University of Hawai‘i Moloka‘i Archaeological Training Project
2004-2005 Results
Kamalō, Moloka‘i, Hawai‘i

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1. INTRODUCTION

THE MOLOKA‘I ARCHAEOLOGICAL TRAINING PROJECT

As part of a University of Hawai‘i archaeological field training program, archaeological inventory survey and mapping were carried out at Kamalō Ahupua‘a, Ko‘olau District, on the Island of Moloka‘i (Figure 1.1). This work took place on land owned by Kamehameha Schools Bishop Estate on TMK:(2)5-5-001:006 and (2)5-5-002:018. The work was non-destructive to archaeological features, and no plans for development in the project area have been proposed.

The work was carried out in two phases, in Fall 2004 and Spring 2005. Theresa Donham, M.A. served as instructor for the 2004 course, and Windy McElroy, M.A. instructed the 2005 session. Cyril Calugay, B.A. served as teaching assistant in 2005. The 2004 Fall session ran from August 21 through December 18 and consisted of ten field classes, at six hours each. Eight students completed this course. The Spring 2005 fieldwork consisted of eight three-hour classes carried out between February 5 and May 14. This phase of fieldwork was complemented by eight three-hour classroom sessions, and students received college credit for completing the course. Fifteen students participated in this session, five of them returning from the previous semester.

BACKGROUND

Physical Environment

The ahupua‘a of Kamalō is located along the southeastern coast of Moloka‘i approximately 9 miles east of Kaunakakai (see Figure 1.1). Kamalō is roughly rectangular in shape (as opposed to the idealized wedge-shaped Hawaiian land division which ran from the mountain to the ocean) and encompasses roughly 4,000 ac. Today the three ahupua‘a to the east of Kamalō - Kapualei, Kumu‘eli, and Wāwā‘ia - are also
commonly referred to as ‘Kamalō,’ although they are distinct land divisions themselves and are not considered here.

Along the southern, seaward edge of Kamalō are easily exploited fringing reefs and offshore fisheries. The ocean off Kamalō was a prime fishing ground, with far-reaching coral cover before dredging operations of the late 1960s destroyed much of the reef (CRAMP 2005). The Coral Reef Assessment and Monitoring Program (CRAMP) noted a peculiarity of the sea floor in the area:

Unique features of the area are the “blue holes” that lie to the east of Kamalo. This portion of the reef is bisected by canyons that appear to be submerged valleys or areas where reef development was retarded by fresh water and sediment discharged from Kamalo gulch. Another hypothesis is that the “blue holes” are “Karst” dissolution features undermining the carbonate reef structure. Eastern (upwind) vertical faces in the “blue holes” show with high cover by *Porites compressa* with low cover on the western (wave impacted) edge. (CRAMP 2005)

Inland from the coast is the widest coastal plain on Moloka‘i (CRAMP 2005) providing extensive opportunity for agriculture. The Kamalo Stream flows intermittently across the coastal plain but is perennial in the upper valley (Cordy and Cordy 2001:3). It is possible that the stream flowed to the sea year-round before the introduction of ungulates and the subsequent degradation of the watershed above east Moloka‘i, but that remains to be studied. Leone (2002) elaborates on the destruction wreaked by introduced species:

Now thousands strong in the ahupuaa of Kamalo and Kapualei on the island’s south slope, the goats’ incessant grazing has moved the native ohia forest farther up the mountain.

As the goats chomp on native plants and grasses, the soil erodes and runs off onto the reefs below, affecting fishing. And the loss of native forest makes the East Molokai aquifer less productive, so there is less water for crops like taro.

(Leone 2002:1)

Inland from the coastal plain the western half of the *ahupua'a* rises as a steep slope to the 2,500 ft. elevation punctuated with the small erosional gulches of Kapuaoko‘olau, Waiakuilani, ‘Aiko‘olua and Lepelepe (Cordy and Cordy 2001:1). The eastern half of the *ahupua'a* is the large amphitheater-headed Kamalō Gulch. At the head of the gulch are the “Seven Sisters” waterfalls, three of which are named on the 1993 Moloka‘i USGS topographical map (Hina Falls, Mo‘oloa Falls, and Haha Falls) as well as in song:

> Nani wale no na wailele ‘uka  
> ‘O Hina ‘o Haha ‘o Mo‘oloa  
> Na wai ‘ekolu i ka uluwehiwehi  
> ‘O Kamalō i ka malie.  
>
> Beautiful waterfalls of the upland  
> Hina, Haha and Mo‘oloa  
> The three waters in the verdant overgrowth  
> Of Kamalō, in the calm.

*Wahine ‘Ilikea,* by Dennis Kamakahi.  

The walls of Kamalō gulch rise steeply to 1,600 ft. at the extreme. Ka‘āpahu Ridge along the east side of Kamalō Gulch rises to a prominent andesite dome over 3,500 ft. high and is known locally as the *mo‘o* (lizard). According to legend the shark deity of Kainalu (an
ahupua’a to the east) challenged the mo‘o, or lizard deity, of Kamalō to a fight over territory. After a long and bloody battle the mo‘o was mortally wounded so the shark deity of Kainalu claimed victory and swam away. In one last effort before dying, the mo‘o crawled from the sea inland where she died facing north, forever to remain guardian of Kamalō as the ridge Ka‘āpahu (Curtis n.d.:2).

On Moloka‘i the land divisions in the western half of the island are larger while those along the wetter eastern portion of the island are smaller, narrower and more numerous. It is at Kamalō that the ahupua’a increase in size toward west Moloka‘i. Lyons suggested that smaller ahupua’a were the result of a “long occupancy of the soil by a dense population” (1875a:103). Following Lyons’ generalization, the ahupua’a of Kamalō may not have been as densely populated or inhabited for as long a period of time as the smaller ahupua’a to mana‘e, or eastward. (Mana‘e is a common term today used to mean “to the east” but which literally means “to windward” and was probably used traditionally with that reference. The opposite directional term used in east Moloka‘i was malalo, or “down,” meaning down-wind, or toward the west.)

Among written sources there is general agreement that Kamalō was formerly known as Kamalo‘o, which means ‘the dry place’ (Cooke 1949:83; Ne and Cronin 1992:33; Pukui et al. 1974:80). Harriet Ne relates that this is because Kamalō is where the sea “dried up and the waves, breaking on the outside reef, did not come up to the shore” (Ne and Cronin 1992:33). This barrier reef, the longest in Hawai‘i, extends from Honouliwai some 10 miles to the east, nearly to La`au Point about 20 miles west of Kamalō with little change in character at Kamalō.

It is at the coastal bend of Kamalo‘o, ‘the dry place,’ where the relatively high rainfall of southeast Moloka‘i - averaging about 40 in. per year - begins an abrupt and rapid decline westward to less than 15 in. per year along the south central Moloka‘i coast (Juvik and Juvik 1998:56). Perhaps it is this easily recognized change in climate that inspired the name Kamalo‘o, which today has been shortened to simply Kamalō. Such contractions in Hawaiian place names, at least on Moloka‘i, are not uncommon (i.e., Kaunakahakai to Kaunakakai and Haka’a’ano to Haka’ano).

The vegetation in Kamalō ranges from a dense mangrove cover along the western fishpond backed by akulikuli wetlands just inland from the pond, to a largely native ‘ōhi’a forest in the uplands. In the Kamalō gulch are scattered monkeypod (Samanea sp.), mango (Mangifera sp.), Java plum (Eugenia sp.), kukui (Aleurites moluccana), wiliwili (Erythrina sandwicensis), koa haole, (Leucaena glauca) and a ground cover made up of a dense growth of introduced shrubs, weeds, and grasses. The coastal plain has been largely bulldozed and disturbed and is dominated by immature kiawe (Prosopis pallida) with a similar ground cover as that of the valley. Along the ocean edge of the coastal plain is a more mature cover of Java plum, and a few mango and monkeypod trees. The steep slopes, as well as the erosional gulches, are almost predominately mature kiawe forest with a grass and weed understory.
Soils of Kamalāō consist of Kealia silt loams along the coast, Pulehu series soil from behind the coast to the base of the slope, stony alluvial land at the valley bottom and slope base, and very stony land on the slope and ridge (Foote et al. 1972).

**Historic Background**

Only a few references to Kamalāō could be found in the historic literature. One of these lists Kamalāō as the site of a major battle. It is said that Kapiʻiʻiohookalani, son of Kualiʻi the chief of Oʻahu, invaded Molokaʻi with a large force and was fighting the Molokaʻi people at Kamalāō when Alapaʻinui from the Big Island arrived and joined the Molokaʻi forces. The battle was fought for four days with equal successes on both sides until the final battle was fought at Kawela, five miles west of Kamalāō, on the fifth day (Fornander, 1880: 136-137; Kamakau, 1961:70-71). Kamakau and Fornander provide details of the battle:

> Every able-bodied man came out of his house to fight. The Molokai forces attacked from the hills, those of Hawaii from the sea, while a great number landed from the fleet and fought on land. The battle began in the morning and lasted until afternoon. The ruling chief of Oahu found himself surrounded by sea and by land and hemmed into a small space. Ka-piʻiʻi-o-o-ka-lani died at Kawela below Kamiloloa, and many chiefs and fighting men were slaughtered, but some escaped and sailed for Oahu.

(First quoted from Kamakau, 1961:70-71)

This famous battlefield may still be seen in the place described, where the bones of the slain are the sports of the winds that sweep over that sandy plain, and cover or uncover them, as the case may be. The numerical strength of the two opposing armies is not mentioned in the legends; but to judge from the multitude of bones and the number of skulls that are bleaching in the sun when a strong north wind has removed their sandy covering, the numbers engaged on each side must have been reckoned by thousands.

(Fornander 1880:138)

Kamalāō is also noted in moʻolelo for its weke, or goatfish, which is said to induce nightmares. Moʻolelo say that this came about when a boastful shark who lived at Laʻau Point initiated a fight with a large but humble shark from Lahaina (Wight in Curtis n.d.). The boastful shark did not fare well in the altercation and his blood spilled as he swam home. Small fish drank his blood, thus when small fish are eaten from the area, nightmares will occur.

In 1854 the French botanist Jules Remy visited Kamalāō and commented on the weaving industry.

> Soon afterwards we reached the village of Kamaloo... There I saw a half dozen women occupied, some with weaving hats and mats from pandanus leaves, others making finer hats, more elegant, in the shape of Panama hats, out of the stems of a cyperaceae (sedge) common to the marshes nearby.

(Remy 1893:35)

Legends of a lava tube running through the central part of Molokaʻi persist to this day.
In the land of Kamalo (not on ranch property), it is said that there is a lava tube going through the island from Kamalo gulch to Pelekunu. The story is that it was used in the very early days by the Chief of the island, who communicated by runners between the leeward and windward sides of the island.

(Cooke 1949:99)

**Land Use**

Kamalō has been used for taro, sweet potato, and sugar cultivation as well as livestock farming. In the recent past, Kamalō was the site of a quarry, and the large excavations have left their signature on the landscape. Today the land in the survey area sits idle but is occasionally used for hunting.

When Handy visited Kamalō in 1931 he witnessed a remarkable method of agriculture in which soil was mounded 3-4 ft. high and 3 ft. wide in swampy terrain (Handy 1940:101). The mounds are surrounded by standing water in ditches, and taro was planted at the base and sweet potato grown on top. This is the only reference to traditional agriculture in Kamalō that could be found.

In the historic era, sugar cane fields dominated the Kamalō landscape. Plantations in Kamalō were owned and operated by the McCorristons and Moanui and operated by Eugene Bal (Cooke 1949:3). A sugar mill was operated by the McCorristons, although it burned down shortly after it was built (Meyer 1982:13). It has been noted that plantation owner George Trimble transported his cane to the mill in an unusual fashion, using draft animals to tow the cane on a small barge along the shore from his Kawela fields to the Kamalō mill (Cooke 1949:87-88). Meyer provides more information on the McCorriston family of Kamalō:

Otto [Meyer] Maggie Ann McCorriston on December 11, 1889 in a gala celebration that lasted a whole week. This was the biggest celebration ever held on Molokai at the time as related by Frank Foster, a brother-in-law of Maggie. Every day for one week a new imu (underground oven) was prepared to feed all the people. Maggie was the daughter of Daniel and Ann McCorriston of Kamalo, Molokai. Daniel and his brother, Hugh McCorriston, came to Oahu in 1863 from Ireland, but they did not go to Molokai until 1873, when they started the Kamalo plantation. This plantation was burnt down in 1875. From the record of the Honolulu Advertiser dated Sunday, March 20, 1927, this article of Dan McCorriston was published. “Dan McCorriston passed away at his Molokai residence at Kamalo where he made his home with his large family 54 years, only moving perhaps a few feet in that length of time. … In 1873 he and his brother, Hugh, landed on Molokai where they started a small sugar plantation that only lasted a few years as the mill burned down completely. The two brothers then went into ranching.”

(Meyer 1982:130-131)

Cattle and hog ranching also took place in the historic era in Kamalō, and the Kamehameha V wall was constructed to control the herds of cattle. Cooke (1949) provides more information on the wall, which is also illustrated on the TMK map of Kamalō (J.A.K. 1934):
...Later, Kamehameha V imported a herd of Longhorn cattle. Since the animals on Molokai must have belonged to the Chief, they were kapu and so roamed the island without being disturbed.

There was a stone wall extending from the valley of Kawela to the valley of Kamalo above the flat land bordering the sea. This was constructed by men and women under the Chief's orders to prevent the destruction by wild cattle of crops on the cultivated coastal land.

(Cooke 1949:45)

Meyer (1982) describes the cattle and hog ranching activities of Theodore Meyer:

Theodore [Meyer] spent most of his life at Kamalo where he ran a very successful hog and cattle ranch. After the Kamalo Sugar Plantation burned down in 1875, he leased all of the Kamalo lands from the Bishop Estate. He raised over 3,000 hogs and a large herd of cattle. He planted most of the feed for his hogs right there at Kamalo.

(Meyer 1982:173)

Previous Archaeology

In 1971 Catherine Summers published “Molokai: A Site Survey” which was a compilation of archaeological sites on Moloka‘i from a variety of sources and included sites for Kamalō. Seventeen years later Stephan Clark conducted a 75-ac. reconnaissance survey on the coastal plain near the base of the slope west of Kamalō Gulch and recorded a number of previously unknown sites (1988). In July 2001, The Society for Moloka‘i Archaeology sponsored a demonstration project in basic archaeological survey and mapping techniques for community members, in which a number of newly discovered sites were recorded (Cordy and Cordy 2001).

**Summers (1971)**

Summers referred to Stokes’ 1909 survey, which listed two *heiau* in Kamalō (1971:100). Olepelepe Heiau was recorded as being at the edge of a small bluff overlooking one of the smaller Kamalō gulches and was described by Stokes as, “A natural formation of large boulders called a heiau” (Stokes in Summers 1971:100). There was no sign of any “artificial work” (Stokes in Summers 1971:100). Pu‘u o Mo‘o Heiau was located at the mouth of the main Kamalō gulch, and the following description was given by Stokes:

...A small L-shaped platform, with the ledge running around its southern side, where the ground is lower. The main interest of this heiau...is the remarkably smooth flooring of the upper surface, being made of selected flat river stones to be found in the gulches nearby. The north-east corner has suffered through depredations.

(Stokes in Summers 1971:100)

Ka‘apahu peak has been reported to be an old fort, a *pu‘u kauwa*, or *heiau*, although no evidence of structures or walls have been found. That Ka‘apahu was used as a fort or place of defense seems likely because sling stones have reportedly been found there and the flat top with steep sides would have been easily defendable. It is interesting to note that the naturally water worn sling stones found on Ka‘apahu were strikingly similar to those found on the ridge at Kawela. (Summers 1971).
**Clark (1988)**

Stephan Clark and Roland LaPierre, of the Applied Research Group, Bishop Museum conducted a reconnaissance survey and limited subsurface testing over the course of two days in January 1988. The survey was done on a 75 ac. parcel and identified eight previously unrecorded sites and three “areas,” two of which were considered especially sensitive due to an abundance of sites that were not thoroughly surveyed and recorded due to time limitations.

Except for two isolated cultural deposits exposed in fallen tree roots, one with associated boulder alignments, to the east of the stream and in the coastal plain, the main pre-contact sites were along the two sides of Kamalō Stream as it entered the coastal plain.

West of the stream there is a 13.5 by 5.0 m enclosure with a low terrace wall identified as Site T4 and mapped. Also in the area to the west of the stream is an earthen platform identified as a possible house site, a C-shaped enclosure, two irregularly shaped enclosures, four large terrace walls, five mounds and ten modified outcrops. Clark noted that “it was not possible to ascertain an accurate record of how many and what kinds of structures were present in these densely vegetated areas” (1988:16).

Along the stream bank east of Kamalō Stream, Clark identified a stretch of about 300 meters that he deemed archaeologically “sensitive” because he was unable to sufficiently cover the area. He did, however, record a circular mound 3.2 m in diameter, a roughly rectangular mound about 4.5 by 4 m and a rectangular platform 4.0 by 3.0 m with a fairly level surface.

**Cordy and Cordy (2001)**

Cordy and Cordy recorded nine new historic sites, four in Clark’s “Area 1” on the coastal plain and five in the lower valley west of the stream. The sites on the coastal plain included two rectangular platforms, three rectangular terraces and three rectangular enclosures all interpreted as permanent habitation sites. Also identified in this area were mounds, soil clearings and short terraces thought to be dryland agricultural fields, as well as three high oval mounds identified as clearing mounds for sugarcane cultivation. Dryland gardens, a field shelter, permanent habitations, a shrine, a possible grave and a small heiau were found in the lower valley survey area.

To summarize, very little archaeological work has been conducted in Kamalō, although many surface features have been recognized. Stokes identified two heiau and a hilltop fort in 1909 (Summers 1971), and a number of other surface features have been recorded on recent surveys (Clark 1988; Cordy and Cordy 2001). These surveys cover very little of the ahupua’a, however, and much of the archaeology of Kamalō remains undocumented.
2. METHODS

The 2004 work took place in lower Kamalō on TMK:(2)5-5-001:006, while the 2005 session focused on a portion of upper Kamalō on TMK:(2)5-5-002:018 (Figure 2.1). The main goal of the 2004 session was to follow up on recommendations for further work made by Cordy and Cordy (2001) after their field training course. The first objective was to locate previously identified site 50-60-04-2458 and complete the description of features and a scaled plan map of the complex. A rough sketch map of the site had been previously drawn, and the site was described as a large habitation complex that was quite worthy of further investigation (Cordy and Cordy 2001: 12, 13).

To relocate the site, a systematic pedestrian survey was conducted, with transects oriented east-west. Potential cultural features were flagged, and many of these were cleared and found to be natural rather than cultural. The main wall identified in the earlier sketch map was relocated, and additional features were identified and given letter designations. Ten features were cleared and mapped in detail with tape and compass, providing a clear example of the cultural remains of site 50-60-04-2458, although this does not represent the full extent of the site.

The 2005 session examined an upland area where no previous archaeology had been conducted. The goal of this session was to identify and document any cultural features that might occur there. An arbitrary survey area was designated, and a systematic pedestrian survey was carried out, with transects running east-west and students spaced 5 m apart. A total of 18 features were identified, and these were given a single new site number, 50-60-04-2471. Individual features were given number designations from 1 to 18. The 18 features may or may not be associated or contemporaneous with one another, thus site 2471 simply represents the cultural remains found within the arbitrary survey area in upper Kamalō. The survey boundaries and all features were mapped with sub-meter accuracy Global Positioning Systems (GPS) units, and selected features were cleared and mapped in detail with plane table and alidade. No subsurface testing was conducted during either phase of fieldwork.
3. RESULTS

FALL 2004 RESULTS

The 2004 survey area encompassed roughly 6,000 m² on the low-lying flat adjacent to Kamalō Stream. A long wall follows the stream on the west bank and curves to bisect the survey area on the south side (Figure 3.1). Terraces and stone mounds surround this wall to make up site 50-60-04-2458, and additional features that were not mapped surround the complex. A total of 10 features were cleared, mapped, and described. These were given letter designations A through J. The land within the survey area is rocky and relatively level. Vegetation is heavy, consisting of *kiawe* trees, lantana, *koa haole*, wild basil, and tall grass.

Feature A is a complex of two terraces located on the southwest side of the survey area (see Figure 3.1). The north wall of both terraces is part of the long wall that bisects the site (feature G) and is composed of stacked large stones and small boulders. The other terrace walls are less defined and made up of large stones and small boulders either piled or in a single alignment. The north wall that comprises the largest terrace is 19.5 m long and runs at an orientation of 270°. The east and west walls are perpendicular to the north wall and measure 9.4 m and 9 m respectively. The west wall is 17.35 m in length. The smaller terrace occurs on the northwest corner of the larger one. The north wall of the smaller terrace is 6 m long, the east wall 4.5 m, the south wall 5.9 m, and the west wall 5.3 m in length. The north wall of both terraces is in good condition, although the remainder of the feature is poorly defined.

Feature B is a terrace adjacent to feature A on the south. It measures 13.8 m in length, and 11.2 m in width on the west and 4.5 m in width on the east. It is composed of piled large stones and small boulders and is in poor condition.

Feature C is a multi-component feature made up of three soil-filled terraces divided by two low walls. This feature is located at the bend of the long wall (feature G). A 31.5 m section of the feature G wall forms the north border of this feature. This segment of the wall is bi-faced with single boulders and filled with cobbles, roughly 80 cm tall and 1 m wide. The east and south perimeters of the feature are bordered by a single alignment of boulders. A low wall divides the east and west terraces. This is composed of large boulders stacked two courses high, filled with smaller stones and cobbles. It runs northeast for 6 m and is up to 70 cm tall. The west terrace abuts the feature G wall on its north side and is outlined by a single alignment of boulders on the west. The west terrace is also defined by a single alignment of boulders. A low loosely-stacked wall parallels the feature G wall and defines the north terrace. This is 5.5 m long, up to 80 cm high, and 80 cm wide. This feature is in fair condition.

Feature D is a series of four rough terraces with a *C*-shaped structure on the west side. These are located just west of features A and B. The largest terrace, feature D-1 is on the south and is defined by an 8 m-long boulder alignment. Three smaller terraces occur on
Figure 3.1: Site 2458 plan view drawing.
the north, all defined by single boulder alignments. The northernmost, feature D-2 is defined by a 3.6 m-long wall on the south. The central terrace, D-3, exhibits an 8.4 m-long wall, and the lower terrace, D-4 has a southern wall measuring 3.0 m in length. A basalt core, a hammerstone, and shell midden were found along the central terrace wall. The C-shape, feature D-5, is located just below feature D-4, along the west wall of feature D-1. It is composed of a curved 6 m-long wall that is up to 1.6 m wide and made up of boulders stacked three courses to a height of 70 cm (Figure 3.2). The opening of the C-shape is to the west. Three hammerstones, a whetstone, and a basalt core were found in the vicinity. The C-shape is in good condition, while the terraces are in fair to poor condition.

Feature E is a multi-component feature consisting of four terraces, a C-shaped structure, and a stone mound, covering an area of 24 x 14 m. This complex is located 15 m northwest of feature C. Feature E-1 is the northernmost terrace. Its north wall is 14 m long and is oriented at 82°, while its east wall is 9.2 m long and runs at a 348° orientation. A basalt core was found on top of the east wall, near the northeast corner of the feature. Terrace E-2 is adjacent to the south. The north wall of this feature is 14 m long and oriented at 82°, and the west wall is 9 m and oriented at 344°. Terrace E-3 is adjacent on the south. Its north wall runs at 320° for 17.1 m, and its east wall runs at 68° for 13 m. Feature E-4 is a small triangular terrace just west of features E-2 and E-3. Its maximum length is 3.5 m and maximum width is 2.4 m. Feature E-5 is a C-shape with a stone mound in the center, located within the feature E-3 terrace. The maximum diameter of feature E-5 is 4 m, and the C-shape opens to the west. All terraces and the C-shape are composed of a single alignment of boulders, roughly stacked with stones and cobbles in places, and the mound is made up of piled stones and cobbles. This complex is in fair condition, affected by erosion and fallen trees.

Feature F is a large terrace located along the west side of the feature G wall and adjacent to the feature E complex on the east. Retaining walls enclose the terrace on the north and west, and the east and south sides are bounded by the feature G wall. The north wall is a
fine example of core-filled bi-face construction. It is 11 m long, 1.6 m wide, and 90 cm tall. The east wall is 26.7 m long and 1.3 m wide. One or more single alignments run east to west within the feature, dividing the terrace into multiple sections. The perimeter retaining walls are curvilinear and not straight as represented in Cordy and Cordy (2001:13). Different methods of wall construction suggest multiple building episodes. The west wall, for example, is constructed with a single alignment of boulders in one segment, then jogs to the west and exhibits two courses of stacked boulders and cobbles; it then becomes a bi-faced core-filled low wall. The feature as a whole is in fair condition, while the north wall is in good condition.

Feature G is a long wall that runs east to west through site 2458 and curves north to form the eastern boundary of the site along Kamalō Stream. The east-west segment of the wall is 36 m long, and the north-south segment is 65.6 m long. The total length of the wall, including the curve, is 130.9 m. Construction is mainly bi-faced and core filled, although some areas are stacked and one section is a single boulder alignment (Figures 3.3 and 3.4). The maximum height of the wall is 1.24 m, and the maximum width is 1.25 m. This feature is in fair to good condition, with some segments of the wall affected by erosion, but most segments remain intact.

Figure 3.3: Feature G facing north, with feature A terrace in foreground. The scale is marked in 10 cm increments.

Feature H is a large terrace adjacent to feature E on the north. A single stone alignment defines the feature on the north side. This terrace is part of a large complex of terraces including feature E on the south and feature I on the north, and an unknown number of uncleared terraces that continue beyond feature I. The terrace measures 16.9 m on the south, 16.8 m on the east, 15 m on the north, and 16 m on the west. The terrace is in fair to poor condition, with jumbled boulders in many places.
Feature I is a terrace adjacent to feature H on the north. Two parallel single stone alignments define the north side of the feature. These alignments are 1 m apart and run for 8 m to meet a bi-faced core-filled wall that runs perpendicular for 10.5 m to form an L shape at the northeast corner of the feature. A basalt rubbing stone was found between the two parallel alignments (see Figure 3.1). The west side of the feature is defined by a single 16 m-long stone alignment. The feature is in good condition, although it has been affected by erosion, and the western alignment is poorly defined and overgrown.

Feature J is a terrace adjacent to feature I on the east and feature G on the west. Aside from the feature G wall, which forms the eastern boundary of the terrace, the only visible architecture is a short curved wall segment on the west. This wall is 7.1 m in length. The feature appears in good condition, although it could not be cleared in its entirety.

In sum, ten features of site 50-60-04-2458 were examined during the 2004 phase of fieldwork. Many of these consisted of multiple components, and additional features of the site remain undocumented. The site 2458 complex was found to be larger than originally defined (Cordy and Cordy 2001:7, 12), and additional features were mapped in detail (see Figure 3.1). It was also determined that this site was not a habitation complex, as previously suggested (Cordy and Cordy 2001:7) but rather an agricultural complex with terraces and walls constructed to form an integrated agricultural area next to Kamalō Stream. Only one small habitation shelter was identified (feature D-5), which contained surface artifacts and midden.

**SPRING 2005 RESULTS**

The 2005 survey area encompassed 18,000 m² on a slope above the Kamalō Quarry. A dirt road marks the western extent of the survey, and a steep cliff designates the eastern boundary (Figure 3.5). The northern boundary is demarcated by a long stone wall known as the Kamehameha Wall, and the southern boundary of the survey area was arbitrarily drawn. A fenceline runs from north to south, bisecting the survey area on the west side.
The land within the survey area is rocky and gently sloping to the south. Vegetation is heavy, consisting of tall grass and *kiawe* trees.

A total of 18 features were identified in the survey area. There were five stone walls, one with a petroglyph at its base, another petroglyph, one terrace, two stone mounds, a boulder alignment, a modified bedrock outcrop, and six multiple-component features.

Feature 1 is the Kamehameha Wall. It runs along the north boundary of the survey area from the dirt road for 250 m toward the cliff. It is composed of boulders, stones, and cobbles stacked and piled up to 90 cm high. The wall continues west outside the survey area and is in fair to good condition. It is approximately 2 m wide and runs at an orientation of 25°. Remnants of wooden fence posts and barbed wire are evident in segments of the wall. A petroglyph was observed on a boulder at the base of the wall, 12 m from the east end (Figure 3.6).

Feature 2 is a stone wall that runs along a gully on the west side of the survey area (Figure 3.7). The largest wall segments occur on the east side of the gully, 6-8 m east of the dirt road, and smaller segments occur along the west side of the gully. The longest
Figure 3.7: Feature 2, stone wall, facing north. The segment shown is on the east side of the gully at the south edge of the survey area. The scale is marked in 10 cm increments.

Segments are 15 m long and 12.4 m long, on the north and south sides of the survey area. The wall segments are composed of stones stacked 2-3 courses atop boulders (Figure 3.8). They reach a maximum height of 1.2 m and are typically 90 cm wide. The wall segments run roughly north-south, at an orientation of 330° and appear to continue both north and south outside the survey area. This feature is in good condition.

Figure 3.8: Feature 2, stone wall, east profile. The segment shown is on the east side of the gully at the south edge of the survey area.

Feature 3 is a modified bedrock outcrop located 40 m east of feature 2. It consists of stones and cobbles piled for a length of 10 m along a 1 m-high stand of bedrock. It is possible that this is a natural feature, but portions of the outcrop appear modified by humans. The feature is in fair condition.
Feature 4 is a possible boulder alignment located 2 m west of the fenceline. It is composed of a single alignment of boulders averaging 60 cm in diameter with a few stones interspersed in the alignment. The alignment runs northwest to southeast at an orientation of 318º for 16 m. It is 70 cm tall, 90 cm wide and in fair condition.

Feature 5 is a C-shaped structure and wall located 12 m east of the fenceline. Feature 5a, the C-shape, measures 3 m east to west and 2.8 m north to south, and is open to the southwest (Figure 3.9). The C-shape is made up of stones averaging 20 cm in diameter, piled to 50 cm high. Some stacking is apparent on the inside face, and the south end is marked by an embedded upright. Feature 5b, the wall, is just south of the C-shape and is composed of piled stones and boulders. It runs at an orientation of 80º for 5 m and is 50 cm tall. The wall and C-shape are in good condition, although a large tree is growing on the east face of the C-shape.

Figure 3.9: Feature 5a C-shaped structure facing north. The scale is marked in 10 cm increments.

Feature 6 is a terrace located 9 m northeast of feature 5. The terrace is rectangular in plan and measures 4 m long, 1.5 m wide and 90 cm high, with its long axis oriented at 130º (Figure 3.10). It is composed of stones and boulders 30 cm in diameter and larger, stacked 3 courses high, with smaller stones piled on top. The feature is built on the slope, so that the east side is level with the ground surface. The terrace is in good condition.

Feature 7 is an eroded retaining wall located 12 m east of feature 5. It runs west for 7.6 m at an orientation of 295º. It is composed of small stones roughly piled on natural boulders to a height of 60 cm. The ground surface on the north side is level with the top of the wall. This feature is in poor condition because of severe erosion.
Feature 8 is a stone mound located 30 m east of the fenceline. The mound is composed of small stones and cobbles piled to a height of 31 cm. It is triangular in plan, measuring 1.86 m, 1.91 m, and 1.89 m on each side. One of the stones at the northern apex of the triangle appears to have been worked (Figure 3.11). This feature is in good condition.
Feature 9 is a stone mound located 6.5 m northeast of feature 8. The mound is irregular in plan and is composed of piled stones and cobbles with a few small boulders at the base. It measures 4 m long, 2 m wide and 1 m tall. The mound is in good condition.

Feature 10 is composed of two retaining walls located 12 m northeast of feature 9. The first wall, feature 10a, runs north to south for 8 m. It is 1 m wide and composed of stones and cobbles stacked four courses to a height of 85 cm. The south end has an extension of embedded uprights that runs for 2 m (Figure 3.12). The north end of the wall has a 2.1 m-long perpendicular extension (Figure 3.13). This wall aligns with the feature 12b wall and these two segments are likely part of a single long wall (Figure 3.14). The second wall, feature 10b is located on the slope below feature 10a. It runs east to west for 9.9 m. It is composed of piled boulders, stones, and cobbles. A large coral fragment is incorporated into its construction on the east end. Feature 10a is in good condition, while feature 10b is in fair to poor condition, heavily overgrown and eroding downslope.
Feature 11 is a slightly curved wall segment located 18 m northwest of feature 12. Its length is 8 m, width is 1.7 m, and height is 40 cm. It is composed of piled stones and cobbles and oriented directly north-south. This feature is in fair condition and heavily overgrown.

Feature 12 consists of an enclosure (feature 12a) and associated wall (feature 12b), located 20 m east of feature 6, on the west side of a small gully. Feature 12a, the enclosure, is on the south and feature 12b on the north (Figure 3.15). The enclosure is 9.6 m in length, and 6.3 m in width, and up to 70 cm in height, composed of stacked and piled large stones, with smaller stones and cobbles on top. The enclosure is square in plan, with two clearly defined walls. Triangular uprights occur on both ends of the western wall, and three possible cupboard features are evident. Feature 12b, a wall, lies just upslope (north) of feature 12a. It runs north for 13.6 m and has two westward extensions, measuring 4.5 m and 5.7 m in length. The wall is composed of large stones, stacked and piled to a maximum height of 1.1 m. Two uprights occur at the south end and another near the north end. Two adze blanks, surface midden and a possible fallen upright were observed near the center of the wall. Both the enclosure and wall are in good condition.

Feature 13 is a stone wall 15 m east of feature 12. The wall runs at an orientation of 155° for 9 m and consists of two courses of stacked and piled stones, 44 cm tall and 1.3 m wide. This feature is in good condition.

Feature 14 lies 15 m northeast of feature 12. This is an enclosure and two walls, one with a small C-shape on the south end. Feature 14a, the enclosure is irregular in plan and composed of stones piled to a height of 85 cm. The interior dimensions are 1.5 m by 1.3 m, while the structure measures 8.3 m by 8 m in its entirety. The walls, features 14b and
Figure 3.15: Feature 12 plan view drawing.
c, extend south and east from the south end of the enclosure. They are 3 m long, and up to 2.4 m wide, and composed of stones piled to a height of 85 cm. A C-shaped structure at the end of feature 14b (the southern wall) measures 1.1 m at its longest dimension and is composed of stones roughly stacked and piled to a height of 75 cm (Figure 3.16).

![Figure 3.16: Feature 14b small C-shaped structure, facing north. The scale is marked in 10 cm increments.](image)

Feature 15 is a multiple-component feature composed of a substantial stone wall (feature 15a), an adjacent terrace (feature 15b) and two smaller wall segments to the west (features 15c and d) (Figure 3.17). Feature 15 is located at the southern boundary of the survey area, 50 m south of feature 10. Feature 15a is a stone wall that runs northwest-southeast for 18 m. It is composed of stones stacked eight courses to a height of 1 m. The wall is 1.1 m wide and the ground surface on the east is level with the top of the wall so that it is 1 m higher than on the west. The wall is in good condition. Feature 15b is a terrace that extends out of the center of the wall. It is composed of stones stacked eight courses to a height of 1 m. The terrace walls are 60 cm wide, and the terrace surface is relatively flat. A hollow stone sitting on the wall may have been used as a bowl (Figure 3.18). The terrace is in excellent condition, although it is overgrown. Features 15c and d are eroded wall segments on the west side of the complex. They are both 5 m long and 1 m wide and run parallel to feature 15a. They are composed of small boulders and large stones roughly piled to a height of 40 cm. The wall segments are in poor condition.
Figure 3.17: Feature 15 plan view drawing.

Figure 3.18: Feature 15b, facing north. The bowl-shaped stone sits atop the terrace in the center right of the photo, above the scale. The scale is marked in 10 cm increments.
Feature 16 is a multi-component feature composed of four or more small terrace segments (feature 16a) and a low wall or alignment (feature 16b). These are located near the northeast survey boundary, 40 m south of feature 1 and 50 m northeast of feature 14. Feature 16a is a set of at least four terrace segments that are each roughly 2 m in length. They are composed of stones and cobbles piled to a height of 40 cm and are severely eroded. Feature 16b is a low wall or alignment that runs east to west for 15 m between the terraces. It is composed of one to two courses of stacked small boulders, stones and cobbles (Figure 3.19). The complex encompasses an area of roughly 15 by 10 m and is in poor condition.

Feature 17 is a modified bedrock outcrop located 10 m southeast of feature 16. The outcrop is enhanced with piled stones to form a rough rectangle, 7.3 m in length and 4.8 m in width. The piled portion extends 80 cm high, and a worked basalt cobble was found on top. This feature is in fair condition.

Feature 18 is a petroglyph located on a boulder 20 m south of feature 1 and 20 m west of the cliff. It depicts a human figure with a circular head and stick figure body (Figure 3.20). The petroglyph is in fair condition.

In sum, 18 archaeological features were found in the survey area, and many of these consist of multiple components. These were designated site 50-60-04-2471, although the function of the features and their relationship to one another cannot be confirmed at this time. It is likely that multiple activities took place at the site, including cattle ranching (feature 1), water management/agriculture (feature 2), habitation and tool making (feature 12, where midden and adze blanks were found), and ritual (features 5 and 12, which exhibited uprights, feature 10, which contained coral and uprights, and feature 15 where a possible medicine bowl was found). Furthermore, it is not likely that all features are contemporaneous. Feature 1, the Kamehameha Wall was likely constructed and/or used during the historic era and may post-date the surrounding features, which are consistent with traditional Hawaiian architecture. If development is proposed for this area in the future, additional research, including subsurface testing is recommended.
4. Discussion and Conclusion

This research has documented significant archaeological features in both lower and upper Kamalō. Site 50-60-04-2458, in lower Kamalō, was originally defined as a habitation area (Cordy and Cordy 2001:7) but is now thought to represent an agricultural complex. Ten features were examined, including terraces, a long wall, C-shaped structures, and a stone mound (Table 1). These features were mapped in detail, and subsurface testing was not conducted. This site is evaluated as significant under criterion d of § 13-275-6(b) for the information it may yield on Hawaiian history and prehistory. If development is proposed for this area in the future, further investigation of this site is recommended. This should include subsurface testing and more extensive survey.

Table 1: Feature descriptions for site 50-60-04-2458 and 50-60-04-2471.

<table>
<thead>
<tr>
<th>Site</th>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td>2458</td>
<td>A</td>
<td>Two Terraces</td>
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<tr>
<td></td>
<td>B</td>
<td>Terrace</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>Three Terraces</td>
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<tr>
<td></td>
<td>D</td>
<td>Four Terraces and C-shaped Structure</td>
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<td></td>
<td>E</td>
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Site 50-60-04-2471 is a previously unidentified complex in upper Kamalō. Eighteen features were documented, including terraces, walls, stone mounds, alignments, enclosures, petroglyphs, and a C-shaped structure (see Table 1). Three features were mapped in detail, and subsurface testing was not conducted. The site is evaluated as significant under criterion d of § 13-275-6(b) for the information it may yield on Hawaiian history and prehistory. Feature 1 of site 50-60-04-2471 may also be significant under criterion b of § 13-275-6(b) because it may be associated with Kamehameha V, a significant personage in Hawaiian history. Subsurface testing is recommended to determine the age and function of the features, and the land adjacent to the survey area on the north, west, and east should be surveyed for additional cultural remains.

In conclusion, Kamalō has a rich history, but very little archaeological research has been conducted in the ahupua‘a. This project has documented 28 archaeological features in both upper and lower Kamalō, making a significant contribution to our knowledge of traditional and historic use of the area.
REFERENCES


