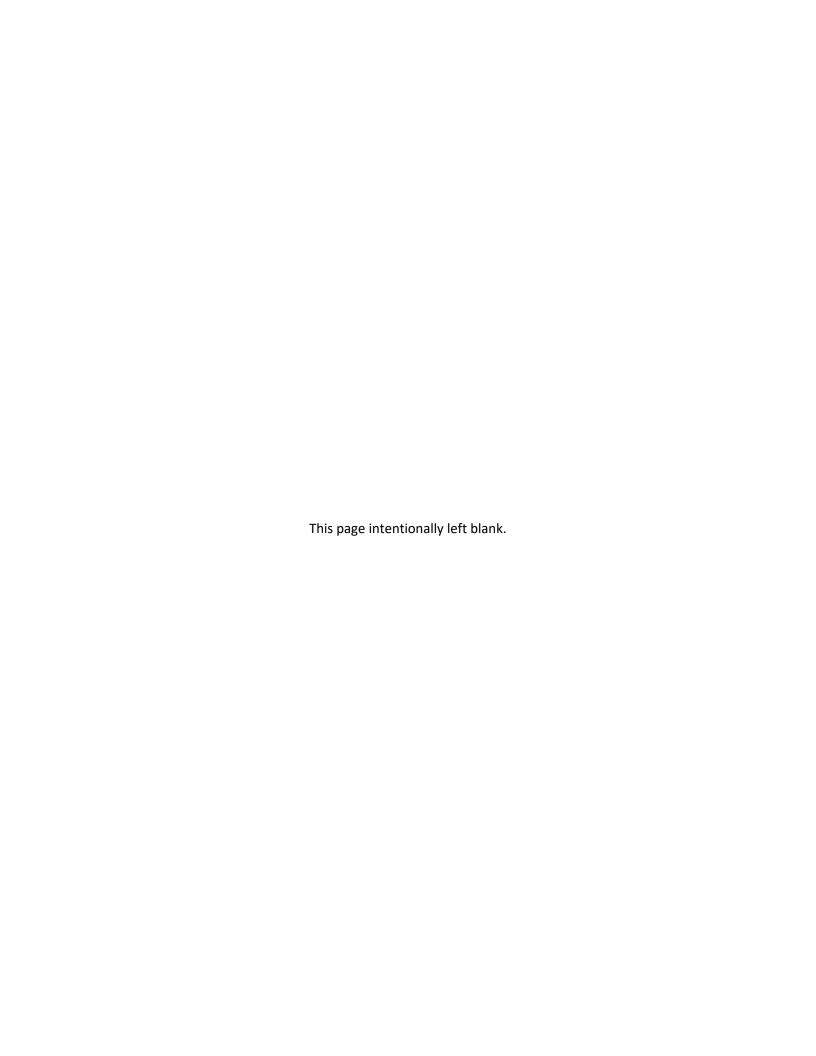
Legend: AMVETS = American Veterans; BLNR = Board of Land and Natural Resources; CZM = Coastal Zone Management; DLNR = Department of Land and Natural Resources; DOFAW = DLNR Division of Forestry and Wildlife; DON = Department of the Navy; NHO = Native Hawaiian Organization; OHA = Office of Hawaiian Affairs; OPSD = Office of Planning and Sustainable Development; SHPD = State Historic Preservation Division; U.S. = United States; USDA = U.S. Department of Agriculture; USFWS = U.S. Fish and Wildlife Service.

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Appendix D

Detailed List of Activities and Operational Elements Under Current Real Estate

Agreements



## **D.1 List and Description of Navy Leaseholds and Easements**

<u>List and Description of Leases and Easements at the Main Base</u>

**Table D.1-1** includes a list of activities or operational elements for leaseholds and easements at the main base.

Table D.1-1 Navy Leases and Easements on State Land at the Main Base

Name	Grant Type	Activity/Operational Element	Size (ac)
Tract E-1	Lease	Contains ordnance related facilities, and lands required to comply with Federal ATFP guidelines regarding setback distances around military bases.	69.562
Tract E-2 Tract E-2-A	Lease	Operations. Includes lands required to comply with Federal ATFP guidelines regarding setback distances around military bases.	45.268 0.777
Lot B	Lease	Encroachment.	32.070
Lot 1	Lease	Drainage.	47.937
Lot 9	Lease	Drainage.	12.422
Lot 3	Lease	Access.	0.232
Lot 10	Lease	Drainage. Includes lands required to facilitate the operation and maintenance of drainage ditches and pumps to protect adjacent lands from flooding.	5.171
Lot 13	Lease	Access. Includes lands required to facilitate access in support of the operation and maintenance of drainage ditches and pumps to protect adjacent lands from flooding.	0.434
Lot 7	Lease	Access. Includes Exclusive Roadway Access Easement.	1.618
Lot A-1	Lease	Encroachment/Drainage. Includes Non-Exclusive Drainage Easement and Roadway Access Easement.	176.16
		Main Base Leases Subtotal	391.651
Easement 100 Easement 101 Easement 102 Easement 103 Easement 104 Easement 105	Easement	Includes use of the lands for agricultural purposes to preclude encroachment on operations by development.	122.011 1,841.53 3,150.093 8.691 9.489 17.875
Easement 107 Easement B Easement B-1 Easement B-2 Easement B-3 Easement B-4	Easement	Includes Non-Exclusive Roadway Access Easement.	0.170 3.084 0.069 0.069 0.044 0.067
Easement D	Easement	Electrical.	1.363
Easement E	Easement	Roadway.	0.441
Easement F	Easement	Cable.	0.049
Easement G Part 1	Easement	Water.	0.671
Easement G Part 2	Easement	Water.	0.138
Easement H	Easement	Roadway.	0.028
Easement A Part 1	Easement	Access.	2.141

Name	<b>Grant Type</b>	Activity/Operational Element	Size (ac)
GHA Easement 1 GHA Easement 2	Easement	Ground hazard area.	2,039.167 69.579
		Main Base Easements Subtotal	7,266.769
		Main Base Total Leases and Easements	7,658.42

Key: ATFP = Antiterrorism and Force Protection; GHA=Ground Hazard Area.

<u>List and Description of Leases and Easements at Kamokalā Ridge</u>

**Table D.1-2** includes a list of activities or operational elements for leases and easements at Kamokalā Ridge.

Table D.1-2 Navy Leases and Easements on State Land at Kamokalā Ridge

Name	Grant Type	Activity/Operational Element	Size (ac)
Tract E-3 Parcel 1 Tract E-3 Parcel 2	Lease	Magazines 1-12 are utilized for proper storage of explosives with effective flexibility to separate incompatible explosives.	25.686 48.777
Kamokalā Ridge Add	Lease	Magazines 12-13 are required for proper storage of explosives with effective flexibility to separate incompatible explosives.	14.372
		Kamokalā Ridge Leases Subtotal	88.835
Easement 106	Easement	Includes use of the lands for agricultural purposes to preclude encroachment on operations by development.	176.372
Easement A Part 2 Por. A			0.627
Easement A Part 2 Por. B		asement Includes Non-Exclusive Roadway Access Easement.	0.558
Easement A Part 2 Por. C	Easement		0.042
Easement A Part 2 Por. D			0.221
Easement A Part 3			0.455
Easement G Part 3			0.186
Easement G Part 4	Easement	Water pipeline	0.153
Easement G Part 5	Easement	Water pipeline.	0.006
Easement G Part 6			0.021
ESQD Easement S5604	Easement	Restrictive Use.	176.371
Kamokalā Ridge Easements Subtotal			355.012
Kamokalā Ridge Total Leases and Easements			443.847

Key: ESQD = Explosive Safety Quantity Distance.

List and Description of Leases at the Mānā Water Well

Table D.1-3 includes a list of leases at the Mānā Water Well.

Table D.1-3 Navy Leases on State Land at the Mānā Water Well

Name	<b>Grant Type</b>	Activity/Operational Element	Size
Tract E-4	Lease	Infrastructure associated with well.	0.264
Lot 12	Lease	Location of water well.	0.026
		Water Well Total Leases	0.29

## List and Description of Leases at Miloli'i Ridge

Table D.1-4 includes a list of activities or operational elements for leases at Miloli'i Ridge.

Table D.1-4 Navy Leases on State Land at Miloli'i Ridge

Name	Grant Type	Activity/Operational Element	Size (ac)
Miloli'i Ridge No. 1		Location of frequency shift reflector used with radar and telemetry stations.	0.005
Miloli'i Ridge No. 2	Lease		0.005
Miloli'i Ridge No. 3			0.005
		Miloli'i Ridge Total Leases	0.015

List and Description of Leases and Easements at Mākaha Ridge

**Table D.1-5** includes a list of activities or operational elements for leases and easements at Mākaha Ridge.

Table D.1-5 Navy Leases and Easements on State Land at Mākaha Ridge

Name	Grant Type	Activity/Operational Element	Size
Parcel A – Mākaha Parcel B – Mākaha	Lease	The location has a guarded, secured entrance, a Frequency Interference Control Building, Maintenance Facility, Telemetry Building, a boresight tower, telemetry antennas, water tanks, a laboratory, radar sites, communications, a small power plant, antennas, and a helicopter landing pad. Most of these structures are on the top of the ridgeline and are in the line of sight of the Main Base. Unique location due to geography allowing coverage of both the base and ocean range.	35.04 167.05
Bore Site	Lease	Used to locate bore site targets for use with radar and telemetry stations.	1.012
		Mākaha Ridge Lease Subtotal	203.102
Parcel E Road	Easement	Includes Non-exclusive Roadway Access Easement.	4.53
Parcel D Road	Facament	Jack des New andreits Desdus Assess Ferrage	26.25
Parcel C Road	Easement	Includes Non-exclusive Roadway Access Easement.	10.82
Bore Site Access	Easement	Includes Non-exclusive Roadway Access Easement.	0.613
Road	Lasement	includes Non-exclusive hodoway Access Lasement.	0.013
Mākaha Ridge Easement Subtotal			
		Mākaha Ridge Total Leases and Easements	245.315

## **D.2 List and Description of NASA Leaseholds**

**Table D.2-1** includes a list of activities or operational elements for leaseholds and easements at Kōke'e Park Geophysical Observatory (KPGO).

Table D.2-1 Navy Leases and Easements on DLNR Land at KPGO

Name	Grant Type	Activity/Operational Element	Size
Sites A – E (6 parcels)	Lease	Facility housing radar antenna. Unique location due to geography allowing coverage of both the base and ocean range.	22.900

## **D.3 General Description of Navy and NASA Real Estate Agreements with DLNR**

**Tables D.3-1** and **D.3-2** provide the location, number, size, type, expiration, and general type of associated actions for the existing leaseholds and easements. *Note to reviewer: This table, including acreages, will be updated when the Report to Congress is updated.* 

Table D.3-1 Navy Leases on Kaua'i with State of Hawai'i

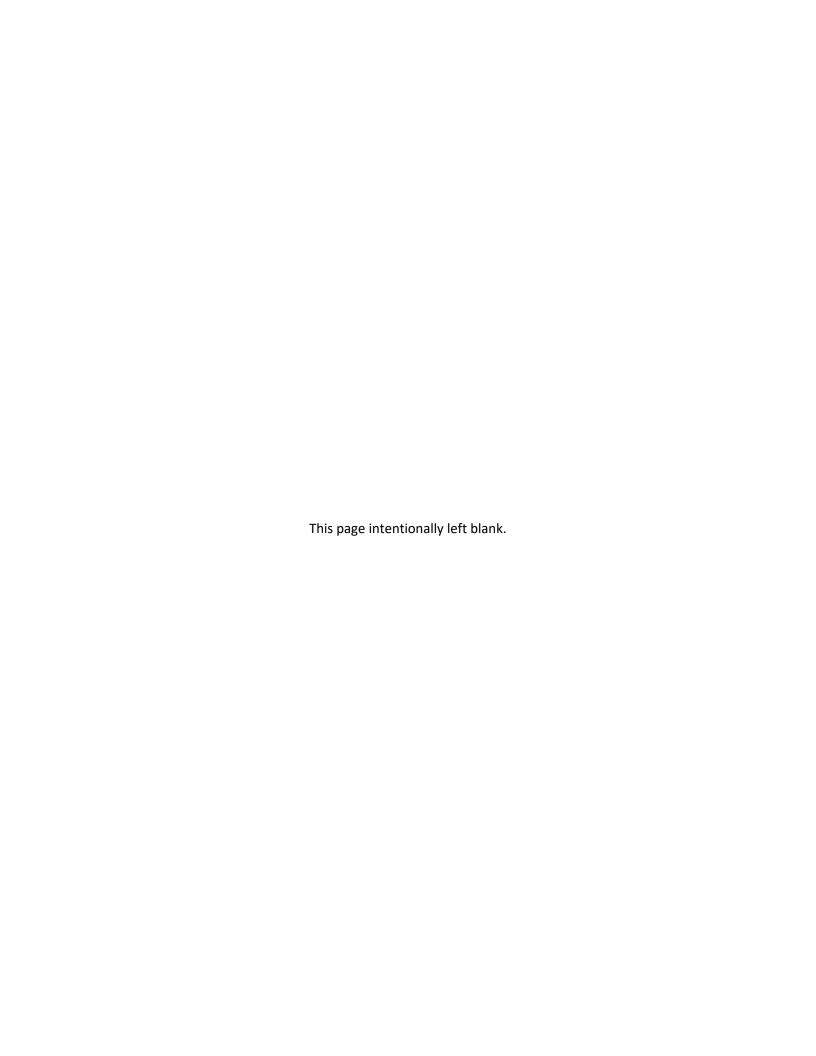
Site Name	City	Size (acres)	Туре	Lessor	Expiration Fiscal Year	Renewal Fiscal Year
PMRF Lease S-3852	Kekaha	480.78	LEASE	State of HI	2029	2029
PMRF Lease S-3852	Kekaha	10.18	EASEMENT	State of HI	2029	2029
PMRF Mākaha Ridge Lease S-3952	Kekaha	203.10	LEASE	State of HI	2030	2030
PMRF Mākaha Ridge Lease S-3952	Kekaha	7722.21	EASEMENT	State of HI	2030	2030
PMRF Miloli'i Ridge Easement S-5352	Kekaha	2108.75	EASEMENT	State of HI	2030	2030
PMRF Miloli'i Ridge Easement S-5804	Kekaha	5326.23	EASEMENT	State of HI	2029	2029
PMRF Easement S-5604	Kekaha	176.37	EASEMENT	State of HI	2029	2029

Source: Draft Report to Congress on the Department's Efforts to Renew Department of Defense Leases and Easements in Hawai'i, September 2023.

Table D.3-2 NASA Leases on Kaua'i with State of Hawai'i

Site Name	City	Size (acres)	Туре	Lessor	Expiration Fiscal Year	Purpose and Associated Actions
Kōke'e Park Geophysical Observatory (6 parcels)	Waimea	23	LEASE, EASEMENT	State of HI	2030	Collect geodetic data, contribute to daily measurements of the Earth's orientation in space and rotation.

Appendix E
No Action Alternative: Detailed List of Activities/Operations



**Table E-1** lists the operational impacts by lease and easement if succeeding agreements are not secured.

Table E-1 No Action Alternative: Operational Impacts

	Grant Type	No Action Alternative: Operational impacts		
Name of Parcel	(Lease/ Easement)	Activity/Operational Element	Operational Impact if Agreement Not Renewed	
Main Base				
Tract E-1	L	Contains ordnance related facilities, and lands required to comply with Federal ATFP guidelines regarding setback distances around military bases.	Leased area contains ordnance related facilities critical to the support of the PMRF mission. Inability to perform launch operations would result in lack of ability to support various Navy missions. Also, reduction in security posture and increased costs to meet ATFP requirements. Due to land limitations, there is nowhere else to relocate the buildings on Navy fee simple lands.	
Tract E-2 Tract E-2-A	L	Operations. Includes lands required to comply with Federal ATFP guidelines regarding setback distances around military bases.	Reduction in security posture and increased costs to meet ATFP requirements.	
Lot B	L	Encroachment.	Reduction in security posture and increased costs to meet ATFP requirements.	
Lot 1	L	Drainage.	If existing agricultural lands were to flood, PMRF would experience increased vulnerability to encroachment and BASH hazards. Without PMRF management of that land, State of Hawai'i would take over	
Lot 9	L	Drainage.	management of the drainage.  If existing agricultural lands were to flood, PMRF would experience increased vulnerability to encroachment and BASH hazards.  Without PMRF management of that land, State of Hawai'i would take over management of the drainage.	
Lot 3	L	Access.	Used as secondary entrance to the base and is the ordnance gate (for transport of ordnance from main base to Kamokalā Ridge). There would be impacts to public safety if ordnance transport went through the main gate.	
Lot 10	L	Drainage. Includes lands required to facilitate the operation and maintenance of drainage ditches and pumps to protect adjacent lands from flooding.	If existing agricultural lands were to flood, PMRF would experience increased vulnerability to encroachment and BASH hazards. Without PMRF management of that land, State would take over management of the drainage.	
Lot 13	L	Access. Includes lands required to facilitate access in support of the operation and maintenance of drainage ditches and pumps to protect adjacent lands from flooding.	If existing agricultural lands were to flood, PMRF would experience increased vulnerability to encroachment and BASH hazards. Without PMRF management of that land, State would take over management of the drainage.	

Name of Parcel	Grant Type (Lease/ Easement)	Activity/Operational Element	Operational Impact if Agreement Not Renewed
Lot 7	L	Access. Includes Exclusive Roadway Access Easement.	Operations gate, which is open in the morning and afternoon, and provides secondary entrance to the base. Without this access, there would be no other entrance if the primary entrance were to be temporarily shut down, and this would impact access to critical PMRF facilities.
Lot A-1	L	Encroachment/Drainage. Includes Non-Exclusive Drainage Easement and Roadway Access Easement.	If existing agricultural lands were to flood, PMRF would experience increased vulnerability to encroachment and BASH hazards. Without PMRF management of that land, State would take over management of the drainage. Also, would impact access to critical PMRF facilities.
Easement 100 Easement 101 Easement 102 Easement 103 Easement 104	E	Includes use of the lands for agricultural purposes to preclude encroachment on operations by development.	If existing agricultural lands were to flood, PMRF would experience increased vulnerability to encroachment and BASH events.  100-103 within GHA and ESQD arcs, 104-
Easement 105 Easement 107 Easement B Easement B-1 Easement B-2 Easement B-3 Easement B-4	E	Includes Non-Exclusive Roadway Access Easement.	This would impact access to critical PMRF facilities, and impact access to the base's main source of potable water.
Easement D	E	Electrical.	Lack of access to critical PMRF facilities.
Easement E	E	Roadway.	Lack of access to critical PMRF facilities.
Easement F	E	Cable.	Lack of electrical service to critical PMRF facilities.
Easement G Part 1	E	Water.	Lack of communication service to critical PMRF facilities.
Easement G Part 2	E	Water.	Lack of water service to critical PMRF facilities.
Easement H	E	Roadway.	Lack of access to critical PMRF facilities.
Easement A Part 1	Е	Access.	Lack of access to critical PMRF facilities.
GHA Easement 1 GHA Easement 2	E	The GHA for many of the ballistic and hypersonic missiles launched from PMRF extends into the Mānā Plain.	Restriction of the GHA to only federal property will mean no ballistic or hypersonic missiles can be safely launched from PMRF.
Kamokalā Ridge		Name and a control of the control of	Land Charles and the Control of the Control
Tract E-3 Parcel 1 Tract E-3 Parcel 2	L	Magazines 1-12 are utilized for proper storage of explosives with effective flexibility to separate incompatible explosives.	Inability to meet ordnance safety storage requirements would result in lack of ability to support aerial target and ballistic and hypersonic missile missions.
Kamokalā Ridge Add	L	Magazines 12-13 are required for proper storage of explosives with effective flexibility to separate incompatible explosives.	Inability to meet explosive safety storage requirements resulting in lack of ability to support various missions at PMRF.
Easement 106	E	Includes use of the lands for agricultural purposes to preclude encroachment on operations by development.	Potential for encroachment due to development and incompatible uses to current Navy operations to include RF spectrum interference, lighting that may impact NVG training, AICUZ concerns, etc.

Name of Parcel	Grant Type (Lease/ Easement)	Activity/Operational Element	Operational Impact if Agreement Not Renewed
Easement A Part 2 Por. A Easement A Part 2 Por. B Easement A Part 2 Por. C Easement A Part 2 Por. D Easement A Part 3	E	Includes Non-Exclusive Roadway Access Easement.	Lack of access to critical PMRF facilities.
Easement G Part 3 Easement G Part 4 Easement G Part 5 Easement G Part 6	E	Water pipeline.	Lack of access to critical PMRF facilities.
ESQD Easement S5604	Е	Restrictive Use.	Lack of access to critical PMRF facilities.
Mānā Water Well			
Tract E-4	L	Infrastructure associated with well.	Reduced reliability of potable water source and increased cost of water. Impacts to range operations from loss of water source.
Lot 12	L	Location of water well.	Reduced reliability of potable water source and increased cost of water.
Miloli'i Ridge			
Miloliʻi Ridge No. 1 Miloliʻi Ridge No. 2 Miloliʻi Ridge No. 3	L	Location of frequency shift reflector used with radar and telemetry stations.	Inability to calibrate instrumentation and antennas which would limit effectiveness during data collection and could result in safety issues related to tracking of vehicles on the range.
Mākaha Ridge			
Parcel A – Mākaha Parcel B – Mākaha	L	Facility housing radar antenna. Unique location due to geography allowing coverage of both the base and ocean range.  The vast majority of PMRF instrumentation exists at Mākaha Ridge to include radar systems, telemetry, communications, electronic warfare assets, etc.	Without the instrumentation located at Mākaha Ridge, almost all of PMRF's training and testing missions will be unsupportable since loss of the data provided by that instrumentation will make it impossible to provide range safety oversight, management and coordination of air and sea space under the control of PMRF, execution of exercises/tests and collection of customer required data.
Bore Site	L	Used to locate bore site targets for use with radar and telemetry stations.	Loss of this facility would limit PMRF support of Pacific Fleet training operations and national test initiatives. Inability to calibrate instrumentation and antennas which would limit effectiveness during data collection and could result in safety issues related to tracking of vehicles on the range.
Parcel E Road	E	Includes Non-exclusive Roadway Access Easement.	Lack of access to critical PMRF facilities.
Parcel D Road Parcel C Road	E	Includes Non-exclusive Roadway Access Easement.	Lack of access to critical PMRF facilities.
Bore Site Access Road	E	Includes Non-exclusive Roadway Access Easement.	Lack of access to critical PMRF facilities.

Name of Parcel	Grant Type (Lease/ Easement)	Activity/Operational Element	Operational Impact if Agreement Not Renewed			
Kōke'e Park Geophysical Observatory						
S-3917 6 parcels	L	Includes facilities (buildings, RADAR, antenna, transmitters) that support Navy and NASA operations.	Loss of Navy radar and telemetry systems at KPGO would also limit effectiveness during data collection and could result in safety issues related to tracking on the range.  Loss of Site B which includes the back-up plant diesel generator for Sites A, C, D, and E would impact the source of reliable power when systems at KPGO are supporting Navy range operations and NASA SGP activities.  Without use of Sites A through E at KPGO, NASA would lose its northern Pacific VLBI and DORIS stations, and two GNSS stations, substantially reducing the capability of NASA's global Space Geodesy Project to support the following: spacecraft tracking; as well as military and civilian terrestrial, airborne, and maritime navigation; and the scientific disciplines that rely on the data produced at KPGO.			

Key: AICUZ = Air Installation Compatible Use Zone; ATFP = Antiterrorism and Force Protection; BASH = Bird/Wildlife Aircraft Strike Hazard; DORIS = Doppler Orbitography and Radio-positioning Integrated by Satellite; ESQD = Explosive Safety Quantity Distance; GHA = Ground Hazard Area; GNSS = Global Navigation Satellite System; KPGO = Kōke'e Park Geophysical Observatory; NASA = National Aeronautics and Space Administration; NVG = Night Vision Goggles; PMRF = Pacific Missile Range Facility; RADAR=Radio Detecting and Ranging; RF=Radio Frequency; SGP = Space Geodesy Project; VLBI=Very Long Baseline Interferometry.