

Miki Basin Industrial Park

Environmental Assessment

Exhibits

**Miki Basin Industrial Park
Environmental Assessment**

Exhibit A

Archaeological Inventory Survey

Archaeological Data Recovery Plan

And

Archaeological Data Recovery Report

Archaeological Inventory Survey for the Miki Basin 200 Acre Industrial Development

Lands of Kalulu and Kaunolū, Lāhaina District, Lāna'i Island
TMK: (2) 4-9-002:061*

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May 9, 2018

Abstract

At the request of Pulama Lāna'i, T. S. Dye & Colleagues, Archaeologists has conducted an archaeological inventory survey with subsurface testing for the Miki Basin 200 Acre Industrial Development located in the lands of Kalulu and Kaunolū, Lāhaina District, Lāna'i Island. The survey evaluated the parcel for the presence or absence of historic properties and cultural materials in support of a zoning change to the project area.

Pedestrian survey resulted in the identification and documentation of a secondarily deposited historic artifact scatter, a secondarily deposited lithic scatter, and an historic property, designated Site 50-40-98-1980. Test excavations included a total of 31 backhoe trenches, one of which yielded a fire-pit feature, recorded as Site 50-40-98-1981.

Both historic properties are likely to date to the traditional Hawaiian period and have been evaluated as significant for the important information on Hawaiian history and prehistory that they have yielded or are likely to yield. The Miki Basin 200 Acre Industrial Development will have an adverse effect on both of these historic properties and data recovery excavations are recommended for Sites 50-40-98-1980 and 50-40-98-1981.

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1 Introduction

At the request of Pulama Lāna'i, T. S. Dye & Colleagues, Archaeologists has completed an archaeological inventory survey with subsurface testing for the Miki Basin 200 Acre Industrial Development. The Miki Basin 200 Acre Industrial Development is located in the lands of Kalulu and Kaunolu, Lāhaina District, Lāna'i Island (fig. 1). The purpose of the survey was to evaluate the *project* parcel for the presence or absence of historic properties and cultural materials in support of a proposed zoning change and construction activities. The parcel is located along Miki Road in the area surrounding the existing Maui Electric Company power plant and associated facilities. The fence line of the Lāna'i Airport marks the northern boundary of the parcel. The Miki Basin 200 Acre Industrial Development is located within TMK: (2) 4-9-002:061 and is situated on lands owned by Pulama Lāna'i.

The Miki Basin 200 Acre Industrial Development is located at an elevation of approximately 415 m above mean sea level in an area called Miki Basin, named after a nearly filled pit crater [26:338]. Vegetation in the area consists of *guava*, *Christmas berry*, and various low-lying shrubs and grasses. The soils underlying the project area comprise Molokai silty clay loam, Uwala silty clay loam, and Waikapu silty clay loam, all dark reddish brown soils

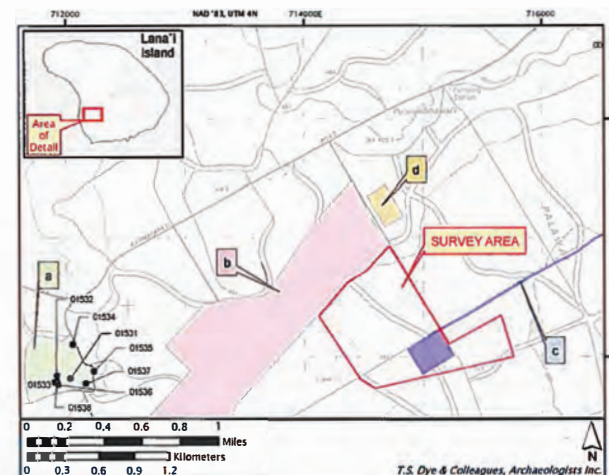


Figure 1: Location of the Miki Basin 200 Acre Industrial Development, nearby archaeological sites, and previous archaeological investigations on a 1992 USGS quadrangle map. Previous archaeological investigations include: *a*, Ahlo [1], Kam [22], Walker and Haun [31]; *b*, Sinoto [28], Borthwick et al. [3], Dagan et al. [5], Lee-Greig and Hammatt [24], Lee-Greig and Hammatt [25]; *c*, DiVito and Dye [6]; *d*, DiVito and Dye [7]. Site numbers are prefaced by 50-40-98- (e.g., 50-40-98-01532).

used primarily for *sugarcane* and pineapple production [12]. The project area is relatively dry and receives approximately 16 in. of rainfall annually.

2 Background

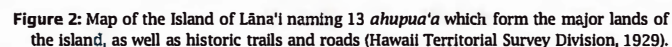
This section presents historical and archaeological background information that was used to predict the kinds and distributions of historic properties that may be present within the project area. The information also provides context for understanding and evaluating the *significance* of historic properties.

The general historic background for the island of Lāna'i was compiled by Kepā Maly. It is based on first-hand observation of cultural practices in the 1970s, interviews with

The historical narratives cited on the following pages provide readers with access to some of the most detailed and earliest accounts recorded from Lānaʻi. The narratives offer a glimpse into the history recorded from the experience and memory of native residents and eyewitness accounts of those who participated in the events which now make Lānaʻi's history. Some of these historical narratives have been translated from Hawaiian-language accounts for the first time, and other accounts rarely seen since their original date of composition. They are compiled here to provide a more detailed history of the land than has been previously available.

Lānaʻi is sixth in size of the major Hawaiian Islands (fig. 2), and like all islands in the group, it was formed through volcanic eruptions and is constantly being reshaped by erosional activity. The primary caldera was in the area now known as the Pālaui Basin, and it is estimated that Lānaʻi first rose above sea level approximately 1.5 million years ago. It is approximately 13.25 mi. long by 13 mi. wide, and at its highest point, Lānaʻi Hale, stands 3,370 ft. above sea level. The island of Molokai lies to the north of Lānaʻi, across the Ka-lohi Channel, and Maui lies to the east, across the 'Au'au and Naehehe Channels; the channel of Ke-ala-i-Kahiki and the island of Kaho'olawe lie to the southeast. The southern and western sides of Lānaʻi face the open ocean and are fringed by imposing cliff sides, while the windward side slopes gently to the sea. Thus, Lānaʻi sits in the lee of its sister islands. Its history, like that of Molokai and Kaho'olawe, has almost always been overshadowed by its larger neighbor, Maui.

In addition to political and social contexts, Lānaʻi's relationship to Maui and Molokai includes a significant environmental one as well, sitting as it does in the rain shadow of the larger and higher islands. Lānaʻi's ecosystem evolved in the absence of man and most other mammals, giving rise to cloud forest zones, which gave life to the land, and made the island hospitable to people when they settled Lānaʻi perhaps as long as 1,000 years ago. There were two primary forest-watershed zones, the major watershed of Lānaʻi Hale at the highest peak of Pālāwai and Keālia Aupuni Ahupuaʻa; and what has historically been called the Kānepuʻu forest zone of Kaʻā Ahupuaʻa. Untouched for countless centuries, the forest systems of Lānaʻi evolved the unique ability to capture droplets of water, which in turn percolated through the ground to create water sources that were spread from mountain to shore across the island. While these precious forest regions have been radically altered by man's activities and feral animals, evidence of the region's water-producing capabilities are still visible on the landscape and in traditional accounts and historic literature.



The earliest traditional lore of Lānaʻi describes the arrival of the gods Kāne, Kanaloa, and their younger god-siblings and companions to the southern shores of the island. Later accounts describe the visit of the goddess Pele and members of her family to the windward region of Lānaʻi. Subsequent narratives describe the settlement of Lānaʻi by evil spirits, and the difficulties that the early human settlers encountered in attempts to safely colonize the island. Another tradition relates that in the early 1400s, a young Maui chief by the name of Kaululāʻau traveled around Lānaʻi vanquishing the evil ghosts/spirits of the island, making it safe for people to live on Lānaʻi, and is the source of the island's name (Lānaʻi = a Kaululāʻau).

By the early 1600s, all the islands of the Hawaiian group were settled sufficiently to develop an organized way to manage scarce resources. Each island was divided into political and subsistence subdivisions called *ahupua'a*, which generally ran from the ocean fishery fronting the land area to the mountains. Under the rule of Pi'ilani, Lāna'i was divided into 13 *ahupua'a*. Native tradition describes *ahupua'a* divisions as being marked by stone cairns (*ahu*) with a carved pig (*pua'a*) image placed upon them, and these ancient divisions remain the primary land unit in the Hawaiian system of land management on Lāna'i today.

The culture, beliefs, and practices of the Hawaiians mirrored the natural environment around them. They learned to live within the wealth and limitations of their surroundings. There is significant archaeological evidence on the island indicating that in the period before western *Contact*, more people lived on the land sustainably—growing and catching all they needed—than currently live upon the island. Several important traditions pertaining to the settlement of Lānaʻi and the beliefs and practices of the ancient residents are commemorated at such places as Kaululāʻau, Kalaehi, Ke-ahi-a-Kawelo, Hālulu, Puʻu-pehe, Pōhaku ō, Kānepuʻu, Kaʻena iki, Nānāhoa, Haʻalelepaʻakai, and Puhi-o-Kaʻala.

Ancient Hawaiian villages, ceremonial features, dryland agricultural fields, fishponds, and a wide range of cultural sites dot the shoreline of Lānaʻi at places like Keone, Kaumā-lapaʻu, Kaunolū, Māmaki, Kapalaoa, Huawai, Kapihaʻā, Hulopoʻe, Mānele, Kamaiki, Naha, Kahemanō, Lōpā, Kahalepalaoa, Kaheʻa, Keōmoku, Kaʻa, Hauola, Maunalei (including a wet land taro field system in the valley), Kahōkūnui, Kaiolohia, Kahāʻulehale, Kahue, Lapaiki, Awalua, Polihua, and Kaʻena.

In the uplands, localities at Hoʻopulupuluamoa and Malulani, Kōʻele and Kihamāniana, Kalulu uka, Kaunolū uka, Keālia Kapu, Keālia Aupuni, and Pālāwai were also locations of significant traditional settlements and agricultural endeavors. We also know that over the generations, families with permanent residences in the Lāhaina District of Maui frequented Lānaʻi to take advantage of its rich fisheries.

In the period leading up to 1800, there was a decline in the native population, and in the capacity of Lānaʻi to produce agricultural resources. This was, in part, due to disputes between the rulers of Maui and Hawaiʻi which overflowed onto Lānaʻi in the mid to late eighteenth century. In the late eighteenth century and early nineteenth century, foreign diseases and influences spread across the islands, leading to a further decline in the population. By the 1840s, there were approximately 600 inhabitants residing on Lānaʻi. By the 1870s, the population hovered around 300 residents, and by the early 1890s, there were just 175 native residents.

Native Lore and Historical Accounts: The Gods Walked the Land—Early Settlement of Lānaʻi Several traditions pertaining to the gods and people of ancient Lānaʻi were found in a review of Hawaiian-language newspapers. These accounts describe the island condition and the life and practices of Lānaʻi's ancient people. The narratives establish the bond between Lānaʻi and neighboring islands of the Hawaiian group and more distant Kahiki—the ancestral homeland of the gods—as Kāne, Kanaloa, Pele, and others of the god-family shaped the natural environment and lives of the people of the land. Coming into the historic period, readers find significant changes on the land and in the lives of the people of Lānaʻi. Selected accounts are related here that transition readers through the history of Lānaʻi and a native landscape to one of change under western settlement.

A Famine on Lānaʻi—an Ancient Prayer Offered by Pakeaulani to the God Kānepaʻina This tradition tells of two ancient residents of Lānaʻi, a period of famine across the islands, and the death of the population. We learn the name of a god of one of the *heiau* on Lānaʻi,

Kānepaʻina. The word *anela* (Hawaiianized angel) is used by the writer in place of the traditional words *ʻaumakua* or *akua*. Also cited within this account is a *pule* uttered by ancient residents of Lānaʻi.

No na Akua o ka Wa Kahiko ...

Eia mai he wahi moolelo no ka malama ana o kekahi anela paha, a mau anela paha, oia hoi he mau Kane paha. Penei ua wahi moolelo la. Aia ma Lanai ka noho ana o Kaimumahanahana, a me kana keiki o Pakeaulani, a he nui loa no na kanaka ma Lanai ia manawa; a hiki mai ke kau wi, pau aku la na kanaka i ka make a ka ai, a koe elua o Kaimumahanahana, a me Pakeaulani, kokoke make nae ka makuakane. O ka Pakeaulani hana; oia keia. Hele wale aku la no kela e eli wale aku no i kulina uala, a loa ka uala liili, (he au la uala) kalua a moa, lawe aku la keia a he wahi heiau a ianei i hanaʻi, kaumaha aku la, alala, pule aku la, penei kahi hapa o ka pule.

Kini o ke akua
E ka lehu o ke akua
E ka pukui akua
E ka lalani akua
E kahuli, e kahele
E ka wahine e moe ana ke alo
iluna
Eia ka ai au a Pakeaulani keiki a
Kaimumahanahana.

Pau ka pule, hoi keia a imi hou i ai no ke ahiahi, a moa ia ai lawe aku, i lawe aku ka hana, ua pau kela ai, kau keia ai, pule no hoi e like me mamua. I kekahi imu liili ana a ianei, honi mai la kona makuakane i ke ala o ka uala! I mai la kela, "Auhea hoi kau uala e kuu keiki e aala mai nei?" Pane mai la kela, "He ai ia na kuu akua." Pane hou mai kona

About the Gods of Ancient Times

Here is a little tradition pertaining to observances for a certain angel (guardian), angels, or perhaps men. The story is this. There was residing on Lānaʻi, Kaimumahanahana and his son, Pakeaulani, and there were many people living on Lānaʻi at that time. There came a time of famine, and all the people died, leaving only Kaimumahanahana and Pakeaulani, though the father was close to death. Here is what Pakeaulani did. He went and dug up some sweet potato runners and got a few small sweet potatoes (little potatoes growing on a vine), and baked them. He took these things to a heiau and did the following, he worshipped, made the offerings, and prayed. This is a portion of his prayer:

Forty thousand gods
Four hundred thousand gods
Assembly of gods
Alignment of gods
Those that change, those that
move about
O women that lie face up
Here is your food, prepared by
Pakeaulani, son of Kaimumahanahana.

When he finished praying, he went again and sought out food for the evening. He cooked the food and took it, doing the same with all the food until it was done, and set there (at the temple), and he prayed as he had before. He prepared the food in a small imu, and his father smelled the scent of the sweet potatoes! He said, "Where are

makuakane, "Aohe o'u akua, a he akua ka hoi kou?" A hala ae la na la elima o kana hana ana pela, alaila, i ka po kamailio mai la kekahi anela o Kanepaina. I mai la, "Ea, a keia po e panipani aku oe i na pukapuka lilii o ko olua hale, a e noho malie mai kamailio pu me kou makuakane a pau ae la ka laua kamailio pu ana, a hele aku la ia anela. Ninau mai la kona makuakane ia ia, 'Owai kou hoa i kamailio mai la.' I aku la oia, 'O kuu akua hoi ia a'u e malama nei.' Aole liuliu ma ia hope iho, haule mai ana ka ua he nui, ka ua no ia a ao ka po a po ua la nei, a ao ua po nei, malie iho la ka ua. I puka aku ka hana iwaho ua palaku ka Maia, ua moe ke Ko a ala mai, hele ke anaku o ka uala a keke, ua hele ka Ape a hilala ka ha; o ke kalo hoi ua makaole kekahi kihapai, a o kekahi pumaia ka ha o ke kalo. Ke kalua iho la no ia o ka ai a moa, kaumaha e aku la keia i ke Akua oia nei, a pau hoi mai la laua nei ai ka uala, ke kalo, a ai no hoi ka mai a maona; o ka laha hou no ia o kanaka o Hawaii nei, ma Lanai wale no. Oia iho la kahi moololo o ka malama ana o kekahi o na Kane ia mau kanaka ..."

Owau no me ka mahalo. John Puniwai.¹

¹ Nupepa Kuokoa, November 8, 1862.

² Trans. K. Maly.

He Mo'olelo no Kaululā'au: A Tradition of Kaululā'au One of the best known traditional accounts of Lāna'i dates from the early fifteenth century and associates the island with the ruling chiefs of Maui. In these narratives, a young chief, Kaululā'au, was born to Kaka'alaneo and Kanikaniā'ula. Kaka'alaneo's elder brother was Kāka'e, and Fornander reported that these royal brothers jointly ruled Maui and Lāna'i [14:II-82, 83]. During

your sweet potatoes, that I smell, my son?" He answered him, saying, "It is the food of my god." The father then answered, "I don't have a god, but you do?" Five days passed in his (Pakeaulani) doing this same thing, then on the fifth night, an angel, Kānepa'ina, spoke. He said, "Heed me, this night go and close the very littlest of the holes in the house of you two, and stay calm, do not speak with your father." When they two were finished speaking, the angel departed. His father asked him "Who was the companion with whom you were speaking?" He answered, "My god whom I have been worshipping." Not long afterwards, a great rain fell. It rained night and day, and through several nights and days until there was calm, then the rains fell lightly. Looking outside to see what had transpired, there was seen ripe Mai'a (bananas), Kō (sugar cane) lying upon the ground, 'uala (sweet potatoes) spread all about, Ape (mountain taro) with long stalks leaning to the side; Kalo (taros) which filled the gardens, banana stalks were used as the channels (to irrigate) for the taro. He then cooked the food, and made an offering to his God. When finished, they two ate the sweet potatoes, taro, and bananas until filled. This is how Hawaiians came to once again be spread across Hawaii, only from Lāna'i. So this is one tradition of how one of the Kāne (gods), was worshipped by these men ...

I am with appreciation. John Puniwai.²

Kāka'e and Kaka'alaneo's rule, and for many generations preceding it, anyone who attempted to live on Lāna'i experienced great difficulties, as the island was inhabited by evil ghosts/spirits ruled by their king, Pahulu.

While there are numerous narratives that describe how Kaululā'au came to free Lāna'i from the rule of Pahulu, thus making it safe for people to inhabit the island [2; 10], there are two major versions of this tradition with variations on the events. The best known is the version published by King David Kalākaua in 1888, but the most detailed version was published in the Hawaiian language in 1863 in association with another tradition from Maui, "Ka Moololo o Eleio" (p. 14).

King Kalākaua's version provides a significant description of Lāna'i and the ability of its people to sustain themselves by working the land and fishing the sea around the island. Through the encouragement of his friend and advisor Walter Murray Gibson,¹ the king compiled the traditions found within *The Legends and Myths of Hawaii* [21] and described Lāna'i as being richly supplied with food crops, natural resources, and fisheries that, but for the presence of the evil beings, made it a desirable place to live.

Excerpts of Kalākaua's version follow, entitled "The Sacred Spear-Point" and "Kelea, the Surf Rider of Maui." These excerpts are followed on page 14 by an excerpt of the Hawaiian-language version of Kaululā'au's legend entitled "Ka Moololo o Eleio."

"The Sacred Spear-Point" and "Kelea, the Surf Rider of Maui"

Kaululaau was one of the sons of Kakaalaneo, brother of, and joint ruler with, Kakae in the government of Maui ... The court of the brothers was at Lele (now Lahaina), and was one of the most distinguished in the [island] group.

The mother of Kaululaau was Kanikaniā'ula, of the family of Kamauaua, king of Molokai, through his son Haili, who was the brother or half-brother of Keoloewa and Kaupepee ...

Kaululaau was probably born somewhere between the years 1390 and 1400. He had a half-sister, whose name was Wao, and a half-brother, Kaihiwāua ...

[Kaululaau] had a congenial following of companions and retainers, who assisted him in his schemes of mischief ... He would send canoes adrift, open the gates of fish-ponds, remove the supports of houses, and paint swine black to deceive the sacrificial priests. He devised an instrument to imitate the death-warning notes of the *alae*, and frightened people by sounding it near their doors; and to others he caused information to be conveyed that they were being prayed to death.

Notwithstanding these misdemeanors, Kaululaau was popular with the people, since the chiefs or members of the royal household were usually

¹ Walter Murray Gibson settled on Lāna'i by early 1862, and came to control most of the land on the island through fee-simple and leasehold title. A friend of many chiefs, some of whom who had been on Lāna'i with Kamehameha I, Gibson recorded a number of traditions from the island, and is generally attributed with the Lāna'i narratives cited by King Kalākaua.

the victims of his mischievous freaks. He was encouraged in his disposition to qualify himself for the priesthood, under the instruction of the eminent high-priest and prophet, Waolani, and had made substantial advances in the calling when he was banished to the island of Lanai by his royal father for an offence which could neither be overlooked nor forgiven.

At that time Lanai was infested with a number of gnomes, monsters and evil spirits, among them the gigantic *moo*, Mooaleo. They ravaged fields, uprooted coconut-trees, destroyed the walls of fish-ponds, and otherwise frightened and discomfited the inhabitants of the island. That his residence there might be made endurable, Kaululaau was instructed by the *kaulas* and sorcerers of the court in many charms, spells, prayers and incantations with which to resist the powers of the supernatural monsters. When informed of these exorcising agencies by Kaululaau, his friend, the venerable Waolani, told him that they would avail him nothing against the more powerful and malignant of the demons of Lanai.

Disheartened at the declaration, Kaululaau was about to leave the *heiau* to embark for Lanai, when Waolani, after some hesitation, stayed his departure, and, entering the inner temple, soon returned with a small roll of *kapa* in his hand. Slowly uncoiling and removing many folds of cloth, an ivory spear-point a span in length was finally brought to view. Holding it before the prince, he said:

Take this. It will serve you in any way you may require. Its powers are greater than those of any god inhabiting the earth. It has been dipped in the waters of *Po*, and many generations ago was left by Lono upon one of his altars for the protection of a temple menaced by a mighty fish-god who found a retreat beneath it in a great cavern connected with the sea. Draw a line with it and nothing can pass the mark. Affix it to a spear and throw it, and it will reach the object, no matter how far distant. Much more it will do, but let what I have said suffice.

The prince eagerly reached to possess the treasure, but the priest withdrew it and continued:

I give it to you on condition that it pass from you to no other hands than mine, and that if I am no longer living when you return to Maui—as you some day will—you will secretly deposit it with my bones. Swear to this in the name of Lono.

Kaululaau solemnly pronounced the required oath. The priest then handed him the talisman, wrapped in the *kapa* from which it had been taken, and he left the temple, and immediately embarked with a number of his attendants for Lanai.

Reaching Lanai, he established his household on the south side of the island. Learning his name and rank, the people treated him with great respect—for Lanai was then a dependency of Maui—assisted in the construction of the houses necessary for his accommodation, and provided him with fish, *poi*, fruits and potatoes in great abundance. In return for this devotion he set about ridding the island of the supernatural pests with which it had been for years afflicted.

In the legend of "Kelea, the Surf-rider of Maui," will be found some references to the battles of Kaululaau with the evil spirits and monsters of Lanai. His most stubborn conflict was with the gnome god Mooaleo. He imprisoned the demon within the earth by drawing a line around him with the sacred spear-point, and subsequently released and drove him into the sea.

More than a year was spent by Kaululaau in quieting and expelling from the island the malicious monsters that troubled it, but he succeeded in the end in completely relieving the people from their vexatious visitations. This added immeasurably to his popularity, and the choicest of the products of land and sea were laid at his feet.

His triumph over the demons of Lanai was soon known on the other islands of the group, and when it reached the ears of Kakaalaneo he dispatched a messenger to his son, offering his forgiveness and recalling him from exile. The service he had rendered was important, and his royal father was anxious to recognize it by restoring him to favor.

But Kaululaau showed no haste in availing himself of his father's magnanimity. Far from the restraints of the court, he had become attached to the independent life he had found in exile, and could think of no comforts or enjoyments unattainable on Lanai. The women there were as handsome as elsewhere, the bananas were as sweet, the coconuts were as large, the *awa* was as stimulating, and the fisheries were as varied and abundant in product. He had congenial companionship, and bands of musicians and dancers at his call. The best of the earth and the love of the people were his, and the *apapani* ['apapane] sang in the grove that shaded his door. What more could he ask, what more expect should he return to Maui? His exile had ceased to be a punishment, and his father's message of recall was scarcely deemed a favor.

However, Kaululaau returned a respectful answer by his father's messenger, thanking Kakaalaneo for his clemency, and announcing that he would return to Maui sometime in the near future, after having visited some of the other islands of the group; and three months later he began to prepare for a trip to Hawaii. He procured a large double canoe, which he painted a royal yellow, and had fabricated a number of cloaks and capes of the feathers of the *oo* and *mamo*. At the prow of his canoe he mounted a carved image of Lono, and at the top of one of the masts a place was reserved for the proud *tabu* standard of an *aha alii*. This done, with a proper retinue he set sail for Hawaii. [21:209-213]

The tradition continues by describing events in which Kaululā'au participated in battles with various demons similar to those on Lāna'i. His journey took him to the islands of Hawai'i, Moloka'i, and O'ahu prior to his return to Maui.

Upon returning to Maui, Kaululā'au was welcomed home by his father, and learned that Waolani, his priestly instructor and friend, had died. Recalling the promise made to Waolani, Kaululā'au secretly hid the sacred spear-point of Lono with the bones of Waolani. Kaululā'au married Laiea-a-Ewa, a high chiefess of O'ahu, and together they lived out their lives, residing at Kaua'ula in Lāhaina and parented six children [21:225].

In the tradition of "Kelea, the Surf-Rider of Maui" [21:229-246], mention is made again of Kaululā'au and his adventures on Lāna'i. The account is centered on Kelea, the daughter of Kahekili I, elder cousin of Kaululā'au. It is reported that when Kahekili I ascended to the throne (ca. 1415), he "became king of Maui and Lanai; for during that period the latter island was under the protection of the *mois* of Maui, while Molokai still maintained its independence" [21:229].

King Kalākaua described the introduction of 'ulu to Lele, now known as Lāhaina, and Kaululā'au's banishment to Lāna'i:

It was Kakaalaneo who introduced the bread-fruit there from Hawaii . . . For some disrespect shown to his royal brother [Kakae], whose mental weakness doubtless subjected him to unkind remarks, he banished his son Kaululaau to Lanai, which island, traditions avers, was at that time infested by powerful and malignant spirits. They killed pigs and fowls, uprooted coconut-trees and blighted *taro* patches, and a gigantic and mischievous gnome amused himself by gliding like a huge mole under the huts of his victims and almost upsetting them.

The priests tried in vain to quiet these malicious spirits. No sooner were they exorcised away from one locality that they appeared in another, and if they gave the *taro* patches a rest it was only to tear the unripe bananas from their stems, or rend the walls and embankments of artificial ponds, that their stores of fishes might escape to the sea. Aware of these grievances, Kaululaau took with him to Lanai a talisman of rare powers. It was the gift of his friend, the high-priest of his father, and consisted of a spear-point that had been dipped in the waters of *Po*, the land of death, and many generations before left by *Lono* on one of his altars.

Crowning a long spear with this sacred point, Kaululaau attacked the disturbing spirits, and in a short time succeeded either in bringing them to submission or driving them from the island. The gnome *Mooaleo* was the most difficult to vanquish. It avoided the prince, and for some time managed to keep beyond the influence of the charmed spear-point; but the monster was finally caught within the boundaries of a circular line scratched with the talisman upon the surface of the earth beneath which it was burrowing, and thereby brought to terms. It could not pass the line no matter how far below the surface it essayed to do so. Heaving the earth in its strength and wrath, it chafed against the charmed restraint that held it captive, and finally plunged downward within the vertical walls of its prison. But there was no

path of escape in that direction. It soon encountered a lake of fire, and was compelled to return to the surface, where it humbled itself before the prince, and promised, if liberated, to quit the island for ever. Kaululaau obliterated sixty paces of the line of imprisonment, to enable *Mooaleo* to pass to the sea, into which the hideous being plunged and disappeared, never to be seen again on Lanai. [21:229-230]

Ka Moololo o Eleio (The Tradition of Eleio) The tradition of Eleio is set in the time of Kaka'alaneo's rule over Maui, Lāna'i, Moloka'i, and Kaho'olawe (ca. 1400), and was published by W. N. Pualewa, in the Hawaiian-language newspaper *Kuokoa* in 1863. The account tells us that Eleio was a famous *kūkini* associated with the court of the king. He was noted for his ability to travel the circuit of the island, to fetch a choice fish from one district and bring it to the court in another district, keeping it alive. When it was learned that Kelekeleioka'ula, Kaka'alaneo's wife, was expecting, the king granted Eleio the privilege of naming the child. Eleio stated his desire, that if it was a boy, he should be named Kaululā'au (The-forest-grove). When the child was born, it was indeed a boy, and he was named Kaululā'au. As the child grew, his mysterious manner and mischievous nature created many problems for his parents and the people of Maui. Eventually, the youth was banished from Maui and sent to Lāna'i to fend for himself. At that time in history, Lāna'i was reportedly inhabited by hordes of *akua* under the rule of Pahulu. While on Lāna'i, Kaululā'au was accompanied by his own personal god, Lono. Together, the two traveled about Lāna'i, tricking the ghosts, killing them, and setting the lands free from their dominion.²

In this version of the tradition, Kaululā'au traveled around Lāna'i. We are told that he has already killed many of Pahulu's minions, and that Pahulu then feigned friendship with Kaululā'au, telling him that he would help him seek out the other *akua* who remained on the island. Pahulu's real objective was to round up the remaining *akua* to fight and kill Kaululā'au. The party traveled around the island counterclockwise, leaving the Keōmuku region, passing through Ka'ena, Honopū, Kaumālapa'u, Kaunolū, and Mānele. The excerpts below cover the lands of the southern coast of Lāna'i between Kaunolū and Mānele.

Ka Moololo o Eleio

A mamuli o keia olele ana a Pahulu; alaila, ua nee io aku no lakou a noho ma Honopu, ala ia wahi ma kahi e ane koko ke aku ana i ka pali o Kaholo, aka, o Kaumalapau nae kahi e pili pu ana me Kaholo.

A hūki lakou nei ma Honopu, a noho malaila i kekahi mau po, aole nae he akua oia wahi, no ka mea, ua kaapuni hele o

The Tradition of Eleio

Pahulu then flew on ahead, and they went on to stay at Honopū. This place is situated not too far away from the cliffs of Kaholo, though Kaumālapa'u is there, adjoining Kaholo.

They arrived at Honopū, and stayed there several nights. Pahulu had traveled all about the place, from one side to the other

²Nupepa *Kuokoa*, October 24 & 31, 1863.

Pahulu ia mau la a me ia mau po ma ia apana mai o a o, mai ka a uka, aole ona hawai iki me ke akua, nolaila, aole o lakou kuleana e noho hou ai malaila.

Nolaila, ua nee hou aku la lakou a noho ma Kaunolu, a malaila a noho loihi hou lakou ma ia wahi, no ka mea, ua ike o Pahulu he wahi akoakoa ia o ke akua.

Nolaila, olelo aku la o Pahulu ia Kaululaau, "E aho e noho kakou ianei, no ka mea, ua ike mai nei au, aia iluna pono o Kahilikalani ke akua kahi i nohoai. Eia nae ka mea hai aku ia oe e Kaululaau, e luku auanei oe i ka nui o ke akua apau; ao ke akua auanei e kapa'ina la o Kanemakua, alaila, mai pepehi auanei oe iaia no ka mea, he hana nui kana. O kana hana, oia ke kamaaina mau o keia wahi, a nana no e malama i kela i-a o ke kai. Oia ke akua, no ka mea, ina oia e make, aole mea nana e kiai pono i keia lae akua. No ka mea, malama paha e pau io ana ke akua o keia aina ma keia hana au e hana nei, a e noho mai ana paha ka mea i like pu me kou ano a'u e ike aku nei. Alaila, ua koe iho la no ke kumu e laka mai ai o ke akua, a ma ona la e hiki ai ke kaumaha aku, a e lilo o Kanemakua i aumakua lawaia no ia poe."

Alaila, ua malkai ia mea i ko Kaululaau manao. A noho lakou malaila, me ka hana aku i kana oi hana mau o ka pepehi aku i ke akua oia wahi, a malaila hoi o Kaululaau i ao ai i ka paeaea ana i ke akua, e like me ka hana ana o na kanaka o Molokai i pae mai ai ma Kahulehale, a no ka lehulehu o na hana maalea i loaa ia Kaululaau mamuli o ke ao-ao ana mai a kona akua a Lono, nolaila, ua pau na akua i ka make o Kaunolu.

A pau ka lakou hana ana mau Kaunolu, alaila, mano iho la lakou e haalele ia wahi a e nee hou aku ma kekahi wahi hou aku. Nee iki ae lakou a noho ma Mamaki, a malaila i luku ia aku ai ...

of the land, and into the uplands, but he could find no akua in the district. Therefore, they had no reason to stay there for long.

Then they traveled once again, and stayed at Kaunolu. They remained at this place for quite a long time, because Pahulu knew that this was a place where the akua gathered.

Therefore Pahulu said to Kaululā'au, "Let us stay here a while, for I see there atop Kāhīkalanī, is the place where the akua reside. But this is what I have to tell you, Kaululā'au, that you shall indeed destroy all the akua; but you should not kill the god called Kānemakua, for he has an important job here. His work, is that he is the native of this place, it is he who cares for the fish of the sea. He is the god, and if he should be killed, there shall be no other god who can watch over this godly point. So be careful, that you do not destroy the akua of this land as you do your work. From what I have seen, he is perhaps like you in what he does. So let him remain free, that he may be worshipped. Kānemakua will become the god of the fishermen of this place."

Kaululā'au thought this was a good idea. So they dwelt there, and he did his work, killing all the akua of this place. Kaululā'au then instructed them in praying to the gods, as he had done with the men of Molokai, who had washed ashore at Kahā'ulehale. So it was that the multitudes do this, as Kaululā'au had been instructed by his god, Lono. Thus vanquished, were the akua of Kaunolu.

So when their work at Kaunolu was completed, they then thought of leaving the place, and they went on a short distance and stayed at Māmaki. And there also destroyed them ...

A pau ke koena o ke Akua o Kaunolu i ka lukuia, a pepehi pu ia kekahi akua opu ohao, o Kuahulua ka inoa oia akua, a no ka make ana oia akua ia Kaululaau, nolaila, hele hou ae ia lakou a noho ma Manele.

A malaila, ua noho loihi loa lakou i kekahi mau la ame kekahi mau po, a o ka Pahulu hana mau no i ka hele e nana i ke akua mao a maanei. A no ka halawai ole o lakou me ke akua, nolaila, hooholo lakou i ka olelo e pii o Kaululaau ame Lono iuka, a o Pahulu hoi, ua hele loa oia ma kahakai a hiki aku i Naha, a malaila oia e huli ae ai ia Kaululaau ma.

A o Kaululaau ma hoi, hele aku la laua mai Manele aku a pii aku a hiki i Kanauau, a malaila aku no a ke kuahiwi o Kaohai, a hele ae la no malaila a Kahaalelepaakai, a ma ia kuahiwi aku no ka hele ana a hiki ae i Ohiahalo, a malaila aku ka hele ana hiki i ka mauna o Lanaihale, kahi hoi a Kaululaau i kapili ai i ka maka o ke akua i ke kepau.¹

¹ Nupepa Kuokoa, October 24 & 31, 1863.

² Trans. K. Maly.

Kealaikahiki: "Canoe Man's Path to Kahiki" The island of Lāna'i plays a role in some traditions describing the arrival of the gods and people in Hawai'i. The famed Kealaikahiki, "canoe man's path to Kahiki," reportedly starts at Kaunolu on Lāna'i.³ The residency of the god-navigator Kāne'āpua is commemorated in a place name to this day, as is the place called Miki (Puuomiki), as a source of water, at Kaunolu. Below is one of the traditions of this god and his place in the life of the families of Lāna'i.

He Moolelo no Wahanui me Kaneapua ma Lanai

O Wahanui kekahi alii o Oahu i holo i Kahiki. O Wahanui ke alii, o Kilohi ke kilo, o Moopuaiki ke kahuna a me na hookele moana. I ko lakou holo ana a pae ma Haleolono ma Molokai. I ka wanaao holo aku la lakou ma

Thus the remaining akua of Kaunolu were destroyed, and there was also killed a god with a protruding belly. The name of this god was Kuahulua. When this god was killed by Kaululā'au, they then continued their journey and stayed at Mānele.

They resided there for some time—a number of days and nights—and as was Pahulu's usual practice he went about looking here and there for the ghosts. Not encountering any, he went to tell Kaululā'au and Lono that they should ascend to the uplands, while Pahulu would travel along the coast to Naha, and from there he would seek out Kaululā'au and his companion.

Kaululā'au folks went from Mānele, ascending up to Kanauau [Kāneua'u (also written Kaniua'u)], and from there up the mountain of Ka'ōhai. From there they went to Kaha'alelepa'akai, and that peak they went to 'Ōhi'alalo. And from there they went to the mountain summit of Lāna'ihale, at the place where Kaululā'au glued closed the eyes of the ghosts with the glue.²

A Tradition of Wahanui and Kāne'āpua on Lāna'i

Wahanui was a chief of O'ahu who went to Kahiki. Wahanui was the chief, Kilohi was the astronomer, and Mo'opuaiki was the navigator. They sailed and landed at Haleolono, Molokai. In the early morn-

³cf. "He Moolelo no Makalei" in *Ka Hoku o Hawaii*, January 31 through August 21, 1928.

ka pali o Kaholo ma Lanai, i ke ao ana, kaalo ae la lakou ma ka lae o Kaunolu, a ma ka hikina hema iki aku o laila, o ka Lae o Apua, ka inoa oia wahi a hiki i keia la. E noho ana kekahi kanaka o Kaneapua ka inoa. Kahea mai la ua kanaka nei, penei, "Ko ke waa, no wai he waa?" "No Wahanui."

"O Wahanui ke alii, o wai ke kahuna?" "O Moopuaiki." "O Moopuaiki ke kahuna, o wai ke kilo?" "O Kilohi." "He waa e holo ana i hea?" "He waa e holo ana i Kahikiki, i Kahikimoe, i Kahiki kapakapakaua a Kane, he waa e holo ana e keekeehee i ka houpo o Kane." "O kou houpo la hoi o ko ke kanaka, ka houpo la hoi o ke akua keehiia iho, a pau ola, a koe make. Pehea la hoi owau kekahi maluna o ka waa?"

Olelo mai o Kilohi ke kilo. "Ua piha loa ka waa, aole oe e hiki." I ka holo ana ma kekahi ma-ka-lae mai, loa i ka ino, me ka makani, a me ka puahlohio, o ka huli waa, hoolana aku la, a komo i ka lulu o Kaunolu, a pae i Kaumalapau.

Ma ka moololo o keia kanaka o Kaneapua, no Kahiki mai no ola, ua hele pu mai me kona mau kaikuaana a no ka wai ole, hoouana ia o Kaneapua, e pii i ka wai i uka o Miki, aia no ia wahi mauka o Lanai, aka, he kuko ua mau kaikuaana nei o Kaneapua, i ka aina momona o Kaneapua, oia ka aina i Kahalapiko nolaila, ua haalele ia o Kaneapua i Lanai, a ua moe i ko laila wahine, ua lilo i kupuna no kekahi poe.

Ua hana mau o Wahanui ma a no ka make pinepine, ua hoolii ia maluna o ka waa, ma Kealaikahiki ma Kahoolawe ka holo ana i Kahiki. Ua olelo ia ma ka moololo o Wahanui i holo ai i Kahiki, mai pilikia o Wahanui ma i ka moana a ua nalowale na aina,

ing, they sailed along the cliff of Kaholo, on Lāna'i, at daylight, they passed by the point of Kaunolu. Just a little to the south-east of there, is the Point of 'Āpua. That is the name of this place to the present day. There was dwelling there a man by the name of Kāne'āpua. The man called out, thus, "The canoe, whose canoe is it?" "It is for Wahanui."

"So Wahanui is the chief, who is the priest?" "It is Mo'opuaiki." "So Mo'opuaiki is the priest, who is the astronomer?" "It is Kilohi." "Where is the canoe sailing to?" "The canoe, is sailing to Kahikiki and Kahikimoe, Kahiki of the rain drops of Kāne, to tread upon the bosom of Kāne." "Your chest is that of a man, and to tread upon the bosom of Kāne, is the end of life, only death will remain. How about if I become one of them upon the canoe?"

Kilohi, the astronomer said, "The canoe is completely loaded, you cannot come." As they sailed on by, passing a certain point, a storm arose, along with a wind and water spouts. Lest the canoe be overturned, they sheltered the canoe at Kaunolu, and then landed at Kaumālapa'u.

In the story of this man, Kāne'āpua, it is said that he came here from Kahiki. He came with his elder brothers, and because there was no water, they sent him to the uplands at Miki, to get some water. It is there in the uplands of Lāna'i. But because the older brothers coveted the rich lands of Kāne'āpua, that is the land of Kahalapiko, they abandoned Kāne'āpua on Lāna'i. He mated with a woman of that place, and became an elder of some of the people there.

Wahanui folks continued trying [to sail], and frequently came close to dying, as storms came upon the canoe at Kealaikahiki, Kahoolawe, where one sails to Kahiki. It is said in the tradition of Wahanui's sailing to Kahiki, that there was much trouble

o Kaneapua ka hookele i loa a na aina o Kahiki, oia ka hookele akamai loa, ua pau na hoku o ka lani a me ka lewa...¹

1 Nupepa Kuokoa, January 5, 1867, p. 1.

2 Trans. K. Maly.

Chiefly Lineages of Lāna'i

It was after the events in which Kaululā'au participated that we see references to chiefly lineages associated with Lāna'i, and the island fell under the dominion of Maui rulers. The role and fate of Maui's chiefs in warfare with the chiefs of other islands also spilled over to Lāna'i in the centuries following Kaululā'au, and lasted through the time of Kamehameha I. In fact, a review of Lāna'i's history since the time of western Contact reveals that the island and its people have been subjected to Maui's political policies throughout modern times.

Between the time of Kaululā'au and his immediate peers until the middle 1700s, there are only a few notable references to chiefly associations on Lāna'i and several passing references—generally one or two liners—to some event in which a chief visited or was associated with Lāna'i. Samuel M. Kamakau made an interesting reference to Lāna'i in his discussion of the Hawaiian nation in 1869:

Ka Moololo o Hawaii—Hefu 108

He aupuni kahiko loa ke aupuni Hawaii ma keia pae aina, aka, he aupuni huli i mokua-hana nae o ka noho ana, a ua lehulehu wale na 'Ili Moi ma keia mau pae aina, aole i lilo ka pae aina o Hawaii i ka Moi hookahi, i kekahi elua Moi o Maui, a he alii okoa ko Lanai, a pela ko Molokai, ko Oahu, a me ko Kauai. A ma ko Kamehameha ikaika i ke kaua a na 'Ili i kokua pu iaia ma ke kaua ana, ua huihua ma ke aupuni hookahi ke aupuni Hawaii. Mai ia manawa mai a loa wale mai ia kakou i ka poe o keia wa ke kapaia o keia mau pae moku ke Aupuni Hawaii.¹

1 Nupepa Kuokoa, March 18, 1869.

2 Trans. K. Maly.

According to Fornander, a review of genealogies and traditions indicated that Lāna'i, while "independent at times," nonetheless shared a "political relation" with Maui a few generations after the cleansing of Lāna'i by Kaululā'au. This relationship was probably

that came upon them in the sea. When Kāne'āpua became the steersman, they reached the lands of Kahiki. He was foremost of the navigators, and knew all of the stars of the sky and heavens...²

The History of Hawaii

The Hawaiian kingdom is an ancient kingdom in these islands, though it was a little kingdom and divided. There were many chiefs and Kings on these islands, the Hawaiian islands were not subject to one Sovereign. Once there were two Kings for Maui, with a different chief for Lanai, and the same for Molokai, Oahu and Kauai. As a result of Kamehameha's strength in battle, and with the chiefs that helped him in battle, the kingdom was unified as one Hawaiian nation. From that time until our present time, we are people of these islands, a Hawaiian Nation.²

fortified during the reigns of Kiha-a-Pi'ilani and his son Kamalālāwalu [15:94, 207]. The research of Kamakau and Fornander make several passing references to the fact that in ca. 1500, Kiha-a-Pi'ilani⁴ was for a time forced to hide on Lāna'i, until the path was open for his taking the throne from a cruel elder brother, Lono-a-Pi'ilani. Kiha-a-Pi'ilani's reign was one of progress and peace, though nothing more is mentioned of Lāna'i [23:22,15:87, 206].

Following Kiha-a-Pi'ilani's death, Kamalālāwalu became the king of Maui, attempted to invade the island of Hawai'i, and was killed. His son Kauhi-a-Kama took the throne, and was subsequently succeeded by his son, Kauhi. It is during the later years of Kamalālāwalu's reign that we find reference to a chief of Lāna'i. Fornander [13] published an account compiled from native informants whose narratives reference a king named Kūali'i who was said to have unified the Hawaiian islands several generations before Kamehameha I. Kūali'i was imbued with godlike characteristics, and reportedly lived between ca. AD 1555 and 1730. He was a sacred chief, feared by all, and famed for his strength. In ca. 1600, Hāloalena was the king of Lāna'i, though he ruled under the authority of Kamalālāwalu and Kauhi-a-kama. Fornander [13] reported that

Haloalena, the chief of Lanai was considered a very good ruler. His great favorite pastime was the collection of the skeletons of birds. When the chief's bird tax was about due it was the usual custom of the agents to go out and proclaim the chief's wishes. [13:IV-422]

Hāloalena had the skeletons of the birds cleaned, prepared, and posed for safe keeping in one of several large storehouses on Lāna'i as his personal treasures. Kauhi, a mischievous son of Kauhi-a-Kama, destroyed all the skeletons and

This was the cause of the hostilities between the king of Lanai and the king of Maui, and the reason why the king of Lanai wanted to be independent and not be any longer under the king of Maui. At this time the chiefs of Lanai were under the control of Kamalālāwalu, king of Maui. [13:IV-424]

Kūali'i was drawn into the dispute, and settled it without bloodshed, though Hāloalena and Lāna'i remained under the Maui kingdom [13:IV-426].

It is not until the 1760s-1770s that we find references to Lāna'i, its people, and chiefs, having been drawn into the path of war between the kings of Hawai'i and Maui. This period of Lāna'i's history has a direct impact on the lands of the Ka'a region, and several prominent native and foreign historians described this time in Lāna'i's history. Samuel M. Kamakau's series on Kamehameha I—which includes background information on the chiefs in historical events predating and during the youth of Kamehameha—names several chiefs from Lāna'i:

Ka Moolelo o Kamehameha I—Helu 5 The History of Kamehameha—No. 5

I ka makahiki 1769, oia ka lawe ana o Kalan- In the year 1769, that is when Kalani'ōpu'u

⁴Kiha, son of Pi'ilani, who lived in about the fifth generation after Kaululā'au.

iopuu ia Hana a me ka puali hīkina o Maui. I ka hoi ana o Kalaniopuu i Hawaii, a mahope iho o ia manawa, hele mai la o Kamehameha Nui ka Moi o Maui, a kua ia Puna ke alii Ki-aaina Kalaniopuu i hoonohe ai no ka puali hīkina o Maui. He kua kaulana keia no na aoao elua. Ma ka aoao o Kamehameha Nui, ka Moi o Maui, ua hui pu mai na'lii o Molokai, oia hoi o Kaohele, Kaolohaka a Keawe, o Awili, o Kumukoa, o Kapooloku; o na 'lii o Lanai, oia hoi o Namakeha, o Kalimanuia, o Kelliaa a me na 'lii o Maui.¹

¹ *Nupepa Kuokaa*, December 1, 1866.

² Trans. K. Maly.

Kalani'ōpu'u failed in an attempt to take control of Maui in ca. 1778, and took the battle directly to Lāna'i. Fornander [15] reported that

Kalaniopuu ravaged the island of Lanai thoroughly, and the Lanai chiefs, unable to oppose him, retreated to a fortified place called "Hookio," inland from Maunalei. But being short of provisions, and their water supply having been cut off, the fort was taken by Kalaniopuu, and the chiefs were killed. This Lanai expedition is remembered by the name of Kamokuhi. [15:156-157]

Forty-five years after Kalani'ōpu'u's raid on Lāna'i, his granddaughter, Ke'ōpūolani, also the sacred wife of Kamehameha I and mother of his acknowledged heirs, died. She had been an early and influential convert to the Protestant mission, and her passing was documented in the *Missionary Herald*.

Keopuolani was greatly beloved by her people . . . Her native disposition was remarkably amiable and conciliatory, and her treatment of her subjects was ever humane.

We are informed by her biographer, who is a missionary at the Sandwich Island, that she was born on the island of Mowee [Maui], in the year 1773; that her father's family had governed the island of Owhee [Hawaii] for many generations; and that her mother's family belonged to the islands of Mowee, Woahoo [Oahu], Lanai [Lanai] and Morokai [Molokai]. Her grandfather was the king of Owhee when it was visited by Capt. Cook, in 1777 [1778].⁵

A Visit to Kaunolū in 1868

In 1868, Lot Kamehameha (Kamehameha V) visited his lands on the island of Lāna'i, and also visited Kaunolū where his grandfather, Kamehameha I, had resided for a time. It

⁵"Keopuolani, Queen of the Sandwich Islands Died on September 16th, 1823, while in residence at Lahaina," *Missionary Herald*, July 1825:234-235.

was reported by Walter Murray Gibson (1873) and Kenneth Emory (1924) that, while on this visit, a god-stone at Kaunolū was hidden at the King's orders, and that one of the men responsible for hiding the stone, was Keli'ihanuani, an ancestor of several families of Lāna'i in the present day. The Hawaiian newspaper *Kuokoa* published part of a series of articles describing another visit to Lāna'i, and a trip to Kaunolū made in November 1868. Importantly, we learn the names of several of the *akua lawai'a* (fishermen's gods) of Kaunolū. Altogether, seven god stones are named, six in the coastal vicinity of Kaunolū, and another on the *kula* lands above it. Among the other important sites mentioned in the account are a reference to the house site of Nāhi'ena'ena (the sacred daughter of Kamehameha I), situated on the flats below the *heiau*, and the former trail leading to the altar of Kāne'āpua. Readers are also told of some of the practices associated with worship of the *akua lawai'a*, and the nature of the spring of Pā'ao, situated on the Kaunolū Valley floor.

Naue ana e ike i ka Mokupuni o Kaulaulau.

Kaunolu.

He ahupuaa no keia o Kaunolu, hookahi kanaka i halawai pu me makou i laila o Mr. Makaena, he kamaaina ia oia wahi, nana i kuhikuhi pololei mai i na mea kaulana oia awa. Nana no hoi e malama ana i na mea kanu a ko kakou Haku Lani Kamehameha V. A wahi hoi ana, e hoi ae ana ua Imi Haku la i laila e lawaia ai, ke hiki ae iloko o Maraki, Aperila na malama kalli aku. Na mea kanu e ulu ana, ipu haole, ipu ala, kulina, uala, a pela aku. A e kukulu ia ana ka ia hale no ua Imi Haku la.

Na Akua Lawaia.

Kunihī, Hilina'i, penei kona wahi moolelo. Ina he lawaia nui au, he lawaia kamaaina nae, a he lawaia malihini kekahi, a hoi mau mai ka lawaia, alaila oia i ka la, ha...¹ ko... kua me ka'u kaohi iloko ke alo i waho ke k.; a o ka lawaia malihini me kana... i waho ke alo e hilina'i like ai, a oia no kona mea i kapala ai o Hilina'i.

Traveling About to See the Island of Kaululā'au.

Kaunolu.

Kaunolū is an ahupua'a, and we met with one man there, Mr. Maka'ena, who is a native of that place. It was he who correctly pointed out the famous places of that bay. He is the one who attends to the things cultivated for our Royal Lord, Kamehameha V. He said that the Lord will return to go fishing here in the months of March and April, the months of line fishing for aku. The things planted (for the King) are water melons, cantaloupes, corn, sweet potatoes, and such. He (Maka'ena) is also building a house for the King.

The Fishermen's Gods.

Kunihī and Hilina'i, their story is thus. If you are the main fisherman, a native fisherman, and there is also a fisherman who is a stranger here, upon returning from fishing in the day, he will turn his back along with that of the paddler to (lean upon) the god; and the visiting fisherman will do the same, turning his back and leaning upon it, that is why he is called Hilina'i (to lean upon).

O Lahe ke kolu o na akua. --- i ka'u wahine a ukiuki au, alaila, noho iho la au a hoi mai oe mai ka lawaia mai, alaila, pee ae la au me ke hiki o ka heiau me ko ike ole mai ia'u. Aia iloko o laila o kanemakua ka 4 o na akua. A nanea mai la kela i ka hele, he peku iki wale aku no ka'u a pa iki ia Lahe, oia hele no o ka lohe a na pepeiao o ka ia, o ka pau aku la no ia i ka holo, alaila, aoale loa hou kana ia ke holo hou, a hana hou ia e ke kahuna.

O Namakaokaia ka 5 o na akua. Ia akua e mohai mua ai ke kahuna, i mea e oluolu mai ai ua mau aumakua la, alaila, loa ka ia a Kalani ke'lii. A lele wale ka pule ana a ke kahuna me ka n_kaka ole o ka puua, alaila ua malkai, holo ke... i ka hiaku, wili aku la hoi ke kahuna i ke kapa eleuli, a lohe ua kahuna la e awa mai ana na kanaka a penei: "A mau ke aku a Kalani e! alaila, ho-a iki ae ke kahuna, a ma@ hou ke aku a Kalani e!! puoho loa kela, pau ka pilikia, aka hoi, ina aoale loa ke aku a ke'lii, alaila, make ke kahuna, a i ole hoo... ia ae la ka waha o kekahi kanaka i ka makau a kau i ka lele i panihakahaka no ke kahuna."

Pau kana hai ana mai i ka moolelo, ... ae la makou ma ia pali a loa ae la iluna o Kaihālulu, he heiau ia oia kahi e kaa ia ai kanaka i ka lele me he ahai maia la, alaila, alakai loa aku kela ia makou makai aku a hiki i ke kahuahale kula o Nahienena, o Kolokolo ka pali kahakai, ke kawa a Kahekili i hoiama ai ke'lii o Mano, me he la he 80 kapuai ke kiekie mai ka ...kai a luna. Hai maoli no ka a-i ke nana ae malalo.

Lahe is the third of the gods. Say if my wife had a disagreement with me, and I was upset. I may go off and sit alone, and then you come back from fishing. Then I go and hide on the side of the heiau, without you seeing me. Inside there, is Kānemakua, the 4th of gods. Now while he (the one who returned from fishing), is there relaxing, and I would go quickly go over to touch Lahe (thinking of him). Then by going there, the ears of the fish hear, and that is the end of his going, he shall not get fish again, until he goes to the kahuna.

Nāmakaokaia is the 5th of the gods. It is the first god that the kahuna makes an offering to, as a means of appeasing all the 'aumākua. Thus, the King and chiefs shall catch fish. When the priest releases the prayer, and if the pigs were not moving about, then it is good. The King can go aku fishing. The kahuna will twist about the black kapa cloth, and he will hear the people calling thus, "Many aku are caught by the King! The kahuna shall light a small fire and then the King will get more aku. They shall cry out, and the troubles are finished. But, if the King does not catch any aku, the priest would be killed, or perhaps the jaw bone of one of the priestly attendants might be made into a hook and set on the altar, in place of the priest."

When he (Maka'ena) finished telling his story, we ascended the cliff, and reached the top of Kaihālulu, it is the heiau where men were placed on the altar like a bunch of bananas. He then took us a little below there on the flats, to the house of Nāhi'ena'ena. Kolokolo is there on the sea-side cliff, as is the diving spot of Kahekili, where the King of Maui would leap, feet first into the water. It is perhaps 80 feet high, from the water's surface to the top. Looking down, it seems that one would truly break his neck.

Kuhikihī mai la kela i kahi e pu ai iluna o Kaneapua, ke ono ia o na akua lawaia, ke ku la ka makou ahu nui maluna iho o kona akua. He puni o lalo i ke kai i ka wa hohonu. Aole hiki o kamaaina ke pu, no ka mea, ua haneē ke alanui; i keia mau kupueu onioni wale ia ae no. Hoi mai auau kai a hoi mai e hoopau i ka hea-kai o ka ili.

O Paoa ka inoa oia luawai kakahe mai la o Mr. Pali mamua, a iho iho i lalo o ka luawai; e kahea mai ana na wahi kamaaina ia me ka leo puiwa penē: "Ei mai iho oe i lalo me kou kai." Eia ka he punawai eepa keia. Na ua o Mr. Makaena i hoauau mua ia Pali-opio, a na Pali-opio hoi i hoauau mai ia makou. Ina no na maloo ka mea kai o ka ili, a iho ae i lalo e _____ ai, he awaawa loa ka wai e like me ke kai maoli. Aia ka huihui a hana hou ia e ka poe akamai e kalokalo aku ai i na aumakua, alaila ono ke inu ae.

Pau ae la, kau iluna o na lio a hoi mai; ke haawi aku nei no na malihini i ke aloha nona, no kona kuhikuhī pololei i na mea hou o laila. Hiki mai la makou i ke kula, i laila o Makauwahine ka hiku o na akua, ke kaikuahine o Kaneapua, mai Kauai mai kona hele ana e ike i ke kaikunane; loa a i ka mai wahine, ku ka hale pe-a i laila, pa-u mai la no i ka puakala. A oia ka mea i ooi ole ai ka puakala oia wahi ke lei ae i a-i. I ka ike kamaka maoli ana aku nei, he like me ka pohaku a kakou e ike mau nei, pela no ke anoo kela poe pohaku, hookahi no mea nui o Kaneapua, aole no hoi ano nui, eia ka hoi he akua iho la ia. He keu no hoi ka hana naaupo o ka wa kahiko, ka hoomana i na mea a na lima o ke Akua Mana Loa Hookahi i hana ai; a ke kamau mai nei no ia hana naaupo a na kupuna o kakou i hala aku la i kekahi o na hanauna opio o kaua e noho mai nei. Aole i pau loa ia anoano ino o ke kuhihewa.²

He then showed us the place where one climbs to the top of Kāne'āpua, the sixth of the fishermen's gods. From where we stood, we could see the large altar with the god atop it. It is completely surrounded by the sea at high tide. The natives can no longer go up, for the trail has collapsed; so it is that we, these rascals, just went around it. We then went swimming and casting.

Pā'ao is the name of the waterhole there. Mr. Pali was the first to go into the waterhole; the native then called out in surprise, "Don't go in with your salty water." For this is indeed a mysterious spring. Then Mr. Maka'ena went to bathe, then Pali Junior. And after Pali Junior, we went to bathe. If the one who goes inside has dry salt water on him, and he pours the water upon himself, it will be bitter, just like pure salt water. But if the people are smart, they offer the kalokalo prayer to the 'aumākua, and the water is sweet to drink.

When we finished there, we got on the horses to continue on our way. We offered our aloha to him (Maka'ena), for his pointing out these places to us visitors. We then reached the kula lands, and there was Makuawahine, the seventh of the gods. She is the sister of Kāne'āpua, who came from Kaua'i, in search of her elder brother; she then had her period and there was built a menstrual house for her there. She wore the puakala (Argemone alba) as her skirt. That is the reason why the puakala of this place is not thorned, and why it may be worn as a neck lei. Upon seeing it, it is like any stone that we may see, and that is the nature of those stones. The biggest one is Kāne'āpua, though it is not that big, he is himself a god. It is so amazing, this foolish work of olden times, to worship the things made by hands, rather than which was made by the one all-powerful God. And there still continues some of this foolish

work of those ancestors of ours who have passed on. Being done by the young generation who live here.³

1 An underscore (.) denotes illegible text.

2 *Nupepa Kuakoa*, January 16, 1869, p. 4.

3 Trans. K. Maly.

Accounts of Kamehameha I at Kaunolū, 1873

Walter Murray Gibson, who accompanied and hosted Kamehameha V while on his visit to Lāna'i in 1868, penned several accounts of Lāna'i, documenting facts of history as conveyed to him by the late King, other chiefs, and native residents of the island. On March 21, 1873, as a part of the tradition of Puhi o Ka'ala, the newspaper, "Nu Hou," published by Gibson, included descriptions of Kaunolū, and events around the life of Kamehameha I, while residing on Lāna'i. Gibson wrote:

We commence the publication of a Hawaiian legend, or story, which was partly written in 1868, during a visit of His Majesty Kamehameha V on Lanai, and at his request ... This story is based upon this amount of fact. The land, the heiau or temple, and the spouting cave all exist as described ... The events connected with the visit and residence of Kamehameha the Great, are not only rife in the traditions of the islanders, but were vouched for in conversations with the author, by the late Governor Kekuanāoa, who was with the Conqueror in one of his expeditions to Lanai. Another historical authority was Piianaia, whose memory was rich with the legends of his native isles ...

Lanai is an island of many legends, stories and songs ... Here dwelt Kane, who crossed the seas from western isles ... His kindred, Kanekoa, Kaneloa; and those fish gods, the Neptunes of the Pacific, had their chosen seat among the bold bluffs upon the ocean beaten coast of Ululāau, the ancient name of Lanai. It was a sacred isle, and its central land, named Kealia Kapu, or Tabooed Kealia, was a Pahonua or place of refuge. Upon its soil and that of the bordering land of Kaunolu are the remains of a great temple, which once was a shelter to the fugitive vanquished warrior—to the servant fleeing from a chief's anger, and even to the victim escaping from bloody sacrifice. Its ruins are still revered by ancients of the isle. But a little while ago when the Fifth Kamehameha was there, the natives, at his command, moved and hid away its great stone fish god; and in these very days anxious fishers have been known to make their secret offerings within the temple grounds in order to propitiate the olden deities of the seas.

This temple, or Heiau of Kaunolu, is on the southwestern coast of Lanai and its ruins lie within the mouth of a deep ravine, whose extending banks run out into the sea and form a bold, bluff-bound bay. On the top of the western bank there is a stone-paved platform, called the Kuaha, or Floor of Offering. Outside of this, and separated by a narrow alley way, there runs a broad high

wall, which quite encircles the Kuaha. Other walls and structures lead down the bank, and the slope is terraced and paved down to the tide-worn stones of the ever-sounding shore.

Kāne'āpua

At the beach there is a break; a great block of the bluff has been rent away by some earth shake, and stands out like a lone tower, divided from the main by a gulf of the sea. Its high red walls beetle from their tops, upon to which neither man nor goat can climb. But you can behold on the flat summit of this islet bluff portions of ancient work, of altars and walls, and no doubt a part of the mainland temple, to which this fragment once was joined. But man can visit this lone tower's top no more, and his feet can never climb its overhanging walls.

Village about Kaunolū Described

Inland from the temple there are many remains of the hales, or huts of the people of the past. The stone foundations of their cabins, the enclosures for swine, the round earth ovens, and other traces of a throng of people, cover many acres of beach and hill-side. This was a kulanakauhale, or town, famed as an abode of gods and a refuge for those who fled for their lives; but it drew its people mainly through the fame of its fishing ground, which swarmed with kala, ohua, bonito, and the varied life of the Hawaiian seas.

Residence of Kamehameha I at Kaunolū

To this famed fishing ground came the great hero of Hawaii to tax the deep, when he had subdued this and the other isles. He came with his fleets of war canoes; with his faithful koas or fighting men, with his chiefs, and priests, and women, and their trains. He had a hale here. Upon the craggy bluff that forms the eastern bank of the bay there is a lonely pa, or wall, and stones of an ancient halepakui, or fort, overlooking the temple, town and bay. The kanaka of this day speaks of it with subdued voice, and he steps carefully around this ground as he points out to you the Lanai home of the conqueror of the eight lands and seas, Kamehameha the Great.

The stout Son of Umi came to Kealia for sport rather than for worship. Who so loved to throw the maika ball, or hurl the spear, or thrust aside the many javelins flung at his naked chest, as the chief of Kohala? He rode gladly on the crests of the surf waves. He delighted to drive his canoe alone out into the storm. He fought with the monsters of the deep, as well as with men. He captured the great mano, the shark that abounds in the bay; and he would clutch in the fearful grip of his hands the deadly puhi, the great jawed eel or

snake of these seas, the terror of fish and men, and hence his dread name of Puhikapa, the Devourer of the Seas.

When this warrior king came to Kaunolu, the islanders thronged to the shore to pay homage to the great chief, and to lay at the feet of their sovereign, as was their wont, and as they do at this day on the visit of his illustrious grandson [Kamehameha V], the products of the isle; the taro, the yam, the pala, the cocoanut, ohelo, banana and sweet potato. They piled up a mound of food before the door the king's pakui, along with a clamorous multitude of fat poi-fed dogs, and of fathom long swine.

Besides this tribute of the men, the workers of the land, the women filled the air with the sweet odors of their floral offerings. The maidens were twined from head to waist with leis or wreathes of the nauu [nā'ū], which is Lanai's own lovely jasmine—a rare gardenia, whose sweet aroma ladens the breeze, and leads you to the bush seeking it afar off. These garlands were fastened to the planted pili thatch of the king's pakui; they were placed on the necks of the young warriors, who stood around the Chief; and around his royal brows they twined an odorous crown of malle.⁶

Subsequently, Gibson revisited some of the history of Kaunolū, and added a few additional observations:

Lanai.

About five miles along the coast westward of Manele we come to the Heiau of Halulu, to the site of a residence of Kamehameha the Great, and of a once populous fishing village, in a ravine that lies between the lands of Kaunolu and Kealia Kapu. This latter land was a place of refuge ... The walls of the Heiau, the altar floor, or kuahu, and other portions of the rude structure are in a good state of preservation. The Heiau, the stone lines of the old Kamehameha residence, and of numerous ancient halepilis cover a space of a couple of acres on both sides of the ravine. Fish abound at this point, and it was a favorite fishing resort of the First Kamehameha; and we had the honor to entertain here at one time the Fifth of the Kamehamehas, who came here to gratify his native taste of sport in the sea. He also spent a few days, in a small bay, Honopu, a few miles west of Kaunolu, where there are five remarkable natural columns; one apparently over 100 feet high, and about 20 feet diameter at the base, and the others varying from 80 to 60 feet in height. There is a large rock on the brink of the sea, just round the point on the western side of this bay, where the King would sit and angle, and this has been named Pohakualii or Royal Rock, and we have named Honopu, King's Bay.

But to return to our Heiau. On its western side, is a natural gap like a gate way in a wall of rock that lines the brink of a precipice about 150 feet above the sea. The old native priest Papalua, who was our guide told us, that the

⁶Walter Murray Gibson in *Nu Hou*, March 21, 1873, p. 3.

Great Kamehameha would sometimes make men, whom he wished to punish, jump from this gap into the sea and some would be hurt or killed. But there is a native now on Lanai named Lono, who will readily make this leap of 150 feet into the tide fretted gulf.⁷

Pu'u o Miki

Pu'u o Miki is translated as "Hill of Miki," Miki meaning "the adept one." This is a feature near the project area. It was identified as Site 142 by Emory in 1924 during his archaeological inventory survey on Lāna'i [10]. The area of Miki, Emory's Site 138, formerly had residences and dry land cultivation in traditional times. It also was the site of an early plantation camp.

"He Moololo no Makalei" (A Tradition of Mākālei): Kealaikahiki at Kaunolū and noted Places of Lāna'i Named for Former Residents

The story of Mākālei—beginning in the Kekaha region of North Kona, Hawai'i—includes rich narratives describing ancient fishing customs, gods, prayers, and traditions of places. The tradition provides information on various locations around the islands of Hawai'i, Lāna'i, O'ahu, and Kaua'i, and is set around ca. AD 1200, by association with 'Olopana's reign on O'ahu. It was submitted to the native language newspaper *Ka Hoku o Hawaii* by noted Hawaiian historian J. W. H. I. Kihe in 1928. The following narratives, translated by Maly, are excerpted from the larger account, and focus on selected accounts of fishing, people, and history from Lāna'i, with reference to Kealaikahiki and other noted places on the island.

The Supernatural A'u—A'u-lele-o-ka-moana

While fishing off of the ko'a of 'Āwini, Kohala, Mākālei hooked a great fish. The fish rose to the water's surface and rested calmly, for it had pulled out three ka'au lengths of line. Mākālei then saw the great kiwi (sword) of the fish and knew that this fish was an A'u-lele-o-ka-moana (Leaping swordfish of the deep sea). Now while Mākālei had been pulling at his line, the fish had taken him to the open ocean. Hawai'i had fallen behind him, and he was now near, on the side of the channel between Moloka'i and Lāna'i. Seeing that this A'u-lele-o-ka-moana had taken him this far, Mākālei called to his ancestress—

E Hina-i-ka-malama-o-Kā'elo,	O Hina in the season of Kā'elo,
Pa'a 'ia a pa'a ka i'a a kāua!	Secure and bind this fish of ours!

By now, the sun was setting, and Mākālei was traveling outside of the point of Keka'a at Kā'anapali, and he continued to hold back the fish. Darkness covered everything and Mākālei could no longer see the land, yet the fish continued to

lead him on. Mākālei called again to his ancestress—"O Hina in the season of Kā'elo, secure and bind this fish of ours!"

During that night, Mākālei and this supernatural fish of 'Āwini encircled Lāna'i two times. In the early light of day, the fish began to tire, and Mākālei then pulled the fish close to the canoe. The size of this fish was truly unbelievable. It was almost seven anana (fathoms) long.

Aku Fisheries of Kaunolū, Lāna'i, and Ke-ala-i-Kahiti

Mākālei secured the great fish A'uleleokamoana on his line and then landed at Ka'ōhai along the shores of Ka-ulu-lā'au (Lāna'i). The shore was filled with people, and Mākālei gave the fish to the residents, who kindly welcomed him and pleasantly cared for him. Now while he was staying on Lāna'i, he was greatly esteemed by the kama'aina, and he asked them if there was a ko'a (fishing station shrine) at this place. The natives told him, "Kaunolū and Ke-ala-i-Kahiti are the famous ko'a. There are many other ko'a, but these are the foremost."

One day, Mākālei went with the people to the shore of Kaunolū and saw the ko'a; indeed the natives of this shore were fishing there. Looking upon this scene, Mākālei told the native residents which were with him, "This kind of fishing is a game for the children of my land." The kama'aina then asked, "Which land is that?" Mākālei answered—

It is Ka'elehuluhulu at Kona, Hawai'i; where the dark clouds settle upon the mountain in the rising calm, where the sun appears upon the back and sets at one's face. The land of Kona is indeed famous for its' calm and gentle seas, [the land which is] also known for the streaked ocean where the 'Eka breezes gently blow!

Mākālei then asked, "Do you have an uhi (pā hi-aku), or mother of pearl aku lure, like the type being used by those fishermen?" Mākālei then took out his lure and showed it to those people who were with him. One person then told Mākālei, "The aku lures are cared for by the fishermen themselves for it is in their knowledge to care for the lures." Mākālei then said, "If you have an 'ohe (aku line boom) for us, I can try to use my lure Kolomikimiki. It is my inheritance from my ancestress Hina-i-ka-malama-i-kā'elo."

One of the people told Mākālei, "Let us go to that canoe which is resting on the shore, it belongs to my elder brother, Ke'ōmuku who is the head fisherman of this place at Kaunolū." They then went down to speak with Ke'ōmuku, asking that he give them an 'ohe hi aku (aku line boom), which he did. Ke'ōmuku then asked, "Who is your fisherman?" And the people told him it was the young stranger. Ke'ōmuku then asked, "Do you have a lure with which to fish?" And they responded that the youth did indeed have a lure, and that was why they

⁷Walter Murray Gibson in *Nu Hou*, September 12, 1873, p. 3.

were asking for the boom. Ke'ōmuku then told them, "So you have gotten your aku fisherman after all."

They then paddled towards the place where the canoes were at rest upon the water. Mākālei then set his lure down, and he then asked his companions, "What are your names, that I may call to you to paddle as is my rule at the time of fishing. If the canoe does not move when I call out to the kāohi (paddlers who position and/or hold a canoe in place while aku fishing) to paddle, the lure will not be drawn through the water. Indeed, the fishermen lives (has luck) by the moving of the canoe." They then told Mākālei their names; Pali was the man at the front (ihu) of the canoe, Malama was the man at the mast brace (ku kia), Pālāwai was the man at the bailing seat (kā i nā liu), and the man at the inner outrigger boom (kua 'iako) was Hopu.

When Mākālei mā reached the canoe fleet, all of the fishermen were waiting for the aku to begin moving. To that time the aku had not yet appeared, and the sun was already drawing to mid-day. Mākālei then called to Pali, Malama, Pālāwai, and Hopu, "Paddle for the Mākālei, fisherman of the long day." Mākālei then called to his ancestress—

E Hina-i-ka-malama-o-Kā'elo	Hail Hina of the season of Kā'elo
Ku'u kupuna wahine o ka lā o lalo	My ancestress of the sun which is below (to the south)
E pāpale i ke aloha hōmai	Your love overshadows, reaches down
I makana na'u na Mākālei	As a gift for me, for Mākālei
Ho'āla ia mai ke kahuli	Arise o fish which upsets the canoe
Ke ka'awili, ka ho'olili, ka holopapa	The fish which twists, which causes ripples on the water's surface, and travels at the lower stratum
Ke aku i ka hale o ke ko'a	The aku which is at the house, the ko'a
o Kaunolū i ke ala i Kahiki	of Kaunolū at the path to Kahiki
I ke hālukuluku i ka māpuna	Striking at the spring,
I ka piko o Wākea	At the umbilical of Wākea
Ka 'i'a alaka'i noho i ke ko'a	The lead fish dwells at the ko'a
I ka hale o ka 'i'a	Which is the house of the fishes

When Mākālei ended his chant the aku began to strike at all sides around them. Mākālei then held securely to the lure line and pulled the quivering aku to the canoe. He then called to Pali, telling him to take up the aku and place it at the bow of the canoe. Mākālei then took up the other aku without any errors; and the aku were like snarling, raging dogs. When the canoe was filled, he called to Pālāwai to bail their canoe, and he called to Hopu, Pali, and Malama telling him, "Our canoe is filled, paddle towards the shore, to the land ko'a which is by the house where the canoe carriers await." Now when Mākālei mā finished

fishing, the aku also stopped rising to the surface and remained in the depths without rising again.

When they landed their canoe upon the shore, Mākālei took up the first caught aku from Pali at the bow of the canoe, and then told his kāohi, "Divide all the fish as you desire, giving some to those people who had carried the canoes, and to the people who dwell in the houses without fish. If there are any fish left, give them to the dogs and pigs, and do not worry about me. This one fish is all that I need."

Now this was something new to those people at this place, that Mākālei should give them all the fish, and keep only one for himself. The people were greatly surprised for there were no other fishermen at this place who had ever given so much. The people thought, "This person is no fisherman, but instead he is an 'aumakua for us."⁸

The fame of Mākālei's deeds went around the island of Lāna'i-a-Kaululā'au, from the 'okina (land divisions) of Ka'ā, Kaunolū, and Ka'ōhai on the island of Lāna'i. Because of these deeds of our alert one [Mākālei], a beautiful young girl of Lāna'i went to Mākālei with her mother to ask that he become the young girl's husband. The name of this girl was Mauna-lei, and her mother was Lāna'i-hale, and Pālāwai, who was one of Mākālei's paddlers was the father of this beauty of the land of the god Pahulu; the one for whom it is said "Eia kau wahi e Pahulu – Here is your portion Pahulu!"⁹

Mākālei then asked the maiden that she excuse him, "There have been many people which have sought to arrange a marriage, and not one of them have I agreed to." Mākālei then told Maunalei mā, "I will have no thoughts of marriage until I see the island of Kaua'i. Until this thought has been fulfilled, I cannot consider marriage." Lāna'i-hale then said, "If that is so, perhaps the two of you could dwell under a palau (betrothal agreement), until the time for marriage is right." But Mākālei explained that that could not be done, "I would not bind any woman to an agreement, for then if some fine man came along, then she would be unhappy. Therefore, I ask you to forgive me, and do not let these thoughts become unjust." Because of his just words, the people felt certain that Mākālei was indeed a chief.

Now one day while the canoe fleet was out 'aku fishing, Mākālei went with his kāohi Pālāwai, who was the father of the maiden named Maunalei. When they reached the ko'a, the aku were seen swimming, Mākālei turned and tossed out his lure and quickly secured ten fish. When Mākālei mā rested, they saw that it had been a great a'u (sword fish) which drove the aku to their canoe. Mākālei

⁸May 29, 1928.

⁹Pahulu (Nightmare) was the king of the *akua* who inhabited Lāna'i, and who were killed by the chief Kaululā'au. Pahulu was the last *akua* killed and his spirit infested a *weke* (goatfish) that is now called *weke pahulu*. Natives of Lāna'i throw the bones and head of *weke pahulu* into the cooking fire and utter this saying to ward off nightmares.

then took his line and tied one of the aku to his lure, he then threw the baited lure behind the canoe and as it fell, the a'u took the aku. The a'u ran along the water's surface thrusting it's sword all about. The canoe fleet scattered as those people on the canoes were fearful that they would be pierced by the a'u.

Mākālei held tight to the line, and A'ulele traveled out to the dark blue-green sea, to where the islands were seen to sit low upon the water, and Wai'ale'ale barely rose above the horizon. As the sun began to descend, Mākālei called to his ancestress—

E Hina-i-ka-malama-o-Kā'elo,
Pa'a 'ia a pa'a ka i'a a kāua!

Hail Hina of the season of Kā'elo,
Secure and hold tight this fish of ours!

A'ulele then dove towards—Kaua'i moku lehua pane'e lua i ke kai (Kaua'i, island of the lehua forests which appear to travel towards the sea).¹⁰

2.2 Historical Events: Transitions in Land Use and Population on Lāna'i

In the 1770s, around the time of western Contact with Hawaiians, Kalani'ōpu'u, sovereign of Hawai'i Island, attempted to take the Maui group of islands by force. Repelled from Maui, the invading force settled on Lāna'i for a time and reportedly killed many of the native residents and laid the land to waste [15; 23]. Apparently, Lāna'i's native population never recovered from this event. In 1804, the first major epidemic brought to the islands on foreign ships swept through the group. It is estimated that by 1805, from Ni'ihau to Hawai'i 150,000 Hawaiians died.¹¹ On Lāna'i the decline didn't end. One estimate of the native population on Lāna'i in ca. 1793 is 6,000 [4].¹² By 1823, Mission Station Journals estimate the population on Lāna'i to be between 2,000 and 3,000 people, and by the early 1890s the population was around 200. By 1902, the native population dropped to 80 residents, most of whom were descendants of Lāna'i's long-term native families. One can only guess how much traditional knowledge of place, practices, and traditions was lost as the population fell from 6,000 to 80 in a little more than a century.

With the exception of the periods from 1854 to 1864 and 1899 to 1901, there were no increases in the population on Lāna'i. The two periods of increase were tied to western initiatives, the first being an experiment by members of the Mormon Church to establish a station on Lāna'i between 1854 and 1864. This period led to an increase of more than 300 Hawaiians and a few foreigners, with the majority living in the *ahupua'a* of Pālāwai, and regular travel between the upland settlement and the Mānele landing. The experiment was in decline by 1858, and though there was a revival between late 1861 and 1864, the Pālāwai experiment was terminated, and the native population continued its historic decline. The second period of growth, between 1899 and 1901, occurred when the Maunalei Sugar

¹⁰ June 5, 1928. Trans. K. Maly.

¹¹ *Pacific Commercial Advertiser*, Nov. 6, 1864.

¹² Archaeological fieldwork conducted over the last decade supports this estimate, which is higher than that given by Kenneth Emory in 1924.

Company brought in some 600 non-Hawaiian laborers to operate a sugar plantation along the windward section of Pālāwai Ahupua'a.

One significant contribution to the decline in Lāna'i's ability to support the resident population was the introduction of grazing herbivores—goats, sheep, and cattle—which were raised to provide foreign vessels with a meat source. These animals, along with the Scandinavian roof rat, produced a rapid and devastating impact on the ability of Lāna'i's forest to draw moisture from the wind-borne clouds and develop groundwater resources. In addition to the introduction of herbivores, the western demand for staple crops such as potatoes, along with the demand for 'ilahi as a trade item, and the hunger for firewood to be used in processing whale blubber, led to the clearing of vast tracts of land. Just as the Hawaiians had no immunities or natural protection from introduced diseases, the native plants, animals, and ecosystems were also unprepared for the impacts of human clearing of the landscape and foraging animals that browsed and trampled everything that was visible, thus killing the land.

In light of the incredible population losses on Lāna'i, we are fortunate that any traditional knowledge of place survived. A number of historical accounts—those recorded by native residents, visitors, and in various government documents—shed light on a wide range of aspects of the history of Lāna'i's people. The historical records below provide us with glimpses into the changes on Lāna'i, with specific references to Pālāwai and Kama'o between ca. 1820 and the early 1900s. Unfortunately, it does not appear that any descriptions of the significant *heiau* at Kaupakuea near the Pālāwai-Kama'o boundary survived.

Lāna'i in 1823 William Ellis, an English missionary who worked with the early Protestant missionaries in the Hawaiian Islands, described Lāna'i, the nature of its resources, and the estimated population in the early 1820s:

RANAI, a compact island, seventeen miles in length and nine in breadth, lies north-west of Tahaurawe, and west of Lahaina, in Maui, from which it is separated by a channel, not more than nine or ten miles across. Though the centre of the island is much more elevated than Tahaurawe, it is neither so high nor broken as any of the other islands: a great part of it is barren, and the island in general suffers much from the long droughts which frequently prevail; the ravines and glens, notwithstanding, are filled with thickets of small trees, and to these many of the inhabitants of Maui repair for the purpose of cutting posts and rafters for their small houses.

The island is volcanic; the soil shallow, and by no means fertile; the shores, however, abound with shell-fish, and some species of medusae and cuttle-fish. The inhabitants are but few, probably not exceeding two thousand. Native teachers are endeavouring to instruct them in useful knowledge and religious truth, but no foreign missionary has yet laboured on this or the neighboring island of Morokai, which is separated from the northern side of Ranai, and the eastern end of Maui, by a channel, which, though narrow, is sufficiently wide for the purposes of navigation. [9:6-7]

A Protestant mission station was established in Lāhaina in 1823, and was responsible for West Maui, Lānaʻi, Molokaʻi, and Kahoʻolawe. Mission station leaders were tasked with overseeing the spiritual, educational, and health needs of island residents. In addition to the Protestant missionaries, Lānaʻi experienced a period of development as a Mormon mission station from late 1853 to early 1864. As noted above, the “experiment” brought an increase in Lānaʻi’s Hawaiian population, with Hawaiians from other islands moving to Lānaʻi, and also fostered some significant changes on the island, notably in the area of land tenure. The work of the various missionaries and their associates resulted in the creation of an important record of history on the island. Excerpts of reports, personal journals, and articles published in Hawaiian and missionary papers—documenting Lānaʻi population statistics, land use, health, and development of churches and schools—provide important records from Lānaʻi.

The islands of Lanai and Morokai have, till within a few weeks, been entirely without teachers. To the former [Lānaʻi], I last week sent a man, who is to act as superintendent of four schools, which are to embrace all the people of the island. There are a few people there, who have frequently visited Lahaina, and when here, have always been in our schools. From among this number, the superintendent is to select four assistants; and thus I hope all the people will have it in their power to learn to read and write, and to acquire, by means of our books, many of the first principles of Christianity. Of the number of pupils which will be embraced in these schools, I can form no estimate, as I have yet received no report, and the island has never been explored by any of our number ...

The communications between the two last mentioned islands and Lahaina, are frequent, and even constant. There is scarcely a day, but canoes pass and repass. Almost the only communication is by canoes, though small vessels occasionally visit Morokai. The inhabitants of those islands have very little communication with any other place except Lahaina. If therefore they are illuminated at all, they must derive their light from this station. Tawawa [Kahoolawe], too communicates with no other island except Maui, though there are few inhabitants there, and those mostly fishermen, who are not permanent residents.¹³

A Visit to Lānaʻi in July 1828 The earliest eyewitness description of travel on Lānaʻi was penned in 1828, when William Richards, in the company of Kamehameha I’s sacred daughter, Princess Nahiʻenaʻena, made a visit to the island. The journal notes were forwarded to the secretary of the American Board of Commissioners of Foreign Missions (ABCFM)¹⁴ through a communication on December 25, 1834, and the excerpts from the

¹³August 9, 1825, Letter of William Richards Describes Progress of Instruction—Four Schools Established on Lanai, *Missionary Herald*, June 1826:174–175.

¹⁴Kepā and Onaona Maly researched the American Board of Commissioners of Foreign Missions (ABCFM) collection at Harvard in 2004, and subsequently digitized it for return to Hawaiʻi. This journal, along with thousands of other records of importance to Hawaiian history, have been lost to Hawaiʻi for 177

journal cited below describe conditions on Lānaʻi at the time. It is notable that there is a discussion on the practice of people living near the shore, where there is easy access to fisheries and brackish water sources; the occurrence of an upland plantation moistened by the cloud and fog drip—the bench lands above the Pālāwai Basin; and the practice of the people to travel seasonally between the coastal region and the uplands to tend their plantations of dry land *kalo* and other crops.

As it is especially desirable that you have correct information respecting all our fields of labor, I prepare in this letter to give you some account of Lanai, the little island which lies directly opposite Lahaina & about seven miles, distant. You will perceive by the accompanying map,¹⁵ that its greatest length is about 17 ½ miles and its greatest breadth is about 12 miles. The land rises from the shore to the interior, and terminates in lofty points. The sides of the mountains are cut up by innumerable ravines or alternate ridges and hollows. But these valleys are not like the valleys on the windward side of the other islands, furnished with openings & rivelets.

There is but one permanent brook on the island, and that is so small that it is all lost in a few small talo¹⁶ ponds, and their fare does not reach the shore except in the wet seasons of the year. There is not a well of good water on the island, except such as are prepared after the manner of the Hebrews. These wells, though few on Lanai, are common at many parts of the Sandwich Islands. They are either natural or artificial pits, sometimes only a few feet in diameter, and at other times many yards. They are so prepared as that when it rains the water for a distance may flow into them. There are steps to go down into them, but they are not often very deep. In places where they are exposed¹⁷ to direct light & from the wind, they are uniformly covered and even where they are not thus exposed they are often covered, to prevent the water from drying up as soon as it would otherwise. Some of these wells are never exhausted even though they are not replenished for eight or nine months. Others which are small, depend entirely on the almost nightly rains which fall on most of the high mountains of the Sandwich Islands, though in many places these rains are little more than heavy dews.

There are many people who make no use of water for washing either themselves or their clothes, except the dew or water on the grass and some times, there is so little of this that they resort to the juice of the succulent plant which they collect. Most of these people however, have two places of residence, and only spend a part of the year on the mountain where there is also a great scarcity of water. In the sea shore, both at Lanai and throughout the islands, with few exceptions, there is a full supply of brackish water, but such as none can drink except those who are accustomed to it. I know not a single well on

years and are seen here in print for the first time.

¹⁵The map referred to by Richards was not found in files with this letter and cannot now be identified.

¹⁶Here Richards is referring to *kalo*, or taro.

¹⁷Page 1 - Reel 797:762.

the Sandwich Islands, supplied with water from the bottom, except such as are on the sea shore on a level with the sea.

Owing to the scarcity of water on Lanai, the inland is barren almost beyond conception. I have recently been quite round the island, and visited every principal village on the island except one, and during my whole tour, I saw but one good well of water; and no spring or brook, and I saw nothing growing which was suitable for food, either for man or beast, and nothing grows except sea weeds and sea grass. I should except a few cocoanut trees and two or three¹⁸ or four have trees.

Most of the people live near the shore for the purpose of taking fish in which the shores of Lanai abound, and a considerable portion of their vegetable food they receive from Lahaina, in barter for fish. There is however one inland plantation of some extent, which furnishes considerable food. It is watered by the mist or light rain which falls during the night, in sufficient quantities for the growth of potatoes and in wet seasons some upland - taro is raised. There are few people that reside at that place constantly, but considerable number who reside generally on the shore, go up & spend a month or two at a time so as to keep their land under cultivation, and then return again to the sea side where they can have abundance of fish, and water too, such as it is for there is a plenty of that which is brackish.

The numbers of inhabitants on the island, has been estimated at about 1600; but at the present time I think there are not so many though there has been no regular census of the island taken & it is impossible to make such an estimate as can be relied upon.

The island is always under the same governance as the island of Maui, but the direct care of it has for years been given to Kapeleaumoku, an elderly man, who is a member of our church, and a man of established reputation...

In a letter of mine written Oct. 15th, 1828¹⁹ I alluded to a tour around the island of Lanai, made by myself in company with the Princess, and promised a full account of it. The following is from my journal kept at that time, but which was never sent.²⁰

July 24, 1828 - Thursday.

A few missionaries located at the principal places on each of the islands exert an important influence not only over those inhabitants who receive their constant instruction, but also over all the inhabitants of the several islands. This they do, in part, through the chiefs in part, through native teachers, but principally, in consequence of the roving habits of the people which induce them often to visit the principal places by which means they are brought under the occasional sound of the gospel and for a season under the direct influence of missionary instruction.

¹⁸Page 2 - Reel 797:763.

¹⁹Page 3 - Reel 797:764.

²⁰At this point Richards inserts lengthy narratives from his personal journal of 1828, and his visit to Lānaʻi with Chiefess Nahiʻenaʻena and the near loss of Kapeleaumoku while travelling from Lāhaina to Lānaʻi.

The chiefs too are after calling the people to the places where they reside to do work for them. In the winter & spring of 1832, all the able bodied men of Maui, Molokai & Lanai were called to Lahaina, and most of them spent several weeks there. It is probable that scarcely a year passes in which most of the people are not thus called to the residence of the chiefs.²¹

The following are extracts from the Lahaina Report dated October 15, 1828. It mentions the people of Lanai assembling for prayer and instruction, as well as population and school enrollment statistics.

You are already aware that this place is the centre of missionary operations for Maui, Molokai, Lanai, and Kahoolawe. Lahaina is the only place where there is regular preaching. It is, however, by no means the only place where people assemble for religious worship on the Sabbath. There are not less than twenty places on this island, and several on Molokai and Lanai, where people assemble for prayer and instruction. The native teachers take the direction of the meetings, occupying the time in reading and teaching the various Scripture tracts and other books, and conclude with prayer. By this course the people are inspired with a reverence for the Sabbath; and though the teachers are themselves extremely ignorant, yet they are able, in this manner, to communicate some instruction, and the people are thereby kept from assembling for vicious purposes, and worse than idle conversation.

Examination of the Schools

During the summer and early part of the fall of 1828, subsequently to the arrival of the late reinforcements, owing to an increase of their numbers, the missionaries at Lahaina were enabled to make tours over Maui and the small island adjacent, for the purpose of preaching the Gospel, examining the schools, and giving the people such counsel and encouragement as their circumstances required ...

Table 1: No. of Scholars

Island	Sch'ls.	Mal.	Fem.	Writers	Readers	Total
Ranai	11	236	249	31	201	485

... A great proportion of the pupils are persons of middle age, and still they have learnt to read the Scriptures. According to the estimate we made, only one fifth of the scholars are under fourteen years of ages.

The people of every district which we visited were addressed particularly on this subject, both by ourselves and the princess [Nahienaena]. We have

²¹Wm. Richards to Rev. Rufus Anderson, Secretary of the ABCFM, Recounting Trips to Lanai in 1828 and 1834 [page 17 - Reel 797:778].

received the fullest evidence that our exertions have not been in vain. Since our return from the tour of the island, about 5,000 spelling books have been called for, principally to establish schools among children. This increases the whole number enrolled in the schools to about 18,000; viz. 15,500 to this island [Maui]; 1,000 to Molokai; and 700 to Lanai. It is not probable that, with the present population, so large a number as this can ever appear at an examination. But 18,000, we think less than the full number of those who are now enrolled in the schools under the direction of this station . . .

The population of Maui has been heretofore estimated at 20,000, that of Molokai at 3,000 or 4,000, and that of Lanai at 2,000 or 3,000, making the whole population on these three islands not more than 27,000. The present estimate represents the population as probably amounting to 37,000. Upon comparing with this the number of learners in the schools on these islands, as just given, it will be seen that almost half the whole population, of both sexes, and all ages, are in the schools; a larger portion of the people, probably, than are enjoying the advantages of instruction in any other country on the globe.²²

2.3 Land Tenure

The *Māhele 'Āina* of 1848 set the foundation for fee-simple property rights in the Hawaiian Islands. As a part of major ethnographic work conducted by Kepā and Onaona Maly for the development of the Lāna'i Culture & Heritage Center, a full history of land tenure on Lāna'i in the period between 1848 and 1960 has been conducted and made available to the public.²³

The narratives below summarize the *Māhele 'Āina* on Lāna'i, drawn from a review of all records compiled as a part of the *Māhele 'Āina* of 1848, with subsequent actions of the Land Commission and government through issuance of Royal Patents on the Awards.

2.3.1 Māhele 'Āina Statistics on Lāna'i

- A total of 110 claims which could be verified for Lāna'i were recorded. These include both chiefly and commoner/native tenant claims.
- 105 claim records were located in the volumes of the Native Register.
- 88 claim records were located in the volumes of the Native Testimony.
- 2 claim records were located in the volumes of the Foreign Register.
- 21 claim records were located in the volumes of the Foreign Testimony.
- 64 of the claims were surveyed and recorded in the Māhele Award Survey Books.
- 51 claim records were recorded in the volumes of the Royal Patent Books.

The combined claims from Lāna'i represent 331 separate documents (some overlapping in records of the Native and Foreign Books):

²²*Missionary Herald*, July 1829:208-211.

²³Lāna'i Culture & Heritage Center, <http://www.lanaichc.org/>.

- 56 claims were awarded. Of those awarded, five claimants were chiefly awardees, who received entire *ahupua'a*.
- 51 awards made to native tenants and individuals of lower chiefly lineage, totaled a little over 600 acres of the approximately 89,000 acres of land on Lāna'i.

2.3.2 Place Names Referenced in Claims by Applicants

A total of 86 place names is in the records provided to the Land Commissioners. The names from Kaunolu and Kalulu are cited in table 2.

Table 2: Place names recorded during the *Māhele*

Names of Places and 'Ili	Ahupua'a	Names of Places and 'Ili	Ahupua'a
Ahua	Kaunolu	Ahupau	Kalulu
Haupu	Kaunolu	Ailau	Kalulu
Kaapela	Kaunolu	Elialii	Kalulu
Kuapohaku	Kaunolu	Jomo	Kalulu
Lelehaka	Kaunolu	Kahawainui	Kalulu
Makapeapea	Kaunolu	Kamoku	Kalulu
Miki	Kaunolu	Kanatu	Kalulu
Miloonohi	Kaunolu	Kapano kai	Kalulu
Moanauli (Moenauli)	Kaunolu	Kapano uka	Kalulu
Namakaokahal	Kaunolu	Kapano	Kalulu
Neua (Newa)	Kaunolu	Kcawalki	Kalulu
Nihokele (Nihokela)	Kaunolu	Kiholena	Kalulu
Pakihl	Kaunolu	Kukuihapuu	Kalulu
Paoole	Kaunolu	Pueo	Kalulu
Punanana	Kaunolu		

2.3.3 Disposition of Ahupua'a and Konohiki Claims on Lāna'i

As a part of the *Māhele*, the King and Chiefs were required to file their claims for personal lands, determine how to pay for their lands—usually by giving up certain lands, in lieu of cash payment—and to claim the *kapu* fish and wood of their land. The latter items were the *konohiki* rights to resources with which the *konohiki* would sustain themselves and generate revenues for their support. In eliciting claims and documentation of rights, the chiefs began submitting letters for the record to the Minister of the Interior.

There were only limited letters submitted for Lāna'i. Of particular interest is a letter dated August 26, 1852 from Noa Pali to Keoni Ana, Minister of the Interior, documenting the *kapu* or *konohiki* fish and trees for 11 of Lāna'i's 13 *ahupua'a* (table 3).

2.3.4 Buke Māhele (Land Division Book), 1848

In preparation for the final division of lands between the king, *konohiki*, and government, a *Buke Māhele* was kept as a log of the agreed upon division. This book is the basis of

Table 3: Forbidden fish of the *konohiki* and the prohibited woods

Konohiki	Land	Fish	Wood
Mataio Kekuanaoa	Kaa	Uhu	Koko
Mataio Kekuanaoa	Kaohai	Hee	Naio
Nahaolelua	Maunalei	Hee	Kukui
Kanaina	Mahana	Hee	Ahakea
Kanaina	Paomai	Hee	Aiea
Haalelea	Palawai	Anae	Ahakea
Kaao	Kealia [Kapu]	Uhu	—
Kaahou	Kamao	Hee	Koko
Ii	Kalulu	Hee	Ahakea
Pali	Kamoku	Uhu	Koko
Pali	Kealia [Aupuni]	Uhu	Koko

Your Highness, this is for you to decide in your office.*

*Hawaii State Archives, Interior Department Lands.

the Crown and Government land inventory now known as the Ceded Lands. There are 13 *ahupua'a* on Lāna'i. Disposition of 10 *ahupua'a* was recorded in the *Buke Māhele* (1848) and before the Land Commissioners. Three *ahupua'a* were apparently dropped through an oversight on the part of the king, Commissioners, and staff. Titles confirmed at the close of the Land Commission are presented in table 4.

The following is a translation of a Land Commission document from the Native Register. It is from the claimants on Lāna'i and describes the land to which they stake claim. Reproductions of the original document are included as figures 3 and 4.

Aloha to you Commissioners who Quiet Land Claims of the Hawaiian Kingdom. We hereby petition to enter our claims on the Island of Lanai.

Here are our claims — moo (planting parcel) lands; kula (open plains and planting) lands; the mountains; the wood, woods to be taken under the Konohiki; fishes, fishes to be taken under the Konohiki; the length is from the moana (open ocean) to the fishery of Kaholo; from one fishery to the other fishery. We are the people in the Ahupuaa of Palawai, Pawili, Kaunolu, Kalulu, Maunalei and Mahana. Here are our names:

Helu	Name	Helu	Name	Helu	Name
10024	Lono	10042	Nakalo	10025	Kaneakua
10043	Paele	10026	Papalua	10044	Kapahoa
10027	Nalimu	10045	Haalu	10028	Oawa
10046	Nalei	10029	Apolo (See O)	10047	Pauahi
10030	Napuulu	10048	Haole	10031	Palaaui
10049	Moo	10032	Pakele (See O)	10050	Wailaia
10033	Kaia	10051	Kalamau	10034	Nakuala
10052	Kuakaa	10035	Naehulua	10053	Kapuhi
10036	Paoao	10054	Elikai	10037	Pamioa
10055	Kunea	10038	Kaiolo	10056	Keaka
10039	Puupai	10057	Ohoe	10040	Pohano
10058	Kaunele (See O)	10041	Kanekeleia		

That is the end.²⁴

2.3.5 Ali'i and Native Tenant Claims from Kaunolu and Kalulu Ahupua'a

²⁴ Helu 10041 (Recorded with Helu 10024), Kanekeleia (and Lono et al.), Palawai, Native Register 6:510-511, Lanai, February 12, 1848, translated by Maly.

Table 4: Disposition of *ahupua'a*

Ahupua'a	Claimant	Disposition	Buke Māhele (1848)
Kaa	Victoria Kamamalu	Awarded	Page 4, Jan. 27, 1848
Kalulu	Daniela Ii	Crown	Testimony of M. Kekauonohi, Dec. 1847
Kamao	Kahanaumakali	Government	Page 47, Jan. 31, 1848
Kamoku	No record	Crown	Record of Boundary Commission (1877)
Kaohai	M. Kekuaia (M. Kekuanaoa)	Awarded	Page 14, Jan. 27, 1848
Kaunolu	Kelliahonui	Government	Page 130, Feb. 9, 1848; Page 209, Mar. 8, 1848
Kealia Aupuni	Kahanaumakali	Government	Page 47, Jan. 31, 1848; Page 209, Mar. 8, 1848
Kealia Kapu	Iosua Kaao	Awarded	Page 34, Jan. 28, 1848
Mahana	Wm. C. Lunaliio	Government	Page 22, Jan. 28, 1848
Maunalei	Pane (Fanny Young)	Awarded	Page 161, Feb. 12, 1848
Palawai	M. Kekauonohi	Awarded	Page 26, Jan. 28, 1848
Paomai	No record	Crown	Testimony of C. Kanaina, Dec. 1847
Pawili	Wm. C. Lunaliio	Government	Page 21, Jan. 28, 1848; Page 207, Mar. 8, 1848
'Ili of Kaumalapau 1 & 2	Oleloa (wahine)	Government	Page 105, Feb. 7, 1848; Page 209, Mar. 8, 1848

	10 026	Spino	10037	Pamisa
	10 025	Bonacalica	10038	Garisle
	10 026	Papalia	10039	Pomfina
	10 027	Alconu	10040	Pedano
	10 028	Ovon	10041	Bonacalica
See O	10 029	Ahol	10042	Akalo
	10 030	Hapmulo	10043	Pale
	10 031	Palaau	10044	Rapahoa
See O	10 032	Pakile	10045	Bradu
	10 033	Varu	10046	Kali
	10 034	Kakula	10047	Puahi
	10 035	Kakulua	10048	Kalo
	10 036	Pavau	10049	Moo

41

42

There are no specific records documenting the *kapu* fish and wood for Kaunolū. Traditional accounts celebrate the *kawakawa* (bonito) fisheries of Kāhōlo, along with documentation of a wide range of other fishes known in the region. Kingdom Law of 1846, listed a *kapu* on the *kawakawa* fisheries of Lānaʻi.

The following is a report of M. Kekauonohi to Iolani Hale, dated December 15, 1847. It shows that Kaunolū was one of her lands.

Eia ka'u mau aina o Kamehameha I i ike ai mai Hawai'i a Kauai. Here are my Lands from Kamehameha I, known from Hawai'i to Kauai:

*** Kalulu, Lanai Kaunolu, " Kaohai, "	*** Kalulu, Lanai Kaunolu, " Kaohai, "
---	---

Oia ko'u i lohe, a i ike no ke Lii. That is what I have heard and known from the King.

Owau no ke ka mahalo, I am yours with appreciation,
M. Kekauonohi¹ M. Kekauonohi²

¹ Hawaii State Archives, Interior Department Lands.

² Trans. K. Maly.

Below is another report, from C. Kanaina to the Minister of the Interior, dated December 1847, where Kanaina lists the lands of the king.

Na Aina Pono i ka Moi a'u i ike ai, a i The King's own lands that I have seen
lohe ai ma keia Pae Aina: and heard of in these Islands.

... Helu 4 Mokupuni o Lanai ... Number 4 Island of Lanai

Kaunolu Kaohai Kalulu Paomai ... ¹	Kaunolu Kaohai Kalulu Paomai ... ²
--	--

¹ Hawaii State Archives, Interior Department Lands.

² Trans. K. Maly.

Kalulu is translated literally as "the shelter," and contains 6,078 acres. Kalulu is one of three unique *ahupua'a* divisions on Lānaʻi. On the *Kona* side of the island, Kalulu is bounded by Kamoku on the north. It then runs across the island, passing the western banks of Pālāwai Basin, up the mountain, and then continues to the *Koʻolau* coast, bounding Maunalei on the north. Along its southern boundary, in both the *Kona* and *Koʻolau* regions, Kalulu is bounded by Kaunolū Ahupua'a. The *Kona* and *Koʻolau* coasts of Kalulu take in two significant fisheries—one being a part of the deep sea fisheries of Kāhōlo (shared with Kaunolū), and the other being the nearshore reef-lined fisheries of the windward coast. In the Pālāwai Basin and mountain lands were extensive agricultural fields, ranging from open *kula* lands noted for sweet potato plantings, to forest-sheltered

dryland field systems. The forest resources included stands of *koa* and other native woods, and small valleys and gulches where water sources were found. Daniel I'i claimed Kalulu as his personal property during the *Māhele*, but relinquished it to the king, who retained it as a Crown Land. He'e was the *kapu* fish, and 'ahakea was the *kapu* wood.

Table 5 lists Land Commission Awards of native tenants who filed claims for *kuleana* (fee-simple property rights) in 1847-1855 to land in Kaunolū and Kalulu. The claims reveal some of the activities that occurred in the lands of Kaunolū and Kalulu. Registered Map 2227 (fig. 5) shows the claims in Kaunolū and Kalulu.

Table 5: Native tenants of Kaunolū and Kalulu Ahupua'a

LCA Helu	Claimant	'Ii, Ahupua'a	Claims
520	Daniela II	Kalulu	Ahupua'a; relinquished
3719B	Kalahoa	Kalulu	—
6814	Pakele	Haupt & Kuapohaku, Kaunolu	1 uala patch, and 2 moku mauu ¹
6815	Kaiwi	Ahua, Paooole, Kaunolu	1 moku mauu, 2 houses, 3 mala uala, ¹ 1 ipu field, 1 ko patch
6816	Naholowaa	Namakaokahai & Ahua, Kaunolu	8 mala uala
6817	Kawalhoa	Paooole, Kaunolu	1 moo uala ⁴ and 1 moo mahakea ⁵
6818	Haole	Kaunolu	1 mala uala and 1 moku mauu
6819	Kamakahi	Punanana, Kaunolu	2 moo uala, 1 mala ko, ¹ 1 moku mauu
6820	Kanohookahi	Nihokela, Kaunolu	1 house lot and 1 moku mauu
6821	Kuheleloa	Makapeapea, Kaunolu	1 moo uala, 1 moku mauu, and 1 house lot
6822	Kahukilani	Miki, Kaunolu	1 house lot and 1 mala uala
6823	Muhee	Kaunolu	1 kihapai of sweet potato and banana
6823B	Wahahee	Kaunolu	—
6824	Napuulu	Ahua, Kaunolu	1 pauku planted with ipu and uala, 2 moo planted in ipu and uala, and 1 house lot
6825	Kalantwahine	Miki, Kaunolu	1 house lot and kula
6826	Kalawala	Iamo, Kalulu	—
6827	Laupahulu (Palaaui)	Kahawalnui, Kalulu	3 moku mauu
6828	Keamo	Kaholena, Kalulu	1 kihapai of uala, ipu, wauke, and a house
6829	Maawe	Kanalu & Kapano, Kalulu	Some mala uala and mala, 1 house lot
6831	Olo	Kapanokai, Kalulu	1 moku mauu
6832	Kele	Ailau, Kalulu	—
6833	Kaalai	Ahupau & Ellalii, Kalulu; Kamoku	2 moku mauu, 1 house lot

⁴Grass land/pasture sections.

⁵Sweet potato patch.

¹Dryland sweet potato patch.

²Fallow parcel.

³Sugarcane patch.

Continued on next page

Continued from previous page

LCA Helu	Claimant	'Ili, Ahupua'a	Claims
6834	Kaukapala	Kalulu	
6835	Kalawaia	Kaholo, Kalulu	
6836	Muhee (Wahahee)	Kaholo, Kalulu	
6837	Malulu	Pakahi and Kaupu and Lele-haka, Kaunolu	1 house lot, 2 moku mauu
6839	Kalehuamakanoe	Kaunolu	—
6846	Malulu	Pakahi, Kaunolu	—
6891	Kauwe	Kalulu	
8556	Kauuwaaina	Kapano uka & Pueo, Kalulu	1 moku mauu
10030	Napuulu	Kaunolu	—
10031	Palaa	Kalulu	—
10032	Pakele	Kaunolu	—
10033	Kele	Kalulu	—
10037	Pardoa	Kaa, Kaunolu	—

2.3.6 Palapala Sila Nui, 1855-1867: Royal Patent Grant Lands on Lāna'i

At the same time the *Māhele 'Āina* was being undertaken, it was realized that many native tenants were not receiving lands claimed, or in the case of environmentally stressed areas, they were not able to claim adequate land areas to support their families. As a result, the king signed into law an act giving applicants the right to apply for larger tracts of land from the inventory of government lands set aside for the support of government operations. All Royal Patent Grants issued on Lāna'i are listed in table 6.

Table 6: Royal Patent Grants on Lāna'i

Grant No.	Grantee	Location	Acreage	Book	Year
1928	Koiku	Pawili	34.93	10	1855
1929	Kekua	Pawili	18.57	10	1855
1930	Nalimakaua	Pawili	31.96	10	1855
1931	Makaiholoae	Pawili	18.30	10	1855
2214	Lonopaawela	Pawili	1.64	12	1857
2903	Puupai	Pawili and Kealia	52.00	14	1863
2971	Kapahoa	Aupuni	33.00	14	1864
3029	Nahuina and Kelihue	Kalulu	236.68	14	1866
3030	Kapeleaumoku	Pawili	32.00	14	1866
3031	Kaaina	Kealia Aupuni	99.07	14	1866
3032	Pali	Kaunolu	29.00	14	1866
3033	Keamo	Kaunolu	20.85	14	1866
3045	Wm. Beder	Kaunolu	128.00	14	1867



Figure 5: Registered Map 2227. F. E. Harvey, Surveyor, December 1903. Note the Land Commission Awards in Kaunolu and Kamoku Ahupua'a.

2.3.7 Boundary Commission Surveys and Testimonies

Following the *Māhele* 'Āina, there was a growing movement to fence off land areas and control access to resources which native tenants had traditionally been allowed to use. By the 1860s, foreign land owners and business interests petitioned the Crown to have the boundaries of their respective lands—which were the foundation of plantation and ranching interests—settled. In 1862, the king appointed a Commission of Boundaries, a.k.a. the Boundary Commission, whose task was to collect traditional knowledge of place, pertaining to land boundaries and customary practices, and determine the most equitable boundaries of each *ahupua'a* that had been awarded to *ali'i*, *konohiki*, and foreigners during the *Māhele*. The commission proceedings were conducted under the courts and as formal actions under the law. As the commissioners on the various islands undertook their work, the kingdom hired or contracted surveyors to begin the surveys, and in 1874, the Commissioners of Boundaries were authorized to certify the boundaries for lands brought before them.²⁵

Primary records in this collection from Lāna'i were recorded from 1876 to 1891. The records include testimonies of elder *kama'āina* who were either recipients of *kuleana* in the *Māhele*, holders of Royal Patent Land Grants on the island, or who were the direct descendants of the original fee-simple title holders, as recorded by the surveyors/commissioners. The resulting documentation covers descriptions of the land, extending from ocean fisheries to the mountain peaks, and also describes traditional practices; land use; changes in the landscape witnessed over the informants' lifetime; and various cultural features across the land.

The native witnesses usually spoke in Hawaiian, and in some instances, their testimony was translated into English and transcribed as the proceedings occurred. Other testimonies from Lāna'i have remained in Hawaiian, untranslated, until development of a manuscript for the Lāna'i Culture & Heritage Center.²⁶ Translations of the Hawaiian-language texts below were prepared by Kepā Maly. The descriptions and certificates of boundaries for the *ahupua'a* of Lāna'i are from the notes of W. D. Alexander, who worked for the Boundary Commission. The notes, dated 1875–76, give boundary information collected from *kama'āina*. The following are excerpts from Alexander's notes.

At Halepalaoa March 28th, '76.

Hoa, an old Kamaaina states that the boundary between Kaohai and Paawili begins at the inlet of the sea a little south of the Church, & thence follows the bottom of the kahawai to the top of the mountain.

Kaumalapau & Kalama are both Ilis of Kamoku. Three lands run across from sea to sea, viz., Palawai, Kalulu, & Kaunolu...

April 3rd. 76. Monday.

Kelihue widow of Nahuina, was born on Kalulu, & testifies that the boundary between Kalulu and Kamoku comes down from a hill known as Puunene

²⁵W. D. Alexander in *Thrum's Hawaiian Annual*, 1891:117–118.

²⁶See <http://www.lanaichc.org>.

down the North bank of the Kapano valley to the Govt. road, passing near Kawaonahale's house, keeping straight on across a side ravine coming in from the north, called Keaakū, to the top of the north wall of the Palawai crater at a place called Pulehulua, near Keliūhananui's house.

Kalulu & Kaunolu

The boundary between Kalulu & Kaunolu begins at a small hill north of the heiau of Maiaele near the shore, & passes a little south of the sheep pen at Puu Ulaula, at some rocks in the path.

The boundary between Kaunolu & Kealia Kapu, begins at the sea at a Kapu rock south of the great heiau, & follows up the centre of the Kaunolu gulch.

Names of villages on the shore of Kealia Kapu were Kapalaoa, Mamaki, Kuahulua nui & Kuahulua iki.²⁷

Kealia Kapu & Kaunolu

... between Kaunolu & Kealia Kapu.

The branches of the deep ravine above mentioned are Waiakeakua nui, Waiakeakua iki & Waiakaahu towards the S.E. The boundary between Kaunolu & Kealia Kapu comes down a more northerly branch which meets the deep ravine above mentioned some distance to the west. It then follows down the main Kaunolu gulch which is formed by their junction x that of a third ravine from the N.E., and at the foot of the terrace where it enters the crater is called the Kauhee gulch. A large rock is shown just below the Govt. road, where Makalena set his compass. From this rock Pohakulua, the line runs straight across the crater to a point a little N, of a white house, belonging to Ohua. Thence to head of the gulch which reaches the sea near the heiau.²⁸

Below is a letter from M. D. Monsarrat, a surveyor, to W. D. Alexander dated 1877. There is some description of Monsarrat's process, as well as the areas of Lāna'i which he has already surveyed. He mentioned he has surveyed Kaunolu.

Palawai, Lanai

Since writing my last letter I have found an old Kamaaina by the name of Pali who has been absent for some time. He gives his age at ninety nine and is pretty helpless as I had to lift him off and on his horse. I could not get him to come for less than two dollars a day but I think that he is worth it as he seems to be very honest. He puts Kamoku boundary the same as Kelihue and not wrongly as Papalua did.

I have surveyed Kaunolu boundary on this side of the mountain, also both sides of Palawai from the top of the mountain to the South wall of Palawai

²⁷W. D. Alexander, LANAI (Memo.), 1875–76, Register Book No. 153, p. 14–24. Pages 1–13 in this book contain memos and maps of land holdings at Nu'uanu, O'ahu. Lāna'i notes begin at page 14. Alexander also uses macron accents on certain place and people names as indicated in the citations here.

²⁸*Ibid.*, p. 27.

crater from there to the sea. I will leave until I return from the other side of the mountain, where I intend starting early Monday morning. Don't you think that I had better survey the boundary between the government land of Kamao and Kaohai which is very short and will survey with Paawili on the upper side of the island to Palawai form a survey of Kaohai. I have started to carry a set of triangles around from Puu Manu to Halepalaoa and find that it can be done with little effort and few triangles. When I was in Lahaina Mr. Gibson spoke of having me stop here and complete the survey of the island as he is very anxious for a map.

It is beginning to get very dry here and water scarce. Potatoes are also very scarce and expensive. Pai ai are a dollar apiece in Lahaina now having jumped from seventy five cents since I came over...

As soon as I finish Kaunolu I will send you the notes of survey as the minister of interior is very anxious to get them. Mr. Gibson is going to start his men shearing at Palawai in a few day[s]. Hoping to hear from you soon. I remain yours.²⁹

The following Boundary Commission document gives testimonies of the surveyor Monsarrat, as well as the *kama'aina* Pali on the boundaries of lands on Lāna'i. Pali states that Kaunolu is a government land and Kalulu is a Crown land.

Hooponopono Palena Aina a ke Komisina

Ma ka la 14 o Julai, A.D. 1877, ua waiho mai o Prof. W.D. Alexander he palapala noi i ke Komisina Palena Aina o Maui, no ka hooponopono ana i na palena o kahi mau aina i pau i ka Anaia o ka Mokupuni o Lanai. Oia hoi o "Palawai" no W.M. Gibson Esq. "Kaohai" no Ka Mea Kiekie R. Keelikolani; "Kalulu," "Kamoku," he mau Aina Lei Alii; "Kamao," "Kealia," "Pawili," & "Kaunolu," he mau Aina Aupuni.

Ma ka la 17 o Sepatemaba, A.D. 1877, ua noho ka Aha a ke Komisina e hoolohe no ke noi maluna'e. O M.D. Monsarrat (Hope Ana Aina Aupuni) ka mea i hiki mai ma ka aoao o ka mea noi. A no ka mea hoi nana no i Ana ia mau aina apau. A ua hoomana pu ia mai no hoi oia e Jno. O. Dominis e lawelawe

Decision of Boundaries by the Commission

On the 14th day of June, A.D. 1877, Prof. W.D. Alexander, set before the Boundary Commissioner of Maui, an application to Certify the boundaries of several lands which have all been surveyed on the island of Lanai. They being, "Palawai" of W.M. Gibson Esq. "Kaohai" of Her Highness R. Keelikolani; "Kalulu" and "Kamoku," Crown Lands; "Kamao," "Kealia," "Pawili," & "Kaunolu," Government Lands.

On the 17th day of September, A.D. 1877, the Commission convened to hear the above applications. M.D. Monsarrat (Assistant Government Surveyor) was present on behalf of the applicant. Also as the one who Surveyed all of the lands. Jno. O. Dominis was authorized to bring the mat-

²⁹M. D. Monsarrat (Surveyor) to W. D. Alexander (Surveyor General), June 2, 1877, Hawai'i State Archives, DAGS 6 Box 1 - Survey.

imua o ke Komisina ma na mea e pili ana i na Aina Lei Alii ma Lanai.

Hoohikia a olelo mai:

Na'u no i Ana keia mau aina a pau; ua hele pu au me na kamaaina ma na palena apau o keia mau Aina. A ua lokahi lakou apau, ua pono, a ua pololei ka'u ana ana. O Rev. N. Pali ko'u alakai nui nana i kuhikuhi, a ua make iho nei kekahi. No ka hiki ole ana mai o Pali i keia la, ua hoopono ka Aha a hiki mai oia noho hou.

Ma ka la 30 o Sepatemaba 1877, ua hiki mai o Pali, a ua noho hou ka Aha. Hoohikia o Pali a olelo mai:

O Pali au, he kamaaina au no Lanai, na ko'u mau makua i kuhikuhi mai ia'u. A no ko'u noho konohiki ana hoi malalo o Kaulikeaouli maopopo loa ia'u na palena. Noho Konohiki au no "Kalulu," "Kamoku." He mau aina Aupuni o Kamao, Kealia, Pawili, ame Kaunolu. Maopopo loa ia'u.¹

¹ Palawai Ahupuaa, Island of Lanai, Boundary Commission Volume No. 1, p. 108-110, No. 34, Keena Kiaaina o Maui, Lahaina, September 17, 1877.

² Trans. K. Maly.

The following is from the Boundary Commission. It certifies the boundaries determined through the survey of Monsarrat.

Olelo Hooholo

Ke hooholo nei au. O na palena o na aina apau ma Lanai i anaia e M.D. Monsarrat, oia hoi o "Palawai" no W.M. Gibson, "Kaohai" no Ka Mea Kiekie R. Keelikolani, "Kalulu" a me "Kamoku" he mau aina Lei Alii ame "Kamao," "Kealia," "Pawili" & "Kaunolu" he mau aina Aupuni, e like me na ana pakahi i hoikeia maloko nei, ua pono a ua pololei.

Kakauia ma Lahaina i keia la 30 o Sept. 1877.

ter forward to the Commission by those adjoining the Crown Lands on Lanai.

Sworn and stated:

I surveyed all these lands; I went along all the boundaries of these lands with natives. They were all in agreement, My surveys are correct and true. Rev. N. Pali was my primary guide, he pointed out things, others have since passed away.

Because Pali did not arrive this day, the Commission moved Await his arrival before reconvening.

On the 30th day of September, 1877, Pali arrived, and The Commission reconvened. Pali Sworn and stated:

I am Pali. I am a native of Lanai, my parents pointed them (the boundaries) out to me. And as a result of my having been Land overseer under Kaulikeaouli, the boundaries are known to me. I was the Konohiki of "Kalulu" and "Kamoku." Kamao, Kealia, Pawili, and Kaunolu are Government lands. I know them well.²

Decision

I hereby move. The boundaries of all the lands on Lanai, surveyed by M.D. Monsarrat, they being, "Palawai" of W.M. Gibson, "Kaohai" of Her Highness, R. Keelikolani, "Kalulu" and "Kamoku" Crown Lands, and "Kamao," "Kealia" [Aupuni], "Pawili" & "Kaunolu," being Government lands, as uniformly surveyed and given within, are right and correct.

Signed at Lahaina, this 30th day of Sept. 1877.

Komisina P. A. Apana Elua, ko H. P. A.¹ Commissioner L. B.,² Second District, of the H. I.³

1 Boundary Commission Volume No. 1, Palawai Ahupua'a, Island of Lanai, p. 113.

2 Commissioner of Land Boundaries.

3 Trans. K. Maly.

These are the metes and bounds of Kaunolū Ahupua'a from the survey of Monsarrat for the Boundary Commission:

Commencing at a pile of stones over a cross cut in a large stone (the same being the point of Commencement of Kalulu Survey) at the edge of precipice a few feet from the sea. The boundary runs:

1. N 87° 20' E true 2551 feet along Kalulu to a pile of stones on side Hill. Thence:
2. N 76° 00' E true 3206 feet along Kalulu to a rock marked with a cross.
3. N 54° 17' E true 6694.5 feet along Kalulu passing between Maakuia's house & his sheep pen to a point 14 feet East of a rock with a cross cut in it.
4. N 56° 15' E true 7944.6 feet along Kalulu to a pile of stones on South edge of Palawai Crater.
5. N 53° 14' E true 13359 feet along Kalulu across crater passing West of school house to a point on terrace marked with Mamane post.
6. N 44° 00' E true 3935 feet along Kalulu across terrace and to a red wood post on the top of a hill called Puu Alii.
7. N 52° 7' E true 9290 feet along Kalulu across Maunalei and Kalulu valleys to a red wood post on East edge of latter gulch. Thence:
8. N 20° 1' E true 9729.5 feet Along Kalulu down the East edge of Kalulu valley to a rock on edge of valley marked with a cross.
9. N 36° 4' E true 5878.5 feet along Kalulu to a red wood post on sea shore. Thence:
10. S 44° 7' W true 5581 feet along shore.
11. S 48° 1' W true 1510 feet along shore to a red wood post. Thence:
12. S 37° 9' W true 10808 feet along Palawai up ridge to a red wood post on the top of a red hill.
13. S 48° 12' W true 6071 feet along Palawai up ridge and across a small gulch and up another ridge to a red wood post. Thence:
14. S 30° 33' W true 1564 feet along Palawai up a path that follows up ridge to a red wood post. Thence:
15. S 1° 30' W true 4425 feet along Palawai across the large valley of Palawai to highest point of the Island. Thence:
16. N 38° 35' W true 3565 feet along Paawili & Kealia Aupuni.
17. N 72° 00' W true 1025 feet along Kealiakapu. Thence:
18. S 32° 10' W true 1660 feet along Kealiakapu down ridge to a point marked by two Triangular pits and bottle at the edge of a gulch.
19. Thence down the bottom of this gulch and up the main gulch to a point on South bank marked by two Tri. pits and buried bottle; which point bears S 61° 45' W true 3482 feet from last point.³⁰
20. Thence down the bottom of the main gulch to a point on East bank marked by two Tri. pits & bottle which bears from last point S 36° 21' W true 930 feet.
21. Thence still down the bottom of the gulch to a point on East bank marked by two Tri. pits and bottle which bears from last mentioned point S 18° 7' E true 538 feet.
22. Thence still down the bottom of the gulch (which where it enters the crater is called the Kauhe) to a large rock at mouth on lower side of the road marked with a cross, and called "Pohakuloa;" which rock bears S 46° 20' W true 2450 feet from last mentioned point.
23. S 44° 8' W true 13375 feet along Kealiakapu across the crater to a point marked by two Tri. pits a little S.E. of a white house belonging to Ohua.
24. S 62° 24' W true 5889 feet along Kealiakapu to a point marked by two Tri. pits and a post near an old house site.
25. S 42° 27' W true 1698 feet along Kealiakapu to a point marked by two Tri. pits.
26. S 48° 30' W true 1275 feet along Kealiakapu to a point marked by two Tri. pits.
27. S 32° 55' W true 3125 feet along Kealiakapu to rock marked with a cross.
28. S 18° 11' W true 1637 feet along Kealiakapu to rock marked thus -- in a clump of rocks.
29. S 25° 00' W true 2280 feet along Kealiakapu to a rock marked with a cross at the Commencement of a small gulch.
30. Thence down the bottom of said gulch and large gulch (that reaches the sea near the Helau) to a point marked by a cross on the S.E. side of the gulch at a bend in it which point bears from last point S 27° 23' W true 3663 feet.
31. Thence down the bottom of the gulch passing to the N.W. of a well in the gulch (which well belongs to Kealiakapu) to a large rock marked with a cross and from thence to the sea at a point on the shore at the middle of the harbor; which point bears from the rock on the side of the gulch at the bend S 33° 57' W true 1343 feet.
32. Thence following the sea shore to point of Commencement. The traverse along the shore being as follows:
 1. N 56° 7' W true 150 feet.
 2. N 27° 54' W true 4387 feet.
 3. N 39° 14' W true 4234 feet.

³⁰Page 119.

4. N 31° 35' W true 1640 feet.
5. N 18° 23' W true 3142 feet to point of Commencement.

Surveyed by M.D. Monsarrat, Assistant
Hawaiian Government Survey.

Lanai, June 1877.

Hanala a hooholoia e a'u ma Lahaina i ka la 29 & 17 o Sept. A.D. 1877.

Komisina P. A. o Maui, 2nd Jud. Circuit.³¹

The following are the metes and bounds of the Crown Land of Kalulu, as surveyed by M. D. Monsarrat in 1877.

Commencing at a pile of stones over a cross cut in a stone (the same being the point of commencement of Kaunolu Survey) at the edge of precipice a few feet from sea. The boundary runs:

1. N 87° 20' E true 2557 feet along Kaunolu to a pile of stones on side hill. Thence
2. N 76° 00' E true 3206 feet along Kaunolu to a rock marked with a cross. Thence
3. N 54° 17' E true 6694.5 feet along Kaunolu passing between Maakuia's house and his sheep pen to a point 14 feet East of a rock with a cross cut on it.
4. N 56° 15' E 7944.6 feet along Kaunolu to pile of stones on South edge of Palawai Crater. Thence
5. N 53° 14' E true 13359 feet along Kaunolu across Crater passing West of school house to a point on terrace marked by a Mamane post. Thence
6. N 44° 00' E true 3935 feet along Kaunolu across terrace to a red wood post on the top of a hill called Puu Alii.
7. N 52° 7' E true 9290 feet along Kaunolu across Maunalei and Kululu valleys to a red wood post on East edge of latter valley. Thence
8. N 20° 1' E true 9729.5 feet along Kaunolu down the East ridge of Kalulu valley to a rock on edge of valley marked with a cross.
9. N 36° 4' E true 5878.5 feet along Kaunolu to a red wood post on seashore. Thence
10. N 46° 2' W true 6285 feet along seashore to a red wood post a little N. E. of a small creek (said post being at N. E. corner of Maunalei). Thence
11. S 28° 27' W true 10676 feet along Maunalei up slope to a pile of stones on a hill called "Wawaeku."
12. S 6° 25' W true 9370 feet along Maunalei up gulch of Waiakapua to a red wood post on summit of a hill called "Wahane." Thence

³¹ Translation: Executed and moved by me at Lahaina on the 29th & 17th day of Sept. A.D. 1877. Commissioner of Land Boundaries, Maui, 2nd Jud. Circuit. Citation: Kaunolu Ahupuaa, Island of Lanai, Boundary Commission Volume No. 1, p. 119-120, No. 37. Survey of the Government Land of Kaunolu, Lanai.

13. N 74° 1' W true 5235 feet along Maunalei along Northern edge of Papalahoomoe gulch to its junction with Maunalei valley and across said valley to a red wood post on the summit of a hill called "Puukukai" on West edge of valley. Thence
14. S 0° 41' W 3555 feet along Mahana and Paomai to a red wood post on ridge that comes down from the central mountain range (said post being on North edge of valley that contains the water hole of Kaiholena). Thence
15. S 45° 49' W true 1067.9 feet along Kamoku across valley passing to the S. E. of above mentioned water hole to a point on ridge marked with Triangular pits and ditch thus said point a little East of Puupane.
16. Thence along Kamoku down the N.W. edge of the Kapano valley to the Government road, passing near Kawaonahale's house keeping straight on across a side ravine coming in from the North (called Keaaku) to a red wood post at the top of the North wall of the Palawai Crater at a place called "Pulehulua," near Kealihanui's house, which red wood post bears S 44° 53' W true 8052 feet from last mentioned point on ridge. Thence
17. S 65° 44' W true 4939.3 feet along Kamoku along North edge of crater to a point a little North of a cactus clump; marked by two triangular pits. Thence
18. S 46° 19' W true 10141.4 feet along Kamoku down road to a cross cut in a stone amongst a lot of stones at the former site of an old Heiau called "Ili o Lono." Thence
19. S 72° 48' W true 2080 feet along Kamoku to head of gulch. Thence
20. S 84° 40' W true 2594 feet along Kamoku to a cross cut in a stone on South edge of gulch.
21. S 88° 46' W true 5225.9 along Kamoku down South edge of gulch to a stone marked with cross; on edge of gulch a little above a branch that runs into the main gulch from the South.
22. S 86° 27' W true 3254 feet along Kamoku down South edge of gulch to a pile of stones (on edge of same) over a cross cut in a large stone to the South of Kaumalapau Harbor (the same pile of stones being the point of Commencement of Kamoku survey).
23. Thence along seashore to Commencement. Traverse along the shore being as follows:
 1. S 27° 00' W true 1,212 feet.
 2. S 22° 57' E true 5915 feet to Commencement.

Area 5945.19 Acres.
Exclusive of Awards.
Surveyed by M.D. Monsarrat, Assistant
Hawaiian Government Survey
Lanai, June 1877.³²

³² Kalulu Ahupuaa, Island of Lanai, Boundary Commission Volume No. 1, p. 112-113, No. 36. Survey of the

On March 23, 1866, Walter M. Gibson applied to the Minister of the Interior, F. W. Hutchinson, for a lease on the government lands on Lāna'i, including lands in Kaunolu and Kalulu. With his application, Gibson submitted a sketch map, included here as figure 6.

In compliance with your request I have the honor to lay before the Department, a statement respecting Government lands on Lanai.

There are six ahupuaas of land belonging to Government on the island, named: Kamao, Paawili, Kealia, Kalulu, Kaunolu, and Kamoku; comprising about 24,000 acres, with a population of 80 persons. About one eighth of this surface is good arable "dry" land; perhaps one half is more or less adapted for grazing; and the remaining three eights, the portion bordering on the beach, an utter barren waste.

I made application to the Department in October 1862 to lease all of these lands. My application was favorably entertained by the Department, but owing to want of proper surveys, a lease was not made out at the time, as I was informed by letter, written by authority of His Majesty, then Minister. A copy of this letter, dated Feb. 20th, 1863 is enclosed.

Feeling myself fortified by a guarantee from the Department, I proceeded to make improvements; to enclose lands with stone wall, to make roads, construct dwelling for laborers, and cultivate on the Government lands, until my operations were interrupted by a lease of Kamoku, the most important of these lands, by the Department, to another party. I had expended much labor on Kamoku, which was thus rendered fruitless.

However, I would still propose to the Government to lease the five lands, Kamao, Paawili, Kealia, Kalulu, and Kaunolu. They are now mere commons, upon which roam many thousand head of sheep and goats that do not yield one cent of revenue to the Government...

Accompanying this, a rough draft map of Lanai.³³

Six months later, on September 18, 1866, Gibson applied again to the Minister of the Interior.

I beg to be informed if the Government lands in this island have been rented or leased. A certain number of natives whom I opposed in their destruction of the little shrubbery of the island, in order to make charcoal, assert that the land is in their possession, and have attempted to subject me to a great deal of annoyance.

I cannot believe in the truth of their assertion that such a lease has been made, in view of the pledge given to me by your predecessor in office, his Majesty.

I am not at all anxious to lease all the Government lands on Lanai. The bulk of these lands, comprised in the districts named Kaunolu, Kalulu and

Crown Land of Kalulu, Lanai.

³³Hawaii State Archives, Interior Department Lands.

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Figure 6: Sketch map of Lāna'i by W. M. Gibson, May 23, 1866 (Hawaii State Archives).

Kamoku, can be better utilized by the native residents at present, and I should waive any pretensions I may have in respect to them; but the smaller lands of Kamao, Paawili, and Kealia, which comprise about one fourth of the Govt. lands, I desire to lease, as they adjoin my own lands.

Your Excellency will observe in the rough draft map I left at the Interior Office, that the lands of Pawili and Kealia are enclosed between my lands of Palawai and Kealia Kapu. Kamao is a barren corner, lying between my lands Palawai, and the leased land Kaohai. There are not more than half a dozen families residing on these small lands, and little or no stock upon them, and they may be properly detached from the bulk of the Govt. lands on the Western half of the island, where the chief part of the population resides.

I trust that some equitable adjustment of these lands will shortly be made, and I beg to be notified respecting any contemplated disposal of them by lease or otherwise ...

P.S. It is proper to mention that I have made improvements on Kamao, Pawili, and Kealia, and it would be an act of gross injustice were I to be dispossessed of the advantages to be derived from them, without being allowed a proper opportunity to enter into competition for leasing the lands upon which the improvements are situated, especially in view of the solemn pledge given me by the Interior Department.³⁴

The following correspondences detail the matter of leasing government lands on Lāna'i to Gibson. The first is from Chas. T. Gulick, Interior Department clerk, to P. Nahaolelua, the governor of Maui and regards the receipt of Gibson's application. The attached sketch mentioned is included here as figure 7.

Ua loa mai i ke Keena nei, he palapala noi na Walter Murray Gibson (Kipekono) e makemake ana e hoolimalima i ke kahi mau Aina Aupuni ma Lanai. Eia ko lokou mau inoa: Kamao, Pawili, Kealia Aupuni, Kaunolu ame Kalulu. I ke wa ia L. Kamehameha ke Kalaiala, ua ae mai no oia iaia no ka hoolimalima i ua mau aina nei, a mahope iho o kona pa ana a me ka hana ana i ke kau wahi pono maluna o ka aina, aka, i kona noho ali ana, ua hoonele ia, ua o Kipekono. Ua waiho pu mai no hoi o Kipekono i ka palapala a Stephen Spencer, ke kakauolelo a ke Kuhina Kalaiala e hooia aku ana ia Kipekono i ka ae ana o ke 'Ili, olai kona wa e noho ana ma ka Oihana. E nana

There was received at this Office, an application from Walter Murray Gibson (Kipekono), desiring to lease some of the Government Lands on Lanai. Here are their names: Kamao, Pawili, Kealia Aupuni, Kaunolu and Kalulu. At the time that L. Kamehameha was the Minister of the Interior, he agreed to lease the lands to him, should he build the walls at appropriate places on the land. But when he became King, Gibson was deprived of the right. Gibson has sent the application to Stephen Spencer, secretary of the Minister of Interior, who confirms that the King agreed to it when he was in the office. Will you please look into this and tell me what you think

³⁴Hawaii State Archives, Interior Department Lands.

iho oe iloko o keia hana a e hoike koke mai i kou manao e pili ana no kana noi. Ke hooili ia aku nei he kii, e hoomaopopoana i ka waiho ana o na Aina. Aole no he kii pololei loa aka ma ke ano nui no nae.¹

¹ Hawaii State Archives, Interior Department Book, Volume 12:251-252.

² Trans. K. Maly.

Governor Nahaolelua replies to Gulick with the following, dated May 28, 1873, which essentially asks that the lease request by Gibson be denied so as not to deprive the natives of access to the lands. Nahaolelua plainly expresses that Gibson is an untrustworthy individual. Gibson had claimed no more than a half-dozen families resided on the lands; however, Nahaolelua says that "quite a number of natives" live on the lands, who would thus be dispossessed should Gibson acquire the lease.

Ua loa mai ia'u kau palapala o ka la 26 o nei malama e pli ana i ka Palapala noi a W. Gibson "e hoolimalima kekahi mau aina ma Lanai" eia ko lakou mau inoa, Kamao, Pawili, Kealia, Kaunolu, ame Kalulu.

A ke olelo mai nei i ka wa ia L. Kamehameha ke Kalaiala, ua ae mai oia ia aina ka hoolimalima i ua mau aina nei, ua pololei kela mau olelo, maanei au e hoakaka ai ina kumu i nele ai o Gibson i ua mau aina nei i i ka wa i noho Moi iho nei of Kamehameha V.

Ua lohe ka moi ina hana a W. Gibson, ma ia hope mai. Eia ka mua, Puhia ae la o Gibson i ke ahi a pau loa aku ka mauu o ka aina i ka a ia e ka ahi. A olelo iho la o Gibson i kanaka o Lanai he mea waiwai ole ka Hanai holoholona, o ka mahiai oia ka mea waiwai o ka aina a he mea hooikaika no hoi ia i ke kino o ke kanaka a he mea no hoi ia e nui ai ka hanau ana a na keiki. Ia lohe ana o kanaka ia mau olelo lawe aku la lakou ina hipa e kuai me Gibson he mahina hookahi a oi ae paha nui loa na Hipa a Gibson, aka, aole i mahia ua wahi nei i pau i ke ahi, ua lohe Moi i keia hana Gibson.

Eia kekahi ua olelo o Gibson i na Hoahanau o ka Hoomana Molemona e lawe mai i ko Kauai, ko Oahu, Molokai, Maui, Hawaii i no Dala no ke kuai ana i ka aina ma Lanai

about this request. There is attached, a sketch that shows the location of the lands. It is not an accurate sketch but gives a general rendering.²

I received your letter of the 26th day of this month, relative to the application of W. Gibson, "to lease some lands on Lanai," these being their names, Kamao, Pawili, Kealia, Kaunolu and Kalulu.

And that during the time that L. Kamehameha had the Interior, he had consented that he was to get the lease of said lands. That statement is true. Here I will explain the reasons why Gibson was refused said lands during the time that Kamehameha V was King.

The King had heard after that what Gibson had done. This is the first: Gibson set fire to the grass on the land and was all burnt up by the fire, then Gibson said to the natives of Lanai, that there was no benefit from raising animals, that farming is what will enrich the land, and will make the body of the person strong, and would be the means of having a lot of children born. When the natives heard these words, they took their sheep to sell to Gibson, and in one month and a little over, Gibson had plenty of sheep, but the place which had been burnt was not cultivated, the King heard of these doings of Gibson.

Here is another, Gibson told the members of the Mormon Religion on Kauai, Oahu, Molokai, Maui, and Hawaii, to secure money to buy land on Lanai, that is Palawai. Gib-

Governor Nahaolelua writes again to Gulick on June 5, 1873.

Ua loa mai ia'u kau palapala o ka la 2, o June nei, ua ike au i na mea i haila mai. He nui io no ka poe e noho ana ma kekahi o keia mau aina o Kalulu, ame Kaunolu, a ma Pawili kekahi mau mea, a o Kamao ame Kealia, aole maopopo loa ia ia'u, no ka mea ua ano hulkau ko lakou noho ana.

A ma ka ninau hoi no ko lakou mau kuleana a noho hoolimalima paha, he kuleana no kakahu poe o lakou, aka he kuleana liliil no.

Nolaila, ua hoolimalima no kakou i ua mau aina nei me ke Aupuni mamuli no nae o ke Kauoha a ke Kuhina Kalalaina ia'a e like no me keia manawa. A no ka'u mau wahi holoholona o wau no kekahi i uku ia Hoolimalima ana.

Iloko oia hoolimalima ana, ua hookaa pono no kanaka ina makahiki Eha, a i ka lima o ka makahiki, ua koe nae \$265. i kaa ole mai, a o ka nui o na Dala i kaa mai \$1735.00. Oia iho la ka loa ame ke koena.

Ina no e lilo o Kalulu ame Kaunolu ia Gibekona a kahi no ia i lehulehu ai ona kanaka, aole no he nui loa o na kanaka ma Lanai, oia wale no ka'u mea hai aku.¹

1 Hawaii State Archives, Interior Department Lands.

2 Trans. K. Maly.

Governor Nahaolelua writes the following to the Minister of the Interior, E. O. Hall on June 13, 1873.

Ua loa mai ia'u kau palapala, ua ike au ina olelo i haila mai. E pono nae e helu aku au ia oe ina aina o Lanai a pau: Pawili, Kamao, eha Kealia, Kaunolu, Kalulu, Kamoku & Paomai, pau na aina aupuni a lilo aku ia ia Gibesona, Eono aina, a koe iho la Ekolu aina.

Aka, ua pono iho la no ia e like me ka mea i holo ia oukou, a o ka uku Kupono i

Your letter of the 2nd day of June was received, and I note what is said. It is true that there are quite a number of persons living on some of these lands of Kalulu and Kaunolu, and there are some on Pawili, and I am not quite familiar with Kamao and Kealia, because their living together is rather mixed up.

As to inquiry about their awards or occupancy under lease. Some of them have awards, but they are small ones. Therefore, they leased these lands from the Government but under the instructions of the Minister of the Interior to me, the same as now. And about my animals, I too have paid towards said lease.

During that lease, the natives paid properly for four years, and during the fifth year, there was a balance of \$265. which remained unpaid. The amount of money that was paid was \$1735.00 that is the receipts and the balance.

If Kalulu and Kaunolu are given to Gibson, those are the places where there are a number of natives. There are not very many natives on Lanai. That is all I wish to tell you.²

I received your letter, and noted what is said therein.

I have better give you a list of all the lands on Lanai: Pawili, Kamao, four Kealia, Kaunolu, Kalulu, Kamoku & Paomai. These are all the Government lands, and Gibson has acquired six lands, and three lands remain.

But it is all right according to what have been decided by you people. And the

ko'u manai oia mau aina eono, Elua Haneri Dala i ka makahiki, a o na aina hou i koe no ka hoolimalima mua, Elua Haneri ia. Oia ko'u manao...¹

1 Hawaii State Archives, Interior Department Lands.

2 Trans. K. Maly.

E. O. Hall responds to Governor Nahaolelua on June 16, 1873 with the following letter, which proposes a rental rate to be paid by Gibson for government lands on Lana'i.

Ua loa mau kau palapala o ka la 13 o June nei. Me neia na manao o ke 'Li a me na Kuhina, no na aina ma Lanai.

O na aina o Kaunolu a me Kalulu, no na makaainana ia mau aina, a nau no e ohi i na dala, e like ma na makahiki i hala.

O na aina o Kealia, Pawili 2, a me Kamao, e hoolimalima ia Gibesona no na dala \$100.00 i ka makahiki. Pehea ia?

O ka aina o Kamoku, ua lilo i ka Pake; pela kuu lohe. Pehea? Ehia mak. ka lilo ana, a ehia dala i ka mak.

O ka aina o Mahana, he aina aupuni ia. Ia wai la ka lilo ana i keia manawa? Ua manao ia C. Kanaina. Aole ka.

O Paomai, ua ninau no wau ia oe no keia aina. E pane mai, ke oluolu oe...²

1 In the context of the land description it appears that Pawili 2 is the section of Pawili that runs into the basin, between Palawai and Kealia Aupuni. Based on surveys and testimony, this section of Pawili crosses from windward to leeward Lana'i, but on the leeward side is cut off from the coast near the 'Eho'ehonui boundary marker.

2 Hawaii State Archives, Interior Department Book, Volume 12:276.

3 Trans. K. Maly.

Then, in 1899, after the death of Gibson, Gibson's estate trustee Cecil Brown wrote to J. F. Brown, the Commissioner of Public Lands, to extend the lease of government lands of Lana'i.

Cecil Brown Administrator and Trustee of the Estate of W.M. Gibson, deceased, with the Will annexed. Hereby makes tender the surrender to the Hawaiian Land Commission, leases held by the Estate of W.M. Gibson of Government lands as follows to wit on condition hereafter stated.

proper rent for these six lands, according to my belief, is Two Hundred Dollars per annum, and for the remaining lands for the first lease Two Hundred. That is what I think.²

Your letter of the 13th of June, has been received. This is the opinion of the King and the Ministers, regarding lands of Lanai.

The lands of Kaunolu and Kalulu, the residents shall occupy those lands, and that you collect the rent of same, as had been the custom for the past years.

The lands of Kealia, Pawili 2¹ and Kamao, shall be leased to Gibson at \$100.00 a year. How about that?

The land of Kamoku is occupied by a Chinaman, so I hear. How many years was it leased for, and how much a year?

That land of Mahana is a Government land. Who is occupying it at the present time? It was thought that C. Kanaina had it. It is not so.

As to Paomai, I have already inquired of you in regard to this land. Would you kindly reply...³

1. Lease No. 168 of the lands of Pawili, Kamao and Kealia Aupuni Rental \$150.00 per Annum. Expires June 23rd, 1908.
2. Lease No. 220 Lands of Mahana, Rental \$100.00 per Annum. Expires November 1st, 1907.
3. Lease No. 279 Land of Kaunolu, Rental \$250.00 per Annum. Expires February 9th, 1907.

Also the land of Kalulu as tenant at will, Rental \$200.00 per annum.

The Estate paying for the four leases \$700.00 per annum.

It is hereby proposed to surrender the said leases provided a new lease will be granted for the whole area of lands in said four leases be granted to the Administrator of said Estate of W.M. Gibson at an annual rental of Twenty Five Hundred (\$2500.00) Dollars for a term of lease of Twenty One years from date hereof.

To be granted without Competition.

J. F. Brown writes to Sanford B. Dole, proposing that grazing and sugarcane cultivation might be possible on the lands leased to the W. M. Gibson Estate in the following letter, dated March 9, 1899.

Enclosed please find copy of an application on behalf of W.M. Gibson Estate for surrender and for releasing of certain Public Lands held by Gibson Estate on the Island of Lanai.

The total area concerned in this application is about 29,341 acres.

The larger part of this is grazing and mountain land but a portion on a rough estimate not less than 2000 acres might be adapted to cane growing if supplied with water. This area of 2000 acres, say below 600 feet level, would be found on the lands of Mahana, Kaunolu and Kalulu named above, these being on N.E. side where plantation site is proposed. The lands of Paawili, Kamao and Kealia may or may not be included in proposed plantation site. If so included, the possible cane area would be largely increased. I do not understand that any authority exists under the law for the lease without competition asked for by applicants, but for the satisfaction of applicants who desire the matter to be brought before the Executive, I would respectfully refer the same to their opinion at a convenient early date.³⁵

The document below conveys lands (fee-simple and leasehold), livestock, and personal property on the island of Lānaʻi from the Gibson Estate to Charles Gay, as ordered by court decision.

This Indenture made this 28th day of August A.D. 1902, between Albert Barnes, Commissioner, of Honolulu, Island of Oahu, Territory of Hawaii of the first part, and Charles Gay of Makaweli, Island of Kauai, in said Territory, of the second part.

³⁵FO & Ex. 1899 Pub Lands Comm.

Whereas, in proceedings duly taken in the Circuit Court of the First Judicial Circuit of said Territory at Chambers in Equity, by and between Gustave Kunst, designs of S.M. Damon, J.H. Fisher, and H.E. Waity, copartners under the firm name of Bishop & Company, Plaintiffs and H.N. Pain and Elise S. U. Neumann, sole devisee and Executive under the last Will and testament of Paul Neumann, deceased, and Henry Holmes, Trustee of Elsie S.V. Neumann, and S.M. Damon, S.E. Damon and H.E. Waity, copartners doing business under the firm name and style of Bishop & Company defendants to enforce the Decree of Foreclosure and Sale theretofore made and filed in the suit of S.M. Damon et al vs. Cecil Brown, Administrator with the Will annexed of Walter Murray Gibson and Trustees of the Estate of said Walter Murray Gibson, deceased, under said Will et al., it was ordered adjudged and decreed by an order made on the 24th day of June A.D. 1902 by the Honorable George D. Gear, Second Judge of the said Circuit Court that the said Decree of Foreclosure and Sale be enforced by a sale of all and singular the real and personal property and assets of the estate of the said Walter Murray Gibson, deceased, hereinafter set forth, and that the same be sold at public auction in said Honolulu at the front door of the Court House (Aliiolani Hale), by and under the direction of the said Albert Barnes, who was by said Decree appointed a Commissioner to sell the said property and was duly authorized to give public notice of, make arrangements for and conduct the sale as set forth in said order.

And whereas, the said Commissioner, pursuant to the said order and direction, after giving public notice of the time and place of sale as in said order required did, on the sixteenth day of August A.D. 1902, at the front door of the Court House (Aliiolani Hale) in said Honolulu expose to sale at public auction all and singular the said premises and property with the appurtenances at which sale the said premises and property hereinafter described were sold to the said Charles Gay for the sum of One Hundred and Eight Thousand Dollars (\$108,000.00) that being the highest sum bid for the same, and Whereas the proceedings of said Commissioner in the premises were duly reported to the said court, and the sale approved and confirmed on the 25th day of August A.D. 1902, as by the records of said court more fully appears, and the said Commissioner was thereupon by an order of said court then made, directed to execute to said Charles Gay a conveyance of said premises and property, pursuant to the sale so made as aforesaid ...

And the said Albert Barnes, Commissioner, as aforesaid, doth hereby covenant with the said Charles Gay and his heirs and assigns that notice of the time and place of said sale was given according to the order of said Court, and that the said premises and property were sold accordingly at public auction as above set forth.

Schedule "A"

Fee Simple.

First. All that tract or parcel of land situate on the Island of Lanai, containing Five Thousand Eight Hundred and Ninety-Seven and 1-10 (5897, 1-10) acres,

and known as the Ahupuaa of Palawai, and comprised in Royal Patent No. 1093 ...

Fourteenth. All that land described in Royal Patent 4767, L.C.A. 10041 conveyed by John S. Gibson to W.M. Gibson by deed dated July 17, 1876 of record in liber 47 fol. 49...

Leases

First. All leases of land on the Island of Lanai held by said Walter Murray Gibson on August 31st, 1887, so far as he had the right to assign the same without incurring any forfeiture...

Personal Property

First. All those flocks of sheep on the 20th day of June A.D. 1902 or thereabouts of mixed ages and sexes, on said day depasturing, running or being upon the said Island of Lanai and also all that herd of cattle and all horses on said 20th day of June, 1902, also depasturing and running upon the said Island of Lanai on said day, all formerly belonging to the Estate of Walter M. Gibson, deceased, together with all the natural increase of the said flocks and herds, and also all the wool, then upon the said sheep and which has since that time been produced and shorn from said sheep, and their said increase save and except such sheep, cattle and wool as have been sold with the consent of the said plaintiff.

Second. All wool presses, wagons, carts, harnesses, tools implements, chattels and effects belonging to said Walter Murray Gibson on said August 31st, 1887, situated on the Island of Lanai, at said time and now in and upon said lands or any of them.

The flocks of sheep and their increase are now estimated at about 18,000 head.

The herd of cattle with their increase are now estimated at about 240 head.

The herd of horses with their increase are now estimated at about 210 head.

In witness whereof the said Albert Barnes has hereunto set his hand and seal the day and year first above written ...³⁶

2.4 Ranching Operations on Lānaʻi, 1854–1951

Goats, sheep, cattle, the European boar, and horses were introduced to the islands between 1778 and 1810. During those early years, Kamehameha I and his chiefs placed *kapu* over the newly introduced animals to ensure that their populations would grow. In the fifty-year period from 1780 to the 1830s, populations of these non-native animals—like the *hipa* (sheep) and *puaʻa bipi* or *pipi* (wild steer or cattle), and *kao* (goats)—grew to become a great nuisance to the Hawaiian population, and had devastating effects on the Hawaiian environment.

Records indicate that the first of these introduced ungulates were brought to Lānaʻi around the 1830s, where a few native tenants, living under landed chiefs, managed the

³⁶Bureau of Conveyances, Liber 242, p. 91–95.

populations. In 1848, a new system of land management was instituted in the Hawaiian Kingdom, and individuals of means were granted large tracts of land. When fee-simple title to land was granted to native Hawaiians and foreign residents who had sworn oaths of allegiance to the king, formal efforts at controlling the *hipa*, *pipi*, *kao*, and other grazers were initiated.

Ranching was a part of Lānaʻi's history for close to 100 years, in the period from ca. 1854 until closure of the ranch in 1951. Initially, Mormon elders brought livestock to Lānaʻi as a part of their effort to establish a mission in the uplands at Palāwai. In 1862, Walter Murray Gibson took over the Mormon settlement, and focused the livestock efforts on herds of sheep and goats, of which nearly 100,000 roamed the island, almost uncontrolled by the 1890s. As a result, Lānaʻi suffered from rapid deforestation and a drying up of the island's water resources. This impacted every other aspect of life on Lānaʻi and was one of the contributing factors to the continual decline in the native population of the island.

From 1910 to 1951, Lānaʻi ranch operations focused on cattle and a steady decline in the population of other livestock. The steady transition to cattle grazing led to the eradication of tens of thousands of goats, sheep, and pigs—many driven over the cliffs of Kaʻāpahu in Kaʻā—in an effort to reduce impacts on the steadily decreasing pasturage. In 1914, the *Maui News* reported on a visit by rancher-investor J. T. McCrosson to Lānaʻi under the heading "Big Improvements on Lanai." McCrosson makes specific reference to the leeward pastures on the island, extending from the 150 ft. to 1,000 ft. elevation.

I spent a week on Lanai inspecting the ranch. The lee side of the island is greener that it has been for years. The finest *Pili* grass pastures in the Territory extend in a broad belt the whole length of the island, from 150 feet above sea level to about 1000 feet elevation. The belt varies from a quarter to two miles wide. Up in the shallow crater that occupies the center of Lanai a good many hundred acres have been plowed and planted in Rhodes grass and Paspalum. It formerly took twenty acres of the wild pasture land to support a bullock. The Paspalum pastures now fatten fifty head of stock on every hundred acres.³⁷

In 1929, L. A. Henke published *A Survey of Livestock in Hawaii*,³⁸ which included the following description of the Lānaʻi Ranch operations. Henke notes that a water line system and extensive fences were made on the island. Describing the basic ranching operations on Lānaʻi, Henke reported

The Island of Lanai, while primarily given over to the growing of pineapples since 1924, still has an area of 55,000 acres of fairly well grassed but rocky and rather arid country extending in a belt around the 55 miles of coast line of Lanai, that are utilized as ranch lands and carry about 2,000 Herefords and 180 horses. This belt is from two to four miles wide and extends from the sea to about 1,000 feet in elevation.

³⁷*Maui News*, October 24, 1914, p. 5, c. 1.

³⁸University of Hawaii Research Bulletin No. 5, Honolulu, Hawaiʻi.

The total area of the Island is about 140 square miles and it ranges in height from sea level to about 3,376 feet elevation, with an average annual rainfall on a great part of the uplands of about 34 inches.

In 1922 before the upper lands were given over to the more profitable pineapples an area of some 2,000 acres had been planted to Pigeon peas (*Cajanus indicus*) and *Paspalum dilatatum*. On the lower, rather rocky, present ranch lands the algaroba tree (*Prosopis juliflora*) is valuable because of its bean crop, and Koa haole (*Leucaena glauca*) and Australian salt bush (*Atriplex semibaccata*) are considered desirable forage crops. It is planned to further improve the lower pastures by additional planting of the above crops and by light stocking and resting present pastures.

In the future the ranch will not do much more than raise beef and saddle horses for the pineapple plantation needs. The ranch, though a part of the Hawaiian Pineapple Company's property, still operates as the Lanai Company, Ltd.

The Hawaiians formerly herded goats, probably for their skins on the uplands of Lanai, and some agricultural work was done by Walter Murray Gibson, who arrived in 1861, in connection with the Mormon Church. Gibson acquired considerable land and when he died in 1888 his daughter, Talula Lucy Hayselden, became the owner. Gibson and the Hayseldens developed a sheep ranch on the island, much of which was then owned by the Government and by W.G. Irwin.

Irwin later acquired the Government lands and the Hayseldens about 1902 sold out to Charles Gay and nearly the whole island of 89,600 acres was combined under the ownership of Charles Gay, which passed to Irwin in 1910 and from him to John D. McCrosson and associates in the same year, when the Lanai Company, Ltd., was formed. Their interests were sold in 1917 to H.A. and F.F. Baldwin, who in turn sold the property to the Hawaiian Pineapple Co., Ltd., in December 1922, who are the present owners.

Mr. Gay continued with the sheep ranch started by Gibson and Hayselden, probably carrying as high as 50,000 at times, but when the Lanai Company, Ltd., was started in 1910 they changed to cattle and put in extensive provisions for water and fences, and a count in April 1911, gave 20,588 sheep and 799 head of cattle. At the end of 1920 there were only 860 sheep and early in 1923 a count showed that the number of cattle had increased to 5,536 and besides 4,462 had been sold during the previous five years. Reduction of the herd to make room for pineapples was started on a large scale in 1924, and from the end of 1922 to October 1928, 6,764 head of cattle were sold.

Mr. Moorhead was manager for the Hayseldens, Mr. Gay managed his own property for a time, Lt. Barnard was manager for the Lanai Company in 1910, and G.C. Munro, the present manager, took charge in 1911. [19:51-52]

The ranch ended operations in 1951 when the Hawaiian Pineapple Company decided to focus all its efforts on the pineapple plantation.

2.5 Hawaiian Pineapple Company

James Dole, owner of the Hawaiian Pineapple Company, purchased the island of Lāna'i on December 5, 1922. The purchase price of the island was \$1.1 million. Nearly \$2 million was spent on improvements to the island, for the development of macadamized roads and the town of Lāna'i City. In 1926, Dole hosted a tour of the plantation and developing city. The 150-person tour of politicians, businessmen, and friends were impressed with the progress that had been made in the short time on Lāna'i [29].

Lāna'i had been often overlooked because the appearance of the island from offshore was dry and desolate, but Dole saw that inland are some arable lands. There were 20,000 acres of land suited to pineapple on the island of Lāna'i—Hawaiian Pineapple Company considered it as the last of the desirable acreage left in Hawai'i. The soil and conditions were desirable, but many improvements had to be made. Many miles of cactus had to be dragged out and removed from the landscape. The Hawaiian Pineapple Company built a harbor at Kaunapali with a breakwater made of a solid rock cliff that they had busted and transferred. Roads from the fields to the harbor were paved. One of Hawaiian Pineapple Company's old photos shows neat rows of pineapple, with Lāna'i City in the background. Lāna'i City was developed for the workers that were brought over [18:17-23].

Miki Camp, ca. 1924-1938 Hawaiian Pineapple Company built several outlying camps from the main Lāna'i City. One of these camps was Miki Camp, so called because of its proximity to the storied place called Puu o Miki. The camp was situated southeast of the present Maui Electric Company (MECO) power plant on Miki Road.

Several oral history interviews have been conducted with elder *kama'āina* of the plantation era who resided at Miki Camp during their youth. Mrs. Susan Minami Miyamoto penned some of her recollections of the camp, and Mr. Tamo Mitsunaga and friends drafted a map of the camp as they recalled it from their youth. Mrs. Miyamoto's recollections and Mr. Mitsunaga's map follow below (fig. 8).

Camps of Lanai

There were several camps when I was growing up on Lanai. Three of my siblings were born on Lanai, the first in Namba Camp in 1926, next in Crusher Camp in 1929, and the last in Lanai City in 1932.

Namba Camp was situated at the foot of the hill to the right as you leave the city to go to Manele. The camp was named after Mr. Namba who was in charge of construction workers. Workers were mostly Japanese with a few Koreans who spoke fluent Japanese.

Workers lived rent free in simple cottages, the only furniture being a simple dining table with long benches at each side. The single men lived in one long building with no furniture. Each man had a designated area in the room marked by a single length of mat with a large trunk or basket at the foot of the mat holding his worldly goods. There were nails pounded at the head of the mat to hang their clothes.

Company trucks picked up the men each morning to go to their work site, and returned at pau hana. School children were picked up by a van which first picked up children from Kaumalapau Camp. We dubbed this van the "Black Maria". The van was driven by Mr. Okamoto, Roy Okamoto's grandfather. It was all purpose used as a hearse or ambulance and for other transportation as needed.

The company had many cattle on the island: There were wire fencing strung along Kaumalapau Highway at the top of the hill, and we children ran amongst the cattle to return home from the pathway at the top of the hill.

It was Prohibition Era and my grandma who lived with us, brewed "sake" a Japanese drink made from special rice, brewed in large crocks. Somehow word would get out to the camp that the inspector was coming, and the crocks would be hidden in the thick panini (cactus) bushes until it was safe to bring them home. These crocks would sometimes be stolen from their hiding places.

There were no cars in the camp. An employee of Okamoto Store would come every week or so to take orders for whatever we needed and delivery was made on his next visit. Goods were charged to employee's bango number (employment number) and payment made to the store on payday.

The Medicine Man, as we called him, would come from one of the pharmaceutical houses in Honolulu to fill a large bag for each family filled with medicine for all kinds of illnesses. On his next visit he would note whatever was used since his last visit and collect money for the used drugs. The bag would then be refilled for his next visit. This practice went on for a long time even after the company built a hospital in 1924.

There were outhouses for our use. We had no toilet paper, Sears Roebuck Catalogs were most coveted for use, newspapers were also put to use. There was a bath house tended by one of the women. She would fill the tubs with water. Fire wood was used to heat the water. This bathhouse was a good social gathering place. We would sit around on the bench built inside the tub and talk story.

Crusher Camp came into being in the late 1920's when men who worked with stones were moved to this camp which had a large stone crusher. Stones were plentiful when fields were cleared for pineapple fields. The camp was situated in what is now the end of the airplane runway. It was under the care of Mr. Murayama, and it was men from this camp who worked on the stone wall along Kaumalapau Harbor. It will attest to the good workmanship of these men as it is still standing, having weathered many storms.

Miki Camp was the last, and most well-known of these camps. It was a large camp built on the hill behind what is now the Electric Plant. There were two stables cared for by Matahei Oyama and Shiro Mitsunaga. They were used to house the mules used for plowing the pineapple fields. The Mitsunaga family was the last to leave this camp. Mrs. Hisako Mitsunaga remembers coming to Miki Camp as a bride from Maui. She says their family was the last to leave Miki Camp in 1938. All of the houses were moved to the city.

By this time Filipino workers were starting to come in, and there were Japanese and Filipino workers in camp, and even one Mexican.

Life in the camps was simple. A favorite sport for the boys was climbing the water tanks and lining the rim of these tanks with what was called "tori Mochi", a gluey substance. The birds would get stuck and were gathered for food.

There was also Kaumalapau Camp. There are a few families still living there. There were mostly Japanese and Hawaiian dock workers, and also independent fishermen. By 1935, most of the families had moved to the city.

Life in the camps was simple and fun, and remembered by most with fond nostalgia.³⁹

2.6 Archaeological Background

A few archaeological studies have been conducted in the general vicinity of the Miki Basin 200 Acre Industrial Development project area (see fig. 1, p. 4). The earliest survey by Emory [11] records the baseline data for the area. Emory's survey is reviewed in section 2.6.1. Subsequent studies focused on retracing Emory's work in order to inventory the sites that he originally recorded. These studies are discussed in section 2.6.2. The last phase of archaeological research has been in support of recent land developments and is discussed in section 2.6.3.

2.6.1 Emory Survey

The earliest archaeological investigation on Lāna'i Island was conducted by Emory [11] in the 1920s. This investigation was the first archaeological and ethnographic study of Lāna'i Island. In this work, Emory broadly summarizes Hawaiian cultural traditions of Lāna'i and includes discussions on the traditional oral histories, place names, *material culture*, and archaeology. The work is geographically organized around an inclusive gazetteer that is keyed to numbers on an accompanying map. Since Emory's work was focused on ethnography as well as archaeology, these numbers refer to places of cultural interest in a general sense and may or may not be considered archaeological sites in their conventional sense—as locations that display evidence of past human behavior. Nevertheless, archaeological sites were included in Emory's survey of Lāna'i Island, but, like many of his contemporaries, his focus was on larger archaeological sites, most notably the village of Kaunolū located on the southwestern shore of Lāna'i.

State Inventory of Historic Places archaeological site numbers were later assigned for Emory's sites. The concordance of State Inventory of Historic Places site numbers to their descriptions by Emory is annotated in the margins of Emory's typescript on file in the State Historic Preservation Division.⁴⁰ Emory mentioned petroglyphs located in Miki Basin; however, they were not published and were never assigned archaeological site numbers.

³⁹Notes by Susan Minami Miyamoto.

⁴⁰Report number I-00006, on file at the State Historic Preservation Division, Kapolei, HI [11].

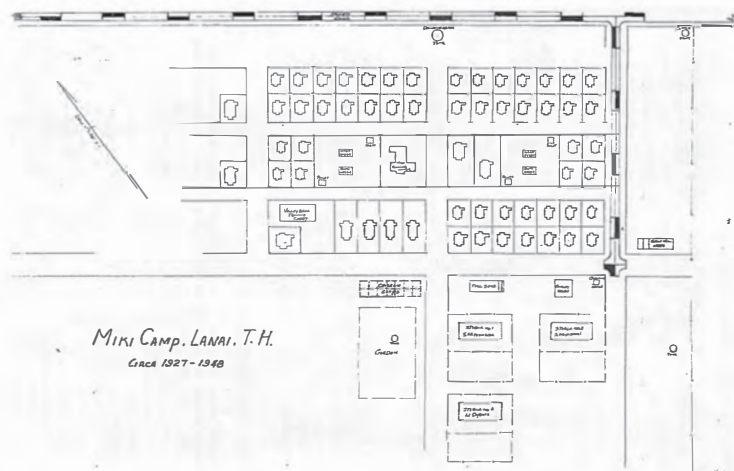


Figure 8: Sketch map of Miki Camp drafted by Tamo Mitsunaga and friends. Note that the 1948 should be 1938.

2.6.2 Late Twentieth-Century Investigations

There was a general dearth of archaeological work conducted on Lānaʻi between the 1920s and the 1970s. The next period of archaeological investigations at Lānaʻi was due to the statewide inventory of archaeological sites that occurred in the mid-1970s. This study was focused toward the relocation of previously identified sites, and the consolidation of that information into the new State Inventory of Historic Places system. It was during this effort that Emory's sites were designated their State Inventory of Historic Places numbers.

In general, the statewide inventory left the identification of new archaeological sites as a task to be completed for future surveys. Due to this, no new archaeological sites were recorded in the vicinity of the Miki Basin 200 Acre Industrial Development.

Following his work on the statewide inventory of historic places, Robert Hommon produced a paper that outlined his general impression of the archaeology of Lānaʻi Island. He noted that Lānaʻi Island contained the greatest degree of relatively untouched archaeology in the Hawaiian archipelago. He states,

Through a happy set of circumstances, the archaeology of Lanaʻi is almost entirely intact. Despite the fact that nearly 20% of the area of the island is under cultivation for pineapple, less than 2% of the archaeological features recorded by Emory in the early 1920's have been destroyed in the process. [20:1]

He then argued, given the completeness of the archaeological record, that an island-wide research design should be developed in order to direct future investigations. This recommendation also appears to respond to a development plan that was proposed by Castle and Cooke that would have substantially altered the interior and northeast shore of the island. It appears that this broad-scale development of Lānaʻi has not occurred, and no comprehensive island-wide research design is known to have been written.

2.6.3 Cultural Resources Management Studies

In 1985, Ahlo [1] recorded Site 50-40-98-01531 during investigations associated with a proposed sanitary landfill located west of Lānaʻi Airport (see fig. 1, a, p. 4). The site is located in Kaumālapaʻu Gulch and comprises two eroding fire-pit features recorded as Sites 1 and 3, both of which contained charcoal and organic material. Data recovery excavations were recommended for both fire-pit features.

In 1987, Site 50-40-98-01531 was relocated by Kam [22] during a field inspection to determine the mitigation requirements of the previously identified cultural resources within the sanitary landfill project area (see fig. 1, a, p. 4). During the inspection, a midden scatter and rock alignment were recorded. However, no site numbers were assigned at that time. The two components of Site 50-40-98-01531 were relocated during the project, and it was determined that one of the fire-pit features, Site 1, had been impacted during grading for a nearby road. The other feature, Site 3, was relocated outside of the landfill project area. It was recommended that the area be re-examined by a qualified

archaeologist and the identified cultural resources be mitigated prior to construction activities.

Later that same year, Walker and Haun [31] conducted a pedestrian survey and data recovery excavations for the identified cultural resources. During the project, 11 test units were excavated and surface collection of the previously identified midden scatter was conducted. A total of eight archaeological sites were investigated during the project (see fig. 1, a, p. 4).

Site 50-40-98-01531 This site was relocated during the project and two ash concentrations were observed. A single test unit was excavated at each ash concentration to search for possible subsurface remains. A total of five basalt flakes, a radiocarbon sample, and a small amount of shell midden were recovered during excavations. The radiocarbon sample was submitted but proved insufficient for dating. The site was interpreted as a temporary habitation area.

Site 50-40-98-01532 This site comprised the previously identified midden scatter and two ash concentrations, likely fire-pit features. Five test units were excavated in and adjacent to the midden scatter and a single shell scraper was collected from its surface. Two of the test units yielded subsurface deposits. The first, TU-1, contained the remnants of a fire-pit feature, seven basalt flakes, and two shell scrapers. A radiocarbon sample was collected from the fire-pit feature for analysis. TU-5 was excavated close to TU-1 and yielded three basalt flakes. A radiocarbon sample was also collected from the surface of one of the ash concentrations. Both radiocarbon samples collected yielded calibrated date ranges between AD 1460 and 1952. The site was interpreted as being used for temporary habitation.

Site 50-40-98-01533 This site comprised two single-course rock alignments. No artifacts were observed on the surface and no artifacts were collected from either of the two test units excavated. The alignments were interpreted as terraces used for dryland agriculture.

Site 50-40-98-01534 This site comprised two basalt *cobble* rock mounds. The mounds were sorted but had no facing of any kind. No test units were excavated and no artifacts were collected from the area. However, historic artifacts were present on and around the two features. The rock piles were interpreted as being prehistoric agricultural clearing mounds, but due to the presence of historic artifacts, that determination cannot be proven with any certainty.

Site 50-40-98-01535 This site was described as a 4 m long curved wall constructed of sub-angular basalt cobbles stacked 50 cm high. No test units were excavated and no artifacts were collected from the area. It was interpreted as being used as a temporary shelter or a modern hunter's blind.

Site 50-40-98-01536 This site comprised a soil and rock terrace and a rock alignment. No artifacts were collected from the surface of the site and a single test unit was excavated within the terrace. A radiocarbon sample was collected from the test unit for analysis and yielded a calibrated date range between AD 1450 and 1954. The site was interpreted as being used for rain-fed agriculture.

Site 50-40-98-01537 This site was described as a rectangular rock mound constructed of sub-angular boulders piled one to two courses high. A test unit was excavated

to bisect the mound and determine its function. No artifacts were observed in and around the mound and no artifacts were collected from the test unit. The mound was interpreted as being a trail marker associated with the Kaumālapa'u Trail located south of the site.

Site 50-40-98-01538 This site is a complex composed of four rock alignments and a rock mound. No artifacts were observed or collected from the site and no test units were excavated. Due to its location near Site 50-40-98-01533 and the lack of portable remains, it was interpreted as being a prehistoric rain-fed agricultural complex.

Based on the radiocarbon date ranges, the sanitary landfill project area and associated sites located at the head of Kaumālapa'u Gulch were interpreted as having been occupied in the mid- to late fifteenth century with re-occupations continuing into the late eighteenth century. Although the area was likely used for temporary habitation and dryland agriculture, the initial occupation of the area and subsequent re-occupations cannot be determined by calibrated date ranges. The wide date ranges, which span five centuries, lack the precision required to be informative. Following data recovery excavations, the sites were deemed insignificant and no further work was recommended.

In 1989, an on-site assessment of the Lāna'i Airport was conducted by Sinoto [28] (see fig. 1, b, p. 4). This included a literature review of the area and a pedestrian survey of the airport expansion area. Two surface scatters of lithic materials were observed during the assessment. Due to this, an archaeological inventory survey of the airport expansion area was recommended.

Borthwick et al. [3] conducted the archaeological inventory survey for the proposed expansion to Lāna'i Airport in 1990 (see fig. 1, b, p. 4). The airport is located east of the Miki Basin 200 Acre Industrial Development. A total of seven surface scatters of stone artifacts were found. Limited test excavations consisting of eight backhoe trenches determined that there were no subsurface deposits in the area. The stratigraphy in the trenches showed that the area had been under commercial cultivation for many years. The survey determined that agricultural activities would have destroyed any deposits present, diminishing the need for further work. Only on-call monitoring was recommended.

In 2009, a cultural impact assessment and field inspection was conducted prior to improvements to Lāna'i Airport [5; 24] (see fig. 1, b, p. 4). Again, no surface or subsurface cultural materials or historic properties were identified due to the previous disturbances mentioned in the 1990 survey.

An archaeological assessment for proposed runway improvements to Lāna'i Airport was completed in March of 2013 by Lee-Greig and Hammatt [25] (see fig. 1, b, p. 4). Twenty-four backhoe trenches were excavated. The results of the investigation are consistent with the findings from the 1990 survey. No historic properties and no intact subsurface features were documented during the project.

In August of 2013, an archaeological inventory survey for the Central Services Warehouse and Miki Basin pipeline replacement was conducted [6]. The Central Services Warehouse is located within the current project area along Miki Road and adjacent to the existing Maui Electric Company power plant and its associated facilities (see fig. 1, c, p. 4). The

pipeline runs northeast from the warehouse. A pedestrian survey of the warehouse area was conducted, and a total of eight backhoe trenches were excavated in the undeveloped portion of the parcel. A large portion of the area showed signs of surface disturbance and no artifacts or cultural deposits were present on the surface or in any of the backhoe trenches excavated.

In March of 2014, an archaeological assessment was conducted for the Lāna'i contractor's housing [7]. The parcel is located on 14 acres of land north of the current project area and adjacent to Miki Road (see fig. 1, d, p. 4). During the project, a pedestrian survey of the parcel was conducted and 12 backhoe trenches were excavated. No cultural materials or deposits of any kind were documented due to use of the area for pineapple cultivation over a long period of time.

3 Methods

The principal investigator for the archaeological inventory survey was Thomas S. Dye, PhD. The survey was conducted between May 5 and May 9, 2014 by T. S. Dye & Colleagues BA-level archaeological technician Nathan DiVito with the assistance of Kaulana and Gaelyn Kaho'ohalahala, Katrina Gillespie, Ben Ostrander, Kamakani Palolo, Kalei Ropa, and Zeth Kipi from the Culture and Historic Preservation department of Pulama Lāna'i. During the project, a 200 acre parcel of land was surveyed.

A 100 percent pedestrian survey was conducted over the entire project area except for the portion that had been previously surveyed. The survey included a visual inspection of the project location for artifacts, cultural deposits, fire-pit features, lithic scatters, and surface architecture. The survey consisted of numerous transects spaced at 10 m intervals.

Subsurface testing of the project area included the excavation of 31 backhoe trenches. Backhoe trenches were excavated to a depth of approximately 145 cm below ground surface, measured 3 to 4 m in length, and were 1 m wide. Backhoe trenching was conducted with a backhoe and operator provided by Pulama Lāna'i.

Digital photographs were taken throughout the survey to record the progress of the work and provide a record of the exposed stratigraphy and photographs of each backhoe trench profile and its location on the landscape were taken. A photo log was kept in the field notebook indicating the subject of the photograph, the direction the camera was pointing, and other information as appropriate.

The location of each trench excavation was recorded with a differentially corrected Global Positioning System (GPS) device. Stratigraphic information was recorded in a field notebook and a stratigraphic profile was recorded for each backhoe trench. Stratigraphic information was recorded with the method described by Harris [17]. Sediment deposits were assigned a *unit of stratification number*, referred to here as a *context*. Stratigraphic profiles were recorded and illustrated in the field notebook. Profile illustrations were drawn to a scale of 1:10. The profile information adequately defined the *stratigraphic relationships* of each context.

A depositional *phase* model was developed to explain the origin of the observed material. *Phasing* is an analytic method of correlating deposits with similar character and stratigraphic position [17:105]. The same stratigraphic contexts were observed at each test trench. A general depositional pattern was observed in the field; this pattern is brought out by assigning each context with similar content and stratigraphic position to one of the phases described below:

Phase 1 Naturally deposited terrestrial sediments.

Phase 2 Cultural deposits.

Phase 3 Plow zone/secondarily deposited soils.

Sediment samples were collected and recorded in a bag list kept in the field notebook. All identified stratigraphic contexts are listed in appendix A. All samples collected during the project are listed in appendix B. All artifacts collected are listed and described in appendix C.

In the laboratory, the context descriptions and bag list were entered into the T. S. Dye & Colleagues, Archaeologists database. Sediments were described for texture using the method described by Thien [30], and for color with reference to a Munsell® soil color chart [16]. Profile illustrations were scanned and drafted using vector graphics software. All artifacts collected during the project were scanned and digitally recorded using a flatbed scanner.

Prior to the survey, a review of all available historical literature and previous archaeological studies was conducted. In addition, longtime Lāna'i residents—Kepā Maly, the Vice President of Culture and Historic Preservation for Pulama Lāna'i; Kaulana Kaho'ohalahala; and the staff of the Pulama Lāna'i Culture and Historic Preservation department—were consulted for their knowledge and insight on the project areas.

All artifacts and samples collected during the project were analyzed at laboratory facilities provided by the Culture and Historic Preservation department of Pulama Lāna'i. All project documentation and notes will be permanently stored at the T. S. Dye & Colleagues, Archaeologists laboratory. All sediment samples collected were discarded in the areas from which they came and all artifacts collected during the project will be permanently stored at facilities provided by Pulama Lāna'i.

4 Field Results

A 100 percent pedestrian survey was conducted for the Miki Basin 200 Acre Industrial Development. Visibility within the parcel was poor due to tall grasses and dense vegetation. Soil was only visible between and under low-lying plants, in and along deer trails that cross the area, and within two drainage cuts that run north to south across the northern portion of the parcel. Black plastic fragments and tubing, indicative of pineapple cultivation, were observed over the entire parcel. No Land Court Awards or previously recorded archaeological sites were present within the parcel.

During the pedestrian survey, two isolated finds of secondarily deposited adze rejects, a secondarily deposited historic artifact scatter, a secondarily deposited lithic scatter,

and an exposed fire-pit and lithic scatter, Site 50-40-98-1980, were documented (fig. 9). The two isolated finds are secondarily deposited adze rejects that were present on the ground surface of the project area, Context 0. They have been broken during the adze manufacturing process. No other cultural materials were observed or collected around the finds.

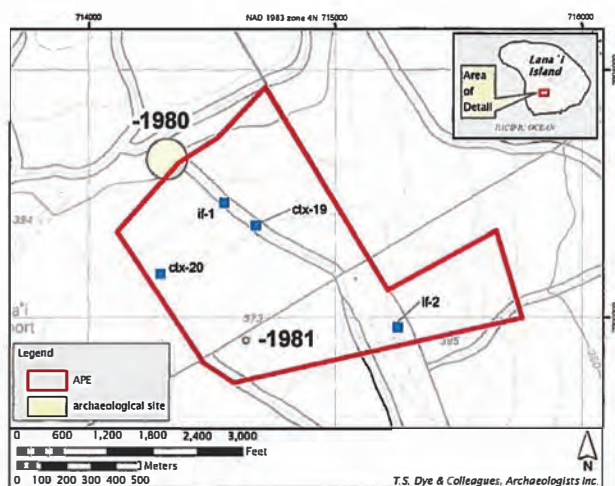


Figure 9: Location of historic properties, Sites 50-40-98-1980 and 50-40-98-1981; artifact scatters, Contexts 19 and 20; and isolated finds 1 and 2, within the Miki Basin 200 Acre Industrial Development area.

The secondarily deposited lithic scatter, Context 19, was located in and along an eroded drainage in the northern portion of the project area (fig. 9). The scatter was approximately 20 m in diameter and comprised 20 or more pieces of flaked basalt. A waterworn cobble *manuport* and a fragment of an adze reject were collected from the scatter (fig. 10). The scatter is located on a slope and appears to have been secondarily deposited as a result of water erosion along the drainage cut (fig. 11).

The historic artifact scatter, Context 20, is located along the western boundary of the parcel and was approximately 30 m in diameter (fig. 9). Four pieces of semi-porcelain



Figure 10: Artifacts collected from the Context 19 lithic scatter: *a*, waterworn cobble manuport; *b*, adze reject, distal portion.

Figure 11: Photograph of a portion of the Context 19 lithic scatter and an eroded drainage cut, looking northwest. Note that Site 50-40-98-1980 is located at the top of the drainage in the eroded area in the background of the photo. The scale is marked in decimeters.



ceramic, two pieces of white earthenware ceramic, and a piece of clear bottle glass were collected from the scatter (fig. 12). An aqua blue "brandy" style bottle lip was also observed within the scatter but was not found during surface collection.

The base fragment of a semi-porcelain cup with a partial maker's mark was the only artifact from the scatter that had diagnostic characteristics (fig. 12, *a*). The partial maker's mark read "... MARK/MADE IN JAPAN" around a rising sun logo. In August of 1921, the United States Customs Bureau required all Japanese ceramics to be marked with "JAPAN" or "Made in Japan" as "Nippon" was used on imported Japanese ceramic up until that time. Imports of Japanese ceramics ceased in 1941 due to World War II and did not resume until the end of the war in 1945. The hand painting on a piece that is part of the same

vessel (fig. 12, *b*) also suggests that it was produced prior to World War II. Taking this into consideration, it is likely that the piece was produced between 1921 and 1941. Since there are no known historic habitation sites in the area in which the scatter was found, it is likely to be associated with Miki Camp, a camp established for the workers of the plantation in the early 1920s which would have been occupied until at least 1947. It is located along Miki Road south of the project parcel and would have been the closest known habitation area to be occupied during the 1921–1941 time period.

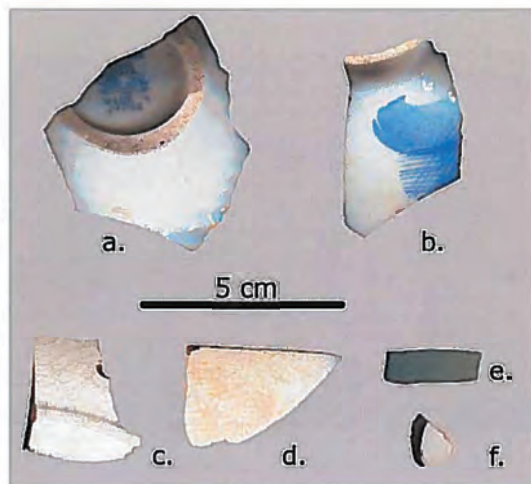


Figure 12: Ceramics collected from the Context 20 artifact scatter: *a*, semi-porcelain base sherd with partial maker's mark; *b*, hand-painted cobalt blue semi-porcelain body sherd; *c*, undecorated white earthenware base sherd; *d*, undecorated white earthenware rim sherd; *e*, green glazed semi-porcelain rim sherd; *f*, undecorated semi-porcelain body sherd.

Site 50–40–98–1980 is located in the northernmost portion of the project area in a highly eroded area along the fence line boundary with the Lānaʻi Airport within and adjacent to the same drainage cut where the Context 19 lithic scatter was recorded (fig. 9). The site comprises two separate components, a lithic scatter and an eroded and exposed fire-pit.

The first component, the Context 18 lithic scatter, is located on the crest of a slope and extends south along a drainage cut. The scatter was approximately 30 × 120 m and contained 30 or more pieces of flaked basalt. All of the artifacts that were observed and

collected from the scatter came from within or adjacent to the existing drainage in areas that lacked vegetation. A cowry shell fragment and several pieces of branch coral were observed within the scatter. Three adze rejects, a hammerstone, a waterworn pebble manuport (possibly a sling stone), and a piece of branch coral were collected from the scatter (fig. 13). No artifacts were observed or collected in the vegetated areas around the drainage. This suggests that the artifacts have either moved downslope from a higher location as a result of water erosion or that the site has eroded and deflated over time. In either case, the artifacts would have been secondarily deposited from their original position.

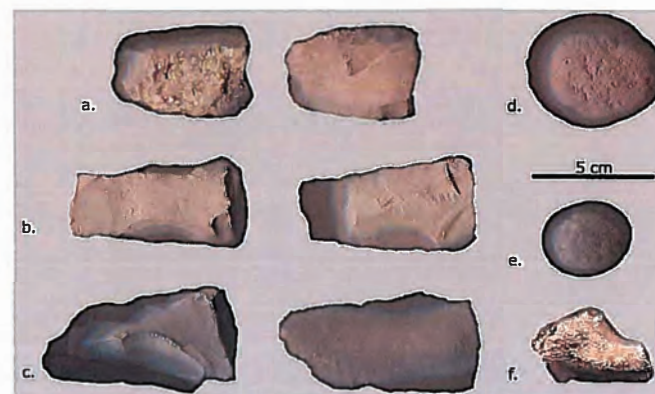


Figure 13: Artifacts collected from the Context 18 lithic scatter, part of Site 50–40–98–1980: *a*, dorsal and ventral views of an adze reject, distal portion; *b*, dorsal and ventral views of an adze reject, proximal portion; *c*, dorsal and ventral views of an adze reject, distal portion; *d*, waterworn cobble hammerstone; *e*, waterworn pebble manuport (possible sling stone); *f*, branch coral. The three adze rejects are depicted with the dorsal side to the left and the ventral side to the right.

The second component of Site 50–40–98–1980 was an exposed fire-pit remnant recorded as Context 15. It is located within the Context 18 lithic scatter on the crest of the slope in a heavily eroded area. The fire-pit remnant was observed over an approximately 75 cm diameter area and had exposed charcoal and a few small cobble-size fire-affected rocks on the surface and eroding downslope. No black plastic or tubing was observed in or around the fire-pit because the plow zone layer, Context 1, had completely eroded away. It is likely that the fire-pit had originally been truncated by the Context 1 plow zone soil.

Following documentation of the fire-pit on the surface, the fire-pit was bisected twice to determine its size and stratigraphic position (fig. 14).

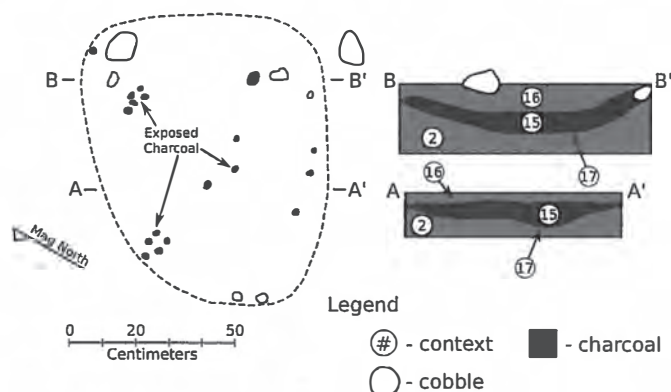


Figure 14: Sketch map and cross section drawing of a subsurface fire-pit recorded as Site 50-40-98-1980.

The first bisection point, A to A', cut the fire-pit in half to expose the stratigraphic section. Following bisection, a 15 cm deep profile was exposed. Context 16, a loose red silty clay loam sediment, was present from the current ground surface to a depth of 3 cm. It appears that the sediment has been deposited over the fire-pit due to water erosion along the drainage. The fire-pit, Context 15, is a band of charcoal that extends from 3 cm below surface to a depth of 12 cm. The fire-pit at this location is approximately 60 cm wide and is basin shaped. The interface between the Context 15 fire-pit and the material it had been dug into, the Context 2 dark reddish brown silty clay loam hard pan soil, was recorded as Context 17. The Context 2 soil was present to the base of excavation at 15 cm below surface.

The second bisection point, B to B', was cut just in front of the two rocks that were exposed on the surface. Following bisection, a 20 cm deep profile was exposed. Context 16, a loose red silty clay loam sediment, was present from the current ground surface to a depth of 6 cm. The sediment has been deposited over the fire-pit due to water erosion along the drainage. The fire-pit, Context 15, is a curved band of charcoal that extends from 6 cm below surface to a maximum depth of 15 cm. The fire-pit at this location is approximately 75 cm wide and is basin shaped. The interface between the Context 15 fire-pit and the material it had been dug into, the Context 2 dark reddish brown silty clay

loam hard pan soil, was recorded as Context 17. The Context 2 soil was present to the base of excavation at 20 cm below surface. A charcoal sample was collected from each profile after bisection for wood taxa identification and ^{14}C analysis.

In addition to the pedestrian survey, 31 backhoe trenches were excavated within the project area (fig. 15). The purpose of the backhoe trenches was to search for subsurface cultural deposits and to record the soils and depth of the plow zone within the parcel. A single historic property, a subsurface fire-pit, was identified in Backhoe Trench 21 during trenching and was recorded as Site 50-40-98-1981. No artifacts were collected from any of the trenches excavated.

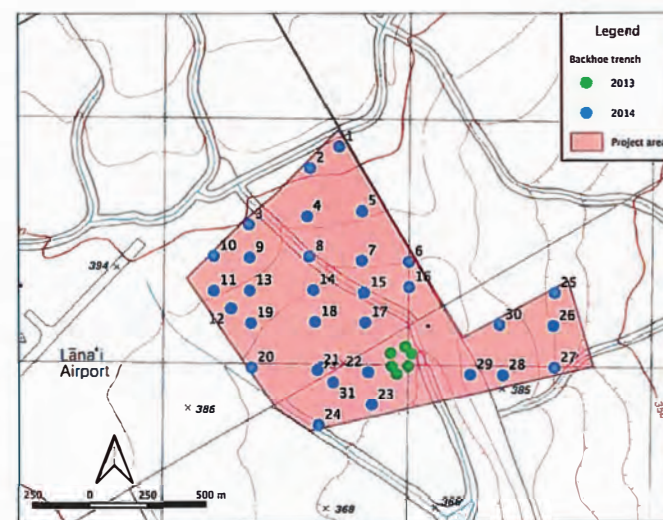


Figure 15: The proposed Miki Basin 200 Acre Industrial Development project area showing the locations of Backhoe Trenches 1-31. The trench locations from the DiVito and Dye [7] investigation are also shown. No trenches were placed in the developed area where the existing Maui Electric Company (MECO) facility lies.

Backhoe Trenches 1-5 were excavated in the northeasternmost portion of the project area and had similar soils (fig. 16, table 7). They contained the plow zone soil, Context 1, to depths ranging from 35 to 45 cm below surface. Context 1 overlay Context 2, a

dark reddish brown silty clay loam hardpan soil present to depths ranging from 65 to 105 cm below surface. Context 2 overlay Context 9, a dark brown silty clay loam present to depths ranging from 100 to 130 cm below surface. It overlay Context 8, a dark reddish brown silty clay loam with gray and red degrading rock fragments present to the base of excavation in each trench.

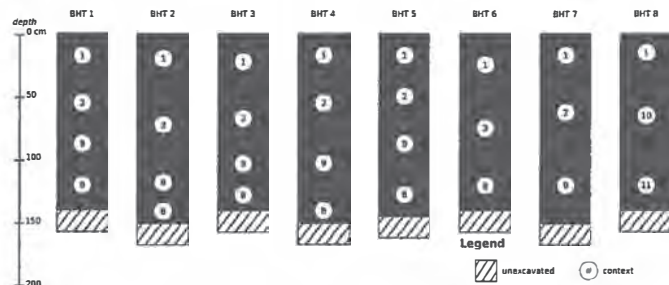


Figure 16: Stratigraphic profiles for Backhoe Trenches 1-8.

Table 7: Sediment descriptions for Backhoe Trenches 1-8

Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 1				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-75	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	75-100	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; clear, wavy lower boundary	Natural deposition process
8	1	100-140+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 2				
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	40-105	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	105-130	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; clear, wavy lower boundary	Natural deposition process
8	1	130-150+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 3				
1	3	0-45	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	45-90	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	90-115	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; clear, wavy lower boundary	Natural deposition process
8	1	115-140+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 4				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-75	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	75-130	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; clear, wavy lower boundary	Natural deposition process

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
8	1	130-150+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 5				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-65	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	65-110	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; clear, wavy lower boundary	Natural deposition process
8	1	110-145+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 6				
1	3	0-50	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	50-100	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
8	1	100-140+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 7				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-90	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	90-150+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 8				
1	3	0-30	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
10	3	30-100	Dark reddish brown (2.5YR 2.5/4) terrestrial silty clay loam; moderately sticky, moderately plastic; diffuse, wavy lower boundary	Natural deposition event
11	1	100-140+	Red (2.5YR 4/8) terrestrial gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

Backhoe Trenches 7, 10, 12-15, 17-21, and 31 were all excavated in the same general area and had similar soils (fig. 17, table 8). They contained the plow zone soil, Context 1, to depths ranging from 35 to 50 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to depths ranging from 80 to 130 cm below surface. Context 2 overlay Context 9, a dark brown silty clay loam present to the base of excavation in each trench. This was the most commonly observed profile within the project parcel.

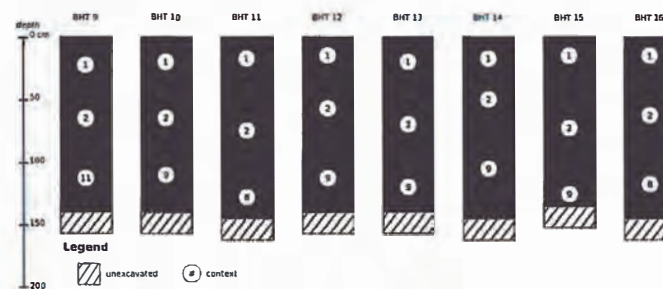


Figure 17: Stratigraphic profiles for Backhoe Trenches 9-16.

Table 8: Sediment descriptions for Backhoe Trenches 9-16

Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 10				
1	3	0-50	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	50-80	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	80-140+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 11				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-115	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
8	1	115-145+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 12				
1	3	0-30	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	30-85	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	85-140+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 13				
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
2	1	40-100	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	100-140+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 14				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-65	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	65-145+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 15				
1	3	0-30	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	30-115	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	115-135+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 16				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-90	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
8	1	90-145+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 9				
1	3	0-45	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	45-85	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
11	1	85-140+	Red (2.5YR 4/8) terrestrial gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

Backhoe Trench 21 contained a subsurface cultural deposit recorded as Site 50-40-98-1981 (see fig. 9, p. 77). The deposit, documented as Context 12, was a truncated fire-pit remnant exposed in the southern profile of the trench (fig. 18). The fire-pit has been truncated by the plow zone layer, Context 1, present to a depth of 35 cm below surface. It appears to have been hit by a plow moving east to west as the charcoal from the fire-pit is scattered an additional 65 cm to the west along the bottom of the Context 1 plow zone layer. The fire-pit is approximately 65 cm in width, approximately 10 cm thick, basin shaped, and is present between 35 and 45 cm below surface. A single rounded volcanic cobble was observed within the feature. The fire-pit has been excavated into Context 2, a dark reddish brown silty clay hardpan soil present to a depth of 100 cm below surface. The interface between the fire-pit and the Context 2 soil it had been excavated into was recorded as Context 13. Context 2 overlay Context 9, a dark brown silty clay loam present to the base of excavation at 150 cm below surface. A charcoal sample was collected from the Context 12 fire-pit for wood taxa and ¹⁴C analysis.

Backhoe Trench 31 was excavated near Backhoe Trench 21 to search for any additional fire-pit features or associated cultural materials. Backhoe Trench 31 contained the same stratigraphic profile as documented in Backhoe Trench 21. A water line excavation trench with an associated 6 in. PVC pipe was observed in the eastern profile of the backhoe trench. It was recorded as Context 14 and was approximately 25 cm in width and extended to a depth of 140 cm below surface. No additional cultural deposits were documented and no cultural materials were collected from the trench.

Backhoe Trenches 6, 11, 16, and 24 also had similar soils (fig. 19, table 9). They contained the plow zone soil, Context 1, to depths ranging from 35 to 50 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to depths ranging from 70 to 115 cm below surface. Context 2 overlay Context 8, a dark reddish brown silty clay loam with gray and red degrading rock fragments to the base of excavation in each trench.

Figure 18: Stratigraphic profile for the Context 12 fire-pit located in Backhoe Trench 21. The feature was later designated Site 50-40-98-1981.

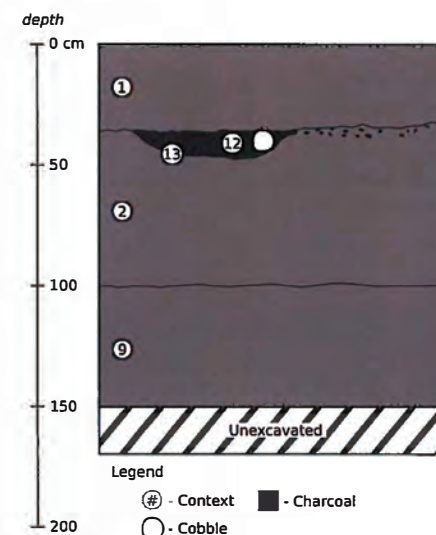


Table 9: Sediment descriptions for Backhoe Trenches 17-24

Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 17				
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	40-85	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	85-135+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 18				
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	40-75	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	75-150+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 19				
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	40-130	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	130-150+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 20				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-110	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	110-140+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 21				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
12	2	35-45	Black (5YR 2.5/1); very abrupt, irregular lower boundary	Cultural deposition event

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
2	1	45-100	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	100-150+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 22				
1	3	0-55	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	55-140+	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 23				
1	3	0-45	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	45-120	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
7	1	120-145+	Dark reddish brown (5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 24				
1	3	0-50	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	50-70	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
8	1	70-150+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

Backhoe Trenches 23 and 29 were excavated along the southernmost portion of the project area. They contained the plow zone soil, Context 1, to depths ranging from 40 to 45 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam

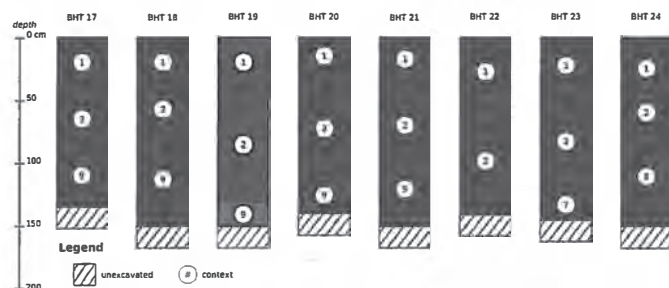


Figure 19: Stratigraphic profiles for Backhoe Trenches 17-24. Note that Backhoe Trench 21 contained the Context 12 fire-pit. See figure 18.

hardpan soil present to depths ranging from 115 to 120 cm below surface. Context 2 overlay Context 7, a dark reddish brown silty clay loam present to the base of excavation in each trench.

Backhoe Trenches 25 and 30 were excavated within the northernmost portion of the parcel located on the east side of Miki Road. They contained the plow zone soil, Context 1, to depths ranging from 35 to 40 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to depths ranging from 65 to 70 cm below surface. Context 2 overlay Context 3, a brown silty clay loam present to the base of excavation in each trench.

Backhoe Trenches 26 and 27 were excavated within the easternmost portion of the parcel located on the east side of Miki Road (fig. 20, table 10). They contained the plow zone soil, Context 1, to depths ranging from 35 to 40 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to depths ranging from 75 to 110 cm below surface. Context 2 overlay Context 6, a very dark gray silty clay loam with degrading rock fragments present to the base of excavation in each trench.

Table 10: Sediment descriptions for Backhoe Trenches 25-31

Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 25				
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
2	1	40-70	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
3	1	70-140+	Strong brown (7.5YR 4/6) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 26				
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	40-110	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
6	1	110-150+	Very dark gray (5YR 3/1) terrestrial very stony silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 27				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-75	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
6	1	75-145+	Very dark gray (5YR 3/1) terrestrial very stony silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 28				
1	3	0-30	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
4	1	30-60	Dark reddish brown (2.5YR 3/4) terrestrial gravelly silty clay loam; moderately sticky, moderately plastic; diffuse, irregular lower boundary	Natural deposition process
5	1	60-145+	Dark reddish brown (2.5YR 2.5/4) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 29				
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	40-115	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
7	1	115-135+	Dark reddish brown (5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 30				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-65	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
3	1	65-150+	Strong brown (7.5YR 4/6) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 31				
1	3	0-25	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	25-85	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	85-150+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

Four of the backhoe trenches contained unique or anomalous profiles. The first, Backhoe Trench 8, contained the plow zone soil, Context 1, to a depth of 30 cm below surface. Context 1 overlay Context 10, a dark reddish brown secondarily deposited plow zone soil with plastic fragments and tubing present to a depth of 100 cm below surface. Context 10 overlay Context 11, a red gravelly silty clay loam with degrading rock present to the base of excavation at 140 cm below surface.

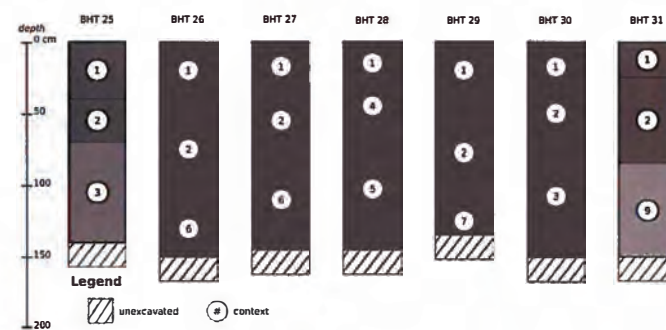


Figure 20: Stratigraphic profiles for Backhoe Trenches 25-31.

Backhoe Trench 9 contained the plow zone soil, Context 1, to a depth of 45 cm below surface. Context 1 overlay Context 2, a dark reddish brown red silty clay hardpan soil present to a depth of 85 cm below surface. Context 2 overlay Context 11, a red gravelly silty clay loam present to the base of excavation at 140 cm below surface.

Backhoe Trench 22 contained the plow zone soil, Context 1, to a depth of 55 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to the base of excavation at 140 cm below surface.

Backhoe Trench 28 contained the plow zone soil, Context 1, to a depth of 30 cm below surface. Context 1 overlay Context 4, a dark reddish brown silty clay loam with degrading rock fragments present to a depth of 60 cm below surface. Context 4 overlay Context 5, a dark reddish brown silty clay loam with red and black degrading rock fragments present to the base of excavation at 145 cm below surface.

5 Summary and Conclusions

At the request of Pulama Lāna'i, T. S. Dye & Colleagues, Archaeologists has completed an archaeological inventory survey for the Miki Basin 200 Acre Industrial Development. Pedestrian survey and subsurface testing were conducted to determine the presence or absence of historic properties and cultural materials within the Miki Basin 200 Acre Industrial Development. During the project, a 100 percent pedestrian survey of the area was conducted and 31 backhoe trenches were excavated. Black plastic fragments, indicative of pineapple cultivation, were observed within the surface layer of soil over the entire project area.

The pedestrian survey resulted in the identification and documentation of a secondarily deposited historic artifact scatter, a secondarily deposited lithic scatter, and an historic

property, Site 50-40-98-1980. Because the two secondary artifact scatters lack integrity of setting, location, and association with other sites and features, they do not represent historic properties and no further investigations of the scatters are warranted.

Subsurface testing included the excavation of 31 backhoe trenches. A truncated fire-pit feature, designated Site 50-40-98-1981, was documented in one of the backhoe trenches. All of the backhoe trenches contained plow zone soils overlying natural hardpan and natural silty clay loam, some of which had degrading rock fragments. No artifacts were collected from any of the trenches excavated.

Both historic properties are evaluated as significant for the important information on Hawaiian history and prehistory that they have yielded. The Miki Basin 200 Acre Industrial Development will have an adverse effect on both historic properties and it is recommended that a data recovery plan be developed for Sites 50-40-98-1980 and 50-40-98-1981, and that this plan be implemented prior to proposed construction activities within the parcel.

It is further recommended that the data recovery plan develop research questions that can be addressed with data yielded by the following laboratory tasks.

Site 50-40-98-1980 Analysis of the wood charcoal collected from the Context 15 fire-pit for taxa identification and ¹⁴C dating. Analysis of artifacts collected from the Context 18 lithic scatter to further investigate the tool-making reduction sequence utilized on the island [32].

Site 50-40-98-1981 Analysis of the wood charcoal collected from the Context 12 fire-pit for taxa identification and ¹⁴C dating.

A Stratigraphic Contexts

Context	Description
0	Surface of the project area.
1	Dark reddish brown silty clay loam plow zone soil with black plastic fragments and tubing throughout.
2	Dark reddish brown silty clay loam hardpan soil.
3	Brown silty clay loam.
4	Dark reddish brown silty clay loam with degrading rock fragments throughout.
5	Dark reddish brown silty clay loam with red and black degrading rock fragments throughout.
6	Very dark gray silty clay loam with degrading rock fragments throughout.
7	Dark reddish brown silty clay loam.
8	Dark reddish brown silty clay loam with gray and red degrading rock fragments.
9	Dark brown silty clay loam.
10	Secondarily deposited plow zone soils with plastic fragments and tubing.
11	Orange brown silty clay loam with degrading rock throughout.
12	Fire-pit located in Backhoe Trench 21.
13	Interface between the Context 12 fire-pit and the material it had been excavated into, Context 2.

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Context	Description
14	Excavation trench for a 6 in. PVC waterline.
15	Fire-pit remnant exposed on the surface of the Context 2 soil.
16	Secondarily deposited silty clay loam sediment covering the Context 15 deposit.
17	Interface between the Context 15 fire-pit and the soil it had been excavated into, Context 2.
18	Surface scatter of flakes, coral, a cowry shell fragment, two adze rejects, and two possible hammerstones located near the Context 15 fire-pit.
19	Surface scatter of flakes and a single hammerstone.
20	Historic artifact scatter located on the ground surface.

B Field Catalog

Catalog	Site	Unit	Context	Contents
1	No site number	Backhoe Trench 30	1	Sediment
2	No site number	Backhoe Trench 30	2	Sediment
3	No site number	Backhoe Trench 30	3	Sediment
4	No site number	Backhoe Trench 28	4	Sediment
5	No site number	Backhoe Trench 28	5	Sediment
6	No site number	Backhoe Trench 27	6	Sediment
7	No site number	Backhoe Trench 29	7	Sediment
8	No site number	Backhoe Trench 16	8	Sediment
9	No site number	Backhoe Trench 5	9	Sediment
10	No site number	Backhoe Trench 8	10	Sediment
11	No site number	Backhoe Trench 8	11	Sediment
12	No site number	Backhoe Trench 21	12	Charcoal sample
13	No site number	Ground surface	15	Charcoal sample
14	No site number	Ground surface	20	Artifacts
15	No site number	Isolated Find 1	0	Adze reject
16	No site number	No unit	19	Artifacts
17	No site number	No unit	18	Artifacts
18	No site number	No unit	18	Artifacts
19	No site number	Isolated Find 2	0	Adze reject

C Artifact List

Bag	Material	Class	Period*	#	Wt. [†]	Whole	Notes
15	stone	adze reject	trad.	1	86.1		Discarded due to a transverse fracture sustained during flaking; length 6.7 cm; width 3.7 cm; thickness 1.9 cm

* trad. = Traditional, hist. = Historic; † Weight in grams.

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Bag	Material	Class	Period*	#	Wt. [†]	Whole	Notes
19	stone	adze reject	trad.	1	242.5		Adze reject proximal end. Sustained a transverse fracture while attempting to remove flakes across the dorsal side; length 6.0 cm; width 3.4 cm; thickness 2.2 cm
Context 18							
17	coral	manuport	trad.	1	30.7		Length 5.4 cm; width 3.4 cm; thickness 2.1 cm
17	stone	adze reject	trad.	1	126.8		Proximal end of an adze reject discarded due to an end shock fracture; length 7.8 cm; width 4.2 cm; thickness 2.7 cm
17	stone	adze reject	trad.	1	76.4		Distal end of an adze reject, likely broken off due to an end shock fracture. The artifact has cortex on its dorsal side and shows evidence of problems thinning the cross section of the artifact during flaking; length 6.0 cm; width 3.9 cm; thickness 1.9 cm
17	stone	adze reject	trad.	1	110.5		Distal portion of a large flake with signs of heavy step fracturing along one edge. It is likely to have been discarded due to a transverse fracture sustained during flaking along the edge in addition to trouble removing flakes across the artifact. Made of a dark gray fine-grained basalt; length 8.5 cm; width 4.6 cm; thickness 2.3 cm
18	stone	hammerstone	trad.	1	144.5		Large waterworn pebble manuport with battering on at least one edge from use as a hammerstone; length 5.8 cm; width 5.2 cm; thickness 3.6 cm

* trad. = Traditional, hist. = Historic; † Weight in grams.

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Bag	Material	Class	Period*	#	Wt. [†]	Whole	Notes
18	stone	waterworn pebble	trad.	1	53.8		Waterworn pebble manuport, possibly a sling stone; length 3.9 cm; width 3.3 cm; thickness 2.8 cm
Context 19							
16	stone	adze reject	trad.	1	20.6		The distal end of an adze reject broken due to an end shock fracture during flaking; length 4.8 cm; width 2.6 cm; thickness 1.2 cm
16	stone	waterworn cobble	trad.	1	142.2		Small waterworn cobble manuport; length 8.7 cm; width 4.6 cm; thickness 2.8 cm
Context 20							
14	ceramic	semi-porcelain	hist.	1	26.7		Undecorated base sherd with footring and partial cobalt blue maker's mark that reads "TRADEMARK/MADE IN JAPAN" with a rising sun logo between the lettering. "Made in Japan" maker's marks on ceramics were required starting in 1921 and continued to 1941. Part of the same vessel as the hand-painted fragment; length 5.7 cm; width 5.3 cm; thickness 0.6 cm
14	ceramic	semi-porcelain	hist.	1	12.6		Body sherd with footring and a hand-painted cobalt blue design with crisscrossing lines. Part of the same vessel as the sherd with the maker's mark; length 5.1 cm; width 3.0 cm; thickness 0.6 cm
14	ceramic	semi-porcelain	hist.	1	0.9		Rim sherd that is undecorated on the inside and has a green glaze on the outside; length 2.4 cm; width 0.8 cm; thickness 0.2 cm

* trad. = Traditional, hist. = Historic; † Weight in grams.

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Bag	Material	Class	Period*	#	Wt. [†]	Whole	Notes
14	ceramic	semi-porcelain	hist.	1	0.4		Undecorated body sherd; length 1.3 cm; width 1.2 cm; thickness 0.3 cm
14	ceramic	white earthenware	hist.	1	6.7		Undecorated rim sherd; length 4.0 cm; width 2.5 cm; thickness 0.6 cm
14	ceramic	white earthenware	hist.	1	6.7		Undecorated body sherd with footring; length 3.1 cm; width 2.9 cm; thickness 0.6 cm
14	glass	bottle	hist.	1	19.0		Clear glass bottle shoulder sherd; length 5.4 cm; width 3.6 cm; thickness 0.6 cm

* trad. = Traditional, hist. = Historic; † Weight in grams.

Glossary

abrupt A transition between *horizons* that is 0.5 cm or greater but still less than 2 cm. See also *horizon*.

caldera A caldera is a cauldron-like volcanic feature usually formed by the collapse of land following a volcanic eruption. They are sometimes confused with volcanic craters.

Christmas berry The ornamental tree, *Schinus terebinthifolius*, known for its bright red berry-like fruits.

clay Fine earth particles less than 0.002 mm.

clear A transition between horizons that is 2 cm or greater but still less than 5 cm. See also *horizon*.

cobble Rock fragment ranging from 76 mm to less than 250 mm.

Contact A period in Hawaiian history marked by the arrival of Captain James Cook in 1778 and characterized by the social changes that eventually brought about the end of traditional Hawai'i.

context A unit of stratification associated with a natural or cultural process or event.

cortex The weathered outer rind that covers the unweathered inner material of a piece of tool stone.

diffuse A transition between horizons that is 15 cm or greater. See also *horizon*.

fee simple An estate of inheritance, held without limitation to a particular class of heirs; unconditional inheritance.

fire-pit A pit of varying depth, often bowl shaped at the base, usually identified by a concentration of charcoal and/or burned material in the fill, especially at the feature interface.

gradual A transition between horizons that is 5 cm or greater but still less than 15 cm. See also *horizon*.

guava The historically introduced tree or shrub, *Psidium guajava*, common in Hawai'i today.

historic property According to Hawai'i Administrative Rules §13-198-2, an "historic property" is any building, structure, object, district, area, or site, including underwater site, that is significant in the history, architecture, archaeology, or culture of the state of Hawai'i, its communities, or the nation.

irregular A soil boundary in which the depth of undulation is greater than its width.

manuport A natural object found in an unnatural position, having been carried there by man.

material culture In *rock art* recording, a category which includes images that are cultural objects, e.g., spears, paddles, gourds, cape, etc.

midden A heap or stratum of refuse normally found on the site of an ancient settlement. In Hawai'i, the term generally refers to food remains, whether or not they appear as a heap or stratum.

moderately plastic A 4 mm diameter roll of soil will support itself if held on end, but a 2 mm diameter roll of soil will not.

moderately sticky Soil adheres to both fingers, after release of pressure and stretches some on separation of fingers.

phase A grouping between an individual unit of stratification and a *period*: several units of stratification make up a phase and several phases compose a period.

phasing Arrangement of the stratification into a stratigraphic sequence, and the division of the sequence into phases and periods. See also *periodization*.

project The archaeological investigation, including laboratory analyses and report preparation. See also *undertaking*.

significance A quality of a historic property that possesses integrity of location, design, setting, materials, workmanship, feeling, and association. The qualities are set out in SHPD administrative rule §13-275-6, *Evaluations of Significance*.

site The fundamental unit of archaeological investigation, a location that exhibits material evidence of past human activity.

smooth A soil boundary which is planar with few or no irregularities.

stone Rock fragment ranging from 250 mm to less than 600 mm.

stratigraphic relationships These are either of a superpositional nature, where one deposit lies above another, or they are made up of correlations, where strata or features have been cut into isolated parts by later digging.

sugarcane A grass, *Saccharum officinarum*, widely grown in warm regions as a source of sugar. See also *kā*.

unit of stratification number A number assigned to each natural and man-made layer, upstanding stratum, and vertical and *horizontal feature interface*. Once numbered, each unit will automatically have a set of stratigraphic relationships which must be defined and recorded.

wavy A soil boundary in which the width of undulation is greater than its depth.

Hawaiian Terms

- ahu** Heap, pile; altar, shrine, cairn.
- ahupua'a** Traditional Hawaiian land division, usually extending from the uplands to the sea.
- 'āina** Land, earth.
- akua** God, goddess, spirit, ghost, devil, image, corpse.
- 'ālae** A bird, *Fulica americana alae*, the mudhen or Hawaiian gallinule. See also *'ālae kea*.
- ali'i** Chief, chiefess, officer, ruler, monarch, peer, head man, noble, aristocrat, king, queen, commander.
- aloha** Love, affection, compassion, mercy, sympathy, etc.
- 'apapane** A honeycreeper, *Himatione sanguinea* with crimson body and black wings and tail, found on all the main Hawaiian Islands. Its feathers occasionally were used for featherwork.
- 'aumakua** Family or personal gods, deified ancestors who might assume the shape of animals, rocks, clouds, or plants.
- 'awa** A shrub, *Piper methysticum*, the root of which is the source of a narcotic drink of the same name used in ceremonies, prepared formerly by chewing, later by pounding.
- hale** House, building, station, hall.
- he'e** Octopus.
- heiau** Traditional Hawaiian place of worship.
- helu** To count, number, compute, take a census, figure enumerate, list, include, impute; to assess, as taxes; to chant a list of names, as of genealogy; including, counting, enumeration, census, list, rate, number, figure, total, inventory; statistics.
- 'ili** A land section, next in importance to *ahupua'a*, and usually a subdivision of an *ahupua'a*.
- 'iliahi** Native trees and shrubs belonging to the genus *Santalum*, or sandalwood. Traditionally, it was powdered and mixed with coconut oil to make perfume for *kapa*.
- imu** Underground oven.
- ipu** The gourd, *Lagenaria siceraria*.
- kahiki** Tahiti, foreign land.
- kahuna** Priest, sorcerer, magician, wizard, minister, expert in any profession.
- kala** A generic name for fish in the Unicornfish genus *Naso*. It is generally caught in nets or with a spear. The flesh has a strong odor and is rarely eaten raw; it is often broiled or partially dried and broiled.
- kalo** The taro, *Colocasia esculenta*, was a staple food in traditional Hawai'i and all parts of the plant were used. The rootstock was baked or steamed, then eaten sliced or pounded to make *poi*, raw taro was also grated and mixed with coconut milk to make desserts, the leaves, leaf stems and flowers were also used in cooking. Medicinally the leaves and rootstock were used to treat many ailments. The plant was also used ritually, as bait for fish, glue, and to make dye.
- kama'āina** Native-born, one born in a place, host.
- kapa** Tapa cloth, as made from *wauke* or *māmaki* bark.
- kapu** Taboo, prohibition; special privilege or exemption from ordinary taboo; sacredness;

- prohibited, forbidden; sacred, holy, consecrated; no trespassing, keep out.
- kāula** Prophet, seer, magician.
- kawakawa** Bonito, little tunny (*Euthynnus yaito*).
- kihāpai** Small land division, smaller than a *paukū*; cultivated patch, garden, orchard, field, small farm.
- kō** Sugarcane, *Saccharum officinarum*, was introduced to Hawai'i by Polynesian settlers, who cultivated it widely. The stalk was chewed between meals for its sweetness, brought on long journeys to ease hunger, and eaten in times of famine; juice from the stalk was fed to nursing babies, and used as a sweetening agent in medicinal herbal concoctions; the leaves were used as thatching for houses; the leaf midrib was used for plaiting braids that were made into hats; the stem of the flower was used to make darts for a child's game.
- ko'a** Shrine, often consisting of circular piles of coral or stone, built along the shore or by ponds or streams, used in ceremonies as to make fish multiply; also built on bird islands, and used in ceremonies to make birds multiply.
- koa haole** A historically introduced small tree, *Leucaena glauca*.
- Kona** Leeward sides of the Hawaiian Islands. Name of a leeward wind.
- konohiki** Head man of an *ahupua'a* land division under the chief; land or fishing rights under control of the *konohiki*. See also *ahupua'a*.
- Ko'olau** Windward sides of the Hawaiian Islands.
- kūkini** Runner, swift messenger, as employed by old chiefs, with a premium on their speed.
- kukui** The candlenut tree, *Aleurites moluccana*, introduced to Hawai'i by Polynesian settlers. The outer husk of the fruit or nut was used to make a black dye for tapa and tattooing; sap from the fruit was used as medicine to treat thrush, and used as a purgative; the hard shell of the nut was used in *lei* making; the kernel of the nut was the source of an oil that was burned for illumination and also used as a wood varnish for surfboards and canoes; the kernel was also chewed and spit on rough seas to calm the ocean and baked kernels were mixed with salt and chili pepper to make a relish (*'inamona*); the trunk was used to make canoes and floats for fishing nets; a reddish dye was made from the bark and/or root; a gum exuded from wounded bark was used to treat tapa; the flower was mixed with sweet potato to treat thrush; the leaves were used in a poultice for swelling and infection.
- kula** 1. Plain, field, open country, pasture; land with no water rights. 2. School.
- kuleana** Right, title, property, portion, responsibility, jurisdiction, authority, interest, claim, ownership.
- lawai'a** Fisherman; to catch fish.
- lehua** The flower of the 'ōhi'a tree, *Metrosideros polymorpha*; also the tree itself. See also 'ōhi'a lehua.
- lei** Garland, wreath.
- mahalo** Thanks, gratitude.
- Māhele** The mid-nineteenth century land division responsible for the introduction of fee simple land title in Hawai'i.
- mai'a** All kinds of bananas and plantains.

maika Ancient Hawaiian game suggesting bowling.

maile A native twining shrub, *Alyxia olivaeformis*, used in traditional Hawaiian religion to evoke Laka, the goddess of hula. *Maile* sticks gummed with lime were used as part of a rig to catch birds.

māla Garden, plantation, patch, cultivated field.

māmāne A native tree, *Sophora chrysophylla*, that thrives at high altitudes. Traditionally the wood was used for a variety of wood implements, and also in *hōlua* sleds. The flower was used medicinally as an astringent.

manō Shark. In Hawaiian culture, there are two classes of sharks. *Manō kākā* are sharks with human affiliations, and *manō i'a* are wild sharks. *Manō kākā* were revered and cared for, and were *akua* or 'aumakua.

mō'i King, queen, sovereign, monarch, or a rank of chiefs who could succeed to the government but who were of lower rank than chiefs descended from the god Kāne.

mo'o 1. Narrow strip of land, smaller than an 'ili; 2. Lizard, reptile of any kind, dragon, serpent; water spirit.

naio A native tree, *Myoporum sandwicense*, with hard, dark, yellow-green wood. The wood was used traditionally for the main timbers of houses.

pala A native fern (*Marattia douglasii*), with a short trunk and large, long-stemmed, much divided, dark green fronds. In time of famine, the thick, starchy, hoof-shaped bases of the frond stems, which cover the short trunk, were eaten after being baked in an *imu* overnight. The mucilaginous water resulting from slicing and soaking the raw stems in water was used medicinally. Pieces of the fronds mixed with *maile lei* enhanced their fragrance. The fern was also used in *heiau* ceremonies.

pānini A cactus, *Opuntia megacantha*, introduced to Hawai'i in the 1800s. The Hawaiian name means "unfriendly wall." Hawaiians made a fermented drink from the fruits and also ate them raw.

paukū A land section smaller than a *mo'o*.

pili A native grass, *Heteropogon contortus*, whose leaves were used traditionally as house thatch.

pipi 1. Hawaiian pearl oyster, *Pinctada radiata*. In songs this is known as the *i'a hāmau leo o 'Ewa*, 'Ewa's silent sea creature—it was believed that talking would cause a breeze to ripple the water and frighten the *pipi*. 2. Cattle.

poi The Hawaiian staff of life, made from cooked taro corms, or rarely breadfruit, pounded and thinned with water.

pua kala A native perennial herb, *Argemone glauca*, whose seeds mixed with a yellow sap from the stalk were used as a narcotic for pain relief; the sap was also used to treat warts.

pūhi Any eel.

pule Prayer, magic spell, incantation, blessing.

'uala The sweet potato, *Ipomoea batatas*, introduced to Hawai'i by Polynesian settlers, was a staple food. The tuber was cooked whole and eaten or it was made into poi and mixed with coconut milk to make a dessert; it was used as bait for mackerel fishing; and to make a fermented drink called 'uala 'awa'awa. The vine made a *lei* which was worn by nursing mothers to ensure a good flow of milk; when dried, the

vine was also used as padding underneath floor mats. All parts of the plant were used as food for pigs. Kamapua'a was the god of the sweet potato.

uhu An adult fish in the family Scaridae.

'ulu 1. Discoidal, smooth stone as used in 'ulu *maika* game; 2. Breadfruit, *Artocarpus altilis*.

wahine Woman, lady, wife; sister-in-law, female cousin-in-law of a man.

wauke A small tree or shrub, *Broussonetia papyrifera*, whose bark was made into *kapa* cloth. The inner bark was used to make cordage, and the shoots were used to treat childhood diseases. The leaves, along with banana and taro leaves, were used ceremonially to wrap the bodies of *ali'i* after death.

weke Certain species of Mullidae, surmullets, or goatfish, which have large scales and are usually found in reefs. Red and light-colored *weke* were popular as offering to the gods.

Abbreviations

ac. A unit of land area equal to 4,840 square yards (0.405 hectare).

AD *Anno Domini*, the Christian era in the Gregorian calendar, starting from the year AD 1 as the calculated year in which Christ was born.

cm The centimeter, a derived unit of length in the International System of Units, equal to 10^{-2} m. See also m.

GPS Global Positioning System, operated by the government of the United States. The term is often used for the unit used to communicate with the GPS.

in. A unit of linear measure equal to one twelfth of a foot (2.54 cm).

LCA Awards issued by the Board of Commissioners to Quiet Land Titles between 1846 and 1855 to persons who filed claims to land between 1846 and 1848.

m The meter, a base unit of length in the International System of Units, equal to the length of the path traveled by light in vacuum during a time interval of $1/299,792,458$ of a second.

USGS A federal agency that provides reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect the quality of life.

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