

Lā'au Point

DRAFT ENVIRONMENTAL IMPACT STATEMENT



West Moloka'i, Moloka'i, Hawai'i

**Volume 2 of 2
Appendices**

*Accepting Authority
State of Hawai'i Land Use Commission*

*Applicant
Molokai Properties Limited*

January 2008

Appendix A
Community-Based Master Land Use Plan for Molokai Ranch

COMMUNITY-BASED MASTER LAND USE PLAN FOR MOLOKA'I RANCH

FINAL

By:
LAND USE COMMITTEE
MOLOKA'I ENTERPRISE
COMMUNITY

Compiled By:
TOWNSCAPE, INC.

NOVEMBER 14, 2005



Acknowledgements

In a rare display of community initiative, this Community Plan is the result of countless community meetings, long hours of impassioned debate, critical thinking and soul searching. Numerous individuals who, in loving dedication to Moloka'i-nui-a-Hina, have contributed their time and energy over the course of two years to complete the Community-Based Master Land Use Plan for Moloka'i Ranch.

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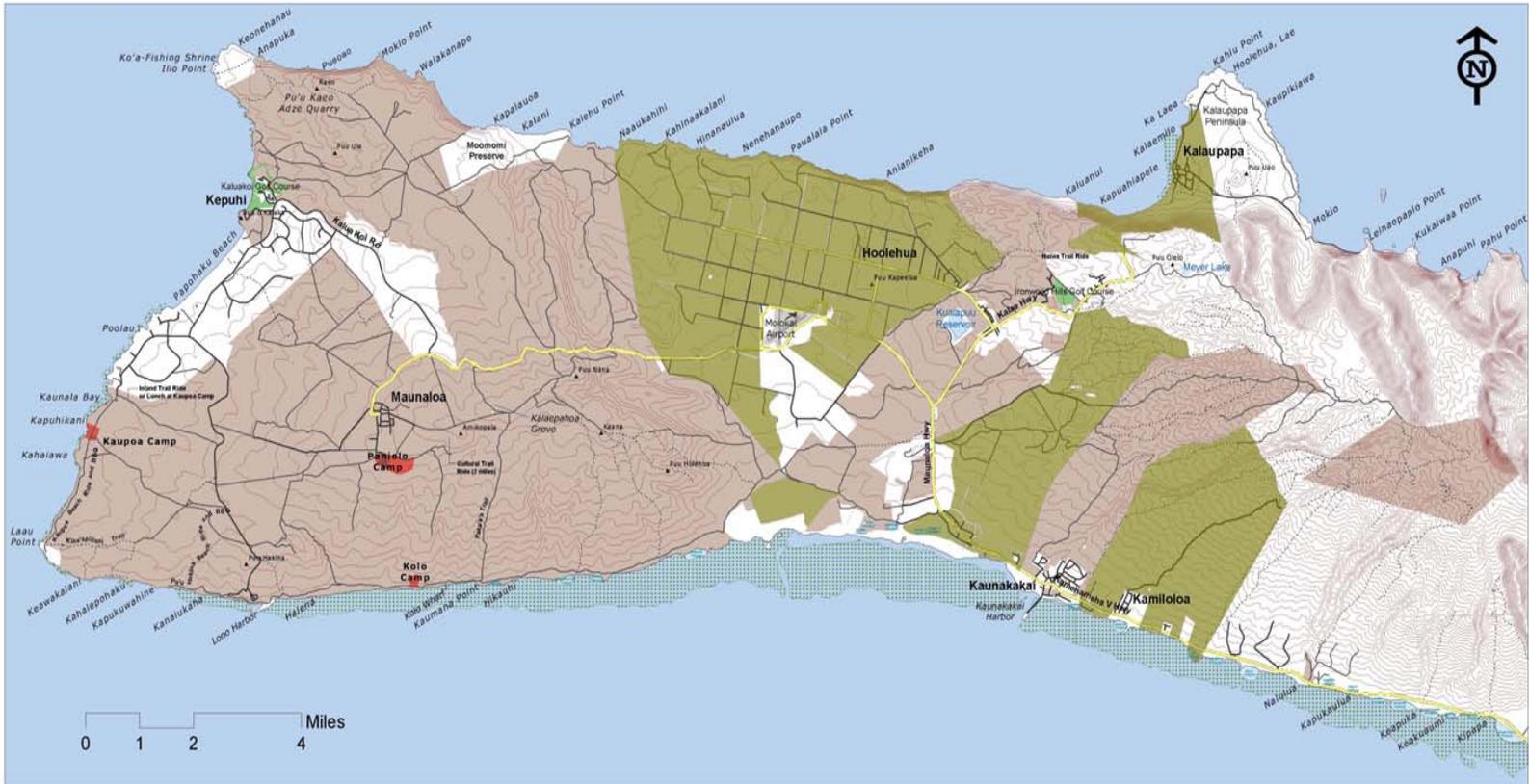
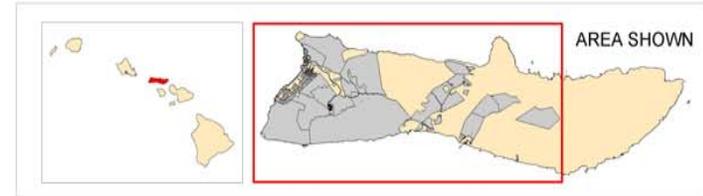
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MOLOKA'I RANCH LANDS: BASE MAP



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- Coral Reef
- Camp
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- Major Road
- Secondary Road
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- 4WD Road
- Trail

Prepared by: The Conservation Fund
October 21, 2005

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1 EXECUTIVE SUMMARY

1.1 ORIGIN

A vision for the future protection of the land's precious resources, a desire to create a sustainable economy for the community and a strong sense of cultural heritage, were the principal focus of community representatives and Moloka'i Properties Limited (MPL) when they began discussing a Community-Based Master Land Use Plan for Moloka'i Ranch in January 2004.

What began almost a year earlier as discussions on the re-opening of the Kaluako'i Hotel led to a desire by MPL and The Moloka'i Enterprise Community, Ke Aupuni Lōkahi (KAL) to create a Plan for MPL's 65,000 acres that would truly be visionary and reflect the wishes of the community.

KAL was formed in 1998, developing a 10-year strategic plan to stimulate the island's economy. Today the KAL has more than 50 projects.

MPL, the largest landowner on the island, had through its decade of ownership by BIL International Limited, isolated itself from the community through a lack of consultation about its future plans.

It was the willingness of these two organizations to come together as equal partners in a planning process which involved representatives of the community that led to the Plan contained within this document.

But the results of the Plan mean more than what is contained on these pages.

The results mean a coming together of the community and a reconciliation of families that had been separated by controversy for more than a decade; a partnership between a company and its island neighbors, and personal growth for all involved.

The planning process was formally launched in August 2003 as a KAL project under Project #47: Community-Based Compatible Development.

In February 2004, the MPL Community-based Master Land Use Plan for Moloka'i Ranch was included as part of the project.



1.2 GOALS

The goal of the project and the plan was to create new employment and training opportunities for Moloka'i residents and to provide the Moloka'i community with

certainty about their future. Its objectives are:

- Develop sustainable economic activities that are compatible with Moloka'i and the vision of the Moloka'i Enterprise Community.
- Secure the role of the community in the management of MPL's 65,000 acres.
- Re-open the Kaluako'i Hotel and create 100 plus jobs.
- Protect cultural complexes and sites of historic significance on MPL lands.
- Protect environmentally valuable natural resources and agricultural land, pasture and open space.
- Create a land trust with donated lands from MPL.

The Master Land Use Plan provides a framework by which the agreed upon principles serve to guide future land use and management activities for the MPL and Moloka'i Land Trust lands.

1.3 PROCESS

From March 2004 through May 2004, five committees: Environment, Cultural, Economics, Tourism, and Recreation met for 100 days with a total of 1,000 participants to develop the plan.

The meetings were announced, open to the public, and most of the meetings were aired on the Akaku Channel 53. The Conservation Fund was hired by MPL to plan the process, produce maps, and to guide the formation of a land trust to manage lands that MPL would gift to the Moloka'i community.

KAL and MPL presented the draft plan to various community organizations and the general public to receive their input. During this time, a Land Use Committee finalized the guidelines for policies and principles for land management, except for the segments on the development at Lā'au Point and Water Use.

In October 2004, the Alternative to Lā'au Development Committee (ALDC) was formed to look at alternatives to the proposed development at Lā'au Point.

On August 1, 2005, the Lā'au Point and Water Use segments of this plan were adopted by the Land Use Committee.

Final approval of the draft CB Master Land Use plan by the KAL is scheduled for early November. The ALDC report will be considered at the same time.

1.4 VISION STATEMENT

*Moloka'i is the last Hawaiian Island. We who live here choose not to be strangers in our land. The values of **aloha 'āina** and **mālama 'āina** (love and care for the land) guide our stewardship of Moloka'i's natural resources, which*

nourish our families both physically and spiritually.

*We live by our **kupuna’s** (elders’) historic legacy of **pule o’o** (powerful prayer). We honor our island’s Hawaiian cultural heritage, no matter what our ethnicity, and that culture is practiced in our everyday lives. Our true wealth is measured by the extent of our generosity.*

*We envision strong **‘ohana** (families) who steadfastly preserve, protect and perpetuate these core Hawaiian values.*

We envision a wise and caring community that takes pride in its resourcefulness, self-sufficiency and resiliency, and is firmly in charge of Moloka’i’s resources and destiny.

*We envision a Moloka’i that leaves for its children a visible legacy: an island **momona** (abundant) with natural and cultural resources, people who **kōkua** (help) and look after one another, and a community that strives to build an even better future on the **pa’a** (firm) foundation left to us by those whose **iwi** (bones) guard our land.*

1.5 RESOURCE ASSESSMENT

MPL owns approximately 65,000 acres on the island of Moloka’i. The bulk of these land holdings are located on the west end of the island. There are also three tracts of land located in the central portion of Moloka’i.

The MPL properties contain a vast array of cultural and archaeological, subsistence, environmental (both terrestrial and aquatic), agricultural, recreational, and economic-based resources.

In order to develop the plan, committees were established to collect and interpret the information necessary to formulate the plan.

Sub-Committee members identified and assessed various resources including terrestrial and aquatic environments, agricultural use areas, physical infrastructure, residential and commercial areas, cultural and archaeological sites and subsistence areas. Various documents and maps were gathered and rendered as follows:

Agriculture: Soil suitability; agricultural lands of importance; current agricultural uses.

Archaeological: Site inventories (west end Moloka’i) and Lā’au.

Residential and Commercial: Maunaloa, Kualapu’u and Kaunakakai towns.

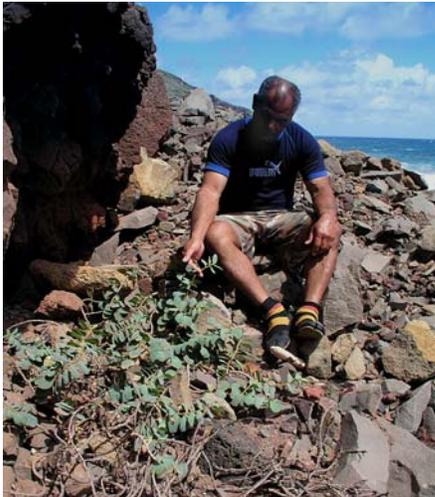
Hunting: Identification of bow and rifle and no hunting safety areas.

Natural Resources:

- Terrestrial: Native dominated landscapes including coastal, lowland and montane, and wet cliff areas;

vertebrate and invertebrate rare species; and non-native plant landscapes.

- Aquatic: Ancient fishponds, wetlands including tidal (marine/coral reef and estaurine areas) and non-tidal, erosion areas, and critical watersheds for reef



protection.

Industrial: Existing Moloka'i Industrial Park.

Recreation: Hiking and bike trails, horse trails, State trails, surfing areas, visible viewsheds, golf courses, and historic Monsarrat trail.

Subsistence Fishing: Ancient fishponds, camp sites, and fishing zones.

1.6 PRECEDENTS

This Plan creates a number of unique precedents:

1.6.1 Community Planning

A Land Use Plan that was initiated, designed and will be implemented by the community of Moloka'i. It is the result of a two-year planning process involving every member of the community who wished to participate.

1.6.2 Land Trust

A total of 26,200 acres or 40% of Moloka'i Ranch lands is donated to a Moloka'i Land Trust that has the unique mission of:

- Protecting historic cultural archeological sites.
- Preserving the precious natural and environmental resources.
- Enhancing indigenous rights through the protection of subsistence gathering.

1.6.3 Easements

A further 24,950 acres (38% of the property) are placed under new Land Trust protective easements, of which:

- 14,390 acres will be protected forever for agriculture use.
- 10,560 acres will remain open space.

1.6.4 Protection from Development

The combination of the donated land, existing and new easements protect more than 85% or 55,000 acres of the property from development.

1.6.5 Subsistence

The recognition of Native Hawaiian subsistence rights, and protecting for the

community, the hunting and fishing resources of the island, by:

- Seeking to establish a subsistence fishing zone from the coast to the outer edge of the reef or where there is no reef, out a quarter mile from the shoreline along the 40 mile perimeter of the property.
- Ending commercial hunting, and allowing only the community to hunt on the property.
- Ensuring access to the shoreline will be available only by foot.

1.6.6 Community Expansion

Only Moloka'i residents will decide future expansion of existing communities in the areas with a total of 200 acres around Kualapu'u and Maunaloa to be made available for community housing, and in the 1,100 acres above Kaunakakai to be donated to the Moloka'i Land Trust for community expansion.

1.6.7 Jobs for the Community

The Kaluako'i Hotel will be re-opened for visitor accommodation creating more than 100 permanent jobs for the local community. By outsourcing various hotel functions such as laundry, gift shop, beach shack and spa, and by committing to use local produce, small business opportunities will be created for the community.

1.6.8 Development

Integral to the development of a 200-lot subdivision at Lā'au Point, the community has ensured it will:

- Be restricted to 500 acres
- Through protective easements to the Land Trust, protect more than 1,000 acres of beachfront, archeological sites and environmental areas, giving the community an important voice in the future of this area.
- Protect the shoreline for subsistence gathering by only allowing foot access for the community.
- Ensure covenants will limit water use, minimize disturbance to the landscape, prevent pollution of the ocean through pesticides and minimize the visual impact of buildings.
- Be the subject of a land use boundary change from agriculture to rural through the Land Use Commission.
- Allow community input.

1.6.9 Land Trust Funding

The community will share in the development returns of the Lā'au Point subdivision by a fee paid to a community entity with every sale transaction, including subsequent re-sales.

Existing communications rents on Land Trust lands of approximately \$250,000 will be assigned to the Land Trust for operating funds.

1.6.10 Water

This Plan guarantees the community that there will be no increase in drinking water currently supplied to the west end of the island, and that excess drinking water capacity from Moloka’i Properties Limited’s Well 17 will be made available for the use of the community.

1.7 LAND USE PLAN SUMMARY

The Community-Based Master Land Use Plan establishes five **Land Use Districts**: Cultural, Natural Resources, Rural Landscape Reserve, Agricultural, and Development. These Districts define the primary functions for the 65,000 acres of land under consideration in this Plan. See Proposed Land Trust and Land Use Districts Map on page 9.

In an effort to include all uses and activities for these lands, **Overlay Zones** indicate distinct yet complementary uses within the overall district.

The Districts and Overlays serve a key function of this Master Land Use Plan, namely, **land use activities or management strategies must conform to the requirements of the District or the overlay zone.**

The Plan also proposes new **Ownership and Management** for the 65,000 acres. Significantly, eighty-five percent (85%) of the lands will either be protected by the Moloka’i Land Trust or will constitute part of a new conservation or agricultural easement in perpetuity. The easement

lands will remain in MPL ownership. See Ownership Map on page 11.

Ownership

Moloka’i Land Trust:	26,200 acres
Conservation/Easements:	24,950 acres
Existing Easements:	4,040 acres
Other MPL Lands:	9,810 acres
Total	65,000 acres

1.7.1 Land Use Districts

Cultural: The Cultural District is to protect the historic and cultural sites and resources for current and future spiritual, cultural, and subsistence uses.

Natural Resource: The purpose of this district is to support the protection and restoration of significant natural ecological/biological resources, i.e., sensitive ecosystems, indigenous and endemic species, watersheds, and wildlife habitat, particularly where they have been degraded, but still remain relatively intact.

Rural Landscape Reserve: The principle purpose of this district is the maintenance of the rural landscape – to preserve the traditional Moloka’i character and to provide scenic viewsheds and open space buffers.

Agricultural: The purpose of this district is to perpetuate the traditional base of Moloka’i’s economy in agriculture. This district includes lands where commercial agriculture and aquaculture

operations are encouraged. These areas are suitable for agriculture and aquaculture cultivation that will not result in degradation of the natural landscapes.

Development: This category applies to areas targeted by MPL for the purpose of revenue-generating development. MPL should work with the community to ensure that development projects are suitable and sensitive to their surroundings, preserve significant ecological and cultural resources, and provide economic benefit to the Moloka'i community.

1.7.2 Overlay Zones

Hunting: Hunting areas, almost 40,000 acres, will be used for allowable types of community hunting including bird, bow, and rifle. Hunting areas near towns will maintain buffer zones as an added measure of safety.

Subsistence Fishing: This zone encompasses areas from the coast to the outer edge of the reef or where there is no reef, out a quarter mile from the shoreline or to the outer edge of the reef along a 40 mile perimeter of the property including the partnership lands. Areas not under MPL ownership will require collaborative management by other landowners at: Lā'au Point, Pāpōhaku Beach, 'Īlio Point, the area between Kapālauo'a and Kaiehu Point, and the area between Mo'omomi and Nā'iwa.

Trails (Historic and Recreation): This overlay documents the access routes and existing trails, leaving the decisions regarding use to the land-owner(s). Use of trails should be consistent with the land district or applicable overlays in which they are located and Native Hawaiian rights.

Natural Resource: This overlay supports the sensitive ecological resources that are in need of management, i.e., areas prone to erosion and in need of watershed management. It also protects important ecological areas that support rare species, native ecosystems, and/or coastal habitats.

Cultural: The purpose of this overlay is to identify areas with significant cultural resources regardless of the land use district in which they are found.



1.7.3 Ownership and Management

MPL Lands: Approximately 9,810 acres is retained by MPL for community

expansion, resort, golf course, and residential shoreline development.

- Community Expansion: Future growth of townships in Maunaloa, Kaunakakai, and Kualapu'u.
- Resort and Golf Course: Retain existing establishments, including refurbishment of the Kaluako'i Hotel and existing Golf Course and future development of a 250-acre golf course in place of the current Maunaloa Golf Course shown in the Moloka'i Community Plan.
- Lā'au Point Development: Development of a 200-lot subdivision at Lā'au Point.

Moloka'i Trust Lands: The Land Trust, approximately 26,200 acres, contains the following features.

- Cultural sites at Kawela Plantation (34.895 acres) and Kaiaka Rock.
- Lands mauka of Kaunakakai for community expansion (1,160 acres).
- The Makahiki Grounds mauka of Kualapu'u, through to Nā'iwa.
- A large strip of land from Kawakanui beach, north to 'Īlio Point, extending to Ho'olehua and down to Pālā'au until Hale O Lono Harbor, including the Kā'ana area.

- The fishing village site, 15 acres, adjacent to the north boundary of Kaupoa Camp.

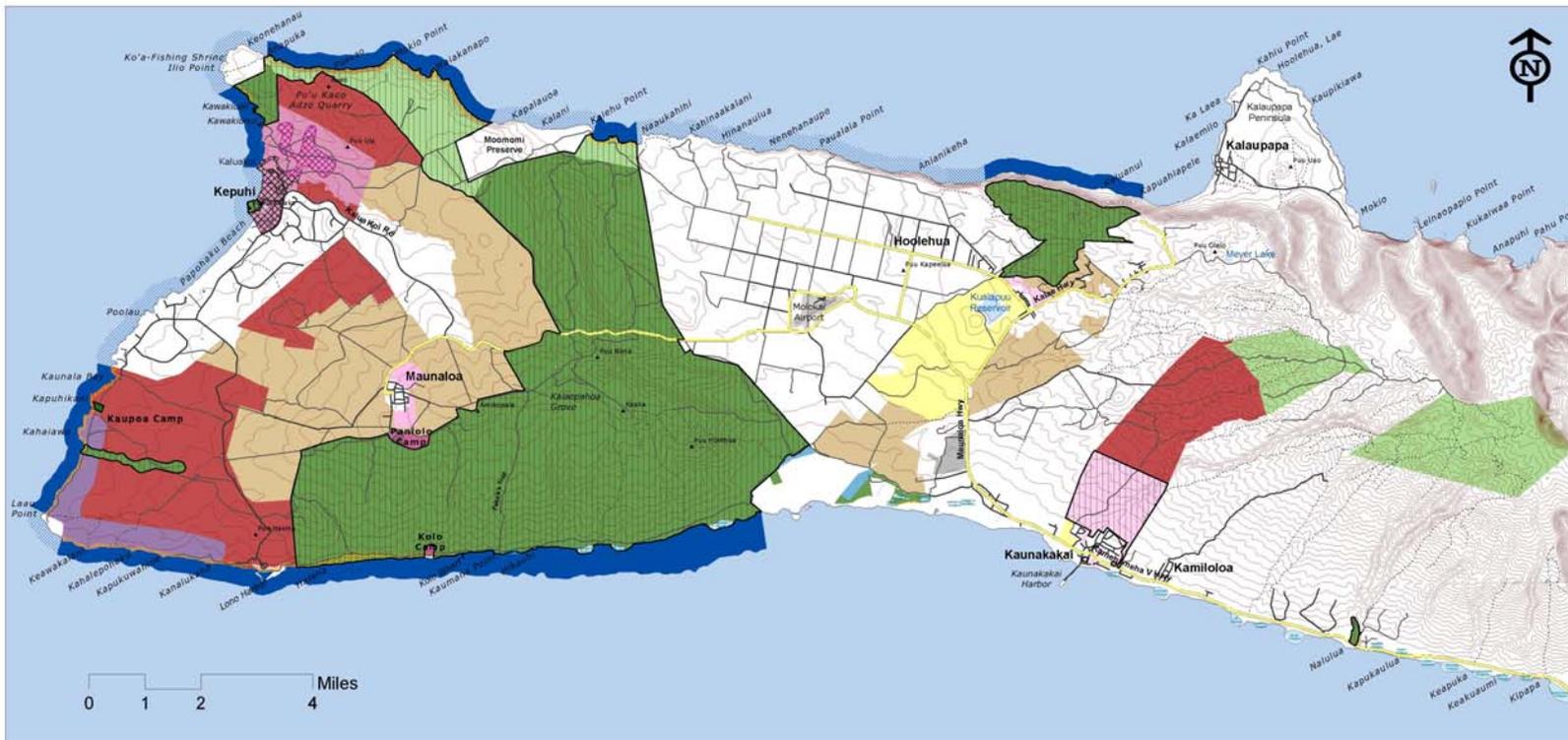
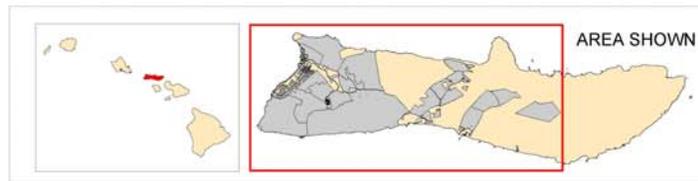
Lands Owned by MPL with Easements to the Moloka'i Land Trust: The MLT would enforce the use of the specified 24,950 acres for Agricultural and Rural Reserves.

- The Moloka'i Land Trust would hold easements over the Agricultural Reserve and Rural Reserve Lands, while MPL would retain the title.
- The easement provides permanent dedication of lands for specific uses that are registered on the land title deed.

Lands Owned by MPL with Easements to Other Entities: Contains approximately 4,040 acres, which consists of lands owned by MPL, but protected by existing conservation easements.

- These areas are known as the Preserves, i.e. the Moloka'i Forest Reserve and the Kamakou Preserve.

MOLOKA'I RANCH MASTER USE PLAN PROPOSED LAND TRUST & LAND USE DISTRICTS



DRAFT

Prepared by:
The Conservation Fund
October 7, 2005

- | | | | | |
|---|--|--|--|--|
| <ul style="list-style-type: none"> Potential Land Trust Property (26,400 acres) Subsistence Fishing Zone Partnership Subsistence Fishing Zone Coastal Conservation District (State) Alternate Golf Course at Kaluakoi Current Development at Kaluakoi | <ul style="list-style-type: none"> Major Road Secondary Road Minor Road 4WD Road Trail | <p>LAND USE DISTRICTS</p> <ul style="list-style-type: none"> CULTURAL RESOURCE NATURAL RESOURCE RURAL LANDSCAPE RESERVE | <p>AGRICULTURE</p> <ul style="list-style-type: none"> Hi-Value or Intensive Aquaculture Other/Extensive | <p>DEVELOPMENT</p> <ul style="list-style-type: none"> Resort Residential Shoreline Community Expansion Industrial |
|---|--|--|--|--|

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1.8 IMPLEMENTATION

In order for the Master Land Use Plan to be implemented, other actions will be required. This section outlines what additional requirements are needed to implement the Plan. A schematic of what is needed and the input from the various parties is presented at the end of this section.

1.8.1 Stakeholder Agreement

This agreement will be between the Ke Aupuni Lōkahi Molokaʻi representing the community, and Molokaʻi Properties Limited. It will cover all aspects of the Plan and provide for a transition to a Molokaʻi Land Trust:

- Donation of lands and easements
- The reopening of the Kaluakoʻi Hotel
- The binding of Native Hawaiian rights on the land titles
- Agreements by the EC to support the regulatory process for entitlements such as the Lāʻau Point development
- The extension of the industrial area
- The community housing expansion areas
- Lāʻau Point development CC&Rs and protection zones

Other issues such as the implementation of the Water Plan will also be covered by agreements in this document.

The timing of implementation of this agreement will be detailed as well.

1.8.2 Molokaʻi Land Trust and A Proposed Community Development Corporation

A community land trust will be formed to own and manage the 26,200 acres that MPL will donate to the Molokaʻi community under this plan. The Land Trust will also administer land use policies that permanently protect another 24,950 acres under agricultural and rural landscape reserve easements.

The mission statement, goals, and objectives of the Molokaʻi Land Trust will be detailed in the Trust’s formation document.

A Community Development Corporation has been proposed and is being discussed.

Any relationship issues between MPL and the Land Trust or a proposed Community Development Corporation will be spelled



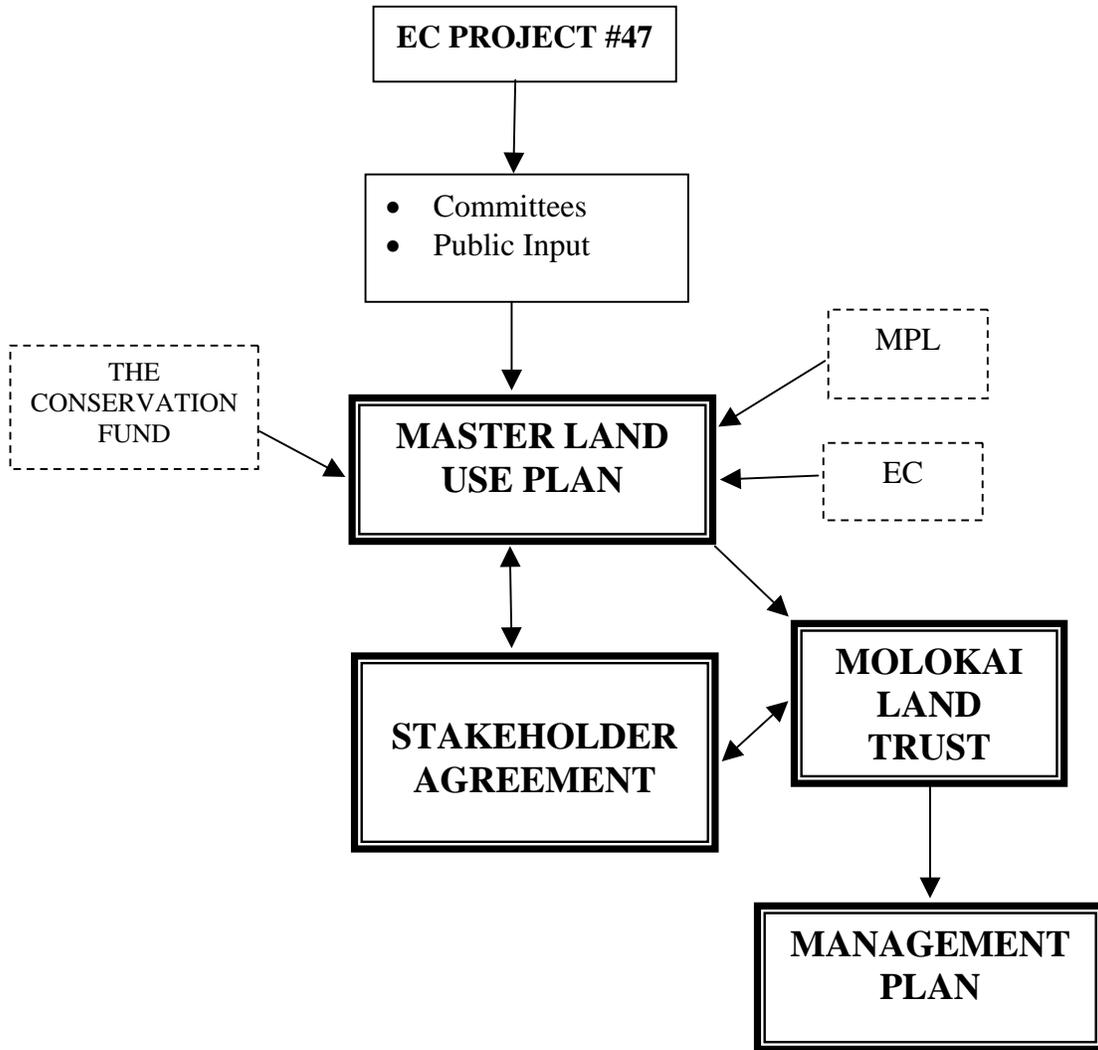
out and agreed to in the aforementioned document.

1.8.3 Management Plan

This document, which outlines how the Land Trust will manage its assets for the benefit of the community, an essential element in retention of its 501c3 status,

will be prepared by the Moloka'i Land Trust immediately after its formation. It will undertake a community input process and rely heavily on the work of the various committees and the Land Use Committee established under Project #47: Community-Based Master Planning Process for Moloka'i Ranch.

SCHEMATIC OF PROCESS



2 INTRODUCTION

MPL currently owns approximately 65,000 acres, which encompasses over one-third of the total 166,000 acres of the island of Moloka‘i. Most of the property is located on the west end, but there are also three substantial areas of MPL land in the central part of the island (See Appendix 1, Moloka‘i Ranch Lands).

This section provides a brief historical overview of these lands, the Plan vision, overall goals, and the planning process.

2.1 HISTORY

The island of Moloka‘i has long been characterized by its rural-agricultural base that was first established by the early *kānaka maoli* (original people or Native Hawaiians). One of the earliest settlement dates for Hawai‘i, 500-600 A.D., established by carbon-14 testing, was found on the Hālawa Valley shoreline along the windward coast of Moloka‘i.

Early inhabitants subsisted on fish, as evidenced by the archaeological sites of stoned fishponds and abundant *ko‘a* (fishing shrines). Many ancient *heiau* (temples) sites demonstrate a strong sense of tradition, culture, and spirituality (Moloka‘i Community Plan, 2001).

Like all the Hawaiian Islands, Moloka‘i has a windward side that receives a

significant amount of rainfall, and a leeward side that is typically hot and dry. Subsequently, the island has generally had a higher concentration of settlement and agriculture on the more lush east side.

Despite its dry climate, the western end



of Moloka‘i is rich in natural and cultural resources, which attracted people there. The areas on the leeward side with the most resources and use by the *kānaka maoli* were the coasts and the summit area surrounding Maunaloa.

2.1.1 Western Moloka‘i Coastal Areas

The North, West, and South coasts of western Moloka‘i vary dramatically in their topography, and therefore in their settlement patterns. The North Coast tended to be devoid of permanent settlement due to the sea cliffs and its exposure to strong winds and big north swells.

Mo‘omomi is the only exception. Composed mostly of sand dunes and low

coastal vegetation, Mo'omomi was used as a fishing station. Located near this area is the *Kalaina Wāwae* (carved footprints), which are a series of oblong depressions that are said to represent human footprints. These footprints were made as a prophecy of the arrival of the boot-wearing Caucasian. In addition, the sand dunes of Mo'omomi were used for burials (Pāpōhaku Dunes Draft Preservation Plan, 2005).

One *mo'olelo* (legend/history), associated with 'Īlio Point, the northwest corner of the island, is told about a Red Dog. In brief, the shark god of Kainalu had an ancestor whose bones washed ashore on this end of Moloka'i. The people there gathered the bones and made a shrine. To visit his ancestor on land, the shark god took the form of a red dog. Every fifth year, he trotted to his ancestor's shrine, paid homage, and then slipped into the water. This *mo'olelo* represents the important Hawaiian values of respect and homage to ancestors.

The West Coast was also exposed to strong winds and big North swells, but protected embayments along it served as safe places for landing canoes and shelter. Residential clusters were concentrated near these bays, generally below the 50-foot elevation in order to access marine resources.

There are also mouths of gulches strewn up and down the West and South Coasts, unlike the North Coast. They served as shelter and had sources of fresh water.

There is evidence of habitation near these gulches, and fishing villages in the areas of Pāpōhaku, Kepuhi, and Kawākui Iki.

The West Coast has a very high concentration of cultural sites and its historical uses are well known. *Ko'a*, were found in abundance along the entire coastline, indicating the rich ocean resources found here. It was possible for the *kānaka maoli* of Kaluako'i to access the coastline due to the *Ke alapupu i Moloka'i* (the shell road at Moloka'i), which was constructed by the Maui *ali'i* (royalty) Kiha-a-Pi'ilani. This coastal trail connected the important fishing places. (See Appendix 8, Recreation/Trails Map.)

Pāpōhaku Beach and the area surrounding it are historically significant. North of the beach is Kaiaka Rock. This major outcropping is home to a heiau facing Pāpōhaku Beach, which was used as an observation tower for fishing and scouting purposes.

Just below Kaiaka Rock is a canoe heiau, which is a rare type of shrine. Its existence indicates the importance of this area for canoe launching and landing.

Pāpōhaku Beach still serves as a major canoe access point for the West Coast. In addition to fishing and canoe access, the beach maintains a spiritual use. The dunes along Pāpōhaku Beach served as burial grounds, as did the sandy areas and dunes of Mo'omomi and *Keonelele* (Flying Sands). Keonelele is the sandy, inland area that connects the two coastal

dune systems. Lastly, to the south of Pāpōhaku is Pu'u Ko'ai, the area where bodies were prepared for burial.

The name Pāpōhaku, meaning stone wall, comes from the story of a chief from east Moloka'i who boarded canoes with some of his people and set off around the island. When they reached the southwest coast of Moloka'i, they met some fishermen who had a large catch of 'ōpelu. They started to eat the 'ōpelu until another group of fishermen came by and told them to stop because it was the season of 'ōpelu kapu. However, since the visiting chief only had a kapu for eating turtle, they continued to eat. The fishermen became angry and attacked the visiting chief and his men.

Overpowered, they were brought before the kahuna. The visiting chief became very ill, and it was decided that a human sacrifice was needed to save the chief from death. One of his men offered himself as a sacrifice and the chief recovered. The kahuna ordered a tree to be planted on the grave of the willing victim. The chief was afraid the waves would wash the sand from the grave, and so ordered his men to build a stone wall in respect and remembrance. Over two hundred feet long when it was created, the wall represented the Hawaiian values of preserving that which is sacred or scarce (kapu of the 'ōpelu) and respect for deeds of unselfishness.

The South Coast generally had calmer waters and shallow reef systems that

were not found on the West and North Coasts. The shallow reef area off of Lā'au Point, called "Penguin Banks," was well known to be a rich fishing area. Along the boulder coastline were habitats for edible mollusks such as 'opihi, pūpū'awa, pipipi, and a'ama crab, while the nearshore area had an abundance of algae and edible seaweed such as limu kohu.

Several fishponds were constructed on the eastern portion of the South Coast, along with two important fishing villages, located at Kapukawahine and Kanalukaha. Situated in the upland area of Lā'au Point are bell stones, which the kākā maoli would ring to announce to the village of Kanalukaha the arrival of ali'i by canoe. Also, the area around Hale o Lono has been noted as the fourth extensive burial locality on the west end of the island.

The name Lā'au Point comes from another mo'olelo involving the shark god of Kainalu. This time, the shark god left his home off of Moloka'i and traveled to Kaua'i. Romping in the ocean with the shark god of Kaua'i, a large floating branch from a hau tree got stuck on the Moloka'i shark's back. As he swam back towards Moloka'i, the branch came loose and washed ashore off of the southwest point. The people on the beach saw it float ashore and took the branch to a fertile bit of land and planted it. Their chief, Kuama, said they should call the place *Ka Lae O Ka Lā'au* (the Point of the Branch). The tree is short and sprawls

close to the ground. The beautiful blossoms were offered by the people of Moloka'i to their gods (Pāpōhaku Dunes Draft Preservation Plan, 2005).

2.1.2 Maunaloa Summit Region

This summit region extends from Maunaloa town on the west, along the ridge, to Pu'u Nānā on the east; all above 900 feet in elevation. Traditional dryland agriculture thrived in this area with the cooler temperatures that resulted from the elevation and strong winds.

There was also believed to be a native forest of kukui, hala, 'ie'ie, 'iwa ferns, ginger, and hau, which served to break the winds that today blow unabated across Kaluako'i. Crops grown there included sweet potato, dryland taro, sugarcane, and banana.

This area was home to numerous adze quarries and adze manufacturing sites. The adzes were used by the kānaka maoli of Kaluako'i and east Moloka'i. Site surveys have found shop refuse, such as adze chips, and adzes in all stages of finish. Both the adze manufacturing and agricultural areas were intermingled with house sites and rows of stone walls. These archaeological sites indicate significant levels of settlement in the Maunaloa region.

The summit zone, generally thought of as being the most sacred, is also where the head of major gulches are located. This



area is known for its association with gods and 'anā'anā (sorcery).

Approximately one mile northeast of 'Amikopala is a hill with an outcropping of rock. The largest of these rocks is the piko stone, where newborns' umbilical cords would be placed. The Maunaloa summit plateau was also the location for games and ali'i recreation.

One important *wahi pana* (sacred place) on the summit region is Kā'ana. It was revered by many hula practitioners as the birthplace of the hula, or *ka hula piko* (the navel or center of hula).

Kapo'ulakīna'u lived at Ma'ohelaia on Maunaloa, and originated the hula, enlisting the aid of her younger sister Laka to help teach others. She decided to never to leave the mountain, so she remained there in the form of a rock.

West of Kā'ana is Paka'a's Trail. It begins near the beach on the west side of Kolo Gulch and runs inland (mauka) for approximately 2 miles to the slopes below 'Amikopala. The trail is paved

with large stones and has a width of 6 feet. There are chunks of sandstone or coral placed alongside of the trail, at intervals of roughly 20 feet, presumably as guides for using the trail at night. Paka'a was the servant of Keawenuia'umi, the king of Hawai'i (1525). After his enemies conspired against him, Paka'a left the island of Hawai'i and sailed to the southwest side of Moloka'i, where he lived in disguise. There he married the daughter of the high chiefs of that section, built several houses and planted fields of crops. Paka'a used this trail to go from his home near Kolo Wharf to his sweet potato fields (Summers, 1971).

2.1.3 Formation of Moloka'i Ranch

Moloka'i Ranch's beginnings were as a cattle ranch belonging to the High Chief Kapuāiwa who later became Kamehameha V. Bernice Pauahi Bishop, daughter of Paki and Konia, the last descendant of the Kamehameha dynasty, inherited title to these lands from those to whom these lands were given in 1848 at the time of the great Mahele, among them Princess Ruth or Ke'elikolanu. Mrs. Bishop did not inherit the land of Kaluako'i on the west end of Moloka'i, for this had been granted to her husband Charles R. Bishop, in 1875. When American Sugar Company was formed, most of these lands were acquired from her estate and Kaluako'i was acquired from Mr. Bishop. Subsequently, small holdings were purchased and sold.

In 1897, Moloka'i Ranch was formed by a hui (group) of men including Judge

Alfred S. Hartwell, Alfred W. Carter, and A.D. McClellan. They had purchased seventy thousand acres of land in fee simple from the Bishop interests. With an additional thirty thousand acres leased from the Government, stock-raising became their principal enterprise.

Early in 1898 the American Sugar Company Limited took over the land (that now belongs to the Moloka'i Ranch) and leaseholds of large tracts of government land lying between the ranch lands.

American Sugar Company was unsuccessful in its cane sugar cultivation due to saline water in its well, and the company was purchased in 1908 by Charles M. Cooke, son of the early missionary teacher, Amos Starr Cooke. He established the Moloka'i Ranch, which his son George P. Cooke subsequently managed.

By 1923, the Libby, McNeill and Libby Company had begun raising pineapple in the Maunaloa area on lands leased from Moloka'i Ranch. They continued operations until selling to the Dole Corporation in 1972. Del Monte, then known as California Packing Corporation, arrived in 1927 and made their headquarters at Kualapu'u. They soon commenced their large-scale pineapple cultivation, mostly on land leased from Moloka'i Ranch. Dole ceased its Moloka'i operations on January 1, 1976. Del Monte phased out its operations in the mid-1980s.

In the early 1970s Moloka'i Ranch entered into a partnership with Louisiana

Land and Exploration Company for the development of the Kaluako'i Resort. It subsequently sold its interest in the undertaking when it was unable to fund the required cash calls. The Ranch later tried diversification into mainland commercial property. After initial success, the cash requirements of these investments led to the eventual sale of Moloka'i Ranch stock to Brierly Investments, Limited who became its sole stockholder in 1987. At that time, Moloka'i Ranch consisted of approximately 52,000 acres.

In October 2001, Moloka'i Ranch re-acquired 6,300 acres on the southwest corner of Moloka'i then known as the Alpha parcel; in December 2001 Moloka'i Ranch acquired the land holdings of Kukui (Moloka'i), Inc. that had acquired the Kaluako'i Hotel and the undeveloped lands of the resort area from Kaluako'i Corporation.

2.1.4 MPL Lands in Central Moloka'i

From west to east, the first tract of MPL land begins mauka of the Pālā'au Homesteads and runs north around Kualapu'u and the Reservoir, up to and including Nā'iwa.

Nā'iwa has numerous cultural sites such as petroglyphs, heiau, caves, and makahiki sites. One site contains large, upright, weathered stones. Several of these stones have figures carved or scratched in them, appearing to represent humans (Summers, 1971).

Another significant site is called *Na Imu Kalua Ua* (the ovens to bake rain) Heiau. It consists of a series of open compartments formed by flat stones placed on edge at right angles to one another. Local tradition says that these stones would catch and retain the large "lumps" of rain that fell in the area. The rain would then be cooked to dissipate it (Summers, 1971).

South of Nā'iwa, on the south and west slopes of Kualapu'u hill, there used to be many sweet potato patches, which were defined by rows of stones. One mo'olelo claims that the name of Kualapu'u used to be *Ka 'Uala Pu'u* (The Sweet Potato Hill) (Summers, 1971).

Further east, the next tract of MPL land begins in the south, around Kaunakakai. From town it continues north up to and including the Moloka'i Forest Reserve. The old name for Kaunakakai was *Kaunakahakai* (Resting-on-the-beach).

It was a place for canoe landings and for fishing. West of the Kaunakakai wharf is a platform that was part of Kamehameha V's home, Malama. The beach in front of this site was used exclusively by the ali'i for sun bathing.



To the west of Kaunakakai was once a site used to make salt. Sea water was run into salt pans at high tide, and retained there when the tide ebbed. Lastly, Kaunakakai and the area mauka of it had numerous heiau and petroglyphs (Summers, 1971).

The third area of MPL land in central Moloka'i is actually composed of two tracts of land from the same ahupua'a: Kawela, a 34-acre parcel with cultural significance, and Kamakou Preserve, an ecologically important 2,774-acre parcel. Kawela was the site of famous ancient battles and contains the remains of many fallen warriors. One of the most destructive battles of Kamehameha I was fought here.

Another, earlier battle was fought between Kapi'iohokalani of O'ahu and the Moloka'i chiefs, who were allied with Alapa'inui of Hawai'i. The main archaeological sites at Kawela are petroglyphs and burial mounds. Kamakou Preserve is located mauka of Kawela. Though it has less cultural sites, it continues to be a healthy, native-dominated, montane wet forest ecosystem today.

The island as a whole has gone through numerous population shifts and economic changes. The population began to increase dramatically in the early 1920s, from approximately 1,000 to 4,427 people by 1930. The first change occurred when the Government passed the Hawaiian Homes Commission Act in

1921, resulting in the settlement of Kalama'ula, Ho'olehua, Pālā'au, and Kapa'akea.

The establishment of two pineapple plantations, Libby, McNeil and Libby (later Dole Pineapple) at Maunaloa in 1923, and California Packing Corporation (Del Monte) in 1927 at Kualapu'u, further encouraged the gradual population shift west from the more populated eastern areas of the island.

These plantations both closed down during the 1970s and 1980s, leaving the island again dependent on diversified agriculture, primarily vegetable farming, and cattle ranching. In the late 1970s, resort development at the west end of the island at Kaluako'i became an influence on the island's economy. The population increased during this period to 6,049. With a very gradual increase since then, the current population remains relatively stable at approximately 7,000 (Moloka'i Community Plan, 2001).

2.2 VISION STATEMENT

This vision statement projects the long-term future for Moloka'i, its environment, spirit, culture, and people.

*Moloka'i is the last Hawaiian Island. We who live here choose not to be strangers in our land. The values of **aloha 'āina** and **mālama 'āina** (love and care for the land) guide our stewardship of Moloka'i's natural*

resources, which nourish our families both physically and spiritually.

*We live by our **kupuna's** (elders') historic legacy of **pule o'o** (powerful prayer). We honor our island's Hawaiian cultural heritage, no matter what our ethnicity, and that culture is practiced in our everyday lives. Our true wealth is measured by the extent of our generosity.*

*We envision strong **'ohana** (families) who steadfastly preserve, protect and perpetuate these core Hawaiian values.*

We envision a wise and caring community that takes pride in its resourcefulness, self-sufficiency and resiliency, and is firmly in charge of Moloka'i's resources and destiny.

*We envision a Moloka'i that leaves for its children a visible legacy: an island **momona** (abundant) with natural and cultural resources, people who **kōkua** (help) and look after one another, and a community that strives to build an even better future on the **pa'a** (firm) foundation left to us by those whose **iwi** (bones) guard our land.*

2.3 GOALS AND OBJECTIVES

The management of Moloka'i Ranch and the members of the EC have worked hard through this process in order to define and achieve their primary goals of conserving the cultural and natural

resources of Moloka'i and stimulating the local economy. The following are the objectives of the Plan:

- Develop sustainable economic activities that are compatible with Moloka'i and the vision of the Moloka'i Enterprise Community.
- Secure the role of the community in the management of MPL's 65,000 acres.
- Re-open the Kaluako'i Hotel and create 100 plus jobs.
- Protect cultural complexes and sites of historic significance on MPL lands.
- Protect environmentally valuable natural resources and agricultural land, pasture and open space.
- Create a land trust with donated lands from MPL.



2.4 PLANNING PROCESS

The process followed this general outline and timeframe:

August 2003: Moloka'i EC creates EC Project #47 for Compatible Community-Based Development.

January 2004: Community-Based Master Use Planning begins with a two-day planning seminar with The Conservation Fund ("TCF"), a renowned Washington-based land planning organization.

February 2004: EC approves the Community-Based Master Use Plan for Moloka'i Ranch as part of EC Project #47.

March 2004: Committees meet and develop Principles and Policies, and map Land Use Districts (Cultural, Recreation, Environment, Economics, and Tourism Committees).

May 2004: Committees complete work. Land Use Committee forms and begins to compile and approve "Guidelines for Principles and Policies of Land Use," except for Lā'au Point and Water.

August 2004 – March 2005: Community presentations outline the Community-Based Master Use Plan for Moloka'i Ranch.

October 2004: Alternative to Lā'au Development Committee forms.

January 2005: Panel of Water Experts holds Community Forum; the MPL Water Plan is presented.

April 2005: Seminar on Moloka'i Land Trust, and formation of a Land Trust Steering Committee.

May/June/July 2005: Land Use Committee meetings focus on Lā'au Development proposal.

August 1, 2005: Decision on Motions for Lā'au Development and Land Use Planning.

September – December 2005: Compilation of Community-Based Master Land use Plan for Moloka'i Ranch.

2.4.1 Committee Process: Cultural, Environmental, Recreation, Tourism, and Economics

The idea to create five committees came at the conclusion of the 2-day planning seminar with TCF in January of 2004. The group proposed a committee-based process to efficiently and thoroughly collect, synthesize, and interpret the information necessary to formulate the Plan.

The committees were comprised of individuals with knowledge and expertise in the specific areas of culture, environment, recreation, tourism, and economics. The Committees were charged with the following:

- **Goals & Objectives:** Formulate goals and objectives for the Plan by devising clear statements that can guide its development. What specifically should the Plan seek to achieve?
- **Data/Information Collection:** Assemble information relevant to each topic's specific issues through document research, site analysis, and/or expert consultations. The information was then reported on maps and/or provided in written form, as appropriate.
- **Analysis & Interpretation:** Each committee then began to evaluate, synthesize the data, and identify the most important resources and develop guidelines for prioritization. Committees were asked to concentrate on capturing the spectrum of opinions, perspectives and ideas, rather than deriving a consensus.

The committees' work had the following functions and methods for data collection and analysis:

- **Environment Committee:** Research opportunities to conserve natural resources where they still exist and restore native communities and/or landscapes where they have been eliminated. Collect and map the information

pertaining to biological significance, environmental quality, and community interests.

- **Economics Committee:** Provide input and research facts on issues dealing with the creation of incoming-generating activities that will provide job opportunities for Moloka'i residents. Research issues connected to agriculture, aquaculture, commercial development, and residential development. Review and assess the accuracy of maps of productive agricultural and aquaculture lands, along with economic statistics, market studies, and physical and regulatory infrastructure.
- **Recreation Committee:** Collect information on existing recreation sites and activities, and map them. Provide data on use and potential conflicts created by use between residents and visitors.
- **Tourism Committee:** Develop guidelines and criteria to direct future recommendations on tourism that does not compromise the lifestyles and traditional activities of islanders.
- **Cultural Committee:** Collect and map locations and significance of archaeological sites. Identify areas of traditional use, such as

hunting, fishing, gathering, and ongoing cultural activity.

2.4.2 Formation of the Land Use Committee

In May 2004, representatives of the five committees formed the Land Use Committee. This committee received the recommendations of the committees, recommended Land Use Districts reflecting primary uses and worked to produce a Land Use Plan and Policies and Principles for land use on the property.

2.4.3 Public Input and Review

Throughout the process, Project #47 solicited public input and review. Between August 2004 and March 2005, there were 12 community meetings and 24 community and focus group presentations regarding the Community-Based Master Land Use Plan for Moloka'i Ranch.

The meetings were held island wide, in Kaunakakai, Kualapu'u, Mana'e, Maunaloa, and Ho'olehua, with over 1,000 participants. Community feedback was taken into account during the development of the Plan.

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3 RESOURCES

3.1 BACKGROUND OF PROJECT AREA

The island of Moloka'i is comprised of approximately 260 square miles. Formed by a series of three volcanoes, it has an elongated shape with diverse topography and rainfall patterns. According to its physical characteristics, the island is divided into three main sections – West Moloka'i, East Moloka'i, and Central Moloka'i.

The west end makes up about 30 percent of the total area, and is relatively dry with gentle slopes. The eastern half of the island is mostly comprised of mountains and gulches that are covered in rainforests and mixed mesic forests, which are vegetation zones found in wet climates.

The only perennial streams that reach the sea are on East Moloka'i. The remaining 20 percent of the land mass makes up Central Moloka'i, which is relatively level and has soil suitable for cultivation. The southern coast is lined almost entirely with coral reef, except where it has been removed for the Kaunakakai Harbor. In contrast, the northern coastline is mostly sheer sea cliffs, making it largely inaccessible, except for the peninsula of Kalaupapa.

The current (2005) population of Moloka'i is approximately 7,000. Kaunakakai, located about midway along the south coast, is the island's primary

population and commercial center. There are also the small plantation communities of Maunaloa and Kualapu'u, as well as the less compact, rural Hawaiian homestead settlements, Ho'olehua and Kalama'ula. The southeast coast contains a settlement pattern along Kamehameha V Highway, which becomes more rural and scattered as it extends from Kaunakakai to Hālawā Valley. The peninsula of Kalaupapa and some of the surrounding area on the northern coast constitute the County of Kalawao.

Moloka'i Ranch Land

The property of Moloka'i Ranch is located primarily on the west end of the island, though there are also three tracts of land in Central Moloka'i. The boundary of the western property extends eastward from the west coast; from 'Ilio Point to Mo'omomi in the north, and from Lā'au Point to the Pālā'au Homesteads in the south.

The land on the west end of Moloka'i is relatively dry, supporting mostly dryland forest and shrub vegetative zones that are now overrun with non-native species. There is also a substantial amount of erosion caused by years of agricultural and ranch use. (See Appendix 1. Moloka'i Ranch Lands.)

Generally, the most important resources in the west end are subsistence food sources and cultural sites. Many residents hunt and fish in various places

within this region. They also come to important cultural sites for traditional and spiritual practices. The Mo'omomi Preserve along the north coast is managed by a partnership of organizations and supports a native dominated lowland dry forest and shrub landscape and a carefully managed subsistence fishing zone. On the west coast lies Pāpōhaku beach and dunes, one of the longest, mostly intact coastal dune systems in the state. To the south, Lā'au Point is a pristine coastal environment, mostly used for subsistence fishing and hunting.

The main population center in West Moloka'i is the small town of Maunaloa, where MPL is headquartered. Along the shores south of Maunaloa is Hale o Lono and Kolo Wharf. Maunaloa Highway connects the west end to the Moloka'i Airport, Kaunakakai, and the rest of the island.

MPL also owns three large tracts of land in Central Moloka'i. From west to east, the first tract encompasses Nā'iwa, Pālā'au State Park, the area surrounding Kualapu'u town and Reservoir, and continues south to the Pālā'au Homesteads.

The second tract includes land immediately surrounding Kaunakakai and a large area mauka of town, including the Moloka'i Forest Reserve.

The third tract is the Kamakou Preserve, which consists of 2,774 acres of an

important native rainforest ecosystem with a conservation easement to and managed by The Nature Conservancy. In addition to these large tracts of land, MPL also owns a 34-acre parcel located south (and makai) of the Kamakou Preserve, at Kawela. This parcel is significant for its cultural history and archaeological sites.

3.2 CULTURAL AND ARCHAEOLOGICAL RESOURCES

The cultural maps, "Cultural Sites of Kaluako'i, Moloka'i" and "Lā'au Cultural Sites" located in Appendix 2, identify the archaeological sites within the MPL property located on the west end. (The central properties also contain important cultural sites but they are not graphically represented in these maps.)



There are various cultural sites, including burials throughout the property, though some areas have higher concentrations. Archaeological maps, coupled with oral history interviews provide insight as to the types of sites, hence cultural land uses that may be found on the Ranch lands.

Evidence suggests that Mo'omomi, to the north, was an ancient fishing station and burial ground. The area is also noted for the presence of the Kalaina Wāwae, which prophesized the arrival of the boot-wearing Caucasian.

The area along the west coastline, between 'Īlio Point and Pāpōhaku Beach, has a high concentration of remnant shelters, caves, and mounds. This area includes the Kawākiu Iki Complex and the Kawākiu Nui North that are believed to have been utilized for habitation.

Oral history accounts confirm that this area was used for temporary fishing villages, which explains the remnants of ancient homes and fishing shrines along the coast. A historical trail, Ke alapūpūkea Moloka'i (the shell road at Moloka'i), runs from Mo'omomi, around 'Īlio Point, and to the south, through Pāpōhaku Beach, to Lā'au Point, east to Iloli in the south.

This coastal trail was constructed with white shells (pūpūkea) to ensure safe nighttime travel under the direction of Maui Island Chief Kiha-a-Pi'ilani. Po'olau, the area immediately south of

Pāpōhaku, is an area rich with habitation, agricultural and natural communities, and bunker sites. This was also the location of a Naval Reservation and a gunnery range for the U.S. military.

Another area with a high concentration of cultural sites is located to the east of Maunaloa. Along the southeast edge of the abandoned pineapple fields are numerous ko'a, heiau, and petroglyphs, as well as remnants of enclosures and platforms that were once used for agriculture and habitation.

This area also has evidence of adze quarries and adze manufacturing. This summit zone is the location of the head of major gulches, which explains its association with the gods and sorcery. It is also where Kā'ana is situated, which is believed to be the birthplace of hula.

The entire property is dotted with burials, especially those areas composed of sand, since this was a common material in which burials were placed. The main burial sites include the dunes of Mo'omomi and Pāpōhaku, and Keonelele, the area where sand is believed to blow southwest from Mo'omomi towards Pāpōhaku.

The "Lā'au Cultural Sites" map illustrates the numerous archaeological sites located in the Lā'au Point area. The majority of sites in this region are of fishing villages and ko'a.

Lastly, the central properties contain important archaeological sites and complexes as well, though they are not included on these maps. The area furthest north in the first tract of central MPL land is Nā'iwa. It is rich with petroglyphs, heiau, caves, and other sites, such as the area that contains large, upright, weathered stones with figures carved into them.

The other main areas with archaeological sites include the region mauka of Kaunakakai and Kawela. Numerous petroglyphs and heiau have been identified in the gulches mauka of Kaunakakai, while the Kawela Cultural Complex is well known to contain burial mounds and the remains of fallen warriors from ancient battles.

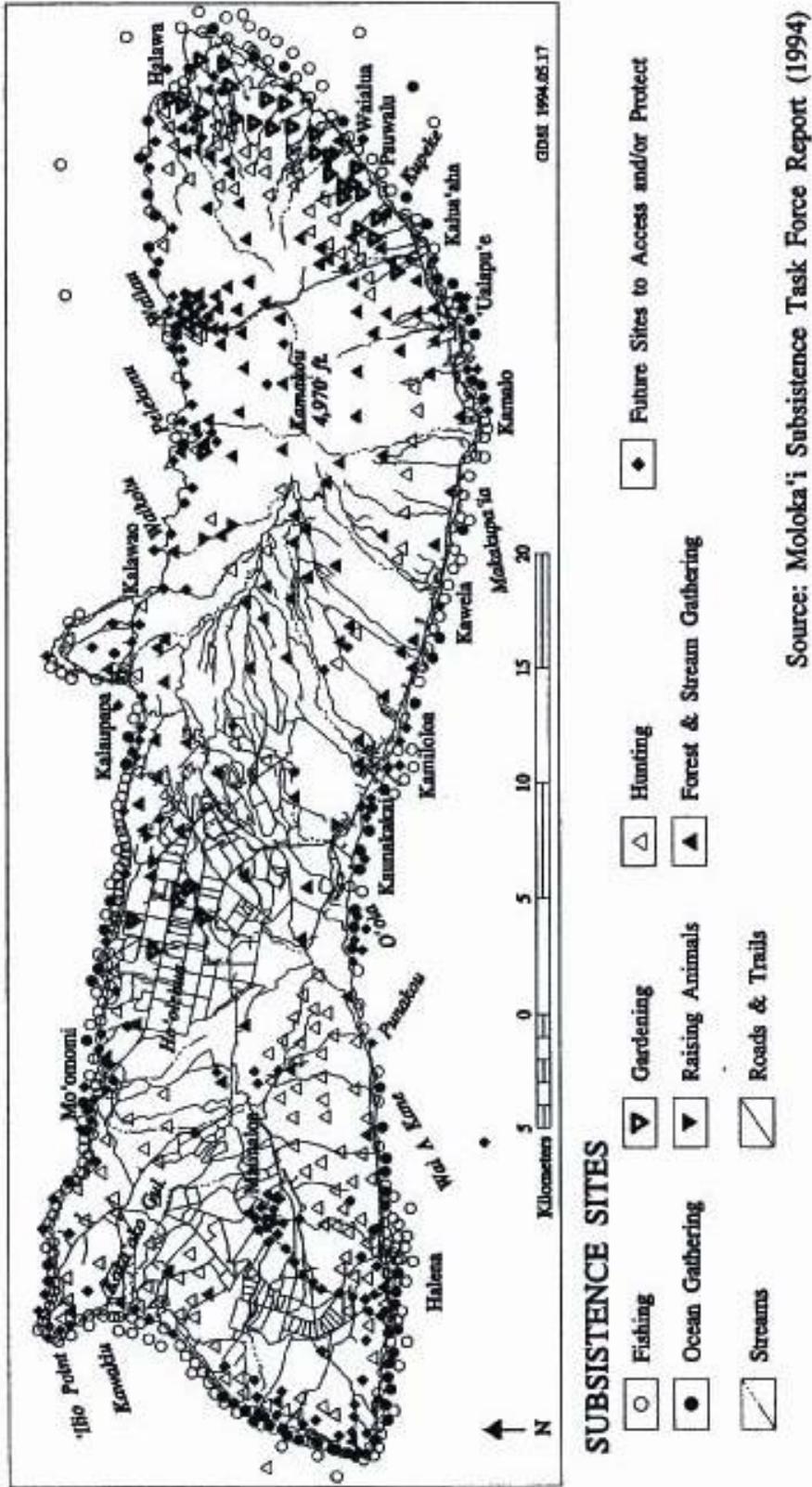
3.3 SUBSISTENCE RESOURCES

In summer 1993, the Governor's Moloka'i Subsistence Task Force met with subsistence practitioners in focus groups to map sites important for fishing, ocean gathering, hunting, forest and stream gathering, gardening, raising animals, and trails to access the resources.

This map was published in the final report of the Task Force. Practitioners identified sites that had been used in the past, were currently used, and sites where they would want to go if access were opened.

The map shows that the entire coastline of the MPL lands is important for

subsistence fishing and ocean gathering. It also indicates that the MPL lands are very important for subsistence hunting. Forested areas on MPL lands are also accessed for subsistence gathering.



Source: Moloka'i Subsistence Task Force Report (1994)

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3.4 ENVIRONMENTAL RESOURCES: TERRESTRIAL AND AQUATIC

The terrestrial and aquatic natural resources are illustrated on the following three maps, which are located in Appendix 3:

- “Moloka‘i Resource Assessment: Natural Resources – Terrestrial”
- “Moloka‘i Resource Assessment: Natural Resources – Aquatic”
- “Moloka‘i Ranch Resource Summary: Natural Resources”

The “Natural Resources – Terrestrial” map shows that the Ranch property is dominated by non-native species (shown in gray). The topography and rainfall patterns of West Moloka‘i indicate that the area, at one time, was lowland dry forest and shrub. The vegetation of this landscape includes mostly grasses and shrubs, with few species of trees. Such coastal and lowland dry forest and shrublands occur on the lower leeward slopes of the higher Hawaiian Islands.

However, over 90 percent of the Hawaiian low shrublands have been lost to development or displacement by alien vegetation. On the Ranch land, these native ecosystems were permanently altered by cattle grazing, followed by the cultivation of sugarcane and pineapple. These activities caused severe degradation and erosion of the west end. The area is now dominated by invasive species such as the kiawe tree and Christmas berry, which have spread throughout the property.

The northwestern edge of the island has a few remaining pockets of native dominated landscape communities. The Mo‘omomi Preserve (on the “Natural Resources – Terrestrial” map), which is managed by The Nature Conservancy, is one of these native lowland dry forest and shrubland communities that still exists in the state.

The preserve is 921 acres and harbors more than 22 native Hawaiian plant species, four of which are globally rare or endangered. These rare plants, like ‘akoko and ‘ena‘ena, thrive in the dry, windy, salt-sprayed environment. The preserve is also an important nesting site for the endangered green sea turtle.

There are a few small areas of the native dominated coastal dry shrubland and grassland communities along the northwestern corner (shown in purple on the “Natural Resources – Terrestrial” map). This landscape community is similar to the Mo‘omomi Preserve community, but has less species diversity.

The west end also has some occurrences of Natural Heritage rare vertebrates and plant species, such as the ‘akoko. The endangered Hawaiian monk seal frequents the beaches of the west end.

The Ranch property in the Forest Reserves of the island contains some occurrences of rare plant species as well as an important native dominated montane mesic forest and wet forest.

Erosion

Eroding lands are one of the most significant problems that need immediate attention. A substantial portion of MPL's Maunaloa lands have bare soils that erode during seasonal storms. The worst problems occur along the south shore from Punakou to Halena as the inner reef waters are red from land-based sedimentation. (See Soil Erosion Aerial Photo on page 37.)

Similar problems occur elsewhere along the coast, but the western and northern coastal waters have huge winter surf that help flush away the seasonal sedimentation.

Therefore, where possible, hunting could keep deer herds from denuding the landscape. It is also important to preserve Puu Nānā (top of Maunaloa mountain) forested areas and increase forestry plantings to retain and improve moisture cycle. Access, use and construction plans should also prevent erosion of dirt road ways and trails.

The Mo'omomi to 'Īlio Point coastal section is the most important biological resource on Moloka'i Ranch's lands. This area is not only important biologically, but is a very rugged and beautiful coastline. The terrestrial native coastal beach strand is some of the best strand left in the main Hawaiian Islands. Many rare plants like 'akoko and 'ena'ena still exist in healthy numbers as do common species like hina hina, nehe, 'aki'aki, pau o hi'iaka, and nama. The coastal dunes

and rocky cliffs also provide nesting sites for several sea bird species including; wedge-tailed shearwater ('ua'u kani), Great frigatebird (iwa), and tropic birds (white-tailed – koa'e kea and red-tailed – koa'e 'ula).

Erosion is the main environmental concern in the 'Īlio Point to Kawakiu and Kepuhi area where human impact will cause problems.



There is severe sedimentation of the inshore reef between Punakou and Halena. With the exception of Pālā'au, it would not be possible to do sedimentation ponds as there is not much flat land along that coastline and therefore, re-vegetation of the adjacent slopes would be the primary solution for that area.

The Pālā'au inshore waters have significantly less sedimentation due to the thick mangrove growth along the shoreline. Although the mangroves are acting as a filter to flood waters and provide nursery sites for inshore marine species, there are concerns that

eventually the mangroves will infringe on the fringing coral reef systems.

The “Natural Resources – Aquatic” map illustrates the substantial coral reef protection area that runs along the south shore of the Ranch property. It begins at Hale o Lono and extends east along much of the southern shore of the island. The protected area includes numerous fishponds.

The fringing reef along this coastline is a treasured resource of Moloka‘i. The inshore areas along this area are also important hatcheries/breeding grounds for many key subsistence marine fish species. This is confirmed by the many ko‘a locations.

Inshore marine species still are abundant along the rugged coastline and tidal pool systems. The limited access is the main reason why this northwest coastline has remained unchanged the past few decades.

At the very tip of the northwest corner is ‘Īlio point, an abandoned US Coast Guard station site, which is owned by the State of Hawai‘i. Although not part of the Ranch lands, this area needed to be clean of old metal debris, and possible live ordinance. This Plan seeks that the State portion of ‘Īlio Point should also be put in conservation protection as it contains very high quality native coastal beach strand, inshore tidal pools and fisheries.

In the Kepuhi to Lā‘au Point area where MPL is planning development, there are several pockets of beach strand or

terrestrial systems of note. It is important that any development plans require an erosion plan, recognizes and enhances pockets of native beach strand/vegetation, and includes no incompatible beach activities (i.e. motorized vehicles on the beach, harvesting of sand, and military exercises).

Beginning at Hale o Lono and extending east is an area of land mauka of the coral reef protection area, which is marked for reclamation and erosion control. Protection of this land is critical for continued health of the coral reef and marine ecosystem, which are sensitive to excessive run-off.

It is important to note the absence of perennial streams on the Ranch property. There are numerous intermittent streams, which generally only have flows during or immediately following heavy rainfalls. The entire west end is relatively dry, and in need of erosion control measures.

The “Moloka‘i Ranch Resource Summary: Natural Resources” map shows those regions prone to erosion, which have been identified as “Priority Areas” for Watershed/Aquatic Resource Protection. That map also illustrates the Priority Areas for Rare Species/Native Ecosystem Preservation and Coastal Habitat Management Protection.

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**ISLAND OF MOLOKA'I
AERIAL PHOTOGRAPH - 1998**

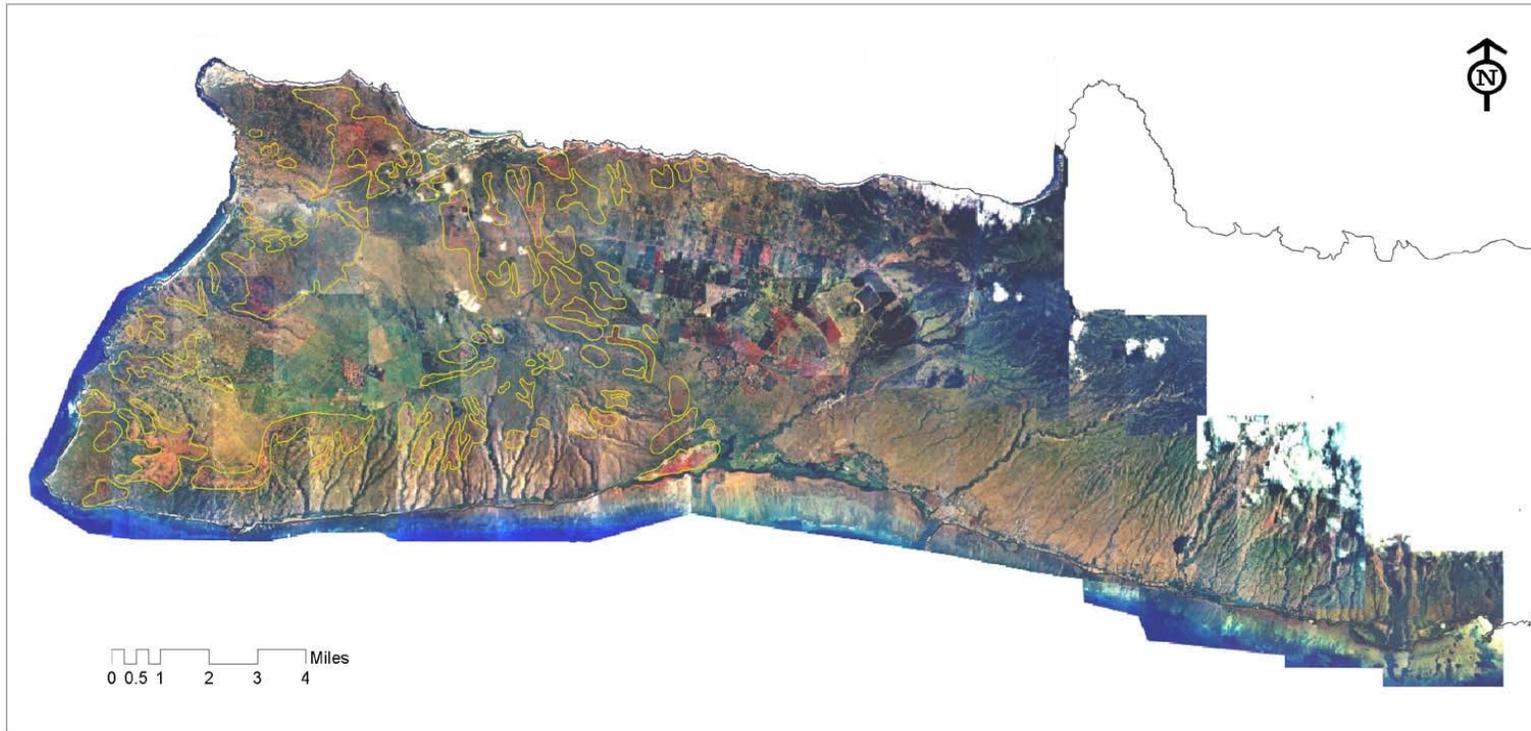
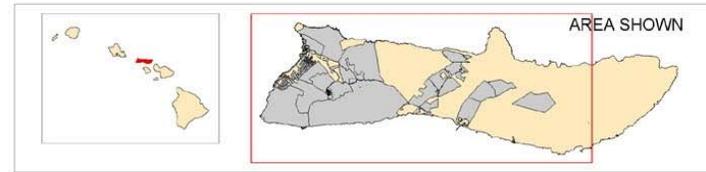


Photo Courtesy of: Air Survey Hawaii, Inc.

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3.5 AGRICULTURAL RESOURCES

The “Agricultural Suitability Classification & Proposed Agricultural Easement Lands” map is in Appendix 4. It illustrates the agricultural resources of the project area and the proposed agricultural lands. The dotted black lines encircle the areas proposed for the agricultural easements, a total of 14,390 acres. The ag lands in Central Moloka‘i are located near numerous water sources for irrigation. The ag lands in Western Moloka‘i are serviced by water lines that vary from ¾ inches to 8 inches in diameter.



The Agricultural Lands of Importance generally overlap with the areas defined for ag easements. They consist of substantial areas of dark green on the suitability map, which indicates Class I: 0 – 2.99% slope, signifying that the land is suitable for cultivation.

The ag lands in West Moloka‘i are composed of the Moloka‘i-Lahaina soil

association, i.e. deep, nearly level to moderately steep, well-drained soils that have a moderately fine textured or fine textured subsoil. Moloka‘i soils are suitable for pineapple, pasture, truck crops, and wildlife habitat.

To the north, near Pu‘u Ula, and to the west, ag lands are classified as very stony land-rock land association, indicating gently sloping to very steep, rocky and stony land types on uplands and in gulches and valleys.

The ag lands located in Central Moloka‘i are also largely composed of the Moloka‘i-Lahaina association. Within these soil associations there are two main soil types found within the ag easements:

Moloka‘i silty clay loam (MuB): Slopes range from 3 to 7 percent. Runoff is slow to medium, and the erosion hazard is slight to moderate. Included in mapping were a few small areas that are eroded to soft, weathered rock.

Hoolehua silty clay (HzC): Slopes range from 7 to 15 percent. Runoff is slow to medium, and the erosion hazard is moderate.

Referring again to the “Agricultural Suitability Classification & Proposed Agricultural Easement Lands”, the ag parcel furthest east also contains significant amounts steeper slopes. It is composed of similar soil associations, but also contains areas of Rough broken land-Oli association, which indicates

shallow to deep, very steep to precipitous soils in gulches and moderately deep to deep, gently sloping to steep, well-drained soils that have a medium textured and moderately fine textured subsoil. That land is suitable for pasture, woodland, orchard, recreation, and wildlife.

3.6 RECREATIONAL RESOURCES

The Moloka'i Ranch lands contain various recreational activities for both residential and visitor recreational activities. The west and south coasts of the ranchlands contain stunning and relatively undeveloped beaches.



However, the rip currents and shorebreaks on the west end make entering the water extremely dangerous in the winter months and during certain weather patterns. Nonetheless, the beach and nearshore areas are used at various times for sunbathing, picnicking, swimming, fishing, snorkeling, scuba diving, whale watching, surfing, and paddling by residents and visitors.

There are a significant number of trails throughout the property for hiking, biking, and horse-riding, that are popular with residents and tourists alike. There are cultural trails and the Historic Trail mapped by Monsarrat, which runs along the west coast. There is a proposed Na Ala Hele State Trail to be located on the central property.

The Ranch provides access to numerous activities, such as kayaking, mountain biking, horse riding, as well as a paniolo cultural museum and workshop in Maunaloa town. It also maintains camping facilities at Kaupoa Camp. Maui County maintains camping sites at Pāpōhaku Beach Park, located on the north end of Pāpōhaku Beach.

Currently, there is an 18-hole golf course at Kaluako'i and 9-holes at the Ironwoods Golf Course. In the future, MPL may open another golf course north of the Kaluako'i resort area. Lastly, there are areas set aside for public bow and rifle hunting, which are differentiated from the subsistence hunting areas.

3.7 MPL URBAN AND COMMERCIAL RESOURCES AND EXISTING ZONING

Although the majority of MPL land is undeveloped, it is zoned for agricultural, urban, and commercial uses.

3.7.1 Maunaloa

Designated “Country Town Business District”, Maunaloa’s main thoroughfares have 13 MPL commercial sites located along them. This County designation allows for quaint country-town commercial properties, which would suit a wide range of activities including retail businesses, arts or culture outlets or professional offices. These sites range in size from 8,700 sq ft to 31,500 sq ft and are competitively priced at approximately \$14-16 per sq ft.

3.7.2 Kaunakakai

Kaunakakai serves as the main population center on the island. It is home to the majority of grocery stores, restaurants, and general services for island residents. The Kaunakakai Wharf is still used for transporting goods between Moloka’i and the rest of the Hawaiian Islands.

This Plan maintains that the old ball park retain its existing use. The Community Plan’s recommendation for this area is to redesignate it from “Public/Quasi Public” to “Park,” so that the current uses as rodeo, fairgrounds, and park are maintained. MPL owns parcels within

the town center and a large area mauka of town, including areas to be considered for Community Expansion.

3.7.3 Kualapu’u

Kualapu’u is a small plantation community located between Kaunakakai and Maunaloa, just north of the Maunaloa Highway and east of the Moloka’i Airport.

3.7.4 Kaluako’i

This resort zoned area just north of Pāpōhaku Beach contains three condominium projects, the golf course and the Kaluako’i Hotel, which is currently shut down. One of the goals of this Plan is to generate the investment revenue to re-open the Hotel. All three condo projects are privately owned; some of the 300 plus units are included in a rental pool and are rented out. The Ted Robinson designed golf course has been restored and improved but needs further renovation.

3.7.5 Pāpōhaku

Located along white, sandy Pāpōhaku Beach, is the Pāpōhaku Ranchlands Subdivision. It contains 273 lots, a few of which are currently for sale. Less than 100 of the lots have been built upon, and of those, less than half of the owners live there full-time. This means that the Pāpōhaku area remains relatively quiet for most of the year (Pāpōhaku Dunes Draft Preservation Plan, 2005).

3.7.6 The Lodge at Maunaloa

A member of the *Small Luxury Hotels of the World*, The Lodge contains 22 guest rooms. The Lodge's main building features a living room with a two-story stone fireplace, an upstairs library & TV room, the Maunaloa Room for dining, the Paniolo Lounge for lite dining, a TV sitting area and billiards room, the Lodge den with computer and wireless internet access, the Lōkahi meeting room, a heated outdoor infinity pool, and a fitness center offering spa treatments with separate saunas, workout room, shower and lockers.

long term needs for both heavy and light industrial users.

3.7.7 Beach Village

A 40-tent platform visitor accommodation operation located at Kaupoa Beach on a 31-acre parcel.

3.7.8 Industrial Park

Centrally located to Moloka'i's main town of Kaunakakai, commercial harbor and the Ho'olehua airport, the Moloka'i Industrial Park consists of 22 improved lots.

All lots have prepared building pads and are accessed from paved roads with curbs, gutters, and sidewalks. These lots range in size from 22,000 sq ft to 55,000 sq ft and are fully serviced with water, underground electricity, and phone connections. Lot prices begin at \$200,000.

MPL owns this only industrial park on the island. The first increment was developed in the late 1990's to meet the island's

4 COMMUNITY GUIDELINES FOR LAND USE PRINCIPLES AND POLICIES

These guidelines are intended to guide Moloka'i Properties Ltd. and the Moloka'i Land Trust in setting policies for the implementation of the Moloka'i Ranch Community-Based Master Land Use Plan and the establishment of the Moloka'i Land Trust.



4.1 MANAGEMENT POLICIES

The wisdom of our kupuna and their relationship to the land and sea has proven well with centuries of managing and living in a manner that caused the land and sea to flourish abundantly. It provided future generations with more than enough for their continued survival without destroying their fragile, island environment and precious resources for over two thousand years.

A single, most important and vital principle of our kupuna and their

relationship to their land comes from the word “Mālama ‘Āina” or “Care for the land”. To “mālama” not only means to care for the land physically, it also means to care for the land spiritually. It also means to regulate the use of land and ocean resources to ensure the continuance of those resources for future generations. *(Written by John Kaimikaua, March 30, 2004)*

What distinguishes Hawaiian custom and practice is the honor and respect for traditional ‘ohana cultural values and customs to guide subsistence harvesting of natural resources. Such ‘ohana values and customs include but are not limited to the following:

- Only take what is needed.
- Don't waste natural resources.
- Gather according to the life cycle of the resources. Allow the resources to reproduce. Don't fish during their spawning seasons.
- Alternate areas to gather, fish, and hunt. Don't keep going back to the same place. Allow the resource to replenish itself.
- If an area has declining resources, observe a kapu on harvesting until it comes back. Replant if appropriate.
- Share what is gathered with family and neighbors.
- Take care of the kupuna who passed on the knowledge and experience of what to do and are now too old to go out on their own.

- Don't talk openly about plans for going out to subsistence hunt, gather or fish.
- Respect the resources. Respect the spirits of the land, forest and ocean. Don't get loud and boisterous.

(Native Hawaiian Access Rights/McGregor/2/12/04)

Hawaiian Subsistence, Cultural and Religious Beliefs, Customs and Practices

Hawaiian custom and practice encompasses the full range of traditional, subsistence, cultural, and religious activities Hawaiians 'ohana or extended families have engaged in for many centuries to live as a people and survive in a unique island environment. There are customs and practices related to each major aspect of Hawaiian lifestyle and livelihood including:

- Community life
- Family
- Human well-being and spirituality
- Stewardship and use of natural and cultural resources
- Rights
- Economics

The Governor's Task Force on Moloka'i Fishpond Restoration and the Governor's Moloka'i Subsistence Task Force developed a useful definition of subsistence. According to these task forces:

Subsistence is the customary and traditional uses of wild and cultivated renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, transportation, culture, religion, and medicine; for barter, or sharing, for personal or family consumption and for customary trade.

Land and Natural Elements – The Foundation of Hawaiian Subsistence, Culture and Religion

TO HAWAIIANS, THE LAND AND NATURAL ELEMENTS ARE THE FOUNDATION OF SUBSISTENCE, CULTURAL, AND RELIGIOUS BELIEFS, CUSTOMS, AND PRACTICES.

The land and the natural environment are alive, respected, treasured, praised, and even worshipped. The land has provided for generations of Hawaiians, and will provide for those yet to come.

Hawaiian subsistence practitioners speak of their cultural and spiritual relation to the lands of their region and their commitment to take care of it and protect it for future generations. The land is not viewed as a commodity; it is the foundation of their cultural and spiritual identity as Hawaiians. The land is a part of their 'ohana and they care for it as they do the other living members of their families.

Hawaiian Stewardship and Use of Natural and Cultural Resources

The ahupua'a is the basic unit of Hawaiian natural and cultural resource management. An ahupua'a runs from the sea to the mountains and contains a sea fishery and beach, a stretch of kula or open cultivable land and higher up, the forest.

A land should run from the sea to the mountains, thus affording to the chief and his people a fishery residence at the warm seaside, together with products of the high lands, such as fuel, canoe timber, mountain birds, and the right of way to the same, and all the varied products of the intermediate land as might be suitable to the soil and climate of the different altitudes from sea soil to mountainside or top.

Hawaiians consider the land and ocean to be integrally united and that these land sections also include the shoreline as well as inshore and offshore ocean areas such as fishponds, reefs, channels, and deep sea fishing grounds. Coastal shrines called fishing ko'a were constructed and maintained as markers for the offshore fishing grounds that were part of that ahupua'a.

Fresh water is the most important thing for life and needs to be considered in every aspect of land use and planning. The Hawaiian word for water is wai and the Hawaiian word for wealth is waiwai,

indicating that water is the source of well-being and wealth.

Insights about the natural and cultural resources inform those who use the land about how to locate and construct structure and infrastructure so as to have the least negative impact upon the land.

The practitioners are sensitive to the condition of the landscape and resources and their changes due to seasonal and life cycle transformations. This orientation is critical to the preservation of the natural and cultural landscape.

An inherent aspect of Hawaiian stewardship and use of cultural and natural resources is the practice of Mālama 'āina or conservation to ensure the sustainability of natural resources for present and future generations.

These rules of behavior are tied to cultural beliefs and values regarding respect of the 'āina, the virtue of sharing and not taking too much, and a holistic perspective of organisms and ecosystems that emphasizes balance and coexistence. Maintaining spiritual, cultural, and natural balance with the elemental life forces of nature.

Hawaiian families who rely upon subsistence as a primary part of their diet respect and care for their surrounding natural resources. They only use and take what is needed in order to allow the natural resources to reproduce. They share what is gathered with family and

neighbors. Through understanding the life cycle of the various natural resources, how changes in the moon phase and the wet and dry seasons affect the abundance and distribution of the resources, the subsistence practitioners are able to plan and adjust their activities and keep the resources healthy.

Hawaiian Fishing Responsibilities and Rights

If subsistence fishing is disrupted, the lifestyle of the families who rely upon the fishing for their diet will be negatively impacted. This will precipitate a chain of negative impacts for those families. Systemic change is likely to occur such as disruption of the 'ohana system of exchange and sharing of foods caught and gathered.

The diet of the families would worsen. The standard of living would be negatively impacted by the increased cost of purchasing food, due to the lack of fish, seaweed, and other marine foods which are part of their regular diet. The inability to fish and gather marine foods regularly relied upon might impair the ability of the 'ohana (extended family) to celebrate life cycle events – baby lū'au, weddings, or birthdays.

In ancient Hawai'i the right to fish in any given area of the sea depended upon rank. The "ali'i nui" or high chief of the island owned all the land and its adjacent fishing areas in his personal and sovereign capacity. He gave the chiefs

under him, or "konohiki", the ahupua'a and their adjacent fisheries to manage. In return, the konohiki paid tribute to the ali'i nui by giving him their oaths of allegiance and portions of bounties that the ahupua'a tenants under them harvested from the land and sea.



The konohiki fishing area extended from the shoreline to the edge of the reef. Where there was no reef, the konohiki had a private fishing right that extended one mile seaward of the shore. Traditionally, the tenants of an ahupua'a shared the use of fisheries that were adjacent to the ahupua'a with the konohiki. Duty required them to reserve portions of their catch and certain species of marine life for the konohiki and ali'i nui (*Externalities Workbook/Native Hawaiian Impacts/ 12/17/96*).

According to Native Hawaiian Rights Handbook by Melody K. Mackenzie, "within the boundaries of the ahupua'a, the maka'ainana also had liberal rights to use the ahupua'a resources. These

included the right to hunt, gather wild plants and herbs, fish offshore, and use parcels of land for taro cultivation together with sufficient water for irrigation. All these activities were regulated by an intricate system of rules designed to conserve natural resources and provide for all ahupua'a residents."

"Implicit in ancient Hawaiian regulations regarding water and land is the concept of mutual benefit and sharing," D. Malo Hawaiian Antiquities (1951 ed).

Access along the shore, between ahupua'a or districts, to the mountains and sea, and to small areas of land cultivated by native tenants, was a necessary part of early Hawaiian life. Use of Hawai'i's trails was open to all classes of people and was governed by *Mamalahoe Kanawai, the Law of the Splintered Paddle*. This first law of Kamehameha, punishable by death, "guaranteed the safety of those using the highway trail of old."

In early Native Hawaiian life, gathering activities served to supplement the everyday food, religion, clothing, housing, and medicinal supplies of the people. They gathered both cultivated and non-cultivated items from the mountains and into the sea, including hunting and fishing.

Tenants of the ahupua'a also had a right to take fish, subject to the right of the Konohiki to manage and conserve the fisheries.

The legal basis for Traditional Hawaiian Access is founded on *Native Hawaiian Ahupua'a Tenant Rights*, and are derived from three sources: (1) *The Common Law of England: Section 1-1 Common Law and Hawaiian Usage*; (2) *The State of Hawai'i Revised Statutes: HRS 7-1*; (3) *The Hawai'i State Constitution: Article XII Sec. 7*.

This plan recognizes and reaffirms all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes by descendants of Native Hawaiians who inhabited the Hawaiian Islands prior to 1778. These rights will be the foundation upon which we build our Management Plan for West Moloka'i.

Relative Importance of Management Area

Subsistence fishing reduces dependence on purchased seafood. The availability of an alternative food source gives residents a sense of self-sufficiency and freedom.

Subsistence fishing provides other, less definable benefits. Time spent in subsistence fishing cultivates intimacy and harmony with the ocean, reinforcing a strong sense of kinship with nature that is the foundation of Hawaiian spirituality and religion. While engaged in fishing and gathering activities, practitioners share experiences and gain knowledge that provides continuity between the past

and the present and that builds trust and cooperation.

These shared experiences reinforce beliefs and values that are critical for perpetuation of Hawaiian cultural identity. Subsistence fishing emphasizes group identity and relationships rather than individual economic accomplishment. Food obtained through subsistence fishing is distributed within the community and is consumed at family and community gatherings.

The prevalence and economic and social importance of subsistence activities on Molokaʻi is well documented (Governor’s Molokaʻi Subsistence Task Force, 1994). A survey commissioned by the Task Force concluded that, without subsistence as a major means of providing food and supplementing income, Molokaʻi families would have a greatly reduced standard of living.

Subsistence is an essential and viable sector of the overall island economy. Subsistence fishing not only provides food, but contributes to a healthy diet. Obtaining equivalent food items, such as fish, from stores can be costly and families on fixed incomes are known to purchase cheaper, less healthy foods. Subsistence activities require physical exertion and provide opportunities for relatively inexpensive recreation that contributes to better health.

Beyond the immediate economic and health advantages of subsistence fishing

are other benefits that serve to enhance family identity and community cohesion and to perpetuate traditional values. Subsistence resources have allowed Molokaʻi to endure economic hardship without major social disruption (Governor’s Molokaʻi Subsistence Task Force, 1994).

Molokaʻi is unlikely to experience economic growth or social dislocation on a scale that would change the underlying lifestyle. Subsistence fishing on Molokaʻi will continue to be an integral part of the island’s economy. In fact, the subsistence lifestyle so prevalent on Molokaʻi is viewed by many on the more urbanized islands as a preferred lifestyle, which protects against downturns in the cash economy (Proposal to Designate Moʻomomi Community-Based Subsistence Fishing Area/Northwest Coast of Molokaʻi/Hui Mālama O Moʻomomi/April 1995).

Many families on Molokaʻi, particularly Hawaiian families, continue to rely upon subsistence fishing, hunting, gathering, or cultivation for a significant portion of their food. Availability of the natural resources needed for subsistence is essential to Molokaʻi households where the unemployment rate is consistently higher than on other islands and a significant portion of the population depend upon public assistance.

Without subsistence as a major means for providing food, Molokaʻi families would be in a dire situation. Subsistence

provides families with the essential resources that compensate for low incomes and a means for obtaining food items that may be prohibitively costly under a strict cash economy.

Food items like fish, limu, and deer meat, which are normally obtained through subsistence are generally unavailable or are very costly in stores. If families on fixed incomes were required to purchase these items, they would probably opt for cheaper, less healthy foods that would predispose them to disease and other health problems. In this respect, subsistence not only provides food, it also ensures a healthy diet that is critical to the prevention of disease.

Subsistence on Molokaʻi will continue to be essential to the lifestyle of the people. Community-based management of the resources, rooted in traditional values of aloha ʻāina and mālama ʻāina and empowered with the responsibility for monitoring of the resources will be critical in assuring a subsistence lifestyle for future generations on Molokaʻi. The other major facet to the perpetuation of subsistence activities and the protection of the necessary natural resources will be the recognition of subsistence as an essential and viable sector of the overall economy and balancing future economic development and growth on the island to assure its continuation.

Molokaʻi provides a rare example of how residents adapted to changing economic circumstances without massive external

intervention. Historical accounts have indicated that when agribusiness closed on Molokaʻi, subsistence became a more vital aspect of the economy. Through community-based efforts, residents organized to successfully stave-off tourism development while promoting values related to community and family integrity. Subsistence and other community-based endeavors are considered the forces that bind together the social elements necessary for cultural perpetuation. Subsistence should not be viewed as a replacement economy per se, but as a tradition that has survived after macroeconomic strategies (i.e., plantations, ranches) failed.



Any economic recovery strategy that is selected should allow for subsistence to continue to play a significant role. This is especially critical on Moloka'i where natural resources are available and subsistence is an integral part of lifestyle. Community planning is a proactive strategy that should encourage a functional coexistence and balance between subsistence, the market economy, and government.

As the natural and cultural resources of Moloka'i are no longer as abundant as the current generation of adults remembers them to be in their childhood, management of the resources traditionally used by the people of Moloka'i for subsistence has become more urgent.

Beyond the immediate economic and health advantages that come with subsistence are other qualities that serve to enhance family and community cohesion and perpetuate culture and spirituality. Subsistence is an activity that provides prescribed roles for its members. Family members of all ages feel that they contribute to family welfare through their involvement in subsistence. Subsistence activities are a central part of camping trips or family outings and parents and children alike are involved in catching fish and gathering marine resources. Older children are oriented towards subsistence by their elders who teach them about techniques and the behaviors of various species.

On another level, subsistence provides a basis for sharing and gift giving within the community. Residents generally ascribe to a process of reciprocity and sharing with those who are unable to obtain resources on their own. Families and neighbors exchange resources when they are abundant and available, and the elderly are often the beneficiaries of resources shared by younger, more able-bodied practitioners. Some practitioners believe that they must share their catch with others even when it is meager, because generosity is rewarded by better luck in the future.

Resources obtained through subsistence are used for a variety of special occasions that bond families and communities. Resources such as fish, limu, 'opihi, deer meat, etc. are foods served at birthdays, lū'au, graduations, and holiday celebrations. 'Ohana and community residents participate in these affairs that cultivate a sense of communal identity and enhance social networks.

Time spent in nature cultivates a strong sense of environmental kinship that is a foundation to Hawaiian spirituality. Subsistence practitioners commune with nature, honor the deities that represent natural elements and life forces, learn how to mālama or take care of the land, and develop an understanding about patterns and habits of flora and fauna.

An inherent aspect of traditional subsistence is the practice of conservation. Traditional subsistence

practitioners are governed by particular codes of conduct that are intended to ensure for the future availability of natural resources. Rules that guide behavior are often tied to spiritual beliefs concerning respect for 'āina, the virtues of sharing and not taking too much, and a holistic perspective of organisms and ecosystems that emphasizes balance and coexistence.

Hawaiians engage in subsistence and related practices more than other ethnic groups. This finding reflects the importance of subsistence to this group and the perpetuation of culture through subsistence activities. As mentioned previously, subsistence also plays an important economic role, and this may be especially true for Hawaiians who generally have lower incomes.



The fact that Hawaiians engage more in subsistence than others also points to how these activities are embedded in the culture and can be explained through a history of adaptation, the development of

an indigenous economy, and the maintenance of cultural traditions despite the influx of foreign lifeways. It is important to note that the other groups (e.g. Filipinos, Japanese) engaged in subsistence, although not at the same level as Hawaiians (Governor's Moloka'i Subsistence Task Force, 1994).

Problems Addressed by Plan

In recent decades, there has been a notable decline in nearshore fishery resources in the main Hawaiian Islands (Shomura, 1987). Resource condition varies considerably from area to area (Smith, 1993), depending on several factors: population size, degree of economic development, extent of nearshore habitat alteration and intensity of fishing. The persistence of subsistence fishing on Moloka'i is an indication that customary fishing practices have not depleted inshore fisheries resources.

Sustainability of subsistence fisheries resources was assured in ancient Hawai'i. The fishing methods and practices of that time generally promoted the sustainable use of fisheries resources within the limited nearshore areas that were exploited. The commercialization of fishing has changed the way resources are perceived and are utilized. Fishing decisions are made with considerable uncertainty about how fishermen will behave collectively. Such uncertainty tends to shorten planning horizons and places a premium on short-term catches over future catches.

Customary fishing practices are increasingly beset by pressures from outside the community. Commercial harvesting by off-island fishermen and new residents is causing some Moloka'i fishermen to question traditional values (sharing of seafood resources and conservation for future generations) and rules of conduct, which are the foundation of the subsistence culture. An alarming number of fishermen are using improper harvesting methods, taking undersized animals or ignoring seasonal prohibitions. The sustainability of the subsistence fishery and its benefits to the community is threatened by encroachment of commercial fishing values and methods.

The ancient Hawaiians depended on the ocean for survival and existence and they accumulated a sophisticated knowledge of marine fisheries. This knowledge involved not only how and where to fish but also a code of conduct about how fishing should be practiced so that it would be sustainable. Cautions against wanton harvest are part of Hawaiian mythology and kinship with marine creatures is part of Hawaiian spirituality.

While the force of these beliefs has been muted in modern times, perpetuation and application of this body of knowledge is relevant to some of Hawai'i's present day fishery problems, particularly the sustainable use of nearshore fisheries (*Proposal to Designate Mo'omomi Community-Based Subsistence Fishing Area/Northwest Coast of Moloka'i/Hui Malama O Mo'omomi/April 1995*).

Over the years, a number of activities contributed to the degradation of the natural environment of Moloka'i. Offshore reefs and oceans were impacted by pollution, erosion and soil run-off from tourist, residential development, and ranching. Sand from the West End of Moloka'i was mined and shipped to O'ahu to make cement to build the freeways and hotels and to replace lost sand at Waikiki Beach.

Gravel and rocks from East Moloka'i were used in freeway construction on O'ahu. Ranching on the East End contributed to deforestation, erosion and run-off. Once productive fishponds were allowed to fill with silt and the walls fell to disrepair following tsunamis and storms. Over-harvesting of marine resources relied upon for subsistence is a growing problem. Traditional resources such as the turtle cannot be used for subsistence under new federal regulations. Wildlife such as deer, goats, pigs, and birds are abundant on privately owned lands but are too scarce to be hunted on public lands.

Within the lifetime of those who are now adults on Moloka'i, ocean resources have significantly declined. Commercial gathering of crab and 'opihi have seriously diminished these particular resources. There are more and more boats from O'ahu and Maui, especially backside. In 1993, all the 'opihi from Kalaupapa to Hālawa was wiped out in 7 days of the zero tides in March and April. There was no 'opihi to be gathered

during the summer. ‘Opihi on the West End is gone. Off island boats take massive quantities of ‘opihi from Dixie to the Northwest side.

Moemoe gill nets left in too long without being checked are negatively impacting fishing resources. Gill nets, lobster nets and bullpen traps seriously diminish the resources. Gill nets are the main problem for the fishing resources. Limu is not being gathered properly. Undersized marine resources are being harvested. Kaunakakai to Makakupa’ia is over fished. With 50% of high school graduates having lū’au which commonly provide raw fish, raw crab, tako, limu, etc., the negative impact on these marine resources are tremendous. Restrictions should apply equally to commercial and subsistence users (Governor’s Moloka’i Subsistence Task Force, 1994).



4.1.1 Cultural Principles and Policies

Cultural Conservation and Management Zone

Establish a Cultural Conservation and Management Zone to include the Historic Cultural Sites and the Complexes of Nā’iwa (Manawainui-Kahanui), Kaluako’i-Kā’ana-Pu’u Nānā (Kalaipahoa-‘Amikopala), Kaunakakai, and Kawela Cultural Complexes; Cultural and Subsistence use and resource areas; a subsistence fishing zone of one-quarter (1/4) mile offshore on the North and West Shore and to the outside of the reef surrounding the remainder of the property (South shore). (See Cultural Resource Protection Map, page 59.)

Subsistence Fishing

Subsistence is defined as the customary and traditional uses of wild and cultivated renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, transportation, culture, religion, and medicine; for barter, or sharing, for personal or family consumption and for customary trade.

Permitted activities (activities to be allowed)

Persons who receive permission to access Moloka’i Ranch lands or Trust lands can engage in the following subsistence fishing activities:

- Hook and line fishing for pelagic species.
- Hook and line fishing for deep sea bottom fish species.

- Hook and line net fishing for akule.
- Fishing with SCUBA gear permitted only for akule and ta'ape or for research.
- Trap fishing for deep sea shrimp.
- Trap and net fishing for kona crab and kuhonu crab.
- Throw netting permitted only for subsistence.
- Hook and line fishing from shore permitted only for subsistence (no competitions are permitted).
- Diving with spears permitted only in the daytime and only for subsistence (no spearing competitions are permitted).
- Diving for hand harvesting permitted only in the daytime and only for subsistence.
- Hand harvesting of a'ama crab is permitted at night and only for subsistence.
- Hand harvesting of ala'eke and kuhonu for subsistence only.
- 'Opihi collecting permitted from shore only (no diving) and only for subsistence.
- Harvesting of spiny lobster and slipper lobster permitted only by hand (no netting, no spearing) and only for subsistence.
- Harvesting of mana-moi (7-12 inch) throughout the year for subsistence only.
- For rescue, monitoring, religious, management, and research purposes only, use of equipment otherwise prohibited in this section is allowed.



Hunting

- Hunting will be for subsistence use only. The golden rule is “take only what you need for your family”.
- MPL has a contractual obligation for commercial hunting and wildlife management on parts of MPL property until December 2007. The contractor has agreed that at the conclusion of that contract he will no longer seek to conduct commercial hunting on the property and will be agreeable to work for the Land Trust and/or MPL as a Wildlife or Subsistence Hunting Manager.
- As a goal of this management plan, the Land Trust and MPL will seek to reach a mutually acceptable agreement with the contractor to cease commercial hunting prior to December 2007. MPL acknowledges that it, alone, has a moral obligation to this contractor that may extend beyond 2007.

- MPL employees and Native Hawaiian residents of the Kaluako'i ahupua'a have seniority for hunting in accordance with traditional subsistence management custom and practice. MPL employees assume responsibilities to sustain the natural and cultural resources of the ahupua'a.
- Management Options include the following: The decision about when and how to implement a selected option would be made by Moloka'i Ranch and Trust resource managers. The Hunting Resource Manager would need to work hand in hand with MPL's Livestock Manager so that the pasture lands remain healthy enough to support the livestock. This is especially critical in times of drought when the deer can intrude into the pasture lands, compete with the livestock, and create erosion problems.
- Kapu on Activities such as "No Hunting for Periods of Time"
- Kapu on Animals "No Hunting of Does"
- Kapu on Areas "No Hunting in Certain Districts"
- Kapu on Seasons "No Hunting During Certain Months"
- Kapu on Times "No Night Hunting"
- Kapu on Equipment "No Dogs for Deer Hunting", "Only Bow Zones"

- Education on Conservation and Preservation
- Education on Cultural History and Practices
- Education on Management Areas
- Education on Safety and Responsibilities

Access for Subsistence Fishing and Hunting

- In order to protect the cultural and natural resources, access on both MPL and Moloka'i Land Trust lands will be managed.
- Hawaiian Access Rights be enshrined on the property titles for both MPL lands and Land Trust lands.
- Non-Hawaiian access will be determined by the landowner.
- Hunting methods (rifle or bow) and game seasons are as confirmed on the Hunting Map.
- Subsistence Fishing: Each year, an experienced Resource Group will recommend open areas for subsistence fishing based on protecting and not depleting the resources.

Stewardship of Cultural Sites

- Designate Kahu for complexes and sites including: Nā'iwa(Manawainui-Kahanui); Kā'ana; Pu'u Nānā (Kalaipahoa-'Amikopala); Kawakiu, Kamakaipo-Lā'au; Hale O Lono; Punakou. Designated Kahu for complexes and sites shall be

consulted prior to decisions being made affecting those areas.

- Involve cultural resource persons, as needed, in a cultural sites stewardship role for all other protected sites and areas.

Responsibility of Kahu and stewardship resource persons

- Ongoing Monitoring of Sites - annual assessment during the dry season
- Identify and prioritize sites for stabilization
- Develop resources for site stabilization and restoration
- Develop any interpretive signage, markers and trails of access
- Identify and prioritize sites for rededication
- Train stewards in mo'olelo, protocols and responsibilities of stewardship for each site
- Implement Management Plan
- Manage research requests

Access and Use of Cultural Sites

- Sites can be accessed to fulfill traditional and customary Native Hawaiian responsibilities for cultural, religious, and subsistence purposes.
- Education and training activities can be organized through the kahu or the resource manager.
- In some cases access may be seasonal, such as during the non-hunting season, rainy/muddy season.

- Use of sites and related protocols will vary according to use of the particular site, including but not limited to:
 - Monitoring its condition - integrity, boundary and buffer, setting access routes, relation



to overall complex or nearby sites and resources. Sites should be assessed once a year during the dry season.

- Work to stabilize and restore sites. A plan for the stabilization and restoration of selected sites should be developed and approved by the State Historic Preservation Office.
- Rededicated for specific spiritual and cultural purposes. Identify sites which have been in continuous use, those which have been rededicated and those which shall be rededicated.
- Access and use of sites should follow protocols established by the Kahu and resource manager.

- Protocols should address manner of approach, entry, use, and exit of site; chants seeking entry and granting entry to sites; appropriate ho'okupu; chants and procedures to stabilize sites.
- Kahu and stewardship resource persons should train stewards in mo'olelo, protocols and responsibilities of stewardship for each site.
- There will be no commercial tours within the boundaries of Nā'iwa (Manawainui-Kahanui) and Kā'ana-Pu'u Nānā (Kalaipahoa-'Amikopala) wahi pana.

Nā'iwa

- An area to be defined by the attached maps inclusive of selected areas within Nā'iwa and Kahanui ahupua'a be protected in perpetuity.
- Known sites be GPS'd (Global Positioning System) and marked on maps.
- Certain sites be limited (kapu) to use only by practitioners of traditional Native Hawaiian religion and culture (Pu'u Ano Ano, Nenewa, Kawahuna, mau Ana, mau Pu'u).
- Residents of Hina (Moloka'i) be given preferred status for access and practice.
- Youth groups be encouraged to prepare, visit, and be groomed to

assume kuleana to mālama these sites and related activities.

- Everyone, regardless of rank or status, be part of the (volunteer) task force.
- Any huaka'i be accompanied by someone who has been trained and certified in the halau na'auao for Nā'iwa.
- Cultural and religious sites be identified, blessed, constructed, and staffed accordingly.
- Fences be reinforced, keys limited, and a schedule of access be developed.

This list does not limit or restrict future recommendations, as may be necessary.

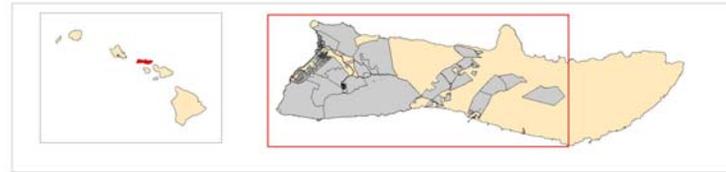
Kaluako'i Cultural District

The Kaluako'i Cultural District is to protect the historic and cultural sites and resources for current and future spiritual, cultural practices and subsistence uses. It includes the following sites and complexes:

- Punakou which is inclusive of Kā'ana, Pu'u Nānā, and Ho'olehua
- Paka'a trail which is located in the entire Kolo Gulch
- Paka'a cultivation fields in the uplands of Kopala
- Kalaipahoa-'Amikopala and Kukui adze quarry sites
- Kamāka'ipō complex of sites in the entire gulch
- Kahualewa Heiau, mauka of Waikāne Gulch

- Heiau, mauka of Halena Road and between Kāhinawai and Oneohilo gulches
- Kawākiu Iki and Kawākiu Nui village sites and burials
- Dunes of Keonelele
- Various fishing ko'a along the shoreline
- Burial Site located west of Kaluako'i water tank in Kaka'ako Gulch
- All sites identified on the Maurice Majors maps

MOLOKA'I RANCH MASTER USE PLAN CULTURAL RESOURCE PROTECTION



Data Sources:
 USGS Hawaii Data Clearinghouse
 Roads, Homesteads
 Hawaii Office of Planning
 Contours, Molokai Ranch Property,
 Place Names, Fish Ponds
 Maurice Major, Archaeologist
 West End Archaeological Survey Data
 Cultural and Land Use Committees
 Other Archaeological Sites, Makahiki Grounds,
 Land Use Districts and Overlay Zones

DRAFT
 Prepared By: The Conservation Fund
 October 7, 2005

- Molokai Ranch Property
- Homestead
- Major Road
- Secondary Road
- Minor Road
- 4WD Road
- Trail
- Cultural Resource District
- Cultural Resource Protection Overlay Zone
- Subsistence Fishing Zone
- Partnership Subsistence Fishing Zone
- West End Arch. Sites (M. Major)
- Additional Archaeological Sites
- Kualapu'u Makahiki Grounds
- Ancient Fishponds
- Camp

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4.1.2 Environmental Principles and Policies

Erosion Control Measures

- Support the efforts of the Northwest Erosion Project that is currently working with various partners and landowners to remedy the erosion rate of the Kaka'a'auku'u Gulch, Kawa'aloa and Mo'omomi Areas. Take the lessons learned from this project and apply to other areas of West Moloka'i and develop erosion plans for specific priority areas.
- Keep domestic livestock from denuding the landscape through best management practices.
- Establish fire prevention and suppression plans for the West End properties.
- Augment vegetation recovering through reforestation/reseeding of denuded areas and develop revegetation plan/strategies.
- Preserve all pu'u and forested areas and increase forestry plantings to retain and improve moisture cycle.



"Limited Access"

Develop access use and construction plan that prevents erosion of dirt road ways and trails. The plan should limit any off road/trail (or on beach) activities with wheeled vehicles. "Limited Access" is defined as "providing access with a system of accountability (pass-key), no further development of road systems, and providing walking trail systems. Allow foot access for subsistence purposes, provided a waiver is signed.

Subsistence Fishing Zone

- To preserve inshore fishing/subsistence resources, create a subsistence fishing zone in the coastal waters along all of the Ranch's coastline property modeled after the Hui Mālama O Mo'omomi Subsistence Fishing Zone.
- Establish no commercial take zone 1/4 mile from the shoreline (north and west shore) and from the beach to the reef edge/breaker line (south shore).
- Establish demonstration fishing nurseries/kapu sites to insure reproduction of key subsistence food species (e.g. 'opihi, moi, mullet, limu, lobster, ulua, uhu he'e).
- Support protection for Penguin Banks from overfishing.

Mo'omomi to 'Ilio Point

- Allow subsistence gathering on a limited access system.

- Develop a system of accountability and enforcement to limit the overtaking of resources.
- Manage the terrestrial coastal beach strand (use TNC Mo'omomi Preserve Management as a model).
- Explore management options - Land Trust and/or TNC extension of the Mo'omomi Preserve.

Īlio to Kawākiu to Kepuhi

- Develop erosion plan for Kawākiu.
- Develop plan to preserve areas with pockets of native coastal vegetation.
- Develop a Kahu watch program.
- Install railing system to prevent motorized ingress into sensitive areas or on the beach.
- Restrict private permanent camp sites.
- Develop a camping management plan.
- No night diving or night gill netting.

All (current and future) MPL and/or Land Trust Development Areas

- MPL and/or the Land Trust will implement erosion plans for any future development.
- MPL and/or the Land Trust will recognize, preserve and enhance pockets of native vegetation (i.e. establish parks at these sites).
- No incompatible nearshore or beach activities (i.e. motorized vehicles on the beach, harvesting

of sand, military exercises, jet skis).

- MPL and/or the Land Trust will recommend that the water company apply for conservation rate structures for individual owners.
- Any future harvesting or pumping of the water source, should not have adverse affects on the natural resources or deplete the source.

Kepuhi to Pālā'au

- Conduct an erosion study comparing the stream/sediment output between a managed and an unmanaged gulch system.
- Control present extent of mangrove forest with strategies that integrate mangrove control and reduction of sedimentation.
- Maintain limited access to these areas.
- Develop wetland/fishpond restoration strategies.

Nā'iwa/Manawainui/Kahanui

- MPL and/or the Land Trust will implement sustainable agricultural practices to minimize non-point source pollution.
- Keep watershed vegetated - both canopy and understory (except for cultural and agricultural sites).
- Use water conserving irrigation methods (e.g. drip irrigation)
- All dirt road construction and maintenance be done in a way to limit erosion.

Kaunakakai

- MPL and/or the Land Trust will work with the County Fire Department to implement fire suppression management.

Kamakou Preserve

- Recognize the Conservation Easement and maintain the management plans that The Nature Conservancy is mandated to implement.



4.1.3 Recreation Principles and Policies

The general structure or creation of recreational policies and procedures for specific areas on MPL land would be in accordance with the policies designed to protect the cultural and natural resources on the MPL lands. Any and all activities and recreational opportunities offered to visitors or tourists should also be available to residents of the island.

Community Advisors

To maintain the longevity and integrity of the recreational plan, cultural and natural

resource persons who would be willing to advise the land owners on recreational activities should be identified and asked to provide advice, as needed. Areas of expertise for these advisors should include: natural resource preservation; Hawaiian culture and traditional Hawaiian practices; native indigenous plants and animals; subsistence and gathering; ocean safety and resource management; tourism; business management; agriculture; water management; and lā'au lapa'au.

Quality Activities

Recreational activities on MPL lands should emphasize quality not quantity and should be offered to visitors and residents alike. Culturally based activities that have an educational component, practice preservation of the island's natural resources, and are respectful of culturally and environmentally sensitive areas and sites should be promoted. These should include ocean activities that are sensitive to reef systems and committed to the preservation of all native ocean life. Cultural activities should be as authentic as possible, unpretentious and not created merely as a visitor attraction.

Activities such as community team sports and those which promote strong family and community relations should be encouraged. New attractions and recreational activities can include: Hula lessons; Makahiki games; lei making classes; cultural or educational hikes to replant indigenous Hawaiian plants;

cultural water activities that teach ocean resource preservation; ukulele lessons; regular story telling sessions about Hawaiian or Moloka'i Mo'olelo (legends/history); Paniolo Cultural Center and Museum.

Horseback Riding

While horseback riding outside of pastures should be on designated trails, recreational riding on the beaches and in conservation resource areas will be restricted and regulated. In order to maintain safety on horse rides, trail systems need to be established and maintained. The constant treading of these animals has a devastating effect on plant life along designated trail systems. Trail rides alone are not economical. Trail rides should be offered as part of a larger experience that includes story telling and visits to culturally significant sites, lunch or dinner on the beach, and educational/cultural information or music.

Hiking

Cultural or educational hikes that limit the amount of people on each tour can be positive if strict guidelines are established and followed. The number of people on a hike should be no more than 10 at a time. Hikes have a low environmental impact. Hikes should contain a strong cultural and educational component and offer a "Moloka'i style" - warm personal – experience. No commercial hikes should be conducted within the boundaries of the wahi pana

of Nā'iwa/Mimimo and Kā'ana/Pu'u Nānā.

Fishing

Reef fishing should be primarily for subsistence. No recreational provider on island is currently, nor should in the future, offer reef fishing as a visitor or tourist activity. Off shore or deep sea sport fishing in which charter boat providers practice "tag and release" does not deplete ocean resources and can in fact educate and give positive benefit to ocean research and study.

Hunting

Hunting on island should be managed carefully. Hunting should be permitted for the community in coordination with the MPL game manager for the deer and wild game population to be sustainable. A map of the water system used for cattle and wild game should be made available to guide the hunting and recreational management plan.

Camping

Encourage weekend camping no earlier than Friday or later than Sunday, unless Monday is a holiday. Longer than weekend camping can be considered but there should be some guidelines for such exceptions. The criteria for camping and for any exceptions should be created later in accordance with a management plan providing accountability, a permitting process, and a protocol for users with established consequences for non-compliance.

It should be based upon an assessment for each area of carrying capacity; how well the site is equipped for sanitation purposes; sustainability of the available resources, seasonal changes. Areas for Primitive and Modern camping should be designated (like the old Halena Boy Scout camp).

Campers should be conscious of the special Moloka'i camping culture. Quiet hours for campers are between 10:00pm and 7:00am. "Primitive" camping (camping without pre-constructed facilities or structures/electricity) should primarily be a residential recreation as opposed to a visitor activity.

Pōhaku māuliuli (Make Horse) should be limited to day use only. Overnight camping should be prohibited (liability issue from the golf course). The landowner needs to provide signage so that the community knows of this policy.

Items or structures that are not permitted include: any and all permanent foundations dug or set in the ground and RV's or non-working vehicles. No firearms or fireworks are allowed when camping. As a general rule, "whatever is brought into a camping area should be taken out when you leave." Only temporary structures and items may be used such as: EZ Ups, tents, temporary structures with canvas tops, portable toilets or showers and gas generators.

Fire rings should be installed in designated camping areas. Campfires

should only be constructed in designated fire rings set up by MPL and/or the Land Trust. Campers must always practice fire safety and adhere to all fire codes, standards and regulations.

A booking system should be designed for weekend camping on MPL and/or the Land Trust property. A fee for campers should be assessed when utilizing MPL and/or the Land Trust camping areas. The fee would include a security deposit which campers would get back upon inspection of the facility after use and a minimal fee that is put towards maintenance of camping sites (example: portable bathrooms, labor for cleaning and security, environmental safety, preservation and education, emergency response plan).

An emergency response/evacuation plan should be designed. Policies taking liability into account will be developed regarding: alcohol consumption, illegal drug usage on property, a fee structure (from other properties with camping areas), sanitation, and health problems. Also there should be signage for water, road and general safety when camping.

4-Wheel /ATV

The landowner should decide about 4-wheel drive vehicles. ATV vehicles should not be allowed on beaches and dunes. Recreational use of ATV should be discouraged on all lands.

Kayaking

Kayaking near or on the reef system is an islandwide issue that is not particular to the West End. It needs to be discussed in the context of the whole island.

Biking (Bicycle)

It is important to include biking as a recreational activity on MPL and Trust lands. Biking events have the potential of bringing worldwide exposure and financial benefit to Moloka'i and MPL. A map of approved bicycle trails should be developed.

Recreation Infrastructure

The paniolo heritage is important and should be exhibited with pride on MPL property through rodeo, workshops, riding lessons and a Paniolo Cultural Center.

A community recreational center and gymnasium should be rebuilt in Maunaloa for West End residents. Youth sports should receive strong support from the community and MPL, including inter-community team sports and events. The Maunaloa Little League baseball field and weight center should be renovated and improved. MPL and the Land Trust should partner with the County of Maui and organize youth playoffs or community league playoffs in Maunaloa.

The county should build a gymnasium next to the College as designated on the Moloka'i Community Plan.

Recreational Providers and Fees

The landowner should decide if there should be just one provider of activities on Moloka'i Ranch property for tourists and for the same activities desired by the local community. The landowner should also decide if community members should pay for designated activities on MPL property recognizing the need for insurance coverage, supervision of some activities, the cost of equipment and clean-up. Non-complying service providers and large groups of tours can deplete natural/cultural resources and should be discouraged.

4.1.4 Economic Development Principles and Policies

Goals

Moloka'i has a diversified economy and efforts should continue to balance that diversity. Tourism should not be the main economic driver, but is recognized as an important component of a balanced diversified island economy. The expansion of the economy should be encouraged in places where existing infrastructure is under-utilized, e.g. Kaluako'i Hotel. Moloka'i's natural resources needs recovery and enhancement.

Lands suitable for agriculture production and animal grazing should be protected now even if those lands are not currently in production, and the water resources needed to service these lands in the future should also be protected and reserved.



It is recognized that Moloka'i will be in a very powerful economic position if it preserves its agricultural lands and the water resources needed to make those lands productive in the future. Further study needs to be undertaken to determine how much more suitable agriculture land can be put into production.

Moloka'i needs further housing for the elderly as the population is aging. Land and housing (both rental and for purchase) should also be made available for current and future generations of Moloka'i families in need of housing that is affordable, based on Moloka'i incomes.

Moloka'i needs a better-trained workforce. Communication needs to improve between the community and the County of Maui on long-term infrastructure needs for Moloka'i.

Objectives and Strategies

- There is consensus agreement that The Kaluako'i Hotel should be re-opened.
- Focus on finding products and/or services that people want from Moloka'i.
- Understand and overcome the identified problem that exists whereby many good ideas for economic stimuli are unable to be turned into actual jobs (e.g. slaughterhouse, ice house and coolstore projects).
- There is consensus that an economist, who understands the community's aspirations and the inherent opportunities and limitations of an island economy, be engaged to report further on what are likely economic drivers to stimulate the Moloka'i economy and how to build capacity from within the community.
- The growth of Kaunakakai, Kualapu'u and Maunaloa should be community-planned and should be allowed to happen naturally as community-driven demands require.

Rural Community Economic Development

- Achieve environmentally and culturally compatible economic development through rural community economic development strategies, i.e. sensitivity to scale, low population

density, and historic reliance on natural resources as the basis for economic activity.

- Develop and maintain a diverse and stable economic base and employment opportunities while preserving rural character and open space.

Agriculture

- The land suitability classifications should be the basis for agriculture land preservation.
- Farming of organic crops and crops to support traditional Hawaiian diets have proven to be economically viable on Molokaʻi and these activities should be expanded. The development of value-added products made from Molokaʻi-grown crops/livestock should be encouraged.
- Develop and implement a plan for the Molokaʻi Irrigation System.
- Agricultural methods should protect indigenous species and the public's health.

Tourism

- An economic objective is to fill the existing hotel rooms on the island.
- The local kamaʻāina market is important.

Jobs

- Immediate expansion of the island's employment base and the creation of family-support jobs, which Molokaʻi residents are

qualified for (e.g. construction where up to 100 jobs have been identified for construction associated with the re-opening of the Kaluakoʻi hotel, to construct the Maunaloa Community Center, and to build new housing units).

- Other skills needed on Molokaʻi include marketing, health care, farming/ranching, accounting, teaching and middle management supervisory.

Community Development Objectives

- Preserve and improve the quality of life.
- Provide adequate educational opportunities.
- Maintain and improve community infrastructure.
- Provide affordable housing and daycare services.
- Maintain age and income diversity.
- Insure adequate job opportunities and commercial services within the community.
- Build the institutional educational and physical infrastructure needed to sustain long-term economic growth, i.e. Maui Community College, high school voc ed, NARA, learning centers.
- Expand entrepreneurial opportunities and create "value-added" development opportunities tied to natural resource base.
- Make each town friendly for walking and biking between destinations, especially for older

residents and physically challenged.

Housing

- There will be a continuing need in the future for more housing for Moloka'i families at prices they can afford based on their respective incomes. Moloka'i Ranch, the EC and others in the community, such as Habitat for Humanity, can coordinate the planning and implementation of future affordable housing projects. Moloka'i Ranch can reserve lands at realistic prices around Kaunakakai, Kualapu'u and Maunaloa to ensure the development of these for future affordable housing projects.
- Identify up to 100 acres around each of the towns of Kaunakakai, Kualapu'u and Maunaloa for the future development of 'Ohana Neighborhood Communities to be developed by partnering various community resources such as Habitat for Humanities, Self-Help Housing and others, such as Department of Hawaiian Homelands (reference policy handout). Housing projects may be developed and managed by the Moloka'i Land Trust and/or MPL or other appropriate housing entities. Lands above Kaunakakai for housing will be deleted to avoid impact on archaeological sites and natural barriers.

- Affordable housing and other community-facilities should be linked to each of the three communities to insure that they develop as balanced communities. The community does not support a large affordable housing project in one area only.



Kaunakakai

Makai Proposal

- Subject to environmental assessment and clean up, historic Kaunakakai Town should be linked to the sea on the makai side of Kamehameha highway with a series of parks, recreational activities, canoe club hale and cultural/educational facilities such as Mālama Park.
- Pedestrian friendly pathways and bikeways should be continuously linked throughout the Kaunakakai Town planned development area.
- Should be aware of the toxic waste. There is a lot of oil on the property. Testing of

contamination and ongoing monitoring is being conducted to hold Chevron accountable. A cleanup might be conducted as a Brownfields EC project.

to establish and perpetuate affordable commercial space in Kaunakakai for local small business operators.

Expansion Proposal

- Future development in Kaunakakai should protect the integrity of the town core. Expand Kaunakakai town to avoid archaeological sites and other natural barriers such as ocean, hills, and streams.
- Develop the gymnasium and swimming pool complex as part of the Community College complex. It would be part of the Community College.
- The area between the current landfill and the Industrial Park be designated as light industrial, including the area currently designated as agriculture, subject to an environmental and archaeological assessment (approximately 60 acres). There is concern that there is major drainage in that area. Light industrial can include recycling as well as retail.
- Have commercial development in and around Kaunakakai Town, while maintaining rural/agricultural character of the surrounding areas and respecting the unique effort to establish Kaunakakai as a special destination area for residents and visitors alike. There is also a need

Fire Department

Ask the EC, on behalf of the Land Use Committee, to send a letter to MPL to continue its negotiations with the Fire Department for the sale of a 5-acre site with the sale subject to the following 6 conditions:

- It will be located on 5 acres mauka of the Community College (the old slaughterhouse site).
- Escrow will be set up to pay either the Moloka'i Land Trust or MPL depending on the future ownership and completion of the Moloka'i Ranch Community-Based Master Land Use Plan.
- County will mitigate drainage impacts and consult with Moloka'i Enterprise Community, DHHL, Moloka'i Education Center, and the Moloka'i Planning Commission on the Environmental Assessment.
- The County agrees that the site will not be used as a County base-yard.
- The County will hold a community informational meeting on the proposed design and related improvements, including landscaping scheme, prior to finalizing the design work.
- The County agrees to do an archaeological assessment of the

site which should include the entire pu'u.

Kualapu'u

Organic papaya, asparagus and other high value crops have been identified as suitable for the land above Kualapu'u.

Maunaloa

Build a community center for Maunaloa.

Second Golf Course

Transfer the current designation for the Maunaloa 18-hole golf course over to the state-designated rural land at Kaluako'i.

Kaluako'i Development

Re-open Kaluako'i Hotel. MPL will provide an opportunity for the Moloka'i Land Trust to exercise a "put option" for a yet to be negotiated proportion of the shares in the Kaluako'i Hotel.

North of Kaluako'i Hotel, there are a number of zoned hotel lots, multi-family lots, and commercial lots. There is also a zoned hotel lot on Kaiaka Rock. Moloka'i Ranch has said it wishes to retain this zoning, but does not intend to develop these properties in the foreseeable future. These lands will be owned as follows:

- The Kaiaka Rock zoned site will be placed in the Moloka'i Land trust
- The Kawākiu multi-family site (TMK 5-1-03: Por. 1) and a portion of the hotel zoned site (TMK 5-1-03: Por. 14) which includes the archaeological sites at Kawākiu

Nui will be placed in the Moloka'i Land Trust.

- Future development of other entitled lots in the north Kaluako'i area will occur to complement and support the present Kaluako'i Resort.



Hale O Lono

We recommend and support the provision of a comfort station and small boat marine support and small boat storage and trailer parking. We recommend and support partnership opportunities between the Moloka'i Land Trust and MPL to facilitate management of the Cultural Conservation Management Zone, including the provision of a resources management center. A full archaeological survey to identify and preserve the cultural and archaeological sites, including burial sites and adequate buffers, should be conducted to determine the appropriate location of these facilities.

Kaupoa, Kolo, Paniolo

Encourage the quarterly opening of Kaupoa to the community. Given the proximity of the Moloka'i Land Trust to Kolo and Paniolo camps, we recommend and support the exploration of collaborative opportunities by MPL with the Moloka'i Land Trust regarding future plans for their use.

4.1.5 Tourism Principles and Policies

Recommended Principles to Guide Tourism

- Hawaiian culture, both traditional and how it is lived on Moloka'i today, is the foundation for activities including tourism.
- Education is fundamental for all aspects of tourism for the community, service providers, property owners, and visitors.
- Development for tourism must be kept to a more intimate scale for quality experiences for both community and visitors.
- Moloka'i events and activities should have a strong community component.
- Advertising and marketing should reflect the authentic Hawaiian culture as well as Moloka'i's rural life style and its people.
- The visitor industry and the community share a commitment to respect, protect, promote and perpetuate authentic Hawaiian culture in visitor sites and visitor activities on Moloka'i.
- On Moloka'i we want to share our authentic Hawaiian culture not sell it. We do not want to commercialize Hawaiian culture.
- Exposure to the Moloka'i rural lifestyle and "rubbing shoulders" with the local community can enrich the visitors' experience.
- Conservation and protection of cultural sites on Moloka'i is essential. Any use of these significant sites needs to be dealt with under the community process which is being developed and not determined by what visitors and vendors want to do.
- Community input and participation is important on major Moloka'i Ranch visitor attractions and facilities changes.
- Kaluako'i resort redevelopment is essential to the island's tourism economy, including small meetings, conferences kama'aina travel, sporting events etc.
- Tourism on Moloka'i Ranch should complement other Moloka'i businesses.
- Tourism on Moloka'i should target niche and special markets, including kama'aina.
- The Moloka'i kupuna play an essential role in keeping the integrity of the Hawaiian culture.
- Moloka'i Ranch should support Moloka'i businesses and products as feasible and affordable.
- Islandwide, employees involved in tourism need cultural education specific to this island to assist in maintaining the authenticity of the Moloka'i experience.

- Encourage personal and interactive modes of communication and education with visitors.
- When landscaping and designing tourist facilities, think in terms of the local environment, ecology and culture.
- Molokaʻi can offer Hawaiian culture in a modern day setting based on the past.
- Tourist activities should have authentic Hawaiian essence and an educational component for resource protection.
- Study to determine the tourism carrying capacity of Molokaʻi should continue at an island wide level.
- Future development of tourist facilities on Molokaʻi should make use of the work done by this Community-Based Land Use Planning Process.
- It is the hope of this committee that appropriate agencies and organizations (MVA, Chamber of Commerce, etc.) will take note of the recommendations of this committee when planning future strategy for this island.

4.1.6 Lāʻau Point Development Principles and Policies

The Lāʻau Point development will be the subject of a change of zoning application from the current Agricultural zoning to a Rural zoning designation, made to the Land Use Commission. The Land Use

committee and the Enterprise Community will support that application.

- The development will be no more than 200 2-acre lots. When roads are added, the development will cover no more than approximately 500 acres of the Lāʻau Point TMK parcel.
- The attached archaeological and environmental protection map indicates the areas that are protected from subdivision. Other areas may be protected, depending on a further archaeological survey.

- To this end, MPL will guarantee:
 - The application to the LUC will show the subdivision lots lines at least 50 feet behind the State Conservation Zone.
 - Lot titles that are a minimum of 50 feet from the Conservation zone will have covenants preventing the building of houses less than 50 feet from the closest ocean frontage of the lot.

Other restrictions will be contained in the CC&Rs that are an addendum to this document.

- MPL will get legal advice to ensure potential or future landowners within the subdivision cannot change these CC&Rs.
- MPL's application to the Land Use Commission will promote the importance of subsistence activities in the Conservation Zone areas and other protected areas.

To this end, the following will be incorporated in the subdivision planning:

- Access to the protected areas will be by walking access only, with vehicular parking provided at both ends of the subdivision.
- The perpetual right to subsistence gathering will be noted on the titles of the areas to be preserved.

Other protections to subsistence gathering are contained in the attached CC&Rs, including the joint control of the protected areas by both the Land Trust and the future lot owners.

- MPL will encumber the lot titles on the 200 Lā'au Point lots so that a percentage of the lot sale revenue is paid to either the Moloka'i Land Trust or a Community Development Corporation. The percentage of lot sale revenue the first time the lots are offered for sale will be 5% of the net income after the deduction of real estate commissions and other charges such as Legacy Land taxes.

The percentage of re-sale revenue, following the initial sale, to be encumbered to either the Land Trust or the CDC, will be decided between the Land Trust/CDC and MPL.

- Sales Strategy: MPL will attempt to attract buyers to the Lā'au point subdivision who reflect the hopes and aspirations of the community. Brochures, sales material and other promotional documents will be vetted by the Land Trust or the EC for accuracy and adherence to their principles.

4.1.7 Water Plan Principles and Policies

- MPL will adhere to the principles and statements outlined in the attached Moloka'i Properties Limited, EC Project #47 Water Plan, published in December 2004 and amended in July 2005.
- The critical principle agreed to by MPL in this document is that it will not, at any time in the future, seek permits for additional drinking water permits, other than the allocation under its permits existing at July 2005, from the Water Commission.
- MPL proposes to develop 1,000,000 GPD from the abandoned Kākahale Well in the Kamiloloa aquifer for future non-potable needs to meet the demands for non-potable water this Plan proposes.
- The maximum water allocation available for the Lā'au Point subdivision is set out in the Water Plan, as is future allocations for the growth of the Kualapu'u and Maunaloa townships.

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5 LAND USE PLAN

The **Community-Based Master Use Plan for Molokaʻi Ranch** establishes five Land Use Districts: Cultural, Natural Resources, Rural Landscape Reserve, Agricultural, and Development. These districts define primary functions for the 65,000 acres of land under consideration in this Plan. (See Proposed Land Trust and Land Use Districts Map on page 9.)

In an effort to include all uses and activities for these lands, Overlay Zones indicate distinct yet complementary uses within the overall district. The Districts and Overlays serve a key function of this Master Land Use Plan, namely, **land use activities or management strategies must conform to the requirements of the District or the Overlay Zone.**

The Plan also proposes **new Ownership and Management for the 65,000 acres.** Significantly, eighty-five percent (85%) of the lands will either be protected by the Molokaʻi Land Trust, or will constitute part of a new conservation or agricultural easement in perpetuity. The easement lands will remain in MPL ownership. (See Land Ownership map on page 11.)

Ownership

Molokaʻi Land Trust:	26,200 acres
Conservation/Easements:	24,950 acres
Existing Easements:	4,040 acres
Other MPL Lands:	9,810 acres
Total	65,000 acres

5.1 OVERVIEW OF LAND USE DISTRICTS

The Land Use Districts describe the location, type and intensities of land uses that would be most appropriate on MPL land. Based on input gathered during the community-based planning process, the following Land Use Districts were decided upon:

- Cultural
- Natural Resource
- Rural Landscape Reserve
- Agricultural
- Development

The purpose and use of these districts is described below.

5.1.1 Cultural District

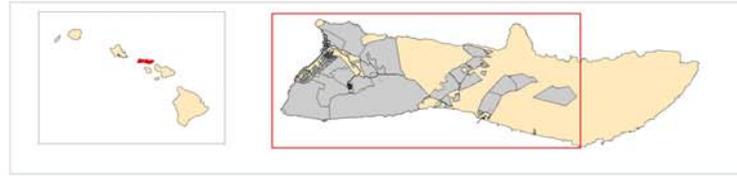
Purpose: The Cultural District is to protect the historic and cultural sites and resources for current and future spiritual, cultural, and subsistence uses. This district includes:

- Historic cultural sites and complexes.
- Nāʻiwa (Manawainui-Kahanui) and Kāʻana-Puʻu Nānā (Kalaipahoa-ʻAmikopala) and Kawela Cultural Complexes, and Kamākaʻipō Gulch.
- Cultural and subsistence use and resource areas.
- A subsistence fishing zone of a ¼ mile on the North and West Shore and to the outside of the reef surrounding the remainder of the property.

Use: Appropriate activities in the Cultural District include:

- The preservation and management of cultural and/or natural resources,
- Traditional non-commercial subsistence practices (i.e., hunting, fishing, gathering), and
- Cultural uses (e.g., religious ceremonies) regulated by traditions, customs, and community-based protocols and other appropriate rules and regulations.
- Tourism activities are deemed appropriate provided they are controlled by local Molokaʻi residents in accordance with the approved management plan for the area.

MOLOKA'I RANCH MASTER USE PLAN CULTURAL RESOURCE DISTRICT



Data Sources:
 USGS Hawaii Data Clearinghouse
 Roads, Homesteads
 Hawaii Office of Planning
 Contours, Molokai Ranch Property,
 Place Names, Fish Ponds
 Maurice Major, Archaeologist
 West End Archaeological Survey Data
 Cultural and Land Use Committees
 Other Archaeological Sites, Makahiki Grounds,
 Land Use Districts and Overlay Zones

DRAFT
 Prepared By: The Conservation Fund
 October 7, 2005

- Molokai Ranch Property
- Homestead
- Major Road
- Secondary Road
- Minor Road
- 4WD Road
- Trail
- Proposed Land Use Districts
- Cultural Resource District
- Subsistence Fishing Zone
- Partnership Subsistence Fishing Zone
- West End Arch. Sites (M. Major)
- Additional Archaeological Sites
- Kualapu'u Makahiki Grounds
- Ancient Fishponds
- Camp

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5.1.2 Natural Resource District

Purpose: This category applies to lands prioritized as having the greatest ecological value (for example, rarity and/or quality) for the island of Moloka'i while facing the most imminent threats to their ecological integrity. This is illustrated on the "Moloka'i Ranch Resource Summary: Natural Resources" map in Appendix 3.

The purpose of this district is to support the protection and restoration of significant natural ecological/biological resources, i.e., sensitive ecosystems, indigenous and endemic species, watersheds, and wildlife habitat, particularly where they have been degraded, but still remain relatively intact.



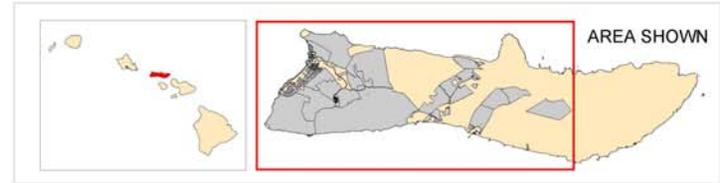
Use: Activities are consistent with the preservation of sensitive and threatened natural systems, habitats, and species. Management regimes in the Natural Resource District focus on:

- Restoration and erosion-control
- Native plant re-introduction
- Critical habitat protection
- Fire suppression
- Non-native invasive species control or eradication
- Revegetation or related efforts to bolster watershed health and groundwater and stream recharge

Management plans consistent with the overall guidance of the Master Plan for these districts will be developed to guide resource users of these areas and to ensure that the resources are not threatened. Natural resources will be monitored on a regular basis to assess its status and ensure its sustainability. See Natural Resource Protection Map on following page.

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MOLOKA'I RANCH MASTER USE PLAN NATURAL RESOURCE PROTECTION



Data Sources:
 <bol>USGS Hawaii Data Clearinghouse</bol>
 Roads, Homestead
 <bol>Hawaii Office of Planning</bol>
 Coral Reefs, Contours, Molokai Ranch Property,
 Place Names, Fish Ponds, Protected Reserves
 <bol>Hawaii Natural Heritage Program</bol>
 NHP Rare Species, Native Dominated Landscape
 <bol>Natural Resource and Land Use Committee</bol>
 Land Use Districts & Overlay Zones

DRAFT

Prepared by: The Conservation Fund
 August 25, 2005

- Molokai Ranch Property
- Major Road
- Secondary Road
- Minor Road
- 4WD Road
- Trail
- Na Ale Hele State Trail
- Protected Reserves
- USFWS Critical Habitat
- Coral Reefs
- Perennial Streams

- Proposed Land Use Districts**
- Natural Resource District
- Natural Resource Overlay Zone
- Native Dominated Landscape**
- Plant Community Type**
- Coastal Dry Shrubland & Grassland
- Coastal Mesic Forest & Shrubland
- Dry Cliff

- Lowland Dry Forest & Shrubland
- Lowland Mesic Forest & Shrubland
- Lowland Wet Forest & Shrubland
- Montane Mesic Forest & Shrubland
- Montane Wet Forest & Shrubland
- Wet Cliff
- Nonnative
- Eucalyptus / Pine Non-native Forest

- Natural Heritage Program Rare Species Element Occurrences* (1980 - 2004)**
- Vertebrate
- Invertebrate
- Plant
- Natural Community
- Plant (recorded habitat range)
- Natural Community

**An Element Occurrence represents an observed location that sustains one to several rare individuals. EO's shown here constitute all documented sightings within the past 25 years; present existence is not verified. More detailed information on taxon status and accuracy of sightings is available. NHP data are for planning purposes only; they are not confirmed and should not be regarded as final statements or substituted for surveys required for environmental assessments*

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5.1.3 Rural Landscape Reserve

Purpose: Maintenance of the rural landscape – to preserve the traditional Moloka’i character and to provide scenic viewsheds and open space buffers – is a principle objective. This designation applies to areas where multiple uses (e.g., traditional, recreational, scenic) are appropriate. Areas identified for this district should include those lands where various types of land use may be suitable, but that contain neither high-value development potential nor critical or highly sensitive resources. (See “Land Use Districts” on page 9.)

Use: Appropriate activities using best management practices include:

- Sustainable ranching, landscape enhancement, traditional/cultural practices, recreational use, resource protection, public parks and open space preservation.
- Development should be limited to discrete areas to support the management and operations of parks and recreation areas.
- Residential use will be limited to those areas or activities necessary to support ongoing agricultural activity or other specific uses of this land.
- Infrastructure (e.g., roads) provided to support this development should be minimal.
- Construction/development standards could be used to restrict the building envelope, location of allowable structures, and lot size.

5.1.4 Agricultural District

Purpose: Perpetuating the traditional agricultural base of Moloka’i’s economy is the purpose of this district. Areas in this category include resource lands where commercial agriculture and aquaculture operations should be encouraged. Areas most appropriate for this category are prime, productive, and potentially productive lands with topography, soil type, and other special characteristics, which create suitable conditions for agriculture and aquaculture cultivation that will not result in degradation of the natural landscapes. (See map “Agricultural Easement Land” in Appendix 4.)

Use: Agricultural activities focus on benefits to the Moloka’i economy as well as generating revenues for the landowner or lessee. In addition, the management plan should be developed with established best management practices (e.g., protection of groundwater, streams, and reef systems; control of erosion and sedimentation; encouragement of water conservation practices; minimized pesticide use and fertilizer; and encouragement of sustainable agriculture practices) and provide financial support to minimize these impacts. Appropriate uses are distinguished among three types of agricultural lands and lands for aquaculture:

- Hi-value agriculture – This category consists of the most productive lands, in particular those that receive natural water inputs/irrigation, have appropriate

soil types, and are at appropriate elevations, the State classes 1-4. Appropriate activities include the cultivation of diversified, specialty, high-value agriculture (e.g., seed corn). Niche markets, specialty crops (e.g., herbs, asparagus, persimmons, organics).

- Intensive agriculture – This category consists of productive lands that are high density but not necessarily high value. Agriculture in this area is labor, capital, or resource intensive, requires access to water (through rainfall or irrigation), and uses a lot of resources (e.g., water, pesticides, cultivation). Examples include higher density, row crops (e.g., corn, dry land taro). Usually State of Hawai‘i classes 1-4.
- Extensive agriculture – Appropriate activities include crop cultivation (e.g., hay) and ranching/grazing and raising livestock. Residential use will be limited to low-density farm dwellings, and limited to those areas and activities necessary to support ongoing agricultural activity. Provisions in favor of agricultural activity should be applied to this zone to adequately accommodate and safeguard the agricultural environment (e.g., nuisance and right-to-farm laws). Usually State of Hawai‘i classes 5-7.
- Aquaculture – This category of land supports the production and

harvesting of aquatic plant and animal life in ponds and other bodies of water.

5.1.5 Development District

Purpose: The purpose of this district is to generate revenues necessary to stimulate employment and economic benefits for the community and to sustain MPL operations. This category applies to areas targeted by MPL for the purpose of revenue-generating development. MPL should work with the community to ensure that development projects are suitable and sensitive to their surroundings, preserve significant ecological and cultural resources, and provide economic benefit to the Moloka‘i community.

Use: This broad designation is classified into 6 categories of use and activity based on the nature/character of the development types (See “Proposed Development Areas” Map, page 13):



- Visitor accommodation development—Areas zoned for the development or refurbishment of multi-family units and hotel-type accommodations for island visitors and associated structures/facilities/amenities (e.g., golf courses, restaurants) to support tourism. This includes the Paniolo Camp near Maunaloa and the resort and golf course expansion area north of the Kaluako’i Hotel.
- Residential shoreline development—Land that may be subdivided and sold for construction of homes. Development standards will likely include ocean setbacks consistent with the conservation zone.
- Community/Village expansion—Consists of land surrounding existing towns/population centers (Maunaloa, Kaunakakai, Kualapu’u) set aside for the purpose of accommodating future urban (residential, commercial and/or industrial) growth and setting boundaries. (Refer to Community Expansion maps in Appendix 5.)
- Industrial/Office—This category includes lands currently zoned or appropriate for industrial use. Namely, this is the Industrial Zone shown in gray, located west of

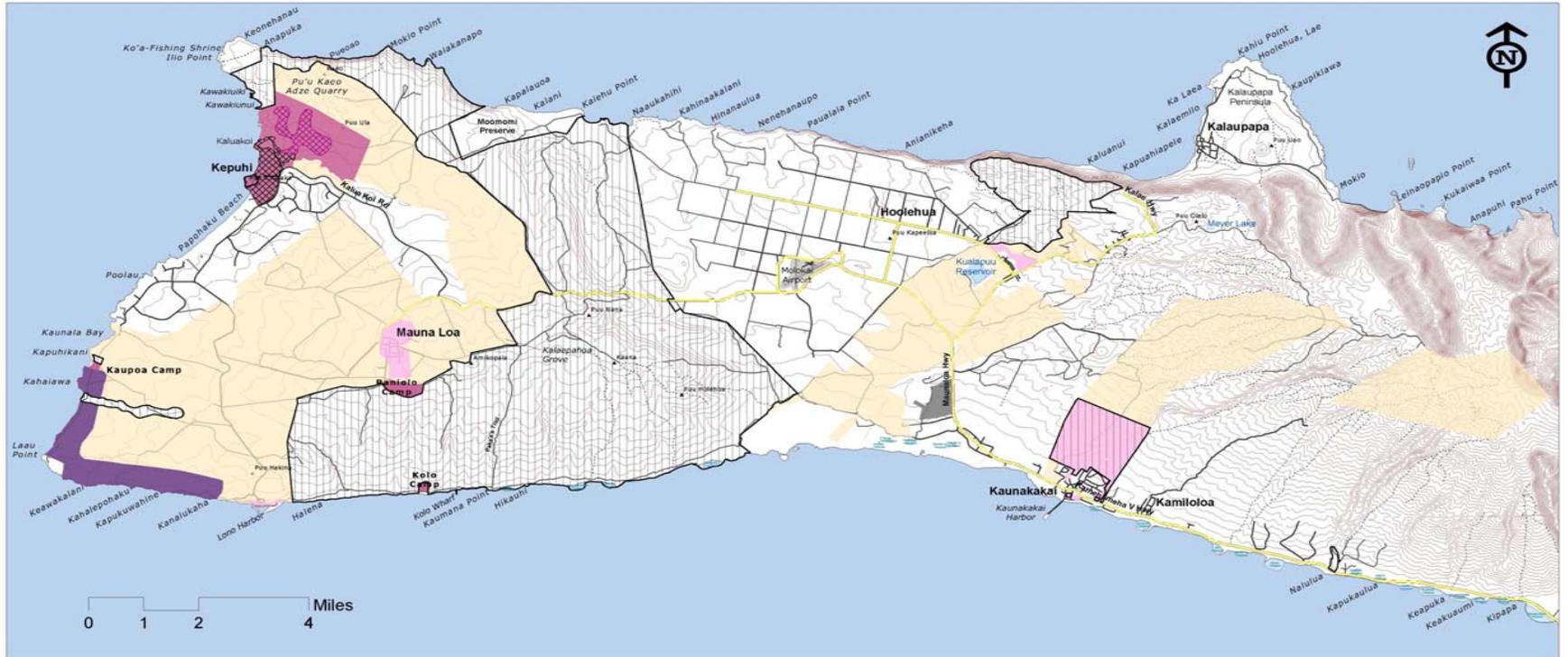
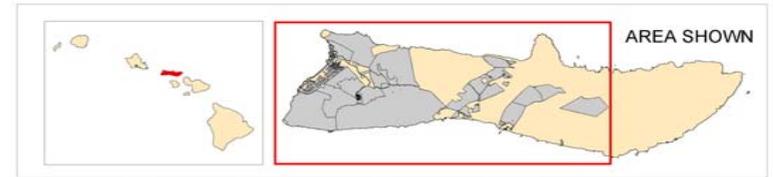
Kaunakakai, along Maunaloa Highway.

- Housing—Land in and around existing towns/population centers that will be provided to qualifying Moloka’i residents at affordable prices for “traditional” and/or conventional housing. Exact locations to be decided.
- Public/Quasi-Public—Areas that include parks, schools, public safety facilities, health facilities, and landfills; for example the Kaunakakai Fire Station relocation and the Maui Community College expansion.

The potential for ancillary uses, including commercial retail, public cultural or educational facilities, exists in each of the above development categories. Small business activity should be focused within the Community/Village expansion zone.

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MOLOKA'I RANCH MASTER USE PLAN PROPOSED DEVELOPMENT AREAS



DRAFT

Prepared by:
The Conservation Fund
October 5, 2005

PROPOSED DEVELOPMENT DISTRICTS

- Resort
- Residential Shoreline
- Community Expansion
- Industrial

- Other MPL-Retained Lands
- Potential Land Trust Property (26,400 acres)
- Alternate Golf Course at Kuluakoi
- Current Development at Kuluakoi

- Major Road
- Secondary Road
- Minor Road
- 4WD Road
- Trail

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5.1.5.1 Projected MPL Developments

MPL’s proposed developments are categorized as short-term and long-term.

152-room facility. No land is available on the existing site.

- The need to set land set aside for facilities that complement and support the existing hotel, such as staff housing and a cultural center.

Short-term Developments

- The re-opening of the Kaluako’i Hotel and associated facilities.
- The upgrading of the Kaluako’i Golf Course and the building of a new Maintenance Workshop on adjacent land.
- A 200-lot subdivision on 2-acre parcels at Lā’au Point with its associated roads and sewage treatment facility.

5.1.5.1.1 *Hotel*

A major focus of this Land Use Plan is to re-open the Kaluako’i Hotel, built in the 1970s and abandoned by the previous owners in January 2001.

The current hotel has 144 rooms and a block of former staff accommodation that will be transformed into a 152-room hotel, eight more than when the hotel was operating.

The market focus will be a mid-range kama’āina hotel with a range of price points which will appeal to the local community desiring to experience the property, and to visitors who are prepared to pay rates equivalent to a 3-Star experience.

The hotel is to become a focal point for the local community for its functions and gathering, as well as the major focus for visitors, particularly the kama’āina market.

Elsewhere in this report it is concluded that the Kaluako’i Resort redevelopment (which includes the upgrading of the Kaluako’i Golf Course) is essential to the island’s tourism economy, including small meetings, conferences, kama’āina travel, sporting events and the like.

Long-term Developments

- The designation of additional land adjacent to the existing Industrial Park for industrial use.
- A Community Plan designation and later zoning of 100 acres around each of the towns of Maunaloa and Kualapu’u for community housing.
- The removal of the Community Plan designation for the 18-hole golf course on 500 acres of land below the Moloka’i Ranch Lodge in Maunaloa, and replacement of it with a designation for a smaller 250-acre golf course on State zoned rural land north of the Kaluako’i Resort.

Other proposals to be noted

- The need to keep land set aside for the potential expansion of the Kaluako’i Hotel from the planned

The hotel renovation will reflect Hawaiian culture in a modern day setting but based on the past history of the area and the island. A visioning group will recommend interior design fittings of cultural significance and outdoor plants representing the island.



The Kaluako'i area has a rich cultural history and the aim is to ensure the hotel reflects this.

Activities for hotel guests will have an authentic Hawaiian essence and an educational component for resource protection. It will also give exposure to Moloka'i's rural lifestyle.

A major factor in the community's desire to re-open the hotel is the job creation and the downstream impact on the Moloka'i economy.

Design Considerations

Preliminary design, the process by which it is decided how the interior and exterior spaces are used, was completed during

the Land Use Committee phase of Project #47.

Key changes from the current hotel layout are:

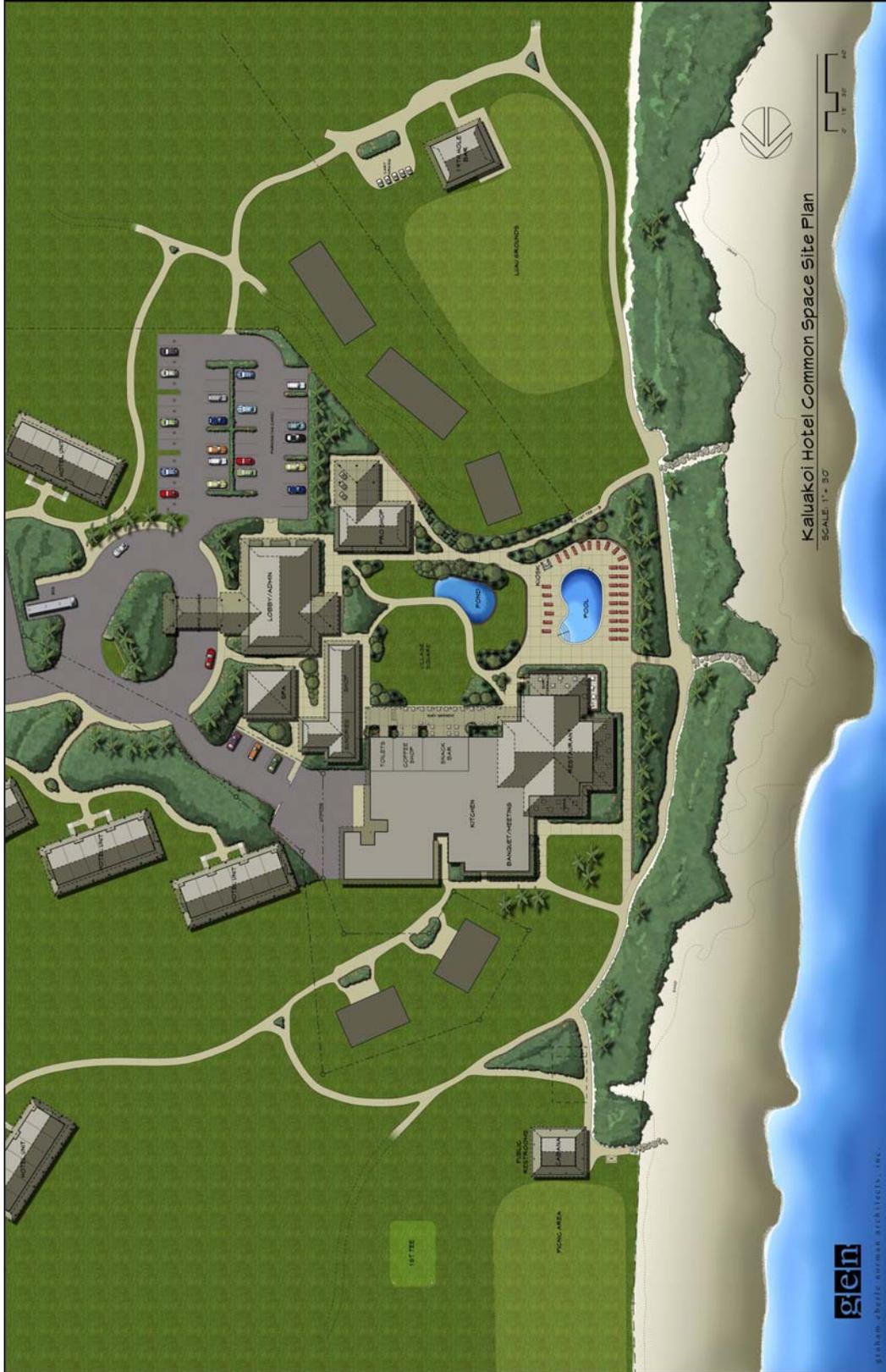
- Restaurant: Open lānais are created on three sides of the restaurant, overcoming the “cavern-like” feeling of the former restaurant.
- Banquet/Meeting Room: The former Paniolo Grill is converted to a meeting/ banquet room that will seat more than 200 people.
- New Coffee Shop/ Internet Café and redesigned Snack Bar are created on the north side of the grass courtyard.
- Pool: The pool and courtyard area have been redesigned for more functionality and better views of the ocean.
- Lobby/Administration Building: This has been redesigned so guests can enter from the roadway roundabout.
- Spa: The small meeting room to the north of the administration building to be converted to a Spa/ Lomi Lomi Massage building.
- Golf Pro Shop: The former large meeting room to the south of the Administration Building will become the Golf Pro-Shop. Golf cart storage to be available adjacent to this building.
- Current Golf Starter Shack: This building will be converted to a “19th–hole bar that will be open

during daylight hours. A Lū'au area will be sited where the current practice tee is located.

- Golfers' Car Park: This area will be extended to accommodate double the amount of vehicles it can currently fit.
- Beach Cabana: This building, which will principally be used by the local community, will be moved and has been redesigned. It is now shown to the north of the hotel adjacent to a new picnic area.
- Hotel Units: These are redesigned to improve internal space by enclosing the lānai and adding a new outdoor deck to all units. The units will range in size from small studio to double units with linking doors.

An artist's impression of the design development is on the next page.

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Further steps in the process leading towards the re-opening of the hotel are:

- Obsolete Exterior Fixtures

Demolish obsolete exterior fixtures and clearing the site of overgrown trees and bushes. The old gazebo in the courtyard, the pergola around the building and other surplus fittings have been removed and dumped. Site clearing around the hotel units has been completed.

- Shoreline and Building Survey

Surveyors have completed a shoreline and hotel buildings survey to determine whether the plans match the exact location of the hotel buildings. This determines the accuracy of the plans.

- Mature Trees

Mature trees and shrubs that may be damaged during construction must be moved to new locations or bagged and stored in MPL's native plant nursery adjacent to the Kaluako'i Golf Course.

- Costings

Preliminary design drawings have been submitted to contractors throughout the State and the mainland for construction estimates.

These estimates will give MPL further insight into the likely cost of demolition and construction and a timetable for this part of the process.

- Moloka'i Planning Commission

The Kaluako'i Hotel is sited within the Special Management Area (SMA) zone and any construction plans need the approval of the Commission.

Important aspects such as the relocation of the Beach Shack, the provision of additional parking adjacent to the new golf pro shop and the addition of lānais to the accommodation units will need the approval of the Commission.

- Construction Drawings and Interior Design

In late 2005, architect Rod Graham will begin to work on detailed construction drawings for the Hotel. This involves engineering work, mechanical, lighting consultants and a kitchen specialist who has already given his input into the preliminary design of the hotel kitchen.

An interior designer will also work with the architect to reflect the work of the visioning group in the hotel's interior design.

- Permitting and Regulatory

Once completed, construction drawings need to be submitted to the Planning Commission and the County for permits.

Business Creation And Community Support:

The Tourism committee of Project #47 determined that Moloka'i Properties Limited, where feasible and affordable, should support Moloka'i businesses and products.

The EC and Moloka'i Properties Limited want to create a positive downstream impact from the re-opening of the Kaluako'i Hotel.

The EC's Project #47 is aimed at compatible development on Moloka'i and much of the focus for this benchmark project is to create sustainable economic benefit from the project.

The current focus in relation to the hotel re-opening is the establishment of entrepreneurial small businesses associated with the Hotel.

The outsourcing of hotel operations includes:

- A laundry business that would contract hotel laundry and offer a cleaning service to other residents and accommodation establishments on the island.
- A specialist hotel cleaning business that would contract cleaning services to the hotel.
- A hairdressing and spa/massage business that will contract these services to guests on site at the hotel.
- A gift shop and sundry store that will be open to hotel

guests, adjacent condominium owners and the community.

- A retail outlet offering ancillary golf equipment and Kaluako'i logo wear to golfers and hotel guests.
- The operation of the Beach Shack that will offer water equipment and sundry items to hotel guests and to the community who use the hotel beaches.
- Contracting services such as cultural tours, lū'au events and the opportunity for visitors to learn about authentic Native Hawaiian practices such as net and pole fishing.

A key component to the hotel's success will be to ensure local labor is trained to assist in the construction of the hotel and once built to ensure that it is possible for the Kaluako'i Hotel to use locally-grown produce and protein products.

The key to this opportunity is to ensure that farmers are geared to maintain the quantity of quality of products needed. This will be a key focus of Project #47 in 2006.

5.1.5.1.2 Shoreline Residential

The Lā'au Point subdivision proposal has been the most controversial of this Land Use Plan, with residents from all aspects of community life concerned about the threats posed from newcomers, the potential for desecration of cultural sites and the pristine nature of the area, and

the potential threat to subsistence gathering that takes place in the waters off Lā'au Point.

MPL has continued to say that it needs an economic engine to this Plan; the ability to make a profit from a venture, which will give it the funds to open the Kaluako'i Hotel and to attract an investor to share in the capital, needed for many ventures under this Plan.

For many members of the Land Use Committee, the decision to support the Lā'au development was an extremely difficult one.

The fact that large areas of the foreshore are to be put aside for resource protection, the lot Covenants, Conditions and Restrictions (CC&Rs) have been strengthened to protect the resources, and MPL will seek a Land Use reclassification from Agricultural to Rural has lessened the pain for many concerning this development.

The Land Use Committee went to extraordinary lengths to ensure that a subdivision development at Lā'au Point will be set apart from typical subdivisions completed in Hawai'i.

The committee has structured subdivision covenants and reviewed protection zones for archaeological and environmental areas, studying how the 1,200 acres of protected shoreline can be maintained for all-time for subsistence gathering.

The aim is that people who buy lots in the subdivision will have to support conservation, cultural site protection and subsistence.

Many Land Use Committee members made at least two site visits to Lā'au Point reviewing MPL's plans and giving their input.

PBR Hawaii Inc., planners for the Lā'au Point development, were at the table with Land Use Committee members planning protection zones and designing setbacks to reflect the importance of the area for subsistence gathering.



The Subdivision

The Lā'au Point development will be the subject of a change of zoning application from the current Agricultural zoning to a Rural zoning designation, made to the Land Use Commission. The community will have an opportunity to appear before the Commission, which will come to Moloka'i to hear the application.

The development will be no more than 200, 2-acre lots. When roads are added, the development will cover no more than approximately 500 acres of the Lā'au Point TMK parcel.

The "Lā'au Cultural Sites" map (see Appendix 2) indicates the areas that are protected from subdivision. Other areas may be protected, depending on a further archaeological survey.

To this end, agreement documents between MPL and the EC will guarantee:

- The application to the LUC will show the subdivision lots lines at least 50 ft behind the State Conservation Zone.
- Lot titles that are a minimum of 50 ft from the Conservation zone will have covenants preventing the building of houses less than 50 ft from the closest ocean frontage of the lot.

MPL's application to the Land Use Commission will promote the importance of subsistence activities in the Conservation Zone areas and other protected areas.

To this end, the following will be incorporated in the subdivision planning:

- Access to the protected areas will be by walking access only, with vehicular parking provided at both ends of the subdivision.

- The perpetual right to Subsistence gathering will be noted on the titles of the areas to be preserved.

Other protections to subsistence gathering are contained in the attached covenants, including the joint control of the protected areas by both the Land Trust and the future lot owners.

Protected Areas

"Lā'au Point must be the most environmentally planned, designed and implemented large lot community in the State. The residents would be educated and informed about the environment and culture, and taught to "Mālama 'āina," take care of the land and sea."

This statement precedes the covenant document determined by the Land Use Committee that will place many restrictions on lot owners at Lā'au Point, in order to attract only those who are concerned about conservation.

As an example, the Conservation Zone and other areas to be protected (approximately 1,200 acres) within the subdivision will be the subject of an easement held by the Land Trust, with guidelines for these uses to be determined prior to the construction of the subdivision and reflecting the importance of the area archaeologically and to subsistence gathering.

These protected lands will be part of an entity that is controlled equally by the

homeowners and the Land Trust. All decisions relating to this area: maintenance, subsistence protection, archaeological site protection, personnel, etc., will be the shared responsibility between the Trust and the homeowners, who will share equally in the costs.

MPL will attempt to attract buyers to the Lā'au point subdivision who reflect the hopes and aspirations of the community. Brochures, sales material and other promotional documents will be vetted by the Land Trust or the EC for accuracy and adherence to their principles.

Covenants

The following are some of the key design restrictions and other covenants that will be implemented at Lā'au Point.

Enforcement and substantial penalties will be put in place to ensure that the covenants are respected and upheld.

Restrictions to Prevent a Gated Community

- Ensure CC&R's reflect prohibition of gates across roads and access roads.
- Ensure no traffic lights be permitted on the roads.
- Ensure maximum two lanes, with one lane in each direction only.
- No street-facing walls or other barriers to be higher than four feet.

Further Subdivision

- Restrictions forever preventing the further subdivision of lots.

Restrict area of lot that can be disturbed for use

- Define a buildable area for each lot based on the site features that should be protected (i.e. unique rock features, arch. sites, etc.). Allow disturbance of no more than 30% of the lot. (For 2 acre Lot = +/-26,000 s.f. or about 1/2 acre).
- Require some level of maintenance of lot area to reduce fire hazard (remove dead wood).
- Building must be at least 50 ft in from the oceanfront property line.

Building restrictions to prevent erosion

- No building allowed on slopes of more than 50%.

Building Code

- Restrict building heights to 25' (same as for Conservation District) and designs to a "kama'āina style" so that the homes will blend with the landscape.
- Restrict building height to one-story buildings. This is important in order to make the buildings discrete, or blended into the environment.
- Restrict building materials, colors and roof materials (non-reflective).

Solar Power

- Require that all buildings make use of solar panels for electric power.
- All houses shall be equipped with a primary hot water system comprised of a conventional solar panel hot water system, sized to meet at least 80% of the hot water demand of the respective houses.

General Energy

- All energy systems for residences shall be designed and constructed to meet conservation standards established by the Climate Protection Division of the United States Environmental Protection Agency.

Pesticide Restrictions

- Because of the proximity to the ocean, pesticide use will be prohibited.

Water Quality Monitoring

- Water quality parameters in storm water drains and in the ocean shall be monitored for the following:
 - Temperature, salinity, total suspended solids, total nitrogen, ammonia nitrogen, nitrate and nitrite, total phosphorus, chlorophyll A and silicate.

Lighting – General

- All exterior lighting shall be shielded from adjacent properties and from the ocean.

Restrict water use for irrigation (*landscaping*)

- Require re-use and collection/storage systems for catchments.
- Only drip systems permitted for irrigation.

Storage Tank

- Require all houses to have at least a 5,000-gallon storage tank for water captured from roofs. Could be used for drinking water or for irrigation.

Covenants on drinking water use

- Designed to ensure an overall maximum drinking water daily use of 500-600 gals per day.

Type of drinking water covenants

- Double flush toilets.
- Specially designed showerheads assisted with water conservation.
- Must use dual water system split into potable and non-potable.

Landscaping

- Restrict landscaping to appropriate native and Polynesian introduced species that are drought tolerant and suitable for coastal locations
- Prohibit use of noxious or invasive species.

- Look to Arizona ordinances where plant type and xeriscaping is aimed at dramatically reducing water use.

Green architecture

- Require “green” architecture that incorporates recycled materials, energy efficient equipment, natural ventilation, solar and photovoltaic systems, etc.
- Study for appropriateness, energy efficient codes such as the LEED building design system.

Drainage systems

- Require drainage systems that retain any run-off within the disturbed area of the lot.
- Maximize recharge into the ground.
- Restore land areas that have eroded by re-establishing vegetative cover.
- Minimize impervious (paved) surfaces on the Lot.

Soil erosion

- Manage open space common areas to reduce/eliminate soil erosion by controlling deer and goats and restoring the vegetative cover.
- Put deer fence at the rear of the subdivision.

Restrict building coverage and size

- Establish a maximum allowable size of a dwelling. The most restrictive example is DLNR’s

restriction for homes constructed in the Conservation District; the maximum developable area of 5,000 s.f. defined as follows: The total floor area in square feet allowed under the approved land use. The floor area computation shall include: all enclosed (on three sides minimum, with floor or roof structure above) living areas; above grade decks in excess on 4’-0” in width; garage or carport; swimming pools (*if allowed*), saunas or other developed water features (excluding naturally existing ponds, tidepools, etc---*if allowed.*); or any other standing structures, which are accessory to the approved land use. Site characteristics and the degree of pre-existing site disturbance may be further limiting factor in the calculation of maximum developable area.



Design Committee

- Require Strict Design Review and Approval Process.

Building Lines

- Will set restrictions on building lines in relation to the front of lots, or to minimize distance between houses and visual impact.

Fences/Barriers

- Will prevent any barriers at front of lots in order to minimize visual disturbance to the land.

Inability to Change CC&Rs

- Ensure that the final CC&Rs are unable to be changed.

Land Trust Representation

- As the Conservation Zone, flood areas, archaeological sites etc are subject to easements from the Land Trust; ensure that representatives of the Land Trust have adequate representation on the homeowners' association.

Property Renting

- Renting properties to third parties will be prohibited in the property covenants.

Lā'au Community Education

- Every person whose name is on the property title of a Lā'au point lot must commit to undergo a certain amount of education about the Moloka'i community and its desires and aspirations. Suggested courses by Kupuna and others from the Maunaloa community.

Land management – Run-off

- Need to ensure that all current run-off from the land is stopped forever so the ocean is not polluted from tailings.

Conservation zone and “protected land”

- Unlike most other subdivisions, control of the conservation zones, archaeological sites, trails and native plant ecosystems would be an easement, but control would rest jointly with the Land Trust and the lot owners. Both will share the responsibility and cost to mālama (care for) the area. Kamāka'ipō Gulch and other areas identified as exceptional will be transferred to ownership of the Land Trust.

Archaeological sites and historic trails

- Protection and restrictions are to be written into CC&Rs as a result of a Cultural Plan, which shall have two major components- archaeological and cultural. The Plan will follow the community guidelines for Policies and Principles adopted for this Master Land Use Plan.

Native Species Plan

- Develop a preservation plan of identified endemic and indigenous species in co-ordination with qualified government agencies in consultation with qualified Moloka'i experts.

Subsistence Plan

- Seek an ordinance for a non-commercial zone in order to support a designated subsistence management area.
- The Land Trust in consultation with the Maunaloa community will develop a subsistence plan. This plan will follow the community guidelines for Policies and Principles adopted for this Master Land Use Plan.

Access Plan

- Design a measure to restrict access to foot only between Dixie Maru and Hale O Lono in order to conserve resources, with an acknowledgement of Native Hawaiian gathering rights as defined by law for subsistence purposes, in a designated subsistence management area.
- CC&Rs to reflect community-driven access plan. Walking access only from each end of the subdivision to restrict area for subsistence. No access from road above subdivision in order to restrict for subsistence gathering to ensure that resources are not depleted.
- No parking all through the roads, to prevent parking and access other than at each end which will enhance the subsistence nature of access.

‘Ohana Housing

- Must fit within the 5,000 square foot limit. Cannot subdivide this away from the primary lot. Cannot be a short term rental. Water restrictions will apply.

5.1.5.1.3 Industrial Expansion Area

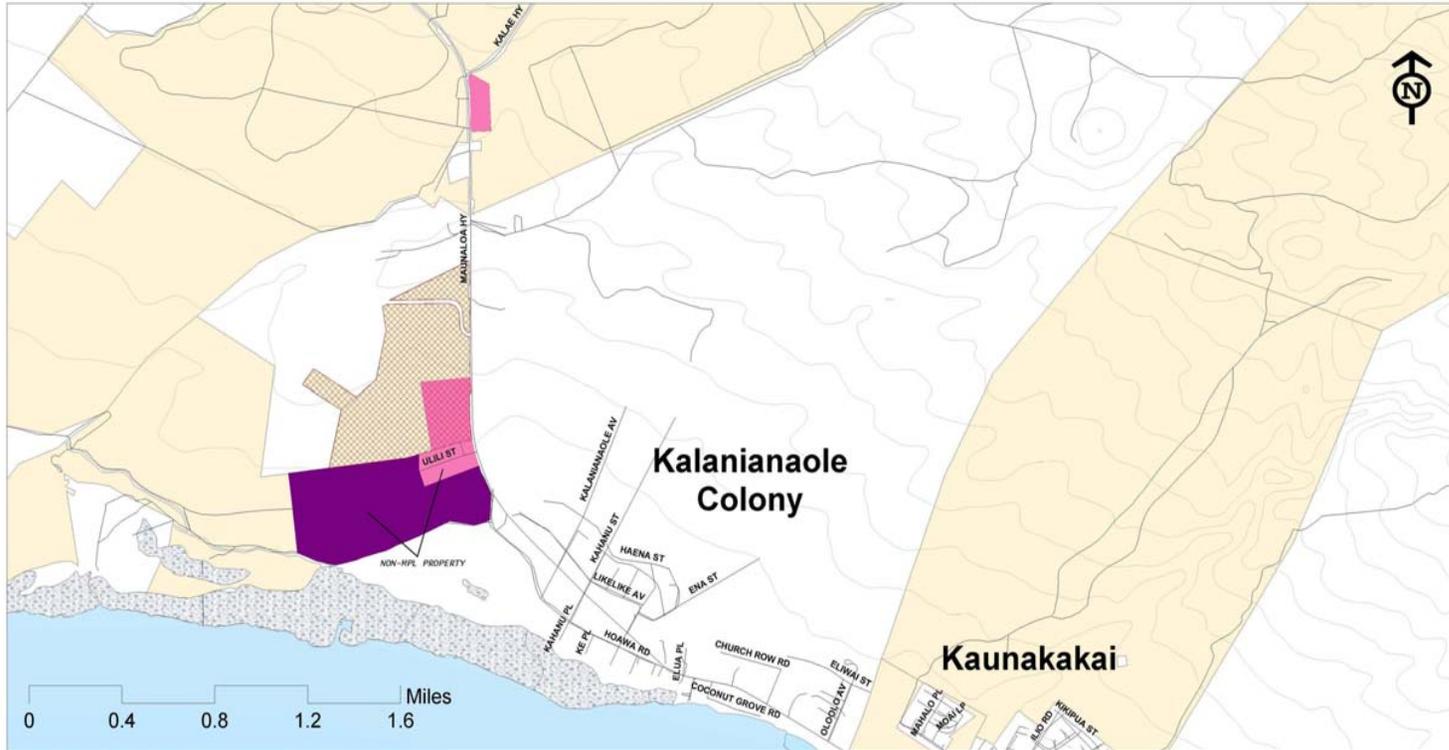
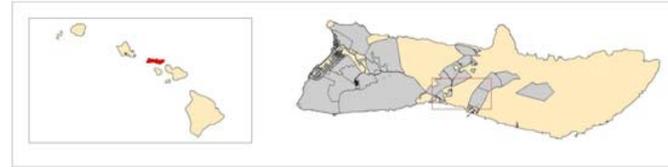
The Industrial Expansion Area is to accommodate the island’s long-term needs for industrial zoned lands. This area is located off of Maunaloa Highway and consists of approximately 180 acres surrounding the Moloka’i Industrial Park and the Landfill.

It is anticipated that area would be developed by the expansion of the existing Industrial Park in a mauka or northward direction as demand warranted.

The cul-de-sacs in the existing Industrial Park were designed to allow those roads to be extended which would eliminate the need to add additional connections to the Maunaloa Highway, connections that would be undesirable from a traffic flow perspective. (See map “Proposed Industrial Zoning Change” on following page.)

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**MOLOKA'I RANCH MASTER USE PLAN
PROPOSED INDUSTRIAL ZONING CHANGE**



DRAFT

Map Prepared By:
The Conservation Fund
August 10, 2005

Molokai Ranch Property	Current Community Plan Designations
100' Contours	Light Industrial
Roads	Heavy Industrial
	Proposed New Industrial District

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5.1.5.2 Community Housing

- The Moloka'i community will know the development plans for and growth of all MPL properties and continue to have input on future plans and development.
- MPL sets aside 200 acres for the following "Future Community Expansion" that will be decided upon by Moloka'i residents.
 - A total of 100 acres each around Kualapu'u and Maunaloa will be made available for community housing.
 - More than 1,000 acres above Kaunakakai will be donated to the Land Trust for future community expansion.

5.1.5.3 Projected Land Trust Urban Sites

The following sections describe the urban sites that are located within the Land Trust. (See Kaunakakai Map in Appendix 5.)

5.1.5.3.1 *Junior Roping Club Site*

This 5-acre parcel (approximate) is located in Kaunakakai on the west side of Mohala Street between Kamehameha V Highway and the Ocean. The land is currently zoned light industrial; a Maui County designation that allows for a wide range of uses including commercial operations.

A mapped, but unimproved road running east-west abuts the mauka boundary of

the site. Future development of this site will likely trigger roadway improvement requirements. Currently, the Moloka'i Junior Roping club has a lease on the site for a nominal consideration that runs to December 4, 2006.

They also have a 5-year option that would extend the lease date to December 4, 2011. The site is an assemblage of several smaller parcels. The conveyance of the parcel to the Land Trust will be subject to the Roping Club lease.

5.1.5.3.2 *Community College*

This 3.213 acre parcel fronting Kamehameha V Highway lies immediately west of the existing 2-acre campus. The parcel was included in the original master planning for the campus and was slated for additional classrooms, parking and a theater. The University was given a 10-year option to acquire the parcel at fair market value running from the date of the original parcel donation together with an additional 10-year right of first refusal thereafter.

5.1.5.3.3 *Kaunakakai Fire Station*

The existing Kaunakakai Fire Station is subject to flooding and is no longer large enough to accommodate the needs of the community. Accordingly, the County approached Moloka'i Properties in 2003 about acquiring a suitable replacement site. Subsequently, in the course of the master planning effort, Moloka'i Properties committed to the community that it would not sell lands in the Kaunakakai area without community

input while the planning process continued.

As the County was desirous of moving forward with the planning and acquisition of a replacement site, they brought their plans to the Land Use Committee. Over the course of a few months and several meetings, an acceptable 5-acre site was agreed upon which could satisfy the Fire Department's needs for a central location, good access and drainage, as well as address the community concerns that were raised.

The site is located on lands scheduled to go to the Land Trust on the east side of Ala Nui Ka'imi'iki Street near Kākahale Street. The purchase price has been established at \$100,000. If the transaction closes before the Land Trust is established the proceeds will be held in escrow for the Trust's benefit. The County, which is responsible for the needed zoning change and subdivision, is currently undertaking soils testing and other preliminary planning activities.

5.2 OVERLAY ZONES

The Overlay Zones provide additional policies and controls to areas that have unique characteristics. The Overlay Zones consist of the following:

- Hunting
- Subsistence Fishing
- Trails – Historic and Recreation
- Natural Resource
- Recreation
- Cultural

Also, note that traditional rights of access and use – for subsistence-based hunting, gathering, fishing and performance of important cultural and spiritual activities – were considered with other District uses. Respecting these rights, managing access, enforcing rules, and monitoring adherence to established policies and protocols are an important part of the Community-Based Master Plan.

5.2.1 Hunting

The “Moloka'i Ranch Resource Summary: Hunting Map” in Appendix 6 shows the areas that are to be used for each type of hunting. These zones have a combined area of almost 40,000 acres. A safety buffer surrounds Maunaloa town and other populated areas. The rules guiding subsistence hunting are in the Management Policies.

Bow hunting is designated in two regions in the southwest corner of MPL property, near Lā'au Point. The Kaupoa Hunting Area 11 has an area of about 6,000 acres and the Ka Ihu Loa Hunting Area 5 consists of 4,000 acres, for a total of approximately 10,000 acres.

The areas established for rifle hunting are located in the northwest corner of the MPL property, near 'Īlio Point and in the south, near the Pālā'au Homesteads. The combined area is approximately 17,000 acres.

Lastly, there are hunting areas in the central properties that have other

management: the Kākahale and Kamakou Hunting Areas.

5.2.2 Subsistence Fishing

The Subsistence Fishing Zone surrounds most of the western Ranch lands. This fishing zone includes areas from the coast to the outer edge of the reef or where there's no reef, out a quarter mile from the shoreline along the 40 mile perimeter of the property, including the partnership lands.

The rules guiding subsistence fishing are also in the Management Policies in Section 4.1.1. Although the areas indicated on the map by hatch marks are not owned by MPL, they are still included in the subsistence fishing zone. They are Lā'au Point, Pāpōhaku Beach, 'Īlio Point, the area between Ka pāluo'a and Kaiehu Point, and the area between Mo'omomi and Nā'iwa.

Proper management will depend on cooperation by these other landowners: The Nature Conservancy, DHHL, Pāpōhaku lot-owners, and the Park Service, State of Hawai'i DLNR and the U.S. Coast Guard. (See Subsistence Fishing Management Zone Map in Appendix 7.)

5.2.3 Recreation and Trails

The Moloka'i Ranch lands have a significant number of trails, both for recreational activities, such as biking, hiking and horse riding, as well as for cultural practices, such as walking the Historic Trail mapped by Monsarrat for

subsistence fishing and gathering. Recreational uses should be in accordance with policies designed to protect cultural and natural resources. This section documents the access routes and existing trails. The decisions regarding use are hereby deferred to the land-owner(s). Use for the trails is to be consistent with the land district or applicable overlays in which they are located. (See Recreation/Trails Map in Appendix 8.)

- **Hiking and Biking Trails**

The trails map shows that many of the recreational trails for hiking and biking begin near Maunaloa town and lead hikers and riders towards the coast. However, most of them are currently inactive and in need of maintenance. There are also two Na Ale Hele State Trails that lead hikers through central Moloka'i Properties Limited land.

- **Horse Trails**

The horse trails shown are distinguished as Active, Active/Seasonal, and Less Active trails by their respectively colored dotted lines. The primary active trail is a loop near the Paniolo Camp in Maunaloa.

- **Historic Trails**

The Historic Trail, as documented on the Monsarrat map shows that it is a cultural trail. It runs along the west coastline around ʻĪlio Point and then along the north coast to the Moʻomomi Preserve. There is also a 2-mile cultural trail that runs from just east of Maunaloa down to Kolo Wharf, called Pakaʻaʻs Trail. The Government Road from Kaunakakai to Kolo, mapped by Summers in “Sites of Molokaʻi” is also shown.

5.2.4 Natural Resource

The purpose of this Overlay Zone is to indicate the sensitive ecological resources that are in need of management. Large areas are especially prone to erosion, and in need of watershed management. The protection of these areas is critical to the preservation of the coral reef to the south of the area, as well as to the continued health of the Moʻomomi Preserve to the north. Both shades of green on the map illustrate important ecological areas that support rare species, native ecosystems, and/or coastal habitats. (See Natural Resource Protection map on page 83.)

5.2.5 Cultural

The purpose of the Cultural Resource Overlay Zone is to identify areas with significant cultural resources regardless of the land use district in which they are found. This overlay zone will be subject to management policies that ensure the protection and appropriate interpretation of the cultural resources found there. (See

Cultural Resource Overlay in Appendix 9.)

The Cultural Overlay Zone includes the Kaunakakai Cultural District, which is bounded by the Kaunakakai Gulch on the east and the Kaunakakai-Kalamaʻula ahupuaʻa boundary on the west. This area is important to the preservation of the unique Molokaʻi petroglyphs, extensive agricultural sites, house sites, and heiau found in this district.

This zone includes the 2,774-acre Kamakou Preserve, which is managed by The Nature Conservancy under a conservation easement from MPL. Lastly, it includes the area designated for the future Lāʻau Subdivision. This area is rich in sites, but is included in the Cultural Resource Overlay instead of the Cultural District because the sites are spread out and less dense in concentration than most areas within the district.

5.3 OWNERSHIP/MANAGEMENT

This section outlines the division of MPL land according to ownership and management. The Land Use Plan concentrates MPL’s economic development in a limited area, and conserves as much land as possible for the citizens of Molokaʻi. Thus, with approval of this plan, 85% of the land will be protected by the Land Trust, or as part of a conservation/agricultural easement, in perpetuity. The remaining 15% will continue to be owned and managed by MPL. The following maps and narrative demonstrate the land

distribution and use under this ownership and management arrangement. (See map “Proposed Land Ownership and Management” on page 11.)

5.3.1 MPL Lands

The 10,000 acres (approximate) retained by MPL/Molokaʻi Ranch are depicted in gray and include: community expansion zones, visitor accommodations, golf courses, and residential shoreline development. The community expansion zones are demonstrated in the smaller town maps by diagonal black lines. These are the areas set aside for the future growth of these townships. In the case of Maunaloa, it includes the land to the north and to the south. Kaunakakai and Kualapuʻu are focusing their growth mauka of town, instead of allowing sprawl from east to west.

The land designated with visitor accommodations includes the existing establishments:

- The Lodge at Maunaloa
- The Beach Village at Kaupoa
- The Kaulakoʻi Hotel
- Paniolo Camp
- Kolo Camp

The Kaluakoʻi Golf Course is located near the Hotel. It will continue to be owned and managed by MPL. A future golf course is proposed for the land north of Kaluakoʻi as a substitute for the golf course at Maunaloa designated in the community plan.

The residential shoreline development component of MPL lands consists of a maximum 200-lot subdivision at Lāʻau Point. While this development has been the controversial aspect to the Plan, MPL will target development to finance the restoration of the Kaluakoʻi Hotel and the renovation of the Kaluakoʻi Golf course. The planning process has guaranteed that the Lāʻau project will mean no increase in the Ranch’s potable water use; it will follow strict cultural and environmental guidelines, and will protect traditional subsistence gathering in the area.

5.3.2 Community Trust Lands

The community will control the Molokaʻi Land Trust, which consists of 26,200 acres. Going from east to west, the Trust lands include:

- Cultural sites at the base of the Kawela Plantation (34.895 acres)
- Lands mauka of Kaunakakai for community expansion (1,160 acres)
- The Makahiki Grounds mauka of Kualapuʻu and up through and including the cliffs of Nāʻiwa
- A large strip of land from Kawakanui beach, north to ʻĪlio Point, stretching around to the Molokaʻi Ranch boundary with Department of Hawaiian Homes Lands in Hoʻolehua and down to Pālāʻau and over to Hale O Lono Harbor and including the Kāʻana area

- The fishing village 15-acre site adjacent to the north boundary of Kaupoa Camp
- Kaiaka Rock
- Plus other sites as shown on the Land Trust map

5.3.3 Lands Owned by MPL with Easements to Land Trust

A third ownership category of lands illustrated on this map are those that belong to a partnership of MPL and Moloka'i Land Trust. The Moloka'i Land Trust would hold easements over these Agricultural Reserve and Rural Landscape Reserve Lands, while MPL would retain the title.

An easement provides permanent dedication of lands for specific uses that are registered on the land title deed. In this case, the Moloka'i Land Trust would enforce the dedicated use of the specified 24,950 acres for Agricultural and Rural Landscape Reserves.

The Agricultural Easement Lands are located around Kualapu'u and south of the town to the southern shore, as well as lands at the western end of the property that were formally used for pineapple cultivation. These lands will be dedicated for agriculture and only single farm dwellings can be built there. These 14,118 acres are depicted with diagonally striped lines on the "Proposed Land Ownership/Management" map.

The Rural Landscape Reserve was created to protect views and the rural character of the island, and to forever prevent development from happening on these lands. Five large parcels are dedicated for a Rural Landscape Reserve Easement, totaling 10,832 acres. These areas are located:

- North of the currently zoned land at Kaluako'i,
- Surrounding the Pāpōhaku Subdivision,
- North of the community expansion zone at Kaunakakai, and
- One large parcel adjacent to the proposed development at Lā'au Point.

5.3.4 Lands Owned by MPL with Easements to Other Entities

The final ownership category consists of those lands owned by MPL, but protected by existing conservation easements. There are two parcels of land with this status. These areas are known as the Preserves, i.e. the Moloka'i Forest Reserve and the Kamakou Preserve. Moloka'i Ranch, Ltd. granted a perpetual conservation easement to The Nature Conservancy to protect the Kamakou Preserve and the Moloka'i Forest Reserve is leased by DLNR on a monthly basis. Both contain important water resources. These two properties have a combined area of 4,040 acres.

6 WATER PLAN

6.1 MOLOKA'I PROPERTIES, LIMITED EXISTING WATER SYSTEMS

Moloka'i Properties, Limited (MPL) operates 3 water systems, two of which are subject to State Public Utilities Commission (PUC) regulation. All three systems are subject to regulation by the State's Commission on Water Resource Management (CWRM).

6.2 KALUAKO'I SYSTEM (MOLOKA'I PUBLIC UTILITIES, INC. (MPU))

MPU services the existing Kaluako'i Development. Its source is Well 17 in Kualapu'u which has a water use allocation of 1,018,000 gallons per day (GPD). The following is the permitted allocation established by the Water Commission based on the then existing uses:

Kaluako'i Hotel	67,000
Condos	186,000
Residential	51,000
Golf Course	400,000
Beach Park	26,000
Nursery	18,000
Filter Backwash	100,000
Moloka'i Ranch	0
System loss	0
Kaluako'i Total	848,000
MIS System Use Charge	94,000
<u>Kualapu'u Town</u>	<u>76,000</u>
Total	1,018,000

In this paper "current use" is defined as the average daily use over a one-year period. Current use of the MPU system, with the Kaluako'i Hotel closed is approximately 800,000 GPD.

At the time the Kaluako'i System was acquired by MPL in December 2001 it had been out of full compliance with Department of Health Drinking Water Standards since 1993. Those standards, which went into effect nation-wide, required drinking water systems using surface water or systems using groundwater under the influence of surface water to meet higher water quality standards to provide a greater margin of safety to their customers.

That non-compliance led to a Consent Order that MPL inherited from the previous owners of Kaluako'i. At the time of acquisition, the compliance deadline was extended to September 15, 2004. A one-year extension was subsequently requested and approved. MPL could have satisfied the Consent Order by either using a dedicated pipeline from Well 17 (an alternative that was abandoned) or by installing new treatment facilities that could meet the current standards. New filtration equipment was installed and became operational on September 14, 2005.

Essentially, MPU starts with clean, compliant water as it leaves Well 17. However, use of the Moloka'i Irrigation System (MIS) to convey this water to the west end mixes in surface water creating

the need for treatment to again make it safe for drinking water purposes.

6.3 EXISTING SYSTEM LOSSES

Much has been said about MPU's system losses and MPL acknowledges that the system it inherited had losses of approximately 200,000 gallons per day.

Prior to the upgrade, the largest water loss was the approximate 100,000 gallons per day consumed in backwashing the sand filters at Puu Okoli that were part of the system MPL inherited. The old Ag lines and the open reservoir between Mahana and the entrance to Kaluakoi were also historically large water wasters. Completion of the system upgrade allowed 17,500 lineal feet of this old pipeline to be removed from service.

All systems have some level of loss. Most systems aim for losses of about 10% -- a reasonable target for the Kaluakoi System at build-out.

6.4 WAIOLA O MOLOKA'I, INC. SYSTEMS

Waiola Waiola is the Public Utilities Commission regulated entity that supplies drinking water to the remaining communities on Moloka'i Ranch land.

The Ranch has been in the water business for more than 100 years. Its role in this area expanded significantly when it inherited the drinking water systems for Maunaloa and Kualapuu when their lessees abandoned those plantation towns.

Waiola also supplies water to Kalae/Kipu and the Moloka'i Industrial Park/Manawainui areas. Prior to 1993, all of this water was supplied from the Ranch's surface water system. With the imposition of more stringent standards, these systems shifted from surface water to purchased well water.

The Kipu/Kalae system (approximately 20,000 gallons per day) is supplied with well water purchased from the Department of Hawaiian Homelands (DHHL).

The Kualapuu system (76,000 gallons per day as noted above) is supplied from Well 17 via a bulk water purchase agreement with MPU.

Initially, Maunaloa and the Industrial Park were supplied with water purchased from the County Board of Water Supply, from its well in Kualapuu. When that agreement came to an end in May 1998, MRL built a new treatment facility that meets the new standards.

6.5 MOLOKA'I RANCH MOUNTAIN (AG) SYSTEM

The initial water system of the Ranch is more 100 years old and moves surface water approximately 20 miles from the central mountains of Moloka'i to the far corners of MPL's holdings through a combination of six and eight inch pipelines. Currently, the surface water system has 3 primary uses:

1. Feed water for the Pu‘u Nānā water treatment plant that provides potable water for Maunaloa and the Industrial Park.
2. Irrigation water for landscaping of Maunaloa Village, the Lodge and Kaupoa camp.
3. Water for the Ranch’s livestock operations.

The system has an average yield of approximately 500,000 gallons per day, but as with all surface water systems, its yield is highly weather dependent. Seasonal flows of 1,300,000 gallons per day can be achieved during winter storms, while summer drought lows of 65,000 gallons per day have occurred.

In many ways the Ranch’s surface water system is like its much larger counterpart on Moloka‘i, the MIS, which is also a surface water system.

While numbers vary, one estimate of the average yield of the MIS is 3,500,000 GPD making it about seven times larger than the ranch system in terms of yield. In terms of storage, the Ranch’s 44,000,000 gallons of storage pales in comparison to the MIS’s 1.4 billion gallons, which is more than 30 times greater.

Both are highly dependent on the weather and rely heavily on winter rains to sustain demand during the drier summer months. One area of difference between the two systems is the MIS’s ability to pump high-level ground water

to supplement gravity surface water flows while the Ranch system relies totally on surface water delivered by gravity. Surface water is the basis for our agricultural industry on Moloka‘i as it is much cheaper to deliver to customers.



The typical energy costs for MPU to raise water 1,000 feet to the surface (the elevation of the Kualapu‘u Wells) is \$1.00 per 1,000 gallons. Without high energy costs, water from Moloka‘i’s existing surface water systems can be kept affordable which is a critical factor to the future of farming on Moloka‘i. Inexpensive water is the key to expanding agriculture on Moloka‘i and Moloka‘i Ranch supports this wholeheartedly.

6.6 MPL AND THE MIS

Since the first days of the Kaluako'i development, transmission of Well 17 water to the Resort utilized the MIS distribution system and the old Libby, McNeill & Libby irrigation pumps, pipelines, and reservoirs. From the MIS reservoir to beyond the Kaluako'i reservoir at Pu'u Nānā.

Currently MPU leases MIS transmission capacity for \$135,000 per year. Based on current usage, that is equivalent to about 51 cents per 1,000 gallons for the right to use a portion of the excess capacity of the existing infrastructure. Other users pay 31.5 cents per 1,000 gallons, plus an acreage assessment. To MPL's knowledge, the Ranch is the largest financial contributor to the system.

In addition MPU "pays" the MIS "a systems loss" equal to 10% of the water it transmits.

MPU does not use MIS water. It puts in 1,111,111 gallons of water for every 1,000,000 gallons it takes out at its Mahana pump station. Over the course of a year, this additional input amounts to about 30,000,000 gallons.

When MPL acquired the assets of Kukui (Moloka'i), Inc. and MPU in December 2001, Kukui had a pumping deficit of 30,000,000 gallons. MPL made up this deficit by mid-February 2002.

Since then MPL has been in arrears only once between April 5th to August 19, 2004. It was the result of the change-out of the old Detroit diesel engine with a new Caterpillar four-stroke diesel that is expected to be a more reliable power unit to drive the Well 17 pump. In hindsight, MPL should have built up greater reserves prior to taking the Well 17 motor out of commission.

This breakdown has, quite rightly, raised concern from homesteaders that a future breakdown could lead to a similar occurrence. MPL proposes that it advances the MIS system 100 million gallons and retains that surplus in the system at all times. That amount of water would equate to about 4 feet of depth out of the 52 feet of usable storage capacity. In the event of any future breakdown at Well 17, this surplus would more than cover any conceivable repair time. MPL also proposes that Preference farmers are able to use this surplus in the event of a drought emergency.

6.7 WATER NEEDS GOING FORWARD

MPL has stated that it **DOES NOT** need any more drinking water than currently allocated for the proposed Master Use Plan. Under this Plan, MPL will abandon the Waiola Well application. If this Plan is approved, MPL will sign covenants preventing it from ever seeking further water permits from the Water Commission. This Master Use Plan is proposing:

Potable Water:

MPL retains its 1.5 million gallons per day of water currently allocated:

- 1,018,000 GPD from Well 17
- 500,000 GPD from the Mountain System.

Non-Potable Water:

It is proposing to develop 1,000,000 GPD from the abandoned Kāalahale brackish water well in the Kamiloloa aquifer sector for future non-potable needs.

By gradually moving current non-potable uses such as the golf course, irrigation of the hotel, condos and large lots to non-potable water, MPL believes its existing 1.5 MGD potable allocation from a combination of Well 17 and the mountain system will meet all of MPL's long-term potable demand.

Non-potable needs can be supplied by a combination of use of MPL's existing mountain system and the unused Kāalahale Well.

MPL has proposed that the remaining 1,000,000 MGD be drawn from the Kāalahale brackish water well. This well which was built by Kaluako'i Corporation in 1969, has been pump tested and demonstrated capable of providing 1,000,000 GPD of good quality brackish water (chlorides at 500 ppm, or twice the drinking water standards).

MPL's advice is that drawing water from the Kāalahale well will have no impact on the yield of the Kualapu'u aquifer. While concerns have been raised about its use by the MIS or on DHHL lands, MPL believes it is a good source for west end irrigation needs.

MPL WILL NOT propose transmission of the Kāalahale brackish water to the West End by the MIS system.

MPL is currently investigating transmission alternatives.

This Plan is different from previous West End water proposals because, previously, three separate large land owners, Moloka'i Ranch, Alpha USA and Kukui (Moloka'i), Inc. all had or were developing massive comprehensive development plans that would have required as much as a total of 20,000,000 gallons of water per day to support.

Because the proposed Master Plan limits development, proposed water use is subsequently dramatically reduced as the table below shows.

6.8 LĀ'AU POINT WATER USE

The proposed Lā'au Point project, like the Pāpōhaku Ranchlands subdivision, is expected to comprise second and third homes for owners who spend a limited amount of time on island. At Pāpōhaku, 60% of those who have built houses are not permanent residents.

Also like Pāpōhaku, MPL would expect actual dwelling construction to lag lot sales by several years. To date, about 20% of lots in Kaluako'i have been built on. After more than twenty years, the build-out rate is less than one percent per year as an average. MPL believes a combination of low occupancy, water conservation education, xeriscaping and tiered water rates will moderate water consumption by these homeowners.

While MPL expects home construction to be slow, water demands during the construction period are expected to be in the order of 50,000-150,000 gallons per day. Initial erosion protection and control measures would likely require an additional 50,000-100,000 gallons per day as well. The construction phase is projected to be 2 years. The initial erosion control phase would be expected to continue well after construction ranging from 5 to 10 years.

The public park(s) would require potable water and non-potable water for irrigation concurrent with the completion of site construction.

MPL anticipates it would be several years into the sales of the project before wastewater recycling would be a significant contribution to the supply of irrigation water for landscaping features, erosion etc. In the interim, non-potable water not required for unbuilt house lots would support these uses.

In summary, MPL expects that water use for the project would start out as a significant percentage of total demand then drop after completion of construction and then slowly rise again as home construction proceeded.

6.9 WATER USAGE UNDER PROPOSED MASTER PLAN

(In Gallons Per Day)

CURRENT WATER USE

DESCRIPTION	Potable	Potable Irrigation	Non-Potable
Kaluakoi Hotel & Golf Course	2,000	405,120	
Kaluakoi Condos	116,250	70,880	
Kaluakoi Residential	70,500	143,825	
Maunaloa/Industrial Park	136,370		25,480
Ranch Operations/ Misc.	41,500		150,000
Kualapuu	76,000		
Subtotal	442,620	619,825	175,480
TOTAL POTABLE		1,062,445	
Total Potable & Non-Potable Categories			1,237,925

FULLY DEVELOPED WATER USE

DESCRIPTION	Potable		Non-Potable
Current and Future Changes (within 50 years)			
Kaluakoi Hotel & Golf Course	33,400		273,240
Golf Course Wastewater Reuse			-100,000
Kaluakoi Condos	116,250		70,880
Kaluakoi Residential	228,500		633,825
Maunaloa/Industrial Park	296,870		25,480
Ranch Operations/Misc.	41,500		150,000
Laaupoint Lots	96,000		300,000
Laaupoint Parks	1,000		40,000
TOTALS	889,250		1,393,425
Long term growth > than 50 yrs			
Community directed growth in Kualapuu and Maunaloa	200,000		
TOTALS	1,089,520		1,393,425
TOTAL ALL USES			2,482,945

MPL has stated that the projected West End water use will not exceed the existing permits plus 1.0 MGD of brackish water from the Kāalahale Well. Current use is grouped into 3 types of water; potable, potable irrigation, and non-potable. Currently 619,825 GPD of irrigation demand is met with potable water. This use will be shifted to non-potable sources over time, freeing up this water for new potable uses. Renovation of the golf course (130 acres of turf down to 80 acres of turf) will reduce water consumption and reopening of the Hotel and higher condo occupancies will provide more wastewater. This is reflected in the much-reduced demand for golf course and hotel irrigation. The Lā'au potable allocation is based on 600 GPD for 200 lots at 80% occupancy. The non-potable water is based on 1,500 GDP for 200 lots.

6.10 THE ROLE OF WATER CONSERVATION

At the time of the Kaluako'i acquisition, MPL understood that water conservation would play an important role in managing the West End's water usage.

The Water Commission reinforced that understanding in its water use permit for Well 17 that was issued after MPL took title to the Kaluako'i assets.

The Commission required MPU to report on its progress in controlling water waste, to conduct an educational campaign on water conservation with its customers, and to investigate a non-potable source for the golf course to allow potable water being used for non-potable uses to be available for other potable purposes.

MPL immediately identified and corrected several long-term water waste issues. MPL conducted a water conservation campaign over 12 months. However the most important action undertaken to date has been to restructure MPU's water rates to properly reflect the true cost of providing this

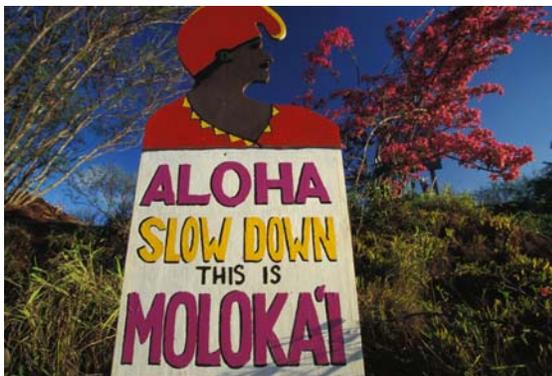
service and to implement tiered water conservation rates that provide a financial incentive to customers to conserve water.

MPL approached its rate structure by using the Water Commission allocation amounts by user type as the base rate. All water use above that amount would be billed at a much higher "conservation rate". MPL proposed that the base rate be \$3.18 per 1000 gallons and the conservation rate be twice as much or \$6.36 per thousand gallons.

As an example, the Water Commission used 560 gallons per unit for the Condos plus 2,000 gallons per day per acre for irrigation. A 50-unit condo on a 4-acre site would have 36,000 gallons per day in its base rate (560 gallons X 50 units plus 2,000 gallons X 4 acres for irrigation). Any water used above this amount would be sold at the higher conservation rate.

As the permit allocation amount was 1,000 gallons per day for all residential uses (even though the existing usage in the Pāpōhaku Ranchlands was noted in the permit to be 5,308 gallons per day per residence), MPL proposed that the conservation rate begin at 1,000 gallons per day for residential customers.

Because of a concern the Consumer Advocate termed "rate shock," MPL agreed to reduce the conservation rate to \$4.70 per 1,000 gallons and phase-in the conservation rate for residential



customers. For residential customers the conservation rate applies to all water used in excess of 5,000 gallons per day.

However the Consumer Advocate and the Public Utilities Commission agreed that MPL could telegraph that its next rate increase – then anticipated to be two to three years away-- would likely see the conservation rate take effect for all residential water use in excess of 1,000 gallons per day.

For the most part, Kaluako'i residents have adjusted their water use. Consumption has dropped by 45% in the Ranchlands and the condos have shown reduced water consumption as well since the rate hike in September 2003. The most notable change is that customers now respond to rainfall and shut off their irrigation systems. Previously MPL saw very little reduction in water use after a good rain. Now a passing shower will cause water consumption to drop dramatically.

6.11 CONTINGENCY PLANNING

MPL has stated that the 2.5 million gallons of water per day is the maximum this community-based Master Plan will require; 1.0 million gallons of existing drinking water from Well 17, and 0.5 MGD from the Mountain System, and one million gallons of brackish water from the Kākahale Well.

The question has been posed: what if the Plan needs more water? What if there is increased demand for agriculture,

particularly on MPL lands designated for agriculture, or on lands to be donated to the land trust?

MPL will never go back to the community and seek more drinking water.

If more non-potable water is needed for agriculture in particular, MPL still has two options:

- The brackish water available to MPL from the Prawn Farm at Pala'au, which is currently permitted for 864,000 gallons per day of which 500,000 gallons per day could be available for reuse.
- Desalination.

The Prawn Farm water is very brackish; 1300 parts per million as chlorides (drinking water must have no more than 250 parts per million), and it would three times as expensive to remove the salts to bring it to an acceptable level for use as agricultural water as compared to obtaining water from the Kākahale Well.

But it is an option for the future and particularly for non-potable uses. Currently, desalting is still about 4 times more expensive on Moloka'i than developing an operating deep groundwater well. While it is not a viable economic alternative today, this technology continues to improve and its costs are declining as a result.

As this technology continues to improve, the cost of producing water will come down. As the conservation rates go up, at some point the two lines will cross, and MPL will find the balance between demand and supply. MPL has talked about the ability to have multiple rate blocks for both potable and non-potable water.

Structured properly, these rates would, in effect, subsidize prudent or thrifty water users and penalize excessive water use. At the higher rate blocks, the cost of desalination can be recovered. Because of this, there would be no pressure to pursue additional groundwater or surface water sources from the central or east end of the island.

6.12 WATER AND HAWAIIAN RIGHTS

Every water use permit issued by the Water Commission contains a provision that the allocation will be reduced if it interferes with the rights of the Department of Hawaiian Homelands.

The water code states that each County's Water Use and Development Plan, and the State's Water Project Plan, "shall incorporate the current and foreseeable needs of DHHL".

Hawai'i revised statutes provides that the Hawaiian Homes Commission and its lessees have a prior right to 2/3 of the water in the MIS. Supreme Court rulings have affirmed that the priority uses of

water include Native Hawaiian and traditional and customary rights.

For Moloka'i Properties Limited, the issue of Hawaiian Water Rights is very clear: the existing allocations are subject to reduction if they interfere with DHHL's rights to water in the future and due consideration must be given to DHHL's projected needs with any proposed new allocations.

Essentially MPL has proposed in its Master Plan to forever limit the withdrawals of potable groundwater to that which has already been permitted and seek only one million gallons per day of non-potable water from the existing proven brackish Kākahale well in the Kamiloloa aquifer sector.

In essence, MPL is requesting 2 million gallons of groundwater out of the estimated developable 33.5 million gallon estimated sustainable yield of the island (about 6%), in the knowledge that it could be reduced in the future if necessary for DHHL's needs to be met. As MPL sees it, it's a matter of law.

So MPL believes that if DHHL used every reasonable effort to develop its 2.905 MGD allocation in Kualapu'u and wasn't successful, the Water Commission would then be obligated to reduce the allocation as necessary so that DHHL would get the full benefit of their allocation at the time it was needed.

MPL does not believe that scenario will eventuate because:

- MPL believes the work done by the USGS supports that the estimates of water availability will be realized.
- There is a strong consensus on island to limit development that will limit total water demand.
- Large quantities of groundwater for agriculture will be cost prohibitive.

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7 IMPLEMENTATION

7.1 LAND TRUST

The Moloka'i Land Trust will be formed to own and manage the 26,200 acres that MPL will donate to the Moloka'i community under this plan. The Land Trust will also administer land use policies that permanently protect another 24,950 acres under agricultural and rural landscape reserve easements.

The initial land to be donated to the land trust is an approximate 1,000 acre piece lying between the State's parcel at 'Ilio Point and the Nature Conservancy's parcel at Mo'omomi. It is a portion of Tax Map Key parcel 5-1-02: 01.

Approximately half of ARINC's facilities are located on the parcel and the transfer will include a partial assignment of rents that will provide about \$50,000 of annual income to the Land Trust.

As noted above, the eastern boundary of the parcel is The Nature Conservancy's parcel and the existing jeep road that intersects the western corner of The Nature Conservancy's parcel. The northern boundary is the shoreline. The western boundary is the north/south leg of the State's eastern boundary at 'Ilio Point. The southern boundary runs from the southern point of the parcel's western boundary to the jeep road paralleling the northern shoreline running east to the junction of the eastern boundary at the "corral".

A Land Trust steering committee has been meeting since July 2005 planning

the implementation of the proposed Land Trust, reviewing its mission statement, goals and objectives and vision in order that documentation can be prepared to establish the Trust.

The committee is:

- Researching organizational documents.
- In the process of engaging an attorney.
- Preparing the Articles of Incorporation, its By-laws.
- Preparing for application for Federal Tax Exempt status.

It is planned that the Land trust will be incorporated by December 2005. The proposed mission of the Land Trust is:

To protect and restore the land and natural resources of Moloka'i, and to perpetuate the unique Native Hawaiian traditions and character of the island, for the benefit of the future generations of all Moloka'i.

Among the proposed activities of the Land Trust to implement the Master Land Use Plan are:

Moloka'i Nui A Hina (Moloka'i, Great Child of Hina) – Resource Protection

- Conduct a base line survey, assessment and mapping of the natural and cultural resources of the trust lands.

- Identify, record and map cultural, archaeological and other important sites on the trust lands.
- Conduct oral history interviews to document the cultural, archaeological and other



- important sites on the trust lands.
- Develop a cultural resources restoration and management plan for the trust lands.
- Develop and conduct public education about the cultural, archaeological and related sites on the trust lands, including cultural protocols for their proper use.
- Develop a natural resources restoration and management plan to control erosion, protect native beach strand and marine resources, protect the dune systems and overall improve the watershed and ground water resources.
- Develop a community-based subsistence fishing plan in partnership with adjacent landowners and government agencies for approval by the

Department of Land and Natural Resources.

- Develop a sustained/yield hunting plan that doesn't erode the land and is based on a determination of the carrying capacity for the feral deer and other game.
- Develop an access management plan to protect natural and cultural resources and respect Native Hawaiian rights.
- Develop policies to guide recreation and tourism activities on trust lands in accordance with the policies designed to protect the trust's cultural and natural resources.

Moloka'i 'Aina Momona (Moloka'i, Land of Plenty) – Use and Productivity

- Implement the guidelines for land use principles and policies developed for the Moloka'i Ranch Community-Based Master Plan.
- Provide stewardship of the Trust's lands and resources, mauka to makai, guided by best management practices and lessons from our kupuna.
- Develop partnership agreements to protect and enhance precious natural resources of the ahupua'a where the trust lands are located, mauka to makai.

Moloka'i Pule O'o (Moloka'i, Land of Powerful Prayer) – Perpetuation of Culture and Education

- Develop curriculum for environmental and cultural

education in partnership with educational and cultural groups and institutions.

- Communicate effectively with the community about the Trust's work.
- Design enforcement of rural landscape and agriculture easements under the control of the land trust.
- Halau (facilities and sites) are established for the training, practice, and research in la'au lapa'au (medical healing), ho'oponopono (conflict resolution), lomilomi (massage), hula, hoe wa'a, etc.

Moloka'i No Ka Heke (Moloka'i is the Greatest) – Sustainability and Organization

- Develop an organizational and financial plan for long-term sustainability of the land trust.
- Develop a training program for staff and interns in cooperation with community agencies and institutions.
- Organize a mechanism to receive public participation and input on the trust's management plans and policies.
- Provide ongoing training for members of the land trust board.

7.2 ZONING AND OTHER REGULATORY APPROVALS

The purpose of this section is to outline the potential State and County permit processes that may be needed to

accomplish the overall goals of the Community Based Land Use Plan for Moloka'i Ranch. It is important to note that any development or plan proposal may require a variety of Federal, State and County permits. Identifying and obtaining the necessary permits can be fairly complicated depending on the complexity, impacts, location and sensitivities associated with projects. Requirements change as laws and regulations are amended. Only by contacting the appropriate regulatory agency, can a project have accurate information on permits required for specific projects.

7.2.1 Land Use Designations and County Zoning

State Land Use Designations

All lands in the State of Hawai'i are classified into one of four Districts: Urban, Rural, Agricultural and Conservation. Most of Moloka'i Ranch's Lands are designated as Agricultural according to the Land Use Commission Districts.

The towns of Kaunakakai, Kualapu'u and Maunaloa are designated as Urban. The Kaluako'i area has all four designations. The Urban District extends from Kawakiuiki south to Pu'u O Kaiaka, from the shore to about 2000 feet inland; behind the northern portion of that area is Rural; the balance is in the Agricultural District with the exception of the a strip of land running along the shoreline starting at Pu'u O Kaiaka running south which is Conservation District land.

Maui County Community Plans

Maui County has 9 Community Plan areas. The current Moloka'i Community Plan was adopted in December of 2001. Community Plans provide Policy Guidance on Land Use within their respective areas. They also include maps which classify land into one of 17 use categories; requests to change zoning cannot be processed unless there is consistency with the Community Plan. Additionally, Special Management Area permits cannot be approved unless the application is consistent with the Community Plan.

Maui County Zoning Districts

Title 19, Maui County Code, is the County's zoning ordinance. Zoning classifies the way land maybe used and regulates the types of activities that may occur. Maui County has 25 different Zoning Districts ranging from open space to high density development districts for varying uses including Residential, Hotels and Commercial uses.

State and County Regulatory Approvals

The information below briefly describes the most appropriate County and State permits that may be required to implement portions of the Community Based Master Plan for Moloka'i Ranch. It is important to note that in certain instances Federal permits may be applicable as well. This section only indicates whether or not a Federal approval may be necessary.

- **Change in Zoning:** A zoning change is required when a land use is desired that is not allowed under the current zoning of that parcel of land. Zoning changes must be in conformance with the State Land Use District and the Moloka'i Community Plan. Zoning changes are processed through the Planning Department and Moloka'i Planning Commission and adopted via ordinance by the County Council and Mayor.
- **Community Plan Amendments:** A Community Plan Amendment is required if a use is in a Special Management Area and is not consistent with the Community Plan, or if a proposed zoning change is not consistent with the Community Plan Designation. Amendments require the submittal of a Draft Environmental Assessment, in accordance with Chapter 343, Hawai'i Revised Statutes. Community Plan Amendments are processed through the Moloka'i Planning Commission which provides their recommendation which is acted on by ordinance by the County Council and Mayor.
- **State Land Use Commission District Boundary Amendment (SLUCDBA):** A District Boundary Amendment is required when a proposed use is not allowed under

the State land use district as outlined in Chapter 205, Hawai'i Revised Statutes (HRS). For properties greater than 15 acres or involving conservation lands, District Boundary Amendments applications are processed by the State Land Use Commission. Applications for less than 15 acres are processed by the Maui County Planning Department and the Moloka'i Planning Commission.

- State Land Use Commission Special Permit: Special permits are required for uses not explicitly permitted under State land use, but may be permitted as an "unusual and reasonable" use within the State Agricultural and Rural Districts. Projects involving 15 acres or more are processed by the County through the Moloka'i Planning Commission and referred to the State Land Use Commission for final action.
- Special Management Area (SMA) Permit: SMA boundaries are designed to protect the County's coastal environment and resources. Proposals involving developments within the SMA boundary requires an application reporting assessment and determination. The assessment must include the anticipated impacts of the proposed action in the SMA. The Director of Planning will determine if the

project is exempt or requires a permit. The Moloka'i Planning Commission is currently reviewing rule changes in this area. A SMA Minor Use Permit is required for projects involving less than \$125,000. A SMA Major Use Permit requires a more comprehensive environmental review and applies to projects valued above \$125,000. Both are granted by the Moloka'i Planning Commission.

7.2.2 Applicable Permits

This section discusses the various Land Use Plan activities that may require County and State permits. It does not contemplate the various land ownership transfers.

Development Districts

1) Visitor Accommodation:

The hotel will require a special management area permit as well as building permits. The refurbishment of the golf course may or may not require a special management permit; however, the new maintenance building for the golf course will require a SMA permit. Building and grading permits will also be required.

The proposed relocation of the second west end golf course currently in the Community Plan from just below Maunaloa to the resort area in the Rural

district would require a Community Plan amendment and a zoning change to Park PK-4 zoning.

2) Residential Shoreline Development at Lā‘au Point:

The 200-lot subdivision of 2-acre parcels at Lā‘au Point will need infrastructure such as associated roads and sewage treatment facility. This development will require a State LUC District Boundary Amendment, Community Plan Amendment, Zoning Change, SMA application and EIS.

3) Community Village Expansion:

Consists of land surrounding existing towns and population centers of Kaunakakai, Maunaloa and Kualapu‘u. Lands are set aside for future residential expansion for Maunaloa and Kualapu‘u while some commercial expansion may be appropriate as well for Kaunakakai. Future implementation will require a State Land Use District Boundary amendment, Community Plan Change and a Zoning Change(s). Kaunakakai expansion, depending on location may also require a SMA permit. Land in and around existing towns/population centers that will be available to qualifying Moloka‘i residents at affordable prices for “traditional” and/or conventional housing.

4) Industrial: Expansion of the Moloka‘i industrial Park will require a State Land Use District Boundary Amendment,

Community Plan Amendment and Zoning changes.

5) Public/Quasi Public: Includes park, schools, public safety type facilities and uses such as Kaunakakai Fire Station relocation, Junior Roping Club and Maui Community College expansion.

- **Kaunakakai Fire Station**

Relocation: Includes a 5-acre site located on lands to the east of Alanui Ka‘imi‘ike Street near Kakalahale Street. The site is zoned Agriculture. The County will be responsible for redistricting the land to Urban, and changing the Community Plan designation and zoning to Public/Quasi-Public. Other County approvals will be required for construction and grading. The property is located within the SMA boundary.

- **Junior Roping Club Site:** This 5-acre parcel is located in Kaunakakai on the west side of Mohala Street. It is zoned Light Industrial. The area is located within the SMA boundary. Possible Community Plan Amendment may apply depending on the intended-long term use of the property.

- **Community College Expansion:** This parcel fronts Kamehameha V Highway and is located west of

the existing 2-acre campus. The property is currently zoned Public/Quasi public. The area is located within the SMA boundary and Other County permits may be required.

Remaining Districts and Overlays

The remaining Districts and Overlay Zones as well as the Subsistence Fishing Zone will require consultation with the County and State in order to verify which jurisdiction is appropriate to adopt or enact the Districts and associated Overlays.

Certain Districts and Overlays, for example may be adopted as policy by the “Moloka‘i Community Plan” produced by the County of Maui and adopted by the County Council and Mayor. In other instances, State Legislative acts may be needed to adopt the Subsistence Fishing zone for example, as policy or to enable enforcement powers.

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Applicable Permits						
Proposal (Future Ownership)	State LUC District Boundary Amendment	Community Plan Amendment	Change in Zoning	Special Management Area Permit	Other County Permits, e.g. building, grading	State Land Use Commission Special Permit
Development District						
1) Resort						
Reopen Kaluakoi Hotel (MPL)				X	X	
Upgrade Kaluakoi Golf Course and Workshop (MPL)				X	X	
18 Hole Golf Course transfer to Kaluakoi from Maunaloa Site (MPL)		X	X	X	X	
2) Residential Shoreline Development						
La'au Development (MPL)	X	X	X	X	X	
3) Community Village Expansion						
Kua'alapu'u (MPL)	X	X	X		X	
Maunaloa (MPL)	X	X	X		X	
Kaunakakai (MLT)	X	X	X	X	X	
4) Industrial Expansion (MPL)	X	X	X		X	
6) Public/Quasi Public						
Kaunakakai Fire Station (MLT)				X	X	X
Junior Roping Club (MLT)		X		X	X	
Community College Expansion				X	X	X
Other Districts and Overlays		X				

7.2.3 Lā‘au Point Implementation Schedule

The following is the estimated schedule to obtain the various land use approvals from the State and County for the Lā‘au Point development. This schedule assumes plan approval by the EC Board by January 2006.

Environmental Impact Statement (EIS)

It is assumed that a complete EIS will be required for the project. The technical environmental, engineering, and socioeconomic studies required to complete the EIS are currently being undertaken and the EIS Preparation Notice will be submitted and published for public comment after the EC Board approval of as noted above. The schedule to complete the EIS is as follows:

EIS Preparation Notice (EISPN)	January 2006
Complete Draft EIS/Publish	April 2006*
Public Comment Period (45 Days)	May 2006
Prepare Final EIS/Acceptance	July 2006

*Subject to technical studies being completed by end of February

State Land Use District Boundary Amendment (SLUDBA)

The areas of Lā‘au Point to be included in the subdivision lots are proposed to be re-classified by the State Land Use Commission (LUC) from Agricultural to Rural. Utilizing the EIS as the informational document to the LUC

petition, the schedule is anticipated to be as follows:

LUC Petition Submitted (w/EISPN)	January 2006
Petition Hearings (after EIS Accepted)	August/September 2006
Decision and Order	October/November 2006

County Land Use Approvals

The project area requires a Community Plan Amendment, Change in Zoning, and Special Management Area permit prior to obtaining final subdivision approval. It is assumed that these approvals will be sought concurrent with the SLUDBA, utilizing the Draft EIS as the technical supporting document to the submittals. The schedule is anticipated as follows:

Applications Submitted (w/DEIS)	April 2006
Planning Commission Hearings/Recommendations	August/September 2006
Council Hearings/Approval	November/December 2006*
Mayor Approval	January 2007*
Planning Commission Approval (SMA)	March 2007

*Could be delayed due to elections

County Subdivision Approval

The preliminary and final subdivision plans would be reviewed concurrent with the above County Land Use Approvals with final subdivision approval being granted following obtaining all of the above approvals.

Preliminary Plat Submitted	April 2006
Preliminary Plat Approved/Comments	October/November 2006
Final Plat Map Reviewed/Approved	April 2007
Bond Improvements/Construct Improvements	May 2007 – May 2009 ±

7.2.4 Land Trust Zoning Issues

Currently under the Maui County Plan and the Moloka’i Community Plan, there is no zoning applicable to the proposed special activities of the Land Trust, namely cultural protection, subsistence protection and land restoration.

The current agricultural zoning of the vast majority of the land is not adequate to reflect the nature of activities on the Land Trust property.

The Land Trust may seek to have the majority of its land designated a “Special Project District” or seek to create a Cultural Area Resource designation.

Special Project Districts are normally reserved for development areas, but there is no reason why this designation cannot apply to the special needs of the Land Trust.

Further work with the County of Maui needs to be undertaken so that the Land Trust land designation is correctly reflected in zoning for all time.

In terms of the proposed easements, the current agricultural zoning, along with strict easement documentation, will be adequate to protect the “open space” designated areas.

7.3 PHASING

The phasing of the implementation of this Land Use Plan will take place over many years, with some aspects of its implementation not taking place in the lifetime of those responsible for its preparation.

Key components of the Plan are the phasing relating to the agreement between Moloka’i Properties Limited and the EC on the Plan’s agreements, the donation of land to the Moloka’i Land Trust and the establishment of the protective easements, the re-opening of the Kaluako’i Hotel, the established of a Community Development Corporation and the regulatory aspects of the Lā’au Point approval and implementation.

Other aspects such as land put aside for future housing for the community, the extension of the industrial park and the application relating to the transfer of second golf course from Maunaloa to north of the Kaluako'i Hotel will be phased over many decades, but covered in the initial agreement between the EC and MPL.

A brief timetable for the Plan's implementation is as follows:

Community Based Master Land Use Plan for Moloka'i Ranch Implementation Timetable

TIME	TASK
December 2005	<ul style="list-style-type: none"> (1) Master Land Use Plan finalized. (2) Moloka'i Land Trust established and operating. (3) Kaluako'i Hotel redevelopment costs finalized. (4) Land boundaries for initial donation of North Shore land to Land Trust finalized.
January 2006	<ul style="list-style-type: none"> (1) EIS Prep Notice for Lā'au Point filed. (2) LUC petition for State Land Use District Boundary/ Amendment submitted. (3) Draft agreement between EC and Moloka'i Ranch re Land Use Plan submitted to EC and its legal advisors for consideration.
March 2006	<ul style="list-style-type: none"> (1) Agreement between EC and Moloka'i Properties Limited re Land Use Plan agreed and signed by the EC on behalf of the community and MPL. (2) Initial land donation (as specified at the beginning of Section 7.1) transferred to Moloka'i Land Trust. (3) Moloka'i Land Trust hires executive director.
May 2006	<ul style="list-style-type: none"> (1) Working drawings for Kaluako'i Hotel finalized.
August/September 2006	<ul style="list-style-type: none"> (1) Moloka'i Planning Commission hearings on SMA permit for Renovation of Kaluako'i Hotel. (2) Planning Commission Hearings on Lā'au Point Subdivision.
October 2006	<ul style="list-style-type: none"> (1) Decision by LUC on State Land Use District Boundary Amendment. (2) Proposed Community Development Corporation established. (3) Moloka'i Land Trust applies to Maui County for Land Trust lands to become "Special Project District."

<i>Implementation Table cont.</i>	
January 2007	<ul style="list-style-type: none"> (1) Council hearings on Lā‘au Point zoning change. (2) Surveys of land to be transferred to Moloka‘i Land Trust and survey and photographs of land under easement, completed and agreed between the parties. (3) Construction company for Kaluako‘i Hotel chosen and contract signed.
April 2007	<ul style="list-style-type: none"> (1) County approval of subdivision. (2) Construction on Kaluako‘i Hotel begins.
May 2007	<ul style="list-style-type: none"> (1) Remaining 20,000 plus acres transferred to Moloka‘i Land Trust and easement agreements signed between the parties. (2) Land assigned to Community Development Corporation transferred and agreements signed between CDC and MPL on Lā‘au Point revenue percentage. (3) MPL implements covenants on its property relating to perpetual rights for access for subsistence gathering. (4) Rental agreements relating to Land Trust lands assigned to Land Trust.
August 2007	<ul style="list-style-type: none"> (1) Moloka‘i Land Trust publishes Management Plan for the property. (2) Lā‘au Point lot construction commences.
September 2007	<ul style="list-style-type: none"> (1) Kaluako‘i Hotel re-opens.

7.4 WATER IMPLEMENTATION

The agreement relating to Moloka'i Properties Limited's Water Plan will form part of the agreement between the EC and MPL on the Master Land Use Plan.

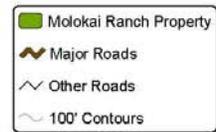
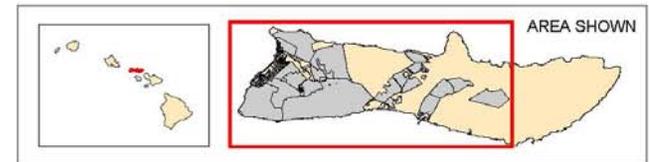
The main implementation of the Water Plan relates to the permitting of the Kākahale brackish well and the transmission of the water to the west end.

Early in 2006, testing of the well will commence with an expected application to the Water Commission for well permitting in mid to late 2006. In the intervening period, MPL will submit to the EC its proposal for transmitting the brackish water to the west end for future irrigation needs.

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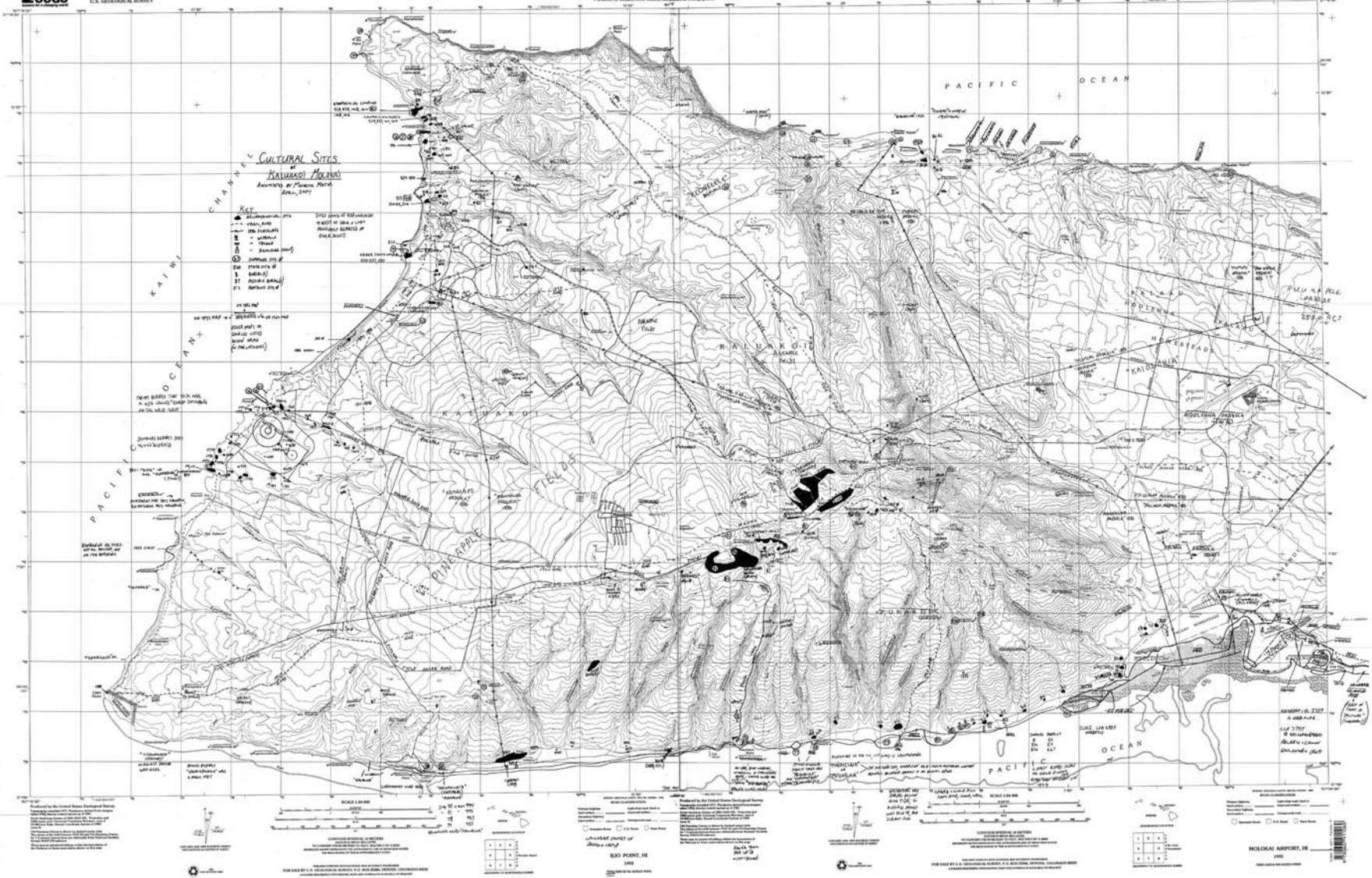
APPENDIX 1: MOLOKA'I RANCH LANDS MAP

MOLOKA'I RANCH LANDS



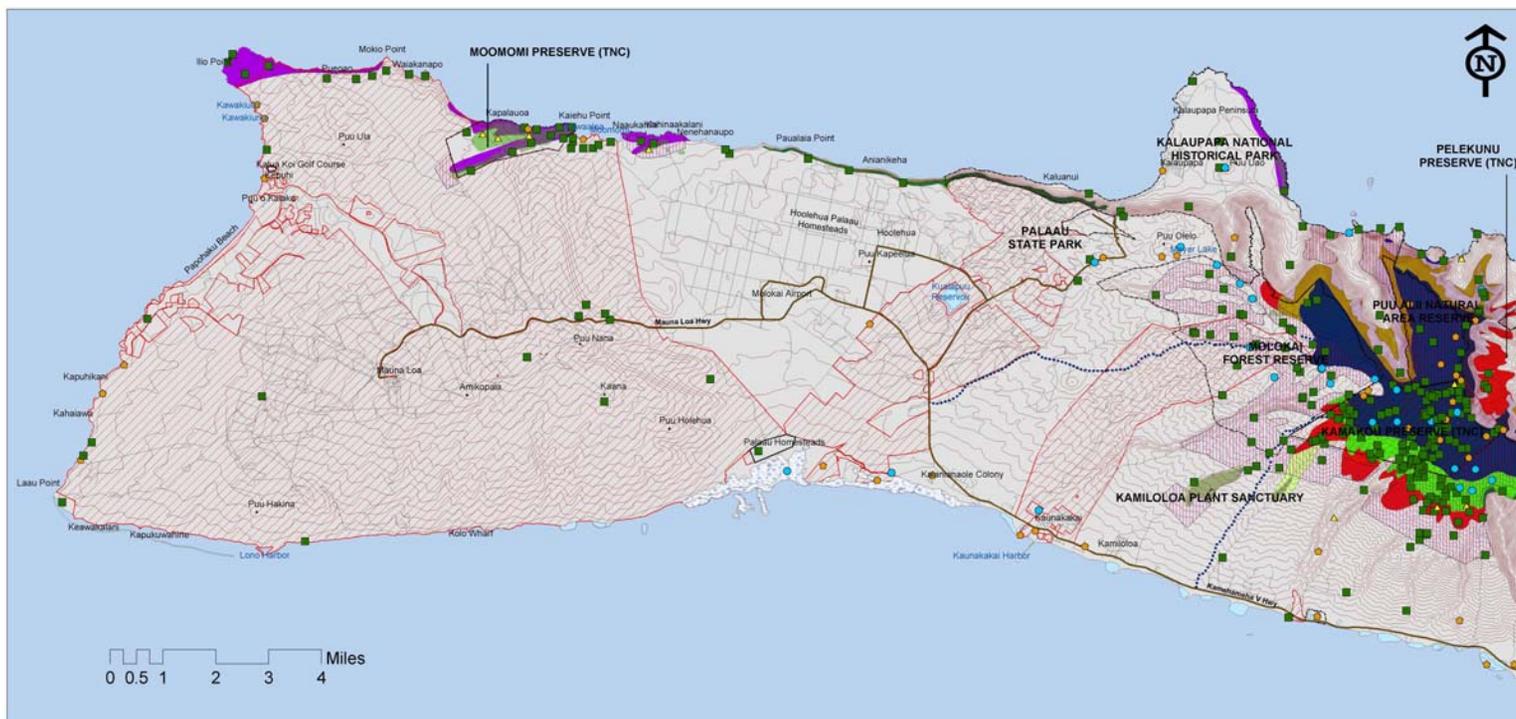
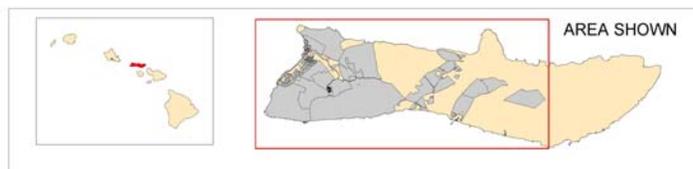
Map Prepared By:
The Conservation Fund
October 21, 2004

**APPENDIX 2: CULTURAL SITES OF KALUAKO'I MAP AND LĀ'AU
POINT CULTURAL & RESOURCE PROTECTION ZONE
MAP**



APPENDIX 3: NATURAL RESOURCES: TERRESTRIAL MAP, AQUATIC MAP, AND SUMMARY MAP

MOLOKA'I RESOURCE ASSESSMENT: NATURAL RESOURCES - TERRESTRIAL



Data Sources:

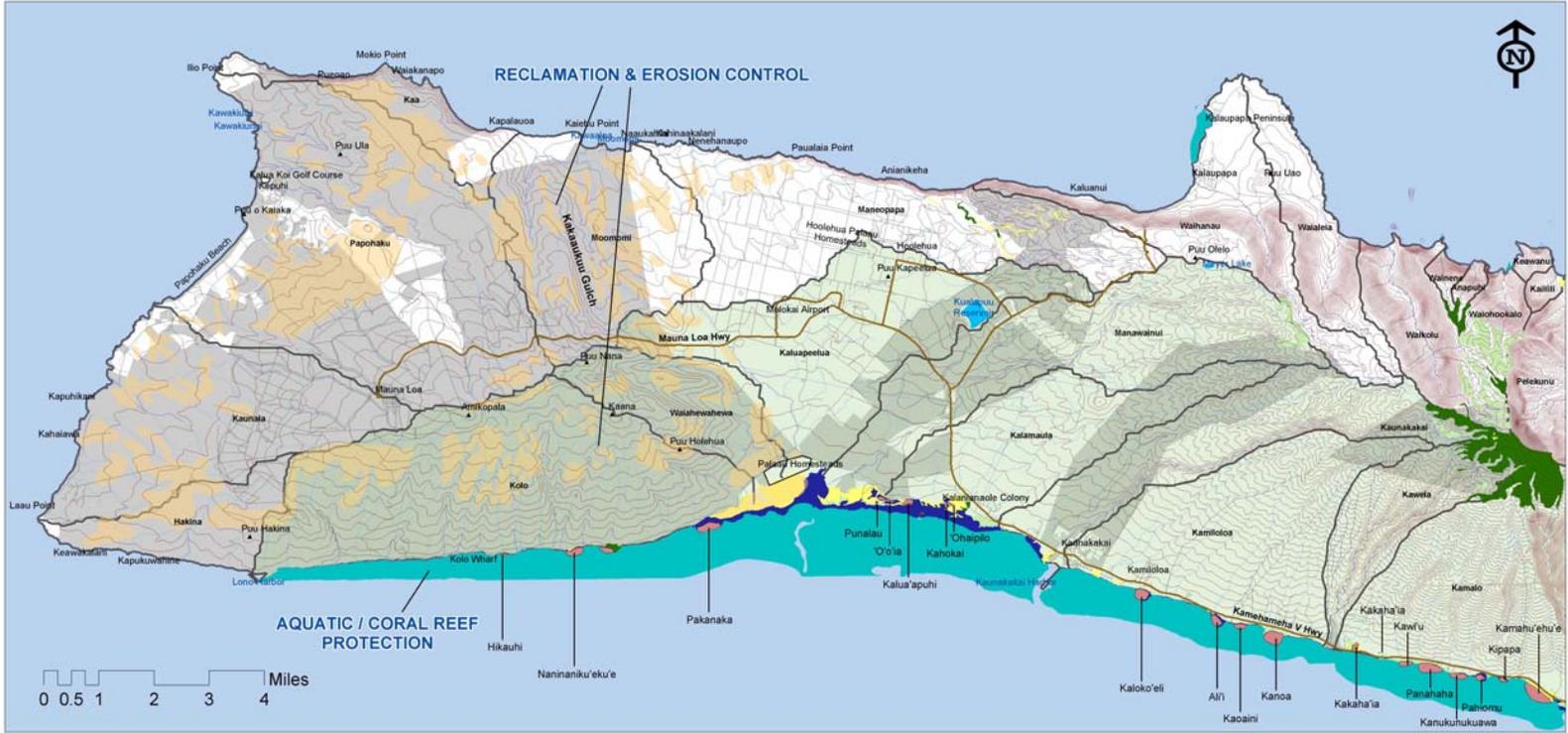
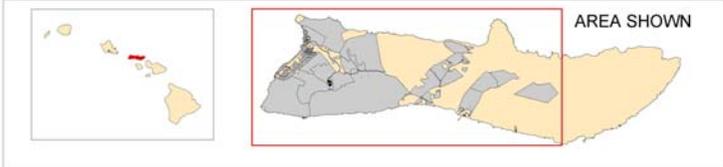
Natural Heritage Rare Species Occurrences - Hawaii Natural Heritage Program (TNC of Hawaii)
 USFWS Critical Habitat - USFWS
 Native Dominated Landscape Vegetation - HI NHP
 Protected Reserves - Hawaii Office of State Planning (OSP)
 Na Ale Hele State Trails & Access - Hawaii Department of Land and Natural Resources

Prepared By: The Conservation Fund
 May 19, 2004

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MOLOKA'I RESOURCE ASSESSMENT: NATURAL RESOURCES - AQUATIC



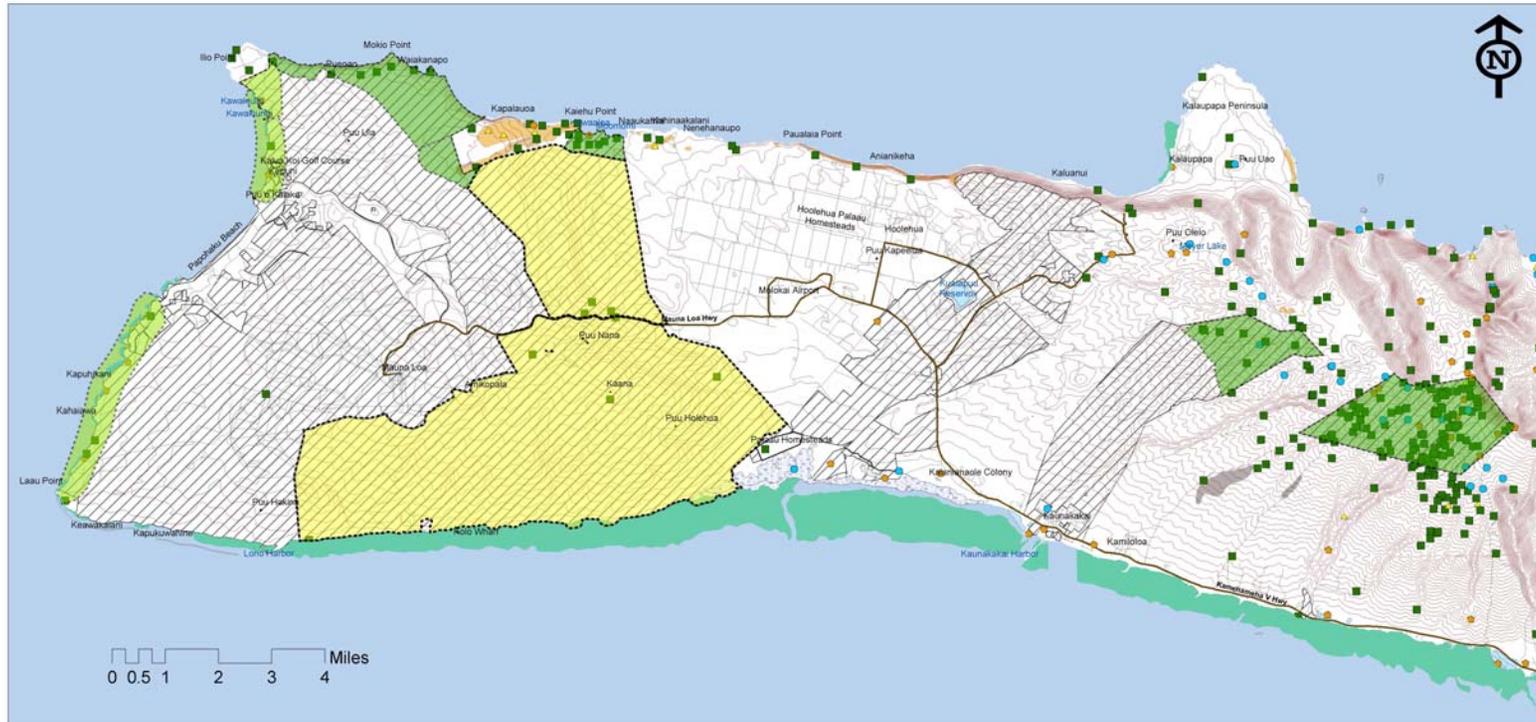
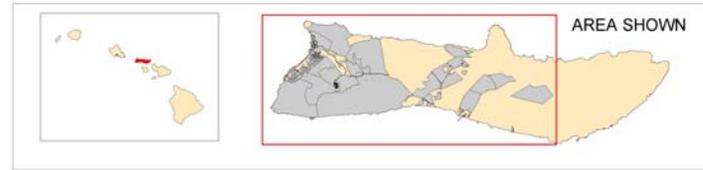
Data Sources:
 Hydrography - Perennial and intermittent streams and water bodies (USGS, 1983)
 Wetlands and Coral Reefs - USFWS / National Wetlands Inventory (WSI)
 Watersheds - Hawaii Department of Land and Natural Resources
 Erosion - Identified from Air Survey Hawaii, Inc. aerial photo (1999)
 Fishponds - HOSP

Prepared By: The Conservation Fund
 May 20, 2004

DRAFT

<ul style="list-style-type: none"> ■ Molokai Ranch Property ▭ Watersheds — Major Roads ~ 100' Contours ~ Perennial Streams ~ Intermittent Streams 	<ul style="list-style-type: none"> ■ Critical Watersheds for Coral Reef Protection ■ Erosion ■ Fishponds 	<p>Wetland Type</p> <p>Tidal</p> <ul style="list-style-type: none"> ■ Marine / Coral Reef ■ Estuarine <p>Non-tidal</p> <ul style="list-style-type: none"> ■ Riverine ■ Lacustrine ■ Palustrine - Emergent ■ Palustrine - Scrub/Shrub ■ Palustrine - Forested
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MOLOKAI RANCH RESOURCE SUMMARY: NATURAL RESOURCES



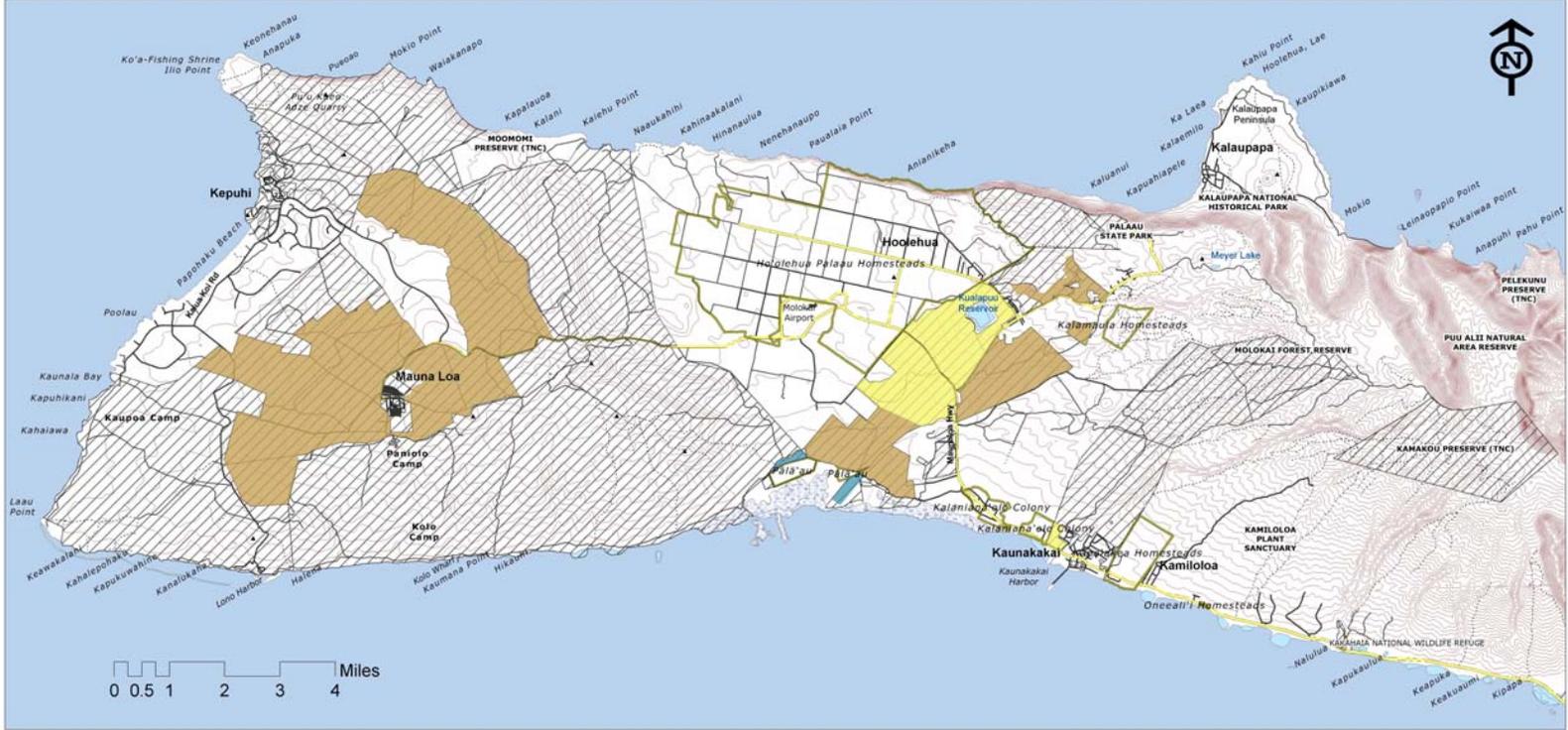
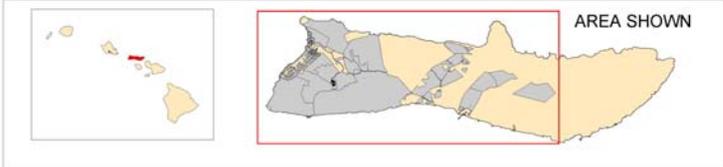
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August 6, 2004

Molokai Ranch Property	Natural Heritage Rare Species	Priority Areas (from Environment Committee)
Major Roads	Element Occurrence	Rare Species / Native Ecosystem Preservation
100' Contours	Vertebrate	Coastal Habitat Management Protection
Coral Reefs	Invertebrate	Watershed / Aquatic Resource Protection
	Plant	
	Natural Community	
	Polygons	
	Natural Community	
	Plant	

**APPENDIX 4: AGRICULTURAL SUITABILITY CLASSIFICATION &
PROPOSED AGRICULTURAL EASEMENT LANDS MAP
AND AGRICULTURAL EASEMENT LAND MAP**

MOLOKA'I RANCH MASTER USE PLAN: AGRICULTURAL EASEMENT LAND



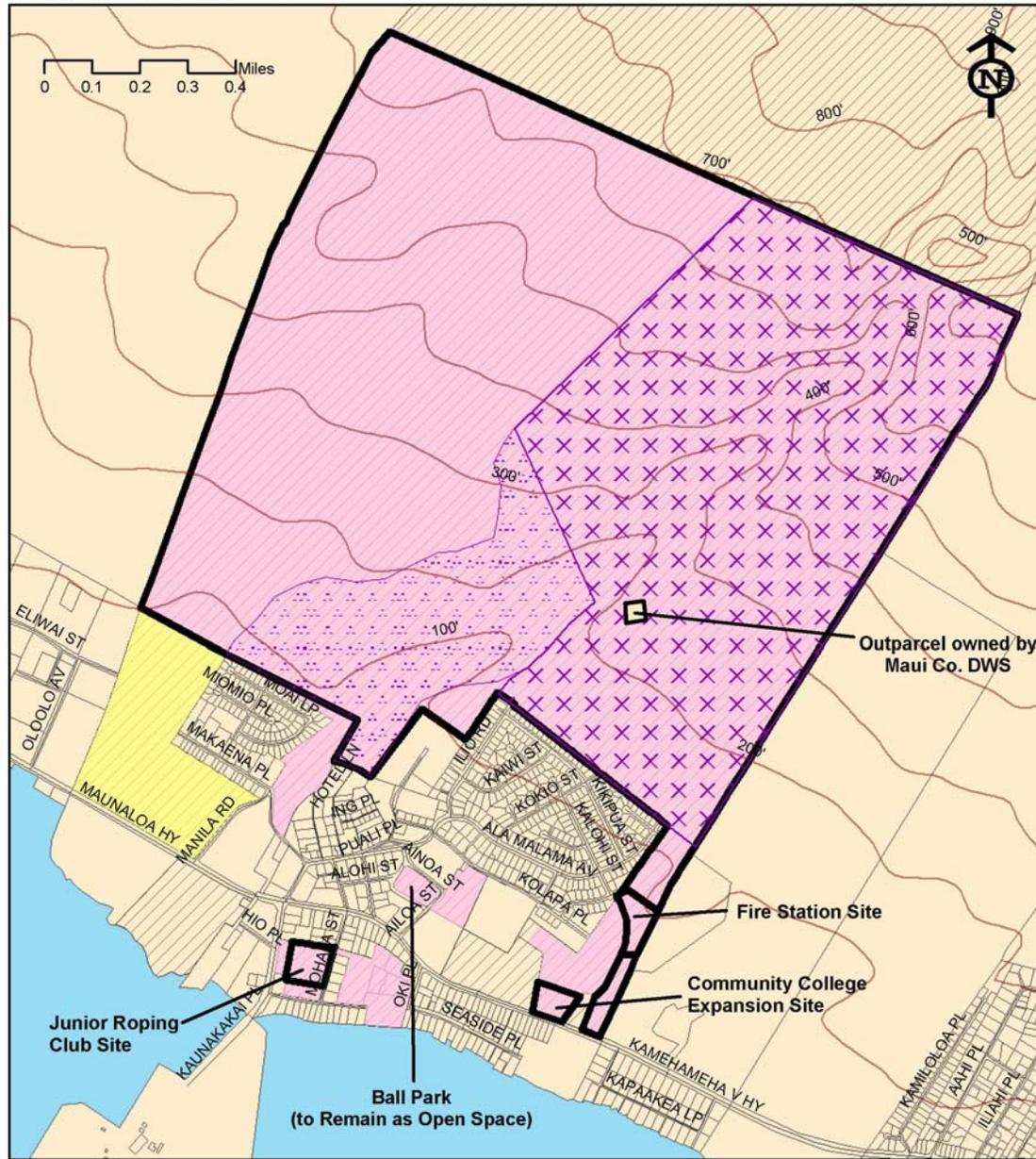
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Prepared By: The Conservation Fund
October 10, 2005

- | | |
|---|--|
| <ul style="list-style-type: none"> Molokai Ranch Property Major Road Secondary Road Minor Road 4WD Road Trail 100' Contours | <ul style="list-style-type: none"> Proposed Agricultural Districts Hi-Value or Intensive Agriculture Aquaculture Other/Extensive Agriculture |
|---|--|

**APPENDIX 5: COMMUNITY EXPANSION: KAUNAKAKAI MAP,
MAUNALOA AND KUALAPU'U MAPS**

MOLOKA'I RANCH MASTER USE PLAN - KAUNAKAKAI



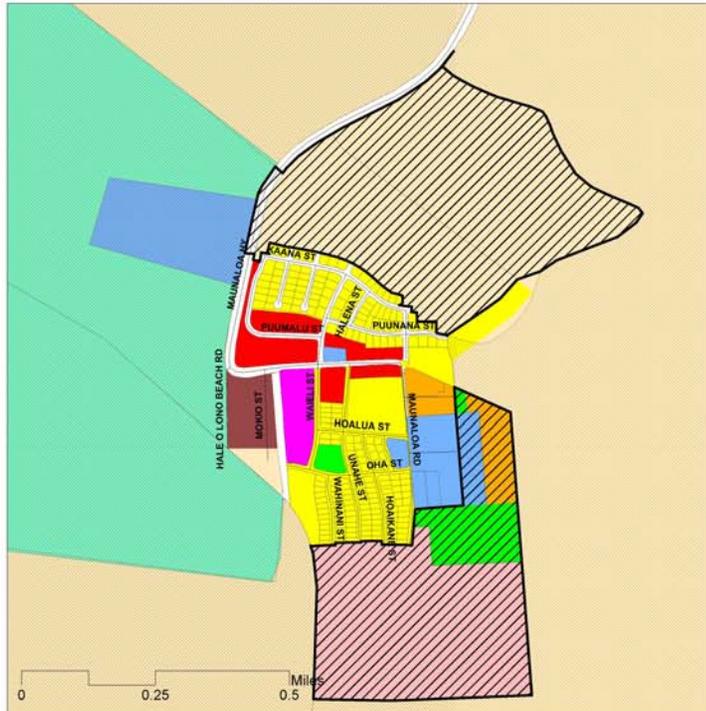
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Prepared By: The Conservation Fund
October 5, 2005

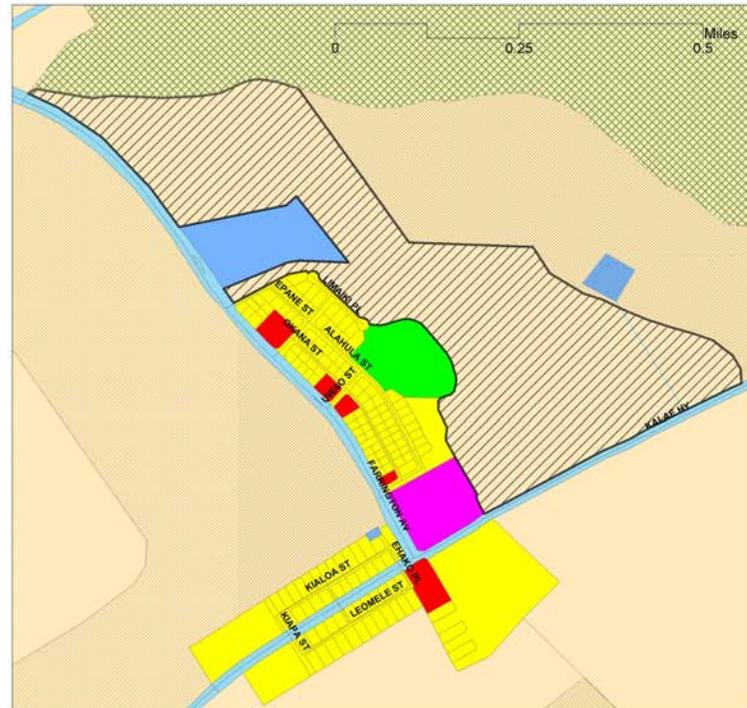
- | | |
|------------------------|------------------------------|
| Proposed Land Trust | Land Use Districts |
| Molokai Ranch Property | Agriculture |
| Maui Co. Tax Parcels | Community Expansion |
| Roads | Cultural Overlay Zone |
| 100' Contours | Area verified and documented |
| | Area needing further study |

MOLOKA'I RANCH MASTER USE PLAN COMMUNITY EXPANSION

Maunaloa



Kualapu'u



DRAFT



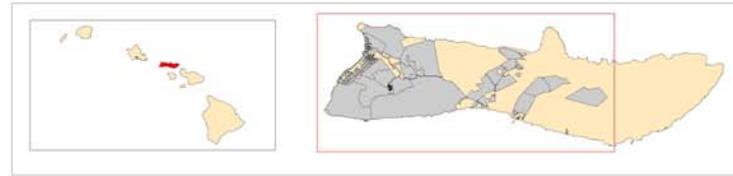
Prepared By: The Conservation Fund
October 10, 2005



APPENDIX 6: HUNTING MAP

APPENDIX 7: SUBSISTENCE FISHING MANAGEMENT ZONE MAP

MOLOKA'I RANCH MASTER USE PLAN SUBSISTENCE FISHING MANAGEMENT ZONE



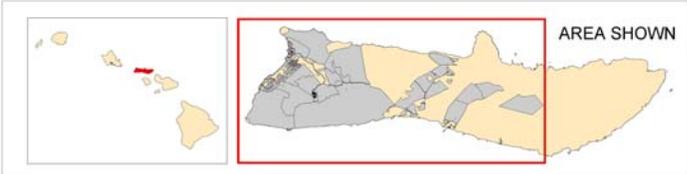
DRAFT

Map Prepared By:
The Conservation Fund
October 7, 2005

- | | | |
|---|------------------------|----------------|
| Community-Based Subsistence Fishing Zone | Molokai Ranch Property | Major Road |
| Adjacent to MPL and Trust-Owned Lands | Homestead | Secondary Road |
| Contingent on Partnership Agreements | Camp | Minor Road |
| | Ancient Fishpond | 4WD Road |
| | | Trail |
| | | 100' Contours |

APPENDIX 8: RECREATION/TRAILS MAP

MOLOKA'I RANCH RESOURCE SUMMARY: RECREATION / TRAILS



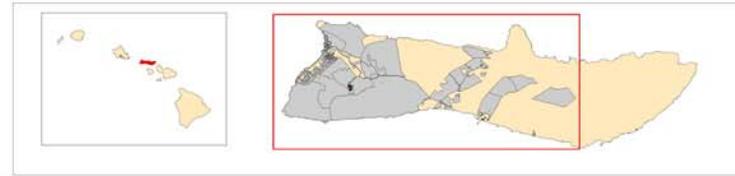
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Prepared by: The Conservation Fund
October 10, 2005

- | | | | |
|------------------------|----------------|------------------------------|---------------------|
| Molokai Ranch Property | Major Road | Cultural Trail | Horse Trails |
| Homestead | Secondary Road | Historic Monsarrat Trail | Active |
| Coral Reef | Minor Road | Na Ale Hele State Trail | Active / Seasonal |
| Camp | 4WD Road | Bike / Hike Trail - Inactive | Less Active |
| Golf Course | Trail | | |

APPENDIX 9: CULTURAL RESOURCE OVERLAY ZONE MAP

MOLOKA'I RANCH MASTER USE PLAN CULTURAL RESOURCE OVERLAY ZONE



Data Sources:

USGS Hawaii Data Clearinghouse
Roads, Homesteads
Hawaii Office of Planning
Contours, Molokai Ranch Property,
Place Names, Fish Ponds
Maurice Major, Archaeologist
West End Archaeological Survey Data
Cultural and Land Use Committees
Other Archaeological Sites, Makahiki Grounds,
Land Use Districts and Overlay Zones

DRAFT

Prepared By: The Conservation Fund
October 7, 2005

- Molokai Ranch Property
- Cultural Resource Protection Overlay
- Homestead
- Major Road
- Secondary Road
- Minor Road
- 4WD Road
- Trail
- Subsistence Fishing Zone
- Partnership Subsistence Fishing Zone
- West End Arch. Sites (M. Major)
- Additional Archaeological Sites
- Kualapu'u Makahiki Grounds
- Ancient Fishponds
- Camp

APPENDIX 10: REFERENCES

REFERENCES

- Maui County. Department of Planning. "Moloka'i Community Plan" (2001).
<<http://www.co.maui.hi.us/departments/Planning/pdf/molokai.pdf>>
- Nature Conservancy, The (2005). "Kamakou Preserve" and "Mo'omomi Preserve".
<<http://nature.org>>
- Summers, Catherine C. (1971). "Molokai: A Site Survey". Department of Anthropology, Bernice P. Bishop Museum. Honolulu, Hawaii.
- University of Hawaii, Department of Urban & Regional Planning (2005).
"Pāpōhaku Dunes Draft Preservation Plan." Planning Practicum Spring 2005.

Appendix B
Shoreline Access Management Plan

Pu'u Hakina & Kamaka'ipo

Shoreline Access

Management Plan

August 14, 2007

I. Introduction and Statement of Purpose

This Shoreline Access Management Plan (SAMP) is for the coastline on the island of Moloka'i, adjacent to Kalae o Ka La'au, on the south shore eastward to Pu'uHakina and on the west shore northward through Kamaka'ipo to Kaupoa on the Island of Molokai (known as the La'au development). It is the result of a long and involved process whereby the Molokai Community, through various organizations and Molokai Properties Limited created a vision for the future of Molokai Ranch. A part of that vision is the creation of a unique, environmentally, culturally and socially sensitive community of 200 homes overlooking the Pu'uHakina & Kamaka'ipo coastlines. The expression of this vision, the "Community Based Master Land Use Plan for Moloka'i Ranch" (the Master Plan), outlined environmental, social and cultural issues posed by the La'au development and how they could be mitigated. This SAMP is the method by which some of the protective measures set forth in the Master Plan can be implemented.

The SAMP was created by the Molokai Land Trust, the Maunaloa subsistence community and Molokai Ranch with the input of area stakeholders. It is intended to be a flexible document, allowing the Molokai Land Trust and the Pu'u Hakina & Kamaka'ipo Homeowners Association the ability to adapt the plan to changing needs and to make changes based on lessons learned.

The Plan sets forth rules and guidelines for Pu'u Hakina & Kamaka'ipo homeowners and visitors to the Pu'uHakina & Kamaka'ipo area with regard to:

1. Access to the property;
2. Social and Cultural sensitivity;
3. Preservation of Environmental resources;
4. Preservation of Cultural resources;
5. Preservation of Marine resources;
6. Recognition of subsistence gathering rights; and
7. Protection of endangered/protected species.

Pursuant to the Master Plan, certain areas within the Pu'u Hakina & Kamaka'ipo development will be subject to a conservation easement. The title to these lands are to be held by the Pu'u Hakina & Kamaka'ipo Homeowner's Association (the "Association") subject to the conservation easement held by the Land Trust. The area will be governed jointly by both. The Kamaka'ipo Gulch, which will be deeded to the Land Trust, is also covered by this document. This SAMP acts as the blueprint for that joint governance.

Chapter 4 of the Master Plan contains community guidelines for land use principles and policies to manage the cultural and natural resources of the Managed Area and appropriate access. Chapter 4 is attached hereto as Appendix A. These guidelines provide the foundation for this SAMP. The SAMP elaborates and refines the Master Plan guidelines and also outlines methods and an organizational framework for their implementation.

Under the *Pu'u Hakina & Kamaka'ipo Declaration of Covenants*, Section 10.13, this SAMP is binding on homeowners and residents of Pu'u Hakina & Kamaka'ipo and their guests.

II. Management, Operations and Resource Management

A. Geographic Area

The SAMP covers the 451 acre area contained in the Pu'u Hakina & Kamaka'ipo development and Kamaka'ipo Gulch above the shoreline as set out in Exhibit "A" (the "Managed Areas"). It is specifically recognized that the Land Trust does not have control over the Association Common Area, marked in dark green on Exhibit A).

Generally the Managed Areas are makai of the project roadway to the shoreline with the exclusion of the individual subdivided lots. It also includes the two parks at either end of the development (17 acres) and the 128 acres of the culturally significant Kamaka'ipo Gulch that has been donated to the Land Trust.

B. Governance and Control

The area covered by the SAMP is initially held by MPL and will be transferred to the Pu'u Hakina & Kamaka'ipo Homeowner's Association upon formation of the Association.

1. SAMP Management Council: The effectuation of the SAMP and management of the SAMP Area shall be the responsibility of the "SAMP Council". The SAMP Council shall be made up of a total of 10 members with equal voting rights.
2. Rules and Bylaws: Members shall be appointed and the Council will conduct business in accordance with the "Rules and Bylaws of the Pu'u Hakina & Kamaka'ipo Shoreline Access Management Council".
3. Council Membership: The Council shall consist of 10 members appointed as follows:
 1. Five members to be appointed by the Land Trust who meet one or more of the following criteria:
 - a. One such member appointed by the Land Trust shall be a Molokai Ranch employee
 - b. One such member appointed by the land Trust shall be a resident of Maunaloa who is a traditional subsistence practitioner/user of the Pu'u Hakina & Kamaka'ipo area.
 - c. One such member appointed by the Land Trust shall be a person with significant knowledge of the cultural sites and practices in the Pu'u Hakina & Kamaka'ipo area
 2. Five members to be appointed by the Association
4. Decisions of the Council:: Decisions made by Council members appointed by the Land Trust and the Association shall be by consensus.
5. Council Powers, Duties and Obligation: It is the obligation of the Council to manage and care for the Managed Areas of Pu'u Hakina & Kamaka'ipo consistent with spirit and purpose of the Master Plan. In general, the council will have the power to:
 - a. Make rules and requirements for access to the Pu'u Hakina & Kamaka'ipo area under its control
 - b. Create and effectuate management plans
 - c. Develop a budget, assess fees and spend moneys to further its goals

- d. Undertake regular monitoring programs of the resources and the effectiveness of its management plans and protective measures
 - e. Hire personnel necessary to manage and protect the resources and enforce the rules and regulations of the SAMP
 - f. Develop and provide any educational programs required by this SAMP.
 - g. Enforce its rules, regulations and protective measures by any legal means available, to decide on penalties for violation by restricting or denying access to the Managed Areas for violation of the SAMP.
6. Resource Management: The guidelines contained in Appendix A (Chapter 4 of the MasterPlan) constitute the foundation for management of the cultural and natural resources in the Managed Area under this SAMP. This SAMP elaborates and refines the Master Plan guidelines and also outlines methods and an organizational framework for their implementation.
- a. Management Plans – Prior to promulgation of any rules and regulations in addition to those contained in this SAMP for the Managed Area and the guidelines and policies of the Master Land Use Plan, the Land Trust shall complete and the Council shall approve, management plans that ensures the protection of the various resources found in the Managed Area, to include:
 - i. The inventory of the existing natural and cultural resources, as contained in the La’au Point final EIS document;
 - ii. A monitoring program designed to both monitor the status of the resources and the effectiveness of the mitigation measures;
 - iii. The monitoring of potential impacts to the resources, such as water quality and marine habits;
 - iv. Recommendations on additional, enforceable rules to effectuate the mitigation measures;
 - v. Suggested access regulations and guidelines;
 - vi. A budget for the effectuation of the plan, and
 - vii. Any other matter relevant to the protection of the resources.
 - b. Types of Management Plans – The Council shall develop, at a minimum, management plans that cover:
 - i. Cultural resources ;
 - ii. Natural resources (marine & terrestrial);
 - iii. Subsistence use;
 - iv. Public access
7. Resource Manager(s): The Council shall retain “Resource Manager(s)” to implement Management Plans.

The Resource Manager(s) will be responsible for:

- i. The enforcement of any rules and regulations associated with the SAMP and implementation of the Management Plans

- ii. The enforcement of rules and regulations regarding access
- iii. The general stewardship of the resources
- iv. Day to day monitoring of the resources
- v. Ensure that overfishing of the subsistence resource does not occur
- vi. Closing any areas to subsistence fishing during periods of spawning or hatching, or because of the likelihood of over-fishing.
- vii. Ensure that those who access the area have received the appropriate educational training.

8. Education:

- a. It is recognized that one of the key mitigation measures set forth in the Master Plan is the education of all residents, visitors and users of the area. The education program will include an overview of the Molokai Community; the Spiritual and Cultural significance of the Pu'uHakina & Kamaka'ipo area and its sites and resources; the rights to access and common practices of the Pu'uHakina & Kamaka'ipo traditional users; the sensitivity of the environment and good stewardship practices required of users of the area.
- g. In order to ensure that social conflict is minimized and that there is an understanding of these issues and to ensure that homeowners and users of the property are aware of the rules and regulations governing the Managed Area, an educational program will be developed by the Council in association with experts in various resources.
- h. The education program will develop educational materials and programs for all users
- i. The education program shall:
 - i. Be required of all homeowners and all visitors to the area.
 - ii. Be of a level sufficient to meet the goals of the management plan.
 - iii. Be developed with input of the community.
 - iv. Meet the requirements of Homeowner education, Molokai community education and Managed Area users.
 - v. Include development and placement of all cultural, natural resource and environmental informational and regulatory signage for the Managed Area.
 - vi. Include rules and regulations for the cultural and natural resources.
 - vii. Include an explanation of penalties and enforcement.
- j. The education program shall be designed to educate with regard to:
 - i. Cultural practices and protocols
 - ii. Cultural sensitivity and respect
 - iii. Environmental protection and concerns
 - iv. The historical significance of the area's sites and resources
 - v. The Molokai Community values, traditions and culture

9. Enforcement: the Council shall adopt rules and procedures for enforcement of this SAMP which provide for accountability, a penalty process and a protocol for uses with established consequences for non-compliance.

- a. The Resource Manager(s) shall be empowered to enforce the SAMP and notice violations.
- b. Penalties may include:
 - i. Ejection from the premise
 - ii. Reporting of trespass violations for prosecution.
 - iii. Prohibition on access for a period of time

- c. Unless legally empowered by the State or County to do so, the Resource Manager(s) shall not act as a police force and detain or “arrest” any person.
- d. Resource manager(s) are to notify persons of their violation, request conformance and if refused, will report the violation to the Council.
- e. If immediate action is required to protect any of the resources on the Managed Area of any type, the Manager(s) will call the police for assistance in removing the person from the premises.

III. Access - General

A. Purpose and General Principles:

In development of the Master Plan, the Molokai Community sought to protect the pristine nature of the Managed Area and expressed concern that what had formerly been an area which was accessible only by foot and by few residents because of its remoteness, would suddenly be subject to significant increases in visitation by residents and visitors.

In particular, concern was expressed that unfettered access would be detrimental to the biological, cultural, spiritual and subsistence resources of the area. There was also concern that Pu’u Hakina & Kamaka’ipo homeowners would have preferential access to the shoreline. In order to ensure equal access and to mitigate impacts to the resources of the Managed Area, a system of limited access is set forth in this SAMP.

In addition to the general access guidelines contained in Appendix A (Chapter 4 of the Master Plan), the following specific provisions shall be instituted.

B. Access Points:

- 1. Vehicular access to the Managed Areas shall be limited to the two public parks. One located adjacent to Hale O Lono and the other at Kamakap’ipo gulch.
- 2. Parking will not be allowed along the Pu’u Hakina & Kamaka’ipo community access roadways.

C. Non-Vehicular Access Only: Access beyond the two parks shall be by foot only.

- 1. Vehicular traffic is specifically prohibited.
- 2. Off-road vehicles, ATV’s, motorcycles and any other motorized vehicle are specifically prohibited, except as needed by the Resource Managers.
- 3. Bicycles can be permitted in the Managed Area only as determined from time to time by the Council.

D. Emergency Access:

- 1. Vehicular access will be allowed for the fire department, ambulance, police or any other first responder.
- 2. Vehicular access will be allowed for any vehicle transporting volunteers to assist in fighting a fire.

E. Special Access Permit:

1. Any person who wishes special access to the Managed Area for cultural or other purposes, who are disabled or unable to enter the premises on their own may request permission and assistance from the Council or its designee.
2. Assisted access (including vehicular) may be provided at the discretion of the Council or its designee in an appropriate manner and under conditions designed to protect the resources of the area.
3. Provision of assisted access is at the sole discretion of the Council and its designee.

F. General Requirements for Access:

1. The Council may set whatever reasonable requirements on access it deems necessary to further the goals of this SAMP.
2. The Council may set hours and limitations for access. The initial hours of access are limited to daylight hours.
3. Persons wishing to access the property for any reason will be required to check in at a resource management center to obtain current rules including any restrictions or resource management measures put in place by the council.
4. Persons wishing to access the property will be required to sign a liability waiver upon check in and agree to adhere to the rules and regulations developed under the SAMP.
5. Persons wishing to access the area will be familiarized with the rules associated with endangered species protection including those regarding Monk Seals.

G. Camping: The criteria for camping and any exceptions should be developed in accordance with the guidelines in Appendix A. The SAMP shall provide for accountability, a penalty process and a protocol for users with established consequences for non-compliance.

1. Camping will only be allowed in areas set by the Council that will not impact the cultural or environmental resources of the Managed Area based upon carrying capacity, sanitation, sustainability of the available resources and seasonal variations.
2. Camping is allowed in the Managed Area at the discretion of Resource Manager.
3. Persons wishing to camp on the property will meet all of the requirements for general access and any additional requirements set by the Council or its designee.
4. Campers must sign in and out of the Managed Area.
5. Camping will be on weekends no earlier than Friday or later than Sunday, unless Friday or Monday are holidays.

H. Pets, Domestic Animals and Hunting Dogs:

1. No domestic pets or other animals will be allowed in the Managed Areas.
2. Hunting Dogs are not allowed in the Managed Area
3. Allowing any animals to harass or approach Monk Seals is specifically prohibited and subject to prosecution under State and Federal law and immediate ejection from the Managed Areas for a period not less than one year.

IV. Subsistence Resource Management & Activity

A. Purpose and General Principles:

Subsistence fishing and gathering has long taken place in the Pu'u Hakina & Kamaka'ipo geographic area, especially by longtime Ranch families and residents of the Maunaloa community. In the course of developing the Master Plan subsistence fisherman and gatherers were concerned that the opening up of the area to public access would deplete the marine resources. In order to ensure that the resources are protected the Council will, in accordance with this SAMP, adopt rules, protocols and permitted activities for persons engaged in subsistence activity.

The following is the initial framework for an eventual set of protocols based on the assessment in the EIS developed for the subsistence resources and in addition to the guidelines in Appendix A (Chapter 4 of the Master Plan).

B. Initial Assessment of Resources

An initial Assessment of the Marine Resources is detailed in the Marine Biological and Water Quality Baseline Surveys, La'au Point, Molokai" prepared by TEC Inc. for Molokai Properties Limited and made a part of the EIS for La'au Point.

C. Preservation of Resources:

1. The Council shall promulgate rules and regulations designed to preserve and enhance the sustainability of the Marine Resources adjacent to the Managed Area. These rules shall include regulations regarding:
 - a. Limitations on individual catch
 - b. The strict enforcement of the rule that subsistence users can only "take what they can carry with them".
 - c. Prohibitions on commercial activity, defined as taking from the ocean more than the user is able to carry from the Managed Area.
 - d. Prohibitions on taking of various resources on a seasonal basis.
 - e. The protection of breeding grounds
2. These rules must be adhered to in order to gain access to and from the resources through the Managed Area
3. The carrying and proposed use of gill nets in the ocean and accessed from the resource area is specifically prohibited in order to protect the endangered Monk Seals.
4. A monitoring program will be developed that incorporates both scientific and anecdotal evidence.
5. Permits will be required for seasonal subsistence gathering
6. Catch reports may be required of subsistence gatherers.
7. Boat fishing (by access from the Managed Areas) is specifically prohibited
8. Opihi gathering will be limited to subsistence only and limits will be set by the Council.

D. Access Requirements for Subsistence Practitioners:

1. All access to the area will be by permit only. A permit will be issued upon completion of the Access Education Program mentioned below.
2. Attendance and completion of the Access Educational Program will be required to obtain a permit. The program will consist of education classes in traditional subsistence gathering, access responsibilities and safety and be administered by the Molokai Land Trust.
3. All visitors to the Managed Lands must sign in with a Resource Manager.
4. Subsistence practitioners will be required to sign liability waivers as a condition of access.
5. As La'au Point (US Coast Guard Parcel) is a hazardous area, access through the Managed Area for subsistence gathering at La'au Point will be limited to experienced practitioners only. .

E. It is recognized that these rules apply only for subsistence harvesters wishing to utilize the Managed Area for access to the beach. It is the intent of the LPHA & the Land Trust to promulgate formal rules through Hawaii DLNR Division of Aquatic Resources to establish a community-based subsistence fishing management area from the shoreline out ¼ mile on the west side and on the south side to the outer edge of the reef.

V. **Cultural Resource Management**

A. Purpose and General Principles:

The Cultural resources of the Managed Areas are set forth in detail in the Cultural Resource Assessment and the Archaeological Assessment attached to the "La'au Point Final Environmental Statement" as Appendix E and F. The SAMP is designed to preserve and protect the Cultural Resources and to ensure their use and safety for generations to come.

In addition to the cultural resources management guidelines contained in Appendix A (Chapter 4 of the Master Plan), the following specific provisions shall be instituted.

B. Cultural Resource Management Plan:

1. Keeping in mind the need to keep the location of many sacred resources confidential, the Council will develop a Cultural Resource Plan for the Managed Area based on the attached Cultural Report and Archeological Survey prepared for the EIS for La'au Point and the guidelines in Appendix A (Chapter 4 of the Master Plan).
2. The Plan will be in conformance with the Archaeological Preservation Plan prepared for the La'au Point area.
3. Monitoring Plan shall incorporate the Archaeological Monitoring Plan prepared for the La'au Point area.
4. The Management Plan will be regularly reviewed and modified in accordance with the data obtained under the Archeological Data Recovery Plan for the La'au Point area.

5. The Management Plan will designate “Kapu” areas where general access will not be permitted without the permission and supervision of a Resource Manager
6. Appropriate signage will be developed for placement on the property to educate and inform any person accessing the property to protect the Cultural Resources.
7. The Cultural Resource Management Plan shall, where possible, designate significant areas rather than carving out individuals sites for management.
8. Where “stand alone” sites are identified for protection, reasonable and appropriate buffer zones will be designated around the site to ensure protection of the resource.

C. Stewardship of Cultural Sites:

1. The Council will designate *Kahu* (traditional steward) for complexes and sites, as set forth in Appendix A, and other areas it may designate, to assist in preserving the Cultural Resources of the managed area.
2. The *Kahu* shall be knowledgeable in Hawaiian culture and of the cultural practices in the La’au area.
3. Cultural Resource Manager(s) may be volunteer “Kupuna” or others familiar with the area.
4. Kahu shall be consulted before prior to decisions be made affecting their area of designation.
5. Responsibilities of Kahu and Stewardship Resource Person or Resource Manager include, but are not limited to:
 - i. Ongoing monitoring of sites – annual assessment during dry season;
 - ii. Identify and prioritize sites for stabilization;
 - iii. Develop resources for site stabilization and restoration;
 - iv. Develop any interpretative signage markers and trails of access;
 - v. Identify and prioritize sites for re-dedication;
 - vi. Train stewards in mo’olelo protocols and responsibilities of stewardship for each site;
 - vii. Implement Management plans; and
 - viii. Manage research requests.

D. Requirements for Access to Cultural Resources:

1. Sites can be accessed to fulfill traditional and customary Native Hawaiian responsibilities for cultural, religious and subsistence purposes and shall follow protocols established by the kahu for the site.
2. In order to protect the resources on the Managed Area those wishing to Access the property shall adhere to the requirements of this Section C.
3. Attendance and completion of the Access and Educational Program shall be required.

4. Check in with the Resource Manager is required prior to entry.
5. If a “kapu” area is to be visited or any Cultural or Archaeological resource visited, the person(s) wishing access shall be accompanied by a Cultural Resource Manager.
6. Commercial tour groups and Commercial operations and activities are specifically prohibited
7. Any person damaging or desecrating a cultural resource shall be denied further access to the managed area for a time period and under conditions set by the Council.
8. Adherence to the terms of this SAMP is required for access.
9. Education and training activities can be organized through the kahu or the resource manager(s).
10. In some cases access may be seasonal, such as during the non-hunting season, rainy/muddy season.

VI. Monk Seal Protection Program

A. Purpose and General Principles:

The Hawaiian Monk Seal is a protected species under the Federal Endangered Species Act and the Marine Mammals Protection Act. Monk Seals have been known to frequent the shoreline fronting the protected lands. Although the SAMP has no direct impact on activities taking place below the shoreline, what goes on in the Managed Areas can have an impact on the shoreline and potentially, the Monk Seals themselves.

Both from a legal standpoint and as stewards of Hawaii’s marine resources, the users of the Managed Areas have an obligation to ensure that they do not have an adverse impact on the Monk Seals visiting the Shoreline area.

Since 1984, a total of 169 Monk Seal sightings have been documented on the shoreline of the Managed Area. Most of these were documented in 2005 and 2006 when increased observations occurred. To date a total of 18 identifiable individuals have been documented. Of the 18, nine were known to have been born at Kalaupapa Peninsula and one was born somewhere on the south shore of the Managed Area.

A number of features of the Pu’u Hakina & Kamaka’ipo area make it desirable habitat for the seals. These include:

1. Remoteness;
2. The sandy beach substrate; and
3. Proximity to the Monk Seals foraging area (Penguin Bank).

In order to protect and maintain the Monk Seal population, threats posed by human caused disturbances, threats from dogs (physical harm and disease transfer) and hooking and entanglement associated with shore based fishing must be prevented or mitigated. The interaction between Monk Seals and subsistence gatherers, fisherman and anyone using the Pu’u Hakina & Kamaka’ipo area must be regulated and minimized.

B. Requirements for Access:

1. Everyone accessing the property must be educated on the law, rules and protocols associated with Monk Seal protection.
2. All of the requirements set forth in this SAMP for access must be adhered to including those regarding check in and vehicular access.
3. Anyone sighting a Monk Seal is obligated to immediately notify the Resource Manager giving the time and location of the sighting

C. Restrictions on Activities:

1. All domestic animals are specifically prohibited from the Managed Area.
2. Gill nets are specifically banned from use from the access area at Pu'uHakina & Kamaka'ipo
3. No person shall approach within 50 feet of a Monk Seal.
4. Fishing of any type is banned from within ¼ mile from any Monk Seal whether resting on the beach or sighted in the water.
5. The use of toxins or pesticides is prohibited in the shoreline area.

D. Enforcement and Regulation:

1. The Resource Manager will post signs in regular intervals along the shoreline explaining the rules regarding Monk Seals.
2. The Resource Manager will be responsible for cordoning off areas, erecting signs around resting Monk Seals and setting designating areas closed to fishing as a result of a Monk Seal sighting.
3. The Resource Manager shall be responsible for reporting the Monk Seal sighting to the NOAA and taking whatever actions are required by NOAA to ensure the safety of the Monk Seal.
4. The Resource Manager shall be responsible for enforcement of all of the Monk Seal protection rules, regulations and protocols.
5. The Resource Manager may report any violation of Federal or State law to appropriate authorities and act as witness in the prosecution of any person violating federal or State law.
6. The Resource Manager shall be trained as a Monk Seal Protection Specialist.
7. The Resource Manager will be responsible for notifying NOAA of entangled Seals.
8. The Resource Manager will be responsible for removing, or causing to be removed, debris that may be harmful to Monk seals from the shoreline area.
9. The Resource Manager will regularly monitor the shoreline area for contaminants that may be harmful to Monk Seals.

7. The Resource Manager will work with NMFS to develop a volunteer seal monitoring program.

VI. Terrestrial Biological Resources:

A. Purpose and General Principles:

The purpose of this SAMP is to protect the environmentally sensitive features of the Managed Areas, including native, rare, threatened and endangered plants and animals which may be found and significant native habitats. To date, one endangered plant species has been found on the site, the 'ihi'ihilauakea (*Marsilea villosa*). Native bird species have been reported from the Managed Areas, but none are rare, threatened or endangered.

In addition to the environmental principles and policies contained in Appendix A (Chapter 4 of the Master Plan), the following specific provisions shall be instituted.

B. Initial Assessment of Resources

An initial assessment of the terrestrial resources is detailed in the "Botanical Survey" and the "Avifaunal and Feral Mammal Field Survey" prepared for the "La'au Point Environmental Impact Statement".

C. Preservation of Resources:

1. The Council shall promulgate rules and regulations designed to preserve and enhance the sustainability of the Terrestrial Resources contained in the Managed Areas. These rules shall include regulations designed to protect native, rare, threatened or endangered species and habitats founding the Pu'u Hakina & Kamaka'ipo ecosystem.
2. The Council will develop a Natural Resource Management Plan (as outlined in paragraph 6) to identify management needed for these significant terrestrial resources based on the attached Surveys prepared for the La'au Point EIS.
3. Areas where rare, threatened or endangered plants or animals are found will be marked with informational/educational signs and managed such that access will be controlled or denied.
4. Any area closed to access will include a buffer zone to further ensure protection of the sensitive species or habitats.
5. A monitoring program will be developed that incorporates both scientific and anecdotal evidence designed to monitor the environment or ecosystems and to ensure the viability of priority native species and habitats and gather data on their population and progress.
6. The Management Plan and restricted areas will be regularly updated based on the results or findings of the monitoring program.

D. Enforcement:

1. The Resource Manager shall enforce the rules and prohibitions and ensure implementation of the Management Plan for the protection of native, rare, threatened and endangered terrestrial species and habitats.
2. The Resource Manager may report any violation of Federal or State law including the Endangered Species Act to appropriate authorities and act as witness in the prosecution of any person violating federal or State law.
3. All individuals (staff, contract or volunteers) implementing the Management Plan will be required to complete the Access and Education Program and coordinate their activities with the Resource Manager(s).

VII. **Revocation and Modification**

This SAMP may not be revoked, modified or amended without approval of all the voting members of the Council.

VIII. Subsistence Fishing Area:

Upon designation of the Community-Based Subsistence Fishing Management Area by the State of Hawaii, this Shoreline Access Management Plan will be amended to cover the ocean area proposed for subsistence protection.

Appendix C
Conservation Easement Document

by reference.

B. In connection with and under the conditions of the *Community-Based Master Land Use Plan for Molokai Ranch*, Grantor is to grant to Grantee easements over a portion of the property consisting of **306 acres** of Conservation District lands.

C. Description of the Protected Property and Surroundings:

1. The Protected Property. The Protected Property includes areas designated as Cultural Preservation Zones and Conservation District Lands. The Cultural Preservation Zone and Conservation District lands, totaling approximately **306 acres in an expanded Conservation District area** including *makai* portions of the proposed La'au Point residential subdivision and various cultural sites and buffer zones.

2. Current and past uses. The Protected Property historically has been used for agriculture and open space. The shoreline is being used for subsistence gathering and open space. The most important resources in the west end are subsistence food sources (fishing and hunting) and cultural sites.

3. History. Since the mid-1800's up to the present time, the Property has been used primarily for ranching and related agricultural activities. Grantor has allowed its employees access to the area for camping, hunting and fishing. A jeep trail runs across the property parallel to the shoreline just mauka of the high water mark. The trail has been used for pedestrian access by invitees of eth Grantor.

4. La'au Point and the Project Area. La'au Point itself and 51 acres surrounding the point are owned by the Federal Government. However, the adjacent area within the above referenced tax map key has become commonly known as, and is referred to herein as "La'au Point".

From 1898 to the present the area immediately adjacent to the La'au Point federal lands, the Pu'u Hakina and Kamka'ipo shoreline to the north and east have been owned by Molokai Ranch and its predecessors, transferred several times and re-purchased. The property has been the subject of several development proposals over the years. The La'au Point project developed in conjunction with the Molokai Community is unique in that, unlike prior proposals, it seeks to maintain the traditional uses and resources of the area and takes extraordinary measures to maintain the environment, the continuation of subsistence and cultural practices and protect the marine resources all for current and future generations.

The Protected Property offers a total of approximately 5.2 miles of shoreline from Hale O Lono Harbor to Kaupoa Beach with stretches of white sand beach broken by large, rocky outcroppings. The south shore portions have three long, white sand beaches: Kanaluhaka Beach, Kapukuwahine Beach, and Kahalepohaku Beach. Kapukuwahine Beach is backed by a low sea cliff for the entire length of the beach; Kanalukaha Beach and Kahalepohaku Beach are backed

by small areas of sand build-up and kiawe trees. The West shore has a rocky shoreline with scattered areas of sandy beach. A dense kiawe forest borders the sand dunes backing the shoreline.

D. The following land use designations relate to the Protected Property:

1 State District Boundary. The majority of the La’au Point lands are within the Agricultural State Land Use District but the coastline, or oceanfront (“makai”) portion of the Protected Property is classified as “Conservation,” as defined by Hawai’i Revised Statutes (“HRS”) Chapter 205 (“Land Uses”). The district boundary between the Conservation and Agriculture districts within the Protected Property runs approximately 150 feet inland of the shoreline. However, Grantor intends to expand the existing Conservation District by 254 acres by increasing the distance inland that the Conservation District runs along the existing Conservation District. Use of the Protected Property is limited as set forth in HRS Chapter 205. Approximately 850 acres of additional Agricultural District land is proposed to be re-districted to the Rural District, as defined by HRS Chapter 205, including 200 house lots on approximately 400 acres, Open Space on approximately 382 acres, roadways on approximately 46 acres, parks on approximately 8 acres and infrastructure on approximately 14 acres. The Grantor is also proposing to redistrict 9 acres from Conservation to Rural for park improvements near Hale O Lono Harbor.

2 County Zoning. The Protected Property is zoned “Agriculture,” as defined by Chapter 19.30A of the Maui County Code, and is limited to the uses prescribed therein. The County of Maui does not zone land within the Conservation District. The Grantor proposes to change the County zoning of the its proposed La’au Point project from County Agricultural zoning to the County Rural and Open Space zoning.

3 Special Management Area. Portions of the Protected Property fall within the Special Management Area, as defined and identified in the Hawai’i Coastal Zone Management Act, HRS Chapter 205A (“CZMA”), and development is limited as described therein, including consistency with the goals and objectives of the CZMA, which include the goal “to protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources,” and to minimize, where possible, “any development which would substantially interfere with or detract from the line of sight toward the sea from the State highway nearest the coast.

4 Community Plan. The Protected Property is designated for agricultural and conservation use in the Molokai Community Plan, which articulates preservation policies in order to enhance the region’s overall living environment. The Moloka’i Vision Statement in the Community Plan “envison[s] a Moloka’i that leaves for its children a visible legacy: an island *momoa* (abundant) with natural and cultural resources, people who *kokua* (help) and look after one another, and a community that strives to build an even better future on the *pa’a* (firm) foundation left to us by those whose *iwi* (bones) guard our land.” Objectives of the Molokai Community Plan relevant to the Protected Property include:

- a. Encourage community stewardship of historic sites and recognize and respect family ancestral ties to certain sites.
- b. Improve and enhance access to cultural resources and the shoreline for the West End of the island.
- c. Encourage the expansion of the State Conservation District boundary where warranted for environmental preservation and habitat enhancement.
- d. Preserve the island's scenic vistas and natural features, and maintain ocean view corridors along coastal roads.
- e. Recognize and preserve traditional access and uses of the environment to address subsistence needs of the residents of Moloka'i.
- f. Discourage any additional development of buildings which impact the integrity of the shoreline
- g. Encourage site preservation for significant archaeological remains, rather than data recovery.

Grantor intends to change the Land Use designation in the La'au Point area to include the proposed expanded Conservation and Preservation Districts, and to change the proposed residential areas from Agriculture to Rural to allow the property to be subdivided and residential homes constructed on a defined portion of the property..

E. Development Potential Protection. The land designations enumerated in Paragraph D above are not sufficiently restrictive to prohibit further subdivision of the additional Conservation and Preservation lands and construction of dwellings or other structures, an action which would be inconsistent with the policies and vision set forth above.

The vision set out in the Community-Based Master Plan for Molokai Ranch and the agreements made therein, recognize the inherent value of the Protected Property and that the Protected Property possesses important conservation value, including scenic, open space, environmental and cultural values (collectively, the "Conservation Value"). As contained in the Baseline Documentation set forth below, these Conservation Values require protection in perpetuity.

F. Baseline Documentation. The Baseline Documentation, consisting of an inventory of relevant features of the Protected Property in the *Community-Based Master Land Use Plan for Moloka'i Ranch*, dated November 14, 2005 ("Baseline Documentation") and the *Environmental Impact Statement for the La'au Point Project* dated -----, 2008 (EIS) on file at the offices of the Grantee, such provisions of the *Community-Based Master Land Use Plan for Moloka'i Ranch* and the EIS (incorporated herein by reference) which has been reviewed and accepted by Grantor and Grantee. The Baseline Documents consist of reports, maps, photographs, and other documentation that provide, collectively, an accurate representation of

the Protected Property at the time of this grant and which are intended to serve as an objective information baseline for monitoring compliance with the terms of this grant. The Grantee will also be conducting a base line survey, assessment and mapping of the natural and cultural resources of the Protected Property and its other trust lands entitled *Moloka'i Nui A Hina (Moloka'i, Great Child of Hina) – Resource Protection*, which will be kept on file at the offices of the Grantee.

G. HRS Chapter 198 provides that any public body and any organization which qualifies for and holds an income tax exemption under section 501(c) of the federal Internal Revenue Code of 1954, as amended, and whose organizational purposes are designed to facilitate the purposes of HRS Chapter 198, may acquire and hold conservation easements by purchase, agreement, donation, devise, or bequest.

H. Grantee is a publicly supported, tax-exempt nonprofit organization, qualified under Sections 501(c)(3) and 170(h) of the Internal Revenue Code of 1986, as amended, and also qualified as a nonprofit corporation under HRS 414D, whose primary purpose is to acquire, hold, preserve and dispose of land, easements, leases, or other rights and interests in land, or improvements to land, for the purpose of: (1) protecting historic, cultural archaeological sites and resources; (2) preserving precious natural and environmental resources; (3) enhancing indigenous rights through the protection of subsistence gathering; (4) protecting scenic and open space values; and providing appropriate access to beaches and other coastal areas for traditional cultural uses. Grantee's mission is "[t]o protect and restore the land and natural resources of Moloka'i, and to perpetuate the unique Native Hawaiian traditions and character of the island, for the benefit of the future generations of all Moloka'i."

I. Grantor desires that the Conservation Value of the Protected Property be preserved and maintained in perpetuity by permitting the continuation of only those uses of the Protected Property that do not significantly impair or interfere with the Conservation Value. And Grantee desires to accept this Easement to preserve and protect in perpetuity the Conservation Value of the Protected Property for the benefit of this generation and the generations to come.

NOW THEREFORE, in consideration of the mutual covenants, terms, conditions, and restrictions contained in this Easement, Grantor hereby voluntarily grants, conveys and warrants to Grantee a perpetual conservation easement over the Protected Property, as defined in this Easement, subject only to the terms and conditions contained in this Easement and title matters of record as of the date of this Easement. This Grant is made as an absolute, unconditional, unqualified, and completed gift, subject only to the mutual covenants, terms, conditions and restrictions set forth in this Easement and title matters of record as of the date of this grant, and for no other consideration whatsoever.

COVENANTS AND RESTRICTIONS

1. Purpose. The purpose of this Easement is to preserve the Conservation Value, as prioritized herein (the "Purpose"). For the purposes of this Easement, including its construction and enforcement, Grantor and Grantee agree the Conservation Value shall be as follows:

(a) Preserving Moloka'i's rural and agricultural character, including subsistence fishing and hunting.

(b) La'au Point is regarded as a *wahi pana* and *wahi kapu*, a special place of spiritual mana and power. This Protected Property which adjoins La'au Point should be managed in a manner which protects the spiritual quality of La'au Point.

(c) Maintaining the wilderness feeling of the Protected Property and mitigating the impacts to the scenic vistas from the shoreline of any proposed housing.

(d) Retaining the Protected Property substantially in its current open-space condition for subsistence, recreational, cultural and traditional purposes,

(e) Protecting and preserving culturally significant elements present on the property, including, but not limited to, heiau, stone walls, platforms and other archaeologically relevant structures by providing, in part, sizeable preservation zones and buffer areas to protect the cultural sites and shoreline areas.

(f) Providing access for cultural and subsistence purposes, including cultural practices, fishing and subsistence gathering in the Protected Property. Subsistence is defined and understood as the customary and traditional uses of wild and cultivated renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, transportation, culture, religion, and medicine; for barter, or sharing, for personal or family consumption and for customary trade.

(g) Limiting access to the shoreline by foot trail only. Gates will be prohibited across roads and access roads other than at the entrance to the Protected Property. No street-facing walls or barriers may be higher than four feet.

(h) Barring further subdivision of lots.

(i) Developing subsistence fishing zones modeled after the Hui Malama O Mo'omomi Subsistence Fishing Zone and establishing demonstration fishing nurseries/ kapu sites to insure reproduction of key subsistence food species (e.g., opihi, moi, mullet, limu, lobster, ulua, huh, he'e).

(j) Managing open space common areas to reduce and/or eliminate soil erosion by restoring vegetative cover.

(k) Adhering and to and managing the lands in conjunction with the La'au Point homeowners association pursuant to the terms and conditions contained in the Shoreline Access Management (SAMP) attached hereto as "Exhibit C". The SAMP is the guiding document for uses and activities under this Easement.

2. Rights Conveyed to Grantee. To accomplish the Purpose of this Easement, Grantor voluntarily imposes the following covenants on the Protected Property and conveys the following to Grantee:

(a) Restrictions on Use and Surrender of Development Rights. Grantor covenants and agrees, for itself and its successors and assigns, that no uses or activities shall be permitted at the Protected Property, and that no improvements may be constructed at the Protected Property, except as specifically provided in Section 3 below. Except as provided in Section 3, Grantor freely and voluntarily surrenders and relinquishes all right it may now have or may in the future acquire to develop or improve the Protected Property. Grantor further acknowledges and agreed that these covenants and restrictions shall benefit and be enforceable by Grantee.

(b) Protection: Subject only to Grantor's reserved rights as set forth in Section 3 and consistent with and, pursuant to, the terms and conditions of the SAMP, Grantee has the right to preserve and protect the Conservation Value of the Protected Property in perpetuity, and to prevent any use of, or activity on, the Protected Property that is prohibited by Section 2(a) or that will significantly impair or interfere with the Conservation Value of the Protected Property.

(c) Access: Consistent with, and pursuant to, the terms of the SAMP, Grantee has the right to reasonable access to carry out the Purpose of this Easement, and as further described below:

(i) To enter the Protected Property at any time for any purpose consistent with this Grant of Easement.

(ii) To enter the Protected Property at such other times as are necessary if Grantee, has reason to believe a violation of the Easement is occurring or has occurred, for the purpose of mitigating or terminating the violation and otherwise enforcing the provisions of this Easement. Such entry shall be conditioned upon Grantee having exhausted all of its remedies and options under the terms of the SAMP and upon a determination by a Court of Law that such activity is a violation of the terms of this Easement and upon prior reasonable notice to Grantor of not less than 24 hours, and Grantee shall not in any case unreasonably interfere with Grantor's allowed uses and quiet enjoyment of the Protected Property.

(iii) Additional access may be further modified as Grantor and Grantee may agree under the terms and conditions of the SAMP and/or any related documents or Management Plan(s).

(d) Enforcement. Grantee has the right to enforce this Easement and the covenants and restrictions herein consistent with pursuant to the terms of the SAMP.

(e) La'au Point Project Conservation Lands. The right of Grantee to enforce this Easement shall not be limited by the authority of the Homeowners Association to enforce Covenants, Conditions and Restrictions ("CCRs") which apply on the individual private landowners. Grantor agrees that the rights granted under this Easement shall be included in the

CCRs adopted for the proposed La'au Point project and the SAMP. The Grantee and the Homeowners' Association may jointly seek enforcement of any violations the SAMP and of the CCRs.

3. Grantor's Reserved Uses and Activities Consistent With the Purpose of the Easement. Grantor reserves for itself the following rights accruing from ownership of the Protected Property:

(a) Privacy and Quiet Enjoyment. Consistent with the terms and conditions contained in the SAMP, the right of privacy and the right to deny access to other persons, except as limited by the SAMP, provided by law or as expressly permitted to Grantee in this Easement. Specifically, however, Grantor shall not erect any gates across roads and access ways other than those approved by Grantee at the entrance to et Protected Property, and shall not erect any walls of over four feet;

(b) Guests and Invitees. The right to permit or invite others to engage in, any use of, or activity on, the Protected Property that is not inconsistent with the Purpose of this Easement and consistent with the SAMP and any Management Plan(s) jointly created by the Grantee and the Homeowner's Association pursuant to the SAMP;

(c) Recreation. The right to undertake non-commercial recreational activities such as swimming, picnicking, fishing, hunting and bird watching on the Protected Property; provided that such activities are conducted in a manner and intensity that does not adversely impact the Conservation Value of the Protected Property and the Purpose of this Easement and are consistent with and authorized under the provisions of the SAMP. Except as set forth in the SAMP no motorized recreational vehicles or activities that could adversely impact the Conservation Value of the Protected Property are allowed in the Conservation Zone indicated on Exhibit B and in the Baseline Documentation.

(d) Fences. The right to construct and maintain fences around the Protected Property, provided that their design and location are consistent with the SAMP and CCRs and shall not impair the Conservation Value of the Protected Property or be contrary to the Purpose of this Easement.

(e) Signs. The right to place signs on the Protected Property to advertise for sale or rent or to state the conditions of access to the Protected Property; provided that such signs are located to preserve, as much as possible, views to the coastline and ocean, and so that they do not significantly degrade the Conservation Value of the Protected Property. The design and erection of any sign in excess of three (3) square feet requires prior written approval by Grantee.

(f) Protection of Public Health or Safety. The right to undertake other activities necessary to protect public health or safety on the Protected Property, or other activities required by any governmental agency with authority to require such activity; provided that any such activity shall be conducted so that interference with the Conservation Value of the Protected Property is avoided, or, if avoidance is not possible, minimized to the extent possible.

(g) Easements and Dedications. The right to grant easements to governmental agencies or utility providers if there is condemnation for the installation, maintenance, repair and replacement of underground utility services;

(h) Dwellings.

(i) Farm Dwelling. No farm dwellings or any other residential structure shall be allowed on the Protected Property. .

(ii) Residential Construction on La'au Point lots. For portions of the La'au Point project, the right to maintain, use, occupy, repair and replace a residence adjacent to portions of the Protected Property, subject to and consistent with any conditions in the CCRs and conditions of land use approvals for such proposed La'au Point project. Construction of the residence and any future replacement of the buildings shall occur solely within the boundaries of designated building envelopes on the approved residential lots.

4. Uses and Activities Inconsistent With the Purpose of the Easement. Any use of, or activity on the Protected Property inconsistent with the Purpose of this Easement is prohibited, and Grantor acknowledges and agrees that it will not conduct, engage in or permit any such use or activity. Without limiting the generality of the foregoing, the following uses of, or activities on, the Protected Property, though not an exhaustive list of inconsistent uses or activities, are inconsistent with the purposes of this Easement and shall be prohibited, except as expressly provided in the SAMP and Section 3 above:

(a) Subdivision. The legal or "de facto" division, subdivision or partitioning of the Protected Property, including declaration of property regimes

(b) Transfers of Individual Parcels. The transfer of one or more of the Tax Map Key parcels constituting the Protected Property unless all such parcels are transferred to the same transferee shall be prohibited, provided that Grantee acknowledges that the portions of the Protected Property included in the proposed La'au Point project will be subdivided and individual lots conveyed. Each individual lot conveyance will be subject to the terms of this Easement for portions of the Protected Property included on those individual lots.

(c) Structures. The placement or construction of any permanent or temporary buildings, structures, or other improvements of any kind including, without limitation, buildings, barns, sheds, roads, and parking lots, except as provided in Section 3(i) or as permitted by Grantee upon a finding it will not significantly diminish the Conservation Value of the Protected Property or be inconsistent with the Purpose of this Easement, and upon a showing that Grantor has or will obtain the necessary state and county permits necessary for such structure.

(d) Alteration of Land. The alteration of the surface of the land, including, without limitation, the excavation or removal of soil, sand, gravel, rock, peat, or sod, except as permitted by Grantee upon a finding it will not significantly diminish the Conservation Value of the Protected Property or be inconsistent with the Purpose of this Easement or is required to preserve the quality of the surrounding waters and prevent runoff or degradation of the Property.

(e) Erosion or Water Pollution. Any use or activity that causes or is likely to cause significant soil degradation or erosion or significant pollution of any surface or subsurface waters.

(f) Alteration of Water Courses. The draining, filling, dredging, ditching, or diking of wetland areas, the alteration or manipulation of ponds and water courses, or the creation of new wetlands, water impoundments, or water courses, except as approved by Grantee for agricultural purposes or to preserve or protect the Conservation Value of the Protected Property.

(g) Hedgerows, Fences or other Structures which Obstruct Scenic Views. Vegetation, fencing, signage or other elements which significantly obstruct the views of the pastures, shoreline and ocean.

(h) Waste Disposal. The disposal or storage of rubbish, garbage, debris, unregistered vehicles, abandoned equipment, parts thereof, or other unsightly, offensive, or hazardous waste or material on the Protected Property.

(i) Utilities. The above-ground installation of new utility systems or extensions of existing utility systems, including, without limitation, water, sewer, power, fuel, and communication lines and related facilities on the Protected Property, except that above-ground solar and wind power systems will be allowed if necessary to support approved buildings, or if becomes necessary to connect to the electrical grid.

(j) Signs. The placement of commercial signs, billboards, or other advertising material on the Protected Property except as provided in Section 3(f).

(k) Yard Lights. The placement and use of any outdoor electric lights, except as approved by Grantee, or to light pathways for safety, or to preserve or protect the Conservation Value of the Protected Property and provided that such lights are shielded on all sides so as to direct light to the ground.

(l) Mining. The exploration for, or development and extraction of, minerals and hydrocarbons on or below the surface of the Protected Property.

(m) Introduced Vegetation. The introduction of any non-native invasive species or plant material listed in the state and local county invasive species list (i.e. MOMISC) Is prohibited, except as approved by the Grantee to enhance the Conservation Value of the Protected Property.

(n) Off-Road Vehicles. The operation of motorcycles, “all terrain” vehicles (“ATV”), or any other type of off-road motorized vehicles within the Protected Property except as necessary for uses consistent with the Grantee’s Management Plans or as allowed under the SAMP.

(o) Archaeological Features. The alteration of archaeological features noted in “Revised Archaeological Mitigation Plans” for “Papohaku to Hakina, Ahupua’a o Kaluako’I, Island of Moloka’i” (Portions of TMK 5-8-1-02-030, 5-1-08-4 through 15, -19 and -23) prepared by Cultural Landscapes Hawai’i in May, 2006.

5. Notice and Approval.

(a) Notice. To afford Grantee an opportunity to ensure that any use or activity proposed by the Grantor is designed and carried out in a manner consistent with the Purpose of this Easement, Grantor shall notify Grantee and receive Grantee’s written approval prior to undertaking certain activities permitted only after prior approval by Grantee as identified in this Easement, for example, in Section 3(c)(iv) and Sections 4(c), (d), (f), (g) and (m). Grantor shall notify Grantee in writing not less than forty-five (45) days prior to the date Grantor intends to undertake the use or activity for which prior approval is required. The notice shall describe the nature, scope, design, location, timetable, and any other material aspect of the proposed activity in sufficient detail to permit Grantee to make an informed judgment as to its consistency with the Purpose of this Easement.

(b) Approval. Where Grantee’s approval is required, Grantee shall grant or withhold its approval in writing within thirty (30) days of receipt of Grantor’s written request for approval. Grantee’s approval may be withheld only upon a reasonable determination by Grantee that the action as proposed would be inconsistent with the Purpose of this Easement. Grantee’s approval may include reasonable conditions, which must be satisfied in undertaking the proposed use or activity. If Grantor must undertake emergency action to protect health or safety on the Property or must act by and subject to the requirement of any governmental agency, Grantor may proceed with such action without Grantee’s approval only if Grantor notifies Grantee prior to taking such action and Grantee cannot provide its approval, with or without conditions, within such time as is reasonable under the circumstances.

(c) Grantee’s Failure to Approve Within the Required Time. A request by Grantor shall be conclusively deemed approved upon Grantee’s failure to respond within the thirty (30) day time period prescribed above.

(d) Addresses for Notices and Responses. Any notice, demand, request, consent, approval, or communication that either party desires or is required to give to the other shall be in writing either served personally or sent by certified mail, return receipt requested, postage prepaid, addressed to as follows:

To Grantors: Molokai Properties Limited
900 Fort Street Suite 600
Honolulu, Hawaii 96813

To Grantee: Moloka’I Land Trust
P.O. Box 1884
Kaunakakai, HI 96748

or to such other address as either party from time to time shall designate by written notices to the other.

7. Dispute Resolution.

(a) Voluntary Cessation of Disputed Use or Activity. Grantor agrees to refrain from implementing any disputed use or activity pending resolution of the dispute. Grantee may seek judicial injunctive relief as provided in Section 8 if Grantor fails to voluntarily refrain from the disputed use or activity during the first sixty (60) days after Grantee becomes aware of the dispute.

(b) Face-to-face meeting. If a dispute arises between the parties concerning the consistency of any proposed use or activity with the Purpose of this Easement, the parties shall, within thirty (30) days of Grantee's first awareness of the dispute, arrange a face-to-face meeting of representatives of the parties and each make good faith efforts to resolve the dispute.

(c) Mediation. After the initial thirty (30) days, either party may refer the dispute to mediation by request made in writing to the other. Within ten (10) days of the receipt of such a request, the parties shall select a single mediator to hear the matter. The matter shall be settled in accordance with the Hawaii mediation rules then in effect. If mediation shall be unsuccessful in resolving the dispute by the end of thirty (30) days from the initial request to mediate, then either party may pursue all available equitable and legal remedies.

8. Grantee's Remedies.

(a) Notice of Violation, Corrective Action. If Grantee determines that the Grantor is in violation of the terms of this Easement or that a violation is threatened, Grantee shall give written notice to Grantor of such violation and demand corrective action sufficient to cure the violation and, where the violation involves injury to the Protected Property resulting from any use or activity inconsistent with the Purpose of this Easement, to restore the portion of the Protected Property so injured to its prior condition in accordance with a plan approved by Grantee.

(b) Grantor's Failure to Respond. Grantee may bring an action as provided in subsection 8(c) if Grantor:

(i) Fails to cure the violation within thirty (30) days after receipt of notice thereof from Grantee;

(ii) Under circumstances where the violation cannot reasonably be cured within the thirty (30) day period, fails to begin curing such violation within the thirty (30) day period and fails to continue diligently to cure such violation until finally cured.

(c) Grantee's Action.

(i) Injunctive Relief. Grantee may bring an action at law or in equity in a court having jurisdiction to enforce the terms of this Easement, regardless of whether other remedies or relief may be available or adequate:

a. To enjoin the violation, ex parte as necessary, by temporary or permanent injunction; and

b. To require the restoration of the Protected Property to the condition that existed prior to any such injury.

(ii) Damages. Grantee shall be entitled to recover damages for violation of the terms of this Easement or injury to any Conservation Value protected by this Easement, to the extent such damages may be ascertained. Without limiting Grantor's liability in any way, Grantee, in its sole discretion, may apply any damages recovered to the cost of undertaking corrective or restoration action on the Protected Property.

(iii) No Bond Required. Any action for injunctive relief or damages may be taken without Grantee being required to post bond or provide other security. Grantor is barred from using this provision regarding damages as an affirmative defense against Grantee's rights to injunctive relief.

(d) Emergency Enforcement. If Grantee, in its sole discretion, determines that circumstances require immediate action to prevent or mitigate significant damage to the Conservation Value of the Protected Property, Grantee may pursue its remedies under this section without prior notice to Grantor or without waiting for the period provided for cure to expire; provided, that Grantee shall first make a reasonable attempt under the circumstances to give verbal/telephone notice to Grantor of the violation and proposed action.

(e) Scope of Relief. Grantee's rights under this section apply equally in the event of either actual or threatened violations of the terms of this Easement. Grantor agrees that Grantee's remedies at law for any violation of the terms of this Easement are inadequate and that Grantee shall be entitled to injunctive and other relief to which Grantee may be entitled, including specific performance of the terms of this Easement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies. Grantee's remedies described in this paragraph shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity.

(f) Costs of Enforcement. In the event Grantee must enforce the terms of this Easement, the costs of restoration necessitated by acts or omissions of Grantor or anyone under Grantor's control or authority or anyone in contractual privity with Grantor, in violation of the terms of this Easement, and Grantee's reasonable enforcement expenses, including attorney's fees, shall be borne by Grantor. In the event that Grantee secures redress for an Easement violation without initiating or completing a judicial proceeding, the costs of such restoration and Grantee's reasonable expenses including attorneys' fees and court costs shall be borne by

Grantor. If Grantor ultimately prevails in any judicial proceeding initiated by Grantee to enforce the terms of this Easement, Grantor shall be entitled to reimbursement by Grantee of the expenses of such proceeding, including attorneys' fees and court costs.

(g) Grantee's Forbearance. Forbearance by Grantee to exercise its rights under this Easement in the event of any breach of any terms of this Easement by Grantor, its agents, employees, contractors, family members, invitees or licensees shall not be deemed or construed to be a waiver by Grantee of such term or any Grantee's rights under this Easement. No delay or omission by Grantee in the exercise of any right or remedy upon any breach by Grantor shall impair such right or remedy or be construed as a waiver.

(h) Waiver of Certain Defenses. Grantor acknowledges that it has carefully reviewed this Easement and has consulted with and been advised by counsel of its terms and requirements. In full knowledge of the provisions of this Easement, Grantor hereby waives any claim or defense it may have against Grantee in interest under or pertaining to this Easement based upon waiver, laches, estoppel, or prescription.

(i) Acts Beyond Grantor's Control. Nothing contained in this Easement shall be construed to entitle Grantee to bring any action against Grantor to abate, correct, or restore any condition on the Protected Property or to recover damages for any injury to or change in the Protected Property resulting from causes beyond Grantor's control, including, without limitation, fire, flood, storm, and earth movement, or for acts of trespassers, that Grantor could not reasonably have anticipated or prevented, or from any prudent action taken by Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Protected Property resulting from such causes.

(j) Estoppel Certificates. Grantee shall, within thirty (30) days of a request by Grantor, execute and deliver to Grantor, or to any party designated by Grantor, any document, including an estoppel certificate, that certifies, to the best of Grantee's knowledge, Grantor's compliance or lack thereof with any obligation of Grantor contained in this Easement and otherwise evidences the status of this Easement. Such certification shall be limited to the condition of the Protected Property as of Grantee's most recent inspection. If Grantor requests more current documentation, Grantee shall conduct an inspection, at Grantor's expense, within thirty (30) days of receipt of Grantor's written request.

9. Access By Public. Access by the general public to any portion of the Protected Property will (should this be WILL) be permitted only as outlined in the SAMP or through the mutual agreement of Grantee and Grantor; provided that Grantor may in its discretion continue to permit reasonable, noncommercial recreational and fishing access to permittees designated by Grantor consistent with prior practice. Nothing herein shall prevent the exercise of any rights of Native Hawaiians for traditional and customary practices as may be required by Hawaii law.

10. Costs, Liabilities and Insurance, Taxes, Environmental Compliance and Indemnification.

(a) Costs, Legal Requirements, Liabilities and Insurance. Grantor until such

time as the Protected property is transferred or assigned to another party, whereupon the rights, duties and obligations contained herein shall become the responsibility of the Grantor's successor in interest, shall share, pursuant to the terms of the Shoreline Access Management Plan attached hereto as exhibit---- responsibilities and shall bear costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the Protected Property, including the maintenance of any insurance coverage desired by Grantor and Grantee. Grantor and Grantee release and relieve the other, and waive their entire right to recover for loss or damage to the extent that the loss or damage is covered by proceeds of the injured party's insurance. This waiver applies whether or not the loss is due to the negligent acts or omissions of Grantor or Grantee. Subsequent to the date of this Grant of Easement, Grantee shall be solely responsible for obtaining any applicable governmental permits and approval for any activity or use permitted by this Easement, and any such activity or use shall be undertaken in accordance with all applicable federal, state, and local laws, regulations, and requirements. Grantor and Grantee shall keep the Protected Property free of any liens arising out of any work performed for, material furnished to, or obligations incurred by Grantor.

(b) Taxes. Grantor shall pay before delinquency all taxes, assessments, fees, and charges of whatever description levied on or assessed against the Protected Property by competent authority (collectively "Taxes"), including any taxes imposed upon, or incurred as a result of, this Easement, and shall furnish Grantee with satisfactory evidence of payment upon request. If Grantor fails to pay any Taxes when due, Grantee is authorized, but in no event obligated, to make or advance such payment of Taxes upon three (3) days prior written notice to Grantor, in accordance with any bill, statement, or estimate procured from the appropriate authority, without inquiry into the validity of the Taxes or the accuracy of the bill, statement or estimate, and the obligation created by such payment shall bear interest until paid by Grantor at the maximum rate allowed by law.

(c) Remediation. If at any time, there occurs, or has occurred, a release in, on, or about the Protected Property of any substance now or hereafter defined, listed, or otherwise classified, pursuant to any federal, state, or local law, regulation, or requirement as, toxic or dangerous to the air, water, or soil, or in any other way harmful or threatening to human health or environment, Grantor agrees to take all steps necessary to assure its containment and remediation, including any cleanup that may be required, unless the release was caused by Grantee, in which case Grantee shall be responsible for remediation.

Control. Physical and Managerial control over the day to day operations of the Protected Property including any cultural, subsistence conservation and preservation activities on the property, including access thereto, shall be governed by the terms and conditions of the Shoreline Access Management Plan attached hereto as exhibit ----.

(d) Indemnification. Grantor agrees to release and hold harmless, indemnify, and defend Grantee and its members, directors, officers, employees, agents, and contractors and the personal representatives, heirs, successors, and assigns of each of them (collectively "Indemnified Parties") from and against all liabilities, penalties, costs, losses, damages, expenses, causes of action, claims, demands, or judgments, including, without limitation, reasonable attorney's fees, arising from or in any way connected with the obligations, covenants, representations and warranties in subsections (a) through (c) of this Section 10.

11. Subsequent Transfer or Extinguishment.

(a) Extinguishment. A court with jurisdiction may, if it determines that conditions upon or surrounding the Protected Property have changed so much that it becomes impossible or impractical to fulfill the Purpose of this Easement, extinguish or modify this Easement in accordance with applicable State law, at the joint request of both Grantor and Grantee. If this Easement is extinguished by judicial proceeding, Grantee shall be entitled to a portion of the proceeds from any subsequent sale or other disposition of the Protected Property, calculated in accordance with subsection (b) below.

(b) Grantee's Compensation. This Easement constitutes a real property interest immediately vested in Grantee. For the purpose of this subparagraph (b), the parties stipulate that this Easement shall have a fair market value determined by multiplying (i) the fair market value of the Protected Property unencumbered by this Easement (minus any increase in value attributable to improvements made after the date of this grant) by (ii) the ratio of the value of this Easement at the time of this grant to the value of the Protected Property, unencumbered by this Easement, at the time of this grant. The values at the time of this grant shall be those values established by Grantor's qualified appraisal (pursuant to Treasury regulation § 1.170A-13) for federal income tax purposes. The ratio established by this subparagraph (b) shall remain constant and, on a subsequent sale, exchange, or involuntary conversion of all or any portion of the Protected Property, pursuant to the provisions of subparagraph (a) of this Paragraph 13, Grantee shall be entitled to a portion of the proceeds equal to such proceeds (minus any portion attributable to improvements made after the date of this grant) multiplied by the ratio established by this subparagraph (b). In the event of extinguishment of this Easement by sale to Grantor (subject to the extinguishment provisions of subparagraph (a) of this Section 11), Grantee shall be entitled to receive an amount equal to the fair market value of the Protected Property at the time of such sale (minus such amount as is attributable to improvements made after the date of this grant), as established by independent appraisal, multiplied by the ratio established by this subparagraph (b).

(c) Condemnation. If all or any of the Protected Property shall be taken by exercise of the power of eminent domain or acquired by purchase in lieu of condemnation, whether by public, corporate, or other authority, so as to terminate this Easement, in whole or in part, Grantor and Grantee shall act jointly to recover the full value of the interest in the Protected Property subject to the taking or in lieu purchase and all direct or incidental damages resulting from the taking or in lieu purchase. All expenses reasonably incurred by Grantor and Grantee in connection with the taking or in lieu purchase shall be paid out of the amount recovered. Except as provided by applicable law, Grantor and Grantee agree that Grantee's share of the balance of the amount recovered shall be an amount determined by multiplying the balance (excluding compensation properly allocable to improvements constructed by Grantor after the date of this grant, all of which shall be paid to Grantor) by a fraction, the numerator of which is the value of this Easement at the time of this grant determined under paragraph (b) above and the denominator of which is the value of the Protected Property unencumbered by this grant immediately before this grant became effective.

(d) Application of Proceeds. Grantee shall use any proceeds received under the circumstances described in this Section 11 in a manner consistent with its conservation purposes, which are exemplified by the Easement.

(e) Subsequent Transfers. Grantor agrees to:

(i) Incorporate the terms of this Easement by reference in any deed or other legal instrument by which it divests itself of any interest in all or a portion of the Protected Property, including without limitation, a leasehold interest;

(ii) Describe this Easement in and append it to, any executory contract for the transfer of any interest in the Protected Property;

(iii) Give written notice to the Grantee of the transfer of any interest in all or a portion of the Protected Property no later than ten (10) days prior to the date of such transfer. Such notice to Grantee shall include the name, address, and telephone number of the prospective transferee or the prospective transferee's representative.

(f) Contemplated Transfer. It is hereby acknowledged by Grantee that Grantor intends to transfer its interest in the Protected Property to the La'au Point Homeowners' Association at a time chosen by Grantor subsequent to the sale of the first of the La'au Point subdivision lots. Upon transfer the Homeowners' Association shall be a successor in interest to the Grantor and will have all of the rights duties and obligations of the Grantor set forth in this Grant of Conservation Easement. The transfer contemplated by this paragraph shall not be deemed a "transfer" under sections (a), (b), (c), (d) and/or (e) of this Paragraph 11.

The failure of the Grantor to perform any act required by this paragraph shall not impair the validity of this Easement or limit its enforceability in any way.

12. Amendment. If circumstances arise under which an amendment to or modification of this Easement would be appropriate, Grantor and Grantee are free to jointly amend this Easement; provided that no amendment shall be allowed that shall affect the qualification of this Easement or the status of Grantee under any applicable laws, including Hawaii Revised Statutes Chapter 198 or Section 170(h) of the Internal Revenue Code of 1986, as amended (or any successor provisions(s) then applicable). Any such amendment shall be consistent with the Purpose of this Easement, shall not affect its perpetual duration, shall be in accordance with the Assignment of Rights referred to in Section 13 below and shall be recorded in the State of Hawai'i Bureau of Conveyances.

13. Assignment and Succession.

(a) Assignment. This Easement is transferable, but Grantee may assign its rights and obligations under this easement only to an organization that is a qualified organization at the time of transfer under Section 170(h) of the Internal Revenue Code of 1986, as amended (or any successor provision then applicable), and the applicable regulations promulgated there under, and authorized to acquire and hold conservation easements under Hawaii Revised Statutes

Chapter 198 (or any successor provision(s) then applicable) and in accordance with the provisions of the Assignment of Rights referenced in subsection (b) below. As a condition of such transfer, Grantee shall require that the transferee exercises its rights under the assignment consistent with the Purpose of this Easement. Grantee shall notify Grantor in writing, at Grantor's last known address, in advance of such assignment. The failure of Grantee to give such notice shall not affect the validity of such assignment nor shall it impair the validity of this Easement or limit its enforceability in any way.

(b) Succession. If at any time it becomes impossible for Grantee to ensure compliance with the covenants, terms, conditions and restrictions contained in this Easement and Grantee has not named a successor organization, or the Grantee shall cease to exist or to be a qualified organization under Section 170(h) of the Internal Revenue Code of 1986, as amended (or any successor provision then applicable) or to be authorized to acquire and hold conservation easements under Hawaii Revised Statutes Chapter 198 (or any successor provision(s) then applicable), then Grantee's rights and obligations under this Easement shall become vested and fall upon an entity, with purposes similar to Grantee's, constituting a "qualified organization" within the meaning of Section 170(h) of the Internal Revenue Code of 1986, as amended (or any successor provision(s) then applicable); provided that if such vesting in any such entity is deemed to be void under the Rule Against Perpetuities, the rights and obligations under this Easement shall vest in such organization as a court having jurisdiction shall direct, pursuant to the applicable Hawaii law and the Internal Revenue Code of 1986, as amended (or any successor provision(s) then applicable), and with due regard to the purposes of this Easement.

14. Recordation. Grantor and Grantee shall record this instrument in a timely fashion in the Bureau of Conveyances of the State of Hawaii and may re-record it at any time as may be required to preserve its rights in this Easement.

15. General Provisions.

(a) Controlling Law. The interpretation and performance of this Easement shall be governed by the laws of the State of Hawaii.

(b) Liberal Construction. Any general rule of construction to the contrary notwithstanding, this Easement shall be liberally construed in favor of the grant to effect the Purpose of this Easement and the policy and purpose of Hawaii Revised Statutes Chapter 198. If any provision in this instrument is found to be ambiguous, an interpretation consistent with the Purpose of this Easement that would render the provision valid shall be favored over any interpretation that would render it invalid.

(c) Severability. If any provision of this Easement, or its application to any person or circumstance, is found to be invalid, the remainder of the provisions of this Easement, or the application of such provision to persons or circumstances other than those as to which it is found to be invalid, as the case may be, shall not be affected.

(d) Entire Agreement. This instrument sets forth the entire agreement of the parties with respect to the Protected Property and supersedes all prior discussions, negotiations,

understandings, or agreements between Grantor and Grantee relating to the Protected Property, all of which are merged into this Easement. No alteration or variation of this instrument shall be valid or binding unless contained in an amendment that complies with Section 12.

(e) No Forfeiture. Nothing contained in this Easement shall result in a forfeiture or reversion of Grantor's title in any respect.

(f) "Grantor" - "Grantee". The terms "Grantor" and "Grantee," wherever used in this Easement, and any pronouns used in their place, shall be held to mean and include, respectively, the above-named Grantor, and its personal representatives, heirs, successors, and assigns, and the above-named Grantee, its personal representatives, successors and assigns.

(g) Successors and Assigns. The covenants, terms, conditions, and restrictions of this Easement shall be binding upon, and inure to the benefit of, the parties to this Easement and their respective personal representatives, heirs, successors, and assigns, and shall continue as a servitude running in perpetuity with the Protected Property.

(h) Termination of Rights and Obligations. A party's rights and obligations under this Easement terminate upon transfer of the party's interest in the Easement or Protected Property, except that liability for acts or omissions occurring prior to transfer shall survive transfer.

(i) Counterparts. The parties may execute this instrument in two or more counterparts, which shall be signed by both parties. Each counterpart shall be deemed an original instrument as against any party who has signed it. In the event of any disparity between the counterparts produced, the recorded counterpart shall be controlling.

(k) Conservation Easement. The conveyance of this Easement is a conveyance of an interest in real property and constitutes a "conservation easement" as defined in Hawaii Revised Statutes Section 198-1.

(l) This Easement runs with the land and shall be binding upon Grantor's personal representatives, heirs, successors, and assigns in perpetuity.

16. Schedule of Exhibits.

(a) Legal Description of Property Subject to Easement

(b) Site Map

17. Counterparts. The Parties agree that this Agreement may be executed in counterparts, each of which shall be deemed an original, and said counterparts shall together constitute one and the same agreement, binding all of the Parties hereto, notwithstanding all of the Parties are not signatory to the original or the same counterparts. For all purposes, duplicate unexecuted and unacknowledged pages of the counterparts may be discarded and the remaining pages assembled as one document.

Executed and effective the day and year first above written.

MOLOKAI PROPERTIES LIMITED,
a Hawaii corporation

By: _____
PETER A. NICHOLAS
Its President

“Grantor”

MOLOKA’I LAND TRUST,
A Hawaii nonprofit corporation

By: _____
COLETTE Y. MACHADO
Its President

“Grantee”

STATE OF HAWAII)
)
COUNTY OF MAUI) SS.

On this _____ day of _____, 200__, before me personally appeared _____, to me personally known, who, being by me duly sworn or affirmed, did say that such person(s) executed the foregoing instrument as the free act and deed of such person(s), and if applicable, in the capacities shown, having been duly authorized to execute such instrument in such capacities.

Notary Public, State of Hawaii
Printed Name: _____
My Commission Expires: _____

STATE OF HAWAII)
)
COUNTY OF MAUI) SS.

On this _____ day of _____, 200__, before me personally appeared _____, to me personally known, who, being by me duly sworn or affirmed, did say that such person(s) executed the foregoing instrument as the free act and deed of such person(s), and if applicable, in the capacities shown, having been duly authorized to execute such instrument in such capacities.

Notary Public, State of Hawaii
Printed Name: _____
My Commission Expires: _____

Appendix D
Moloka'i Land Trust Documents

MOLOKAI LAND TRUST
Preliminary Strategic (Action) Plan
Revised December 2006

VISION STATEMENT

The Molokai Land Trust shares a long-term vision of the future for Moloka'i, its environment, spirit, culture and people

Moloka'i is the last Hawaiian island. We who live here choose not to be strangers in our land. The values of aloha 'aina and malama 'aina (love and care for the land) guide our stewardship of Molokai's natural resources, which nourish our families both physically and spiritually.

We live by our kupuna's (elders') historic legacy of pule o'o (powerful prayer). We honor our island's Hawaiian cultural heritage, no matter what our ethnicity, and that culture is practiced in our everyday lives. Our true wealth is measured by the extent of our generosity.

We envision strong 'ohana (families) who steadfastly preserve, protect and perpetuate these core Hawaiian values.

We envision a wise and caring community that takes pride in its resourcefulness, self-sufficiency and resiliency, and is firmly in charge of Moloka'i resources and destiny.

We envision a Moloka'i that leaves for its children a visible legacy: an island momona (abundant) with natural and cultural resources, people who kokua (help) and look after one another, and a community that strives to build an even better future on the pa'a (firm) foundation left to us by those whose iwi (bones) guard our land.

MISSION STATEMENT

The mission of the Molokai Land Trust is to protect and restore the land, natural and cultural resources of Moloka'i, and to perpetuate the unique Native Hawaiian traditions and character of the islands for the benefit of the future generations of all Moloka'i, particularly Native Hawaiians.

VALUES OF THE TRUST

Although there are many important principles that guide our work, the Molokai Land Trust emphasizes the following values as core to our efforts:

- **Moloka'i Nui A Hina:** reverence and love for Molokai's people and the land.
- **Moloka'i Pule O'o:** strength in mission through prayer, training and education
- **Moloka'i Aina Momona :** promotion and practicing of sustainable land use practices.
- **Moloka'i No Ka Heke:** remaining true to core Hawaiian values while embracing new technologies and ideas.

LONG-TERM GOALS AND STRATEGIES

1. The Land Trust acquires environmentally and culturally important lands on Moloka'i for protection and perpetuation of their cultural and natural resources.
 - a. Facilitate and implement the Community-Based Master Land Use Plan for Moloka'i Ranch.
 - b. Acquire fee title or easement on appropriate lands to ensure their perpetual protection.
 - c. Collaborate in partnership to advocate and facilitate conservation and stewardship of lands and cultural sites on Moloka'i.
 - d. Develop and implement an effective land stewardship and management plan with community involvement.

2. The Trust is established as an effective, community-based organization with diverse sources of support.
 - a. Create a system of sound financial management with appropriate internal controls.
 - b. Strengthen and develop the Trust's Board of Directors.
 - c. Develop an organizational structure that fosters creativity, participation and accountability among paid staff, board members and volunteers.
 - d. Build and maintain annual and long-range financial support for the organization.
 - e. Create plans and systems to support the organization.

3. A community that embraces the values of *aloha 'aina* and *malama 'aina* (love and care for the land) is fostered by the Trust's work with others.
 - a. Create and implement outreach programs for the conservation of natural resources and perpetuation of cultural resources.
 - b. Build recognition of and confidence in the Trust.
 - c. Collaborate with private and public partners that help achieve the mission of the Trust.

I. The Land Trust acquires environmentally and culturally important lands on Moloka'i for protection and perpetuation of their cultural and natural resources.

Strategy	2006	2007	2008
<p><i>A. Support the implementation of the Community-Based Master Land Use Plan for Moloka'i Ranch</i></p>	Participate in community meetings - done	Begin development of a strategy to engage more people to participate in the land trust.	Expand board and committee memberships by increasing representation from Molokai and off-island State residents.
	Finalize land use principles and policies (LUC and KAL) - done	Begin discussions with CDC on division of La'au revenues	Finalize transfer of Mokiio properties to include participation of the public at official transfer ceremonies.
	Support regulatory process for SMA permitting and state land use commission - ongoing	Support regulatory process for SMA permitting and state land use commission	Finalize and implement CC&Rs for Laau Point project to include specifically the roles of the community regards enforcement.
	Encourage more participation from the community via committees	Ongoing	Finalize CDC revenue agreement
	Complete and document details of first land transaction and acquisition	Complete and document details of first land transaction and acquisition	Support the implementation of the CDC
	Assist in the development of the Land Plan DVD. - done	Fundraise and collaborate with EC to get an independent legal advisor for CDC and land trust	Complete acquisition of all MPL lands and easements
		Begin collaborating with CDC committee and EC to form the CDC.	Ongoing
			Ongoing
			Ongoing
			Ongoing

I. The Land Trust acquires environmentally and culturally important lands on Moloka'i for protection and perpetuation of their cultural and natural resources.

	2006	2007	2008
<p><i>B. Acquire fee title or easement on appropriate lands to ensure their perpetual protection</i></p>	Create sample checklist to guide land transactions	Continue to create sample checklist to guide land transactions	Assess program capacity for future acquisitions
	Create model easement language for future transactions	Create model easement language for future transactions	Develop plan and program for acquiring other conservation and cultural lands
		Negotiate with MPL for full acreage	Ongoing
		Complete acquisition and document land phase I	Begin phase II of acquiring the 26,000 acres from MPL in land use plan.
<p><i>C. Collaborate in partnership to advocate and facilitate conservation and stewardship of lands and cultural sites on Moloka'i.</i></p>	Engage partners for protection of first acquisition	Create criteria for acquiring land and easements	Ongoing
		Respond to landowner inquiries	Ongoing
		Continue to build on current opportunities for partnerships related to first acquisition and respond to opportunities for partners.	Ongoing
	Create Lands and Stewardship Committee	Complete Mokia project plan and begin implementation	Respond to opportunities for partnerships in other areas

I. The Land Trust acquires environmentally and culturally important lands on Moloka'i for protection and perpetuation of their cultural and natural resources.

Strategy	2006	2007	2008
<p><i>Continued</i></p> <p><i>C. Collaborate in partnership to advocate and facilitate conservation and stewardship of lands and cultural sites on Moloka'i.</i></p>	<p>Decide on conservation action planning tools and approaches for first acquisition</p>	<p>Agree on temporary access policies</p>	<p>Begin development of stewardship plan for all lands</p>
<p><i>D. Develop and implement an effective land stewardship and management plan with community involvement.</i></p>		<p>Identify potential contractors to support stewardship planning</p>	<p>Ongoing</p>
		<p>Identify and initiate planning process for all gifted lands</p>	<p>Complete stewardship plan for full acreage</p>
		<p>Identify potential contractors and/or staff planner to support stewardship planning for all gifted lands and easements</p>	<p>Ongoing</p>

II. The Trust is established as an effective, community-based organization with diverse sources of support.

Strategy	2006	2007	2008
A. Create a system of sound financial management with appropriate internal controls.	CPA contracted - done		Assist KAL in Filing Tax Return Form 990
	Filed for 509(a) (3) Federal IRS status - done	Receive IRS letter of determination as 509(a)(3) – done June 26, 2006	Complete external financial audit
	Registered with state DCCA - done	Update state DCCA filing	Update DCCA filing
	Acquire state GET/exemption?		
	Submit monthly/quarterly reports with KAL	MOU with KAL	Submit monthly/quarterly reports with KAL
	Initial Budget filed with IRS - done	Develop annual budget	Review relationship with KAL and options for nonprofit status
	Register with GET and exemption.		
	Identify potential grant funding sources - done	Continue fundraise private and public grants for budget	Fundraising private and public grants for budget

II. The Trust is established as an effective, community-based organization with diverse sources of support.

Strategy	2006	2007	2008
Continued...			
A. Create a system of sound financial management with appropriate internal controls.		Create individual giving program Complete grant reports	Expand individual giving program Complete grant reports
B. Strengthen and develop the Trust's Board of Directors.	9 founding members approved by EC as MLT's first Board	Complete training of new board members - conferences, networking with other land trusts Recruit new members to expand board to 11	Organizational assessment retreat to evaluate first 2 years and plan for next cycle

II. The Trust is established as an effective, community-based organization with diverse sources of support.

Strategy	2006	2007	2008
<p><i>C. Develop an organizational structure that fosters creativity, participation and accountability among paid staff, board members and volunteers.</i></p>	Complete Board retreat/training (Marc Smiley)	Implement Board, Committee and Advisor model	Add 2 Board members from advisors' list
	Complete job description, recruit/advertise and hire staff - ED and AA	Recognize and add kahu to model	New committees formed - financial, fundraising
	ID and secure office space capacity	Committees increase membership by 25%	Ongoing
		Complete job description, recruit/advertise and begin process for hiring project manager (first quarter)	Hire project planner and fundraiser for the 24,000 acre addition
		Develop volunteer program	Complete job description for natural resources and cultural technicians

II. The Trust is established as an effective, community-based organization with diverse sources of support.

Strategy	2006	2007	2008
<i>D. Build and maintain annual and long-range financial support for the org</i>	Create short-term fundraising plan. - done	Create long-term fundraising plan	
	ID grant prospects and begin proposed development	Host reception in SF to build fundraising network with foundations and east coast	As above, hire fundraiser to build fundraising network
<i>E. Create plans and systems to support the organization.</i>	Begin committee work plans	Complete committee work plans	Complete committee work plans
	Develop an action plan – done.	Using the action plan, develop a strategic plan.	Review and update strategic plan

III. A community that embraces the values of *aloha* ‘*aina* and *malama* ‘*aina* (love and care for the land) is fostered by the Trust’s work with others.

Strategy

2006

2007

2008

A. Create and implement outreach programs for the conservation of natural resources and perpetuation of cultural resources.

Identify plan for community outreach	Begin implementation of outreach plan
Set up first acquisition lands Task Force that engages historic users to inform all planning efforts	Expand plans to inform community of access and use of all MPL gifted lands
	Create outreach materials to support outreach efforts
	Celebrate acquisition of large land project
	Host open-house to celebrate gifting of first lands
Establish task force engaging historic users in all MPL gifted lands	Ongoing
Identify experts for land, ocean and cultural resources in the area	Ongoing
Conduct inventory of cultural sites and cultural users	

III. A community that embraces the values of *aloha*, *‘aina* and *malama* ‘*aina* (love and care for the land) is fostered by the Trust’s work with others.

Strategy	2006	2007	2008
<i>B. Build recognition of and confidence in the Trust.</i>		Develop Plan for “Conservation Day” event with schools Develop Plans to educate community about access to fist lands	Hold “Conservation Day” event with schools Develop visitation program for access to other protected lands
<i>C. Collaborate with private and public partners that help achieve the mission of the Trust</i>	Participate in Earth Day Participate in the Trust for Public Lands Forum on Oahu.	Participate in Earth Day Make initial contact with private and public partners Develop plan to connect to all organizational partners	Participate in Earth Day Host Hawaii Land Trust Conference Host the Trust for Public Lands Forum on Molokai.

ATTACHMENT II

BIOGRAPHY

BOARD OF DIRECTORS FOR THE MOLOKAI LAND TRUST

Colette Y. Machado
President

Born and raised on Molokai. A founding member of the Molokai Land Trust. Served on the Molokai Enterprise Community (EC) Land Use Culture Sub-Committee. An elected trustee of the Office of Hawaiian Affairs representing the islands of Molokai and Lanai since 1996. Executive Director and President of Ke Kua Aina Hanauna Hou, Inc. a community-based non-profit organization on Molokai. Served two terms as OHA's representative to the Kaho'olawe Island Reserve Commission.

Richard A. Cooke, III
Vice President

Member of the Cooke family who were one of the earlier owners of Molokai Ranch. A founding member of the Molokai Land Trust. Serves as Operations Manager of Hui Ho'olana Center on Molokai. Has a long history in professional photography, including 15 years with the National Geographic Society. Serves as an alternate on the Cooke foundation Board of Trustees.

Cheryl Corbiel
Secretary

A founding member of the Molokai Land Trust. Served on the EC board for three years and volunteered with the EC Community-based Master Land Use Plan Committee. Served as a board member of the Molokai Visitors Association, past president and secretary for Hale Ho'okupa'a, a substance abuse outpatient center. Is self-employed as a communications consultant, operates a bed and breakfast operation and teaches part-time business and communications classes at Molokai's Maui Community College.

William M. Akutagawa
Treasurer

Born and raised on Molokai. Director for the Na Pu'uwai Native Hawaiian Healthcare System. Is a founder of the Molokai Health Center. Has served as the Molokai field representative to the Office of US Senator Daniel K. Inouye for the past 14 years.

Stephanie (Stacy) Helm Crivello
Director

Born and raised on Molokai. Participated as a volunteer member of the EC Strategic Planning Committee, Vision Statement Committee and the Community-Based Master Land Use Plan Committee. Serves currently as President for the EC and is a founding member of the Molokai Land Trust. Retired in 2001 as Manager of Verizon's Molokai and Lanai operations.

Clarence Halona Kaopuiki
Director

Born and raised on Molokai. A life-long advocate of Native Hawaiian cultural preservation and archaeology. Served on the Native Hawaiian Historic Preservation Council as the Molokai representative for the past 6 years. Since the '90's, has worked or volunteered with the Bishop Museum, Kahoolawe Island Reserve Commission's Cultural and Historic Orientation program, Governor's Subsistence Taskforce, the Office of Hawaiian Affairs Native Rights Land and Culture Division, DLNR's Office of Conservation and Coastal Land, University of Hawaii's Department of Urban and Rural Planning and EC project #47. Currently employed with the Office of Hawaiian Affairs.

David J. Lunney.
Director

A founding member of the land trust. Prior to living on Molokai, worked for the American Film Institute, Center for the Advanced Film Studies as General Manager. Operated an independent film and television production company in Los Angeles. Also served as GM for Center Theater Group at the LA Music Center. A recipient of grants from the Ford Foundation, served as a field representative for the National Endowment for the Arts and has extensive experience administering non-profit tax exempt organizations. Is active in the Molokai community, performing with Na Kupuna O Moana Hula Halau and the Na Ohana Hoaloha musical group. Is a teacher at Molokai's Maui Community College campus and has been a member of the Native Hawaiian Education Council on Molokai.

Davianna P. McGregor, PHD
Director

A long-time professor of Ethnic Studies at the University of Hawaii's Manoa campus. A founding member of the land trust who served as a volunteer member of the EC's Strategic planning and Vision Statement committee. Assisted in the Strategic Management Plan for Kaho'olawe and the Molokai Subsistence Management Plan. Is currently working on the Responsible Tourism Initiative for Molokai and a Cultural Management Plan for The Nature Conservancy on Molokai.

Edwin T. Misaki
Director

Born and raised on Molokai. Currently employed at The Nature Conservancy as Director and served as Interim Director for the Conservancy's Palaau program. A founding member of the land trust, also served on the EC Community-Based Master Land Use Plan Committee where he volunteered as chair of the Environmental Sub-committee.

Pedro Benny Venenciano
Director

Born and raised on Molokai. Active with the EC's Young Adult and Leadership group. President of Friends for Molokai High and Middle Schools Foundation. Volunteer coach for high school baseball and wrestling teams. Currently employed by the State Department of Health with responsibilities in the area of providing assistance to the disabled.

3. Incorporators. The incorporators of this corporation are as follows:

<u>Name</u>	<u>Business Address</u>
William M. Akutagawa	P.O. Box 1884, Kaunakakai, Hawai'i 96748
Richard A. Cooke III	Same
Cheryl Corbiell	Same
Stephanie Helm Crivello	Same
David J. Lunney	Same
Colette Y. Machado	Same
Davianna P. McGregor	Same
Edwin T. Misaki	Same
John R. Sabas	Same

III. DURATION

The duration of the corporate existence shall be perpetual.

IV. CORPORATE PURPOSES

The corporation is organized exclusively for the following purposes:

1. To protect and restore the land, natural and cultural resources of Moloka'i, and to perpetuate the unique Native Hawaiian traditions and character of the island, for the benefit of the future generations of all Moloka'i, particularly Native Hawaiians; and
2. To achieve the above charitable purposes and for no other purposes, to hold and acquire title and easements to lands and to gather and disseminate funds; and
3. To operate exclusively for charitable, scientific, or educational purposes as a section 509(a)(3) supporting organization within the meaning of section 501(c)(3) of the Internal Revenue Code of 1986, as now enacted or hereinafter amended, and the regulations thereunder ("the Code"); and
4. To support the mission of Ke Aupuni Lokahi, a federally funded, Hawai'i nonprofit corporation, which (a) has been granted status as a charitable organization under section 501(c)(3) of the Code that is described in sections 509(a)(1) and 170(b)(1)(A)(vi) of the Code, (b) has as part of its mission to steward the natural and cultural resources of Moloka'i; and (c) includes in its strategic plan the creation of a land trust for Moloka'i; or, to support other or additional public charities as provided in Article VII of these Articles.

V. RESTRICTIONS

At all times the following restrictions shall apply to the operations and activities of the corporation:

1. Notwithstanding any other provision of these articles, the corporation shall not carry on any activities not permitted to be carried on:
 - a. By a corporation exempt from federal income tax under section 501(c)(3) of the Code.
 - b. By a corporation contributions to which are deductible under section 170(c)(2) of the Code.
 - c. By a "qualified organization" as set forth in section 170(h)(3) of the Code.
2. Net earnings of the corporation, if any, shall be used only to carry out the nonprofit corporate purposes set forth in Article IV above.
3. No part of the assets, funds, or earnings of the corporation shall inure to the benefit of any director of the corporation or of any individual having a private interest in the activities of the corporation, except that reasonable compensation may be paid for services rendered to or for the corporation affecting one or more of its purposes. The term "funds" as used in this provision shall mean and include any properties and monies held by the corporation, including any income accumulated by the corporation and any proceeds from the sale of any properties sold or otherwise disposed of by the corporation.
4. No substantial part of the activities of the corporation shall constitute the carrying on of propaganda or otherwise attempting to influence legislation, or any initiative or referendum before the public, and the corporation shall not participate in, or intervene in (including by publication or distribution of statements), any political campaign on behalf of, or in opposition to, any candidate for public office.

VI. CORPORATE POWERS

The corporation shall have and possess all the powers permitted to nonprofit corporations under the laws of the State of Hawai'i, including but not limited to: (a) the ability to acquire land or interests in land, including conservation easements, by gift or purchase; and, (b) the power to conduct fundraising activities, so long as such activities are consistent with the corporation's purposes, as set forth in Article IV of these Articles.

VII. ADDITIONAL SUPPORTED ORGANIZATIONS

These Articles may be amended, pursuant to Article XIV, to identify other public charities under section 501(c)(3) of the Code which are to be supported by the corporation, including, but not limited to: identifying a new supported organization if Ke Aupuni Lokahi shall cease to exist or no longer constitute a permitted or appropriate supported organization under section 509(a)(3) of the

Code; or, identifying one or more public charities whose missions shall be supported in addition to Ke Aupuni Lokahi.

VIII. BOARD OF DIRECTORS

The management of the affairs of the corporation shall be vested in a board of directors, consisting of not less than nine (9) or more than twenty-one (21) persons. The directors shall be appointed in accordance with the corporation's bylaws. The board of directors shall, except as limited in HRS Chapter 414D or the bylaws, have all powers necessary and proper to carry out all of the activities of the corporation, and the directors may delegate such powers as they see fit, so long as such delegation is not prohibited by the bylaws or by law. No director shall have any right, title, or interest in or to any property of the corporation. Members of the first board of directors, identified below, shall serve for a term as provided for by the bylaws, but not greater than the maximum term specified in HRS Chapter 414D, at which point their successors shall be duly appointed according to the bylaws. The number of directors constituting the first board of directors is nine, their names and addresses are the same as the incorporators identified in Article II, section 3.

IX. OFFICERS

The officers of the corporation shall consist of a president, vice president, secretary and treasurer who shall also serve as directors. Officers shall be selected as provided by the bylaws. The corporation may have such additional officers as the board of directors shall from time to time determine in accordance with the bylaws. The officers shall have the powers, perform the duties and be appointed and removed in the manner set forth in the bylaws. The initial officers of the corporation who shall hold office until their successors are duly elected and qualified pursuant to the bylaws, are as follows:

<u>OFFICE</u>	<u>NAME</u>
PRESIDENT	Colette Y. Machado
VICE PRESIDENT	Richard A. Cooke, III
SECRETARY	Cheryl Corbiell
TREASURER	William M. Akutagawa

X. MEMBERSHIP

The corporation has no members.

XI. PERSONAL LIABILITY AND INDEMNIFICATION

1. No Liability to Corporation. Any director who serves without remuneration or expectation of remuneration shall not be liable for damage, injury, or loss caused by or resulting from the person's performance of, or failure to perform duties of, the position to which the person was elected or appointed, unless the director was grossly negligent in the performance of, or failure to perform, such duties. For

purposes of this section, remuneration does not include payment of reasonable expenses and indemnification or insurance for actions as a director.

2. **Mandatory Indemnification.** The corporation shall indemnify a director who was wholly successful, on the merits or otherwise, in the defense of any proceeding to which the director was a party because the director is or was a director of the corporation, against reasonable expenses, including attorneys' fees, actually incurred by the director in connection with the proceeding.
3. **Court-Ordered Indemnification.** A director of the corporation who is a party to a proceeding may apply for indemnification to the court conducting the proceeding or to another court of competent jurisdiction. On receipt of an application, the court after giving any notice the court considers necessary may order indemnification in the amount it considers proper if it determines:
 - a. The director is entitled to mandatory indemnification under section 2 of this Article XI, in which case the court shall also order the corporation to pay the director's reasonable expenses incurred to obtain court-ordered indemnification; or
 - b. The director is fairly and reasonably entitled to indemnification in view of all the relevant circumstances, whether or not the director met the standard of conduct set forth in sections 4.a and 4.b.ii of Article XI or was found liable as described in section 4.d, but if the director was found liable indemnification is limited to reasonable expenses incurred.
4. **Qualified Indemnification.** The corporation shall indemnify a director of the corporation who was or is a party or is threatened to be made a party to any threatened, pending or completed civil, criminal, administrative or investigative action, suit or proceeding by reason of the fact that such person is or was a director of the corporation against expenses, attorneys' fees, judgments, fines and amounts paid in settlement, actually and reasonably incurred by such person in connection with such action, suit or proceeding, subject to the following conditions:
 - a. **Determination and Authorization of Indemnification.** The corporation must determine whether the director has met the standard of conduct set forth in section 4.b of this article with the determination being made as follows:
 - i. The determination shall be made by the board of directors by two-thirds vote of a quorum consisting of directors who are not at the time parties to the proceeding.
 - ii. If a quorum cannot be obtained under subsection i, above, the determination shall be made by majority vote

- of a committee duly designated by the board of directors (in which designation directors who are parties may participate) consisting solely of two or more directors not at the time parties to the proceeding.
- iii. If a quorum of the board cannot be obtained under section 4.a.i and a committee cannot be designated under section 4.a.ii, the determination shall be made by special legal counsel selected by:
 - A. The board of directors or its committee in the manner prescribed in subsection 4.a.i or 4.a.ii; or
 - B. Two-thirds vote of the full board (in which selection directors who are parties may participate).
 - iv. Authorization of indemnification and evaluation as to reasonableness of expenses shall be made in the same manner as the determination that indemnification is permissible, except that if the determination is made by special legal counsel, authorization of indemnification and evaluation as to reasonableness of expenses shall be made by those entitled under section 4.a.iii to select counsel.
- b. The director's conduct must be consistent with the following standard:
 - i. The individual conducted the individual's self in good faith; and
 - ii. The individual reasonably believed:
 - A. In the case of conduct in an official capacity, that the individual's conduct was in the corporation's best interests;
 - B. In all other cases, the individual's conduct, at a minimum, did not oppose the corporation's best interests; and
 - iii. In the case of any criminal proceeding, the individual had no reasonable cause to believe the individual's conduct was unlawful.
 - c. The termination of a proceeding by judgment, order, settlement, conviction, or upon a plea of nolo contendere or its equivalent, is not by itself determinative of a director's failure to meet the standard of conduct described in this section.
 - d. The corporation may not indemnify a director's liability under this section where the director's liability has been determined:
 - i. In connection with a proceeding by or in the right of the corporation; or

- ii. In connection with any other proceeding whether or not involving action in an official capacity, in which the director was found liable on the basis of the director's improper receipt of a personal benefit.
 - e. Indemnification permitted under this section 4 and its subparts in connection with a proceeding by or in the right of the corporation is limited to reasonable expenses incurred in connection with the proceeding.
5. Advance for Expenses. The board of directors may, in its discretion, authorize payment in advance of final disposition of an action, suit or proceeding for the reasonable expenses, including attorneys' fees, incurred by a person seeking indemnification under the provisions of this Article XI, provided that such person:
 - a. Furnishes the corporation with a written affirmation of the person's good faith belief that the person has met the standard of conduct set forth in this Article XI; and
 - b. Furnishes the corporation with a written undertaking, in the form of an unlimited general obligation, executed personally or on the person's behalf, to repay the advance if it is ultimately determined the person did not meet the standard of conduct (at the discretion of the board of directors pursuant to the bylaws, the undertaking may be accepted with or without being secured or unsecured, and with or without reference to financial ability to repay); and
 - c. A determination is made by the board of directors that the facts then known would not preclude indemnification under the provisions of this Article XI.
6. Relationship to Other Law. The indemnification provided by the provisions set forth in this Article XI shall not be deemed exclusive of any other rights to which those seeking indemnifications are entitled under any law, bylaws provision, agreement, vote of disinterested directors or otherwise.
7. Persons Indemnified. The indemnification provided by the provisions set forth in this Article XI shall apply to any director or officer who has or is currently serving the corporation, and any right of indemnification shall inure to the benefit of a former or current director's or officer's heirs, executors and administrators.
8. Right to Secure Insurance. Notwithstanding any limitation of indemnification set forth in the provisions of this Article XI, the corporation may purchase and maintain insurance providing coverage and protection for acts and omissions that is more expansive in the protection it affords directors and officers.

XII. DISSOLUTION

If the corporation shall cease to exist or shall be dissolved, all property and assets of the corporation of every kind, after payment of its just debts, shall be distributed only to one or more entities that has qualified as a tax-exempt organization under section 501(c)(3) of the Code and has purposes similar or related to those of this corporation. In addition to the foregoing limitation, to the extent conservation easements are included within the distributed assets, such easements shall be distributed only to one or more entities that are qualified to hold easements under the relevant state and federal laws, including section 170(h)(3) of the Code. In the event a conservation easement held by the corporation identifies a specific entity to whom the easement shall be distributed in the event of dissolution, such entity shall hold the easement as long as it meets all other qualifications set forth in this Article regarding dissolution.

XIII. BYLAWS

Bylaws shall be adopted by the board of directors of the corporation. The Bylaws may be altered, amended or repealed by the board of directors of the corporation by the affirmative vote of not less than two-thirds of the directors of the corporation then in office.

XIV. AMENDMENT

These Articles of Incorporation may be amended by the affirmative vote of not less than two-thirds of the directors of the corporation then in office.

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We certify under penalties of HRS Section 414D-12 that we have read the above Articles of Incorporation for the nonprofit corporation, Moloka'i Land Trust, and that the same are true and correct.

IN WITNESS WHEREOF, the undersigned have executed these Articles of Incorporation.

INCORPORATORS:

William M. Akutagawa
William M. Akutagawa

Date: 5/19/06

Richard A. Cooke III
Richard A. Cooke III

Date: 5-19-06

Cheryl Corbell
Cheryl Corbell

Date: 5/19/06

Stephanie Helm Crivello
Stephanie Helm Crivello

Date: 5/19/06

David J. Lunney
David J. Lunney

Date: 5-19-06

Colette Y. Machado
Colette Y. Machado

Date: 5/19/06

Davianna P. McGregos
Davianna P. McGregos

Date: 5-19-06

Edwin J. Misaki
Edwin J. Misaki

Date: 5/19/06

John R. Sabas
John R. Sabas

Date: 5/19/06

Appendix E

CC&Rs

CKDBW DRAFT DATED December 10, 2007

LAND COURT SYSTEM

REGULAR SYSTEM

Return by Mail

Pickup

Chun, Kerr, Dodd, Beaman & Wong (DSW)
745 Fort Street, Suite 900
Honolulu, HI 96813
Tel: 808-528-8200

TITLE OF DOCUMENT:

**LĀ‘AU POINT
DECLARATION OF COVENANTS**

PARTIES TO DOCUMENT:

Declarant: **MOLOKA‘I PROPERTIES LIMITED**

Additional Signatory: **MOLOKA‘I LAND TRUST**

TMK: _____

This Documents consists of _____ pages

**LĀ‘AU POINT
DECLARATION OF COVENANTS**

“Lā‘au Point must be the most environmentally planned, designed and implemented large lot community in the State. The residents would be educated and informed about the environment and culture, and taught to “Mālama ‘āina,” take care of the land and sea.”

Page 100, Community-Based Master Land Use Plan for Moloka‘i Ranch by Land Use Committee, Moloka‘i Enterprise Community, compiled by Townscape, Inc, dated November 14, 2005

Preamble

Vision Statement

“Moloka‘i is the last Hawaiian Island. We who live here choose not to be strangers in our land. The values of aloha āina and mālama āina (love and care for the land) guide our stewardship of Moloka‘i’s natural resources, which nourish our families both physically and spiritually.

We live by our kupuna’s (elders’) historic legacy of pule o’o (powerful prayer). We honor our island’s Hawaiian cultural heritage, no matter what our ethnicity, and that culture is practiced in our everyday lives. Our true wealth is measured by the extent of our generosity.

We envision a wise and caring community that takes pride in its resourcefulness, self-sufficiency and resiliency, and is firmly in charge of Moloka‘i’s resources and destiny.

We envision a Moloka‘i that leaves for its children a visible legacy: an island momona (abundant) with natural and cultural resources, people who kōkua (help) and look after one another, and a community that strives to build an even better future on the pa’a (firm) foundation left to us by those iwi (bones) guard our land.”

Page 2, Community-Based Master Land Use Plan

THIS DECLARATION OF COVENANTS (“Declaration”) is made this _____ day of _____, 200__, by MOLOKA’I PROPERTIES LIMITED, a Hawaii corporation, whose mailing address is 745 Fort Street Mall, Suite 600, Honolulu, Hawaii 96813 (hereinafter referred to as “Declarant”).

ARTICLE 1: RECITALS

Section 1.1 Description of Property.

(a) The land to which this Declaration applies is the land described in **Exhibit A** attached hereto and made a part hereon and any additional property which is made a part of Lā’au Point (the “Project”) in the future by Recording one or more Supplemental Declarations (hereinafter the “Property”).

(b) No property, except that described in **Exhibit A** and hereby made subject to this Declaration and except that specifically annexed as provided herein, shall be deemed subject to this Declaration, whether or not shown on any subdivision map or file plan filed by Declarant or described or referred to in any document executed and Recorded by the Declarant. No designation of any parcel, lot or other area on any map or plan Recorded by the Declarant as a common area, road, street, school or park or as any other type of parcel, lot or area shall be deemed to be a dedication or commitment or representation that such parcel, lot or area is or will be used, devoted to, or restricted to such use; nor shall any Owner, or the public, or any public body or agency or any other person, corporation or entity acquire any interest or rights therein by reason of such designation or filing, except as provided herein. Nothing in this Declaration or in any amendment to this Declaration, or in any Recorded or unrecorded subdivision map or file plan, nor in any picture, drawing, brochure or other representation of a scheme of development, shall be deemed to be a representation, warranty or commitment that the Declarant will commit or subject (or be construed as requiring the Declarant to commit or subject to this Declaration) any real property situated on Moloka’i other than that described in **Exhibit A** or any amendment thereto.

Section 1.2 Binding Effect. All property described in **Exhibit A**, and any additional property which is made a part of the Project in the future by Recording one or more Supplemental Declarations, shall be owned, conveyed, and used subject to all of the provisions of this Declaration, which shall run with the title to such property. This Declaration shall be binding upon all Persons having any right, title, or interest in any portion of the Project, their heirs, successors, successors-in-title, and assigns.

Section 1.3 Exhibits.

The following documents, as they may be amended from time to time, attached hereto as **Figure 1, Exhibits A through H**, are hereby made a part of this Declaration:

- Figure 1** – Project Area Plan
- Exhibit A** – Land Initially Submitted
- Exhibit B** – Land Subject to Annexation
- Exhibit C** – Articles of Incorporation of the Association

- Exhibit D** – Bylaws of the Association
- Exhibit F** – Initial Rules and Regulations
- Exhibit G** – Design Guidelines
- Exhibit G – 1**–Master Plan Covenant – Design Guidelines
- Exhibit H** – Shoreline Access Management Plan

Section 1.4 Governing Documents.

(a) The Project’s Governing Documents consist of the following, as they may be amended from time to time:

- This Declaration and such Recorded Supplemental Declarations;
- The Articles of Incorporation and Bylaws of the Association;
- Rules and Regulations of the Project;
- Design Guidelines;
- The Shoreline Access Management Plan; and
- Resolutions of the Board of Directors.

(b) Nothing in this Section shall preclude any Supplemental Declaration or other Recorded covenants applicable to any portion of the Project from containing additional restrictions or provisions which are more restrictive than those of this Declaration and, in such case, the more restrictive provision shall control.

(c) The Association may, from time to time and subject to the provisions of this Declaration, adopt, amend, and repeal the Rules and Regulations excepting Rules and Regulations designated as “Master Plan Covenants” which can only be amended or waived pursuant to the provisions of **Section 19.3**³ below and the “Master Plan Perpetual Covenants” which cannot be amended or waived. The Rules and Regulations are to be certified by the Secretary of the Association. A copy of the Rules and Regulations shall be filed in and available at all times at the office of the Association and duplicate copies shall be delivered to each Owner upon the Owner’s acquisition of a Lot. A copy of each new rule or nay amendment of any existing rule and/or regulation and notice of repeal of any rule/and or regulation shall be given to each Owner when the same becomes effective. The initial Rules and Regulations are attached hereto as **Exhibit E**. Failure to deliver to any Owner a copy of any rule and/or regulation shall not render such rule and/or regulation, amendment, or repeal invalid.

(d) The Governing Documents apply to all Owners and occupants of property within the Project, as well as to their respective tenants, guests, and invitees. Any lease on a Lot shall provide that the tenant and all occupants of the leased Lot are bound by and obligated to comply with the Governing Documents.

Section 1.5 Severability.

If any court or government commission, board, or agency having jurisdiction should determine by final judgment, order or decree that any provision of this Declaration is invalid, or invalid as applied in a particular instance, such determination shall in no way affect the validity or application of other provisions of this Declaration, which shall remain in full force and effect according to their terms.

ARTICLE 2: DEFINITIONS

Section 2.1 “Area of Common Responsibility” shall mean the Common Areas, together with such other areas, if any, for which the Association has or assumes responsibility pursuant to the terms of this Declaration, any Supplemental Declarations, and/or other applicable covenants, contracts, or agreements.

Section 2.2 “Articles” shall mean the Articles of Incorporation of the Association granted to or to be granted pursuant to Chapter 415B of the Hawai‘i Revised Statutes, as amended. A copy of the initial Articles is attached to this Declaration as **Exhibit C**.

Section 2.3 “Association” shall mean the Lā‘au Point Association of Homeowners, a Hawai‘i non-profit corporation, and its successors and assigns.

Section 2.4 “Association Design Guidelines” shall mean the Design Guidelines excluding Design Guidelines designated Master Covenants.

Section 2.5 “Association Easement” shall mean those easements in favor of the Association that are within the Project, and that are shown on a Recorded Plan including, without limitation, Historical Sites.

Section 2.6 “Association Rules and Regulations” shall mean all Rules and Regulations of the Project excluding the Rules and Regulations designated Master Covenants.

Section 2.7 “Base Assessment” shall mean assessments levied on all Lots subject to assessment under **Article 7** to fund Common Expenses for the general benefit of all Lots, as determined in accordance with **Section 7.15**.

Section 2.8 “Board of Directors” or “Board” shall mean the Board of Directors of the Association.

Section 2.9 “Building Envelope” shall mean the portion of each Lot designated by Declarant in which the Lot Owner shall be permitted to construct a Dwelling and all related Improvements as established by Declarant. The Building Envelope shall be comprised of two areas, the Private Area and the Transition Area. The Natural Area is that portion of the Lot that is outside of the Building Envelope.

Section 2.10 “Bylaws” shall mean the Bylaws of the Association, as they may be amended. A copy of the initial Bylaws is attached to this Declaration as **Exhibit D**.

Section 2.11 “CDC” shall mean the Moloka‘i Community Development Corporation, a Hawai‘i corporation, whose purpose, among others, is to expand educational opportunities that will build capacity among the youth of Moloka‘i.

Section 2.12 “Common Area” shall mean all real and personal property, including easements, which the Association owns, leases, or otherwise holds possessory or use rights in for the common use and enjoyment of the Owners including, without limitation, the Association Easements.

Section 2.13 “Common Expenses” shall mean the actual and estimated expenses incurred, or anticipated to be incurred, by the Association for the general benefit of all Owners, including any reasonable reserve, as the Board may find necessary and appropriate pursuant to the governing Documents. Notwithstanding the fact that access to some roads within the Project may be restricted to less than all of the Owners, the maintenance, repair and replacement of such roads shall be included within the Common Expenses. Subject to **Sections 14.2** and **15.2** below, Common Expenses shall not include any expenses incurred during the Declarant Control Period for initial development or other original construction costs unless Members representing a majority of the total Owner Member vote of the Association approve. Payments due under leases of capital improvements such as street lights shall not be considered an initial development or original construction cost.

Section 2.14 “Community-Wide Standard” shall mean the standard of conduct, maintenance, or other activity generally prevailing at the Project, or the minimum standards established pursuant to the Design Guidelines, Rules and Regulations, and Board resolutions, whichever is the highest standard. Declarant shall initially establish such standard, which may contain both objective and subjective elements. The Community-Wide Standard may evolve as development progresses and as the needs and desires within the Project change.

Section 2.15 “Conservation District Area” shall mean the area of the Project within the revised Conservation District Zone under the Land Use laws of the State of Hawai‘i as depicted on the Project Area Plan, consisting of approximately 434 acres which will be managed jointly by the Association and the Land Trust pursuant to the terms and provisions of the SAMP .

Section 2.16 “Council” shall mean the body comprised of individuals appointed by the Association and the Land Trust, pursuant to the SAMP to establish policies and procedures relating to (a) traditional Hawaiian subsistence gathering and cultural practices within the Project and (b) management of the Cultural Zone.

Section 2.17 “Cultural Zone” shall mean all of the Conservation District Area and the Historical Sites on the Project as set forth in Section 10.13 below.

Section 2.18 “Declarant” shall mean Moloka‘i Properties Limited, a Hawai‘i corporation, or any successor, successor-in-title, or assign who takes title to any portion of the Property for the purpose of development and/or sale and who is designated as the Declarant in a Recorded instrument executed by the immediately preceding Declarant, provided that there shall be only one “Declarant” at any one time.

Section 2.19 “Declarant Control Period” shall mean the time period during which the Declarant Member is entitled to appoint a majority of the members of the Board as provided in the Bylaws. The Declarant Control Period shall terminate on the first to occur of the following:

- (a) When ninety percent (90%) of the total number of Lots permitted by the Master Plan for the property described in **Exhibits A** and **B** have certificates of occupancy issued thereon and have been conveyed to Owner Members; or
- (b) [date]; or
- (c) When, in its discretion, the Declarant Member so determines.

Section 2.20 “Design Guidelines” shall mean the architectural, design, and construction guidelines and review procedures as they may be adopted, amended and repealed pursuant to this Agreement, provided that Association Design Guidelines may be amended or repealed as provided in **Article 5** and those Design Guidelines designated as Master Plan Covenants shall only be amended or repealed pursuant to the provisions of **Section 19.3** below.

Section 2.21 “Design Review Committee” or “**DRC**” shall mean the **Design Review Committee** established or to be established pursuant to **Article 5** hereof to review plans and specifications for the construction and use of Improvements within the Project, and to approve or disapprove the same in accordance with Declaration and the Design Guidelines.

Section 2.22 “Dwelling” shall mean a single family dwelling located on a Lot, and may include, with the express written consent of Declarant, a guest or ohana house, provided, however, that all dwellings, houses and structures intended for occupancy must fit within the Building Envelope and shall be considered one (1) Dwelling for purposes of calculating Buildable Area, and complying with the provisions of this Declaration.

Section 2.23 “Flora Sites” shall mean the location of rare or endangered plants that are identified and/or existing within the Project.

Section 2.24 “Governing Documents” shall be a collective term referring to this Declaration and any applicable Supplemental Declaration, the Articles, the Bylaws, the Rules and Regulations, the Design Guidelines, the SAMP and the Resolutions of the Board of Directors, as they may be duly amended.

Section 2.25 “Historical Sites” shall mean burial grounds and other historically and/or archaeologically significant sites that are identified and/or existing within the Project and are subject to the laws of the State of Hawaii.

Section 2.26 “Improvement” shall mean any thing or device placed on a Lot within the Project that may affect the appearance or use of such Lot, including, but not limited to, any building, outbuilding, garage, shed, deck, landscaping, road, driveway, excavation, fill, grading, parking area, fence, retaining wall or other wall, tanks, reservoir, pipes, lines, meters, drainage, appurtenances, cables, conduit, utility, hedge, windbreak, pole, marker, sign, mailbox, newspaper box or other delivery receptacle, planted tree, swimming pool or any other structure or improvement of any type or kind.

Section 2.27 “Land Trust” means the Moloka‘i Land Trust, a community-based land stewardship tax-exempt organization under the Internal Revenue Code which will hold an easement over the Conservation District Areas and is entrusted with and will jointly manage with the Association certain portions of the Project.

The Land Trust is also a signatory to the Declaration and, as such, has the right to enforce those provisions specifically designated herein to be “Master Plan Perpetual Covenants” and “Master Plan Covenants”.

Section 2.28 “Lot” shall mean a portion of the Project, whether improved or unimproved, which may be independently owned and is intended for development, use, and occupancy as a Dwelling. The term shall refer to the land which is part of the Lot as well as any Improvements thereon.

In the case of a parcel of vacant land or land on which Improvements are under construction, the parcel shall be deemed to contain the number of Lots designated for residential use for such parcel on the Master Plan or Declarant’s site plan, whichever is more recent.

To the extent permitted by Hawai‘i law, and subject to the express written consent of the Declarant, two or more contiguous Lots, may be consolidated and treated as a single Lot for the purposes of architectural control pursuant to **Article 5** and the Design Guidelines, assessments and voting rights, provided that:

- (a) the Lots to be consolidated are owned by the same Owner;
- (b) only one Dwelling has been or will be constructed on the consolidated Lots and the location of the Dwelling on the Lots may be subject to the degree to which the Building Envelope is redesignated or adjusted to provide for an alternate location for the Building Envelope on the Lots by the Declarant;
- (c) the Owner of the consolidated Lots executes all documents necessary and required;
- (d) the Owner shall pay all costs related to the consolidation of the Lots; and
- (e) if a Dwelling exists on the consolidated Lots, or construction has commenced on a Dwelling on the consolidated Lots, the Lots may not be subdivided or otherwise designated as separate Lots without the express written consent of the Declarant.

Section 2.29 “Master Plan” shall mean Community-Based Master Land Use Plan for Moloka‘i Ranch by Land Use Committee, Moloka‘i Enterprise Community, compiled by Townscape, Inc. dated November 14, 2005.

Section 2.30 “Master Covenants” shall mean the Master Plan Covenants and/or Master Plan Perpetual Covenants.

Section 2.31 “Master Plan Covenant” shall mean those provisions so designated in this Declaration, as may be amended from time to time, which shall not be amended, modified, waived or terminated without the written approval of the Land Trust as set forth in **Section 19.3** below.

This Section 2.31 is hereby designated to be a Master Plan Perpetual Covenant.

Section 2.32 “Master Plan Perpetual Covenant” shall mean those provisions so designated in this Declaration, which Declaration may be amended from time to time, which, notwithstanding any provision contained herein to the contrary, shall not be amended, modified, waived or terminated.

This **Section 2.32** is hereby designated to be a Master Plan Perpetual Covenant.

Section 2.33 “Member” shall mean a Person or Persons entitled to membership in the Association pursuant to **Section 7.4**.

Section 2.34 “Mortgage” shall mean a mortgage, a deed of trust, a deed to secure debt, or any other form of security instrument affecting title to any Lot. The term “Mortgagee” shall refer to a beneficiary or holder of a Mortgage.

Section 2.35 “Natural Area” shall mean that portion of the Lot that is not within the Building Envelope which is to remain in an essentially natural condition. No building improvements of any kind may be done in this area.

Section 2.36 “Net Sales Proceeds” shall mean the gross sales proceeds from the sale of a Lot net of normal closing costs, including but not limited to real estate commissions and reasonable attorneys’ fees.

Section 2.37 “Ordinance” shall mean all ordinances applicable to the development and operation of the Project including, but not limited to, County of Maui Rezoning Ordinance No. 88-158.

Section 2.38 “Owner” shall mean one or more Persons, who hold the record title to any Lot, but excluding in all cases any party holding an interest merely as security for the performance of an obligation. If a Lot is sold under a Recorded contract of Sale, and the contract specifically so provides, the purchaser (rather than the fee Owner) will be considered the Owner. If a Lot is subject to a Recorded lease with a term of twenty (20) or more years from its commencement date, the Person or Persons having the right of occupancy to such Lot will be considered an Owner of such Lot during the term of the lease.

Section 2.39 “Person” shall mean a natural person, a corporation, a partnership, a trustee or any other legal entity.

Section 2.40 “Private Area” shall mean that portion of the Building Envelope which includes buildings and outdoor private spaces.

Section 2.41 “Project” The master planned community at Lā‘au Point that includes a common interest community. The Project is to be developed on the real property described in **Exhibit A**, together with such additional property as is subjected to this Declaration in accordance with **Article 8**.

Section 2.42 “Project Area Plan” shall mean the “Project Area and LUC Petition Area Plan” for the development of the Project prepared by PBR Hawai‘i attached hereto as Figure 1 which includes all of the property described in **Exhibit A** and all or a portion of the property described in **Exhibit B**. Inclusion of property in the Project Area Plan shall not, under any circumstances, obligate Declarant to subject such property to this Declaration, nor shall omission of property described in **Exhibit B** from the Project Area Plan bar its later submission to the Declaration as provided in **Article 8**.

Section 2.43 “Project Improvements” shall mean the Improvements constructed by Declarant within the Project, including, but not limited to, berms, swales, drainage facilities, parks, sidewalks, streets, trees, landscaping, fencing, irrigation facilities, lighting, utility lines, curbing, paving, and adjacent amenities.

Section 2.44 “Property” shall mean all real property described in **Exhibit A** together with such additional property as is subjected to this Declaration in accordance with **Article 8**.

Section 2.45 “Record,” “Recording,” “Recorded,” or “Recordation” shall mean, with respect to any document, the recordation or filing of such document in the public records of the State of Hawai‘i, including, but not limited to, the Bureau of Conveyances and/or the Office of the Assistant Registrar of Land Court, or such other place as may be designated as the official location for recording deeds, plats, and similar documents affecting title to the Property.

Section 2.46 “Reviewer” shall mean the entity having jurisdiction over the matters contained in **Article 5** as provided in that Article.

Section 2.47 “Rules and Regulations” shall mean the Rules and Regulations of the Project, as they may be adopted, amended, and repealed as provided in this Agreement, provided that the Association Rules and Regulations may be amended or repealed as provided in **Section 3.2** and those Rules and Regulations designated Master Covenants shall only be amended or repealed pursuant to the provisions in **Section 19.3** below. The initial Rules and Regulations are attached hereto as **Exhibit E**.

Section 2.48 “Shoreline Access Management Plan” or “SAMP” shall mean the Pu‘u Hakina & Kamaka‘ipo Shoreline Access Management Plan adopted by the Declarant and the Land Trust attached hereto as **Exhibit H**, as the same may be duly amended from time to time.

Section 2.49 “Special Assessment” shall mean an assessment levied in accordance with **Section 7.17**.

Section 2.50 “Specific Assessment” shall mean an assessment levied in accordance with **Section 7.18**.

Section 2.51 “SMA Permit” shall mean Special Management Area Use Permits Nos. _____ issued for the development of the Project.

Section 2.52 “South Park” shall mean the park along the southeastern portion of the Project as depicted on the Project Area Plan.

Section 2.53 “Supplemental Declaration” shall mean an instrument Recorded pursuant to **Article 8** which subjects additional property to this Declaration and/or imposes additional restrictions and obligations on the land described in such instrument.

Section 2.54 “Transfer Fee” shall mean the assessment levied on all transfers of ownership of a Lot subject to assessment under **Article 7** as determined in accordance with **Section 7.24**.

Section 2.55 “Transition Area” shall mean that portion of the Building Envelope in which no buildings may be located, but pools, patios, spas, other landscape improvements, and low walls or planting areas are allowed.

Section 2.56 “West Park” shall mean the park situate on the west side of the Project adjacent to the Kamakaipo Gulch as depicted on the Project Area Plan.

ARTICLE 3: USE AND CONDUCT

Section 3.1 Framework for Regulation. The Governing Documents establish, as part of the general plan of development for the Project, a framework of affirmative and negative covenants, easements, and restrictions which govern the Project. Within that framework, the Board and the Members must have the ability to respond to unforeseen problems and changes in circumstances, conditions, needs, desires, trends and technology. Therefore, this Article establishes procedures for modifying and expanding the Association Rules and Regulations.

Section 3.2 Rule Making Authority.

(a) Subject to the terms of this Declaration and the Board’s duty to exercise business judgment and reasonableness on behalf of the Association and its Members, the Board may modify, cancel, limit, create exceptions to, or expand the Association Rules and Regulations and to impose reasonable fees for the use of the facilities of the Association. The Board shall mail notice to all Owners concerning any proposed action at least five (5) business days prior to the Board meeting at which such action is to be considered.

Such action shall become effective, after compliance with **subsection (c)** below, unless Members representing more than fifty percent (50%) of the total Owner Member votes in the Association and the Declarant Member, if any, disapprove. The Board shall have no obligation to call a meeting of the Members to consider disapproval except upon receipt of a petition of the Members as required for special meetings in the Bylaws. Upon such petition of the Members prior to the effective date of any Board action under this Section, the proposed action shall not become effective until after such meeting is held, and then subject to the outcome of such meeting.

(b) Alternatively, Members, representing more than fifty percent (50%) of the total Owner Member votes in the Association at an Association meeting duly called for such purpose, may vote to adopt rules which modify, cancel, limit, create exceptions to, or expand the Association Rules and Regulations then in effect. Such action shall require approval of the Declarant Member, if any.

(c) Prior to any action taken under this Section becoming effective, the Board shall send a copy of the new rule or explanation of any changes to the Rules and Regulations to each Owner. The effective date shall be not less than thirty (30) days following distribution to Owners. The Association shall provide, without cost, a copy of the Rules and Regulations then in effect to any requesting Member or Mortgagee.

(d) No action taken under this Article shall have the effect of modifying, repealing, or expanding the Design Guidelines or any provision of this Declaration or any of the Governing Documents other than the Association Rules and Regulations. In the event of a conflict between the Design Guidelines and the Association Rules and Regulations, the Design Guidelines shall control. Similarly, in the event of a conflict between the Governing Documents and the Association Rules and Regulations, the Governing Documents shall control.

(e) No action taken under this Article shall have the effect of unreasonably impeding Declarant's right to develop the Project.

(f) The procedures required under this Section shall not apply to the enactment and enforcement of administrative rules and regulations governing use of the Common Area unless the Board chooses in its discretion to submit to such procedures. Examples of such administrative rules and regulations shall include, but not be limited to, hours of operation of a recreational facility, speed limits on private roads, and the method of allocating or reserving use of a facility (if permitted) by particular individuals at particular times.

Section 3.3 Owners' Acknowledgment and Notice to Purchasers.

All Owners are given notice that use of their Lots and Common Area is limited by this Declaration and the Rules and Regulations as amended, expanded, and otherwise modified from time to time. Each Owner, by acceptance of a deed conveying a Lot, acknowledges and agrees that the use and enjoyment and marketability of his/her Lot can be affected by this provision and that the Declaration and the Rules and Regulations may change from time to time. All purchasers of Lots are on notice that the Association may have adopted changes. Copies of the current Declaration and the Rules and Regulations may be obtained from the Association.

ARTICLE 4: COVENANTS AND RESTRICTIONS

Section 4.1 Protection of Owners and Others.

The Limitations contained in this Section shall only limit rulemaking authority exercised under **Section 3.2**; they shall not apply to the Declaration, any amendments to the Declaration adopted in accordance with **Article 21**, or the initial Rules and Regulations set forth in **Exhibit E**. Rules and Regulations adopted pursuant to the rulemaking authority granted by

Section 3.2 shall comply with the limitations contained in **Section 3.2** and the following provisions:

(a) Similar Treatment. Similarly situated Owners shall be treated similarly.

(b) Displays. Owners' rights to display religious and holiday signs, symbols, and decorations inside structures on their Lots of the kinds normally displayed in dwellings located in single-family residential neighborhoods shall not be abridged, except that the Association may adopt time, place, and manner restrictions with respect to displays visible from outside the Dwelling.

No rules shall regulate the content of political signs; however, rules may regulate the time, place and manner of posting such signs (including design criteria).

(c) Household Composition. No rule shall interfere with Owners' freedom to determine the composition of their households, except that the Association shall have the power to require that all occupants be members of a single housekeeping unit and to limit the total number of occupants permitted in each Lot on the basis of the size and facilities of the Lot and its fair use of the Common Area.

(d) Activities Within Dwellings. No rule shall interfere with the activities carried on within the confines of Dwellings, except that the Association may prohibit activities not normally associated with property restricted to residential use, and it may restrict or prohibit any activities that create monetary costs for the Association or other Owners, that create a danger to the health or safety of occupants of other Lots, that generate excessive noise or traffic, that create unsightly conditions visible outside the Dwelling, or that create an unreasonable source of annoyance.

(e) Allocation of Burdens and Benefits. No rule shall alter the allocation of financial burdens among the various Lots or rights to use the Common Area to the detriment of any Owner over that Owner's objection expressed in writing to the Association. Nothing in this provision shall prevent the Association from changing the Common Area available, from adopting generally applicable rules for use of Common Area, or from denying use privileges to those who are delinquent in paying assessments, abuse the Common Area, or violate the Governing Documents. This provision does not affect the right to increase the amount of assessments as provided in **Article 7**.

(f) Alienation. No rule shall prohibit the transfer of fee ownership of any Lot, or require consent of the Association or Board for such transfer.

(g) Abridging Existing Rights. No rule shall require an Owner to dispose of personal property that was in or on the Lot prior to the adoption of such rule if such personal property was in compliance with all rules previously in force. This exemption shall apply only during the period of such Owner's ownership of the Lot and shall not apply to subsequent Owners who take title to the Lot after adoption of the rule.

ARTICLE 5: CONSTRUCTION AND DESIGN STANDARDS

Section 5.1 Purpose.

The purpose of the construction and design standard set forth in this Article are to (a) insure the best and most appropriate development and improvement of each Lot; (b) protect the Owners of Lots against improper use and development of any other Lot which might depreciate the value of the Project as a whole; (c) preserve as far as practicable the natural beauty of each lot and the Project as a whole; (d) guard against the erection of structures which are poorly designed or proportioned, or structures built of improper or unsuitable materials, (e) guard against run-off of soil and other matter into the ocean, and (f) adhere to the principles and intent of the Master Plan.

Section 5.2 General.

No structure or thing shall be placed, erected, or installed upon any Lot, and no Improvements or other work (including staking, clearing, excavation, grading and other site work, exterior alterations of existing improvements, or planning or removal of landscaping) shall take place within the Project, except in compliance with this Article and the Design Guidelines.

No approval shall be required to repaint the exterior of a structure in accordance with the originally approved color scheme or to rebuild in accordance with originally approved plans and specifications. Any Owner may remodel, paint, or redecorate the interior of any Improvement on the Owner's Lot without approval. However, modifications to the interior of screened porches, patios, landscaping and similar portions of a Lot visible from outside the structure shall be subject to approval.

All Dwellings constructed on any portion of the Project shall be designed by and built in accordance with the plans and specifications of a licensed architect unless Declarant or its Designee otherwise approves in the sole discretion. Any two or more Lots that may be consolidated under the terms of the Declaration shall be deemed to constitute one Lot.

This Article shall not apply to the activities of Declarant and/or assignees of Declarant's interest under the Declaration, nor to activities of the Association during the Declarant Control Period.

Section 5.3 Design Review

(a) By Declarant.

Each Owner, by accepting a deed or other instrument conveying any interest in any portion of the Project, acknowledges that, as the developer of the Project and as an Owner of portions of the Project, Declarant has a substantial interest in ensuring that the Improvements within the Project enhance Declarant's reputation as a community developer and do not impair Declarant's ability to market, sell, or lease its property. Therefore, each Owner agrees that no activity within the scope of this Article shall be commenced on such Owner's Lot unless and until Declarant or its designee has given its prior written approval for such activity, which approval may be granted or withheld in Declarant's or its designee's sole discretion.

In reviewing and acting upon any request for approval, Declarant or its designee shall be acting solely in Declarant's interest and shall owe no duty to any other Person. Declarant's rights reserved under this Article shall continue so long as Declarant owns any portion of the Project or any real property adjacent to the Project, unless earlier terminated in a written instrument executed and Recorded by Declarant.

Declarant may, in its sole discretion, designate one or more Persons from time to time to act on its behalf in reviewing applications hereunder.

Declarant may from time to time, but shall not be obligated to, delegate all or a portion of its reserved rights under this Article to (i) a Design Review Committee appointed by the Board of Directors, or (ii) a committee comprised of architects, engineers, or other persons who may or may not be Members of the Association. Any such delegation shall be in writing specifying the scope of responsibilities delegated. It shall be subject to (i) Declarant's right to revoke such delegation at any time and reassume jurisdiction over the matters previously delegated and (ii) Declarant's right to veto any decision which Declarant determines, in its sole discretion, to be inappropriate or inadvisable for any reason. So long as Declarant has any rights under this Article, the jurisdiction of the foregoing entities shall be limited to such matters as Declarant specifically delegates to it.

(b) By Design Review Committee.

Upon delegation by Declarant or upon expiration or termination of Declarant's rights under this Article, the Association, acting through the DRC, shall assume jurisdiction over architectural matters.

The DRC shall consist of five members. Initially, all five (5) members of the DRC shall be appointed by Declarant on behalf of the Association. Each member shall hold office until such time as the member resigns, has been removed, or has had a successor appointed.

Upon expiration or termination of Declarant's rights under this Article, all members of the DRC shall thereupon be appointed by the Board and selected as follows: Two (2) to be selected by the Land Trust, two (2) to be selected by Declarant, and the fifth to be a licensed design professional in the field of architecture selected by the Association. Members of the DRC need not be members of the Association. Members shall serve staggered two (2) year terms as initially determined by the Board. There is no limit as to the number of consecutive terms that can be served by any member..

The DRC may contract and/or assign some of the DRC's administrative duties, but not authority, to any qualified design professional as needed.

Unless and until such time as Declarant delegates all or a portion of its reserved rights to the DRC or Declarant's rights under this Article terminate, the Association shall have no jurisdiction over architectural matters.

(c) Review Fees; Assistance.

For purposes of this Article, the entity having jurisdiction in a particular case shall be referred to as the “Reviewer.” The Reviewer may establish and charge reasonable fees for the initial review of submissions and may require such fees to be paid in full by the Owner prior to commencement of review of any submission. If the initial fees collected are insufficient to cover the actual costs incurred in the review process, the Reviewer may recover from the Owner the actual costs incurred in having any submission reviewed by architects, landscape architects, engineers, or other professionals. Declarant and the Association may employ landscape architects, engineers, or other persons as deemed necessary to perform the review. The Board may include the compensation of such persons in the Association’s annual operating budget.

Section 5.4 Guidelines and Procedures.

(a) Design Guidelines. The initial Design Guidelines are attached hereto as **Exhibit G**. The Design Guidelines are intended to provide guidance to Owners regarding matters of particular concern to the Reviewer in considering submissions. The Design Guidelines are not the exclusive basis for the Reviewer’s decisions, and compliance with the Design Guidelines does not guarantee approval of any submission.

Declarant shall have sole and full authority to amend the Association Design Guidelines as long as it owns any portion of or has a right to expand the Project pursuant to **Section 8.1**, unless Declarant specifically delegates the Owner to amend the Design Guidelines. Upon termination or delegation of Declarant’s right to amend, the DRC shall have the authority to amend the Design Guidelines with the Board’s consent.

Any amendments to the Design Guidelines shall be prospective only and shall not apply to require modifications to or removal of structures previously approved once the approved construction or modification has commenced. Except as set forth in **subsection (b)** below with respect to Design Guidelines designated to be Master Plan Covenants, there shall be no limitation on the scope of amendments to the Design Guidelines, and such amendments may remove requirements previously imposed or otherwise make the Design Guidelines less restrictive.

The Reviewer shall make the Design Guidelines available to owners who seek to engage in development or construction with the Project. The Recorded version of the Design Guidelines, as it may unilaterally be amended from time to time, shall control in the event of any dispute as to which version of the Design Guidelines was in effect at any particular time.

(b) Design Guidelines Provisions.

The Design Guidelines will contain certain restrictions which are required in the Master Plan and set forth in **Exhibit G-1**. These restrictions shall be incorporated into the Design Guidelines and shall not be waived, modified or amended with respect to any development or construction in the Project unless the same is approved pursuant to **Section 19.3** below. Those Design Guidelines designated Master Plan Perpetual Covenants may not be waived, modified or amended.

The provisions of this **Section 5.4(b)** are hereby designated to be Master Plan Perpetual Covenants.

(c) Procedures.

Except as otherwise specifically provided in the Design Guidelines, no activities shall commence on any portion of the Project until the final submission required by the Design Guidelines has been submitted to and approved by the Reviewer. Such submission shall include the written reports described in **Sections 5.10** and **5.11** below, plans and specifications showing site layout, structural design, exterior elevations, exterior materials and colors, landscaping, drainage, exterior lighting, irrigation, and other features of proposed construction as applicable. The DRC and the Reviewer may require the submission of such additional information as may be reasonably necessary to consider any submission.

In reviewing each submission, the Reviewer may consider any factors it deems relevant, including, without limitation, harmony of external design with surrounding structures and environment. The Reviewer shall have the sole discretion to make final, conclusive, and binding determinations on matters of aesthetic judgment and such determinations shall not be subject to review so long as made in good faith and in accordance with the procedures set forth herein.

The design review process shall take place in four (4) steps: (i) a Pre-Design Conference; (ii) Preliminary Design Review; (iii) Final Design Review; and (iv) construction monitoring. The Reviewer shall design review according to the following schedule:

Pre-Design Conference: Meeting scheduled within fourteen (14) working days of receipt of pre-design conference request form.

Preliminary Design Review: Application documents to be submitted fourteen (14) working days prior to the next scheduled meeting of the Reviewer.

Written comments from the meeting with the Reviewer provided to Owner within seven (7) working days, subject to Declarant's veto right pursuant to this Section.

If a second review meeting is necessary to review corrected and/or new materials, the Owner shall submit such corrected and/or new materials five (5) working days prior to the next regularly scheduled meeting of the Reviewer.

Final Design Review: Application documents to be submitted fourteen (14) working days prior to the next scheduled meeting of the Reviewer, and within one (1) year of preliminary design approval.

Written comments from the meeting with the reviewer and/or written notice of final design approval provided to Owner within seven (7) working days, subject to Declarant's veto right pursuant to this Section.

If a second review meeting is necessary to review refinements, revisions and/or new materials, the Owner shall submit such materials five (5) working days prior to the next regularly scheduled meeting of the Reviewer.

Any subsequent construction, landscaping or other changes that differ from the approved final design documents must first be submitted in writing to the Reviewer for review and approval.

Construction Monitoring:

Owner applies to the County of Maui for all applicable building and use permits. Any adjustments to the final approved plans required by the County of Hawai'i must be resubmitted to the Reviewer for review prior to the commencement of construction.

Site observation with the builder prior to any site disturbance, and within seven (7) working days of receipt of written request.

Framing observation within seven (7) working days of receipt of written request.

Final Observation within seven (7) working days of receipt of written request and prior to request for a Certificate of Occupancy form the County of Maui.

Notice of Completion issued by the Reviewer within seven (7) working days of observation.

The DRC and Reviewer will make a reasonable effort to comply with the design review schedule. However, the DRC and Reviewer shall not be liable for any delays that are caused by circumstances beyond their control.

Until expiration of Declarant's rights to amend the Design Guidelines under this Article, Declarant shall have the right to veto the approval by the DRC of any submission within the scope of matters delegated to the DRC by Declarant. The DRC shall notify Declarant in writing within three (3) business days after the DRC has approved any submission. The notice shall be accompanied by a copy of the submission and any additional information which Declarant may require. Declarant shall have fourteen (14) days after receipt of such notice to

veto any such action, in its sole discretion, by written notice to the DRC. The Reviewer shall notify the applicant in writing of the final determination on any submission within five (5) days after the earlier of: (i) receipt of notice of Declarant's veto or waiver thereof; or (ii) expiration of the fourteen (14) day period for exercise of Declarant's veto.

In the event that the Reviewer fails to respond in a timely manner, approval shall be deemed to have been given, subject to Declarant's right to veto pursuant to this Section. However, no approval, whether expressly granted or deemed granted, shall be inconsistent with the Design Guidelines unless a written variance has been granted pursuant to **Section 5.6**. Notice shall be deemed to have been given at the time the envelope containing the response is deposited with the U.S. Postal Service. Personal delivery of such written notice shall, however, be sufficient and shall be deemed to have been given at the time of delivery to the applicant.

If construction does not commence on the Project for which plans have been approved within one (1) year after the date of approval of the final submission required by the Design Guidelines, such approval shall be deemed withdrawn and it shall be necessary for the Owner to resubmit for approval before commencing any activities. Once construction is commenced, it shall be diligently pursued to completion. All work shall be completed within twenty-four (24) months of commencement unless otherwise specified in the notice of approval or unless the Reviewer grants an extension in writing, which it shall not be obligated to do. If approved work is not completed within the required time, it shall be considered nonconforming and shall be subject to enforcement action by the Association, Declarant, or any aggrieved Owner.

The Reviewer may, by resolution, exempt certain activities from the submission and approval requirements of this Article, provided such activities are undertaken in strict compliance with the requirements of such resolution.

Section 5.5 No Waiver of Future Approvals.

Each Owner acknowledges that the Persons reviewing submissions under this Article will change from time to time and that opinions on aesthetic matters, as well as interpretation and application of the Design Guidelines, may vary accordingly. In addition, each Owner acknowledges that it may not always be possible to identify objectionable features until work is completed, in which case it may be unreasonable to require changes to the Improvements involved, but the Reviewer may refuse to approve similar proposals in the future. Approval of submissions or plans, or in connection with any other matter requiring approval, shall not be deemed to constitute a waiver of the right to withhold approval as to any similar submissions, plans, or other matters subsequently or additionally submitted for approval.

Section 5.6 Variances.

The Reviewer may authorize variances from compliance with any of its guidelines and procedures set forth in the Association Design Guidelines when circumstances such as topography, natural obstructions, hardship, or aesthetic or environmental considerations require, but only in accordance with duly adopted rules and regulations. No variance shall (a) be effective unless in writing; (b) be contrary to this Declaration; (c) estop the Reviewer from

denying a variance in other circumstances, or (d) have the effect of amending, modifying, waiving or terminating any Master Plan Covenant except in accordance with **Section 19.3**, or any Master Plan Perpetual Covenant. For purposes of this Section, the inability to obtain approval of any governmental agency, the issuance of any permit, or the terms of any financing shall not be considered a hardship warranting a variance.

Section 5.7 Limitation of Liability.

The standards and procedures established by this Article are intended as a mechanism for maintaining and enhancing the overall aesthetics of the Project; they do not create any duty to any Person. Review and approval of any submission pursuant to this Article is made on the basis of aesthetic considerations only, and the Reviewer shall not bear any responsibility for ensuring the structural integrity or soundness of approved construction or modifications, nor for ensuring compliance with building codes and other governmental requirements, nor for ensuring that all Dwellings are of comparable quality, value or size, of similar design, or aesthetically pleasing or otherwise acceptable to neighboring property owners.

Declarant, the Association, the Board, any committee, or member of any of the foregoing shall not be held liable for soil conditions, drainage, or other general site work; any defects in plans revised or approved hereunder; any loss or damage arising out of the action, inaction, integrity, financial condition, or quality of work of any contractor or its subcontractors, employees, or agents; or any injury, damages, or loss arising out of the manner or quality or other circumstances of approved construction on or modifications to any Lot. In all matters, the Board, the DRC, and the members of each shall be defended and indemnified by the Association as provided in **Section 7.10**.

Section 5.8 Certificate of Architectural Compliance.

Any Owner may request that the Reviewer issue a certificate of architectural compliance certifying that there are no known violations of this Article or the Design Guidelines. The Association shall either grant or deny such request within thirty (30) days after receipt of a written request and may charge a reasonable administrative fee for issuing such certificates. Issuance of such a certificate shall estop the Association from taking enforcement action with respect to any condition as to which the Association had notice as of the date of such certificate.

Section 5.9 Notice to Comply.

When as a result of a construction observation or final inspection, the Reviewer finds (i) changes and/or alterations that have not been approved; or (ii) that construction work was not done in compliance with the approved final design documents, the Reviewer shall issue a Notice to Comply to the Lot Owner within three (3) working days of the observation/inspection. Such Notice shall describe with reasonable particularity the nature of the non-compliance and a timetable for compliance.

Upon receipt of the Notice to Comply, the Lot Owner shall remedy the non-compliance within a minimum of thirty (30) days or such other time period set forth in the Notice to Comply. Failure to remedy the non-compliance within the time period provided in the Notice to Comply may result in enforcement action against the Lot Owner including all rights

and remedies contained within this Declaration and the Design Guidelines including, but not limited to, fines and removal or modification of the Improvement with the costs for such modification or removal to be assessed against such Owner's Lot.

Section 5.10 Disruption of Historical Sites.

Historical Sites exist on various portions of the Property. Declarant has conducted a survey of the Property in a reasonable effort to identify all Historical Sites on the Property. As a result of the survey numerous Historical Sites have been identified ("Identified Historic Sites") however some Historical Sites may exist on the Property that have not been identified ("Undiscovered Historic Sites"). Historical Sites may be located on Lots as well as under Lots. Such Historical Sites may impact the manner in which an Owner may improve his/her Lot. Some of the Identified Historic Sites have been designated for preservation ("Preservation Sites") while other Identified Historic Sites have been designated for potential data recovery ("Data Recovery Sites"). The Preservation Sites within the Project are depicted on a plan that has been, or will be, Recorded. Preservation Sites shall not be disturbed or removed. The Association shall be obligated to protect and preserve Preservation Sites as required by the State of Hawai'i Department of Land and Natural Resources regulations. Protection and preservation of Preservation Sites may include the construction of berms, walls, gates and barriers, the installation of signs, plants and other landscaping, and monitoring of Historical Sites. The cost of maintaining such protection and preservation measures shall be Common Expense of the Association. Data Recovery Sites may be disturbed or disrupted after data recovery activities have been completed. In the event any Data Recovery Site is located within the Building Envelope on any Lot, Declarant shall have the obligation to undertake and complete all data recovery activities.

Each Owner shall take into account any Preservation Sites on the Owner's Lot when designing and constructing Improvements on the Lot. The existence and location of any Preservation Sites on a Lot shall be considered by the Reviewer in evaluating a submission for approval.

In the event that any Preservation Site or Data Recovery Site exists on the Lot, then prior to undertaking any Improvements on the Lot, the Owner of the Lot shall engage a cultural and archaeological resource expert approved by the Land Trust to (i) physically mark the Identified Historic Sites; (ii) establish procedures and protocols to protect and preserve the Preservation Sites and gather information from the Data Recovery Sites, (iii) submit a written report to the Lot Owner and the Land Trust describing the procedures and protocols, and (iv) submit periodic written status reports of the expert's observations and evaluations of the construction work in following the required procedures and protocols throughout the period of any construction or grading work. Under no circumstances may any Owner or Member, or their licensees, guests, invitees, agents, employees, contractors, representatives, or any other Person deposit construction waste, refuse, or any other material on or in any Preservation Site, damage, disrupt or destroy a Preservation Site, or remove material of any kind from a Preservation Site.

In the unlikely event an Owner discovers the existence of an Undiscovered Site after commencing construction of an Improvement, the Owner shall cease construction and notify the Association immediately of the existence and location of the Undiscovered Site. The

Owner shall then grant the Association, its agents, employees, and any governmental officials and inspectors access to the site to conduct any required evaluation, testing, data recovery, preservation, and mitigation that may be required by Ordinance, SMA Permit, the State of Hawai‘i Department of Land and Natural Resources regulations as of the date this Declaration is Recorded, or Hawai‘i Law. Neither the Association nor Declarant give any warranty, or make any representation, that all Historical Sites that exist within the Project have been discovered. Undiscovered Sites may affect the manner in which Lots within the Project may be developed. Neither the Association nor Declarant shall have any liability for any damages, increased construction costs, or delays caused by the existence of, or the discovery of, a Historical Site.

Notwithstanding any other provision of this Declaration, this Section may not be amended or modified without the consent of the State of Hawai‘i Department of Land and Natural Resources.

Section 5.11 Flora Sites.

Flora Sites exist on various portions of the Property. Declarant has conducted a survey of the Property in a reasonable effort to identify all Flora Sites on the Property. As a result of the survey numerous Flora Sites have been identified (“Identified Flora Sites”) however some Flora Sites may exist on the Property that have not been identified (“Undiscovered Flora Sites”). Such Flora Sites may impact the manner in which an Owner may improve his/her Lot. The Flora Sites within the Project are depicted on a plan that has been, or will be, Recorded. Flora Sites shall not be disturbed or removed. The Association shall be obligated to protect and preserve Flora Sites as required by law. Protection and preservation of Flora Sites may include the construction of berms, walls, gates and barriers, the installation of signs, plants and other landscaping, and monitoring of Flora Sites. The cost of maintaining such protection and preservation measures shall be Common Expense of the Association.

Each Owner shall take into account any Flora Sites on the Owner’s Lot when designing and constructing Improvements on the Lot. The existence and location of any Flora Sites on a Lot shall be considered by the Reviewer in evaluating a submission for approval.

In the event that a Flora Site exists on the Lot, then prior to undertaking any Improvements on the Lot, the Owner of the Lot shall engage a cultural and archaeological resource expert approved by the Land Trust to (i) physically mark the identified Flora Sites; (ii) establish procedures and protocols to protect and preserve the Flora Sites, (iii) submit a written report to the Lot Owner and the Land Trust describing the procedures and protocols, and (iv) submit periodic written status reports of the expert’s observations and evaluations of the construction work in following the required procedures and protocols throughout the period of any construction or grading work. Under no circumstances may any Owner or Member, or their licensees, guests, invitees, agents, employees, contractors, representatives, or any other Person deposit construction waste, refuse, or any other material on or in any Flora Site, damage, disrupt or destroy a Flora Site, or remove material of any kind from a Flora Site.

In the unlikely event an Owner discovers the existence of an Undiscovered Flora Site after commencing construction of an Improvement, the Owner shall cease construction and notify the Association immediately of the existence and location of the Undiscovered Flora Site.

The Owner shall then grant the Association, its agents, employees, and any governmental officials and inspectors access to the site to conduct any required evaluation, testing, data recovery, preservation, and mitigation that may be required by Ordinance, SMA Permit, the State of Hawai'i Department of Land and Natural Resources regulations, Hawai'i Law or applicable federal law. Neither the Association nor Declarant give any warranty, or make any representation, that all Flora Sites that exist within the Project have been discovered. Undiscovered Flora Sites may affect the manner in which Lots within the Project may be developed. Neither the Association nor Declarant shall have any liability for any damages, increased construction costs, or delays caused by the existence of, or the discovery of, a Flora Site.

Section 5.12 Setbacks.

All residential Lots shall have a minimum building setback from its oceanside boundary of fifty (50) feet. This **Section 5.12** is hereby designated to be a Master Plan Perpetual Covenant.

Section 5.13 Construction of Improvements.

Declarant has a legitimate interest in assuring that all construction undertaken within the Project is of the highest quality. Construction of Improvements should be conducted expeditiously with the least possible disruption to adjacent and neighboring Lots and properties so the property values within the Project may, at all times, be protected and maintained at the highest possible levels. Construction of any and all Improvements within the Project must be undertaken only by builders who are duly licensed by the State of Hawai'i as general contractors. Prior to commencement of construction of Improvements on a Lot, the Owner of the Lot, and/or the Owner's general contractor, shall secure and maintain adequate public liability, builder's risk insurance, and performance and payment bonds with face amounts equal to at least one hundred percent (100%) of the cost of construction, and the Owner shall be named as an additional insured on such policies. Prior to commencing construction, a copy of the policy or certificate thereof shall be delivered to Declarant.

No Improvement built by any Owner on the Owner's Lot shall encroach upon any adjoining Lot or extend outside of the Building Envelope for that Lot, provided that each Owner shall be responsible for landscaping the Natural Area on his/her Lot. Declarant shall not be responsible for any encroachment of any such Improvement upon an adjoining Lot, or outside of the Building Envelope (other than landscaping). The Reviewer may require that an Owner conduct a survey to ensure that any Improvement constructed on the Owner's Lot will not encroach upon any adjoining Property or outside of the Building Envelope (other than landscaping). An Owner shall indemnify, defend, and hold Declarant, the Association, their agents and employees, harmless from and against any and all claims, losses, expenses, damages, liabilities, or injuries suffered by reason of any acts, omissions, or alleged acts or omissions arising out of an Owner's performance or nonperformance of the Owner's obligations under this Section, including, but not limited to, the encroachment of any Improvement upon any adjoining Lot, or outside of the Building Envelope (other than landscaping), including, but not limited to, any judgment, award, settlement, reasonable attorney's fees and other costs, or expenses incurred in connection with the defense of any actual or threatened action, proceeding, or claim.

Each Owner shall maintain the Owner's Lot in a neat and orderly condition before, during, and after the construction on the Lot and take all reasonable dust control measures, including watering the Lot and/or erecting dust screens, to alleviate the generation of dust. In addition, Owners shall not allow trash and debris to accumulate anywhere on the Lot. Owners shall not store any construction materials on the Lot, except during the period that construction is actually occurring on the Lot. Owners shall keep roadways, easements, and other property within the Project clear of trash and materials related to construction of the Lots.

Declarant may construct Project Improvements within the Project. Preservation of Project Improvements contributes substantially to property values in the Project. Construction and other activities conducted by an Owner shall not result in any damage to or alteration of any Project Improvements. If any damage shall occur, the Owner responsible for such damage shall promptly repair such damage. Each Owner agrees to indemnify and hold harmless Declarant, the Association, their agents and employees, and other Owners of Lots in the Project from and against any and all claims, damages, expenses (including reasonable attorneys' fees and court costs), and liabilities of any nature whatsoever asserted against, or incurred by the same, in connection with any damage to or alteration of Project Improvements caused by such Owner, the Owner's employees, agents, or independent contractors.

ARTICLE 6: USE, MAINTENANCE AND REPAIR

Section 6.1 Use and No Subdivision.

Each Owner of Lot Nos. 1 through 200 hereby covenants and agrees with all other Owners and the Association, as follows:

(a) To use Owner's Lot solely for residential purposes and that the Lot shall not be used for transient or long term rentals, daycare nurseries, kindergartens, nursery schools, childcare homes, daycare homes or other like facilities used for childcare services, or the sale of agricultural or other products; no Owner shall receive income or other consideration from the letting of his house or Lot; and

(b) That no Lot shall be subdivided into two (2) or more Lots.

This **Section 6.1** is hereby designated to be a Master Plan Perpetual Covenant.

Section 6.2 Maintenance of Lots.

Subject to the rights and obligations of the Association set forth in this Declaration, each Owner shall maintain the Owner's Lot and all landscaping and Improvements on the Lot in a manner consistent with the Governing Documents, the Community-Wide Standard and all applicable covenants, unless such maintenance responsibility is otherwise assumed by or assigned to the Association pursuant to any Supplemental Declaration or other declaration of covenants applicable to such Lot. This Section shall not be interpreted as giving the Owner the right to prune, trim, cut or remove any tree, plant or other vegetation from the Association Easement but shall be interpreted to require the Owner to maintain the Lot in order to reduce fire hazards, including but not limited to removing dead wood.

Section 6.3 Responsibility for Repair and Replacement.

Unless otherwise specifically provided in the Governing Documents, or in other instruments creating and assigning maintenance responsibility, responsibility for maintenance shall include responsibility for repair and replacement, as necessary, to maintain the Property to a level consistent with the Community-Wide Standard.

By virtue of taking title to a Lot, each Owner covenants and agrees with all other Owners and with the Association to carry property insurance for the full replacement cost of all insurable improvements on the Owner's Lot, less a reasonable deductible, unless the Association carries such insurance (which they may but are not obligated to do hereunder). If the Association assumes responsibility for obtaining any insurance coverage on behalf of Owners, premiums for such insurance shall be levied as a Specific Assessment against the benefited Lot and the Owner.

Each Owner further covenants and agrees that in the event of damage to or destruction of structures on or comprising the Owner's Lot, the Owner shall proceed promptly to repair or to reconstruct in a manner consistent with the original construction or such other plans and specifications as are approved in accordance with **Article 5**. Alternatively, the Owner shall clear the Lot and maintain it in a neat and attractive, landscaped condition consistent with the Community-Wide Standard. The Owner shall pay any costs not covered by insurance proceeds.

Section 6.4 No Pesticides.

Pesticide use in the Project shall be prohibited. Only organic fertilizers shall be permitted to treat any landscaping. This **Section 6.4** is hereby designated a Master Plan Covenant.

Section 6.5 Education.

Each Owner, in acquiring title to a Lot, recognizes and acknowledges that the Project is intended to be the "most environmentally planned, designed and implemented large Lot subdivision in the State." In order to achieve this goal, each Owner covenants with all other Owners and the Association, to become educated and informed about the environment, and culture, and to learn about "Mālama 'āina," "take care of the land and sea." To this end, each Owner agrees to participate in classes and educational workshops to be developed by the Council under the SAMP together with the participation and involvement of Declarant. This **Section 6.5** is hereby designated as a Master Plan Covenant.

ARTICLE 7: THE COMMUNITY ASSOCIATION

Section 7.1 Organization.

The Association is organized under the Hawai'i Revised Statutes as a Hawai'i non-profit corporation without stock. The Association is charged with the duties and vested with the powers prescribed by law, subject to the limitations and provisions of the Governing Documents. Neither the Articles nor Bylaws shall, for any reason, be amended or otherwise changed so as to be inconsistent with this Declaration. If there should exist any ambiguity in any

provision of the Articles or Bylaws, then such provision shall be construed, to the extent possible, so as to be consistent with the provisions of this Declaration.

Section 7.2 Function.

The Association is the entity responsible for management, maintenance, operation, and control of the Area of Common Responsibility. The Association also is the primary entity responsible for the enforcement of the Governing Documents. The Association shall perform its functions in accordance with the Governing Documents and Hawai‘i law.

Section 7.3 Membership.

Every Owner shall be a Member of the Association. There shall be only one membership per Lot. If a Lot is owned by more than one Person, all co-Owners shall share the privileges of such membership, subject to reasonable Board regulation and the restrictions on voting set forth in **Section 7.4(c)** and the Bylaws, and all such co-Owners shall be jointly and severally obligated to perform the responsibilities of Owners. The membership rights of an Owner which is not a natural person may be exercised by any officer, director, partner, member, trustee, or by the individual designated from time to time by the Owner in a written instrument provided to the Secretary of the Association.

Section 7.4 Voting.

The Association shall have two classes of membership, Owner Members and Declarant Members.”

(a) Owner Members. Class A Members shall be all Owners except the Declarant Member, if any. Owner Members shall have one equal vote for each Lot in which they hold the interest required for membership under **Section 7.3** except that there shall be only one vote per Lot. No vote shall be exercised for any property which is exempt from assessment under **Section 7.22**. All Owner Member votes shall be cast as provided in **Section 7.4(c)**.

(b) Declarant Member. The sole Declarant Member shall be Declarant. The Declarant Member may appoint a majority of the members of the Board of Directors during the Declarant Control Period, as specified in the Bylaws. Additional rights of the Declarant Member are specified in the relevant sections of the Governing Documents. After termination of the Declarant Control Period, the Declarant Member shall have the right to disapprove actions of the Board and committees as provided in the Bylaws.

The Declarant membership set forth in this subsection (b) shall terminate upon the earlier of:

- (i) Ten (10) years after expiration of the Declarant Control Period pursuant to the Bylaws; or
- (ii) When, in its discretion, Declarant so determines and declares in a Recorded instrument.

Upon termination of the Declarant membership, Declarant shall be an Owner Member entitled to Owner Member votes for each Lot it owns.

(c) Exercise of Voting Rights. Except as provided herein, during the Declarant Control Period the vote for each Lot owned by an Owner Member shall be exercised by such Owner Member. In any situation where a Member is entitled personally to exercise the vote for the Member's Lot, and there is more than one Owner of such Lot, the vote for such Lot shall be exercised as the co-Owners determine among themselves and advise the Secretary of the Association in writing prior to the vote being taken. Absent such advice, the Lot's vote shall be suspended if more than one Person seeks to exercise it.

(d) Additional Classes of Membership. In recognition of the different character and intended use of the Property subject to Supplemental Declaration, Declarant may, by Supplemental Declaration, create additional classes of membership for the Owners of Lots within any Property made subject to this Declaration pursuant to **Article 8**. These classes shall have such rights, privileges, and obligations as specified in such Supplemental Declaration.

Section 7.5 Acceptance and Control of Association Property.

The Association may acquire, hold, lease (as lessor or lessee), operate, and dispose of tangible and intangible personal property and real property. The Association may enter into leases, licenses, or operating agreements for portions of the Common Area, for such consideration or no consideration as the Board deems appropriate, to permit use of such portions of the Common Area by community organizations and by others, whether nonprofit or for profit, for the provision of goods or services for the general benefit or convenience of Owners, occupants, and residents of the Project; provided, however, that the Area of Common Responsibility makai of the Project roadway shall be limited to agricultural uses.

Declarant and its designees may convey to the Association, and the Association shall accept, personal property and fee title, leasehold, or other property interests in any real property, improved or unimproved, described in **Exhibits A** or **B**. Upon Declarant's written request, the Association shall reconvey to Declarant any unimproved portions of the Common Area Declarant originally conveyed to the Association for no consideration, to the extent conveyed by Declarant in error or needed by Declarant to make minor adjustments in property lines.

The Association shall be responsible for management, operation, and control of the Common Area, subject to any covenants and restrictions set forth in the deed or other instrument transferring such property to the Association. The Board may adopt such reasonable rules regulating use of the Common Area as it deems appropriate.

Section 7.6 Maintenance of Area of Common Responsibility.

(a) The Association shall maintain, in accordance with the Community-Wide Standard, the Area of Common Responsibility, which shall include, but need not be limited to:

Area;:

- (i) all portions of and structures situated on the Common

- (ii) landscaping within public rights-of-way within or abutting the Project;

- (iii) such portions of any additional property included within the Area of Common Responsibility as may be dictated by this Declaration, any Supplemental Declaration, the Covenant to Share Costs, or any contract or agreement for maintenance thereof entered into by the Association;

- (iv) all Historical Sites as described in **Section 5.9**, including any sites located on individual Lots, shall also be subject to the management and maintenance obligations, procedures and protocols set forth in the SAMP;

- (v) the deer and livestock fence to be placed along the mauka boundary of the Project.

This **Section 7.6(a)(v)** is hereby designated to be a Master Plan Perpetual Covenant;

- (vi) all portions of and all structures, equipment, landscaping, trees, plants and other Improvements situated on the Association Easement with the exception of any structures, equipment, landscaping, trees, plants and other Improvements installed or constructed on the Association Easement by an Owner;

- (vii) any Property and facilities Declarant owns and makes available, on a temporary or permanent basis, for the primary use and enjoyment of the Association and its Members. Such Property and facilities shall be identified by written notice from Declarant to the Association and will remain part of the Area of Common Responsibility maintained by the Association until such time as Declarant revokes such privilege of use and enjoyment by written notice to the Association.

- (b) The Association shall establish baseline and acceptable parameters relating to storm water drains and outlets draining into the ocean for water quality with respect to the temperature, salinity, total suspended solids, total nitrogen, ammonia nitrogen, nitrate and nitrite, total phosphorous, chlorophyll A and silicate, and monitor and report such findings periodically to the Council in accordance with procedures to be agreed upon by Council, the Association and Declarant.

- (c) Subject to the provisions of **Article 9** below, the Common Area mauka of the Conservation District Area shall be maintained by the Association as open space; there shall be no construction or grading except as may be necessary or appropriate for health or safety purposes; there shall be no clearing of foliage or shrubs although the same may be trimmed and pruned in order to maintain and /or enhance the general coverage and landscaping environment.

This **Section 7.6.c** is hereby designated to be a Master Plan Perpetual Covenant.

(d) The Association may maintain other property which it does not own, including, without limitation, undeveloped Lots and property dedicated to the public, if the Board of Directors determines that such maintenance is necessary or desirable to maintain the Community-Wide Standard.

(e) The Association shall not be liable for any damage or injury occurring on or arising out of the condition of property which it does not own except to the extent that it has been grossly negligent in the performance of its maintenance responsibilities.

(f) Except as provided above, the Area of Common Responsibility shall not be reduced except with Declarant's prior written approval as long as Declarant owns any property described in **Exhibit A** or **B** of this Declaration.

(g) The costs associated with maintenance, repair, and replacement of the Area of Common Responsibility shall be a Common Expense; provided, the Association may seek reimbursement from the owner(s) of, or other Persons responsible for, certain portions of the Area of Common Responsibility pursuant to this Declaration, the Covenant to Share Costs, other Recorded covenants, or agreements with the owner(s) thereof.

Section 7.7 Insurance.

(a) Required Coverages. The Association shall obtain and continue in effect the following types of insurance, if reasonably available, or if not reasonably available, the most nearly equivalent coverages as are reasonably available:

(i) Blanket property insurance covering "risks of direct physical loss" on a "special form" basis (or comparable coverage by whatever name denominated) for all insurable improvements on the Common Area and within the Area of Common Responsibility to the extent that Association has assumed responsibility in the event of a casualty, regardless of ownership. If such coverage is not generally available at reasonable cost, then "broad form" coverage may be substituted. All property insurance policies obtained by the Association shall have policy limits sufficient to cover the full replacement cost of the insured improvements under current building ordinances and codes;

(ii) Commercial general liability insurance on the Area of Common Responsibility, insuring the Association and its Members for damage or injury caused by the negligence of the Association or any of its Members, employees, agents, or contractors while acting on its behalf. If generally available at reasonable cost, such coverage (including primary and any umbrella coverage) shall have a limit of at least \$1,000,000.00 per occurrence with respect to bodily injury, personal injury, and property damage; provided, should additional coverage and higher limits be available at reasonable cost which a reasonably prudent person would obtain, the Association shall obtain such additional coverages or limits;

(iii) Workers compensation insurance and employers liability insurance, if and to the extent required by law;

(iv) Directors and officers liability coverage;

(v) Commercial crime insurance, including fidelity insurance covering all Persons responsible for handling Association funds in an amount determined in the Board's business judgment but not less than an amount equal to one-quarter of the annual Base Assessments on all Lots plus reserves on hand. Fidelity insurance policies shall contain a waiver of all defenses based upon the exclusion of Persons serving without compensation; and

(vi) Such additional insurance as the Board, in the exercise of its business judgment, determines advisable.

Premiums for all insurance on the Area of Common Responsibility shall be Common Expenses.

(b) Policy Requirements. The Association shall arrange for an annual review of the sufficiency of its insurance coverage by one or more qualified Persons, at least one of whom must be familiar with insurable replacement costs in the Maui County area. All Association policies shall provide for a certificate of insurance to be furnished to the Association and, upon request, to each Member insured.

The policies may contain a reasonable deductible, and the amount thereof shall not be subtracted from the face amount of the Policy in determining whether the Policy limits satisfy the requirements of **Section 7.7(a)**. In the event of an insured loss, the deductible shall be treated as a Common Expense. However, if the Board reasonably determines, after notice and an opportunity to be heard in accordance with the Bylaws, that the loss is the result of the negligence or willful misconduct of one or more Owners, their guests, invitees, or lessees, then the Board may assess the full amount of such deductible against such Owner(s) and their Lots as a Specific Assessment.

All insurance coverage obtained by the Board shall:

(i) Be written with a company authorized to do business in Hawai'i which satisfies the requirements of the Federal National Mortgage Association, or such other secondary mortgage market agencies or federal agencies as the Board deems appropriate;

(ii) Be written in the Association's name as trustee for the benefited parties. Policies on the Common Areas shall be for the benefit of the Association and its Members;

(iii) Not be brought into contribution with insurance purchased by Owners, occupants, or their Mortgagees individually;

(iv) Contain an inflation guard endorsement;

(v) Include an agreed amount endorsement, if the policy contains a co-insurance clause;

(vi) Provide that each Owner is an insured person under the policy with respect to liability arising out of such Owner's interest in the Common Area as a

Member in the Association (provided, this provision shall not be construed as giving an Owner any interest in the Common Area other than that of a Member);

(vii) Provide a waiver of subrogation under the policy against any Owner or household member of an Owner;

(viii) Include an endorsement precluding cancellation, invalidation, suspension, or non-renewal by the insurer on account of any one or more individual Owners, or on account of any curable defect or violation without prior written demand to the Association to cure the defect or violation and allowance of a reasonable time to cure; and

(ix) Include an endorsement precluding cancellation, invalidation, or condition to recover under the policy on account of any act or omission of any one or more individual Owners, unless such Owner is acting within the scope of its authority on behalf of the Association.

In addition, the Board shall use reasonable efforts to secure insurance policies which list the Owners as additional insureds and provide:

(i) a waiver of subrogation as to any claims against the Association's Board, officers, employees, and its manager, the Owners and their tenants, servants, agents, and guests;

(ii) a waiver of the insurer's rights to repair and reconstruct instead of paying cash;

(iii) an endorsement excluding Owners' individual policies from consideration under any "other insurance" clause;

(iv) an endorsement requiring at least thirty (30) days' prior written notice to the Association of any cancellation, substantial modification, or non-renewal;

(v) a cross liability provision; and

(vi) a provision vesting in the Board exclusive authority to adjust losses; provided, no Mortgagee having an interest in such losses may be prohibited from participating in the settlement negotiations, if any, related to the loss.

(c) Restoring Damaged Improvements. In the event of damage to, or destruction of, Common Area or other property which the Association is obligated to insure, the Board or its duly authorized agent shall file and adjust all insurance claims and obtain reliable and detailed estimates of the cost of repairing or restoring the property to substantially the condition in which it existed prior to the damage, allowing for changes or improvements necessitated by changes in applicable building codes,

Damaged Improvements on the Common Area shall be repaired or reconstructed unless the Members representing at least seventy-five percent (75%) of the total Owner Member votes in the Association, and the Declarant Member, if any, decide within sixty (60) days after

the loss not to repair or reconstruct. If either the insurance proceeds or estimates of the loss, or both, are not available to the Association within such 60-day period, then the period shall be extended until such funds or information are available. However, such extension shall not exceed sixty (60) additional days. No Mortgagee shall have the right to participate in the determination of whether the damage or destruction to the Common Area shall be repaired or reconstructed.

If a decision is made not to restore the damaged Improvements, and no alternative improvements are authorized, the affected Property shall be cleared of all debris and ruins and thereafter shall be maintained by the Association in a neat and attractive, landscaped condition consistent with the Community-Wide Standard.

Any insurance proceeds remaining after paying the costs of repair or reconstruction, or after such settlement as is necessary and appropriate, shall be retained by the Association for the benefit of its Members and placed in a capital improvements account. This is a covenant for the benefit of Mortgagees and may be enforced by the Mortgagee of any affected Lot.

If insurance proceeds are insufficient to cover the costs of repair or reconstruction, the Board may, without a vote of the Members, levy Special Assessments to cover the shortfall against the Owners.

Section 7.8 Compliance and Enforcement.

(a) Every Owner and occupant of a Lot shall comply with the Governing Documents. The Board may impose sanctions for violation of the Governing Documents after notice and a hearing in accordance with the procedures set forth in the Bylaws. Such sanctions may include, without limitation:

(i) imposing reasonable monetary fines which shall constitute a lien upon the violator's Lot. (In the event that any occupant, guest, or invitee of a Lot violates the Governing Documents and a fine is imposed, the fine shall first be assessed against the violator; provided, if the fine is not paid by the violator within the time period set by the Board, the Owner shall pay the fine upon notice from the Board);

(ii) suspending an Owner's right to vote;

(iii) suspending any Person's right to use any recreational facilities within the Common Area; provided, nothing herein shall authorize the Board to limit ingress or egress to or from a Lot;

(iv) suspending any services provided by the Association to an Owner or the Owner's Lot if the Owner is more than thirty (30) days delinquent in paying any assessment or other charge owed to the Association;

(v) exercising self-help or taking action to abate any violation of the Governing Documents in a non-emergency situation;

(vi) requiring an Owner, at its own expense, to remove any structure or Improvement on such Owner's Lot in violation of the Governing Documents and to restore the Lot to its previous condition and, upon failure of the Owner to do so, the Board or its designee shall have the right to enter the property, remove the violation and restore the property to substantially the same condition as previously existed and any such action shall not be deemed a trespass;

(vii) without liability to any Person, precluding any contractor, subcontractor, agent, employee or other invitee of an Owner who fails to comply with the terms and provisions of **Article 5** and the Design Guidelines from continuing or performing any further activities in the Project; and damages or both.

(viii) levying Specific Assessments to cover costs incurred by the Association to bring a Lot into compliance with the Governing Documents.

(b) In addition, the Board may take the following enforcement procedures to ensure compliance with the Governing Documents without the necessity of compliance with the procedures set forth in the Bylaws:

(i) exercising self-help in any emergency situation (specifically including, but not limited to, the towing of vehicles that are in violation of parking rules and regulations); or

(ii) bringing suit at law or in equity to enjoin any violation or to recover monetary damages or both.

In addition to any other enforcement rights, if an Owner fails properly to perform the Owner's maintenance responsibility, the Association may Record a notice of violation or perform such maintenance responsibilities and assess all costs incurred by the Association against the Lot and the Owner as Specific Assessment. Except in an emergency situation, the Association shall provide the Owner reasonable notice and opportunity to cure the problem with a thirty (30) day period after receipt of such notice, prior to taking such enforcement action.

All remedies set forth in the Governing Documents shall be cumulative of any remedies available at law or in equity. In any action to enforce the Governing Documents against an Owner if the Association (or the Land Trust under **Section 7.8(c)** below) prevails, it shall be entitled to recover from such Owner all costs, including, without limitation, attorneys fees and court costs, reasonably incurred in such action.

(c) In addition to the Board, the Land Trust shall have the right to take the enforcement procedures set forth in **Section 7.8(a)** and **(b)** above to ensure compliance with the Master Plan Perpetual Covenants or the Master Plan Covenants, subject to the procedures set forth therein, and the following conditions:

(i) The Land Trust shall provide the Board with not less than five (5) business days prior written notice of intent to commence an enforcement action against the offending Lot Owner stating with particularity circumstances giving rise to the alleged violation of the Master Plan Perpetual Covenant or Master Plan Covenant;

(ii) In the event the Board declines to bring its own enforcement action and the Land Trust pursues such action but does not prevail on the main claims of the enforcement action, the Land Trust shall indemnify, defend and hold the Board and Association harmless from and against all claims, losses and damages (including reasonable attorneys' fees and costs) which the Board and/or the Association may suffer arising out of or incurred in connection with the Land Trust's enforcement action.

This **Section 7.8(c)** is hereby designated to be a Master Plan Perpetual Covenant.

(d) The decision to pursue enforcement action in any particular case shall be left to the Board's discretion, except that the Board shall not be arbitrary or capricious in taking enforcement action. Without limiting the generality of the foregoing sentence, the Board may determine that, under the circumstances of a particular case:

(i) the Association's position is not strong enough to justify taking any or further action;

(ii) the covenant, restriction or rule being enforced is, or is likely to be construed as, inconsistent with applicable law;

(iii) although a technical violation may exist or may have occurred, it is not of such a material nature as to be objectionable to a reasonable person or to justify expending the Association's resources; or

(iv) that it is not in the Association's best interest, based upon hardship, expense, or other reasonable criteria, to pursue enforcement action.

Such a decision shall not be construed a waiver of the Association's right to enforce such provision at a later time under the circumstances or preclude the Association from enforcing any other covenant, restriction or rule.

(e) The Association, by contract or other agreement, may enforce applicable County Ordinances, if applicable, and permit Hawai'i County to enforce Ordinances within the Project for the benefit of the Association and its Members.

Section 7.9 Implied Rights; Board of Authority.

The Association may exercise any right or privilege given to it expressly by the Governing Documents, or reasonably implied from or reasonably necessary to effectuate any such right or privilege. Except as otherwise specifically provided in the Governing Documents, or by law, all rights and powers of the Association may be exercised by the Board without a vote of the membership.

The Board may institute, defend, settle, or intervene on behalf of the Association in mediation, binding or non-binding arbitration, litigation, or administrative proceedings in matters pertaining to the Area of Common Responsibility, enforcement of the Governing Documents, or any other civil claim or action. However, the Governing Documents shall not be

construed as creating any independent legal duty to institute litigation on behalf of or in the names of the Association or its members.

In exercising the Association's rights and powers, making decisions on the Association's behalf, and conducting the Association's affairs, Board members shall be subject to, and their actions shall be judged in accordance with, the standards set forth in the Bylaws.

Section 7.10 Indemnification of Officers, Directors and Others.

Subject to Hawai'i law, the Association shall indemnify every officer, director, and committee member against all damages and expenses, including counsel fees, reasonably incurred in connection with any action, suit, or other proceeding (including settlement of any suit or proceeding, if approved by the then Board of Directors) to which he or she may be a party by reason of being or having been an officer, director, or committee member, except that such obligation to indemnify shall be limited to those actions for which liability is limited under this Section, the Articles, and Hawai'i law.

The officers, directors and committee members shall not be liable for any mistake of judgment, negligent or otherwise, except for their own individual willful misfeasance, malfeasance, misconduct, or bad faith. The officers and directors shall have no personal liability with respect to any contract or other commitment made or action taken in good faith on behalf of the Association (except to the extent that such officers or directors may also be Members of the Association).

The Association shall indemnify and forever hold each such officer, director, and committee member harmless from any and all liability to others on account of any such contract, commitment or action. This right to indemnification shall not be exclusive of any other rights to which any present or former officer, director, or committee member may be entitled. As a Common Expense, the Association shall maintain adequate general liability and officers' and directors' liability insurance to fund this obligation, if such insurance is reasonably available.

Section 7.11 Safety and Security.

All Owners and occupants of a Lot, and their respective guests and invitees, shall be responsible for their own personal safety and the security of their property in the Project.

The Association may, but shall not be obligated to, maintain or support certain activities within the Project designed to enhance the level of safety or security which each Person provides for himself and his property. Neither the Association nor Declarant shall have in any way be considered insurers or guarantors of safety or security within the Project, nor shall either be held liable for any loss or damage by reason of failure to provide adequate security or ineffectiveness of security measures undertaken.

No representation or warranty is made that any systems or measures, including any mechanism or system for limiting access to the Project, cannot be compromised or circumvented, nor that any such systems or security measures undertaken will in all cases prevent loss or provide the detection or protection for which the system is designed or intended. Each Owner acknowledges and understands that the Owner shall be responsible for informing

the Owner's tenants and all occupants of the Owner's Lot that the Association, its Board and committees, and Declarant are not insurers or guarantors of security or safety and that each Person within the Project assumes all risks of personal injury and loss or damage to property, including Lots and the contents of Lots, resulting from acts of third parties.

Section 7.12 Provision of Services.

The Association may provide, or provide for, amenities, services and/or facilities for the Members and/or their Lots, and shall be authorized to enter into and terminate contracts or agreements with other entities, including Declarant or Persons affiliated with Declarant, to provide such services and facilities. The Board may charge use or service fees for any such amenities, services and/or facilities provided at the option of an Owner, or may include the costs thereof in the Association's budget as a Common Expense and assess it as part of the Base Assessment if provided to all Lots. By way of example, such services and facilities might include recreational amenities (located at the Project or elsewhere), landscape maintenance, pest control service, cable television service, security, caretaker, transportation, fire protection, utilities, and similar amenities, services and/or facilities.

Nothing in this Section shall be construed as a representation by Declarant or the Association as to what, if any, services shall be provided. In addition, the Board shall be permitted to modify or cancel existing contracts for services in its discretion, unless the provision of such services is otherwise required by the Governing Documents. Non-use of services provided to all Owners or Lots as a Common Expense shall not exempt any Owner from the obligation to pay assessments for such services.

Section 7.13 Relationships with Other Properties.

The Association may enter into contractual agreements or covenants to share costs with any neighboring property to contribute funds for, among other things, shared or mutually beneficial property or services and/or a higher level of Common Area maintenance.

Section 7.14 Facilities and Services Open to the Public.

(a) Certain facilities and areas within the Project may be open for the use and enjoyment of the public. Such facilities and areas may include, by way of example: greenbelts, trails and paths, parks, and other areas conducive to gathering and interaction, roads, sidewalks, and medians. Declarant may designate such facilities and areas as open to the public at the time Declarant makes such facilities and areas a part of the Area of Common Responsibility or the Board may so designate at any time thereafter.

(b) In order to prevent the appearance of a gated community, gates shall be prohibited across roads and access roads and no street-facing walls or solid barriers may be higher than four (4) feet. This **Section 7.14(b)** is hereby designated a Master Plan Covenant.

Section 7.15 Budgeting and Allocating Common Expenses.

At least sixty (60) days before the beginning of each fiscal year, the Board shall prepare a budget of the estimated Common Expenses for the coming year, including any

contributions to be made to a reserve fund pursuant to **Section 7.16**. The budget shall also reflect the sources and estimated amounts of funds to cover such expenses, which may include any surplus to be applied from prior years, any income expected from sources other than assessments levied against the Lots, and the amount to be generated through the levy of Base Assessments and Special Assessments against the Lots, as authorized in **Section 7.17**.

The Association is authorized to levy Base Assessments equally against all Lots subject to assessment to fund the Common Expenses.

Declarant may, but shall not be obligated to, reduce the Base Assessment for any fiscal year by payment of a subsidy (in addition to any amounts paid by Declarant under **Section 7.20(b)**), which may be either a contribution, an advance against future assessments due from Declarant, or a loan, in Declarant's discretion. Any such subsidy shall be disclosed as a line item in the income portion of the budget. Payment of such subsidy in any year shall not obligate Declarant to continue payment of such subsidy in future years, unless otherwise provided in a written agreement between the Association and Declarant.

The Board shall send a copy of the final budget, together with notice of the amount of the Base Assessment to be levied pursuant to such budget, to each Owner at least thirty (30) days prior to the effective date of such budget. The budget shall automatically become effective unless disapproved at a meeting by Members representing at least seventy-five percent (75%) of the total Owner Member votes in the Association and by the Declarant Member, if such exists. There shall be no obligation to call a meeting for the purpose of considering the budget except on petition presented to the Board within ten (10) days after delivery of the budget and notice of any assessment.

If any proposed budget is disapproved or the Board fails for any reason to determine the budget for any year, then the budget most recently in effect shall continue in effect until a new budget is determined.

The Board may revise the budget and adjust the Base Assessment from time to time during the year, subject to the notice requirements and the right of the Members to disapprove the revised budget as set forth above.

Section 7.16 Budgeting for Reserves.

The Board shall prepare and review at least annually a reserve budget for the Area of Common Responsibility and for its obligations under the SAMP. The budget shall take into account the number and nature of replaceable assets, the expected life of each asset, and the expected repair or replacement cost. The Board shall include in the Common Expense budget adopted pursuant to **Section 7.15** a capital contribution to fund the reserve budget in an amount sufficient to meet the projected need with respect both to amount and timing by annual contributions over the budget period.

Section 7.17 Special Assessments.

In addition to other authorized assessments, the Association may levy Special Assessments to cover unbudgeted expenses or expenses in excess of those budgeted. Any such

Special Assessment for Common Expenses may be levied against the entire membership. Except as otherwise specifically provided in the Declaration, any Special Assessment shall require the affirmative vote or written consent of Members representing more than fifty percent (50%) of the total votes allocated to Lots which will be subject to such Special Assessment, and the affirmative vote or written consent of the Declarant Member, if such exists. Special Assessments shall be payable in such manner and at such times as determined by the Board, and may be payable in installments extending beyond the fiscal year in which the Special Assessment is approved.

Section 7.18 Specific Assessments.

The Association shall have the power to levy Specific Assessments against a particular Lot as follows:

(a) to cover the cost (including overhead and administrative costs) of providing any special services to an Owner at his/her request, pursuant to any menu of special services which may be offered by the Association (which might include the items identified in **Section 7.12**). Specific Assessments for special services may be levied in advance of the provision of the requested service;

(b) to cover costs of maintenance of any turf installed on an Owner's Lot by Declarant during the period between the close of escrow and the commencement of construction by the Owner. Such maintenance shall include the maintenance of any temporary irrigation system, general lawn maintenance (cutting, fertilizing, weed control, etc.), and payments to the utility provider of water.

(c) To cover costs of correcting deficiencies resulting from an Owner's failure to comply with the Governing Documents, or costs incurred as a consequence of any conduct by the Owner or occupants of the Lot, their agents, contractors, employees, licensees, invitees, or guests in violation of the Governing Documents; provided, the Board shall give the Lot Owner prior written notice and an opportunity for a hearing, in accordance with the Bylaws, before levying any Specific Assessment under this **subsection (c)**.

Section 7.19 Authority to Assess Owners; Time of Payment.

Declarant hereby establishes and the Association is hereby authorized to levy assessments as provided for in this Article and elsewhere in the Governing Documents. The obligation to pay assessments shall commence as to each Lot on the first day of the month following: (a) the month in which the Lot is made subject to this Declaration, or (b) the month in which the Board first determines a budget and levies assessments pursuant to this Article, whichever is later. The first annual Base Assessment, if any, levied on each Lot shall be adjusted according to the number of months remaining in the fiscal year at the time assessments commence on the Lot.

Assessments shall be paid in such manner and on such dates as the Board may establish. The Board may require advance payment of assessments at closing of the transfer of title to a Lot and impose special requirements for Owners with a history of delinquent payment. If the Board so elects, assessments may be paid in two (2) or more installments. Unless the

Board otherwise provides, the Base Assessment shall be due and payable in advance on the first day of each fiscal year. If any Owner is delinquent in paying any assessments or other charges levied on his Lot, the Board may require the outstanding balance on all assessments to be paid in full immediately.

Section 7.20 Obligation for Assessments.

(a) Personal Obligation. Each Owner, by accepting a deed or entering into a Recorded contract of sale for any portion of the Project, is deemed to covenant and agree to pay all assessments authorized in the Governing Documents. All assessments, together with interest (computed from its due date at a rate equal to the higher of: (i) the prime rate of interest announced from time to time by Bank of Hawai'i, or its successors, plus two percent (2%), per annum, or (ii) ten percent (10%) per annum, subject to the limitations of Hawai'i law), late charges as determined by Board resolution, costs, and reasonable attorneys' fees, shall be the personal obligation of each Owner and a lien upon each Lot until paid in full. Upon a transfer of title to a Lot, the grantee shall be jointly and severally liable for any assessments and other charges due at the time of conveyance.

Failure of the Board to fix assessment amounts or rates or to deliver or mail each Owner an assessment notice shall not be deemed a waiver, modification, or a release of any Owner from the obligation to pay assessments. In such event, each Owner shall continue to pay Base Assessments on the same basis as during the last year for which an assessment was made, if any, until a new assessment is levied, at which time the Association may retroactively assess any shortfalls in collections.

No Owner is exempt from liability for assessments by non-use of Common Area, abandonment of the Owner's Lot, or any other means. The obligation to pay assessments is a separate and independent covenant on the part of each Owner. No diminution or abatement of assessments or set-off shall be claimed or allowed for any alleged failure of the Association or Board to take some action or perform some function required of it, or for inconvenience or discomfort arising from the making of repairs or improvements, or from any other action it takes.

Upon written request, the Association shall furnish to any Owner liable for any type of assessment a certificate in writing signed by an Association officer setting forth whether such assessment has been paid. Such certificate shall be conclusive evidence of payment. The Association may require the advance payment of a reasonable processing fee for the issuance of such certificate.

(b) Declarant's Option to Fund Budget Deficits. During the Declarant Control Period, Declarant may satisfy its obligation for assessments on Lots which it owns either by paying such assessments in the same manner as any other Owner or by paying the difference between the amount of assessments levied on all Lots not owned by Declarant which are subject to assessment and the amount of actual expenditures by the Association during the fiscal year. Unless Declarant otherwise notifies the Board in writing at least sixty (60) days before the beginning of each fiscal year, Declarant shall be deemed to have elected to continue paying on the same basis as during the immediately preceding fiscal year.

Regardless of Declarant's election, Declarant's obligations hereunder may be satisfied in the form of cash or by "in kind" contributions of services or materials, or by a combination of these. After termination of the Declarant Control Period, Declarant shall pay assessments on its unsold Lots in the same manner as any other Owner.

Section 7.21 Lien for Assessments.

The Association shall have a lien against each Lot to secure payment of delinquent assessments, as well as interest, late charges (subject to the limitations of Hawai'i law), and costs of collection (including court costs and reasonable attorneys' fees). Such lien shall be superior to all other liens, except (a) the liens of all taxes, bonds, assessments, and other levies which by law would be superior, and (b) the lien or charge of any Recorded first Mortgage (meaning any Recorded Mortgage with first priority over other Mortgages) made in good faith and for value. Such lien, when delinquent, may be enforced by suit, judgment, and judicial or nonjudicial foreclosure.

The Association may bid for the Lot at the foreclosure sale and acquire, hold, lease, mortgage, and convey the Lot. While a Lot is owned by the Association following foreclosure: (a) no right to vote shall be exercised on its behalf; (b) no assessment shall be levied on it; and (c) each other Lot shall be charged, in addition to its usual assessment, its pro rata share of the assessment that would have been charged such Lot had it not been acquired by the Association. The Association may sue for unpaid assessments and other charges authorized hereunder without foreclosing or waiving the lien securing the same.

The sale or transfer of any Lot shall not affect the assessment lien or relieve such Lot from the lien for any subsequent assessments. However, the sale or transfer of any Lot pursuant to foreclosure of the first Mortgage shall extinguish the lien as to any installments of such assessments due prior to the Mortgagee's foreclosure. The subsequent Owner to the foreclosed Lot shall not be personally liable for assessments on such Lot due prior to such acquisition of title. Such unpaid assessments shall be deemed to be Common Expenses collectible from Owners of all Lots subject to assessment under **Section 7.19**, including such acquirer, its successors, and assigns.

Section 7.22 Exempt Property.

The following Property shall be exempt from payment of Base Assessments and Special Assessments:

- (a) All Common Area and such portions of the Property owned by Declarant as are included in the Area of Common Responsibility;
- (b) All Property owned by the Land Trust; and
- (c) Any Property dedicated to and accepted by any governmental authority or public utility.

In addition, Declarant and/or the Association shall have the right, but not the obligation, to grant exemptions to certain Persons qualifying for tax exempt status under **Section**

501(c) of the Internal Revenue Code so long as such Persons own Property subject to this Declaration for purposes listed in **Section 501(c)**.

Section 7.23 Endowment Fees.

Upon acquisition of Record title to a Lot by the first Owner thereof other than Declarant, the following contributions shall be made by Declarant:

(a) A contribution shall be made by or on behalf of the purchaser to the working capital of the Association in the amount of \$_____.

(b) A contribution shall be made to CDC in the amount of five percent (5%) of the Net Sales Proceeds from the sale of a Lot.

(c) These amounts shall be in addition to, not in lieu of, the annual Base Assessment and shall not be considered an advance payment of such assessment.

Section 7.24 Transfer Fee.

(a) Authority. The Board shall have the authority to establish and collect a Transfer Fee from the transferring Owner upon each transfer of title to a Lot in the Project, which fee shall be payable to the Declarant at the closing of the transfer and shall be secured by the Association's lien for assessments under **Section 7.21**. Transfers shall include long-term leases (an initial term of more than five (5) years) and the sale or other conveyance of fractional ownership interests. Owner shall notify the Secretary of the Association of a pending title transfer at least seven (7) days prior to the transfer. Such notice shall include the name of the buyer, the date of title transfer, and other information as the Board may require.

(b) Fee. The initial amount of the Transfer Fee shall be Five Percent (5%) of the Net Sales Proceeds, subject to change.

The amount of the Transfer Fee for the first ten (10) years following payment of the first Transfer Fee shall not exceed one-half of one percent (0.5%) of the gross sales price of the Lot transferred. Thereafter, subject to the following sentence, the Transfer Fee may increase by not more than the same percentage increase as the Base Assessment levied by the Association. In the event the Base Assessment levied by the Association increases in any given year such that the corresponding percentage rate increase to the Transfer Fee would be greater than three-quarters of one percent (0.75%), the Transfer Fee shall instead be increased at a rate equal to one-half (1/2) of the percentage rate of the Base Assessment increase. In no event, however, may the Transfer Fee be greater than one percent (1%) of the gross sales price of the Lot transferred in any given year.

For purposes of this Section, the "gross sales price" means the total amount paid by the purchaser for the Lot, excluding customary closing costs, real estate commissions and any other state, county or federal taxes or other charges relating to a Lot sale (excluding taxes assessed on gross or net income at the time of such sale).

(c) Payment. All Transfer Fees which the Association collects shall be paid to the CDC.

This **Section 7.24(c)** is hereby designated to be a Master Plan Perpetual Covenant.

(d) Purpose. All Transfer Fees shall be used exclusively for purposes consistent with the mission and with the purposes for which the CDC was created.

(e) Exempt Transfers. Notwithstanding the above, no Transfer Fee shall be levied upon transfer of title to a Lot:

- (i) by or to Declarant;
- (ii) among co-Owners of a Lot;
- (iii) to the Owner's estate, surviving spouse, or child upon the death of the Owner;
- (iv) to an entity wholly owned or controlled by the grantor; provided, however, that the Transfer Fee shall become due upon any subsequent transfer of an ownership interest in such entity; or
- (v) to an institutional lender pursuant to a Mortgage or upon foreclosure of a Mortgage.

ARTICLE 8: EXPANSION OF THE PROJECT

The Declaration reserves various rights to Declarant in order to facilitate the smooth and orderly development of the Project and to accommodate changes in the Master Plan which inevitably occur as the Project matures, including, but not limited to the following:

Section 8.1 Expansion of the Common Area by Declarant.

Declarant may from time to time subject all or any portion of the property described in **Exhibit B** to the provisions of this Declaration as Common Area by Recording a Supplemental Declaration describing the additional property to be subjected. A Supplemental Declaration Recorded pursuant to this Section shall not require the consent of any Person except the owner of such property, if other than Declarant.

Declarant's right to expand the Project by adding to the Common Area pursuant to this Section shall expire when all property described in **Exhibit B** has been subjected to this Declaration or _____(____) years after this Declaration is Recorded, whichever is earlier. Until then, Declarant may transfer or assign this right to any Person who is the developer of at least a portion of the real property described in **Exhibit A** or **B**. Any such transfer shall be memorialized in a written Recorded instrument executed by Declarant.

Nothing in this Declaration shall be construed to require Declarant or any successor to subject additional property to this Declaration or to develop any of the property described in **Exhibit B** in any manner whatsoever.

Section 8.2 Expansion by the Association.

The Association may also subject additional property to the provisions of this Declaration as Common Area by Recording a Supplemental Declaration describing the additional property. Any such Supplemental Declaration shall require the affirmative vote of Members representing more than fifty percent (50%) of the Owner Member votes of the Association represented at a meeting duly called for such purpose, and the consent of the owner of the property. In addition, so long as Declarant owns Property subject to this Declaration or which may become subject to this Declaration in accordance with **Section 8.1**, Declarant's consent shall be necessary. The Supplemental Declaration shall be signed by the President and Secretary of the Association, by the owner of the property and by Declarant, if Declarant's consent is necessary.

Section 8.3 Additional Covenants and Easements.

Declarant may subject any portion of the Project to additional covenants and easements, including covenants obligating the Association to maintain and insure such Property and easements which encumber Association property, provided that the same do not conflict with the provisions and intent of the Master Covenants. Such additional covenants and easements may be set forth either in a Supplemental Declaration subjecting such Property to this Declaration or in a separate Supplemental Declaration referencing Property previously subjected to this Declaration. If the Property is owned by someone other than Declarant, then the consent of the Owner(s) shall be necessary and shall be evidenced by their execution of the Supplemental Declaration. Any such Supplemental Declaration may supplement, create exceptions to, or otherwise modify the terms of the Declaration as it applies to the subject Property in order to reflect the different character and intended use of such Property.

Section 8.4 Effect of Filing Supplemental Declaration.

A Supplemental Declaration shall be effective upon Recording unless otherwise specified in such Supplemental Declaration. On the effective date of the Supplemental Declaration, any additional property subjected to this Declaration shall be assigned voting rights in the Association and assessment liability in accordance with the provisions of this Declaration.

Section 8.5 Limitation on Lots. Notwithstanding any provision contained in the Declaration to the contrary, nothing herein shall mean or be construed to permit the addition to, or creation of additional land in, the Project to be used for the development, use or occupancy as a Dwelling.

This **Section 8.5** is hereby designated to be a Master Plan Perpetual Covenant.

ARTICLE 9: ADDITIONAL RIGHTS RESERVED TO DECLARANT

Section 9.1 Withdrawal of Property.

Declarant reserves the right to amend this Declaration, so long as it has a right to annex additional property pursuant to **Section 8.1**, for the purpose of removing any portion of the Project which has not yet been improved with structures from the coverage of this Declaration, provided that after such withdrawal, the total number of Lots then subject to the Declaration shall be greater than or equal to 134. Such amendment shall not require the consent of any Person other than the Owner(s) of the Property to be withdrawn, if not Declarant. If the Property is Common Area, the Association shall consent to such withdrawal.

Section 9.2 Marketing and Sales Activities.

Declarant may construct and maintain upon portions of the Common Area such facilities and activities as, in Declarant's sole opinion, may be reasonably required, convenient, or incidental to the construction or sale of Lots, including the business offices, signs, model units, and sales offices. The design of such facilities shall be consistent with the Community-Wide Standard. Declarant shall have easements for access to and use of such facilities at no charge.

Section 9.3 Right to Develop.

Declarant and its employees, agents and designees shall have a right of access and use and an easement over and upon all of the Common Area for the purpose of making, constructing and installing such improvements to the Common Area as it deems appropriate in its sole discretion.

Section 9.4 Right to Approve Additional Covenants.

No Person shall Record any declaration of covenants, conditions, and restrictions, or declaration of condominium or similar instrument affecting any portion of the Project without Declarant's review and written consent. Any attempted Recordation without such consent shall result in such instrument being void and of no force and effect unless subsequently approved by written consent signed and Recorded by Declarant.

Section 9.5 Right to Approve Changes in Project Standards.

No amendment to or modification of any Rules and Regulations or Design Guidelines shall be effective without prior notice to and the written approval of Declarant so

long as Declarant owns Property subject to this Declaration or which may become subject to this Declaration in accordance with **Section 8.1**.

Section 9.6 Right to Transfer or Assign Declarant Rights.

Any or all of Declarant's special rights and obligations set forth in this Declaration or the Bylaws may be transferred in whole or in part to other Persons; provided, the transfer shall not reduce an obligation nor enlarge a right beyond that which Declarant has under this Declaration or the Bylaws. No such transfer or assignment shall be effective unless it is in a written instrument that Declarant signs and Records. The foregoing sentence shall not preclude Declarant from permitting other Persons to exercise, on a one-time or limited basis, any right reserved to Declarant in this Declaration where Declarant does not intend to transfer such right in its entirety, and in such case it shall not be necessary to Record any written assignment unless necessary to evidence Declarant's consent to such exercise.

Section 9.7 Exclusive Rights to Use Name of Development.

No Person shall use the names listed on **Exhibit G** attached hereto or any logo, depiction, or derivative of such names in any printed or promotional material without Declarant's prior written consent. However, Owners may use the name "Lā'au Point" in printed or promotional matter where such term is used solely to specify that particular property is located within the Project and the Association and other entities related to Declarant shall be entitled to use the words "Lā'au Point" in its name.

Section 9.8 Right to Notice of Design or Construction Claims.

No Person shall retain an expert for the purpose of inspecting the design or construction of any structures or Improvements within the Project in connection with or in anticipation of any potential or pending claim, demand, or litigation involving such design or construction unless Declarant has been first notified in writing and given an opportunity to meet with the Owner of the Lot to discuss the Owner's concerns and conduct its own inspection.

Section 9.9 Termination of Rights.

The rights contained in this Article shall not terminate until the earlier of (a) _____ (___) years following the date this Declaration is Recorded, or (b) Recording by Declarant of a written statement that all sales activity has ceased.

ARTICLE 10: EASEMENTS

Section 10.1 Easements in Common Area.

Declarant grants to each Owner a non-exclusive right and easement of use, access, and enjoyment in and to the Common Area, subject to:

- (a) The Governing Documents and any other applicable covenants;

(b) Any restrictions or limitations contained in any deed conveying such Property to the Association;

(c) The Board's right to:

(i) adopt rules regulating use and enjoyment of the Common Area, including rules limiting the number of guests who may use the Common Area;

(ii) dedicate or transfer all or any part of the Common Area, subject to such approval requirements as may be set forth in this Declaration;

(iii) impose reasonable membership requirements and charge reasonable admission or other use fees for the use of any recreational facility situated upon the Common Area;

(iv) designate other areas and facilities within the Area of Common Responsibility as open for the use and enjoyment of the public; and

(v) mortgage, pledge, or hypothecate any or all of its real or personal property as security for money borrowed or debts incurred.

Any Owner may extend the Owner's right of use and enjoyment to the members of the Owner's family, lessees, and guests, as applicable, subject to reasonable regulation by the Board. An Owner who leases the Owner's Lot shall be deemed to have assigned all such rights to the lessee of such Lot for the period of the lease.

Section 10.2 Easements of Encroachment.

Declarant grants reciprocal appurtenant easements of encroachment, and for maintenance and use of any permitted encroachment, between each Lot and any adjacent Common Area and between adjacent Lots due to the unintentional placement or settling or shifting of the Improvements constructed, reconstructed, or altered thereon (in accordance with the terms of these restrictions) to a distance of not more than one (1) foot, as measured from any point on the common boundary along a line perpendicular to such boundary. However, in no event shall an easement for encroachment exist if such encroachment occurred due to willful and knowing conduct on the part of, or with the knowledge and consent of, the Person claiming the benefit of such easement.

Section 10.3 Easements for Utilities, etc.

(a) Installation and Maintenance. Declarant reserves for itself, so long as Declarant owns any property described in **Exhibit A** or **B** of this Declaration, and grants to the Association and all utility providers (including, but not limited to, privately owned and operated utilities), perpetual non-exclusive easements throughout the Project (but not through a structure) to the extent reasonably necessary for the purpose of:

(i) installing utilities and infrastructure to serve the Project, cable and other systems for sending and receiving data and/or other electronic signals, security

and similar systems, walkways, pathways and trails, drainage systems, street lights and signage on property which Declarant owns or within public rights-of-way or easements reserved for such purpose on Recorded plats;

(ii) inspecting, maintaining, repairing, and replacing the utilities, infrastructure, and other Improvements described in **Section 10.3(a)(i)**; and

(iii) access to read utility meters.

(b) Specific Easements. Declarant also reserves for itself the non-exclusive right and power to grant and Record such specific easements as may be necessary, in Declarant's sole discretion, in connection with the orderly development of any property described in **Exhibits A and B**. The Owner of any property to be burdened by any easement granted pursuant to this **subsection (b)** shall be given written notice in advance of the grant. The location of the easement shall be subject to the written approval of the owner of the burdened property, which approval shall not be unreasonably withheld, delayed, or conditioned.

(c) Minimal Interference. All work associated with the exercise of the easements described in **subsections (a) and (b)** of this Section shall be performed in such a manner as to minimize interference with the use and enjoyment of the property burdened by the easement. Upon completion of the work, the Person exercising the easement shall restore the property, to the extent reasonably possible, to its condition prior to the commencement of the work. Exercise of these easements shall not extend to permitting entry into the structures on any Lot, nor shall it unreasonably interfere with the use of any Lot and, except in an emergency, entry onto any Lot shall be made only after reasonable notice to the Owner or occupant.

Section 10.4 Easements to Serve Additional Property.

Declarant hereby reserves for itself and its duly authorized agents, successors, assigns, and mortgagees, an easement over the Common Area for the purposes of enjoyment, use, access, and development of the property described in **Exhibit B**, whether or not such property is made subject to this Declaration. This easement includes, but is not limited to, a right of ingress and egress over the Common Area for construction of roads and for connecting and installing utilities on such property.

Declarant agrees that it and its successors or assigns shall be responsible for any damage caused to the Common Area as a result of its respective actions in connection with development of such property. Declarant further agrees that if the easement is exercised for permanent access to such property and such property or any portion thereof benefiting from such easement is not made subject to this Declaration, Declarant, its successors, or assigns shall enter into a reasonable agreement with the Association to share the cost of any maintenance which the Association provides to or along any roadway providing access to such property.

Section 10.5 Easements for Maintenance, Emergency and Enforcement.

Declarant grants to the Association easements over the Project as necessary to enable the Association to fulfill its maintenance responsibilities under **Section 7.6**. The Association shall also have the right, but not the obligation, to enter upon any Lot for emergency,

security, and safety reasons, to perform maintenance and to inspect for the purpose of ensuring compliance with and enforce the Governing Documents. Such right may be exercised by any member of the Board and its duly authorized agents and assignees, and all emergency personnel in the performance of their duties. Except in an emergency situation, entry shall only be during reasonable hours and after notice to the Owner.

Section 10.6 Easements for Maintenance and Flood Water.

Declarant reserves for itself, the Association, and their successors, assigns, and designees, the non-exclusive right and easement, but not the obligation, to enter upon the Area of Common Responsibility to (a) construct, maintain, and repair structures and equipment used for maintaining such areas; and (b) maintain such areas in a manner consistent with the Community-Wide Standard. Declarant, the Association, and their successors, assigns, and designees, shall have an access easement over and across any portion of the Project abutting or containing wetlands to the extent reasonably necessary to exercise their rights under this Section.

Declarant further reserves for itself, the Association, and their successors, assigns, and designees, a perpetual, non-exclusive right and easement of access and encroachment over the Common Area and Lots (but not the Dwellings thereon) adjacent to or within 100 feet of bodies of water and wetlands within the Project, in order to (a) flood temporarily, back water upon, and maintain water over such portions of the Project; (b) alter in any manner and generally maintain the wetlands within the Area of Common Responsibility; and (c) maintain and landscape the slopes and banks pertaining to such areas. All persons entitled to exercise these easements shall use reasonable care in, and repair any damage resulting from, the intentional exercise of such easements. Nothing herein shall be construed to make Declarant or any other Person liable for damage resulting from flooding due to hurricanes, heavy rainfall, or other natural occurrences.

Section 10.7 Easement to Inspect and Right to Correct.

Declarant reserves for itself and others it may designate the right to inspect, monitor, test, redesign, and correct any structure, Improvement, or condition which may exist on any portion of the Property within the Project, including Lots, and a perpetual, non-exclusive easement of access throughout the Project to the extent reasonably necessary to exercise such right. Except in an emergency, entry onto a Lot shall be only after reasonable notice to the Owner and no entry into a Dwelling shall be permitted without the Owner's consent.

Section 10.8 Easement for Public Access to the Conservation District Area, West Park and South Park.

Each Owner acknowledges that as a condition of the development of the Property, the public must be granted access to the Conservation District Area, West Park and South Park. Therefore, Declarant reserves the right to grant to the public a non-exclusive perpetual easement to use designated portions of the Project for access to, and use of, the Conservation District Area, West Park and South Park, provided, however, that the public's use shall be subject to the terms and provisions in the SAMP referred to in **Section 10.13** below.

Section 10.9 Easements for Historical Sites and Flora Sites.

Declarant reserves for itself, the Association, the Land Trust and the public, a non-exclusive, perpetual easement over the Common Areas and Lots to (a) travel to and from the Historical Sites and Flora Sites, and (b) inspect, evaluate, perform data recovery, maintain and preserve the Historical Sites and Flora Sites identified on the Property from time to time, subject to the terms and provisions in the SAMP. Such easement shall affect only such portions of the Common Area and Lots as Declarant or the Association, as the case may be, deems reasonably necessary for such purposes. Declarant further reserves for itself, the Association and the Land Trust the right to grant non-exclusive easements over the Common Areas and Lots to (a) travel to and from such Historical Sites and Flora Sites, (b) inspect, evaluate, perform data recovery, maintain and preserve such Historical Sites and Flora Sites, and/or (c) perform traditional, cultural and/or religious practices at such Historical Sites, to any Person who is or may be entitled under Hawai'i law to exercise any such rights, subject to the terms and provisions of the SAMP. Such easements shall affect only such portions of the Common Areas and Lots as Declarant or the Association, as the case may be, deems reasonably necessary for such purposes and may be subject to such reasonable terms, conditions and restrictions that Declarant or the Association may impose consistent with Hawai'i law and the SAMP. Some Historical Sites and Flora Sites have been identified, however, others may exist that have yet to be discovered. The Historical Sites and Flora Sites that have yet to be discovered may be located on Lots or in lava tubes or caves beneath Lots. The Declarant reserves for itself, the Association and the Land Trust the right to grant additional easements or modify existing easements under this Section for additional Historical Sites and Flora Sites that are discovered and to comply with Hawai'i law, or the requirements of any governmental or quasi-governmental entity that has jurisdiction over matters involving such Historical Sites or Flora Sites.

Due to the sensitive nature of this type of easement, the potential exists for conflict between Persons using easements pursuant to this Section and Owners. In order to avoid or eliminate any potential conflicts that may arise, an environment of mutual respect between Persons using the easements and Owners must prevail. Owners should exercise caution to avoid disruption of Historical Sites and Flora Sites and should take no action to prevent or hinder access to Historical Sites or Flora Sites. Persons utilizing easements pursuant to this Section should do so in a careful, considerate and conscientious manner and take reasonable steps to avoid disturbing Owners. Neither the Association, Declarant nor the Land Trust shall have any liability for any damages, increased construction costs, or delays caused by the existence of, or the discovery of, a Historical Site, a Flora Site or the designation or use of an easement related to such Historical Site or Flora Site.

Section 10.10 Easement for Maintenance of Lots

Declarant reserves for itself and the Association, an easement of ingress and egress over such portions of Lots necessary for the purpose of removing, replacing, installing, and maintaining trees, plants, and other vegetation on such Lots. Declarant and the Association shall have the right to exercise this easement over the entire area of a Lot, including the Building Envelope until the Owner of such Lot completes construction of a Dwelling on the Lot.

The activities undertaken pursuant to this Section may include, but not be limited to, grading of Lots and the removal, replacement, installation, and maintenance of trees, plants and other vegetation. Any costs incurred by the Association under this Section shall be a Common Expense. No tree, plant, or other vegetation installed pursuant to this Section, including but not limited to, trees, plants, and other vegetation, shall be modified, pruned, cut, or removed without the approval of the Declarant.

Except as otherwise provided by the Governing Documents, after an Owner has completed construction of a Dwelling on his/her Lot, the right to exercise this easement shall be limited to the Association Easements. The Declarant and the Association shall have the right, but not the obligation, to undertake any, or all, of the activities described in this Section.

Section 10.11 Easement for Drainage.

The Property is burdened with a perpetual and non-exclusive easement over, through, and across the Property as necessary to accommodate drainage from or across Property adjacent to the Lot in its currently existing and natural pattern and flow. Each Owner assumes all liability for damage to persons or Property caused by interference with the natural flow of drainage from, over, through, or across the Lot in connection with Owner's activities on all or any part of the Lot, and agrees to indemnify, defend, and hold harmless Declarant and the Association from and against any liability, claim, demand, action, or suit arising out of, or in connection with, any such interference with drainage.

Section 10.12 Association Easement.

Declarant reserves for itself, so long as Declarant owns any property described in **Exhibit A** or **B** of this Declaration, and grants to the Association and its successors, assigns, and designees, the non-exclusive right and easement to the portion of each Lot that is designated as an Association Easement for the purposes of installing, maintaining and repairing utilities, widening roads, installing structures and Improvements, installing and maintaining landscaping, and any other reasonable purpose as may be determined in the discretion of the Declarant or the Association as the case may be.

No Owner may remove, damage, or destroy any Improvement, structure, landscaping, plants, or trees that are within the Association Easement unless given express, written consent by the Board of Directors. Any Owner that constructs any Improvement or installs any landscaping on a portion of his/her Lot that is designated as an Association Easement shall be required, upon notice from the Board, to remove such Improvement or landscaping at his/her expense and restore the Association Easement to substantially the same condition as it existed prior to the construction or installation of such Improvement or landscaping. In the event an Owner fails to take such action as required by the Board, the Association shall have the right to remove such landscaping or Improvement and restore the Association Easement. The costs for such action may be levied against such Owner's Lot as a Specific Assessment.

Section 10.13 Cultural Zone; SAMP and Land Trust Easement. Declarant recognizes that the single most important and vital principle in understanding one's relationship to the land comes from the phrase "Mālama 'āina" or "care for the land." To "Mālama" the land not only

means to care for the land physically, it also means to care for the land spiritually and to regulate the use of the land and ocean resources to ensure continuance of these resources for future generations.

It is with this guiding light that Declarant hereby establishes a cultural conservation and management zone (“Cultural Zone”) covering all of the Conservation District Areas and the Historical Sites on the Project, to be administered, managed and operated in accordance with the provisions of the SAMP.

Governance within the Cultural Zone shall be under the joint stewardship of the Association and the Land Trust through the Council as provided in the SAMP. The Council shall adopt plans, rules, regulations and guidelines (collectively “Cultural Plans”) with regard to the following:

1. Access to the Project.
2. Social and cultural sensitivity
3. Preservation of environmental resources
4. Preservation of cultural resources
5. Preservation of marine resources
6. Recognition of subsistence gathering rights; and
7. Protection of endangered/protected species.

The Cultural Plans will incorporate programs to identify indigenous species in coordination with qualified governmental agencies and in consultation with qualified Moloka‘i experts.

Declarant and each Owner covenants to become familiar with the Cultural Plans and to follow the intent of the Cultural Plans as well as the actual provisions thereof. Furthermore, Declarant and each Owner agree to observe and comply with all of the provisions of the SAMP applicable to Lot Owners in the Project. This paragraph of this **Section 10.13** is hereby designated to be a Master Plan Perpetual Covenant.

In furtherance of the intent of this section, Declarant reserves the right to grant a perpetual easement in favor of the Land Trust over such Project lands which are within the Conservation District Area upon such terms, covenants and conditions as Declarant shall determine in its sole discretion.

Except as otherwise noted, this **Section 10.13** is hereby designated to be a Master Plan Covenant.

ARTICLE 11: SOUTH PARK AND WEST PARK

Section 11.1 Creation.

As a condition of the development of the Property, the land located on the southeastern side of the Project designated as South Park, and the land on the western side of the Project designated as West Park, must be developed and maintained as a park that is open to the public. Each park shall exist in perpetuity, be open to the public, and the Association shall provide access to the public in accordance with the rules and guidelines established in the SAMP as it may be amended or changed from time to time.

Section 11.2 Easement.

Each Owner acknowledges that members of the public shall have an easement for access to South Park and West Park, respectively, over the Common Areas as set forth in **Section 10.9**. A parking area will be provided for the public. In order to ensure that there is sufficient parking for the public, and to prevent the public from parking on private streets within the Project, Members are prohibited from parking in the public parking area.

Section 11.3 Construction and Maintenance.

At its expense, Declarant shall construct all facilities and Improvements required at South Park and West Park. Declarant shall transfer and convey South Park and West Park to the Land Trust, or a separate entity formed by the Land Trust (“Park Managers”) which entity shall thereafter assume the maintenance responsibility for South Park and West Park.

Section 11.4 SAMP; Restrictions on Use.

The operation, maintenance and management of the South Park and West Park shall be subject to the provisions of the SAMP. In addition, the Land Trust may impose reasonable restrictions on the use of South Park and/or West Park including, but not limited to, rules and regulations affecting activities and hours of usage so long as such rules and regulations do not conflict with the provisions of the SAMP.

ARTICLE 12: WATER SYSTEM

Section 12.1 Design and Construction.

Declarant shall construct a dual water system for the purpose of providing water for service within the Project. The water system will be designed to provide potable water for domestic purposes and non-potable water for irrigation purposes. All of the components of the water system relating to water service for the Project, including all wells, lines, pumps, reservoirs, water towers or tanks, and other facilities and appurtenances serving the Project have been or will be paid for, constructed, and installed by Declarant or its affiliates. Declarant’s investment in the water system facilities will not be recovered through Lot sales, but through the rates and charges to be paid by the water system users. Owners are required to utilize the water system.

Section 12.2 Ownership and Operation of the Water System.

Declarant currently owns the facilities constituting the water system. _____ (the “Water Company”) has been formed and is seeking the issuance of a Certificate of Public Convenience and Necessity (“CPCN”) from the Hawaii Public Utilities Commission (“PUC”) Upon the Water Company’s receipt from the PUC of (i) a CPCN, (ii) approval of its rates, rules and regulations, and (iii) approval of the transfer of the water system from Declarant to the Water Company for value, Declarant will transfer the water system to the Water Company (with the exception of the wells, which wells will continue to be owned by Declarant). The water system shall be paid for by utility ratepayers through utility rates and charges. As part of that transfer, Declarant reserves the right to receive from the Water Company an amount equal to Declarant’s investment in the water system. Upon the completion of the transfer, the Property will be assured of water service by the Water Company under regulation by the PUC. The Water Company shall be owned and operated by Declarant, and any additional Persons that may, from time to time, be given or may acquire an ownership interest in the Water Company pursuant to its articles of organization and operating agreement. The Water Company shall have the right, subject to its operating agreement, applicable regulations, and Hawaii law, to convey or transfer ownership of part or all of the Water System to a Person, governmental entity, or quasi-governmental entity. The Water Company shall have the right, subject to its operating agreement, applicable regulations, and Hawaii law, to supply water services to properties other than the Project and from time to time expand the Water System in order to provide such services to such other properties. However, the provision of such services to such other properties shall not be permitted to the extent that it materially and adversely affects the adequacy of such services with respect to the Project.

Section 12.3 Access to Water System and Rates for Service.

Water service shall be provided by the Water Company to Owners pursuant to rates, terms and conditions established by the Water Company and approved by the PUC. As a result of the anticipated improvement and construction of the Project in phases, initial water service charges may be less than the cost of providing water and may increase at rates higher than the rate of increase in operating expenses and capital costs as the number of customers in the project increases, until water service charges reach a level where they fully reimburse the Water Company for operating expenses plus a fair and reasonable return of and on capital improvement costs for the Water System and all other property of the Water Company used or useful in providing water services. Declarant’s investment in the water system will be recovered by the Water Company from ratepayers through utility service rates and charges.

Section 12.4 Maintenance and Repair of the Water System.

Upon satisfaction of the conditions described in **Section 13.1** above, the Water Company shall be obligated to maintain and repair the water system. The costs associated with maintenance and repair of the water system will be recovered by the Water Company from ratepayers through utility service rates and charges. To complete the required maintenance and repair of the water system, the Water Company, its successors and assigns, shall be granted an easement over, under, and across the Project to the extent necessary to conduct such maintenance

and repair. Such easement shall include a right of ingress and egress over Common Areas, roads, Association Easements and Lots as reasonably necessary.

Section 12.5 Water Plan.

Declarant shall adhere to the principles and statements outlined in the Moloka'i Properties, Limited EC Project #47 Water Plan, published in December 2004 and amended in 2005. By this document Declarant agreed that it will not, at any time in the future, seek additional drinking water permits, other than the allocation under its permits existing at July, 2005, from the Water Commission. The maximum allocation available to the Project is set out in the Water Plan.

Section 12.6 Limitations on Water Usage.

The Declarant has the right to restrict usage to amounts specified from time to time. The Design Guidelines attached hereto as **Exhibits G** and **G-1** set forth water usage restrictions and design requirements applicable to all Lots. Any usage above the specified amounts may subject Owners to remedies available to the Water Company, including, but not limited to, shutting off water to the Lot.

ARTICLE 13: WASTEWATER TREATMENT SYSTEM

Section 13.1 Design and Construction.

As a condition of approval for the development of the Project, Declarant is required to provide and has the authority to construct a wastewater treatment system for the purpose of collecting, treating, and disposing of effluent. Owners are required to utilize the wastewater treatment system. Additionally, Declarant shall have the authority to construct, own, and operate a system for the collection and distribution of reclaimed water.

Section 13.2 Ownership and Operation of the Wastewater Treatment System.

Declarant currently owns the facilities constituting the wastewater treatment system. The _____ (the "STP Company") has been formed and is seeking the issuance of a CPCN from the PUC. Upon the STP Company's receipt from the PUC of (i) a CPCN, (ii) approval of its rates, rules and regulations, and (iii) approval of the transfer of the wastewater treatment system from the Declarant to the STP Company for value, Declarant will transfer the wastewater treatment system to the STP Company. As part of that transfer, Declarant reserves the right to receive from the STP Company an amount equal to Declarant's investment in the wastewater treatment system. The wastewater treatment system shall be paid for by utility ratepayers through utility rates and charges. Upon the completion of the transfer, the Property will be assured of sewer service by the STP Company under regulation by the PUC. The STP Company shall be owned and operated by Declarant, and any additional Persons that may, from time to time, be given or may acquire an ownership interest in the STP Company pursuant to its articles of organization and operating agreement. The STP Company shall have the right, subject to its operating agreement, applicable regulations, and Hawaii law, to convey or transfer ownership of part or all of the wastewater treatment system to a Person, governmental entity, or quasi-governmental entity. The STP Company shall have the right, subject to its

operating agreement, applicable regulations, and Hawaii law, to supply sewer services to properties other than the Project and from time to time to expand the wastewater treatment system in order to provide such services to such other properties. However, the provision of such services to such other properties shall not be permitted to the extent that it materially and adversely affects the adequacy of such services with respect to the Project.

Section 13.3 Utilization of Reclaimed Water and Treated Effluent.

To the extent permitted by law and applicable regulations, reclaimed water and treated effluent from the wastewater treatment system may be utilized by Declarant, and the Association, to irrigate and fertilize the Common Area. This **Section 13.3** is hereby designated to be a Master Plan Covenant.

Section 13.4 Rights of Access and Parking.

There is hereby established for the benefit of the Declarant and its employees, agents, contractors, and designees, a right and non-exclusive easement of access and use over all roadways located within the Project reasonably necessary to travel between the entrance to the Project and the wastewater treatment site and over those portions of the Project (whether Common Area or otherwise) reasonably necessary to the operation, maintenance, repair and replacement of the wastewater treatment facility. Without limiting the generality of the foregoing, Declarant and its employees, agents, contractors and designees shall have the right to temporarily park their vehicles on the roadways located within the Project at reasonable times while they are attending to the wastewater treatment facility.

Other than temporary parking for the purposes set forth in this Section, no person or entity shall be permitted to park on the roadways within the Project.

Section 13.5 Access to Wastewater Treatment System and Rates for Service.

Sewer service shall be provided by the STP Company to Owners pursuant to rates, terms and conditions established by the STP Company and approved by the PUC. As a result of the anticipated improvement and construction of the Project in phases, initial service charges may be less than the cost of providing the services and may increase at rates higher than the rate of increase in operating expenses and capital costs as the number of customers in the Project increases, until such service charges reach a level where they fully reimburse the STP Company for operating expenses plus a fair and reasonable return of and on capital improvement costs for the wastewater treatment system and all other property of the STP Company used or useful in providing such services. Declarant's investment in the wastewater treatment system will be recovered by the STP Company from ratepayers through utility service rates and charges.

Section 13.6 Maintenance and Repair of the Wastewater Treatment System.

Upon satisfaction of the conditions described in **Section 13.1** above, the STP Company shall be obligated to maintain and repair the wastewater system. The costs associated with maintenance and repair of the wastewater treatment system will be recovered by the STP Company from ratepayers through utility service rates and charges. To complete the required maintenance and repair of the wastewater treatment system, the STP Company, its successors

and assigns, shall be granted an easement over, under and across the Project to the extent necessary to conduct such maintenance and repair. Such easement shall include a right of ingress and egress over Common Areas, roads, Association Easements and Lots as reasonably necessary.

ARTICLE 14: PARTY WALLS AND OTHER SHARED STRUCTURES

Section 14.1 General Rules of Law to Apply.

Each wall, fence, driveway, or similar structure built as a part of the original construction on the Lots which serves and/or separates any two adjoining Lots shall constitute a party structure. To the extent not inconsistent with the provisions of this Section, the general rules of law regarding party walls and liability for property damage due to negligence or willful acts or omissions shall apply thereto. Any dispute arising concerning a party structure shall be handled in accordance with the provisions of **Article 15**.

Section 14.2 Maintenance: Damage and Destruction.

The cost of reasonable repair and maintenance of a party structure shall be shared equally by the Owners who make use of the party structure. If a party structure is destroyed or damaged by fire or other casualty, then to the extent that such damage is not covered by insurance and repaired out of the proceeds of insurance, any Owner who used the structure may restore it. If other Owners thereafter use the structure, they shall contribute to the restoration cost in equal proportions. However, such contribution will not prejudice the right to call for a larger contribution from the other users under any rule of law regarding liability for negligent or willful acts or omissions. The right of any Owner to contribution from any other Owner under this Section shall be appurtenant to the land and shall pass to such Owner's successors-in-title.

ARTICLE 15: DISPUTE RESOLUTION AND LIMITATION ON LITIGATION

Section 15.1 Agreement to Encourage Resolution of Disputes Without Litigation.

(a) Declarant, the Association and its officers, directors, and committee members, all Persons subject to this Declaration, and any Person not otherwise subject to this Declaration who agrees to submit to this Article (collectively, "Bound Parties"), agree that it is in the best interest of all concerned to encourage the amicable resolution of disputes involving the Community without the emotional and financial costs of litigation. Accordingly, each Bound Party agrees not to file suit in any court with respect to a Claim described in subsection (b), unless and until it has first submitted such Claim to the alternative dispute resolution procedures, if any, set forth in the Governing Document giving rise to such Claim and, in the absence thereof, **Section 15.2** in a good faith effort to resolve such Claim.

(b) As used in this Article, the term "Claim" shall refer to any claim, grievance, or dispute arising out of or relating to:

(i) The interpretation, application, or enforcement of the Governing Documents;

(ii) The rights, obligations, and duties of any Bound Party under the Governing Documents; or

(iii) The design or construction of Improvements within the Community, other than matters of aesthetic judgment under **Article 5**, which shall not be subject to review;

The following shall not be considered “Claims” unless all parties to the matter otherwise agree to submit the matter to the procedures set forth in **Section 15.2**:

(i) Any suit by the Association to collect assessments or other amounts due from any Owner;

(ii) Any suit by the Association to obtain a temporary restraining order (or emergency equitable relief) and such ancillary relief as a court of competent jurisdiction may deem necessary in order to maintain the status quo and preserve the Association’s ability to enforce the provisions of this Declaration;

(iii) Any suit between Owners, which does not include Declarant or the Association as a party, if such suit asserts a Claim which would constitute a cause of action independent of the Governing Documents;

(iv) Any suit in which any indispensable party is not a Bound Party; or

(iv) Any suit as to which any applicable statute of limitations would expire within one hundred eighty (180) days of giving the Notice required by **Section 15.2(a)** unless the party or parties against whom the Claim is made agree to toll the statute of limitations as to such Claim for such period as may reasonably be necessary to comply with this Article.

Section 15.2 Dispute Resolution Procedures.

(a) Notice. The Bound Party asserting a Claim (“Claimant”) against another Bound Party (“Respondent”) shall give written notice to each Respondent and to the Board stating plainly and concisely:

(i) The nature of the Claim, including the Persons involved and the Respondent’s role in the Claim;

(ii) The legal basis of the Claim (i.e., the specific authority out of which the Claim arises),

(iii) The Claimant’s proposed resolution or remedy; and

(iv) The Claimant’s desire to meet with the Respondent to discuss in good faith ways to resolve the Claim.

(b) Negotiation. The Claimant and Respondent shall make every reasonable effort to meet in person and confer for the purpose of resolving the Claim by good faith negotiation. If requested in writing, accompanied by a copy of the Notice, the Board may appoint a representative to assist the parties in negotiating a resolution of the Claim.

(c) Mediation. If the parties have not resolved the Claim through negotiation within thirty (30) days of the date of the notice described in **Section 15.2(a)** (or within such other period as the parties may agree upon), the Claimant shall have thirty (30) additional days to submit the Claim to mediation with an entity designated by the Association (if the Association is not a party to the Claim) or to an independent agency providing dispute resolution services on Moloka'i.

If the Claimant does not submit the Claim to mediation within such time, or does not appear for the mediation when scheduled, the Claimant shall be deemed to have waived the Claim, and the Respondent shall be relieved of any and all liability to the Claimant (but not third parties) on account of such Claim.

If the Parties do not settle the Claim within thirty (30) days after submission of the matter to mediation, or within such time as determined reasonable by the mediator, the mediator shall issue a notice of termination of the mediation proceedings indicating that the parties are at an impasse and the date that mediation was terminated. The Claimant shall thereafter be entitled to file suit or to initiate administrative proceedings on the Claim, as appropriate.

Each Party shall bear its own costs of the mediation, including attorneys' fees, and each Party shall share equally all fees charged by the mediator.

(d) Settlement. Any settlement of the Claim through negotiation or mediation shall be documented in writing and signed by the parties. If any party thereafter fails to abide by the terms of such agreement, then any other party may file suit or initiate administrative proceedings to enforce such agreement without the need to again comply with the procedures set forth in this section. In such event, the party taking action to enforce the agreement or award shall, upon prevailing, be entitled to recover from the non-complying party (or if more than one non-complying party, from all such parties in equal proportions) all costs incurred in enforcing such agreement or award, including, without limitation, attorneys' fees and court costs.

(e) Mandatory Arbitration. Any parties that have failed to reach the settlement of a Claim through negotiation and mediation as provided by this Article may submit the Claim to arbitration. The party, or parties, that desire to submit a Claim to arbitration shall promptly so notify the other party in writing. Any Claim submitted for arbitration shall be submitted to arbitration to Dispute Prevention and Resolution, Inc. ("DPRI") or such other dispute resolution agency as the parties to the dispute may mutually select. Claims involving \$25,000 or less shall be heard by a single arbitrator. Claims involving more than \$25,000 or nonmonetary issues shall be heard by a panel of three arbitrators. The arbitrator(s) shall be selected and the arbitration conducted in accordance with the commercial arbitration rules then in effect for DPRI unless otherwise agreed by the parties. The decision of the arbitrator, if the

Claim is heard by a single arbitrator, or a majority of the arbitrators, if the Claim is heard by a three arbitrator panel, shall be final, conclusive and binding on the parties to the arbitration. All proper costs and expenses of the arbitration including, without limitation, witness fees, attorney's fees, and the fees of the arbitrator(s) shall be allocated among the parties in such amounts as the arbitrator, if the Claim is heard before a single arbitrator, or a majority of the arbitrators, if the Claim is heard before a three arbitrator panel, shall determine at the time of the award. In the event of the failure, inability, or refusal of an arbitrator to act, a new arbitrator shall be appointed in such arbitrator's stead by DPRI. The arbitration award shall be binding in all aspects and shall be subject to the provisions of Chapter 658, Hawai'i Revised Statutes, as the same be amended from time to time. In the resolution of any dispute or controversy as set forth in this Section, each party hereby irrevocably waives the right to a jury trial and any right and claim to exemplary or punitive damages in any jurisdiction. Any documents of assignment, lease, or conveyance of any Lot or other interest in the Project shall be deemed to incorporate the provisions for arbitration of disputes set forth in this Section, as if the same were fully set forth in any such document. Any person who is injured by reason of the fact that a dispute, subject to the terms of this arbitration provision, is resolved other than by arbitration, may recover as damages the cost and expense incurred by reason of the fact that the dispute was not submitted to arbitration for resolution. Any arbitration proceedings under this Section will be submitted to arbitration in Honolulu, Hawai'i.

Section 15.3 Initiation of Litigation by Association.

In addition to compliance with the foregoing alternative dispute resolution procedures, if applicable, the Association shall not initiate any judicial or administrative proceeding unless, prior to initiation of the proceedings, seventy five percent (75%) of the total Owner Member votes in the Association are cast in favor of commencing such proceeding. Notwithstanding the foregoing, no such approval shall be required for actions or proceedings:

- (a) initiated during the Declarant Control Period;
- (b) initiated to enforce the provisions of this Declaration, including collection of assessments and foreclosure of liens;
- (c) initiated to challenge ad valorem taxation or condemnation proceedings;
- (d) initiated against any contractor, vendor, or supplier of goods or services arising out of a contract for services or supplies; or
- (e) to defend claims filed against the Association or to assert counterclaims in proceedings instituted against it.

This section shall not be amended unless seventy five percent (75%) of the total Owner Member votes in the Association are cast in favor of such amendment.

ARTICLE 16: MORTGAGE PROVISIONS

The following provisions are for the benefit of holders, insurers, and guarantors of first Mortgages on lots in the Project.

Section 16.1 Notices of Action.

An institutional holder, insurer, or guarantor of a first Mortgage which provides a written request to the Association (such request to state the name and address of such holder, insurer, or guarantor and the street address of the Lot to which its Mortgage relates, thereby becoming an “Eligible Holder”), will be entitled to timely written notice of any:

(a) Condemnation loss or any casualty loss which affects a material portion of the Project or which affects any Lot on which there is a first Mortgage held, insured, or guaranteed by such Eligible Holder;

(b) Delinquency in the payment of assessments or charges owed by a Lot subject to the Mortgage of such Eligible Holder, where such delinquency, has continued for a period of sixty (60) days, or any other violation of the Governing Documents relating to such Lot or the Owner or Occupant which is not cured within sixty (60) days;

(c) Lapse, cancellation, or material modification of any insurance policy maintained by the Association; and

(d) Proposed action which would require the consent of a specified percentage of Eligible Holders.

Section 16.2 Other Provisions for First Lien Holders.

To the extent not inconsistent with Hawai‘i law:

(a) Any restoration or repair of the Project after a partial condemnation or damage due to an insurable hazard shall be performed substantially in accordance with this Declaration and the original plans and specifications unless the approval is obtained of the Eligible Holders of first Mortgages on Lots to which more than fifty percent (50%) of the votes of Lots subject to Mortgages held by such Eligible Holders are allocated.

(b) Any election to terminate the Association after substantial destruction or a substantial taking in condemnation shall require the approval of the Eligible Holders of first Mortgages on Lots to which more than fifty percent (50%) of the votes of Lots subject to Mortgages held by such Eligible Holders are allocated.

Section 16.3 No Priority.

No provision of this Declaration or the Bylaws gives or shall be construed as giving any Owner or other party priority over any rights of the first Mortgagee of any Lot in the case of distribution to such Owner of insurance proceeds or condemnation awards for losses to or a taking of the Common Area.

Section 16.4 Notice to Association.

Upon request, each Owner shall be obligated to furnish to the Association the name and address of the holder of any Mortgage encumbering such Owner's Lot.

ARTICLE 17: CHANGES IN THE COMMUNITY

Communities such as the Project are dynamic and constantly evolving as circumstances, technology, needs and desires, and laws change; as the residents age and change over time; and as the surrounding community changes. The Project and its Governing Documents must be able to adapt to these changes while protecting the things that make the Project unique.

Section 17.1 Changes in Ownership of Lots.

Any Owner desiring to sell or otherwise transfer title to the Owner's Lot shall give the Board at least seven (7) days' prior written notice of the name and address of the purchaser or transferee, the date of such transfer of title, and such other information as the Board may reasonably require. The transferor shall continue to be jointly and severally responsible with the transferee for all obligations of the Owner of the Lot, including assessment obligations, accruing until the later of (i) date upon which such notice is received by the Board, and (ii) the Record date of the transfer of title. In addition, each transferee shall also participate in classes and educational workshops as more particularly described in **Section 6.5** above.

Section 17.2 Changes in Common Area.

(a) Condemnation. If any part of the Common Area shall be taken (or conveyed in lieu of and under threat of condemnation by the Board acting on the written direction of Members representing at least sixty seven percent (67%) of the total Owner Member votes in the Association and of Declarant, as long as Declarant owns any Property subject to the Declaration or which may be made subject to the Declaration in accordance with **Section 8.1**) by any authority having the power of condemnation or eminent domain, each Owner shall be entitled to written notice of such taking or conveyance prior to disbursement of any condemnation award or proceeds from such conveyance. Such award or proceeds shall be payable to the Association to be disbursed as follows:

(i) If the taking or conveyance involves a portion of the Common Area on which Improvements have been constructed, the Association shall restore or replace such Improvements on the remaining land included in the Common Area to the extent available, unless within sixty (60) days after such taking Declarant, so long as Declarant owns any Property subject to the Declaration or which may be made subject to the Declaration in accordance with **Section 8.1**, and Members representing at least seventy five percent (75%) of the total Owner Member vote of the Association shall otherwise agree. Any such construction shall be in accordance with plans approved by the Board. The provisions of **Section 7.7(c)** regarding funds for restoring Improvements shall apply; or

(ii) If the taking or conveyance does not involve any Improvements on the Common Area, or if a decision is made not to repair or restore, or if net

funds remain after any such restoration or replacement is complete, then such award or net funds shall be disbursed to the Association and used for such purposes as the Board shall determine.

(b) Partition. Except as permitted in this Declaration, the Common Area shall remain undivided, and no Person shall bring any action partition of any portion of the Common Area without the written consent of all Owners and Mortgagees. This Section shall not prohibit the Board from acquiring and disposing of tangible personal property nor from acquiring and disposing of real property which may or may not be subject to this Declaration.

(c) Transfer or Dedication of Common Area. The Association may dedicate portions of the Common Area to the Land Trust, Hawai'i County, Hawai'i, or to any other local, state, or federal governmental or quasi-governmental entity.

ARTICLE 18: DISCLOSURES

Section 18.1 Ongoing Construction and Other Activities.

Construction activity by Declarant or other Lot Owners may continue within the Project, as well as on properties, adjacent to and in the vicinity of the Project. Such construction activity may result in the transmission, discharge or emission of surface water runoff, smoke, noise, dust, odors, noxious vapors, chemicals, vibrations, and other annoyances, as well as pose certain risks of injury to an Owner and the Owner's guests and visitors, and may limit the Owner's access to portions of the Project. Hunting, camping and other outdoor recreational activities may continue on properties adjacent to and in the vicinity of the Project. Additionally, Declarant's sales activities, including the use of signs and sales displays and activities, will continue in the Project until the sale of the last lot in the Project. All sales display and activities will be consistent with the community-wide standard.

Declarant shall have an easement over and upon each Owner's Lot and over the Project for the transmission, discharge, or emission of surface water runoff, smoke, noise, dust, noxious vapors, odors, chemicals, vibrations, or other substances or nuisances over the Project which are created by or result from such construction activities. Declarant may do such things as may be reasonably required in connection with such activities, including, but not limited to, grading; excavation; depositing fill material; installing drainage systems; and installing sewer, water, electrical, gas, telephone, and/or television cable lines.

Section 18.2 Reclaimed Water.

Facilities for collection and distribution of non-potable reclaimed water may be, or have been, constructed on the Property. Such reclaimed water may be utilized to irrigate the Common Area. By the act of purchasing or occupying a Lot within the Project, all Owners understand and irrevocably consent to the possibility of irrigation of the Common Area and other areas within the Property with reclaimed water in accordance with applicable law.

Section 18.3 Expansion and/or Modification.

Declarant has the right, pursuant to this Declaration, to add, modify, or eliminate Lots and Common Areas (and, if any, facilities thereon) to, on, or from the Property generally,

and no representation, warranty, or assurance has been made (a) that any such Lots or Common Areas or facilities will or will not be added, modified, or eliminated, or (b) as to the financial or other impact on the Association which may assess charges against the Owners in the Project.

Section 18.4 Hazardous Materials.

Each Owner assumes all risks of Hazardous Materials (as used herein, the term “Hazardous Materials” means all substances identified, listed, or defined as a “hazardous substance” under any federal, state, or local environmental laws or otherwise regulated as a dangerous, hazardous, toxic, or carcinogenic substance) existing on, about, around, under, over, or within the Owner’s Lot, including all risks of: (a) any and all enforcement, clean up, or other governmental or regulatory actions instituted or threatened pursuant to any Hazardous Materials Law affecting the Lot; (b) all claims made or threatened by any third party against an Owner or Declarant relating to damage, contribution, compensation, loss, or injury resulting from any Hazardous Materials, and (c) having sole responsibility for, and defending, indemnifying, and holding harmless Declarant and its partners, officers, directors, employees, agents, successors, and assigns (each of said parties herein called an “Indemnitee”), from and against all claims, demands, actions, lawsuits, proceedings, fines, penalties, damages, liabilities, judgments, awards, expenses, and costs (including attorneys’ fees and costs) which may arise out of or may directly or indirectly be attributable to the use, generation, manufacture, treatment, handling, refining, production, storage release, discharge, disposal, or presence of any Hazardous Materials on, about, around, over or within the Lot or the Project. This indemnification shall not apply to claims, demands, actions, losses, damages, liabilities, costs and expenses caused by any Indemnitee’s proven gross negligence, willful misconduct, or violation of applicable laws, established by a final, nonappealable judgment of a court of competent jurisdiction. This provision shall not apply to any institutional lender, investor, or federal housing agency (including any successors or assigns) who holds a Mortgage covering the Lot or who takes title to the Lot upon foreclosure or by way of deed in lieu of foreclosure or otherwise.

Section 18.5 Impacts on Lot.

Each Lot, and the Improvements thereon, may be affected periodically by various hazards and by noise, dust, smoke, earthshock, soot, ash, odor, noxious vapors, transmission of pollutants or other hazardous materials, surface water runoff, or other adverse environmental conditions created by or attributable to surrounding construction, development, pasture and other non-residential uses and activities, including, but not limited to:

- (a) fertilization and pest and weed control;
- (b) cattle and other livestock grazing;
- (c) real estate development and other changes in use (due to zoning changes or other governmental authorization otherwise), construction, grading, improvement and maintenance of adjacent and surrounding properties, including roadways;
- (d) irrigation of any and all surrounding lands with reclaimed water, treated effluent, or other non-potable water sources;

(e) preservation and restoration of the anchialine ponds may result in the establishment of endangered species within the Project, possibly resulting in portions of the Project being designated as a critical habitat under the federal Endangered Species Act and being subject to regulation by the U.S. Fish and Wildlife Service.

Section 18.6 View Impairment.

The activities conducted on the Property pursuant to **Article 5, Article 8, and Article 10** may diminish or impair views within the Property. Therefore, views within the Project are not protected, and any negative impact to any Owner's view caused by such activities shall not provide a basis for any claim or right of action. Neither Declarant nor the Association shall have any obligation to prune or thin landscaping, or trees and shall have the right, in their sole and absolute discretion, to add Improvements, landscaping, and trees from time to time. In addition subject to the terms and provisions of this Declaration, Declarant and/or the Association, may, in their sole discretion, change the location, configuration, size and elevation of Improvements, trees, and landscaping from time to time. Any such additions or changes may diminish or obstruct views from the Lots. Any express or implied easements for view purposes or for the passage of light and air are hereby expressly disclaimed. However, the Declarant will use its reasonable efforts to insure that any development on adjoining Lots will be done in such a manner so as to minimize (as determined by Declarant in its sole discretion) the impact that the development will have on the view planes of Improvements already constructed (or approved for construction) on adjoining Lots.

Section 18.7 Roadways.

Roadways and related Improvements within the Project (the "Roadways") will remain as Common Area, which the Association shall own and be responsible for unless and until the Roadways are dedicated to Hawai'i County, and Hawai'i County accepts such dedication. In order for Hawai'i County to accept dedication of the Roadways, the Roadways must be in a condition that meets the standards of Hawai'i County for such dedications. This Section shall not be interpreted to require the Association to dedicate the Roadways to Hawai'i County, nor shall it be interpreted to require either the Association or Declarant to construct and maintain the Roadways in a condition that meets the standards of Hawai'i County for such dedications.

Section 18.8 Wells and Irrigation Systems.

No Owner or Member may construct, drill, install, or maintain any sprinkler or irrigation systems or wells of any type which draw upon water from lakes, creeks, streams, rivers, ponds, wetlands, canals, or other ground or surface waters within the Project, except that Declarant, the Association, and the Company shall have the right to draw water from such sources.

ARTICLE 19: AMENDMENT OF DECLARATION

Except with respect to the provisions designated "Master Plan Covenants" or "Master Plan Perpetual Covenants," the restrictions, covenants, conditions, and provisions of this Declaration may, from time to time, be amended, modified, waived or terminated (collectively

“Change” or “Changed”) by the Declarant or by the Members, as set forth below and subject to the provisions thereof; provisions designated “Master Plan Covenants” shall only be Changed pursuant to the provisions of **Section 19.3** below; Master Plan Perpetual Covenants shall not be Changed. Any amendment adopted pursuant to the provisions hereof shall be Recorded, and a copy of the Recorded amendment shall be distributed to all Members of the Association. The foregoing paragraph of this **Section 19** is hereby designated to be a Master Plan Perpetual Covenant.

Section 19.1 By Declarant.

In addition to specific amendment rights granted elsewhere in this Declaration, and subject to the provisions of **Section 19.3** below, until termination of the Declarant membership, Declarant may, unless otherwise prohibited by Hawai‘i law, unilaterally amend this Declaration (excluding provisions designated Master Covenants) for any purpose. Thereafter, so long as Declarant owns any property described in **Exhibit A** or **B**, Declarant may unilaterally amend this Declaration (excluding provisions designated Master Covenants) if such amendment is necessary (a) to bring any provision into compliance with any applicable governmental statute, rule, regulation, or judicial determination; (b) to enable any reputable title insurance company to issue title insurance coverage on the Lots; (c) to enable any institutional or governmental lender, purchaser, insurer or guarantor of mortgage loans, including, for example, the Federal National Mortgage Association or Federal Home Loan Mortgage Corporation, to make, purchase, insure, or guarantee mortgage loans on the Lots; or (d) to satisfy the requirements of any local, state, or federal governmental agency.

Section 19.2 By Members.

Except as otherwise specifically provided in this Declaration, this Declaration (excluding provisions designated Master Covenants) may be amended only by the affirmative vote or written consent, or any combination thereof, of Members representing seventy five percent (75%) of the total Owner Member votes in the Association, including seventy five percent (75%) of the Owner Member votes held by Members other than Declarant, and Declarant’s consent, so long as Declarant owns any property subject to this Declaration or which may become subject to this Declaration in accordance with **Section 8.1**.

Notwithstanding the above, the percentage of votes necessary to amend a specific clause shall not be less than the prescribed percentage of affirmative votes required for action to be taken under that clause.

Section 19.3 Required Consent to Master Plan Covenants.

Notwithstanding any provision in this Declaration to the contrary, provisions specifically designated “Master Plan Covenants” by the terms of this Declaration shall only be Changed upon the following conditions: (1) the Land Trust shall have given its written consent, and (2) such Change reflects the current best practices and is in compliance with and adheres to the principles and intent set forth in the Master Plan.

Any proposed Change to a Master Plan Covenant shall be submitted to the Land Trust for its consent, which consent may be withheld in the Land Trust's sole and absolute discretion.

Any request for the Land Trust's consent shall be deemed denied if written approval shall not have been given to the Association within thirty (30) days of request. Any proposed Change to a Master Plan Covenant to which the Land Trust does not consent shall be of no force or effect whatsoever.

This **Section 19.3** is hereby designated to be a Master Plan Perpetual Covenant..

Section 19.4 Validity and Effective Date.

No amendment may remove, revoke, or modify any right or privilege of Declarant or the Declarant Member without written consent of Declarant or the Declarant Member, respectively (or the assignee of such right or privilege).

Section 19.5 Limitations on Amendments.

If an Owner consents to any amendment to this Declaration or the Bylaws, it will be conclusively presumed that such Owner has the authority to so consent, and no contrary provision in any Mortgage or contract between the Owner and a third party will affect the validity of such amendment.

Any amendment shall become effective upon Recording, unless a later effective date is specified in the amendment. Any procedural challenge to an amendment must be made within six months of its Recordation or such amendment shall be presumed to have been validly adopted. In no event shall a change of conditions or circumstances operate to amend any provisions of this Declaration.

ARTICLE 20: MISCELLANEOUS

Section 20.1 Laws of Hawai'i; Non-Waiver. The provisions hereof shall be construed and enforced under the laws of the State of Hawai'i. Failure to enforce any provision hereof shall not constitute a waiver of the right to enforce said provision or any other provision hereof. No acceptance of any assessment paid by any Owner shall be deemed a waiver of any breach by such Owner of any provision of this Declaration or a waiver of any rights of any person entitled to enforce this Declaration.

Section 20.2 Joint and Several Liability. If an Owner consists of more than one Person, all of the obligations of the Owner under this Declaration shall constitute the joint and several obligation of all such Persons.

Section 20.3 Interpretation; Conflicts. The provisions of this Declaration shall be liberally construed to effectuate their purpose of creating a uniform plan for the development of the Project. The headings of paragraphs and articles are inserted only for ease of reference and shall not define or limit the scope or intent of any provision of this Declaration. In the event of a conflict between or among the Governing Documents, the conflict shall be first resolved in favor

of the SAMP, second the Declaration, third the Articles, fourth the Bylaws, fifth the Design Guidelines, and sixth the Resolutions of the Board of Directors.

Section 20.4 Captions. The captions and headings in this instrument are for convenience only and shall not be considered in construing any provisions of this Declaration.

Section 20.5 Word Usage. The use of the masculine gender herein shall be deemed to include the feminine and neuter genders and the use of the singular shall be deemed to include the plural, whenever the text so requires.

Section 20.6 Notice, Information, or Material. Any notice, information, or material required to be given hereunder shall be deemed furnished or delivered to a party at the time a copy thereof is deposited in the mail, postage or charges prepaid, addressed to the party, and in any event, when such party actually receives such notice, information, or material.

Any notice, information, or material delivered or furnished to the name and address of a Member as last shown on the books of the Association shall be deemed to be the proper delivery of furnishing of such notice, information, or material. If notice of a meeting is given as provided for above, nonreceipt of actual notice by any Member shall in no way invalidate the meeting or any proceedings taken or any business done at the meeting. Any Member may waive notice of any meeting either prior to or at or after the meeting, with the same effect as though notice of the meeting had been given to the Member. The presence of any Member at a meeting shall be the equivalent of a waiver by that Member of notice at the meeting.

Notices, information, and material required to be given hereunder to Declarant shall be addressed to the Declarant at Fort Street Tower, Suite 600, 745 Fort Street, Honolulu, Hawai'i 96813. Notices, information, and material required to be given hereunder to the Association or the Board shall be addressed to such entity in care of the Association at the office of the Association.

Section 20.7 Limited Liability. Neither Declarant, the Association, the Board, nor any member, agent, officer, or employee of any of the same, shall be liable to any party for any action or for any failure to act with respect to any matter if the action taken or failure to act.

Section 20.8 Exhibits. **Exhibits A, B, C, D, E, F, G, G-1 and H** attached to this Declaration are incorporated by this reference, and amendment of such exhibits shall be governed by this Article. Any other exhibits are for informational purposes and may be amended as provided therein or in the provisions of this Declaration which refer to such exhibits.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the Declarant and the Land Trust have executed these presents as of the date first above written.

MOLOKA ʻĪ PROPERTIES LIMITED

By: _____
Name: _____
Its: _____

By: _____
Name: _____
Its: _____

Declarant

MOLOKA ʻĪ LAND TRUST

By: _____
Name: _____
Its: _____

By: _____
Name: _____
Its: _____

Land Trust

Exhibit A

Land Initially Submitted

200 lots aggregating approximately 400 acres to be sold to Owners.

Approximately 434 acres of Conservation District Lands along the coast of Lā'au Point to be under the joint control of the Land Trust and the Association pursuant to the terms of the SAMP.

Approximately 46 acres of road to be maintained by the Association.

Approximately 382 acres of Rural Lands (previously classified as Agricultural District lands) between lot clusters and the mauka buffer zone of the Project to be under the control of the Association to be designated and maintained as open space.

Two (2) parks (West Park and South Park) containing in the aggregate approximately 17 acres to be conveyed to the Land Trust or to the County of Maui, Department of Parks and Recreation.

Note: Approximately 14 acres are set aside for the wastewater treatment plant to be maintained by Declarant.

Exhibit C

Articles of Incorporation of the Association

The Board of Directors shall include two (2) members designated by the Land Trust as ex-officio non-voting director.

Exhibit D

Bylaws

The Bylaws shall include a provision which shall permit the Land Trust to appoint two (2) members whose rights to participate and vote shall be limited to matters which directly relate to Master Plan Covenants and Master Plan Perpetual Covenants.

This provision shall be a Master Plan Perpetual Covenant.

Exhibit G

Design Guidelines

Note: Require Lot Owner to design their connection to the Wastewater Line to include a force feed to the Water Treatment Plant.

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Exhibit G-1
Master Covenants—Design Guidelines

Capitalized terms shall have the same meaning as set forth in the Declaration of Covenants.

1. **Building restrictions to prevent erosion; grading:** No building shall be allowed on land where the slope is greater than 50%. In such areas, no grading shall be permitted which would decrease the finished grade to less than 50% except for health or safety reasons. On each Lot, the goal shall be to manage open space areas in order to reduce or eliminate soil erosion by restoring the vegetative cover.

This **Section 1** is hereby designated to be a Master Plan Perpetual Covenant.

2. **Building code:**
 - a. Building heights shall be limited to 25 feet as determined in accordance with the provisions of Chapter 19 of the Maui County Code, as amended from time to time.

This **Section 2.a** is hereby designated to be a Master Plan Perpetual Covenant.

- b. Buildings shall be designed with the goal of blending in with the landscape and in a “kama’aina style”
 - c. Building roof materials shall be non-reflective.
3. **Solar Power:** All buildings which require electricity shall utilize solar panels (or other comparable technology) for electric power
 - a. All Dwellings shall be equipped with a primary hot water system comprised of a conventional solar panel hot water system (or comparable technology) sized to meet at least 80% of the hot water demand of such home
4. **General Energy:** All energy systems for Dwellings shall be designed and constructed to meet conservation standards established by the Climate Protection Division of the United States Environmental Protection Agency
5. **Lighting – General:** All exterior lighting shall be shielded from adjacent properties and from the ocean.
 - a. **Storage Tank:** All Dwellings shall have at least a 5,000 gallon storage tank and pump for water captured from roofs for irrigation and non-potable purposes.

6. **Water Use for Irrigation (landscaping):**
 - a. Re-use and collection/storage systems for catchments shall be utilized.
 - b. Only drip systems shall be permitted for irrigation.
7. **Drinking water use covenant:** Buildings shall be designed to ensure an overall maximum drinking water daily use of between 500- 600 gallons per day.
8. **Drinking water covenants:**
 - a. Toilets shall be double flush toilets or comparable equipment
 - b. Water conservation shower heads shall be required
 - c. Dual water system for potable and no-potable uses shall be required
9. **Landscaping:**
 - a. Landscaping shall be restricted to appropriate native Hawaiian and Polynesian-introduced species that are drought tolerant
 - b. Use of noxious or invasive species shall not be permitted
 - c. As part of the Lot's landscaping plans, the Lot Owner shall construct and maintain a physical demarcation, such as a lava rock wall, [Comment: other examples should be listed as well] running along an individual property line which reflects the approximate boundary of the private near shore lots and the Conservation District areas. Lot Owners shall be permitted to have gates to access these areas.

Section 9.c is hereby designated to be a Master Plan Perpetual Covenant.

10. **Green architecture:** Design of buildings shall require "green" architecture considerations that incorporate recycled materials, energy efficient equipment, natural ventilation, solar and photovoltaic systems, etc.
11. **Buildable Area:**
 - a. No more that 30% of the land area of the Lot shall be "disturbed," provided, however, that in any event, the total floor area of any Dwelling shall not exceed 5,000 square feet.

Section 11.a is hereby designated to be Master Plan Perpetual Covenant.

- b. For purposes of this Section, floor area shall include: all enclosed (on three sides minimum, with floor or roof structure above) living areas; above grade decks in excess on 4'-0" in width; garage or carport; swimming pools (if allowed), saunas or other developed water features (excluding naturally existing ponds, tide pools, etc. – if allowed); or any other standing structures, which are accessory to the Dwelling.

Site characteristics and the degree of pre-existing site disturbance may be further limiting factor in the calculation of maximum developable area..

- c. For purposes of this section , “disturb” shall include the following:
 - i. Removing existing foliage without replacement; and
 - ii. Removing and replacing existing foliage with a different species or Improvements.
- d. The location of the Dwelling on each Lot shall be restricted to the Building Envelope designated by Declarant on the final subdivision map to establish the view planes of each Lot and to ensure that the Dwelling will not be unreasonably obtrusive taken viewed from the ocean.⁶

Section 11.d is hereby designated to be a Master Plan Perpetual Covenant.⁷

- 12. **Drainage Systems:** Each Lot’s drainage systems shall be required to retain any run-off within the disturbed area of the Lot. The goals shall be to maximize recharge into the ground, restore land areas that have eroded by re-establishing vegetative cover, and to minimize impervious (paved) surfaces on the Lot.
- 13. **Fire Protection Systems:** Each Improvement intended to be used for dwelling purposes shall have installed a fire protection or sprinkler system approved by the Fire Department of the County of Maui, provided that this requirement shall be omitted when a fire station is constructed on the West End of Molokai within five (5) miles of the Project and operational.

Each of the provisions set forth in the aforesaid 13 Sections, unless specifically designated to be a Master Plan Perpetual Covenant, is hereby designated to be Master Plan Covenant.

Appendix F

Speech for Commencement of EC Project #47

Welcome everybody.

It is very historic that we are all meeting today and I can't thank you enough for taking the time to sit with us.

I feel very humble and a little scared about the next two days because, over the last decade, there has been so much bitterness and anguish between my company and the community which you all represent.

This company has a lot of bridges to build and a lot of trust to earn. I know words are not enough and we will only be judged by our actions.

All of you know how we got to be sitting around this table so I won't go into the history of the last 12 months. But I would like to say a couple of things about my intent:

- 1. I have complete authority to act for my company and the parent company BIL International.**
- 2. My company accepts that I will not do anything that is contrary to the ethos that is that "Molokai is the last Hawaiian Island." In fact my mission is to enhance that.**
- 3. My personal mission is to balance my company's interests with the interests of the Molokai community. I believe strongly that balance can be achieved and I am relying on the Conservation Fund to help us with that.**
- 4. I will answer every question you have for me with honesty.**

Many of you have expressed a concern that we are asking for your input into a range of issues that affect Molokai, but not telling you what our development plans are.

It is a valid concern because obviously some level of development is integral to a plan that is aimed at a vision for our 64,000 acres for the next 50 to 100 years.

I want the development on our property confined to the coastal west end of the island.

So, what do I want?

- The Kaluakoi Hotel re-opened.
- The Kaluakoi golf course renovated with a 35% reduction in turf ---its now 120 acres of turf and the current plan is to reduce it to 79 acres.
- At some time in the future we see the need for another golf course. It was a terrible idea to have one entitled below the Lodge and we should talk about where that course might be. If we take the long-term view, we think that the former plantation course in the hills above Maunaloa, is a likely site, but we need to discuss that with the Conservation Fund. There are no immediate plans to build that course.
- Retain the other entitled lots on the Kaluakoi property. There are no immediate plans to develop these.
- Economically, we need some development at La'au Point, because the Kaluakoi Hotel and Golf Course will almost certainly lose money for many years until a marketing campaign kicks in. We need a larger financial engine than just the hotel and the golf course.
- The previous La'au Point plan that some of you saw just won't fly with its wall to wall houses from one end of La'au Point to the other. Specifically the number of home sites, the amount of beach access, picnic spots, open spaces and archeological sites to be retained will come out of discussions like today. For example some tell us a 100 acre beach park would be a good idea, others say we need to plan for many more smaller parks.
- The Conservation Fund also wants input and we haven't discussed it with them yet.
- WE DO NOT HAVE A FINAL VERSION OF A LA'AU POINT PLAN YET. I can honestly tell you the level of development there has not been decided.

- The Land trust: We have come to believe that a land trust, and allocating lands to it, should be an integral part of our development plan. Its part of my larger vision for the property which preserves land that can never be developed, for open space for all to use, and puts land aside for agriculture, aquaculture and for other uses.

Maunaloa and Kaulapuu: It will be up to the community to decide whether these communities grow or remain the same. Your input is needed here.

It is important for you to know that BIL is not in a position to fund any of these development options by itself.

When the vision and the plans are complete, we will be seeking an investment partner to join us in the development. We will be looking for investors who believe in whatever vision we come up for the property.

When the time comes we would appreciate your help and your input in finding this partner.

This investor will most likely not be the typical development partner who sees cash returns as the only reason for being on Molokai.

It will be someone who wants more than that, someone who can see Molokai for what it is and realizes that there is more to an investment than just dollars.

Water

The inevitable next question will be “water”.

I am sure that if we find common ground on this plan for the future, then I am sure we will find common ground on the water issue.

If we don't find commonality on the plan for our property, then we can't ever discuss water.

- It's an issue I am committed to finding common ground with you.
- I don't want a 14-inch pipeline across Hooleahua.
- I don't know what the answer is yet, but there might be some options that help us all.
- These could be that you can monitor the flow through your lands to ensure we always comply with what is agreed.
- We are also constantly looking at alternative water sources such as Reverse Osmosis, and although its not looking economic at this stage, I am sure it will in the future.

Please give me some time on this issue. I am learning more every day and exploring lots of options. I really can't say more than that at the moment.

So in summary, I want to come back to you all within 6-8 weeks with firmer development proposals on the items I have mentioned.

I can assure you there won't be any skyscrapers on Molokai and I can't see any traffic lights in my future.

If we are ever going to be successful with the Kaluakoi Hotel and the Lodge and beach Village, then our island has to be unique and not another Kaanapali. For me, that means it's the most Hawaiian island, it portrays peace and tranquility and it offers a range of unique activities that can only take place in the environment we all enjoy now.

Appendix G
Geotechnical Engineering
Reconnaissance Report



August 23, 2007
W.O. 5916-00

Mr. Daniel Orodener
Moloka'i Properties Limited dba Moloka'i Ranch
745 Fort Street Mall, Suite 600
Honolulu, HI 96813

**GEOTECHNICAL ENGINEERING RECONNAISSANCE
LA'AU POINT DEVELOPMENT**

**TMK: (2) 5-1-02: 30; (2) 5-1-06: 157; (2) 5-1-08: 03, 04, 06, 07, 13, 14, 15, 21, AND 25
WEST MOLOKA'I, COUNTY OF MAUI, HAWAII**

Dear **Mr. Orodener**:

This report presents the results of our preliminary geotechnical engineering reconnaissance performed for the proposed *La'au Point Development* project in the West Moloka'i area on the Island of Moloka'i, Hawaii. The project location and general vicinity are shown on the Project Location Map, Plate 1.

This letter report summarizes the findings resulting from our site reconnaissance and laboratory testing of selected soil samples. These findings are intended to assist in the preliminary planning of the project only. The findings and recommendations presented herein are subject to the limitations noted at the end of this report.

PROJECT CONSIDERATIONS

The proposed project involves the development of 200 single-family rural residential lots on approximately 1,492 acres in the vicinity of La'au Point at the southwestern tip of the Island of Moloka'i, Hawaii. Based on the preliminary planning information provided, we understand that the new development will be limited to the lower elevations of the project site generally below about +175 feet Mean Sea Level (MSL). A map showing the preliminary development plan is provided on Plate 2.

We understand that there is some concern with respect to the suitability of the on-site clayey soils for subdivision development. The focus of our study is on the areas reportedly containing expansive "adobe" type clay soils. Therefore, a reconnaissance of accessible areas of the project site was performed to record observations and collect near-surface soil samples for laboratory testing, which are believed to be representative of the predominant soil types encompassing the project site.

PURPOSE AND SCOPE

The purpose of this reconnaissance-level geotechnical engineering study was to obtain preliminary soils information in support of the Draft Environmental Impact Statement (DEIS) and Land Use Commission (LUC) Petition. The soils information obtained was used to develop a generalized soil and/or rock data set to formulate preliminary geotechnical recommendations for project planning. Our scope of work generally consisted of the following tasks:

1. Research and review of our in-house soils reports, available geological and soil survey maps, and aerial photos of the project site and vicinity.
2. Reconnaissance of accessible areas of the project site to observe the site conditions by our senior geologist and field geologist.
3. Collection of near-surface soil samples from selected areas of the project site and transportation of the samples to our testing laboratory in Honolulu.
4. Laboratory testing of selected soil samples for classification purposes and evaluation of the expansion potential of the soils.
5. Analyses of the field and laboratory data to formulate preliminary geotechnical engineering recommendations for the development planning.
6. Preparation of this report summarizing our work on the project and presenting our findings and recommendations.
7. Coordination of our overall work on the project by our senior geologist.
8. Quality assurance of our work and client/design team consultation by our principal engineer.
9. Miscellaneous work efforts such as drafting, word processing, and clerical support.

REGIONAL GEOLOGY

The project site is at the southwest tip of the western half of the Island of Moloka'i. The Island of Moloka'i was built by two coalescing shield volcanoes identified as West Moloka'i and East Moloka'i. The West Moloka'i volcano is broad and relatively flat with no discernable caldera feature. The project site encompasses weathered lava flows extruded from the southwest rift zone (a primary eruptive lineament) of the West Moloka'i volcano, which extruded mainly basaltic lava flows comprising the western half of the Island of Moloka'i.

West Moloka'i resides leeward of the East Moloka'i Mountains; therefore, the climate is very dry and the rate of chemical and physical weathering of the exposed basaltic rocks is reduced. Long periods of post eruption weathering, accompanied by generally slower rates of surface erosion stripping, have left a deep red soil cover over the majority of the West Moloka'i uplands. However, it has been noted in previous geological investigations that many surface soil deposits, particularly on the lower elevation south facing slopes along the southern shoreline, have been largely washed away during earlier higher stands of the sea level. As a result, bare basaltic rock covered by thin surface soils typifies the hillside ground surfaces along the southern facing coastline.

Based on our review of available geological maps and aerial photographs, the majority of the project site is underlain by weathered basaltic rock and derived in-situ residual and saprolitic soils belonging to the Tertiary West Moloka'i Volcanic Series geological mapping unit. Areas of alluvial soil deposits have been mapped by others on flatter terrain near the mouths of the larger drainage gullies along portions of the western and southern coastlines. The most notable areas of mapped alluvial soil deposits occur at Aholehole Flats in the vicinity of Kamakaipo Gulch and at Hakina Gulch.

It appears that the Aholehole Flats area (southwest of Kamakaipo Gulch) is a gently westerly sloping alluvial plain that receives runoff and sediment via multiple inland tributaries that feed into the depositional area. Hakina Gulch, on the southern facing slopes of the project site, is an incised drainage gulch that delivers intermittent stream flow from inland regions.

EXISTING SITE CONDITIONS

The project site encompasses approximately 1,492 acres of vacant land extending along the western and southern shorelines at La'au Point on the Island of Moloka'i. Vehicle access to the project site is from the existing Kaupoa Beach Camp Road at the north end of the project site and from the existing Haleolono Harbor Road at the southeastern end of the project site. Existing foot trails along the coastline provide hiking access between the two vehicle access points. The project site is mostly covered by a dense growth of dry land shrubbery and Kiawe trees with localized areas of bare exposed ground.

Site Reconnaissance

A reconnaissance of accessible areas of the project site was performed to record visual observations of the existing conditions and to collect samples of the near-surface soils believed to be representative of the project area. Our site reconnaissance consisted of a traverse along the coastal perimeter between the two existing roads (mentioned previously) combined with short traverses inland at selected accessible locations.

Five soil samples representing the predominant soils observed at the project site were collected at selected locations. The soil samples are identified as S-1 through S-5. The approximate location of the soil sample collections are shown on the Site Plan, Plate 2. Selected photographs of the existing site conditions and locations of soil sample collection are presented in Appendix B.

Based on our observations and a review of the available topographic maps, the overall project site terrain consists of mainly gentle to moderate sloping ground with multiple small (shallow) drainage ravines imparting an undulatory and irregular surface topography. Some localized moderately steep slopes occur along the southern shoreline and interior portions of the project site. Overall slope gradients range between about 5 and 15 percent inclination. The majority of the observed ground surfaces encompass rocky surface materials. The rocky surface materials consist of relatively thin clayey residual soils (containing appreciable cobbles, boulders, and scattered rock outcroppings) overlying weathered, hard basaltic rock formation. Based on our observations, there appears to be three generalized types of inland surface soils, which we encountered during our site reconnaissance.

GENERALIZED SOIL TYPES			
Soil Description from Site Reconnaissance	Typical Depositional Environment	Anticipated Geologic Origin	Correlation with Soil Conservation Service (SCS) Mapping Unit
Reddish brown to brown silty clay (CH) with gravel, cobbles, and boulders (TYPE 1)	Widespread inland from the shoreline, overlying and grading with shallow depth weathered basaltic rock	Residual and Saprolitic soils derived from in-situ weathering of the parent basaltic rock	Kapuhikani (KKTC) – Extremely Stony Clay
Reddish brown to brown stratified silty clay (CH) with sand and variable amounts of embedded gravel, cobbles, and boulders (TYPE 2)	Alluvial plains, ravines, dry washes, gully mouths	Alluvial soil eroded and transported from inland regions consisting of residual and saprolitic soils	Mala Silty Clay (MmA)
Dark brown to grayish brown plastic silty clay (CH) mixed with gravel, cobbles, and boulders (TYPE 3)	Localized to isolated deposits along and inland from the shoreline	Alluvial and some residual soils	Kapuhikani (KKTC) – Extremely Stony Clay

TYPE 1 – Based on our observations, the most predominant surface soil encountered throughout the project site consists of reddish brown to brown colored silty clay (CH) representing residual soils derived from the weathering of basaltic rock. The residual soils covered most of the inland sloping terrain. The soils contain an appreciable volume of erosional remnant embedded cobbles and boulders mixed with rock outcroppings. Based on our observations, the residual soils appear to have a generally low expansion potential when subjected to soil moisture fluctuation as evidenced by some occasional slight surface desiccation cracking. Based on our observations, the depth to rock below the residual soils appears to range on the order of less than about 2 to 3 feet across the majority of the project site. Thicker surface soil deposits were encountered, ranging up to about 5 to 10 feet northerly of Kamakaipo Gulch. The soils are believed to represent the soil unit identified and mapped by the Soil Conservation Service (SCS) as the Kapuhikani Extremely Stony Clay (KKTC).

TYPE 2 – Reddish brown to brown alluvial clay (CH) soils with sand were observed within and adjacent to some existing drainage ravines and on the low elevation alluvial plain at the mouths of the ravines and gullies. In places, these soils contain very few embedded rocks such as the broad low gradient alluvial plain at Aholehole Flats. Other more localized areas, underlain by silty and sandy alluvial soils, contain appreciable volumes of embedded stones, cobbles, and boulders, such as within the existing drainage ravines and gullies. The expansion potential of these clayey, silty, and sandy surface soils is believed to be generally low to moderate as evidenced by slight surface desiccation cracking. The soils are believed to represent the soil unit identified and mapped by the SCS as the Mala Silty Clay (MmA).

TYPE 3 – Dark grayish brown clay (CH) soils were observed sporadically mainly along our coastal traverse. These hard plastic soils were also encountered as isolated deposits mixed with the predominant reddish brown residual soils further inland from the shoreline. The dark brown clay soils were less commonly encountered progressing inland from the coastal region. The soils are believed to represent alluvial and residual type soil deposits overlying basalt rock formation at relatively shallow depths. The soils appear to have a moderate to high expansion potential when subjected to soil moisture fluctuation as evidenced by moderate to occasionally strong surface desiccation cracking. The soils are also believed to represent the soil unit identified and mapped by the SCS as the Kapuhikani Extremely Stony Clay (KKTC).

In summary, the predominant surface soils encountered during our reconnaissance consists of reddish brown to brown silty clays (CH) representing residual soil material derived from the weathering of basaltic rock. In general, these soils appear to have a low expansion potential. Reddish brown to brown clayey soils (CH) with sand were encountered mainly in alluvial depositional environments, which appear generally confined to topographic low elevations such as depressions and drainage ravines. These soils appear to have a low to moderate expansion potential. Finally, the dark brown to grayish brown clay (CH) soil was encountered as isolated inland deposits and discontinuous deposits along the lower elevation coastal regions at the southern portion of the project

site. These soils appear to have a relatively high expansion potential. With the exception of the northernmost portions of the project site (northerly of Kamakaipo Gulch), basalt rock formation was encountered at the ground surface and partly exposed at the ground surface mixed with the soils mentioned previously.

Soil Survey Data

Based on our review of the available United States Department of Agriculture Soil Conservation Service (USDASCS) data, inland areas of the project site may contain the following soil types listed in the approximate order of areal coverage as depicted by the SCS soil survey map. The soils were mapped by the USDASCS within lands that are proposed for residential subdivision development. Other minor soil types may exist within the development area as localized or relatively small-scale deposits. A soil survey map depicting the areal distribution of the major soil types described below is provided on Plate 3.

Soil and/or Land Type	Generalized Soil Conservation Service (SCS) Description
KKTC: Kapuhikani Extremely Stony Clay	The representative soil is dark brown, very sticky, very plastic, and has a high shrink-swell (expansion) potential. The soil is very stony at the surface and throughout the soil profile. The soil occurs on slopes ranging between 3 and 15 percent inclination. The soils are underlain by bedrock at depths of about 24 inches.
rVT2: Very Stony Land Eroded	This land type contains areas of stones, cobbles, and boulders, covering 50 to 75 percent of the ground surface on slopes of 3 to 40 percent inclination. The material is mixed with typical area soils with bedrock occurring at depths of about 24 inches.
MmA: Mala Silty Clay	The representative soil is dark reddish brown and grayish brown silty clay with a platy structure containing stratified sub-layers occurring on slopes ranging between 0 and 3 percent (alluvial plain). The soils may extend deeper than about 5 feet thick and are associated with recent alluvial deposits and flooding conditions.

DISCUSSIONS AND RECOMMENDATIONS

We understand that a Draft Environmental Impact Statement (DEIS) was prepared for the project. Based on public comments, there is some concern regarding the suitability and use of the near-surface clay soils at the project site for residential subdivision development including homes, infrastructure, and pavements. The concern is that the

on-site clay soils are a vertisol soil containing montmorillite clay mineralogy, which is known to cause the clay soil to shrink and swell substantially in response to soil moisture fluctuation. The cyclic shrink and swell activity is responsible for deformation cracking and lifting of structural foundations and pavements when improperly used as earth fill material.

In addition, the occurrence of slow landslide earth movement on the southeastern side of the Island of O'ahu is documented within the thick vertisol soil deposits residing on sloping hillside terrain. The present concern is that similar deep seated earth movement and near-surface swelling soil conditions could adversely impact new homes and roadways constructed on the clay materials, similar to the destructive problems encountered with problem clay soils on the Island of O'ahu.

Vertisol soils, containing montmorillite clay mineralogy, are common in Hawai'i's soils and are typically associated with lower hillside and valley floor alluvial and colluvial materials deposition. Montmorillite clay is a component of various clay soils encountered throughout Hawai'i. Montmorillite is believed to be one of several clay minerals responsible for the high expansion potential of some clay soils, namely "adobe" type clay. Such "adobe" clay deposits typically occur within the larger leeward valleys, adjacent side slopes, and along the lower elevation hillsides of southeastern O'ahu such as within Kuli'ou'ou and Wailupe Valleys. These vertisol soils are associated with documented deep-seated hillside earth movements, which have occurred in existing residential areas on the Island of O'ahu. In general, the vertisol soils associated with the documented earth movements occur as thick (20 to 40 feet or more) wedge deposits residing on the lower elevation side slopes of the larger valleys on the Island of O'ahu. The problematic vertisol soils are typically dark brown to dark grayish brown in color and are very sticky and plastic when wet. Wide desiccation cracks (on the order of about 1/2 inch to several inches in width) are common at the ground surface when the soils dry after a wetting episode. Based on our previous experience and review of soil and geology maps, large scale deposits of problematic thick "adobe" type clay have not been encountered on the Island of Moloka'i.

Based on our review of aerial photographs combined with our site reconnaissance and laboratory testing of selected soil samples, we believe that the predominant soil at the project site is represented by a reddish brown to brown colored silty clay with a typical shrink-swell potential of less than about 2 to 4 percent, which is considered to be of generally low expansion potential. Based on our evaluation of the existing site conditions, we believe these soils reside over approximately 70 to 80 percent of the land area within the project limits. The remaining 20 to 30 percent of the land area within the project limits may contain generally isolated and discontinuous deposits of expansive, dark grayish brown colored clay, which may be classified as a true vertisol containing a higher percentage of montmorillite clay mineralogy.

The predominant soil types (reddish brown silty clay, and dark grayish brown clay) were observed as intermixed deposits, thus rendering a detailed surface mapping effort as impractical. Based on our observations, geography may play a role in the preferred

depositional environment. We believe the dark brown expansive soils may be encountered with greater frequency along the southern coastal uplands, and within topographically flat or depressed regions where alluvial materials collect. Regardless of the depositional environment, the potentially expansive soils were observed where underlying basalt rock formation resides within relatively close proximity of the ground surface, estimated on the order of about 2 to 5 feet in depth.

As previously mentioned, five selected soil samples (identified as Soil Samples S-1 through S-5) were tested in our laboratory in support of the classification of the soils and evaluation of the expansion potential of the soils. The approximate locations of the soil sample collections are shown on the Site Plan, Plate 2. The following is a summary of our laboratory test results. An additional and more detailed presentation of the laboratory test results is provided in Appendix A.

SUMMARY OF LABORATORY TEST RESULTS				
Soil Sample Identification No.	Soil Description	Soil Moisture Content (percent)	Soil Expansion Potential (percent)	Soil Expansion Classification
S-1	Reddish brown to brown silty Clay (CL) with some fine sand. (Residual and Saprolitic Soil)	14.6	2.2	Low
S-2	Brown silty Clay (CL) with fine sand. (Recent Alluvium Soil)	16.4	6.3	Moderate
S-3	Reddish brown with tan mottling silty Clay (CH) with some decomposed gravel and sand. (Residual and Saprolitic Soil)	14.9	1.2	Low
S-4	Dark grayish brown Clay (CH) with some gravel. (Alluvium and Residual Soil)	10.2	23.6	High
S-5	Dark grayish brown Clay (CH). (Alluvium and Residual Soil)	11.1	20.0	High

Based on our evaluation, an estimated 70 to 80 percent of the project site appears to contain rocky silty clay residual and saprolitic soils having a generally low expansion potential. Some rocky clay soils having a moderate to high expansion potential appear to comprise about 20 to 30 percent of the project site. The expansive soils were encountered

as relatively isolated and discontinuous surface deposits intermixed with the predominant low expansive clay soils observed at the project site. In addition, basalt rock formation is believed to occur at relatively shallow depths of about 2 to 5 feet below the existing ground surface.

The dark brown expansive clay soils encountered at scattered locations of the project site do not represent the thick "adobe" type clay deposits that have caused significant problems with slope stability and foundation disturbance on the Island of O'ahu. The soils and rock formations at the site can be graded to stable slopes. The slopes at the project site may be characterized as gently to moderately inclined (about 5 to 15 percent slope gradient), and are underlain by stable basalt rock formation at shallow depths. The scattered expansive clay deposits are thin and can be readily removed by site grading to expose the underlying basalt rock formation. In addition, other viable engineering controls, such as the use of non-expansive fill materials below foundations and pavements, are an option to mitigate the adverse effects of the potentially expansive soils.

Based on our preliminary soils evaluation conducted for this project and our experience with similar sites and clay soil conditions in Hawai'i, we believe the soils encountered at the La'au Point project site are not extraordinary and do not warrant limitation for residential development. We believe the effects of the potentially expansive soils (where encountered) can be mitigated through appropriate engineering controls and adequate slope stability can be achieved through proper grading design.

A detailed geotechnical engineering exploration should be conducted to evaluate the extent of the potentially expansive soils within the development area. The exploration would assist in the development of an appropriate grading plan for the project. It is our opinion that the proposed subdivision development at La'au Point is similar to other coastal residential developments throughout the State of Hawai'i. We believe that thick expansive clay and adobe clay deposits, which could be difficult to mitigate are not present at the project site. Because of the shallow depth to bedrock and relatively localized occurrence of the expansive clays, the unsuitable soils could be excavated and removed. Alternatively, imported non-expansive fill materials could be utilized beneath foundations and pavements.

Finally, we understand that the coastal project site is in an arid and windy environment. Therefore, dust and runoff from infrequent rainfall will require erosion control for environmental preservation. It is our opinion that storm water runoff and possible sedimentation can be effectively controlled with the use of proper erosion control methods including siltation barriers and sedimentation retention structures. These engineering controls are employed on similar projects throughout the State of Hawai'i.

LIMITATIONS

The analyses and recommendations submitted herein are based, in part, upon information obtained from visual observations and laboratory testing of selected soil samples. Variations of conditions between and beyond our observations and collection of soil samples may occur, and the nature and extent of these variations may not become evident until additional geotechnical exploration is underway. If variations then appear evident, it will be necessary to re-evaluate the recommendations presented herein.

This report has been prepared for the exclusive use of Moloka'i Properties Limited dba Moloka'i Ranch for specific application to the *La'au Point Development* project in accordance with generally accepted geotechnical engineering principles and practices. No warranty is expressed or implied.

This report has been prepared solely for the purpose of assisting the planner and design engineer in the preparation of an environmental assessment and land use petition for the proposed project. Therefore, this reconnaissance report may not contain sufficient data, or the proper information to serve as a basis for construction cost estimates or contract bidding. A contractor wishing to bid on this project should retain a competent geotechnical engineer to assist in the interpretation of this report and/or performance of site-specific exploration for bid estimating purposes.

The owner/client should be aware that unanticipated soil conditions are commonly encountered. Unforeseen soil conditions, such as perched groundwater, soft deposits, hard layers or cavities, may occur in localized areas and may require additional probing or corrections in the field (which may result in construction delays) to attain a properly constructed project. Therefore, a sufficient contingency fund is recommended to accommodate these possible extra costs.

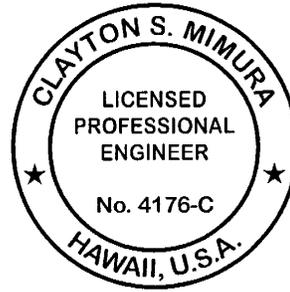
This geotechnical engineering exploration conducted at the project site was not intended to investigate the potential presence of hazardous materials existing at the site. It should be noted that the equipment, techniques, and personnel used to conduct a geo-environmental exploration differ substantially from those applied in geotechnical engineering.

CLOSURE

We appreciate the opportunity to provide our services to you on this project. If you have questions or need additional information, please contact our office.

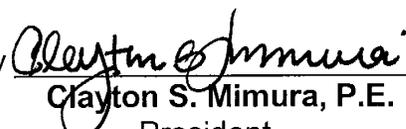
Respectfully submitted,

GEOLABS, INC.



By 
Steven F. Carr, R.G.
Senior Geologist

THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

By 
Clayton S. Mimura, P.E.
President

 4-30-08
SIGNATURE EXPIRATION DATE
OF THE LICENSE

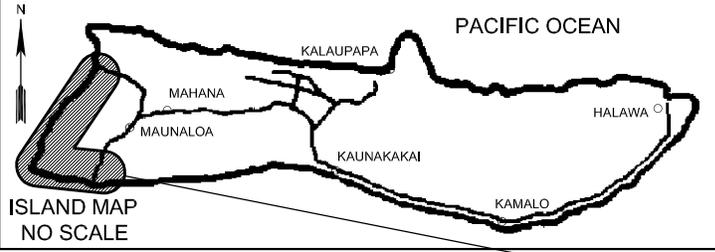
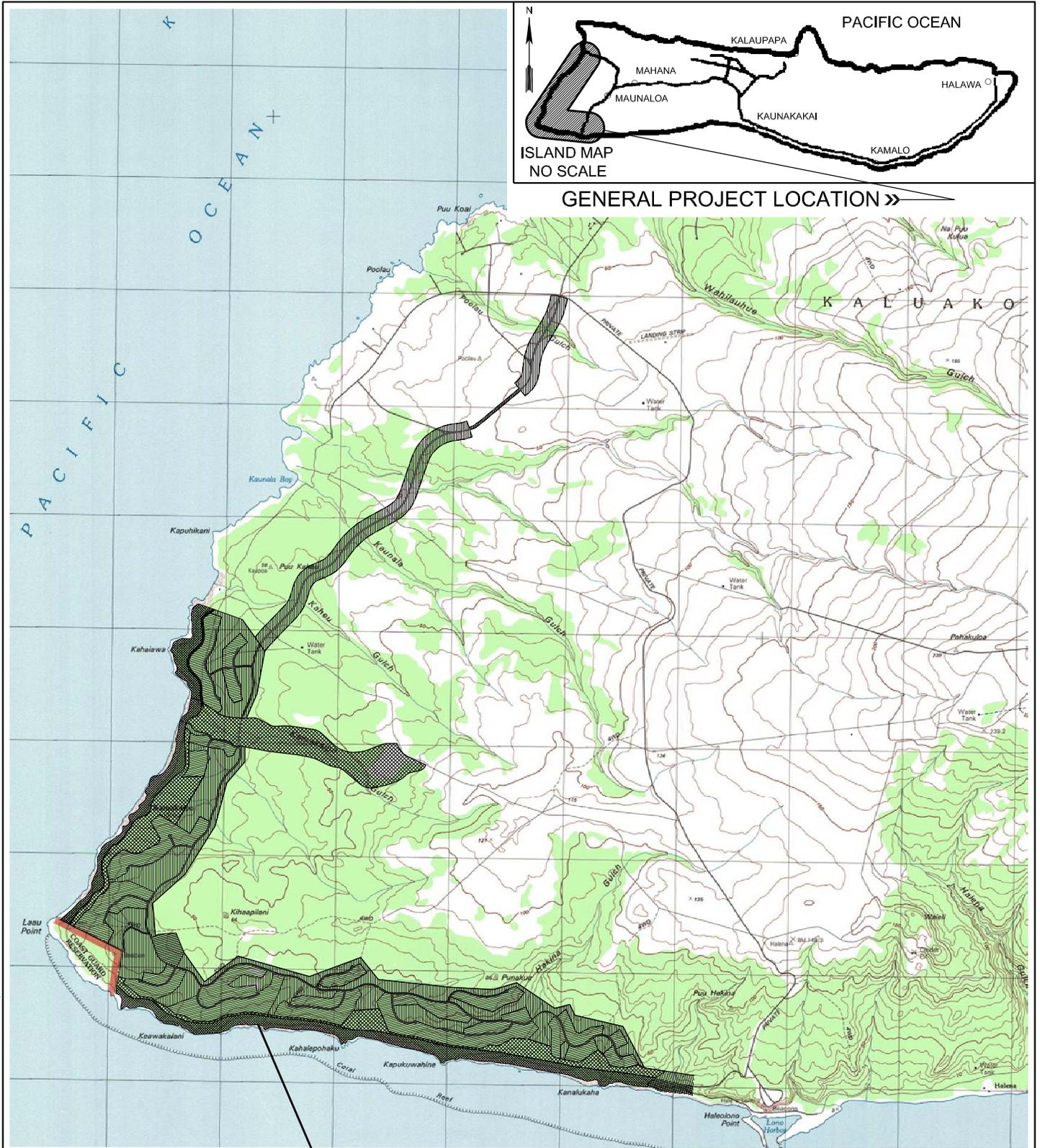
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- Attachments: Project Location Map, Plate 1
Site Plan, Plate 2
Soil Survey Map, Plate 3
Appendix A - Laboratory Test Results, Plates A-1 and A-2
Appendix B - Site Condition Photographs, Plates B-1 thru B-4

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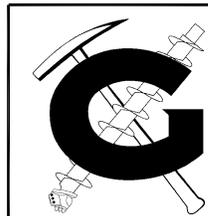
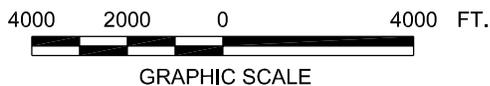
PLATES



GENERAL PROJECT LOCATION »

PROJECT LOCATION »

PROJECT LOCATION MAP
 LA'AU POINT DEVELOPMENT
 ISLAND OF MOLOKA'I, COUNTY OF MAUI, HAWAII



GEOLABS, INC.
 Geotechnical Engineering

DATE	DRAWN BY	PLATE
JULY 2007	KHN	
SCALE	W.O.	1
1" = 4,000'	5916-00	

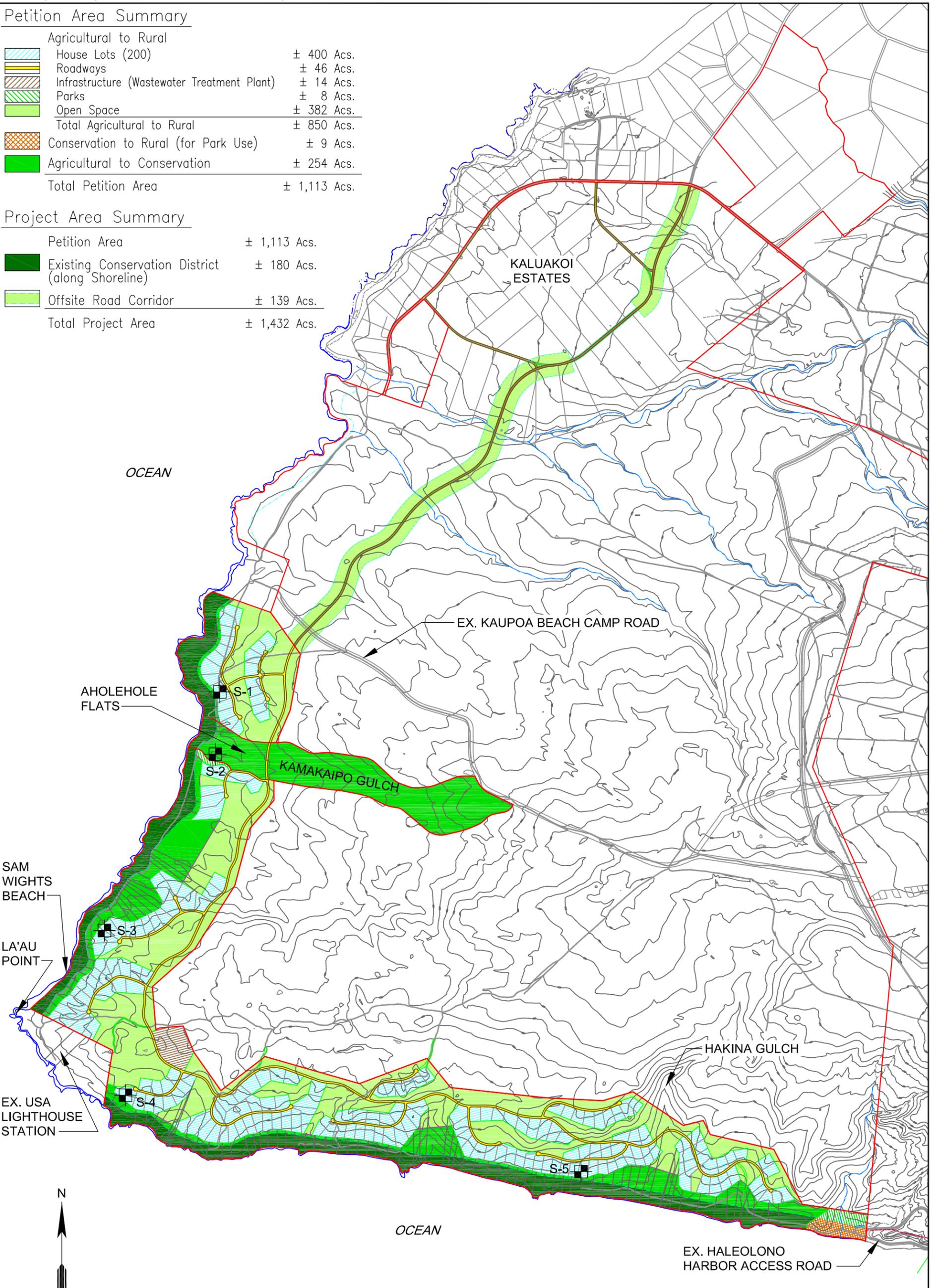
REFERENCE: MAP CREATED WITH TOPO!® ©2001 NATIONAL GEOGRAPHIC (WWW.NATIONALGEOGRAPHIC.COM/TOPO).

Petition Area Summary

Agricultural to Rural		
	House Lots (200)	± 400 Acs.
	Roadways	± 46 Acs.
	Infrastructure (Wastewater Treatment Plant)	± 14 Acs.
	Parks	± 8 Acs.
	Open Space	± 382 Acs.
Total Agricultural to Rural		± 850 Acs.
	Conservation to Rural (for Park Use)	± 9 Acs.
	Agricultural to Conservation	± 254 Acs.
Total Petition Area		± 1,113 Acs.

Project Area Summary

Petition Area		
	Existing Conservation District (along Shoreline)	± 180 Acs.
	Offsite Road Corridor	± 139 Acs.
Total Project Area		± 1,432 Acs.



LEGEND:

APPROXIMATE NEAR-SURFACE SOIL SAMPLE LOCATION

REFERENCE: FIGURE 1, PROJECT AREA & LUC PETITION AREA PLAN TRANSMITTED BY PBR HAWAII ON JULY 30, 2007.



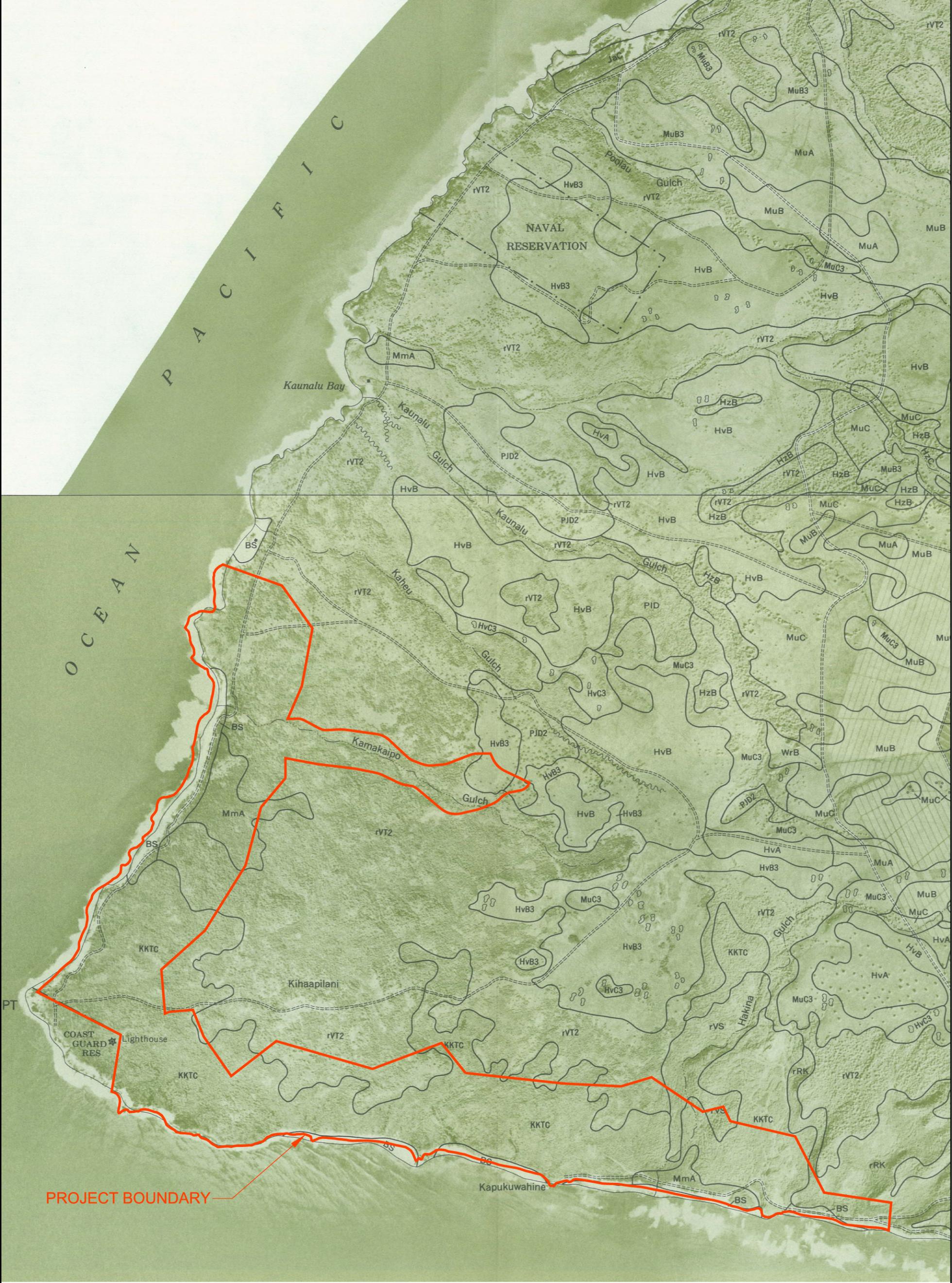
SITE PLAN

LA'AU POINT DEVELOPMENT
 ISLAND OF MOLOKA'I, COUNTY OF MAUI, HAWAII

GEOLABS, INC.

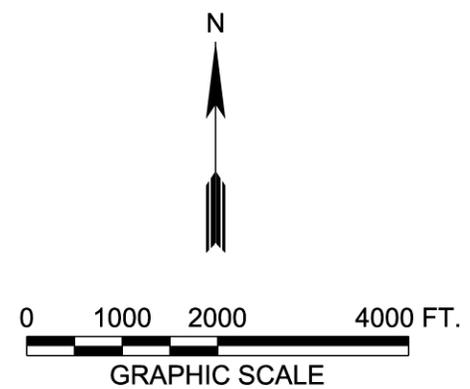
Geotechnical Engineering

DATE	DRAWN BY	PLATE
JULY 2007	KHN	2
SCALE	W.O.	
1" = 2000'	5916-00	



- LEGEND:**
- MmA** Mala siltly clay
 - BS** Beaches
 - KKTC** Kapuhikani extremely stony clay
 - rVS** Very stony land
 - rVT2** Very stony land, eroded

REFERENCE: SOIL SURVEY MAP FROM SOIL SURVEY OF ISLANDS OF KAUAI, OAHU, MAUI, MOLOKAI, AND LANAI, STATE OF HAWAII BY UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE IN COOPERATION WITH THE UNIVERSITY OF HAWAII, AGRICULTURAL EXPERIMENT STATION. ISSUED AUGUST 1972. PAGES 70 AND 71.



SOIL SURVEY MAP
 LA'AU POINT DEVELOPMENT
 ISLAND OF MOLOKA'I, COUNTY OF MAUI, HAWAII

GEOLABS, INC. <i>Geotechnical Engineering</i>		
DATE JULY 2007	DRAWN BY KHN	PLATE 3
SCALE 1" = 2000'	W.O. 5916-00	



APPENDIX A

Laboratory Test Results

APPENDIX A

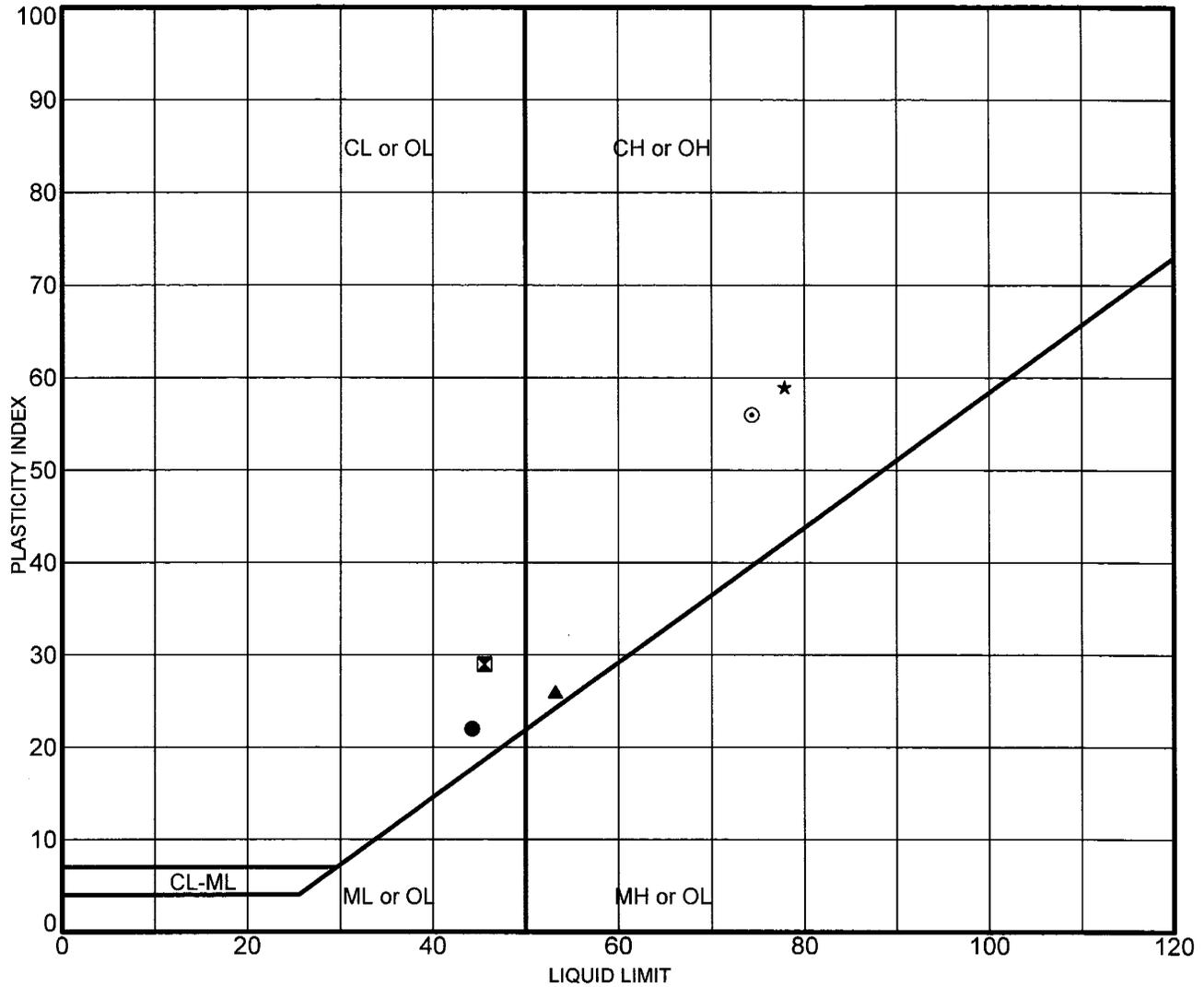
Laboratory Testing

Five Moisture Content (ASTM D 2216) determinations were performed on selected soil samples as an aid in the classification and evaluation of soil properties. The results of these tests are presented in the text of the report.

Five Atterberg Limits tests (ASTM D 4318) were performed on selected soil samples to evaluate the liquid and plastic limits and to aid in soil classification. The test results are presented on Plate A-1.

Five one-inch Ring Swell tests were performed on selected remolded samples to evaluate the swelling potential of the near-surface soils. The test results are summarized on Plate A-2.

[h:\5900 Series\5916-00.sc1 – p14]



	Sample	Depth (ft)	LL	PL	PI	Description
●	S-1	0.5	44	22	22	Reddish brown silty clay (CL)
⊠	S-2	1.0	46	17	29	Brown silty clay (CL)
▲	S-3	0.5	53	27	26	Reddish brown w/ tan mottling silty clay (CH)
★	S-4	0.5	78	19	59	Dark grayish brown clay (CH)
⊙	S-5	0.5	74	18	56	Dark grayish brown clay (CH)

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GEOLABS, INC.
 GEOTECHNICAL ENGINEERING
 W.O. 5916-00

ATTERBERG LIMITS TEST RESULTS - ASTM D 4318

LA'AU POINT DEVELOPMENT
 ISLAND OF MOLOKA'I, COUNTY OF MAUI, HAWAII

Plate
 A - 1

SUMMARY OF RING SWELL TESTS

La'au Point Development
West Moloka'i, County of Maui, Hawai'i

<u>Location</u>	<u>Depth</u> (feet)	<u>Soil</u> <u>Description</u>	<u>Dry</u> <u>Density</u> (pcf)	<u>Moisture Contents</u>			<u>Ring</u> <u>Swell</u> (%)
				<u>Initial</u> (%)	<u>Air-Dried</u> (%)	<u>Final</u> (%)	
S-1	0.5	Reddish-Brown Silty Clay	92.2	27.3	20.2	31.2	2.2
S-2	1.0	Brown Silty Clay	98.1	22.8	18.8	29.1	6.3
S-3	0.5	Reddish-Brown Silty Clay	78.4	33.7	25.4	41.7	1.2
S-4	0.5	Dark Grayish- Brown Clay	82.8	24.8	19.4	52.6	23.6
S-5	0.5	Dark Grayish- Brown Clay	86.6	23.3	18.6	46.6	20.0

NOTE: Samples tested were remolded in 2.4-inch diameter by 1-inch high rings. They were air-dried overnight and then saturated for 24 hours under a surcharge pressure of 55 psf.

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APPENDIX B

Site Condition Photographs

*La'au Point Development
West Moloká'i, County of Maui, Hawai'i*



Photograph No. 1: Collection site for Soil Sample S-2 on the alluvial plain at Aholehole Flats and the typical surrounding ground surface conditions. (photo 0292)



Photograph No. 2: Typical dark brown clay soil with desiccation cracks encountered as generally thin deposits along the western coastline trail northerly of the existing Coast Guard property. Note the embedded coral fragments. (photo 0297)

*La'au Point Development
West Molokā'i, County of Maui, Hawai'i*



Photograph No. 3: Collection of Soil Sample S-3 and the typical surrounding ground surface conditions. (photo 0298)



Photograph No. 4: Collection site for Soil Sample S-4 and the typical surrounding ground surface conditions. Note the moderate desiccation cracks indicative of expansive soil conditions. (photo 0300)

La'au Point Development
West Moloká'i, County of Maui, Hawai'i



Photograph No. 5: View of localized concentrated surface boulder deposits just easterly and inland from the existing Coast Guard property. (photo 0303)



Photograph No. 6: View towards the east along the south facing shoreline showing typical sea cliffs and exposed rock formation. (photo 0306)

*La'au Point Development
West Moloká'i, County of Maui, Hawai'i*



Photograph No. 7: Collection site for Soil Sample S-1 and the typical surrounding ground surface conditions. Note that the reddish brown surface soils grade at relatively shallow depth to a multicolored saprolitic soil with highly weathered rock formation. (photo 0315)



Photograph No. 8: Collection site for Soil Sample S-5 and the typical surrounding ground surface conditions. The subject dark grayish brown clay soils were often encountered as isolated deposits within regional soil deposits consisting of reddish brown silty clay. (photo 0319)

Appendix H

Botanical Survey

LA'AU POINT PLANT SURVEY

November 2005 – June 2006

Prepared by: Bill Garnett

Revised: 9 Sept 2006

1. Introduction

La'au Point is the southwest corner of the island of Moloka'i. The study area includes lands along the coastline from Kaunala Bay in the north to Hale o Lono Point in the east. The Coast Guard Reservation that includes La'au Point is not included. Low annual rainfall is a defining characteristic of this region. Historical use of this area for grazing and wild land fires have left few native plants, except for those that grow on the sandy beaches. Even there, Axis deer have significantly reduced the abundance and diversity of native plants.

This botanical survey of La'au Point was contracted by Molokai Properties Limited (MPL) in September 2005 to provide information on native and rare plants and natural communities within the La'au Point area. The study area was defined by the "project boundary" provided by MPL (see Map 1).

This report summarizes the findings from a combination of ground and aerial surveys. It includes:

- Brief descriptions, plant checklist and map for the seven plant communities currently found on La'au Point – from the coastline to inland areas.
- Location & relevant natural history for three rare Hawaiian plant species observed during the survey
- List of eight additional rare Hawaiian plant species known historically from the area but not observed during this survey
- Brief vegetation management options for future consideration.

Photographs, sample field forms and additional information are included as appendices on the report CD.

2. Survey methods

A total of five person-days were spent surveying La'au Point from 28 November 2005 through 6 June 2006. Ground surveys were conducted on foot covering the varying terrain and the areas that promised the highest native plant species diversity. A GPS was used to log the survey routes and record significant features. On 15 May 2006, a helicopter was used to conduct an aerial photographic survey and spot any unique areas that were not previously visited on the ground.

The survey period was extended to allow for adequate observations after the winter rains, which came in late March 2006. This was necessary to detect rare and native plants that only come up in the wet season, including species historically known from the area.

3. Results

Healthy native plant communities are still found in the sandy beach habitat of La'au Point, including the most extensive example of *Cressa* herbland in the main Hawaiian islands. In addition to *Cressa*, which is considered rare in Hawaii, localized populations of two rare Hawaiian plant species were found in areas dominated by non-native species. The federally endangered 'ihi`ihilauakea (*Marsilea villosa*) was found near one of the seasonal wetlands, and a population of the endemic Hawaiian cotton or ma'o (*Gossypium tomentosum*) was found where the Kamakaipo drainage meets the coast. Otherwise, the vast majority of La'au Point is vegetated by non-native plants.

The location of each major habitat/plant community and rare plant population are indicated on Maps 2 and 3. A complete checklist of both native and non-native plant species observed in each habitat is provided in Table 1.

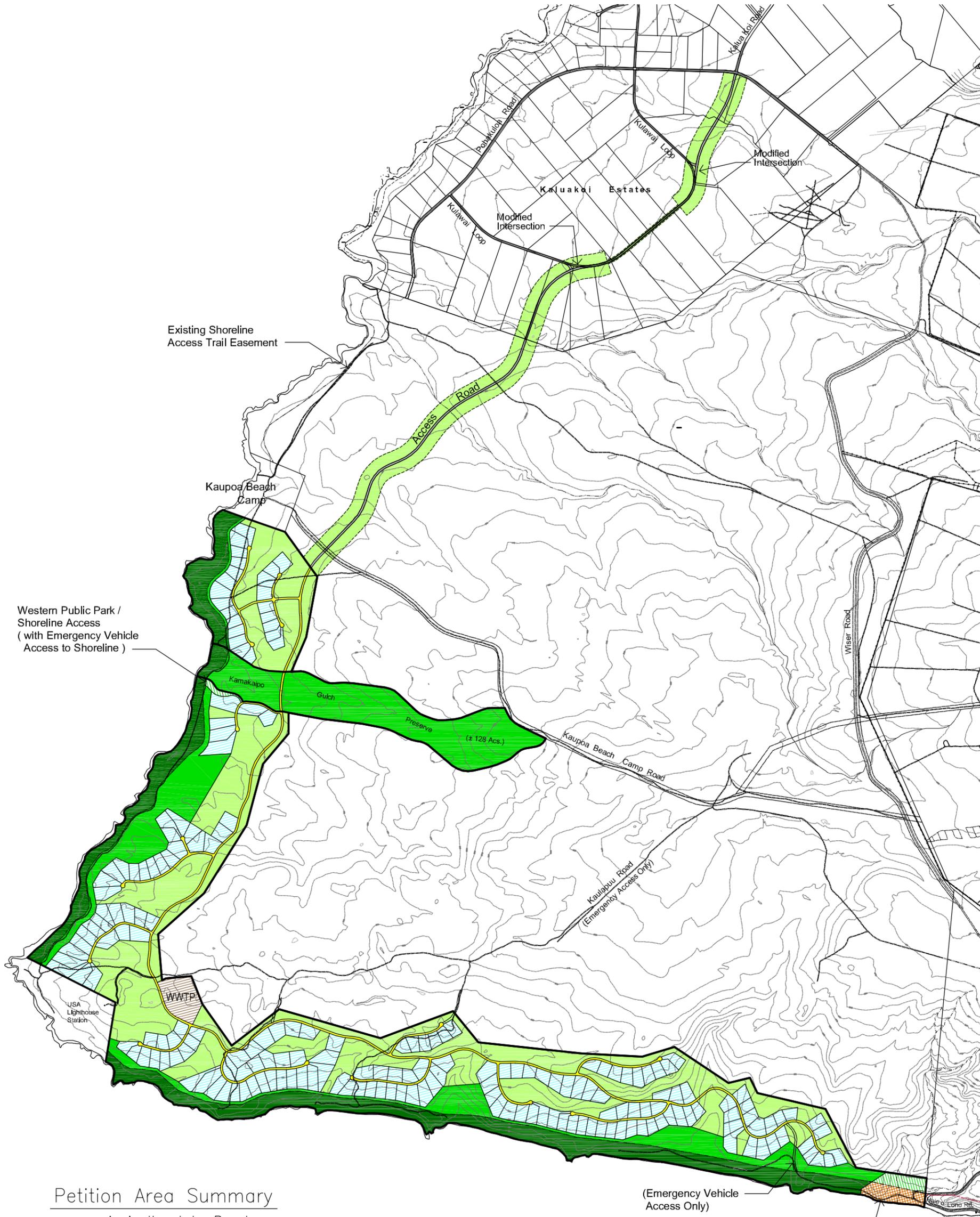
Plant Communities Found in Study Area

Sandy Beach

The sandy beach strand habitat contains examples of three native plant communities, including the best, most extensive example of a seasonal herb-land dominated by *Cressa truxillensis* in the main Hawaiian islands. The strand also includes scattered surviving patches of 'aki 'aki (*Sporobolus virginicus*) grasslands along the west facing beaches, and small patches of 'akulikuli (*Sesuvium portulacastrum*) herbland are found spreading onto the beach in areas that have seasonal streams. Other native plants found growing on the beach include: pohuehue or beach morning glory (*Ipomoea pes-caprae*), the sedge *Fimbristylis cymosa*, and pohinahina (*Vitex rotundifolia*). Kiawe and animal grazing have been the main pressures on these plant communities.

Rocky Shoreline Shrubland/Grassland

Only 10% of this habitat currently has native plant cover, but it contains the highest number of native plant species including: naupaka (*Scaevola sericea*), uhaloa (*Waltheria indica*), ma'o or Hawaiian cotton (*Gossypium tomentosum*), 'ilima (*Sida fallax*), alena (*Boerhavia diffusa*), pau o Hi'iaka (*Jacquemontia ovalifolia* ssp. *sandwicensis*), 'ihi (*Portulaca lutea*), akulikuli (*Sesuvium portulacastrum*), the grass *Panicum fauriei* var. *latius*, aki'aki (*Fimbristylis cymosa* ssp. *umbellato-capitata*), and kakonakona (*Panicum torridum*). The non-native components that dominate this community are golden crown beard (*Verbesina encelioides*), Australian salt bush (*Atriplex semibaccata*), dog fennel (*Dessodia tenuiloba*) and kiawe (*Prosopis pallida*). Endangered plants historically known from this community are *Lipochaeta degeneri*, *Sesbania tomentosa* and *Portulaca vilosa*.



Petition Area Summary

	Agricultural to Rural	
	House Lots (200)	± 400 Ac.
	Roadways	± 46 Ac.
	Infrastructure (Wastewater Treatment Plant)	± 14 Ac.
	Parks	± 8 Ac.
	Open Space	± 382 Ac.
Total Agricultural to Rural		± 850 Ac.
	Conservation to Rural (for Park Use)	± 9 Ac.
	Agricultural to Conservation	± 254 Ac.
Total Petition Area		± 1,113 Ac.

Project Area Summary

	Petition Area	± 1,113 Ac.
	Existing Conservation District (along Shoreline)	± 180 Ac.
	Offsite Road Corridor	± 139 Ac.
Total Project Area		± 1,432 Ac.

(Emergency Vehicle Access Only)

Southern Public Park / Shoreline Access (with Emergency Vehicle Access to Shoreline)

Figure 1
Project Area & LUC Petition Area

Lā'au Point

Seasonal Wetlands

This community is found in mud flats that are flooded when consistent seasonal rains saturate the soil. Under drought situations, the community is dominated by several dryland weed species, including cocklebur (*Xanthium saccharatum*), bristly foxtail (*Setaria verticilata*), finger grass (*Chloris barbata*) and the vine *Merremia aegyptica*. The perimeter of the seasonal wetlands is dominated by kiawe trees (*Prosopis pallida*) and in some areas guinea grass (*Panicum maximum*). The population of endangered `ihi`ihilauakea (*Marsilea villosa*) is found 50 meters from one of the seasonal wetlands and most likely occurred in that community before, as this is the plant's preferred habitat. Seasonal wetlands are natural settling basins which can reduce soil loss and near shore siltation.

Kiawe Lowland Dry Forest

Kiawe forests are the most widespread plant community in the study area. In many areas, these forests stretch up to the high tide line due to the trees' ability to utilize brackish groundwater. The kiawe forest is most developed in areas where groundwater is available, just inland of the coastal strand and in the drainages. The native components of this community are `ilima, *Abutilon incanum*, and pili grass (*Heteropogon contortus*) which is currently rare in the study area. Historically, `ilima and pili grass along with *Chamaesyce skottsbergei* and ohai (*Sesbania tomentosa*) would have been the dominant plant community in the inland areas of the study area before grazing, fire and weeds dramatically changed the community structure. Historic native components of the drainages in this zone would have included wiliwili (*Erythrina sandwicensis*), ohe makai (*Reynoldsia sandwicensis*) and ma'o (*Gossypium tomentosum*). Endangered species historically known from this kiawe-dominated zone of the study area include Hawaii's state flower, ma'o hau hele (*Hibiscus brackenridgei ssp. molokaianus*).

Lowland dry mixed shrub and grasslands

This plant community occupies the inland areas where rocky terrain, erosion and lack of water have created gaps in or slowed the ingress of the kiawe forest community. Lantana is a dominant species in these dry exposed nutrient poor areas.

Map 2.

2006 La'au Point Vegetation Survey Vegetation Communities

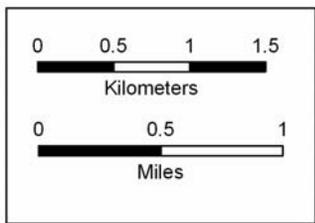
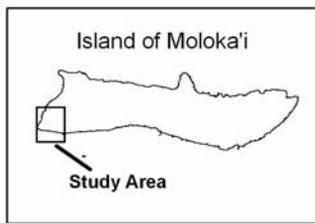
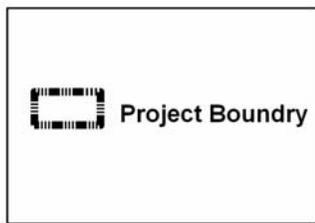
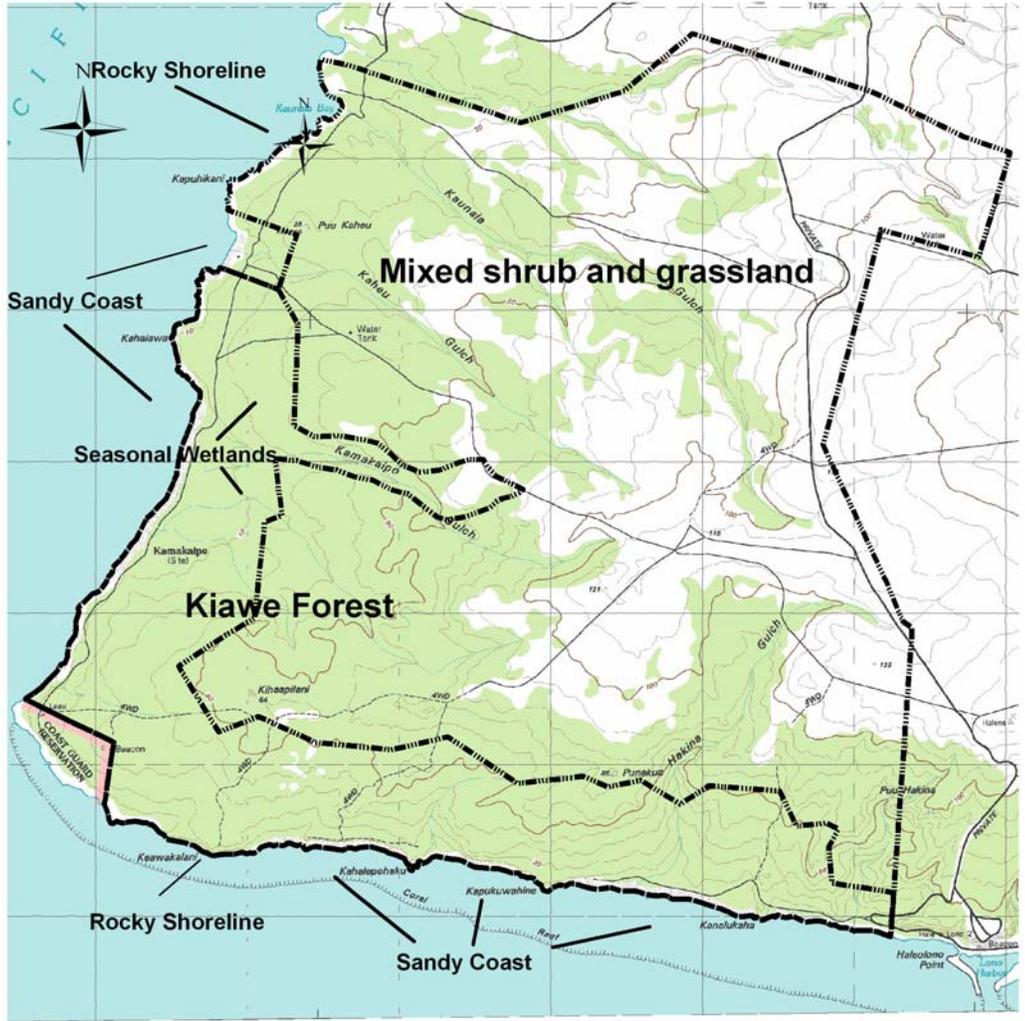


Table 1

LA'AU POINT PLANT CHECKLIST

November 2005 – June 2006

STATUS	SCIENTIFIC NAME	COMMON NAME	Beach	Coastal Strand	Shrubland	Kiawe Forest	Seasonal Wetland
A	<i>Abutilon grandifolium</i>	Hairy abutilon, ma`o			X	X	
I	<i>Abutilon incanum</i>	Ma'o		X	X	X	X
A	<i>Acacia farnesiana</i>	Klu, kolu		X	X	X	
A	<i>Amaranthus spinosus</i>	spiny amaranth			X		X
A	<i>Ageratum conyzoides</i>	Maile hohono					
A	<i>Anagallis arvensis</i>	Scarlet pimpernel					
A	<i>Arenaria serpyllifolia</i>	Thyme-leaved sandwort					
I	<i>Artemisia australis</i>	Hinahina kuahiwi					
A	<i>Atriplex semibaccata</i>	Australian saltbush					X
A	<i>Bidens pilosa</i>	Spanish needle					
I	<i>Boerhavia repens</i>	Alena					
A	<i>Bothriochloa barbinodis</i>	Fuzzy top		X	X		
A	<i>Bothriochloa pertusa</i>	Pitted beardgrass			X		
A	<i>Bromus rigidus</i>	Ripgut grass		X	X		
A	<i>Cenchrus ciliaris</i>	Buffelgrass		X	X	X	
A	<i>Centaurium erythraea</i> <i>ssp. erythraea</i>	Bitter herb, European centaury		X	X		
A	<i>Chamaecrista nictitans</i> <i>ssp. patellaria</i> var. <i>glabrata</i>	Partridge pea, lauki		X	X	X	X
E	<i>Chamaesyce degeneri</i>	`Akoko, koko, kokomalei		X			
A	<i>Chamaesyce hirta</i>	Hairy/garden spurge, koko kahiki	X	X	X	X	X
A	<i>Chamaesyce prostrata</i>	Prostrate spurge	X	X	X	X	
A	<i>Chenopodium carinatum</i>	Tasamnian goosefoot	X	X	X		
A	<i>Chenopodium murale</i>	Lambs quarters		X			
A	<i>Chloris virgata</i>	Feather fingergrass			X	X	
A	<i>Conyza bonariensis</i>	Hairy horseweed				X	
A	<i>Coronopus didymus</i>	Swinecress		X	X	X	
I	<i>Cressa truxillense</i>						
E	<i>Cuscuta sandwichiana</i>	Dodder, kauna`oa, kauna`oa lei				X	
A	<i>Cynodon dactylon</i>	Bermuda grass, manienie		X			
A	<i>Dactyloctenium aegyptium</i>	Beach wiregrass	X				
A	<i>Datura stramonium</i>	Jimson weed,		X	X		
A	<i>Dichanthium annulatum</i>	Blue stem			X		
A	<i>Digitaria ciliaris</i>	Henry's crabgrass, kukaepua`a			X		
A	<i>Digitaria insularis</i>	Sourgrass			X	X	
A	<i>Doryopteris decipiens</i>	Kumuniu			X	X	

STATUS	SCIENTIFIC NAME	COMMON NAME	Beach	Coastal Strand	Shrubland	Kiawe Forest	Seasonal Wetland
A	<i>Dyssodia tenuiloba</i>	Dog fennel	X	X	X	X	
A	<i>Emilia fosbergii</i>	Pua lele, sow thistle		X	X	X	
A	<i>Eragrostis tenella</i>	Japanese lovegrass			X		
A	<i>Erodium cicutarium</i>	Alfilaria, pin clover			X		
I	<i>Fimbristylis cymosa</i> ssp. <i>umbellato-capitata</i>	Aki'aki	X				
E	<i>Gnaphalium sandwicense</i> var. <i>sandwicense</i>	`Ena`ena		X			
E	<i>Gossypium tomentosum</i>	Ma'o		X			
E	<i>Heliotropium anomalum</i> var. <i>argenteum</i>	Hinahina, hinahina ku kahakai	X	X			
I	<i>Heliotropium curassavicum</i>	Seaside heliotrope, nena	X	X			
I	<i>Heteropogon contortus</i>	Pili grass			X		
A	<i>Hypochoeris radicata</i>	Gosmore, Hairy cat's ear		X			
A	<i>Indigofera suffruticosa</i>	Indigo		X	X	X	
I	<i>Ipomoea pes-caprae</i> ssp. <i>brasiliensis</i>	Beach morning glory, pohuehue	X	X			
E	<i>Ipomoea tuboides</i>	Hawaiian moonflower, koali pehu					
E	<i>Jacquemontia ovalifolia</i> ssp. <i>Sandwicensis</i>	Pa`u-o-Hi`iaka		X			
A	<i>Lantana camara</i>	Lantana		X	X	X	X
A	<i>Lepidium oblongum</i>	Pepper grass			X		
A	<i>Lepidium virginicum</i>	Garden pepper grass			X	X	
A	<i>Leucaena leucocephala</i>	Haole koa, koa haole, ekoa		X	X	X	
I	<i>Lipochaeta integrifolia</i>	Nehe		X			
I	<i>Lycium sandwicense</i>	`Ohelo kai, `ae`ae		X			
A	<i>Lycopersicon pimpinellifolium</i>	Currant tomato			X	X	
A	<i>Macroptilium lathyroides</i>	Wild bean, cow pea				X	
A	<i>Malvastrum coromandelianum</i> ssp. <i>Coromandelianum</i>	False mallow		X	X	X	
LE	<i>Marsilea villosa</i>	`ihi`ihi, `ihi`ihilauakea					X
A	<i>Medicago polymorpha</i>	Bur clover					
I?	<i>Merremia aegyptia</i>	Hairy merremia					
A	<i>Nicotiana Glauca</i>	tree tobacco		X	X		
A	<i>Oxalis corniculata</i>	Yellow wood sorrel, `ihi makole				X	
E	<i>Panicum fauriei</i> var. <i>latius</i>	Faurie's panicgrass	X				
A	<i>Panicum maximum</i>	Guinea grass		X			
E	<i>Panicum torridum</i>	Kakonakona					
A	<i>Plantago lanceolata</i>	Narrow-leaved plantain					
A	<i>Pluchea symphytifolia</i>	Sourbush					

STATUS	SCIENTIFIC NAME	COMMON NAME	Beach	Coastal Strand	Shrubland	Kiawe Forest	Seasonal Wetland
A	<i>Polycarpon tetraphyllum</i>	fourleaf manyseed					
I	<i>Portulaca lutea</i>	`Ihi		X			
A	<i>Portulaca oleracea</i>	Pigweed, `ihi		X			
A	<i>Prosopis pallida</i>	Algaroba, kiawe					
A	<i>Reichardia tingitana</i>	False sow thistle					
A	<i>Rhynchelytrum repens</i>	Natal redtop					
I	<i>Scaevola sericea</i>	Naupaka kahakai					
A	<i>Schinus terebinthifolius</i>	Christmas berry, wilelaiki				X	
I	<i>Sesuvium portulacastrum</i>	Sea purslane, `akulikuli	X				
A	<i>Setaria verticillata</i>	Bristly foxtail		X			
I	<i>Sida fallax</i>	`Ilima					
A	<i>Silene gallica</i>	Pink		X	X		
I	<i>Solanum americanum</i>	Glossy nightshade, popolo					
A	<i>Sonchus oleraceus</i>	Sow thistle, pualele					
A	<i>Sporobolus africanus</i>	Smutgrass, African dropseed					
I	<i>Sporobolus virginicus</i>	`Aki`aki	X	X			
A	<i>Stachytarpheta jamaicensis</i>	Jamaica vervain, oi		X	X	X	
A	<i>Tournefortia argentea</i>	Tree heliotrope		X			
I	<i>Tribulus cistoides</i>	Nohu					
A	<i>Tridax procumbens</i>	Coat buttons					
A	<i>Turnera ulmifolia</i>	Yellow alder				X	
A	<i>Verbesina encelioides</i>	Golden crown-beard		X	X	X	X
I	<i>Waltheria indica</i>	`Uhaloa, hi`aloha		X	X	X	X

Key to status column: A-alien, I-indigenous, E.-endemic, L.E.-federally listed endangered species

Rare Plant Species Found in Study Area

`Thi`ihilauakea (*Marsilea villosa*)

`Thi`ihilauakea is an endangered, endemic water fern found only in the Hawaiian islands, restricted to areas with irregular flooding regimes. Currently, it is known from three populations on O`ahu and two populations on Moloka`i. Many of the historic populations on O`ahu were destroyed by drainage of ponding areas, habitat degradation, competition from alien plants, off road vehicles and development.

This unique fern resembles a four-leaf clover, with four leaflets borne at the end of a leaf stalk. The plant occurs either in scattered clumps or as a dense interwoven mat, depending on the competition with other species for limited habitat resources. *Marsilea villosa* requires periodic flooding for spore release and fertilization, followed by a decrease in water levels for the young plants to establish, and finally dry soil for the plants to mature. For *Marsilea villosa*, flooding and sexual reproduction may occur as

infrequently as once every ten or more years, due to the infrequency of sufficiently heavy rains in the lowland areas of Hawai`i. Hence this plant can remain dormant and undetected for many years, yet continue to have viable sporocarps in the soil.

A few details on the sexual reproduction of *Marsilea villosa* may be useful. It is initiated through the production of a hard sporocarp borne on the rhizome leaf pair node. The sporocarp will mature only if the soil dries below threshold levels for leaf growth. The sporocarp remains in the soil for an extended period of time and must be scarified before it will open. It is not known how the sporocarp is scarified in *Marsilea villosa*, but bacterial action is thought to erode the wall of the sporocarp to the point that water can be absorbed and force the sporocarp to open. Standing water is necessary for the sporocarp to open and release the male and female spores. Standing water also is needed for the sperm to swim to the female spore containing the egg. The method of dispersal of *Marsilea villosa* sporocarps is unknown, although in other species, water birds have been known to disperse either internally or externally (USFWS 1996).

Cressa truxillensis

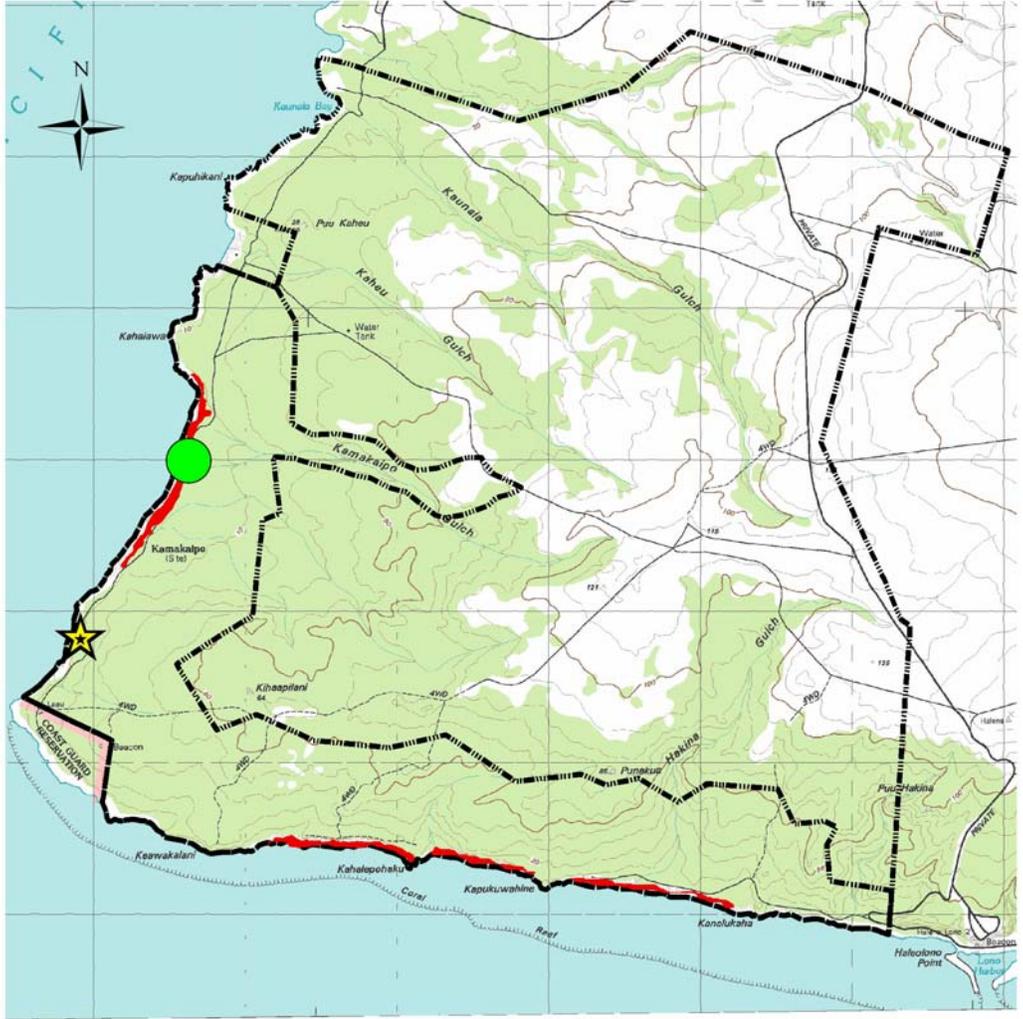
Cressa truxillensis is indigenous to Hawaii, where it is considered rare. The populations scattered along Molokai's sandy coasts from Ilio point to Kaunakakai are considered to be the best in the main Hawaiian islands. The next best known population is on Kahoolawe. As with many native plants found in dry coastal locations, *Cressa* is most abundant during the wet season.

Ma'o (*Gossypium tomentosum*)

Hawaii's endemic cotton was probably a dominant species in the rocky areas and clay flats of the study area before grazing and fires degraded the habitat. On this survey, a stand of ma'o was found only where the Kamakaipo drainage meets the coast. Individual plants may occur elsewhere off the survey routes. Ma'o populations are declining on Moloka'i and throughout the Hawaiian islands. *Gossypium tomentosum* is a shrub with yellow flowers. The short brownish fibers on the seeds of the Hawaiian cotton are not commercially useful, but the Hawaiian plants have been used in cotton breeding programs in attempts to improve disease resistance in commercial cotton.

Map 3.

2006 La'au Point Vegetation Survey Significant Plants



-  *Gossypium tomentosum*
-  *Marsilea villosa*
-  *Cressa truxillensis*
-  Project Boundry

Island of Moloka'i



Study Area

0 0.5 1 1.5
Kilometers

0 0.5 1
Miles

Historic Rare Plant Occurrences

A literature review revealed eight rare or endangered Hawaiian plant species that were recorded from West Molokai in the past but were not observed during this survey.

Rare Plant Species	Observer & Last Date Observed
<i>Achyranthes splendens</i>	Hillebrand 1850
<i>Hibiscus brackenridgei molokaianus</i>	Caum 1930
<i>Lipochaeta degeneri</i>	Degener 1928
<i>Portulaca villosa</i>	Munro 1920's
<i>Sesbania tomentosa</i>	Hillebrand 1850
<i>Solanum nelsonii</i>	Forbes 1880's
<i>Tetramolopium conyzoides</i>	Munro 1920's
<i>Chamaesyce skottsbergei</i>	Degener 1938

4. Conclusions

According to the Petition Area Summary map provided, none of the significant plant populations are found within the areas indicated for the 200 house lots or rezoning from Agriculture to Rural. The *Cressa truxillensis*, Hawaiian cotton (*Gossypium tomentosum*) and *Marsilea villosa* populations are all found within the existing or proposed Conservation Districts and Public Park/Shoreline Accesses shown on the map. The *Marsilea* population occurs on both sides of the existing unimproved road near where it crosses the Western Public Park/Shoreline Access and will require consideration in the new road. The seasonal wetlands are potential habitat for additional *Marsilea villosa* populations and also appear to be in the areas proposed to be re-zoned from Agriculture to Conservation.

While the native vegetation in the study area has been severely impacted by historical fire, grazing and non-native competitors, the remaining native elements, slopes and seasonal wetlands are worthy of stabilizing and will enhance the site. The high deer population in the watershed above the study area keeps all ground cover species (native and non-native) from developing and retaining rainfall. The lack of protective groundcover has resulted in erosion scars and excessive runoff, which causes siltation of the near shore waters after even minor rain events.

Management options for the rare and native plants and communities found in the study area should be considered. The *Marsilea villosa* population is located within the coastal set back zone and could be protected from impacts. A simple management plan could be developed to manage this significant population, including possible opportunities to use private land owner "safe harbor" conservation programs. *Marsilea* might also benefit from habitat created by any settling ponds planned for the site. Removal of kiawe from the beaches will improve the habitat for the surviving coastal plant communities and would restore the sandy beach areas to their original width. Finally, any landscaping in the study area should utilize the drought resistant native species that have persisted at La'au Point and should not utilize any invasive plant species.

5. References

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6. Appendices (on CD)

- Checklist of Historic Plants from West Molokai
- Sample Field Forms
- Aerial Photos

Appendix I

Avifaunal and Feral Mammal Field Survey

**AVIFAUNAL AND FERAL MAMMAL FIELD SURVEY OF
MOLOKAI RANCH, LA'AU POINT PROPERTY, MOLOKAI**

Prepared for:

Molokai Properties Limited

Prepared by:

**Phillip L. Bruner
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17 August 2006

INTRODUCTION

This report presents the findings of a two day (21, 22 December 2005) field survey of approximately 1500 acres of Molokai Ranch at La'au Point, Molokai. In addition to the field data this report also notes pertinent published and unpublished sources of birds and mammals to provide a broader view of the potential species known from this region of Molokai. The two objectives of the field survey were to:

- 1-Document the birds and mammals presently found on or near the property.
- 2-Locate and examine all habitats on the site and note their importance, if any, for native and migratory birds.

SITE DESCRIPTION

This site runs along the coast on either side of La'au Point (Fig.1). The topography is generally flat with some ravines and cliffs along the shoreline. The vegetation is dominated by Kiawe (*Prosopis pallida*) with an understory of alien weeds and grass. Some small patches of native, dry land plants, such as Ma'o (*Gossypium sandwicense*) and 'Ilima (*Sida fallax*), can also be found scattered throughout the property. No wetland habitat was found, however, ephemeral streams occur in the ravines following periods of extended, heavy rain. The shoreline contains a mixture of wave swept sandy beaches and rocky cliffs.

METHODS OF THE FIELD SURVEY

The survey was conducted by walking the site. Observations were focused during early morning, late afternoon and early evening hours when birds and mammals are most active and observable. All habitats (Kiawe thickets and shoreline) on the property were investigated. All birds seen and heard were tallied. Census stations were established approximately 100-200m apart throughout the site and eight minute counts of all birds seen or heard were tallied. These data were used to estimate the relative abundance of each bird species on the property. Rare or infrequently seen species were tallied whenever they were observed, not just on the census stations. Data on mammals were obtained by visual observations only. No trapping of mammals was conducted. The duration and nature of the field survey did not warrant trapping. A Pettersson Elektronik AB Ultrasound Detector D-100 was used on the evening survey (21 December) to listen for the echolocation calls of the endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*). The weather during the survey period was generally fair with some cloud cover late in the day. The winds were light. Large swells generated by storms north of Hawaii produced strong surf on both days of the survey.

Scientific and common (vernacular) names of birds and mammals referred to in this report follow the taxonomy of Pyle (2002) and Honacki et al. (1982). Plant names are those given by Pratt (1998).

RESULTS OF THE FIELD SURVEY

Native Land Birds:

No native land birds were recorded on the survey. The only likely species that is known to forage in this area is the Hawaiian Owl or Pueo (*Asio flammeus sandwichensis*). This species is listed by the State of Hawaii as endangered on Oahu but not elsewhere in the State. They hunt in grasslands, agricultural fields and forests (Pratt et al. 1987, Hawaii Audubon Society 2005). This species nests on the ground in habitats with tall grass. I recorded Pueo during an earlier survey (Bruner 1989) of a 7000 acre parcel that included this site.

Native Waterbirds:

No native waterbirds were recorded nor were any expected on this property due to an absence of wetland habitat. I recorded Hawaiian Coot (*Fulica alai*) at a man-made pond at Kalua Koi golf course during my 1989 field survey (Bruner 1989).

Seabirds:

No seabirds were recorded on the survey. None would be expected to nest at this site due to the presence of ground predators and human disturbance. Some species on occasion may fly over the property.

Migratory Birds:

Four species of migratory shorebirds were observed on the survey: Pacific Golden-Plover or Kolea (*Pluvialis fulva*); Ruddy Turnstone or 'Akekeke (*Arenaria interpres*); Wandering Tattler or 'Ulili (*Heteroscelus incanus*); and Sanderling or Hunakai (*Calidris alba*). A total of four Kolea, three 'Akekeke, two 'Ulili, and one Hunakai were tallied over the duration of the survey. The most common migratory shorebird in Hawaii is the Pacific Golden-Plover. They forage on lawns, pastures and in agricultural fields as well as along shorelines. Kolea have been extensively studied both here in Hawaii and on their breeding grounds in western Alaska (Johnson et al. 1981, 1989, 1993, 2001a, 2001b). None of these migratory shorebirds are listed as threatened or endangered.

Introduced (Alien) Birds:

Thirteen species of alien birds were tallied on the survey. Table One gives the names and relative abundance of these birds recorded on the survey along with those found on the Bruner 1989 survey. None of these species are listed as threatened or endangered. The array of alien birds at this location is typical of the lowlands on Molokai (Hawaii Audubon Society 2005).

Mammals:

Four cats (*Felis catus*), six Small Indian Mongoose (*Herpestes auropunctatus*), and eleven Axis Deer (*Axis axis*) were observed over the duration of the survey. Two endangered Hawaiian Monk Seals (*Monachus schawinslandi*) were observed resting on Sam Wights Beach north of La'au Point on 21 December. Monk Seals haul out to rest on beaches as deserted as this beach or as heavily used as public beaches on Oahu. They have even given birth and raised their pups. The most recent example was June – July 2006 at Turtle Bay Resort on the North Shore of Oahu. Mice (*Mus musculus*) and rats (*Rattus spp.*) undoubtedly occur on the site but were not observed. The native endangered Hawaiian Hoary Bat was not detected. This finding was not unexpected given the low numbers of bats reported to occur on Molokai (Tomich 1986, Kepler and Scott 1990). This species forages in a wide variety of habitats including: forests, agricultural lands, and urban areas. They are most abundant on Kauai and the Big Island.

Jacobs (1991, 1993) and Reynolds et al. (1998) provide information on the occurrence and natural history of this species on the Big Island.

SUMMARY AND CONCLUSIONS

The purpose of this report was to present the findings of a bird and feral mammal field survey. No native land birds were recorded but the endangered Hawaiian Owl (Pueo) has been seen foraging on the property. No native water birds were recorded due to an absence of suitable habitat. No seabirds were seen. The four common migratory shorebirds that winter in Hawaii were observed along the shoreline. The array of alien birds recorded was typical of this region. No unexpected species were recorded. The presence of feral mammals (cats, mongoose, Axis Deer) was expected at this site. The absence of the endangered Hawaiian Hoary Bat was not unexpected given the low numbers of bats reported to occur on Molokai. The endangered Hawaiian Monk Seal has been seen on the beaches of the main Hawaiian Islands with increasing frequency in the last ten years (pers. observ.). The appropriate protocol if one encounters a monk seal on the beach is to notify National Marine Fisheries so they can check to see if the animal is injured or entangled. They will then put tape around the site to keep people from approaching too close. If a birth is occurring or the female has a pup volunteers will watch over the site as was done at Turtle Bay Resort, Oahu this past June – July (2006).

The La'au Point project should not significantly impact alien bird and mammal populations in this region. The expanded protection area along the shoreline will help minimize effects upon migratory shorebirds and the Hawaiian Monk Seal. The proposed residential lots will be setback a minimum of 200 feet from the shoreline (average 385 feet) and the closest building construction will be an additional 50 feet into the lot.

TABLE 1

Relative abundance estimates in appropriate habitat: A=abundant (ave. 10+ on census stations); C=common (ave. 5-9 on census stations); U=uncommon (ave. 1-4 on census stations); R=recorded but not on census stations (number which follows is total found on the survey). A dash indicates this species was not recorded on that survey.

Common Name	Scientific Name	2005	1989
Barn Owl	<i>Tyto alba</i>	-	R=3
Cattle Egret	<i>Bubulcus ibis</i>	-	R=2
Red Junglefowl	<i>Gallus gallus</i>	R=6	-
Wild Turkey	<i>Meleagris gallopavo</i>	R=9	R=37
Ring-necked Pheasant	<i>Phasianus colchicus</i>	-	R=1
Gray Francolin	<i>Francolinus pondicerianus</i>	U=2	C=8
Black Francolin	<i>Francolinus francolinus</i>	C=6	A=14
Spotted Dove	<i>Streptopelis chinensis</i>	U=2	U=5
Zebra Dove	<i>Geopelia striata</i>	A=10	A=12
Common Myna	<i>Acridotheres tristis</i>	U=2	U=2
Japanese White-eye	<i>Zosterops japonicus</i>	C=5	C=9
Northern Cardinal	<i>Cardinalis cardinalis</i>	C=9	C=6
Red-crested Cardinal	<i>Paroaria coronata</i>	C=7	A=13
Northern Mockingbird	<i>Mimus polyglottos</i>	C=8	A=12
Skylark	<i>Alauda arvensis</i>	R=3	U=4
House Finch	<i>Carpodacus mexicanus</i>	C=8	A=15
Nutmeg Mannikin	<i>Lonchura punctulata</i>	-	C=8
Warbling Silverbill	<i>Lonchura malabarica</i>	-	C=6

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Appendix J
NOAA Correspondence



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JUN 21 2007

Mr. Thomas S. Witten
President, PBR Hawaii
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, HI 96813

Dear Mr. Witten:

Thank you for your letter of April 17, 2007 regarding our discussions concerning potential impacts to monk seals at the proposed La'au Point development.

As described in our February 5, 2007 letter, the National Marine Fisheries Service (NMFS) considers La'au Point important monk seal habitat. As we discussed, we do have non-systematic data collected by NMFS staff, other agencies, and public reports of monk seals at La'au Point.

NMFS believes it would not be necessary to conduct a survey at the site to ascertain that La'au Point is important monk seal habitat, as that is already known. We do believe however (as expressed at our meeting) that there should be a monitoring program established whereby some regular surveys are conducted before, during, and after the development to determine whether or not monk seal use of this habitat changes as the land and ocean use changes. NMFS would be happy to consult with you on the design of such a monitoring plan to ensure that the information collected is the most useful possible and consistent with other information collected.

I commend you for making a commitment to address the very real threats to seals posed by this development – disturbance, domestic animals, and fishery interactions. Finally, NMFS has no information on hawksbill turtle use of this area. There may be hawksbill turtle foraging or nesting, but NMFS has thus far not collected any information on this species at this location.

Sincerely,

Chris E. Yates
Assistant Regional Administrator
For Protected Resources



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August 6, 2007

Mr. Thomas S. Witten
President, PBR Hawaii
1001 Bishop Street
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Honolulu, HI 96813

Dear Mr. Witten:

This letter serves as comment and provides recommendations from NOAA Fisheries on your proposed Monk Seal Protection Program for the La'au Point development project on the island of Molokai, Hawaii.

The Hawaiian monk seal (*Monachus schauinslandi*) is known to occupy the shoreline and nearshore areas surrounding the proposed development. NOAA Fisheries has expressed concern that there would be disturbance to the monk seals as a result of increased human presence and ease of access provided to this currently remote area. Our staff met with Mr. Daniel Orodener of the Molokai Land Trust to discuss the details of your Monk Seal Protection Program (MSPP) on July 12, 2007, as well as to determine what assistance we could provide in developing a monitoring plan that would detect any changes in the monk seal population at La'au Point. Following are some initial guidelines to assist in the design of the monitoring protocols:

Goals of the Monitoring Plan:

To document any changes in the behavior, numbers, distribution, and/or population structure of monk seals that may result from construction activities or increased interactions with people, dogs, and/or fishing gear.

Methodology:

Conduct weekly systematic surveys along the affected coastline before, during, and following construction. Surveys would consist of a trained person (e.g., biological technician) walking the beach and documenting individual seals, their location, identity (determined by observation of flipper tags, bleach markings, and photo-ID), and noting any disturbance or interaction. A shoreline users' reporting scheme may also be developed to provide observations to the technician.

Training and Authorization:

A NOAA Fisheries monk seal biologist would train the survey technician in accepted monitoring methods. The data would be provided to NOAA Fisheries to be incorporated into our full dataset. The technician may also be authorized under a NMFS research permit to allow for closer

approaches to seals that may assist in the identification process, thus improving the data collected.

In addition to the above recommended monitoring guidelines, we provide the following input on the MSPP document. The draft MSPP document contains many important goals to protect monk seals, however we believe that the success of the MSPP will depend on the specific details of how the many requirements and restrictions in the plan are implemented. For example, how will the many individual property users be educated on the laws, rules, and protocols pertaining to monk seals? How will you ensure that guests of residents are educated in these rules and regulations? How will the prohibitions on domestic animals and use of gill nets, and approach distances to monk seals be enforced? Who will train the Resource Manager as a Monk Seal Protection Specialist and what will this training consist of? If the Resource Manager is occupied with check-in duties at the visitor center, who will be tasked with observation of residents/visitors to ensure compliance with the rules and restrictions? In our experience of working with local communities on wildlife conservation, answering the difficult questions above have proven to be the difference between having rules on paper and actually having effective conservation on the ground.

We also recommend several of the rules/restrictions should be clarified so as to be more easily enforced. For example, how will you determine if a person is fishing within ¼ mile of a monk seal that is "sited in the water"? What is the definition of the "shoreline area" and what distance is this from the high tide or permanent vegetation mark? At what distance apart will signs be placed along the shoreline (i.e., what is meant by "regular intervals") so as to assure they are clearly visible to all users?

We do not agree that the Resource Manager should develop protocols for disentanglement of monk seals as proposed in the MSPP. These protocols already exist and should always be conducted by NOAA-authorized staff. We do, however, welcome your assistance in the development of a volunteer network on the island of Molokai to aid in the education and public awareness processes, and to assist in monitoring of monk seals hauled out in the project area.

Thank you for your willingness to work with NOAA Fisheries in assuring that no adverse impacts will occur to monk seals or their habitat as a result of the proposed development. Please contact us if you have any additional questions regarding the comments or recommendations made in this letter.

Sincerely,



Chris E. Yates
Assistant Regional Administrator
For Protected Resources



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
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December 17, 2007

Mr. Daniel Orodener
PBR Hawaii and Associates, Inc.
1001 Bishop St.
ASB Tower, Suite 650
Honolulu, HI 96813-3484

Dear Mr. Orodener:

Thank you for your recent letter with additional questions regarding potential impacts to Hawaiian monk seals related to the proposed development project at La'au Point on Molokai, Hawaii.

As we have discussed during our meetings and in previous correspondence, the Hawaiian monk seal (*Monachus schauinslandi*) is known to occupy the shoreline and near shore areas surrounding the proposed development. NOAA Fisheries has expressed concern that there would be increased disturbance to the monk seals and threat of hooking or entanglement in fishing gear as a result of increased human presence and ease of access provided in this currently remote area. I appreciate your shared concern and your desire to minimize these potential impacts.

Following are answers to the four specific questions you pose in your December 16, 2007, letter:

1. There are no specific studies that have analyzed the impact of near shore development on the Hawaiian monk seal, nor are there studies that have quantified the impact of increased human presence on beaches where seals are present. This project offers the opportunity to undertake such a study for the first time, and we look forward to working with you to accomplish this.
2. As we have expressed previously, and as you note in your letter, the issue of concern is the activity of humans and domestic animals on the beach, not the development per se. Structures such as homes will not be a threat to seals -- the behavior of people on the beach is the threat. There is much information from the northwest Hawaiian islands and the main Hawaiian islands that demonstrate that human activities and pets pose a significant threat to seals by disturbance, domestic pets, and fishing. These threats can lead to abandonment of preferred habitat, transmission of disease, and direct harm such as hooking or entanglement by fishing gear.

Therefore, together we have an ideal opportunity to jointly conduct a study that would monitor the before, during, and after status of monk seals at La'au Point. This type of study has not been previously undertaken. The joint monitoring plan would detect any changes in the monk seal



population or behavior at La'au Point and assess threats to these animals. The goals of this study would be to document any changes in the behavior, numbers, distribution, and/or population structure of monk seals that may result from increased interactions with people, dogs, and/or fishing gear.

The methodology for this study could be to conduct weekly systematic surveys along the affected coastline before, during, and following construction. Surveys would consist of a trained person (e.g., biological technician) walking the beach and documenting individual seals, their location, identity (determined by observation of flipper tags, bleach markings, and photo-ID), and noting any disturbance or interaction. A shoreline users' reporting scheme may also be developed to provide observations to the technician.

NMFS is willing to provide a monk seal biologist to train the survey technician in accepted monitoring methods. The data would be provided to NMFS to be incorporated into our full dataset. The technician may also be authorized under a NMFS research permit to allow for closer approaches to seals that may assist in the identification process, thus improving the data collected. This authorization would be contingent upon proper training and qualifications.

This study should start as soon as possible, continue during the construction activities, and extend for a significant period of time following construction to monitor potential impacts of increased human presence on the beach. The extended time frame is necessary since the potential impacts to seals may not be realized for years as the residences are occupied and improved access to the beach is realized. The study needs to start as soon as possible to gather data to develop a "baseline" from which to compare future data.

The costs of this study will depend upon what arrangements are made by you regarding acquiring the appropriate personnel to gather the necessary data. This will require hiring appropriate personnel to conduct this study, as NMFS does not have the resources to conduct such a long-term study.

3. I believe that the mitigation measures you have proposed are an excellent first step in mitigating potential impacts to seals. However, I believe that the success of these will depend on the specific details of how the many requirements and restrictions in the plan are implemented.

Your Shoreline Access Management Plan is a legitimate start at recognizing and addressing potential monk seal threats. The measures you have proposed in that document directly address the threats we have identified previously. However, I know from experience in attempting to mitigate these same threats throughout Hawaii that there are many challenges in controlling human behavior on our beaches. Keeping people away from seals, keeping dogs on leashes, and controlling the use of fishing gear in areas where seals frequent are difficult tasks. This will require a significant, sustained effort on your part to ensure these mitigation measures are successful for the long term. I look forward to working with you on developing specific plans on these measures. We look forward to working with you as you begin to develop more specific plans regarding who will enact these restrictions, what authorities they will operate under, and



how you can adapt your management over time. We should begin the development of these specifics in the near future.

4. As you note, the number of people present on the beach will likely increase due to the proposed development. Similar to my previous comment on development, the number of people on the beach is not the concern per se. It is the behavior of those people. A small number of people who are disturbing the animals, have dogs off leash, or are fishing in manners that threaten seals is a worse scenario than having many people who are conducting themselves in an appropriate seal-friendly manner. Therefore, the most important aspect regarding this issue is to ensure there is a long-term management structure in place that is enforceable, adaptable, and has the appropriate resources and commitment to mitigate these potential impacts.

Thank you for your willingness to work with NOAA Fisheries in assuring that no adverse impacts will occur to monk seals or their habitat as a result of the proposed development. We have the opportunity to develop a collaborative partnership that could gather important data and protect monk seals. I suggest we meet at your soonest convenience to begin plans for initiating a monitoring plan and to further refine the details of your mitigation measures.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris E. Yates". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

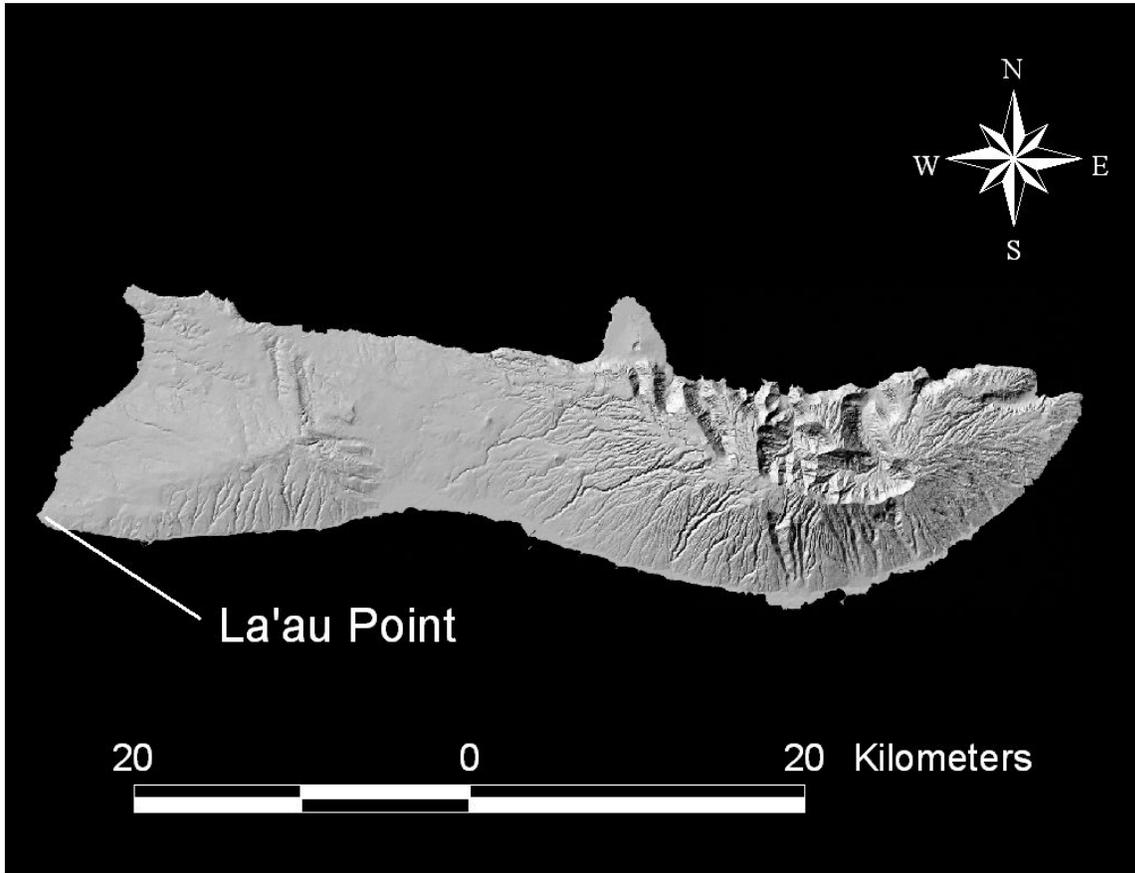
Chris E. Yates

Assistant Regional Administrator

Appendix K

Marine Biological and Water Quality Baseline Surveys

Marine Biological and Water Quality Baseline Surveys La'au Point, Moloka'i



Prepared for:
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May 2006

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1. Marine Biological Baseline

1.1 Introduction

These survey results are to be used to support a description of the existing environment in an environmental impact statement being prepared for the La'au Point residential community proposed by Moloka'i Properties Limited, and to provide a baseline for comparison with the results of future similar surveys. La'au Point is on the southwest point of the island of Moloka'i, 30 km west of Kaunakakai Harbor and 65 km east of Honolulu.

Background Information

From *Moloka'i Island Coastal Resource Inventory* (US Army Corps of Engineers, Pacific Division, unpublished report; 1984):

“Physiography

The inshore area consists of irregular basalt formations and boulders of moderate size and relief. A fairly steep profile extends to a depth of 6 m and is cut with deep grooves and channels. Live corals here are diverse, but have less than 10% coverage. A base made up of older dead coral rock encrusts the surfaces of many of the basalt boulders. Extending seaward to depths of 11-12 m and beyond is a wide, gently sloping basalt terrace which exhibits little relief. Occasional platforms, 5 to 8 m wide and 2 m high, break up the otherwise flat substrate and support substantially more coral cover than the surrounding plain. Some cracks and crevices are etched into the basalt floor and oriented perpendicular to the shoreline. Occasional boulders or knolls protrude from the flat surface. Other than a few small sand patches, little sediment is evident.

South of La'au Point – The inshore area near the rocky, lava headlands consists of a steep talus boulder slope at the cliff (shoreline) base that descends to a depth of 6 to 10 feet. Beyond the talus is found a very irregular high relief terrace upon which rests 2-4 m diameter basaltic boulders. The terrace slopes gradually to deeper water seaward. Live coral cover is less than 5%, with occasional small sand patches existing between the large boulders. Approximately 90 m offshore, in 4-5 m of water, the solid basalt substrate is covered with algal turf and some sand channels. Nearshore areas fronting the sandy beaches exhibit sand flats extending from shore to 8 m deep and beyond. Further offshore, in depths of 9-11 m, scoured basalt rock projections form dome-like tables 2 m above wide sand channels. The network of sand channels interconnect and undercut the worn basalt formations.”

Marine flora and fauna

Inshore

Algae are quite diverse in this area. Several species of edible algae found in abundance include limu lipoa (Dictyopteris australis), limu kohu (Asparagopsis taxiformis), and limu alani (Dictyota acutiloba). Live coral coverage is approximately 10% in this area, generally growing atop dead coral on a boulder base. The bottom

profile is quite dramatic with the encrusting coral *Pavona varians* concentrated on vertical surfaces and the encrusting corals *Montipora capitata* and *M. flabellata* growing on the upper surfaces. Twenty meters offshore, the branching reef corals *Pocillopora meandrina* and *P. damicornis* and the rounded or encrusting reef coral *Porites lobata* grow in abundance.

The other invertebrates observed during surveys consisted of purple octocoral (*Anthelia edmondsoni*) and the soft zoanthid coral *Palythoa tuberculosa* both in large quantities. A variety of mollusks were found including an abundance of top shell (*Trochus intexus*), an occasional leopard cone (*Conus leopardus*) and the rare humpback cowry (*Cypraea mauritiana*). A few sea cucumbers, *Actinopyga mauritiana* and *Holothuria atra*, and sea urchins, the black rock-boring urchin (*Echinometra oblonga*), may also be seen in this area. The fish population, in general, is rather diverse and fairly abundant. Surgeonfish are the most abundant group, especially large schools of the Achilles tang (*Acanthurus achilles*), manini or convict tang (*A. triostegus*) and maikoiko or Jenkin's surgeon (*A. leucopareus*), and also the nenu or rudder fish (*Kyphosus* sp.). Several species of commonly-caught food fish here consist of uhu or parrotfish (*Scaridae*), the goatfish weke and moano (*Mullidae*), and small jack or papio (*Carangidae*). A few damselfish (*Pomacentridae*) and wrasses (*Labridae*) also exist here.

Offshore

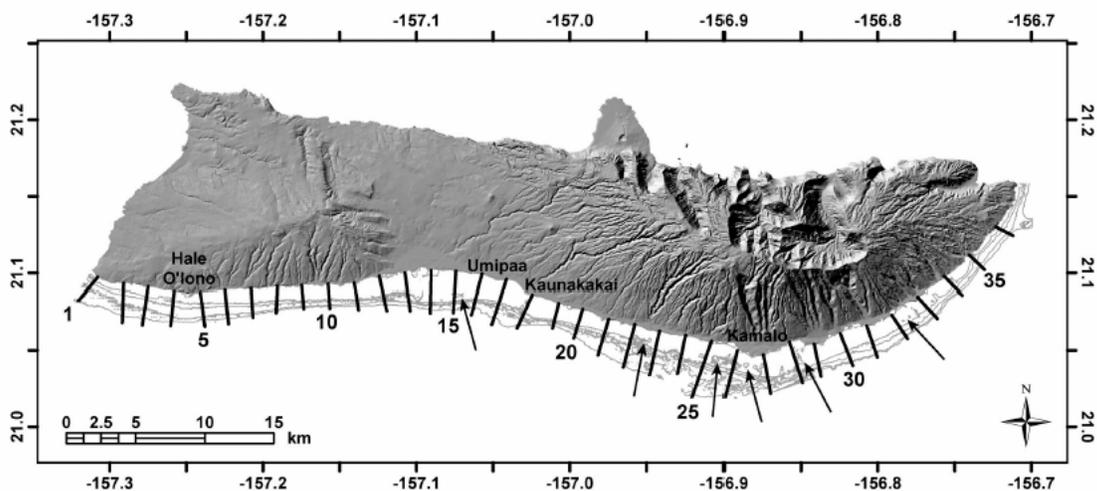
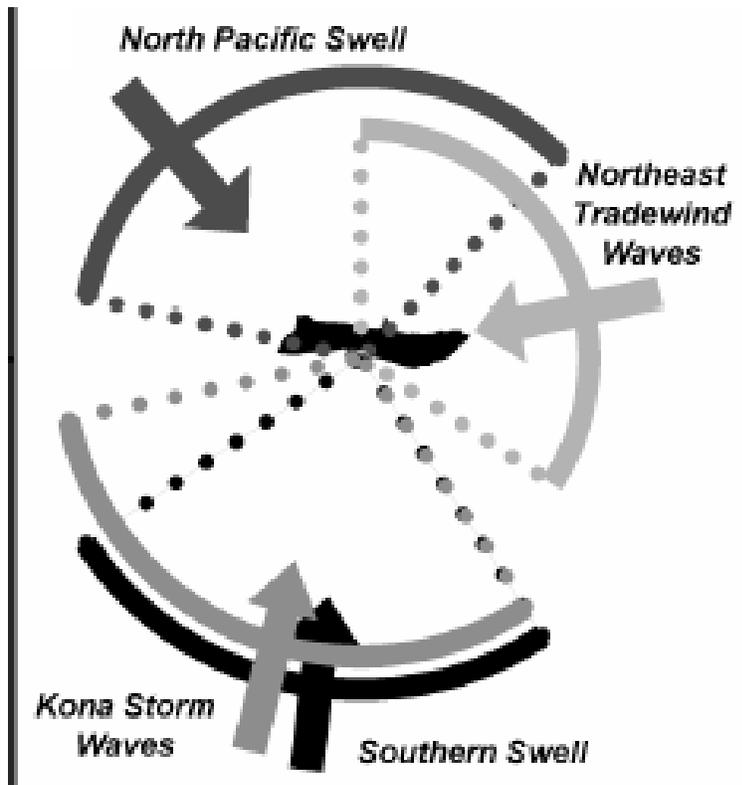
Six species of algae were found in the area, but only edible alga *Dictyopteris australis* (*limu lipoa*) and the red alga *Liagora* sp. are dominant, covering a good portion of the bottom. The sand producing green algae *Halimeda opuntia* and *Neomeris annulata* are abundant as well. In waters of 11-12 m depth, very little live coral grows on the gently sloping basalt floor. Small coral heads, 10-15 cm in diameter, of the branching reef corals *Pocillopora meandrina* and *P. damicornis* are the most abundant. The only other invertebrates offshore are sponges and hydroids. Since the substrate is mainly flat, the fish population was very small. In general, the surgeonfish and damselfish are the most abundant with a few humuhumu or triggerfish (*Balistidae*), uhu or parrotfish (*Scaridae*) and aawa or table boss (*Bodianus bilunulatus*) inhabiting this area.

Human Uses

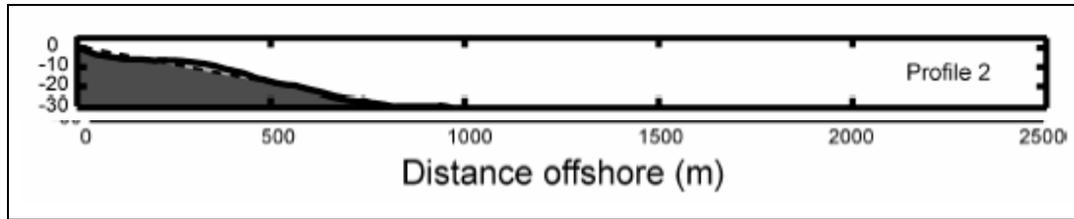
La'au Point and the surrounding coastal areas can be accessed only by four-wheel drive vehicle. One-half square mile of the point area was administered by the U.S. Coast Guard which maintains a lighthouse there. The coastal area may occasionally be closed-off to visitors by Moloka'i Ranch, owners of the adjacent property. Some of the Coast Guard land not required for lighthouse operation at La'au is in the process of being sold off by the Federal government.

Strong rip currents, high waves, and rough conditions persist at La'au Point throughout the year except on rare occasions when kona conditions prevail. Pole and line fishing is done from the point and adjacent beaches. Fishing boats may troll the waters for aku, ahi, and ulua. Because of rough conditions of the inshore zone, entering the water to dive or spearfish should be considered quite dangerous."

Recent work (Storlazzi et al. 2005; figures below) provide further context for the wave climate and reef morphology for the island of Moloka'i.



Morphology of the reef and insular shelf off southern Molokai from the SHOALS and National Ocean Service bathymetric data overlaid with the locations of the 36 shore-normal transects used for analysis. The shore-normal transects were spaced roughly every 1.5 km along shore; the isobaths are every 10 m from the shoreline out to 40 m. Arrows denote the location of some prominent "blue holes" on reef flat; note their correlation to onshore drainages. (From Storlazzi et al. 2005)



Selected shore-normal reef profiles showing the variation in the development of the reef complex along shore. The dashed lines are a projection of the slopes of the volcanic cone (dark gray) through the reef profiles to provide some insight to the likely crosssectional area of the reef complex (light gray). Note that the reef is almost nonexistent at the ends of the island (profiles #2 and #36) and extends more than 1500 m offshore of the island's central portion (profiles #13 through #27). (From Storlazzi et al. 2005)

1.2 Methods—Present Study

1.2.1 Benthic Habitat Mapping

The National Oceanic and Atmospheric Administration (NOAA) acquired and visually interpreted orthorectified aerial photography for the near-shore waters (to 25 meters depth) of parts of the main Hawaiian Islands (Coyne et al. 2003, NOAA/NOS 2003). Features visible in the aerial photographs were mapped directly into a geographic information system (GIS). Visual interpretation of the photographs was guided by a hierarchical classification scheme that defined and delineated benthic polygon types based on insular-shelf zones and habitat structures of the benthic community. Zones describe the insular-shelf location (inner lagoon, outer lagoon, bank-shelf), whereas habitat structure (hereafter “structure”) includes the cover type (reef, submerged vegetation, unconsolidated sediments, etc.) of the benthic community. The major product of this effort is a series of GIS-based benthic habitat maps that are characterized by a high degree of spatial and thematic accuracy. The hierarchical spatial structure underlying the habitat classifications were explicitly designed to include ecologically-relevant locational (backreef, forereef, lagoon, etc.) and typological (patch reef, spur and groove, colonized pavement, etc) strata, thereby creating an analytical construct within which nuances of community structure, such as resource distribution, abundance, and habitat utilization can be tested and resolved.

1.2.2 Benthic Methods

Monitoring methods for coral reef habitats were based on those of the Global Coral Reef Monitoring Network (GCRMN; <http://coral.aoml.noaa.gov>) and Green (2002). These methods were aimed at providing a baseline for detection of significant changes in reef habitat as a result of land-based development activities. Assessment methods included:

Line intercept surveys to identify and estimate relative abundance of benthic substratum type (by genus, species, growth form, or other bottom type).

Visual censuses of fishes to quantify numerical abundance, biomass, diversity, and species richness).

1.2.3 Monitoring Site Locations

Information from the Moloka'i Island Coastal Resource Inventory and NOAA's marine benthic habitat maps were used to determine approximate locations for sampling sites. GPS points were generated in ArcView. Six sites, three north and three east of La'au Point, were surveyed over a 2-day period (Table 1, Figure 1). Sites were identified relative to estimated location for the proposed development. Baseline surveys were conducted on November 19-20, 2005. Transects were located along a depth profile where coral density was highest—approximately 8-11 m—with consideration of adjacent coastline features and reef structure at each site.

1.2.4 Sample Design

Three 25 x 5 m transects, each separated by ca. 5 m were conducted at each sampling location. Transects were “permanently” marked using heavy cable ties. Transects were orientated along bathymetry contours and conducted within homogeneous microhabitat types.

1.2.5 Quantitative Benthic Surveys and Analysis

Surveys assessed the biological diversity and abundance of algae, coral and other macroinvertebrates at each reef site (Sites 2-5). Surveys were also conducted at control sites (Sites 1 and 6), away from the zone of anticipated impact yet close enough to represent similar reef environments.

Three 25 m long transects were surveyed along a single depth gradient (8-11 m depth) parallel to the shoreline at each site, with 1-3 m between the end of one transect and the start of the next. The substratum type (coral, algae, invertebrate, sand, etc) was recorded at one meter intervals directly under the transect tape and at one meter to each side of the tape, giving a total of 225 points per site (3 transects x 25 meters/transect x 3 points/meter interval). The relative percentages of each substratum type were calculated as the mean (\pm S.E.) of three replicates for the three transects (n=9).

1.2.6 Fish Sampling Methodology

Fish assemblages at each location were assessed using standard underwater visual belt transect survey methods (Brock 1954, Brock 1982). A SCUBA diver swam each 25m x 5m transect at a constant speed (~ 15 min/transect) and identified to the lowest possible taxon, all fishes visible within 2.5 m to either side of the centerline (125 m² transect area). Nomenclature followed Randall (1996). Total length (TL) of fish was estimated to the nearest centimeter. Length estimates of fishes from visual censuses were converted to weight using the following length-weight conversion: $W = aSL^b$ - the parameters a and b are constants for the allometric growth equation where SL is standard length in mm and W is weight in grams. Total length was converted to standard length (SL) by multiplying standard length to total length-fitting parameters obtained from FishBase (www.fishbase.org). Length-weight fitting parameters were available for 150 species commonly observed on visual fish transects in Hawaii (Hawaii Cooperative Fishery Research Unit unpublished data). These data were supplemented by information from other published and web-based sources. In the cases where length-weight information did not exist for a given species, the parameters from similar bodied congeners were used. All biomass estimates were converted to metric tons per hectare (t/ha) to facilitate comparisons with other studies in Hawaii. Finally, fish

taxa were categorized into three trophic categories (herbivores, secondary consumers, and apex predators) according to various published sources and FishBase (www.fishbase.org).

1.2.7 Statistical Methods

Because transects within sites were spatially autocorrelated, mean values for all transects at each site were used in all analyses. Species diversity was calculated from the Shannon-Weaver Diversity Index (Ludwig and Reynolds 1988): $H' = -\sum (p_i \ln p_i)$, where p_i is the proportion of all individuals counted that were of species i . The evenness component of diversity was expressed as: $J = H' / \ln(S)$, where S is the total number of species present (Pielou 1977).

Table 1: Site locations and associated meta-data around La'au Point. Lat. = latitude, Long. = longitude. Latitude and longitude are in WGS 84. X and Y UTM coordinates are for UTM Zone 4.

Date	Site	Lat.	Long.	Y	X	Depth (ft)	Habitat Descriptions
19-Nov-05	1	21.14	-157.29	2338656	677251	24	Flat reef pavement; scattered <i>P. meandrina</i> , <i>P. lobata</i> , <i>Asparagopsis</i> ; abundant branching/encrusting calc. algae; green sponge
19-Nov-05	2	21.13	-157.30	2337355	676511	33	Spur and groove reef pavement; abundant <i>P. meandrina</i> , <i>Asparagopsis</i> ; scattered <i>P. lobata</i> , <i>P. evermanni</i>
19-Nov-05	3	21.11	-157.31	2335644	676050	24	Flat reef pavement; scattered small <i>P. lobata</i> , <i>P. meandrina</i> ; abundant branching coralline algae
20-Nov-05	4	21.09	-157.30	2333093	676873	36	Flat, sand covered reef pavement; scattered small <i>P. lobata</i> , <i>P. meandrina</i> , <i>P. eydouxii</i> ; abundant <i>Halimeda</i>
20-Nov-05	5	21.09	-157.28	2332962	678897	24	Flat reef pavement, spur and groove to south; some sand; scattered <i>P. meandrina</i> , <i>P. lobata</i> , green sponge
20-Nov-05	6	21.09	-157.26	2332748	680444	24	Flat, sand-covered reef pavement; abundant small <i>P. lobata</i> , <i>M. capitata</i> ; abundant <i>Asparagopsis</i> , <i>Halimeda</i>

1.3 Results—Present Study

1.3.1 Large-scale Habitat Features

The shelf zone accounted for 84% of the total study area (<60 feet), followed by reef flat (8%), forereef (6%), and shoreline intertidal (2%) (Table 2). Large-scale habitat types within the study area (<60 feet) were dominated by uncolonized volcanic rock/boulder (45%), followed by uncolonized pavement (24%), sand (7%), linear reef (7%), colonized pavement (6%), aggregated coral (6%), and macroalgae (5%).

1.3.2 Benthic Flora and Fauna

Turf algae dominated benthic cover at all locations, accounting for a grand mean of 57%, followed by sand (22%), and macroalgae (10%) (Tables 2, 3 and Figure 2). Hard coral cover was slightly more than 6% overall (range 3.56-11.56%). Table 4 provides more detail on the relative abundance of the most common taxa and Figures 3 and 4 illustrate the relative percentages of coral and macroalgae at each site.

There was an inverse relationship between coral and macroalgae at all sites, as seen in comparison of Figures 3 and 4. Macroalgae were dominant on exposed areas; percent coral and sand cover were more abundant at lee sites, protected from northwest swells. Algae and coral species were qualitatively similar in both the 1975 and 2005 surveys.

Octocorals, molluscs and echinoderms noted in a previous study (AECOS 1975) were not seen during the November, 2005 surveys. Rather, the collector urchin, *Tripneustes gratilla*, was the most abundant macroinvertebrate. Density of this urchin at the six sites is summarized in Table 5.

Figure 1: Sampling locations and NOAA benthic habitat map.

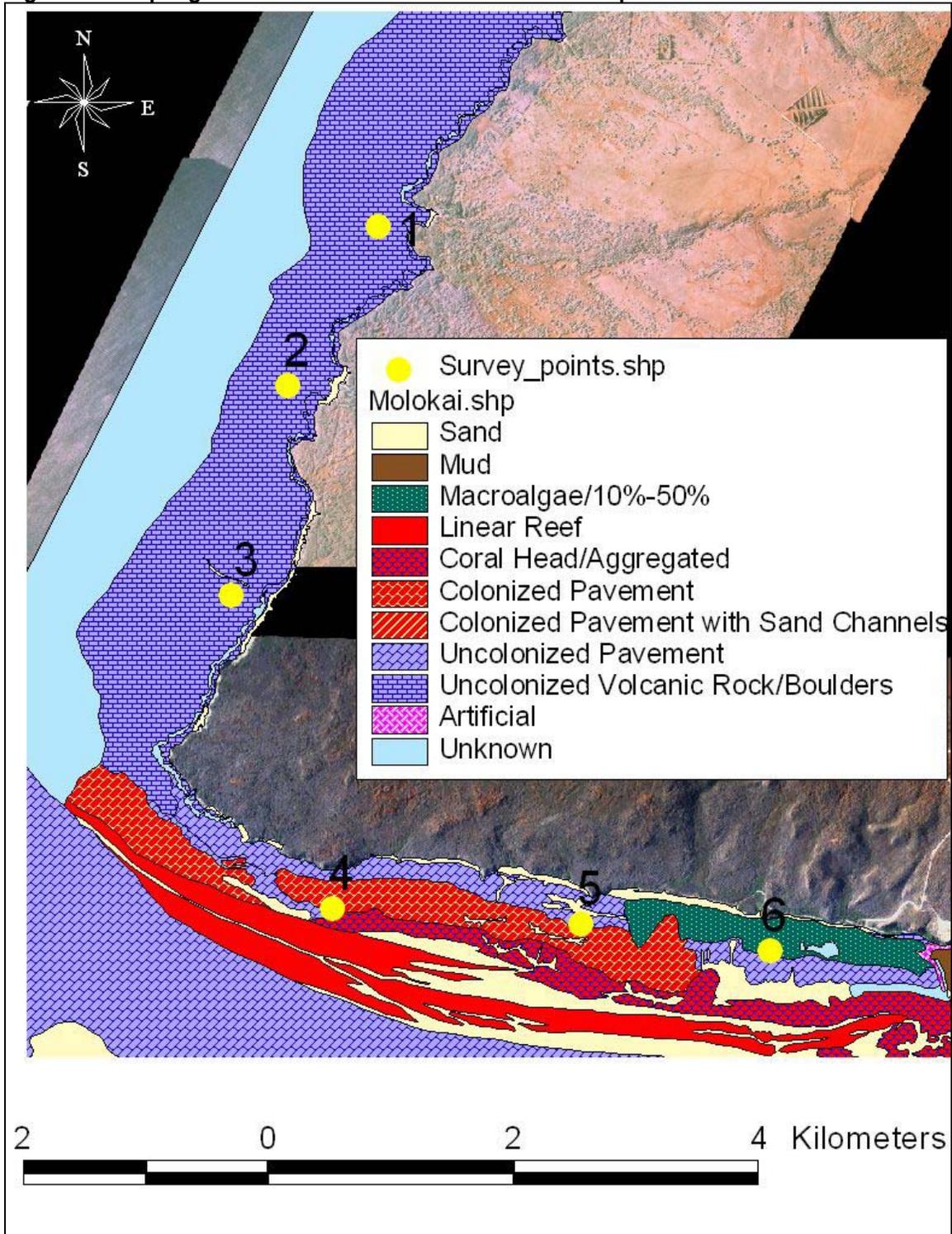


Table 2: Zone and habitat types within the general study area to a depth of ca. 60 feet. Zone and habitat classifications based on NOAA benthic habitat maps (Coyne et al. 2003, NOAA/NOS 2003)

Zone	Habitat	Acres	Percent
Forereef	Hardbottom/Uncolonized Pavement	85.85	1.36%
	Reef/Colonized Pavement	256.78	4.05%
	Sand	61.13	0.97%
Reef Flat	Hardbottom/Uncolonized Pavement	168.10	2.65%
	Hardbottom/Uncolonized Volcanic Rock/Boulders	1.08	0.02%
	Macroalgae/10-50%	309.78	4.89%
	Sand	12.75	0.20%
Shelf	Hardbottom/Uncolonized Pavement	1275.68	20.14%
	Hardbottom/Uncolonized Volcanic Rock/Boulders	2726.41	43.05%
	Reef/Aggregate Coral	387.97	6.13%
	Reef/Colonized Pavement	131.33	2.07%
	Reef/Linear Reef	429.12	6.78%
	Sand	330.78	5.22%
Shoreline Intertidal	Hardbottom/Uncolonized Volcanic Rock/Boulders	96.37	1.52%
	Sand	60.18	0.95%
	Total	6333.31	100.00%

Table 3: Percent cover of major benthic groups. Values are means of three transects with standard deviation of the mean in parentheses. Groups ranked from high to lower grand mean cover.

Groups	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Grand mean
Turf algae	44.89 (14.64)	53.33 (11.71)	83.56 (24.14)	30.67 (12.23)	75.66 (12.65)	56.00 (9.85)	57.33 (14.21)
Sand	20.00 (8.90)	21.78 (8.55)	0.89 (1.54)	54.22 (15.30)	11.56 (5.39)	22.67 (6.43)	21.85 (7.69)
Macroalgae	14.67 (10.09)	17.33 (13.91)	9.78 (15.86)	6.67 (7.92)	1.33 (1.54)	8.00 (5.89)	9.63 (9.20)
Hard Coral	4.00 (6.16)	4.00 (5.39)	3.56 (6.16)	4.89 (6.62)	9.78 (12.80)	11.56 (12.11)	6.30 (8.21)
Calcareous algae	16.00 (8.88)	3.11 (3.55)	1.33 (2.31)	1.78 (2.31)	1.33 (2.31)	0.89 (1.54)	4.07 (3.48)
Sponge	0.44 (0.77)	0.44 (0.77)	0.89 (1.54)	3.11 (4.62)	1.78 (2.10)	0.89 (0.77)	1.26 (1.76)

Table 4: Mean percent cover (sd) at each site around La'au Point. Taxon ranked from highest to lowest grand mean cover.

Benthic Group	Taxon	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Grand mean
Turf algae	Turf algae	44.89 (14.64)	53.33 (11.71)	83.56 (24.14)	30.67 (12.23)	75.56 (12.65)	56.00 (9.85)	57.33 (14.21)
Sand	Sand	20.00 (8.9)	21.78 (8.55)	0.89 (1.54)	54.22 (15.30)	11.56 (5.39)	22.67 (6.43)	21.8 (7.69)
Macroalgae	<i>Lobophora variegata</i>	7.56 (4.35)	8.44 (5.85)	6.22 (10.78)	2.67 (3.08)	1.33 (1.54)	4.00 (1.54)	5.04 (4.52)
Calcareous algae	Calcareous algae	16.00 (8.88)	3.11 (3.55)	1.33 (2.31)	1.78 (2.31)	1.33 (2.31)	0.89 (1.54)	4.07 (3.48)
Macroalgae	<i>Halimeda opuntia</i>	4.89 (3.64)	4.44 (3.44)	3.56 (5.08)	4.00 (4.84)	0.00 (-)	3.11 (3.58)	3.33 (3.43)
Hard Coral	<i>Pocillopora meandrina</i>	0.89 (1.54)	1.33 (1.54)	1.33 (2.31)	2.67 (3.55)	5.78 (6.85)	1.78 (2.31)	2.3 (3.02)
Hard Coral	<i>Porites lobata</i>	0.89 (0.77)	1.33 (1.54)	1.78 (3.08)	0.89 (1.54)	1.33 (2.31)	5.33 (4.62)	1.93 (2.31)
Macroalgae	<i>Asparagopsis taxifolia</i>	2.22 (2.10)	4.44 (4.62)	0.00 (-)	0.00 (-)	0.00 (-)	0.89 (0.77)	1.26 (1.25)
Sponge	Green sponge	0.44 (0.77)	0.44 (0.77)	0.89 (1.54)	1.78 (3.08)	0.44 (0.77)	0.89 (0.77)	0.81 (1.28)
Hard Coral	<i>Montipora patula</i>	0.44 (0.77)	0.00 (-)	0.44 (0.77)	0.00 (-)	0.44 (0.77)	2.22 (2.87)	0.59 (0.86)
Hard Coral	<i>Montipora capitata</i>	0.44 (0.77)	0.44 (0.77)	0.00 (-)	0.00 (-)	0.00 (-)	1.78 (1.54)	0.44 (0.51)
Sponge	Orange sponge	0.00 (-)	0.00 (-)	0.00 (-)	1.33 (1.54)	1.33 (1.33)	0.00 (-)	0.44 (0.48)
Hard Coral	<i>Porites evermanni</i>	0.89 (1.54)	0.89 (1.54)	0.00 (-)	0.00 (-)	0.00 (-)	0.00 (-)	0.30 (0.51)
Hard Coral	<i>Pocillopora ligulata</i>	0.00 (-)	0.00 (-)	0.00 (-)	0.00 (-)	0.44 (0.77)	0.44 (0.77)	0.15 (0.26)
Hydroid	<i>Pennaria disticha</i>	0.00 (-)	0.00 (-)	0.00 (-)	0.00 (-)	0.44 (0.77)	0.00 (-)	0.07 (0.13)
Hard Coral	<i>Pocillopora eydouxi</i>	0.44 (0.77)	0.00 (-)	0.00 (-)	0.00 (-)	0.00 (-)	0.00 (-)	0.07 (0.13)

Table 5: Sea Urchin (*Tripneustes gratilla*) density

Site	Number (per 150 m ²)	Density (no. m ⁻²)
1	20	0.1333
2	5	0.0333
3	1	0.0067
4	0	0.0000
5	0	0.0000
6	0	0.0000
Mean	4.33	0.0289

Figure 2: Percent cover of major benthic groups at the six survey sites around La'au Point. Mean represents values of three transects at each site.

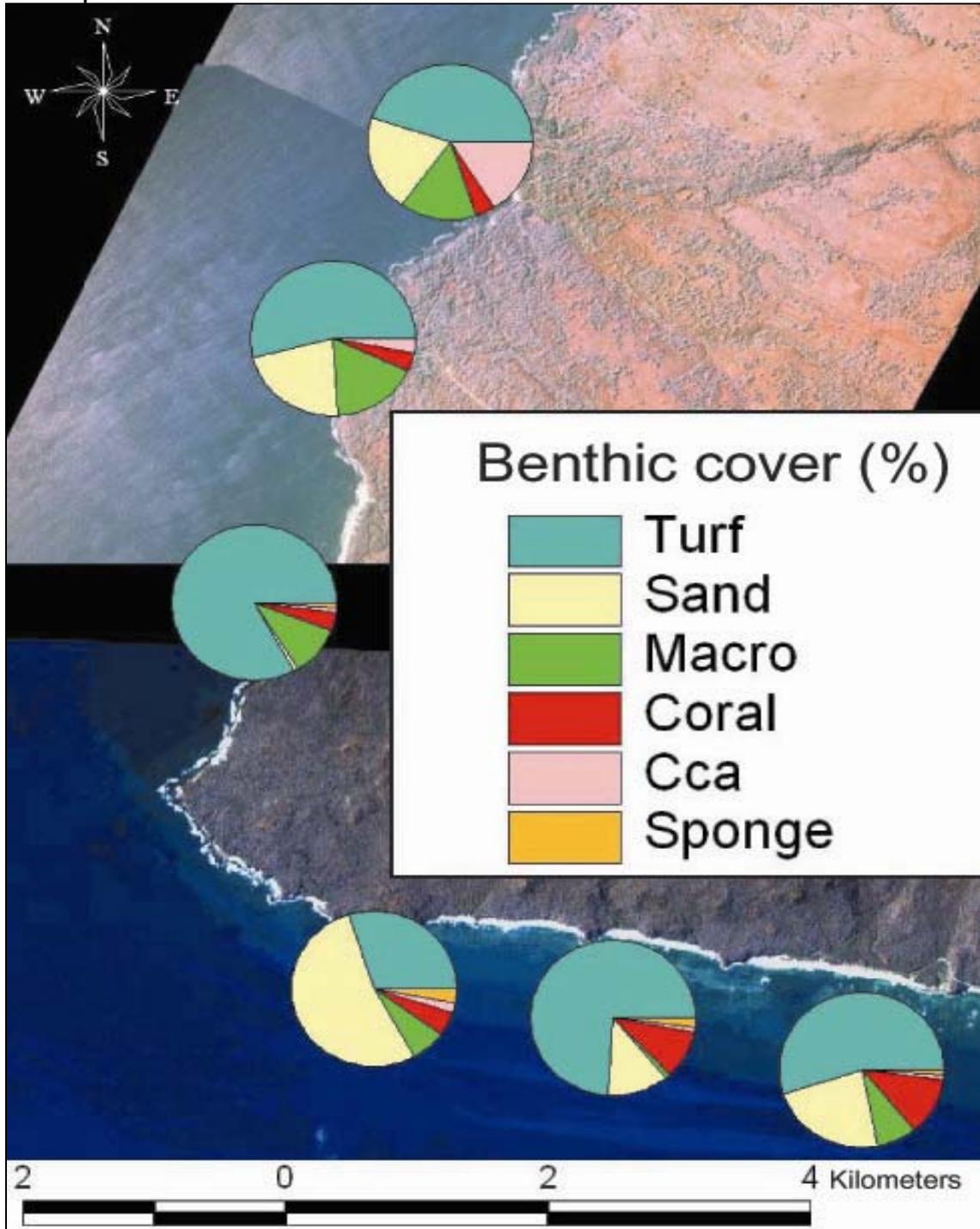


Figure 3: Percent live hard coral cover at the six survey sites around La'au Point.
Mean represents values of three transects at each site.

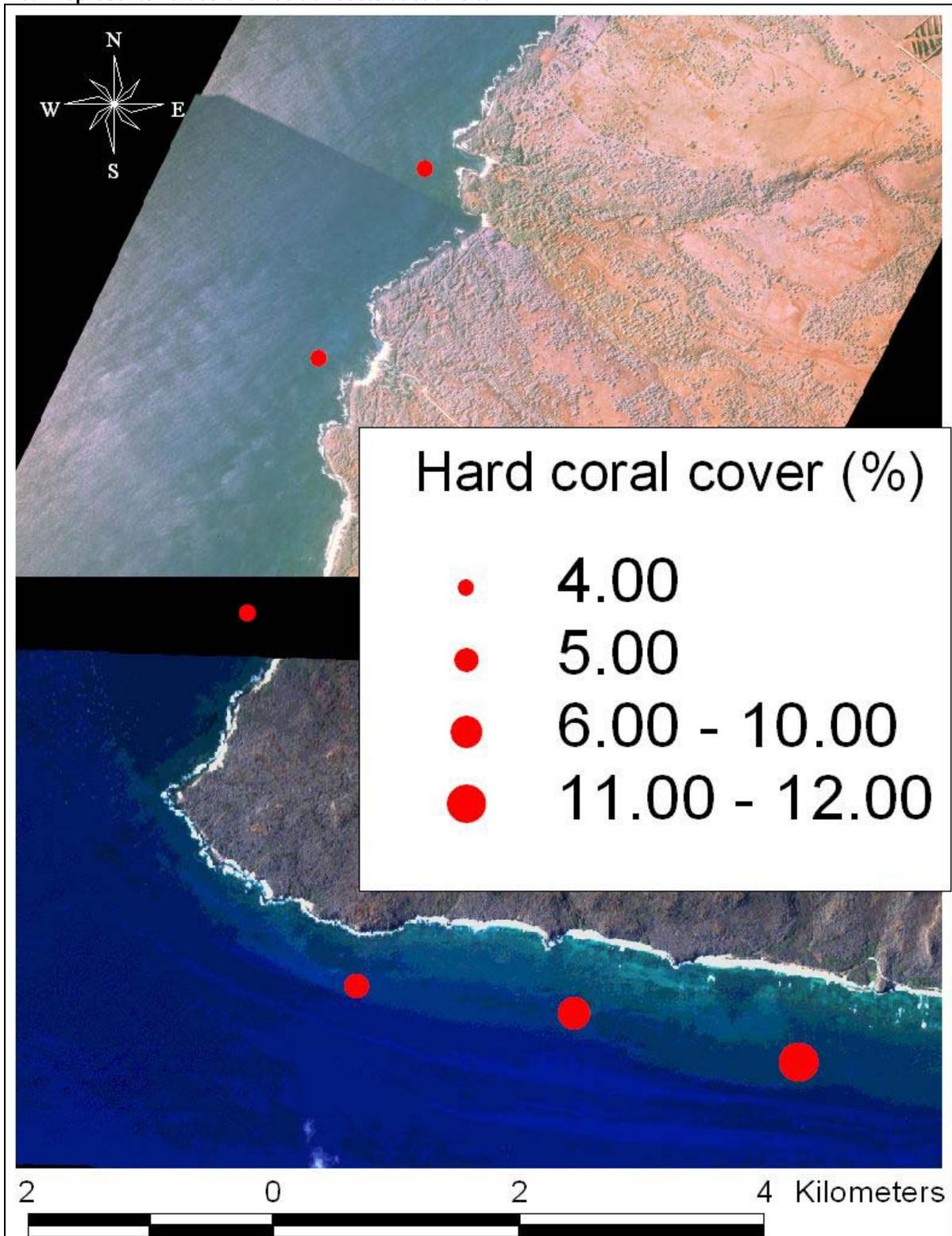
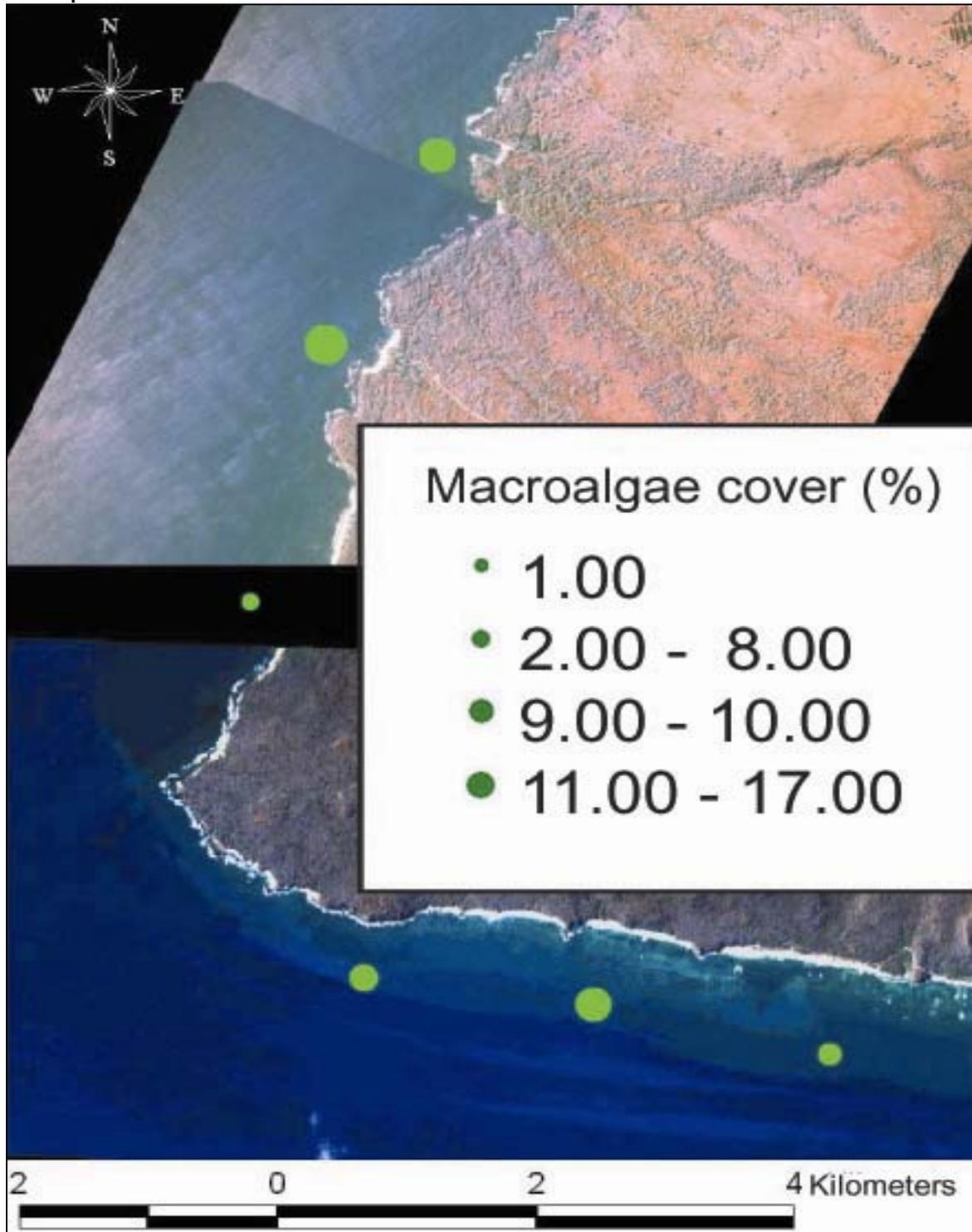


Figure 4: Percent macroalgae cover at the six survey sites around La'au Point. Mean represents values of three transects at each site.



1.3.3 Fish Assemblage Characteristics

Numbers of individual fishes per transect were 20% higher north than east of La'au Point (Table 5, Figure 6). Diversity, evenness, and species richness were 59%, 55%, and 9% higher, respectively, north of the point as well (Table 5, Figure 5). Biomass, however, was more than 130% higher east of La'au Point (Table 5, Figure 7). Site 3 had the lowest rank for all assemblage characteristics pooled while sites 5, 4, 2, and 1 had similarly high total rankings (Table 6).

Overall fish biomass was low. Small schools of surgeonfishes (manini – *Acanthurus triostegus*, kala lolo – *Naso brevirostris*, na'ena'e – *A. olivaceus*) comprised much of the weight of the assemblages. Secondary consumers (planktivores and triggerfishes) accounted for 50% of the fish biomass overall, followed by herbivores (43%), and apex predators (7%). Three of the six sites had no apex predators present. More than 30% of the biomass at site 1 consisted of apex predators, primarily a single island jack (ulua – *Carangoides orthogrammus*) and two individuals of the introduced peacock grouper (roi – *Cephalopholis argus*).

Table 6: Fish assemblage characteristics. Means (S.D.)

Site	Species	Number ha ⁻¹ (÷ 1000)	Biomass (t ha ⁻¹)	Diversity	Evenness
1	13.33 (3.79)	4.43 (2.54)	0.11 (0.11)	1.90 (0.61)	0.73 (0.17)
2	15.00 (5.57)	5.92 (2.70)	0.24 (0.18)	1.82 (0.67)	0.67 (0.17)
3	10.00 (1.73)	4.16 (0.56)	0.05 (0.01)	1.58 (0.11)	0.69 (0.02)
4	13.00 (4.00)	3.55 (1.45)	0.20 (0.15)	2.21 (0.27)	0.87 (0.01)
5	13.33 (4.04)	4.72 (2.00)	0.79 (0.50)	1.86 (0.16)	0.73 (0.04)
6	11.00 (2.00)	2.29 (1.17)	0.08 (0.06)	2.02 (0.14)	0.85 (0.12)
Grand mean	12.61 (3.52)	4.18 (1.74)	0.24 (0.17)	1.90 (0.33)	0.76 (0.09)

Table 7: Ranking of fish assemblage characteristics among sampling sites. Highest rank represents highest values for assemblage characteristics.

Site	Number	Biomass	Diversity	Evenness	Species Richness	Total rank
5	5	6	3	3	4	21
4	2	4	6	6	3	21
2	6	5	2	1	6	20
1	4	3	4	4	5	20
6	1	2	5	5	2	15
3	3	1	1	2	1	8

Figure 5: Fish species richness at the six survey sites around La'au Point. Values = mean of three transects at each site.

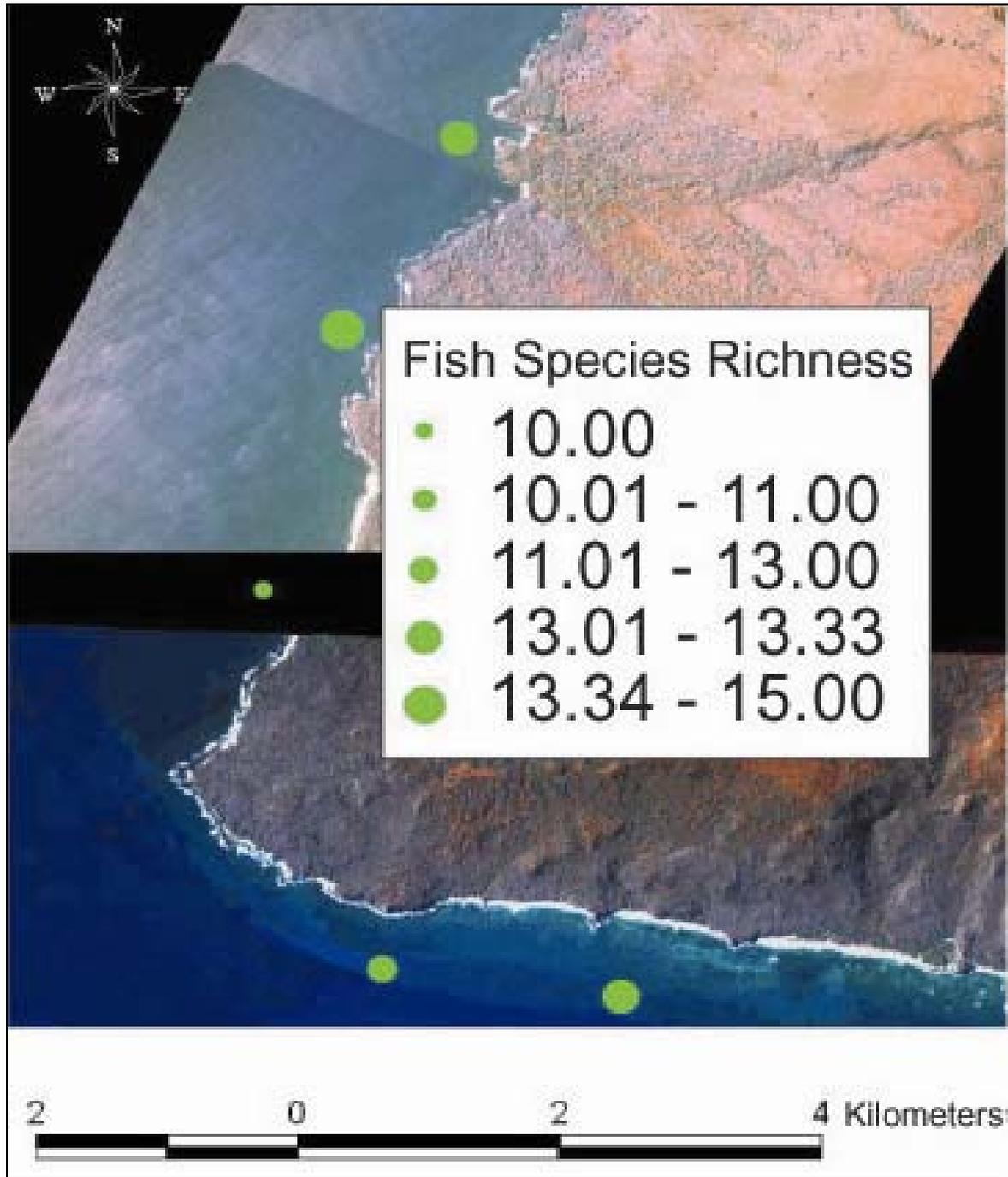


Figure 6: Fish numerical abundance at the six survey sites around La'au Point. Values = mean of three transects at each site. Values are number of individuals ($\div 1000$) ha^{-1} .

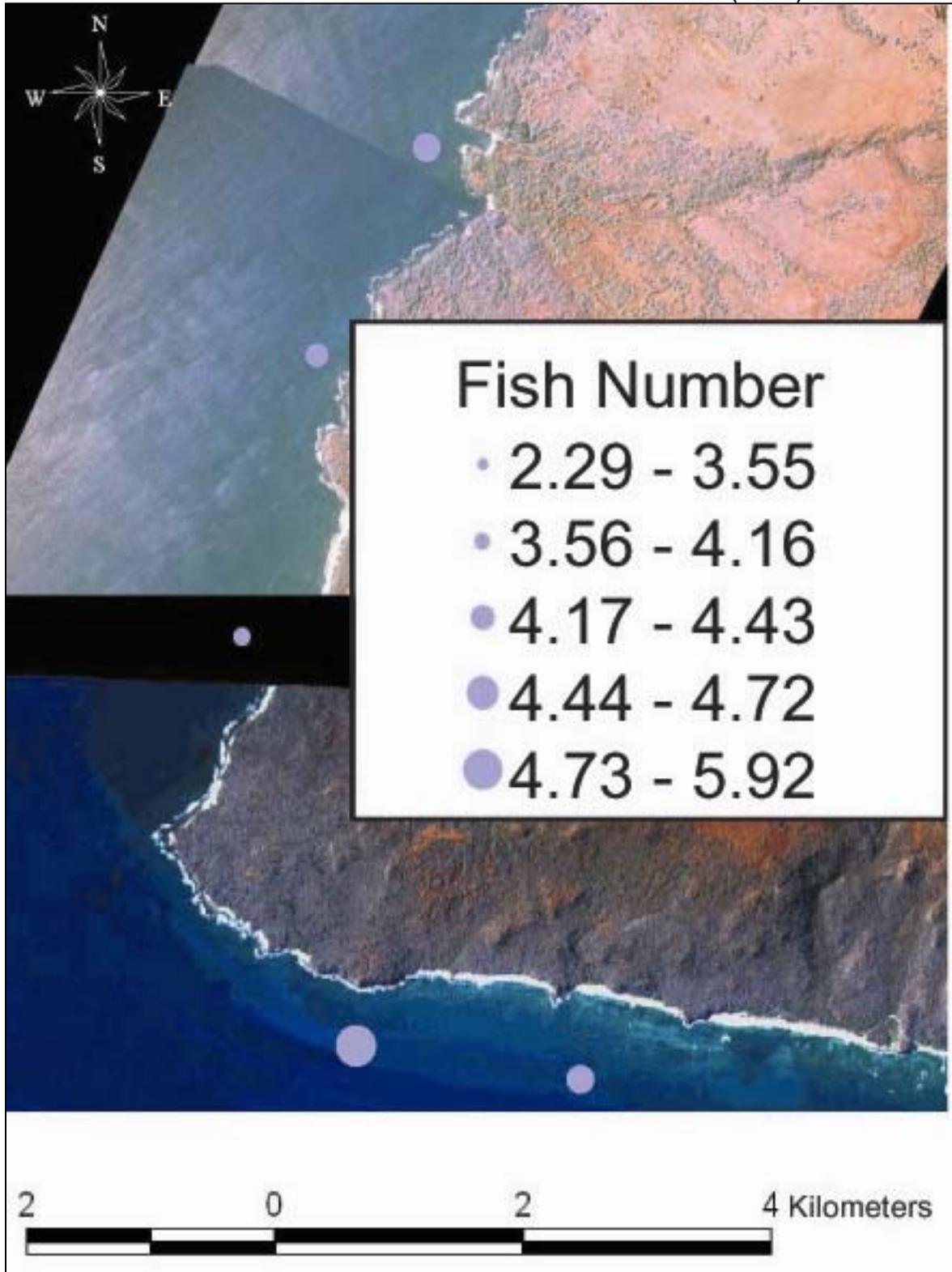


Figure 7: Fish biomass (t ha⁻¹) at the six survey sites around La'au Point.
Values = mean of three transects at each site. Values are number of individuals ($\div 1000$) ha⁻¹.

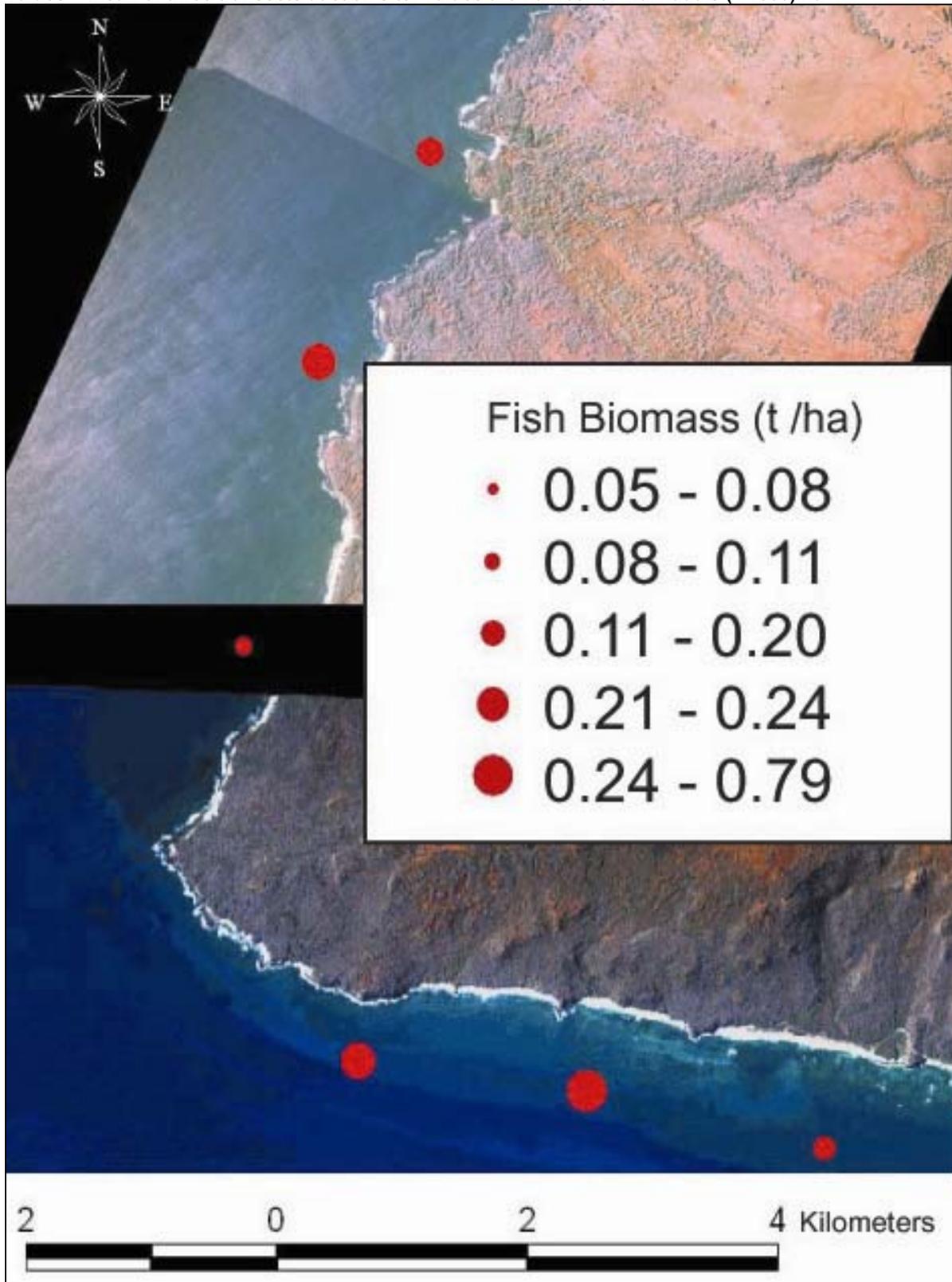


Figure 8: Mean fish diversity at the six survey sites around La'au Point.
Values = mean of three transects at each site.

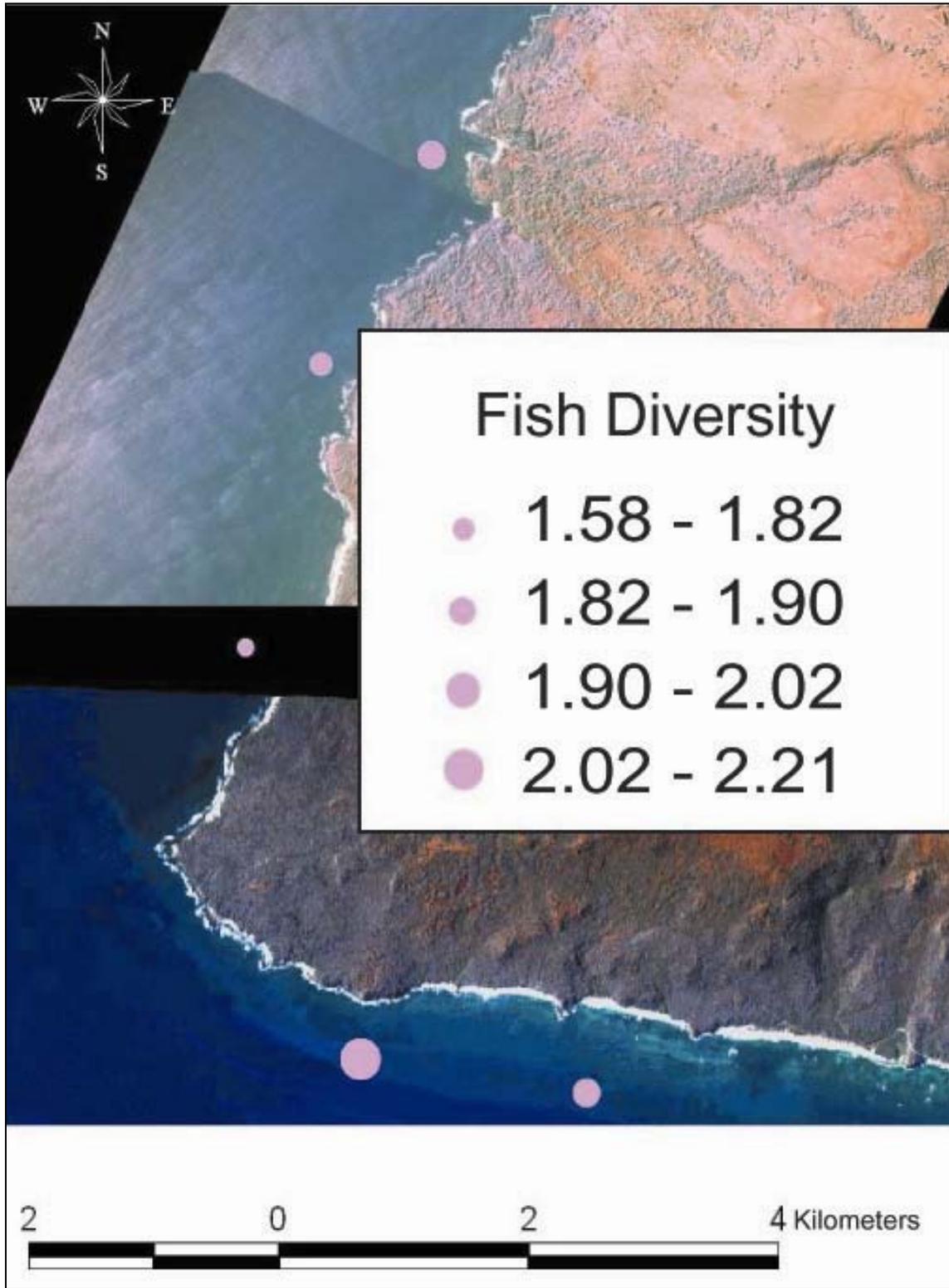
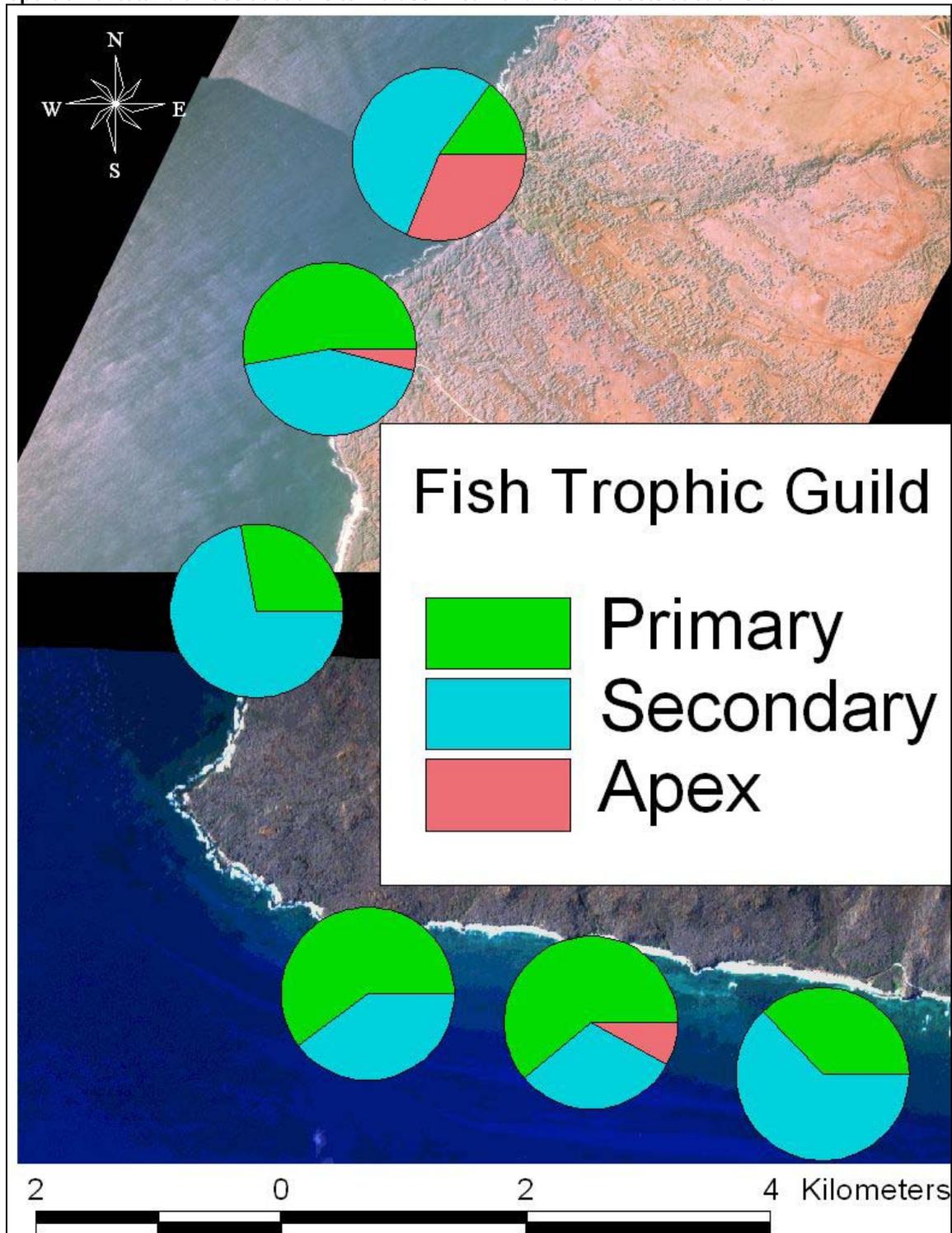


Figure 9: Fish trophic guilds at the six survey sites around La'au Point.
Proportion of total biomass at each site. Values=mean of three transects at each site.



1.3.4 Comparisons with Other Locations Around Hawaii

Benthic habitat characteristics described a typical wave-exposed, low-relief reef with generally low coral cover.

Table 8: Benthic components

Site	Coral cover (%)	Macroalgae cover	Source
La'au Point	6.30 (8.21 sd)	9.63 (9.20 sd)	This study
60 sites statewide	25.07% (21.8 sd)		Jokiel et al. 2004
30 sites in wave exposed habitats	20.67% (16.4 sd)		Jokiel et al. 2004

Fish assemblage characteristics at La'au Point were generally lower than average values reported from large-scale studies statewide (Table 8). Biomass was more than four times lower at La'au compared to no-take Marine Life Conservation Districts (MLCDs) and 42% lower than open access areas across multiple habitat types statewide. Diversity and evenness were the only assemblage metrics that showed similar or greater values at La'au.

Anecdotal information from fishermen (including our dive charter boat captain) report that the westernmost tip of La'au Point harbors lobster populations and serves as productive fishing ground for ulua (giant trevally; *Caranx ignobilis*). However, strong currents and swell conditions during this baseline survey period precluded our diving in this area.

Table 9: Comparison of fish assemblage characteristics between La'au Point and recent large-scale surveys conducted around the main Hawaiian Islands. Means with standard deviations in parentheses.

Site	Species	Number ha ⁻¹ (÷ 1000)	Biomass (t ha ⁻¹)	Diversity	Evenness	Source
La'au Point	12.61 (3.52)	4.18 (1.74)	0.24 (0.17)	1.90 (0.33)	0.76 (0.09)	This study
All MLCDs	19.10 (7.44)	9.70 (6.42)	0.87 (0.91)	2.11 (0.50)	0.75 (0.12)	Statewide MLCDs Friedlander et al. 2006
Open areas adjacent to all MLCDs	13.84 (7.94)	7.22 (6.53)	0.34 (0.38)	1.77 (0.68)	0.72 (0.22)	Statewide MLCDs Friedlander et al. 2006
No-take MLCDs	24.98 (4.65)	11.70 (4.81)	1.27 (0.42)	2.52 (0.25)		Friedlander et al. 2003
Open areas	17.60 (4.65)	8.98 (4.68)	0.57 (0.10)	2.15 (0.25)		Friedlander et al. 2003
Wave exposed open areas	17.75 (5.65)	10.73 (5.74)	0.	2.15 (0.35)		Friedlander et al. 2003
Note:						
Friedlander et al. 2003 = 56 sampling locations (239 transects) on Kauai, O'ahu, Maui, Moloka'i, Lanai, Kahoolawe, and Hawai'i.						
Friedlander et al. 2006 = 973 transects along the coasts of O'ahu, Maui, Lanai, and Hawai'i						

1.3.5 Summary

Six representative sites offshore of the vicinity of the proposed residential community at La'au Point, southwest Moloka'i, were characterized to serve as a baseline for comparison with future surveys.

At the time of these surveys (November, 2005), fish diversity and biomass, and coral diversity and cover, were fairly low at the selected sites, reflecting a generally typical, low-relief, wave-structured, shallow water habitat. These sites are exposed to high wave energy, moderate sand movement/scour, and fairly low fishing pressure relative to other nearshore areas in the main Hawaiian Islands.

2. Water Quality Baseline

2.1 Methods

Baseline water quality measurements were made on November 19 and 20, 2005 in conjunction with the marine biological surveys at six stations around La'au Point, three south of the point and three west of the point. *In situ* measurements were made at five-foot intervals through the water column with a YSI Model 85 water quality meter. Parameters measured included temperature, salinity, dissolved oxygen concentration, percent oxygen saturation, conductivity, and specific conductance. Conductivity and specific conductance were used to post-calibrate the conductivity sensor against a YSI secondary standard solution of 50,000 microsiemens/cm $\pm 1\%$ at 25°C. Salinity values were corrected as necessary, based on the conductivity calibration.

At each station, discrete water samples were collected on replicate casts with a horizontal Van Dorn bottle from a depth of approximately 15 feet. The collection depth varied somewhat between stations because variable water currents caused some differences in the line angle at different stations. The lack of vertical stratification in water quality parameters through the water column, however, rendered inconsequential any resulting minor differences in sampling depth. Water samples were stored on ice until delivery to Hawaii Food and Water Testing for analysis of turbidity, pH and total suspended solids concentrations.

2.2 Results

The water column at every station was clear; the bottom was visible at our anchorages in 25-35 feet of water. Winds were light and from the south to southwest on both days, with the second day being somewhat calmer. Swells were generally small and the tide was ebbing throughout sampling. Water quality results are shown in Table 10.

No significant stratification of the water column was seen in the temperature or salinity data. Water temperature varied over a narrow range from 25.7 °C to 26.4 °C over all stations and depths, with surface temperatures rising slightly over the sampling period. The applicable State standard is that "temperature shall not vary more than one degree Celsius from ambient conditions." This standard is really intended to limit the thermal impacts of discharges; the natural ambient temperature, whatever that may be, is the standard, so by definition natural baseline conditions cannot be in violation of the standard.

Salinity varied even less, generally being in the 34.4 ppt to 35.0 ppt range. With the single exception of Station 1 at the surface, all sampling points were within the very narrow range 34.8 ppt to 35.0 ppt. The applicable State standard is that "salinity shall not vary more than ten percent from natural or seasonal changes considering hydrologic input and oceanographic factors. Like the temperature standard, the salinity standard is defined in terms of natural ambient conditions, and baseline conditions cannot be in violation of the standard, by definition.

Dissolved oxygen (DO) concentrations were generally slightly higher at the surface, but sometimes showed a near-bottom maxima, presumably due to algal production. DO concentrations averaged around 90% saturated. The applicable State standard for dissolved oxygen is "not less than seventy-five per cent saturation," and was not violated at any sampling location.

Total suspended solids concentrations were low, varying between 1.0 and 1.5 mg/l. Turbidity values varied over a narrow range, 0.33-0.39 NTU. The geometric mean of all samples is 0.36 NTU. These values are low, but they would exceed the State standard for "dry" open coastal waters – which is that the geometric mean is not to exceed 0.20 NTU.

pH values ranged from 8.1-8.2. The limit of detection of the instrument used is ± 0.1 unit, so these values are essentially constant. The applicable State water quality standard is that "pH units shall not deviate more than 0.5 units from a value of 8.1, except at coastal locations where and when freshwater from stream, storm drain or groundwater discharge may depress the pH to a minimum level of 7.0." Values were thus within the State standard.

Table 10: Baseline Water Quality Data, La'au Point, Moloka'i

Station No.	Date	Start Time	Depth (ft)	Temperature (°C)	Salinity (ppt)	Dissolved Oxygen (mg/l)	Dissolved Oxygen (% Saturation)	Total Suspended Solids (mg/l)	Turbidity (NTU)	pH
1	11/20/05	1020	0	25.8	34.4	5.91	89.2			
			5	25.8	34.8	5.82	86.5			
			10	25.7	34.9	5.81	86.0			
			15	25.7	34.9	5.89	88.1	1.3	0.39	8.2
			20	25.7	35.0	5.92	87.7			
2	11/20/05	1145	0	25.8	34.9	5.85	89.5			
			5	25.8	34.9	5.90	88.6			
			10	25.7	35.0	5.94	88.6			
			15	25.7	35.0	5.98	88.7	1.0	0.35	8.2
			20	25.7	35.0	6.08	88.3			
3	11/20/05	1330	0	26.0	34.7	6.65	97.7			
			5	25.9	35.0	6.09	90.6			
			10	25.9	35.0	6.21	92.5			
			15	25.9	35.0	6.22	92.4	1.0	0.33	8.2
			20	25.9	35.0	6.27	94.2			
4	11/19/05	1030	0	26.0	34.9	6.04	88.7			
			5	26.1	34.9	5.93	88.9			
			10	26.1	34.9	5.99	88.6			
			15	26.1	34.9	6.07	90.3	1.3	0.36	8.2
			20	26.1	34.9	6.09	90.4			
			25	26.1	35.0	6.01	91.3			
5	11/19/05	1250	0	26.2	35.0	6.06	92.0			
			5	26.2	35.0	5.95	88.3			
			10	26.2	35.0	5.91	87.8			
			15	26.2	35.0	5.88	87.1	1.5	0.36	8.1
			20	26.1	35.0	5.90	87.0			
6	11/19/05	1445	0	26.4	34.9	6.20	94.1			
			5	26.3	35.0	6.16	91.6			
			10	26.3	35.0	6.10	92.0			
			15	26.3	35.0	6.08	88.7	1.5	0.37	8.1
			20	26.3	35.0	6.09	91.5			

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3. Post-Storm Event Water Quality

3.1 Background

The following excerpts from the National Weather Service Forecast Office report entitled "Unprecedented Extended Wet Period Across Hawaii,"¹ summarize conditions preceding the post-storm sampling:

Normally during March, Hawaii will see several strong trade wind events and shear line passages with considerable rainfall over the windward, or north- and east-facing slopes of the islands. Instead, March 2006 brought only 5 days of low level winds from a trade direction with the remainder being from the southeast through southwest due to the persistent pattern of low pressure to our west. It was not a single low that persisted for nearly 7 weeks, but rather a series. A particular low would last for a few days and weaken and then give way to a developing new low as a shortwave would drop into the persistent upper level trough and provide additional energy to the system and create another "Kona Storm." When this occurred, strong southwest winds aloft would extend as far south as 5 degrees north latitude, tap into the deep tropical moisture and transport it over the state. This moisture, combined with the instability in the atmosphere would produce another round of thunderstorms and heavy rains. ...

March 19. A strong shortwave embedded within the upper level trough swept across the state. This system hit Oahu the hardest with strong thunderstorms dumping 3 to 5 inches of rain, mostly in a 6-hour period between 8 AM and 2 PM.

March 21-25. Several more shortwaves. This latest round of unpleasant weather featured strong dynamics and instability, very similar to those found in the Midwestern U.S. during tornado season...heavy rains did continue with flash flood warnings issued daily from March 21 through 24. On the night of March 22, an area of thunderstorms moved over Honolulu from the southwest resulting in flash flooding....Thunderstorm activity shifted eastward and impacted Molokai on the morning of March 23. These storms dropped over 2 inches of rain within a 3-hour period.... Another round of fast-moving thunderstorms swept over Honolulu and east Oahu during the evening of March 23....

Preliminary National Weather Service climatological data for station "Molokai" (21° 8'N; 157° 6'W)² show 4.52 inches of rain in the five days preceding sampling, with half of that received on the day before sampling. Prior to these events, most of the unusual March rainfall over the state occurred on Kauai and Oahu. With the shift of heavy rain eastward to Moloka'i, we quickly mobilized to conduct the post-storm sampling event. Subsequent days produced even more rainfall over Moloka'i, and coastal water quality may have deteriorated further from what is reported here.

¹ <http://www.prh.noaa.gov/hnl/pages/events/weeksrain/weeksrainsummary.php>

² http://www.nws.noaa.gov/climate/getclimate_nonjs.php?wfo=hnl

3.2 Methods

Water quality measurements were made on March 24, 2006 at the same six stations around La'au Point that were sampled earlier. Once again, *in situ* measurements were made at five-foot intervals through the water column with a YSI Model 85 water quality meter. Parameters measured included temperature, salinity, dissolved oxygen concentration, percent oxygen saturation, conductivity, and specific conductance. Conductivity and specific conductance were used to post-calibrate the conductivity sensor against a YSI secondary standard solution of 50,000 microsiemens/cm $\pm 1\%$ at 25°C. Salinity values were corrected as necessary, based on the conductivity calibration.

At each station, discrete water samples were collected on replicate casts with a horizontal Van Dorn bottle from depths of approximately 5 and 15 feet. The collection depth varied somewhat between stations because variable water currents caused some differences in the line angle at different stations. The somewhat surprising lack of vertical stratification in water quality parameters through the water column, however, rendered inconsequential any resulting minor differences in sampling depth. Water samples were stored on ice until delivery to Hawaii Food and Water Testing for analysis of turbidity, pH and total suspended solids concentrations. Nutrient samples (phosphate, total phosphorus, nitrate plus nitrite nitrogen, ammonia nitrogen and total nitrogen) were processed by Marine Analytical Specialists.

3.3 Results

Winds were light and from the southeast. Swells were generally small and the tide was rising to a very low high (~0.5 feet) at about 1 PM. Along the west coast of Moloka'i, north of La'au Point, fingers of "red water" extended away from gulch mouths and were interspersed with areas of visibly cleaner water. Nearer to shore the red water was nearly continuous. East of La'au Point, a fairly narrow (on the order of 100 yards wide) plume of red water was being held against the shore and pushed westward by the southeast winds. The plume was deflected offshore by the Hale o Lono Harbor breakwater, creating a fairly clean area in the wake of the breakwater west of the harbor. Once past the harbor, the plume returned to the shoreline. At Station 5, however, there were two bands of red water, one at the shoreline and one about 200 yards offshore, separated by a band of visibly cleaner water. This general pattern of red water distribution was confirmed from the air on the flight back to Honolulu.

Water quality results are shown in Table 11. Despite the influx of runoff through the various gulches along the study area, only a very slight indication of stratification of the water column was seen in the temperature and salinity data, and this was mostly at Station 1. Water temperature varied over a narrow range from 24.4 °C to 25.2 °C over all stations and depths, with surface temperatures rising slightly over the sampling period. As explained in the previous section, the State standard for temperature is "ambient," so by definition, there were no violations.

Salinity throughout the study area varied from 34.1 ppt to 35.0 ppt, with the lowest value again being recorded at the surface at Station 1. The maximum salinity dilution seen at the surface (Station 1) was about 1.5% of the value at depth. The applicable State standard is that "salinity shall not vary more than ten percent from natural or seasonal changes considering hydrologic input and oceanographic factors. Like the temperature standard, the salinity standard is defined in terms of natural ambient conditions, and there were no violations.

Dissolved oxygen (DO) concentrations were generally slightly higher at the surface, but sometimes showed an increase near the bottom, presumably due to algal production. This was especially true at Station 5, where slight super-saturation was observed at depth. DO concentrations ranged from about 91% to about 101% saturated. The applicable State standard for dissolved oxygen is "not less than seventy-five per cent saturation," and was not violated at any sampling location.

Total suspended solids concentrations were on the order of twenty times greater in the post-storm samples than in the baseline samples. Mean values of two samples per depth ranged from 19.4-30.2 mg/l. The highest values were recorded at Station 1, but there were no consistent trends with depth or station location.

Turbidity values varied from 0.43 to 1.27 NTU at Stations 2-6, but were more than an order of magnitude greater at Station 1 (29.9-30.2 NTU). The geometric mean (which decreases the influence of extreme values compared with an arithmetic mean) of all samples is 1.19 NTU. These values would exceed all nominal State criteria for "dry" open coastal waters, however, the criteria are presented in terms of the percentage of time the criterion is exceeded. For example, turbidity is not to exceed a value of 1.00 NTU more than two per cent of the time.

pH values ranged from 8.1 to 8.3, well within the applicable State water quality standard.

Concentrations of nutrients at the six stations for shallow (5 feet) and deep (15 feet) casts are shown in Table 12, along with the applicable water quality criteria. The water quality criteria are based on geometric mean values, and three values are given for each criterion: not to be exceeded by the geometric mean, not to be exceeded more than ten per cent of the time, and not to be exceeded more than two percent of the time. Geometric means were calculated by station and depth, and by parameter using all stations and depths. There is no standard for phosphate-phosphorus in open coastal waters; this parameter is included for reference only.

Values for total phosphorus were fairly constant over the study area, ranging from a low of 10.85 µg/l to a high of 12.09 µg/l. There were no apparent trends with depth or station location. These values are within the range expected for open coastal waters in Hawaii. Geometric means by station varied from 11.31 µg/l at Station 6 to 12.09 µg/l at Station 4. The geometric mean for all stations and depths combined was 11.75 µg/l. None of these geometric mean values exceeded the total phosphorus criterion of 16.00 µg/l.

Values for nitrate plus nitrite nitrogen were relatively more variable than those for phosphate and there was a consistent pattern of higher values in the shallow sample than the deep sample at every station. The geometric mean value by station was highest at Station 6 and lowest at Station 4, with no consistent trend through the study area. Geometric means exceeded the criterion of 3.50 µg/l at all stations except 4 and 5. The overall combined geometric mean of 3.58 slightly exceeded the criterion. Typical baseline values in open coastal waters around Hawaii are in the range 1.2-1.7 µg/l.

Ammonia values were relative high. There was no consistent trend with depth, but there was a geographic trend. The highest geometric mean value was seen at Station 4, and values decreased with distance from this station. The overall geometric mean value of 4.28 µg/l was more than double the criterion of 2.00 µg/l. By station, only Station 6 had a geometric

mean below the criterion. That resulted from a very low value in the shallow sample. Typical baseline values in open coastal waters around Hawaii are in the range 1.8-2.1 µg/l.

Total nitrogen concentrations at every station showed the same trend with depth as did the nitrate plus nitrite values, lower concentrations in the deep samples, but no geographic trend was apparent. Geometric means by station and the combined geometric mean all exceeded the criterion of 110.00 µg/l, with the single exception of that at Station 5, which was just 0.12 µg/l below the criterion. However, the absolute concentrations of total nitrogen were not atypical of those found in open coastal waters around Hawaii, which are generally in the range 120-125 µg/l.

In summary, the waters around La'au Point after a period of heavy rainfall showed relatively high concentrations of nitrate plus nitrite nitrogen and ammonia nitrogen. Concentrations of total phosphorus and total nitrogen, however, were not atypically high, although the latter did exceed the applicable state water quality criterion.

The following conclusions may be drawn with respect to the potential water quality impacts of the La'au Point development. The marine waters surrounding La'au Point experience episodic "red water" events following periods of heavy rainfall. Turbidity, suspended solids and nutrient concentrations may be significantly elevated during these events. Sediment delivery to coastal waters is exacerbated by soil loosened by natural causes, including the effects of deer and livestock transiting and foraging in upland areas. The return to baseline conditions after a storm event is aided by turbulent mixing from waves and advection by currents along this exposed coast. The coastal marine communities are adapted to this periodic influx of runoff as well as to occasional high surf and the resulting scour from moving sand and rocks. Coral cover in particular is low and the low relief of the substratum provides limited fish habitat.

It is likely that sediment discharge from runoff to the ocean will be significantly less with the La'au Point development compared with existing conditions. This is because the Master Plan for the La'au Point Residential Community contains several elements that will protect nearshore waters from increased degradation of water quality. These include drainage control systems, CC&Rs to regulate the use of fertilizers and pesticides, re-vegetation as a means of permanent erosion control measures throughout the developed areas, and livestock fencing to keep deer and livestock from disturbing the soil near the community. Therefore, it is likely that the long-term water quality in adjacent coastal waters will be improved by these measures.

Potential short-term impacts of construction on marine waters can be mitigated by implementation of best management practices to control drainage and mitigate erosion from grading.

Table 11: Post-Storm Water Quality Data, La'au Point, Moloka'i

Station No.	Date	Start Time	Depth (ft)	Temperature (°C)	Salinity (ppt)	Dissolved Oxygen (mg/l)	Dissolved Oxygen (% Saturation)	Total Suspended Solids (mg/l)	Turbidity (NTU)	pH
1	3/24/06	0925	0	24.6	34.1	6.44	94.9			
			5	24.5	34.3	6.34	91.3	29.9	16.4	8.2
			10	24.5	34.4	6.35	92.2			
			15	24.4	34.5	6.35	92.1	30.2	15.3	8.2
			20	24.5	34.6	6.27	90.7			
2	3/24/06	1015	0	24.5	34.7	6.85	99.4			
			5	24.5	34.9	6.72	97.5	22.5	1.27	8.3
			10	24.5	34.9	6.65	95.5			
			15	24.5	34.9	6.62	95.1	21.7	1.17	8.3
			20	24.5	34.8	6.63	95.5			
3	3/24/06	1048	0	24.7	35.0	6.68	97.2			
			5	24.7	35.0	6.50	94.1	22.2	1.09	8.3
			10	24.6	35.0	6.75	98.6			
			15	24.5	35.0	6.82	98.8	19.4	0.55	8.3
4	3/24/06	1135	0	25.0	34.8	6.96	100.3			
			5	24.8	34.8	6.87	99.8	19.5	0.43	8.3
			10	24.8	34.8	6.85	99.5			
			15	24.8	34.8	6.84	99.3	19.5	0.48	8.3
			20	24.8	34.8	6.86	99.3			
5	3/24/06	1210	0	25.2	34.5	6.88	99.5			
			5	25.1	34.6	6.79	98.4	20.7	0.73	8.3
			10	24.9	34.6	6.92	101.3			
			15	24.9	34.6	6.87	100.8	26.9	0.58	8.3
			20	24.9	34.8	6.92	100.9			
6	3/24/06	1245	0	25.1	34.5	6.75	99.2			
			5	25.1	34.5	6.65	97.2	21.4	0.58	8.3
			10	25.1	34.5	6.68	97.6			
			15	25.1	34.7	6.72	98.9	20.9	0.68	8.3
			20	24.7	34.9	6.76	99.2			

Table 12: Post-Storm Nutrient Concentrations, La'au Point, Moloka'i

Station No.	Phosphate (µg/L)	Total Phosphorus (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Ammonia Nitrogen (µg/L)	Total Nitrogen (µg/L)
1S	2.48	11.78	5.04	3.78	124.46
1D	2.17	12.09	3.92	4.48	120.26
Geometric Mean		11.93	4.44	4.12	122.34
2S	2.48	11.78	4.90	5.18	132.44
2D	2.48	11.47	4.34	4.06	121.80
Geometric Mean		11.62	4.61	4.59	127.01
3S	2.48	12.09	4.76	5.88	143.64
3D	1.86	11.47	2.94	3.64	123.48
Geometric Mean		11.78	3.74	4.63	133.18
4S	2.17	12.09	2.52	5.60	126.56
4D	2.17	12.09	1.40	7.00	121.38
Geometric Mean		12.09	1.88	6.26	123.94
5S	2.79	11.47	4.48	5.74	115.92
5D	2.48	12.09	2.10	6.44	104.16
Geometric Mean		11.62	3.07	6.08	109.88
6S	3.10	11.78	5.04	0.84	123.06
6D	2.48	10.85	4.48	4.06	108.08
Geometric Mean		11.31	4.75	1.85	115.33
Combined Geo Mean		11.75	3.58	4.28	121.71
Criteria		16.00	3.50	2.00	110.00

Shaded values exceed State water quality criteria.

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Appendix L
Archaeological Plans



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

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CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
DIVISION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

August 24, 1994

Boyd Dixon, Ph.D., Project Director
Department of Anthropology
Bishop Museum
1525 Bernice Street, P.O. Box 19000-A
Honolulu, Hawai'i 96817-0916

LOG NO: 8480
DOC NO: 9407SC13

Dear Dr. Dixon:

SUBJECT: Historic Preservation Review of an Archaeological
Inventory Survey of Southwest Moloka'i, Hawai'i

Thank you for the submission of the revised draft of *Kapukahehu to Pu'uhakina: An Archaeological Inventory Survey of Southwest Moloka'i, Hawai'i*, by Boyd Dixon and Maurice Major. Our review is very late and we apologize.

We believe that the inventory survey conducted at Southwest Moloka'i was adequate, and has located all historic sites, which number 168. The report provides a useful and thorough compendium of site descriptions and preliminary comparative data from the subsurface testing; we note that approximately 19% of the temporary and permanent habitation sites -- an adequate sample size -- were test-excavated. While most of the significance evaluations seem acceptable, we do disagree with several evaluations; suggested changes are given in Attachment 1. We also have some minor concerns with some of the mitigation proposals; see Attachment 1. These significance evaluations and mitigation proposals need revision.

Also, before we can consider this report to be final, there are several other points we would like to have addressed; Attachment I itemizes these concerns. Principally, we would like for the Museum -- in consultation with our staff -- to assign State Site Numbers to those sites which do not already have such designations; we believe that an additional appendix containing these numbers can be prepared and added to the current document.

Mr. Boyd Dixon
Page 2

If you disagree with any of these points, we can schedule a consultation meeting. Please feel free to call Sara Collins at 587-0013 if you have any questions.

Sincerely,

Don Hibbard

for DON HIBBARD, Administrator
State Historic Preservation Division

SC:jen

ATTACHMENT I
RECOMMENDED REVISIONS
ARCHAEOLOGICAL INVENTORY SURVEY - SOUTHWEST MOLOKA'I

GENERAL REMARKS

SPECIFIC COMMENTS

METHODS

Substantive Discrepancies

Page 26, Testing/Laboratory Procedures: Did the survey or testing procedures include surface-collection of materials, particularly lithics? Appendices A - C contain midden and artifactual data from more sites than are listed in Table 5 (List of Tested Sites). This should be clarified.

Other Comments

Page 25, Paragraph 4: Delete the reference to Appendix D since the site maps have been incorporated into the section on site descriptions.

DESCRIPTIONS

Substantive Discrepancies

Page i, Abstract: In paragraph 1, you state that a total of 168 sites were found during the survey, including 34 previously recorded sites. Table 5 (Site Significance Evaluations) lists 200 sites, however; does the number 168 refer only to pre-modern archaeological sites (i.e., exclusive of military, hunting, or ranch sites)? The abstract should be modified so as to clarify this point.

Page 17, Table 2: All of the State Site Nos. listed here are part of the SW Moloka'i Archaeological District, which has been designated 50-60-01-803; -803 went on the Hawaii Register 11/12/85, and the National Register 10/15/86. In addition, some of the information listed in Table 2 differs from what is provided in the register nomination papers. Table 2 would be more useful and informative if it incorporated previous work and correlated it to current State Site data; Table 1 in Weisler (1984) is a good place to start with reference to correlating previous numbers (Phelps, Summers, BPBM) with the State numbers.

Page 190, Paragraph 5: There is still no plan view for site MO-B6-63.

Meaning Unclear

Page 323, Paragraph 2: "pre-Contactly" is not a word; just use "pre-Contact."

Page 330, Paragraph 4: Sentences 2 and 3 need to be combined into one sentence, with a comma placed after 1940s.

Figures

Page 16, Figure 1: We have previously recommended that the project location should also be shown on the USGS quad map; this figure still needs to be added.

Page 23, Figure 3: Figure 3 still appears to be missing sites listed in our letter of 21 May 1992 (Item 4). These are not sites listed in Table 4 as "destroyed" or "not located," and include B5-60, 83, 91, 98, 121 & 134, and B6-86, 91, 111, 139 & 191. Also,

ATTACHMENT I
RECOMMENDED REVISIONS
ARCHAEOLOGICAL INVENTORY SURVEY OF SOUTHWEST MOLOKA'I

DESCRIPTIONS

Figures

Site B6-95 is shown on Figure 3 but is not listed in Table 4.

Page 196, Figure 67: Figure 67 seems to be the only sketch of this large habitation complex; can another, more detailed map (like Figure 68 for the North Kamaka'ipo complex) be added?

SIGNIFICANCE ASSESSMENTS

Substantive Comments

Pages 351 - 8, Table 8: In general, all burials and possible burials are significant under both criteria "D" and "E." While only the possible burial sites would presumably be subjected to test excavations to confirm their status, burial sites -- by definition -- ". . ." are likely to yield information important to further understanding of traditional culture, history, or cultural value to an ethnic group of Hawai'i." Therefore, all burial and possible burial sites listed in Table 8 should have the significance evaluations of "D" and "E."

Page 351, Table 8: The recommendation for site B6-77 should include "Y" since there is a possible burial present.

Page 352, Table 8: We do not see why, given the available evidence, site B6-118 has been deemed significant for criteria "B" and "D." Probably, just criterion "D" is applicable here.

Page 353, Table 8: To be consistent, should not site B6-153, a possible burial, be evaluated as significant under criteria "D" and "E?"

Page 354, Table 8: Since site B6-162 has two components -- a modern military structure and a lithic scatter -- the significance assessments and recommendations should be, respectively, "NS,D" and "N,R." Site B6-178, which includes a possible burial, needs to have the additional recommendation of "Y."

Page 356, Table 8: The recommendations for site B5-79 should include "R" and "Y" since the stone piles associated with it may be possible burials. The recommendation for site B5-80 should include "R" on account of the midden scatter component present the site which is significant under criterion "D." Sites B5-81 and B5-86 are both said to be historic yet there is no evidence for this assertion. Both sites are likely to contain information on the prehistory and/or history of Kaluakoi, so the recommended treatment should be "R." Site B5-88, the piko stone, is significant under criteria "A, C, D & E."

Page 358, Table 8: Site B5-133 has no recommendation; presumably, it would be "R,Y,P."

OTHER COMMENTS

Miscellaneous

Pages 201 - 208: These pages have been bound in upside down and backwards.



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

February 13, 2007

Mr. Alan Suwa
PBR Hawaii
100 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawai'i 96813

LOG NO: 2007.0484
DOC NO: 0702NM10
Archaeology

Dear Mr. Suwa:

**SUBJECT: Chapter 6E-42 Historic Preservation Review (County/Molokai Properties Limited)
Revised Data Recovery Plan Papohaku to Hakina Ahupua'a o Kaliako'i Island o
Moloka'i (Majors, CLH, 2006)
West Moloka'i, Island of Moloka'i
TMK: (2) 5-1-002: 30; 5-1-006: 157; 5-1-008: 04, 03, 06, 07, 13, 14, 15, 21 and 25**

Thank you for submitting the revised data recovery plan which is 875 acres for a residential community comprising of mixed residential uses, cultural preserves, parks and shoreline access.

Data recovery is to take place at the following sites: 697, 698, 743, 745, 746, 749, 755, 756, 758, 760, 761, 762, 1118, 1121, 1124, 1125, 1130, 1131, 1132, 1134, 1136, 1141, and 1145. Data recovery work is to include: relocation of these sites by GPS, mapping, testing and surface collections. Sites 761, 1125 and 1136 once relocated might be outside of the subdivision boundaries. We concur that if these three sites are outside the subdivision boundaries they will be preserved and included in an amended preservation plan which would include appropriate buffers around the sites.

This plan also mentions the road corridor survey and resurvey work. We recommend that this be completed as soon as possible.

Research questions on the data recovery will address land use in the settlement margins, agricultural practices, lithic production and mauka-makai routes. We concur with this framework for the research. Ideally the data recovery work shall take place prior to construction. To ensure that these sites are protected during construction and archaeological data recovery can take place, we recommend that all sites set for data recovery shall be marked by highly visible flagging tape.

This plan is approved. If you have any questions, please call Nancy McMahon, our Molokai Archaeologist at 808 -742-7033.

Aloha,


Melanie Chinen, Administrator
State Historic Preservation Division

NM:jen

c: Anthony Ching, State Land Use Commission P.O. Box 2359, Honolulu, HI 96804
OEQC, 235 S. Beretania St. Suite 702, Honolulu, HI 96813
Peter Nicholas, Molokai Properties Limited 745 Fort Street Mall, Suite 600, Hon, HI 96813
Mo Majors, Cultural Landscapes Hawaii

**Papohaku to Hakina, Ahupua'a o Kaluako'i,
Island o Moloka'i**
(Portions of TMK 5-1-02-030, 5-1-08-4 through 15, -19, and -23)

Revised Archaeological Data Recovery Plan



Prepared for Molokai Ranch
by
Maurice Major, MA

Cultural Landscapes
9712 Overhill Road
Richmond, Virginia, 23229

www.culturallandscapes.net

May, 2006

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LĀ'AU ARCHAEOLOGICAL PLAN SUMMARY

The archaeological plans for Lā'au include four sections for cultural resource needs that will arise in relation to 196 sites within the proposed development and preserves.¹ The plans are:

Preservation – Procedures for protecting and preserving 160 cultural sites. Actions range from the immediate to the perpetual, and include site condition evaluation, stabilization, short and long-term protection, protocol education, periodic field checks, and data collection. The focus is on conservation of cultural landscapes, rather than isolated sites.

Data Recovery – Procedures and research issues for mapping and excavation of 21-24 sites within the road/infrastructure corridor and proposed subdivision lots. Since the most significant sites are being preserved, data recovery sites mostly consist of very simple agricultural modifications, lithic scatters, and more recent historical sites. All sites will undergo data recovery or, more likely, preservation, and samples within sites will be more robust than minimal SHPD requirements.

Monitoring – Procedures and responsibilities for archaeological maka 'ala of development activity. In addition to ensuring that preservation areas are not damaged, monitoring detects previously unknown cultural deposits, and halts work in an area, to evaluate finds, and if necessary consult with SHPD and interested parties to establish a preservation buffer or recover data.

Burial Treatment – Procedures for dealing with known, suspected, and inadvertently discovered burial sites (with no revisions to the accepted 2001 plan). All burials will be preserved in place, and all sites of unknown function for which burial is a possibility will be preserved. Newly found burials trigger consultation with the Moloka'i Island Burial Council.

Because the plans are interrelated, and important part of the general approach is to define the **process and sequence**. The past two years of community meetings can be considered the first phase, and with ongoing consultation helps define what happens next. The Ranch has committed to planning for the entire project area, to maintain or expand upon previous preservation commitments, and to have this revision include plans for all of the affected parcels including proposed subdivision lots, whose future owners must also abide by the plans. The process continues:

- Re-survey the road corridor to verify and augment site records, and search for new sites. Unexpectedly significant finds may cause re-routing. Also, the Papohaku Ranchlands section of the corridor will be described and reported at inventory level for SHPD review.
- Next, short-term preservation measures will be implemented, such as establishing protective buffers and emergency stabilization.
- Next, data recovery will be implemented. At the same time, implementation of long-term preservation measures will begin.
- During the course of construction, monitoring will occur.
- Final reports for each plan will be submitted for community feedback and submitted to SHPD for review as required by rules and statutes.

¹ 197 sites appear in Table I-1 because Sites 53 and 655 refer to the same site. 12 of the 196 lack integrity and significance and are not included in these plans.

The original version of this plan (*Kahaiawa to Hakina, Ahupua'a of Kaluako'i, Island of Moloka'i*, Major 2001) dealt with the former "Alpha USA" parcel (TMK 5-1-2-030). Since then, changes in the project area and the size and location of proposed subdivision lots have necessitated some revisions. More fundamentally, the Ranch's decision to engage the community in master planning has resulted in a scaled-back development with a more conservation-oriented approach, and the proposed land trust, resource management staff, and cultural protection zones have required that the preservation and data recovery plans be augmented and revised. For the most part, the archaeological plans closely resemble the 2001 version, which was accepted by SHPD. Changes in the revised version include:

- Re-assignment of several Data Recovery sites to Preservation.
- Shift from defining buffers around individual or clustered sites to instead establishing a confined development corridor.
- Increased emphasis on active cultural resource management, anticipating as a neighbor a community land trust employing a cultural resource staff person.

Recommendation to collect some data from preservation sites to provide a better baseline for monitoring and help expand our understanding of the chronology and nature of settlement in the area, and specifically to guide environmental restoration.

INTRODUCTION

Background

The cultural resource management plans contained in this volume represent the culmination of a process that has evolved over several years as the landowner's plans have altered, as the scope of planning has grown to encompass most of western Moloka'i, and as the community has become more deeply involved in the process. Despite this recent history of change, many elements of the plans remain as they were in 2001: preservation continues to be the most common treatment for archaeological sites, a process of verification and augmentation of existing inventory survey data precedes development activity, and procedures for preservation, data recovery, monitoring, and burial treatment remain much as they were in the original plans. And while the landowner and the community have engaged in far-reaching discussions about land use and resource management across a large portion of the island, this document focuses only on the southwest corner of the island in a portion of the *ahupua'a* of Kaluako'i.

A brief history of cultural resource management in this area clarifies some of the changes that have happened with regard to this set of plans (archaeological findings of previous studies appear in the following **History and Archaeology** section). Although information about sites had been reported sporadically during the 20th Century, and Catherine Summers (1971) had compiled this information along with her own field observations and research, explicit focus on sites as "cultural resources" to be preserved and otherwise managed did not occur until the 1980s, when Marshall Weisler (1984) undertook the systematic survey, recording, and evaluation of sites in portions of Kaluako'i. This work led to the establishment of the Southwest Moloka'i Archaeological District (Site 50-60-01-803, also referred to as the "SMAD"), a series of well-defined areas that were listed on the State and National Registers of Historic Places, and therefore afforded some protection against future development and alteration.

Several years later (in 1991), after the Japanese real estate company Alpha USA had purchased a 6,350-acre section of southwest Kaluako'i intending extensive development there, Bishop Museum performed archaeological survey of the parcel, producing an inventory extending in scope beyond the major sites recorded by Weisler, as well as significance evaluations and treatment recommendations for each site (Dixon and Major 1993). The majority of the nearly 600 recorded sites deserved further investigation or data recovery in the case of development plans that would have caused damage, a small number (due to more recent origin or very poor site integrity) were considered not significant, and 46 sites were recommended for permanent preservation. The inventory, evaluations, and recommendations were reviewed and accepted by the State Historic Preservation Division (SHPD) at that time.

A decade after the Bishop Museum survey, Alpha USA had sold the property and Cultural Landscapes was retained by the new owner to create a set of management plans for the property, including a Preservation Plan, a Data Recovery Plan, a Monitoring Plan, and a Burial Treatment Plan (Major 2001). These plans provided detailed procedures and site treatments for sites covered by the 1993 inventory report, and were intended to minimize and mitigate any impacts that a smaller subdivision would have on sites. Although the 1993 report recommendations served as the starting point, the new plans emphasized avoiding rather than mitigating impacts, and so the number of sites slated for preservation grew from 46

to 138, including all of the sites outside the proposed subdivision as well as those between the new lots and the ocean, a large preserve encompassing a settlement system from the shore to an inland quarry, and sites within the proposed subdivision amounting to an estimated 10 – 15% of the area within subdivision parcels.

Shortly after SHPD had reviewed and accepted the 2001 plan, the landowner decided to change the subdivision plan by altering the proposed access road alignment, in response to which Cultural Landscapes produced an addendum to the plans (Major 2002). Rather than having the road meet up with the existing road from Maunaloa town to Hale o Lono Harbor on the eastern edge of the parcel, there would be a single entry to the subdivision from the north, from an old subdivision known as Papohaku Ranchlands. (Of that subdivision, the affected lots would be TMK 5-1-08-4, -5, and -14). At that time, an archaeological reconnaissance had been carried out in the Papohaku subdivision for the Army, since the area had been a target range during and after WW II. Although this project produced some good maps and site descriptions (Burtchard and Athens 2000), its authors believed it would not meet inventory standards, and the client had not released the report or submitted it for SHPD review at the time of the Lā'au addendum. On the basis of a draft report recording 27 sites, five of which were in or near the proposed Lā'au subdivision access road, the 2002 addendum proposed inventory survey within 30 m of either side of the propose road centerline. These sites included one with habitation and agricultural features (Site 50-60-01-520), one habitation (Site 1784), one agricultural site (Site 1758), an isolated lithic artifact (Site 1760), and a possible burial (Site 1761); all except for 1760 had been deemed significant for their information content and recommended for inventory survey by Burtchard and Athens (2000). The 2002 addendum to the Lā'au plans suggested that all of these sites could be preserved in place, and recommended that fieldwork be done that would bring the records up to inventory standards, but also begin implementation of site preservation measures such as establishing protective buffers, avoidance, and stabilization (Major 2002). This plan has been integrated into the current revision.

The most recent period of cultural resource management has witnessed a new willingness on the part of the landowner to engage in master planning for all of their holdings and a greatly increased role for the community. In the past two years, a series of meetings with both the general public and of smaller committees composed of Molokai Ranch staff, representatives of various Hawaiian organizations, and interested members of the public have worked on plans to conserve and manage not just cultural resources, but biological and other natural resources as well. The Cultural Committee called on Cultural Landscapes to provide information regarding sites on Ranch lands, archaeological and regulatory concerns regarding cultural resources, and planning for a much-expanded preservation program. Besides further reducing the scope and potential impacts of development, this process sought to increase preservation as a cultural resource management goal by establishing a community land trust tasked with preserving natural and cultural resources within lands deeded to it, by creating conservation easements and cultural overlay districts on privately held land, and by writing codes, covenants, and restrictions for the proposed subdivision that would help preserve sites therein and establish procedures for a management partnership between the new population of subdivision dwellers and Hawaiians who have been on Moloka'i for generations.

The proposed changes in land use, a reduced footprint for the subdivision, and the new approach toward managing cultural resources necessitated this revision of the 2001 plans and the 2002 addendum. Many elements of the existing plans remain the same, and this set of plans simply adjusts the plans to fit the current situation. So while most of the procedures for archaeological measures remain the same, reconfigured boundaries make the status of some sites different; for example, the most recent subdivision plan, being smaller than before, changes the status of some sites from data recovery to preservation, and others from the more protection-oriented preservation of sites within subdivision lots to the avoidance-oriented preservation measures associated with sites outside of development areas. Responsibilities for implementation of some preservation measures have changed with the advent of greater community participation and the proposed establishment of a land trust employing a cultural resource staff person.

Given the more robust management program envisioned by the landowner and community, some measures have been added or augmented, such as: re-survey of development areas, use of GPS to increase site location accuracy, and an increased effort to identify and mark ancient trails. In response to community concerns, the landowner has committed to additional archaeological fieldwork in advance of the road corridor construction, leading to a reorganization of the work-flow envisioned in the 2001 plans. Namely, re-survey of the road corridor will be completed prior to fieldwork done strictly in relation to preservation and data recovery plans. Because the 1993 report (Dixon and Major, for TMK 5-1-02-030) completed the inventory, evaluation, and treatment recommendations for the subdivision parcel, and were approved by SHPD, road corridor fieldwork may be best considered as a “supplemental data collection,” a type of archaeological investigation that exceeds the regulatory requirement, but which serves the landowner’s and community’s desire that final engineering and construction be based on an enhanced understanding of the archaeological sites in the proposed development corridor. Although this does not fit within the usual SHPD review process, a report will be prepared in case of any significant sites located during the new fieldwork, or if new information leads to revised significance evaluations or treatment recommendations. If, however, a known site is encountered during the supplemental survey, but the description does not change substantially, and does not lead to a re-evaluation of significance or different treatment recommendation, then whatever new information is collected will be reported in the preservation or data recovery report that follows those phases, depending on the status of the site.

For the parcels north of the parcel being subdivided (TMK 5-1-08-4, -5, and -14), road corridor survey will in fact constitute an inventory survey, and the data collected from those areas will be prepared as a normal inventory report with site significance evaluations and treatment recommendations, all of which will be submitted to SHPD for review according to the Hawaii Administrative Rules, section 13-13-276.

Perhaps the most profound change embodied in this revision, though, is change in outlook from the traditional practice of defining a site and surrounding it with a protective buffer to defining a development area and enclosing it within what the Cultural Committee came to call a “bubble.” By reversing the approach from “Keep out of the fenced sites” to “Do not stray beyond the development corridor,” the current plans should result in two major benefits: reduction of inadvertent archaeological finds, and increased preservation of cultural landscapes rather than site “islands” in a sea of development.

Rural Landscape Reserve, which corresponds to the remainder of the 6,350-acre parcel surveyed in 1991. All of the proposed Lā'au Subdivision lots and most of the infrastructure derive from that original parcel (TMK 5-1-02-030), although development activity will affect only a limited portion—400 acres of house lots and 153 acres of roads, infrastructure and parks, or less than 10% of the original parcel area. Finally, the total acreage for the road and utility corridor leading into the Lā'au Subdivision includes several lots in the older Papohaku Ranchlands subdivision. This volume proposes treatments for each of those subdivision lots where potential effects could occur (a total of approximately 15 acres), but does not encompass the entirety of Papohaku Ranchlands.

Because they concern separate actions in the State Historic Preservation Division administrative rules (the general process being described in Hawaii Administrative Rules 13-13-275), this volume presents Preservation (detailed in HAR 13-13-277), Data Recovery (HAR 13-13-278), Monitoring (HAR 13-13-279), and Burial Treatment (HAR 13-13-300) plans as separate sections. A single Introduction and set of appendices serve all of these sections to reduce repetition and save paper.

A final note regarding figures. The original and addendum plans included numerous reproductions of site sketches and maps from the Dixon and Major 1993 and Burtchard and Athens 2000 reports. As these are now available in at least two documents, paper conservation wins out in this revised plan.

Environmental Setting

Southwest Kaluako'i lies on the flanks of Mauna Loa, the extinct shield volcano that formed the west side of Moloka'i prior to the eastern (Ko'olau) volcano. Mauna Loa, like most other Hawaiian volcanoes, formed through a series of bedded basaltic lava flows (MacDonald et. al. 1983:412). The project area includes portions of the western and southern slopes of Mauna Loa, as well as traversing the southwest rift zone, a line of greater activity where vents and flows created a ridge between the summit and Ka Lae o Lā'au (Lā'au Point, the southwest tip of Moloka'i).

Although Mauna Loa is older, the drier conditions have produced less topographic variation than on the Ko'olau side of Moloka'i, where heavier rainfall has cut spectacular valleys. The gulches of Mauna Loa are relatively shallow, interspersed with broad, relatively undissected landscapes. Many of the smaller gullies between and feeding into the larger gulches are very young, the result of drought and overgrazing that denuded surface vegetation in the 19th and 20th Centuries, leaving it vulnerable to violent erosion during occasional downpours. Other consequences of this period of erosion have been exposure of hardpan subsoils on high ground and accumulation of wind and water-borne silt in leeward low areas and gulch bottoms.

Rainfall is concentrated during the winter months, but has amounted to an average of only 15 inches per year in modern times; on the lower slopes of the southwest region, that figure is lower (Baker et. al. 1968). One aspect of the local climate not mentioned in rainfall data is the typical cloud cover, which consists of a line of clouds parallel to and directly above the island. In dry periods, it barely extends past the high Ko'olau mountains, but often extends past the west coast. During wetter periods, this line of clouds brings rainfall that seems to be concentrated over the gulches of Kamāka'ipō, Kaheu, and Kaunalā. The tradewinds that cause these clouds to pile up over the island dominate, but on the south shore there is frequently little or no wind. When tradewinds are absent, land and sea breezes are

more noticeable, and convection clouds (with occasional rain) may occur if humidity is sufficient. A traditional name for a wind of Kaluako'i is "Haleolono," which is also a place name for the land just east of the project area (Nakuina 1992:68).

Although there were reportedly a few springs in the past (Summers 1971, Kaimikaua personal communication 1999), there is no reported evidence of perennial streams that would support typical wetland taro agriculture. Another indication of the aridity of the project area is that there are no traces of traditional coastal fishponds, which generally were constructed where some fresh water input fostered plant growth. However, the wetland just behind the dunes at Site 1146 shows that at least brackish water is present at some coastal locations.

The general soil types of the project area are low humic latosols interspersed with lithosols (Foote et. al. 1972). Soil series represented in the project area are dominated by very stony eroded soil in the north and the interior, Kapuhikani along the southern shore to just south of Kamāka'ipō, and Mala silty clay in the Kamāka'ipō Gulch bottom (ibid.). Both Baker and Foote mention deep soils on the west end, but field experience shows that the project area generally has a very shallow soil cover, with rocky and hardpan areas exposed rather frequently, and substantial accumulation of sediments occurring only in the lower reaches of gulches. The 1991 excavations rarely went more than 50 cm in depth before reaching extremely hard clay.

The soil classifications interpret the project area as having very low productivity (Baker et. al. 1968, Foote et. al. 1972). This may be true for modern forms of agriculture and animal husbandry, but it is likely that higher rainfall occurred prior to upland deforestation, providing enough moisture and could cover to grow the less thirsty Polynesian crops such as 'uala (sweet potato, *Ipomoea batatas*), 'ipu (gourd, *Lagenaria siceraria*), and the thatching grass *pili* (*Heteropogon contortus*). George Cooke (1949), who managed Molokai Ranch in the first half of the 20th Century, saw Hawaiian *kō* (sugar cane, *Saccharum officinum*) growing in an old household garden at Kamāka'ipō. Terraces, planting circles, and areas cleared of stones show that Hawaiians once practiced agriculture within the gulches, and to a more limited extent, on the sloping lands. Monitoring at Kaupoa, then old ranch house on the outskirts of an ancient village at Kaheu gulch, revealed deposits of loamy soil sometimes exceeding 30 cm in depth, soil that appeared to have a relatively high organic content and held onto moisture for weeks after rainfall—attributes that would have been attractive to ancient farmers.

Currently, vegetation is dominated by *kiawe* (*Prosopis pallida*) forest, which sometimes forms dense thickets, but may also be open. *Lantana* (*Lantana camara*) forms an understory in the forested areas, and also occurs in the open areas. There are occasional grasslands, with various pasture and weedy species that have become naturalized. Chili peppers (*Capsicum frutescens*), bittermelon (*Momordica* species), and basil (*Ocimum* species) are also naturalized, representing historic household garden introductions, but possibly from elsewhere on Moloka'i, since birds readily disperse each. The native flora are much diminished, although hardier shrubs that are adapted to dry and disturbed conditions are still present; these include: 'uhaloa (*Waltheria indica*), 'ilima (*Sida fallax*), and *ma'o* (native cotton, *Gossypium sandvicense*).

Insects and other arthropods dominate fauna of southwest Kaluako'i, and it is beyond the expertise of the archaeologists to list or evaluate these. Bird life includes game species introduced by Kamehameha V, and later by the territory and

state, as well as exotic songbirds such as cardinals, mockingbirds, and mynahs. Herds of Axis deer, another of the king's introductions, wander Moloka'i's west end, and along with the other introduced ungulates (cattle, sheep, and goats—only the former of which is still present) have affected the ecology significantly. More important to the human inhabitants of old was the marine fauna, from pelagic species at the offshore Penguin Banks, to reef fish, to shellfish and echinoderms found on the coast, and even the turtles that hauled up on shore.

The character of the southwest Moloka'i shoreline merits attention, not least because this is where ancient and historical people settled. Sand beaches cover most of the coastline, although basaltic ridges do extend to the shore in a few locations, with those at Lā'au Point and along the south shore being highest. Low dunes occur as well, although sand mining depleted those at the eastern end of the project area's south coast. Sandstone and limestone underlie the sand and are visible in many locations. Slabs of this material appear in ancient and historic construction, but the more consistently important aspect of such stone is that the shoreline and shallow waters where it occurs are riddled with holes and cracks that form excellent habitat for fish, lobsters, and other food. Because canoes formed the backbone of the ancient transportation system, the presence of numerous channels through the reef and sandy beach landings would have been an attractive trait of this shoreline in ancient times. The waters of Lā'au Point, however, remain notorious to this day, as currents traveling down each coast collide in a choppy, swirling mix that makes paddling dangerous.

In the reconnaissance of the gunnery range, Burtchard noted highly eroded areas and charcoal indicative of wildfire (2000). It is no great stretch to infer that live fire practice could have ignited vegetation in this parched landscape, and an aerial photo from 1965 shows what appears to be a recent burn area in the range. The reconnaissance also noted several graded and bulldozed areas, piles of stone, and military dumps. In an analysis of Burtchard's report; Dixon and Major's 1993 report; 1955, 1964, 1965, and 1969 aerial photos; Molokai Ranch color aerial photos from the 1990s; the publication *Detailed Land Classification – Island of Molokai* (Baker et. al., 1968); and USGS quad sheets from 1924 and 1983, Cultural Landscapes has been able to estimate the minimum extent of disturbance in and around the new corridor.

Between Po'olau and Wahīlahue Gulches, only a small, unnamed gulch appears to have escaped disturbance prior to the mid-1960s. Between about 100 and 250 feet in elevation, numerous dirt roads criss-cross the landscape here. Po'olau Gulch itself appears to have escaped much direct impact, except where roads crossed it—Burtchard's discovery of intact agricultural sites in the gulch is consistent with this. (His Site 1760, a single adze preform in "an erosional scar" that may in fact be in a dirt road visible on aerial photographs.) South of Po'olau Gulch, almost everything inland of the old coastal road, north of where the south arm of Kulawai Loop meets Pohakuloa Road, and below about 250 feet in elevation has been heavily disturbed. Grading to clear the target areas, construct roads, and build observation towers and bunkers has obliterated nearly everything inside of Kulawai Loop, and as far east as the rock piles recorded as Sites 1683-1687. The single contra-indication to this situation may be Site 1788, a concentration of boulders including a slab that was interpreted as a fallen upright from a shrine (Burtchard 2000). Low, seasonably wet ground nearby (interpreted as a spring with which the shrine would have been associated) may have saved this area from grading, and is visible on air photos due to the vegetation.

South of Kulawai Loop, the situation changes markedly, and several sites were present beginning between the road and Kapukahehu Gulch. Sites have been recorded in and between Kapukahehu and Kaunalu Gulches, with a few *mauka-makai* roads being the only disturbance to the intervening ridge. The ridge south of Kaunalu Gulch, however, has been disturbed as far down as 100 feet in elevation, and the 1965 aerial photograph shows a series of lines following the contours from this elevation up to nearly 200 feet. It is uncertain what these are, although they appear to have a few intact trees, and may represent grubbing of pasture, an attempt at erosion control, or both. Kahehu Gulch and south appears to be far less disturbed, except for the road down the ridge to Kaupoa.

History and Archaeology

To achieve a more comprehensible and holistic understanding of southwest Kaluako'i's past, this document combines historical and archaeological background. This discussion summarizes what is currently known about the project area, and then offers a brief regional overview as a framework for the research plan. Site particulars appear with the detailed site mitigation plans below, to avoid redundancy and the need to flip pages constantly. A more developed discussion of overall patterns will be included in the final data recovery report.

The name of the *ahupua'a* containing all of these places, Kaluako'i, refers to the pits or quarries ("lua") from which adzes ("ko'i") were made. Kumu Hula John Kaimikaua notes that the largest quarries were inland at "Amikopala, Kahinawai, Koholalele, and Kamakahi," and that the best types of stone were named "Awalau...Awali'i, and Awauli" (Kaimikaua 1997:4). He also relates that when the Maui *ali'i* (chief) Kiha-a-Pi'ilani ruled over Moloka'i, he stationed his men in all of the coastal villages of Kaluako'i "to secure the mining rights of the valuable ko'i as an added wealth for the high chief," and that access to and security over the quarries was the reason he built his famed trail ("KealapūpūoKihaaPi'ilani, See Summers 1971:12-13) around the west end (Kaimikaua 1997:4).

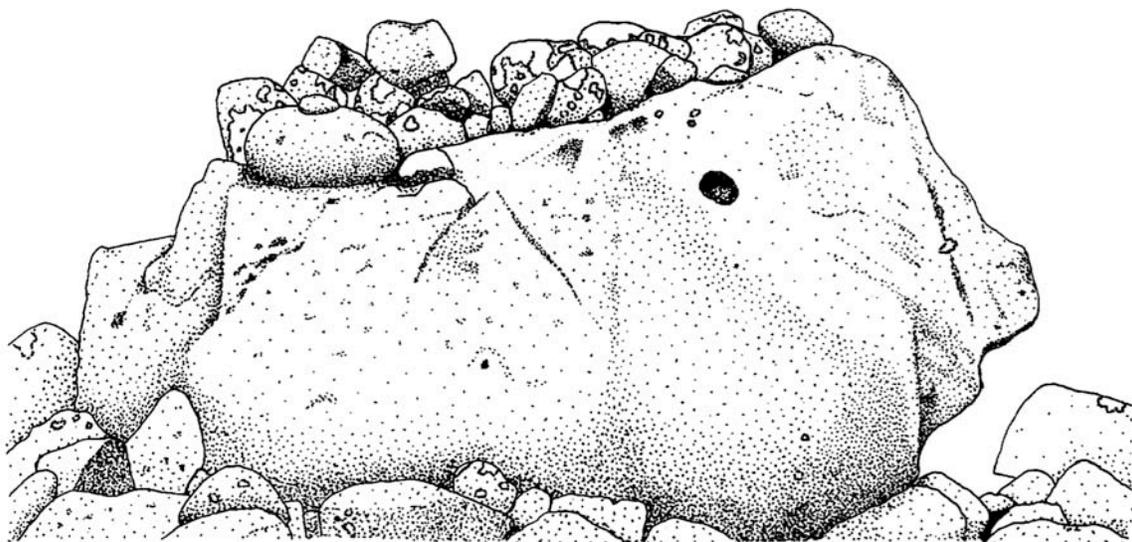


Figure I.3: Trail marker at North Kamāka'ipō

One of the Moloka'i chiefs who provided labor for the trail, Kamāka'ipō, was immortalized in the name of the gulch and bay north of Lā'au Point. Kamāka'ipō was also the name of an owl who lived at the place, and whose droppings appeared as a type of gray clay found there. Two Kamāka'ipō places known from traditional oral history that may have identifiable archaeological sites associated with them are a *heiau* dedicated to Hina that is supposed to be small and circular, and a hill named Ahoaho, a small hill where chiefs were buried (Kaimikaua 2001, personal communication).

By the time Europeans found the Hawaiian Islands, western Moloka'i was not heavily populated, although both the Cook and Vancouver expeditions noted that a small population was present prior to AD 1800 (see Dixon and Major 1993:9). Moloka'i also became a battleground in the struggles between Maui, Hawai'i, and O'ahu, and during the latter 18th Century lost much of its population due to warfare; a Hawaiian told the surgeon of the Vancouver expedition that Kamehameha had decimated the island (Menzies 1920:115, 118). Another source indicates that a generation earlier, the O'ahu chief Peleioholani raided and burned Moloka'i in revenge for his daughter being killed on the island (Fornander, cited in Summers 1971:18). Ash exists widely on the west end, observed in buried layers from at least Po'olau (Burtchard and Athens 1999) to Kaheu (also known as Kaupoa, Major 2000). An older explanation of the barrenness and low population may be found in the story of 'Ami'ikopalā, which said that the wells dug by that supernatural crab dried up when he was killed (Kaimikaua, personal communication 1999). Another *mo'olelo* told that other water sources dried up when people carelessly, and later maliciously, poisoned springs with pieces of the Kālaipāhoa gods (Kaimikaua 1988).

Regardless of the causes, the view that Kaluako'i was a dry, thinly populated area found its way into archaeological literature, and is accepted today. Stokes (1909) stated that "inhabitants of the western end of Molokai deserted or were removed from their homes nearly half a century ago" (Stokes 1909:30), a period when Kamehameha V had begun ranching operations on the island. Stokes concentrated on religious features, and near the current project area recorded *ko'a* (fishing shrines) on the coast at Kamākaipō (Sites 53 and 55), Lā'au (Site 58, destroyed by lighthouse construction before 1909), Keawakalai (probably Keawakalani, Site 59), Kahalepohaku (Site 61), and Pu'u Hakina (Site 62). At the latter place, he also recorded Kalalua Heiau (Site 67), which had an unusual reef rock slab construction, and was reportedly used for human sacrifice (ibid:31-32). Stokes further reported that local people identified Kahalepohaku as the place where Kihā-a-Pi'ilani had been raised.

During the 1920s and 1930s, most Moloka'i archaeology was done by visiting scholars such as Fowke (who wrote a brief paper for the Bureau of American Ethnology in 1922), and Phelps (who produced a monograph on Moloka'i archaeology in 1941). The Phelps paper is more interesting for its consideration of environmental variables than its site recording. He divided the island into ecological regions, of which the western was the driest; Phelps highlighted this aspect by repeating a Hawaiian newspaper story about the 18th Century *ali'i* Kaiakea, who ordered a well dug with adzes near Ka Lae o Lā'au (Phelps 1941:57). He stated that the advantages of Kaluako'i were its namesake adze quarries and its fine fishing grounds (ibid:55-60). He used the *ahupua'a* of Kaluako'i to support his conclusion that land divisions with the greatest area had the least population, and that the absence of valleys to provide natural divisions was what made Kaluako'i the largest *ahupua'a* (ibid:75-76).

Few new sites were recorded prior to the 1950s, when the Bishop Museum and University of Hawai'i began working together on Hawaiian archaeology, and on educating a new generation of scientists. One of these students, William Bonk, reiterated the conventional wisdom in his master thesis, which included the lines, "this was a decidedly marginal land for the inhabitants of Molokai. Fishing and the quest for adze stone brought people into the area, and fighting probably sent refugees into it, but temporarily" (1954:139). His excavation of a house site at Kamāka'ipō (Site 54) revealed less than 10 inches of midden, leading him to conclude that the intensity of habitation had perhaps increased over time, but that the site represented a fisherman's house, and that the area had little more in the way of permanent habitation (ibid:51-52).

Catherine Summers compiled historical and archaeological documentation over the next two decades, and published the results in 1971. Few of the sites are within the current project area, but the book is notable as the first and last attempt to bring together knowledge about sites island-wide. *Molokai: A Site Survey* includes notes made by Stokes and other early site recorders, as well as Hawaiian myths and oral histories, unpublished accounts, and historical documents. Based on all of this information, Summers concurs with the portrayal of Kaluako'i as a land blessed with excellent adze stone and fishing grounds, but also where habitation was limited by aridity (1971:39-40). Also implicit in her maps and descriptions is a settlement pattern in which the most heavily used areas are clustered at the bays and high in the uplands. The current project area occasionally reaches the margins of the coastal settlements, but is largely in the "empty" middle elevations. The Statewide Inventory of historical properties began shortly after the publication of Summers, but consisted more of an effort to relocate previously recorded sites than to discover new ones, and added no new information.

The same year that *Molokai: A Site Survey* was published, a University of Hawai'i student named Hal Strong documented some of the Kamāka'ipō habitations. He described and photographed four house sites and a variety of associated features, including: *ahu* (stone mounds), shrines, *ko'a*, a stone pile, and scatters of midden and artifacts strewn on the surface (Strong 1971).

In the early 1980s, Marshall Weisler surveyed coastal southwest Moloka'i, relocating and discovering eleven sites (State Sites 50-60-01-53 through -56, -655, 1118, and -1134) in or near what has become current project area. He reiterated an aspect of Phelps' settlement pattern in which topography was key—sites were concentrated in gulches and the bays where they met the sea—and added that there was a correlation between the size of the bay and the quantity and diversity of features (Weisler 1984:27). Another pertinent outcome of Weisler's work, creation of the Southwest Moloka'i Archaeological District (hereafter SMAD, Site 50-60-01-803) included some sites (53, 54, and 56), in or near the project area. This district is now on the State of Hawai'i and National Registers of Historic Places, meaning that sites within it are afforded additional protection.

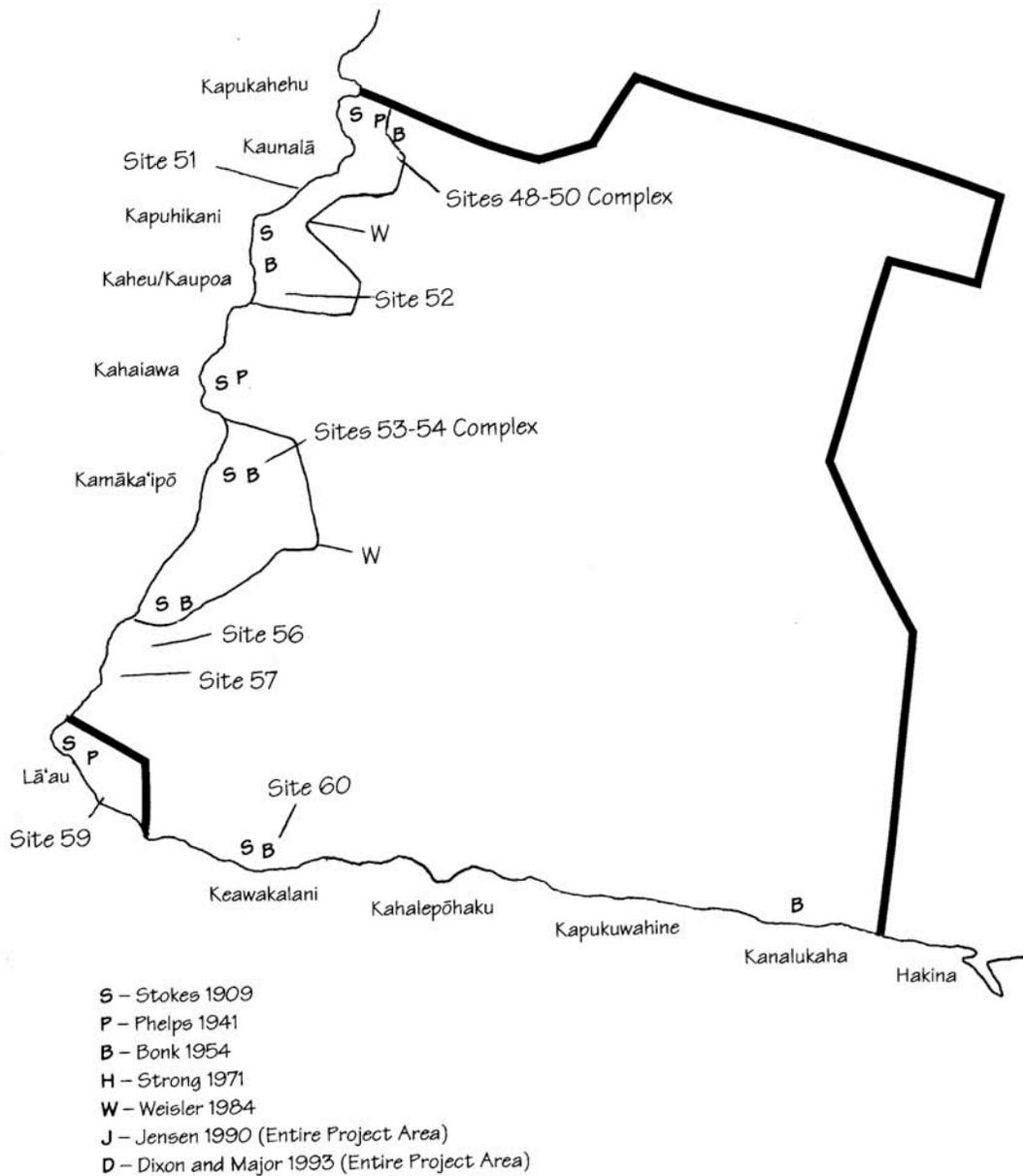


Figure I.4: Previous archaeological study areas. (Note: Burchard and Athens project area is north of this, and is shown in the Papohaku Ranchland map earlier in this report.)

In 1991, a survey of 6,350 acres of southwest Moloka'i done by Bishop Museum encountered features throughout southwest Moloka'i, including the current project area (Dixon and Major 1993, referred to in this report as the "1991 inventory" and the "1993 report"). This survey provided the most complete coverage of southwestern Kaluako'i to date, and the settlement pattern model that emerged from the inventory reinforces the main pattern mentioned above, that sites cluster around bays and gulches (Dixon and Major 1993:337). However, having a survey area that extended well inland from the coast, it was possible to refine the model. For example, although the inland margins of sites had the expected agricultural areas and lithic work stations, they had a surprising number of "temporary and semi-permanent residential compounds" (ibid:337).

Discovery of large, multi-roomed enclosures near the 100 foot elevation also went against conventional wisdom that inland features were marginal and ephemeral. Two such enclosures occur in the Site 771-773 complex, each with six or more rooms, some of which display massive, well-built walls. Excavation revealed evidence of lithic manufacture (over 3,000 flakes from a single 100 by 50-cm excavation unit), while presence of a metal pick-ax head suggests that this could be a site that transcends the era of contact between Hawaiians and Europeans. These sites remain enigmatic, but seem to suggest a degree of permanence or intensity previously not recognized on the west coast, and certainly not at that elevation.

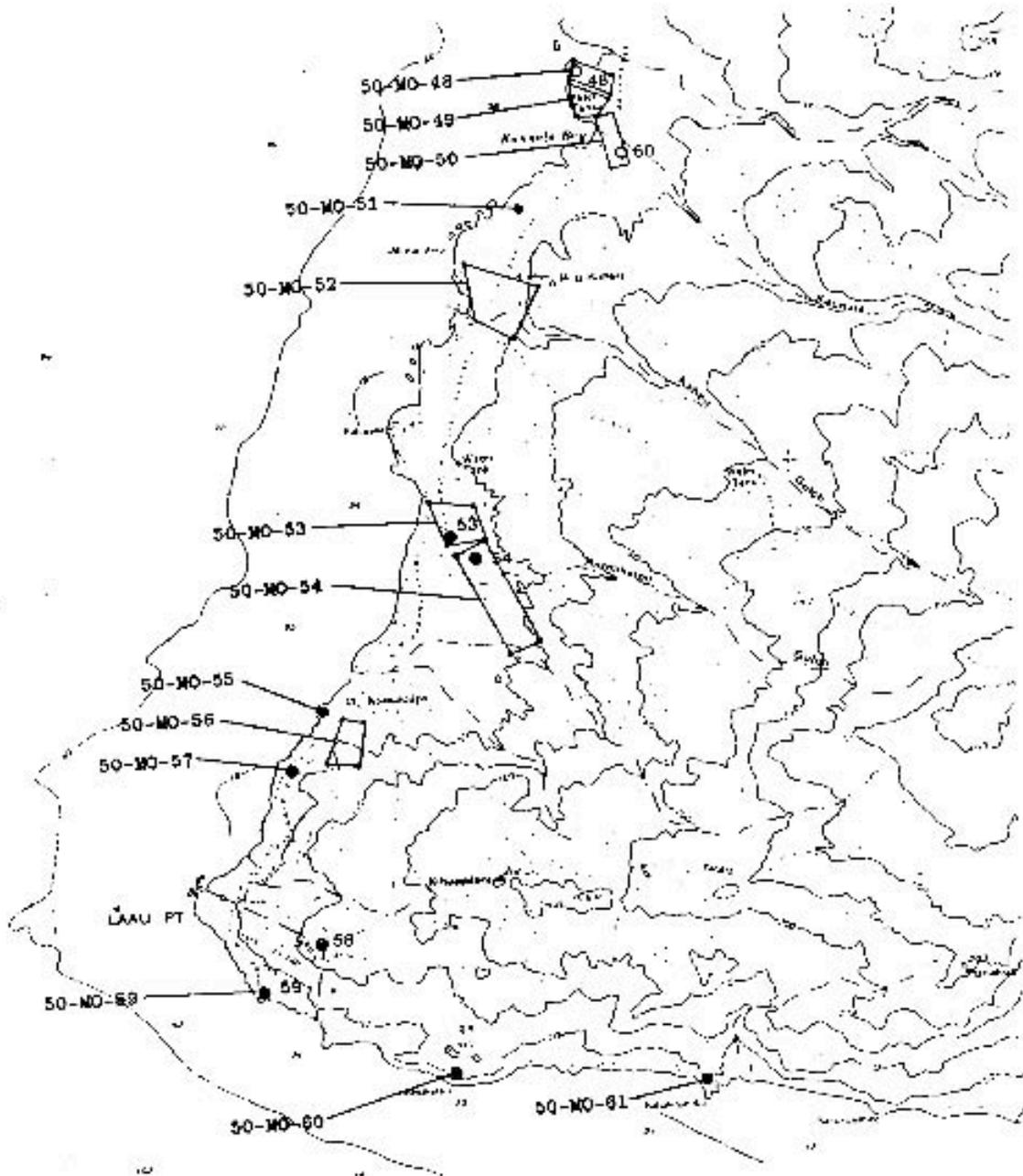


Figure I.5: Southwest Molokai Archaeological District sites and areas.

The 1991 project also documented variation between west coast settlements (where features clustered at the bays and stretched inland to gardening or quarrying areas) and south coast settlements (where habitations were spread laterally along the coast), indicating that the causes again related to topography (ibid:337-338). Analyses of subsistence strategies and lithic production, paired with the form and distribution of features, suggested that rather than a temporarily occupied, culturally peripheral area, southwest Kaluako'i was probably permanently occupied late in prehistory, and that its access to fishing grounds and adze quarries meant that it was integrated into island-wide society (ibid:240-344). A more recent study including part of the north end of the current project area concluded that coastal habitations must have been permanent (Burtchard and Athens 1999). Presence of extensive occupations in the uplands (Summers 1971, Major 2000) and of major specialized features such as *heiau* (temples) and *holua* (sledding courses) in the lowlands (Summers 1971) provide evidence that the Kaluako'i area had permanent, perhaps socially stratified, occupants.

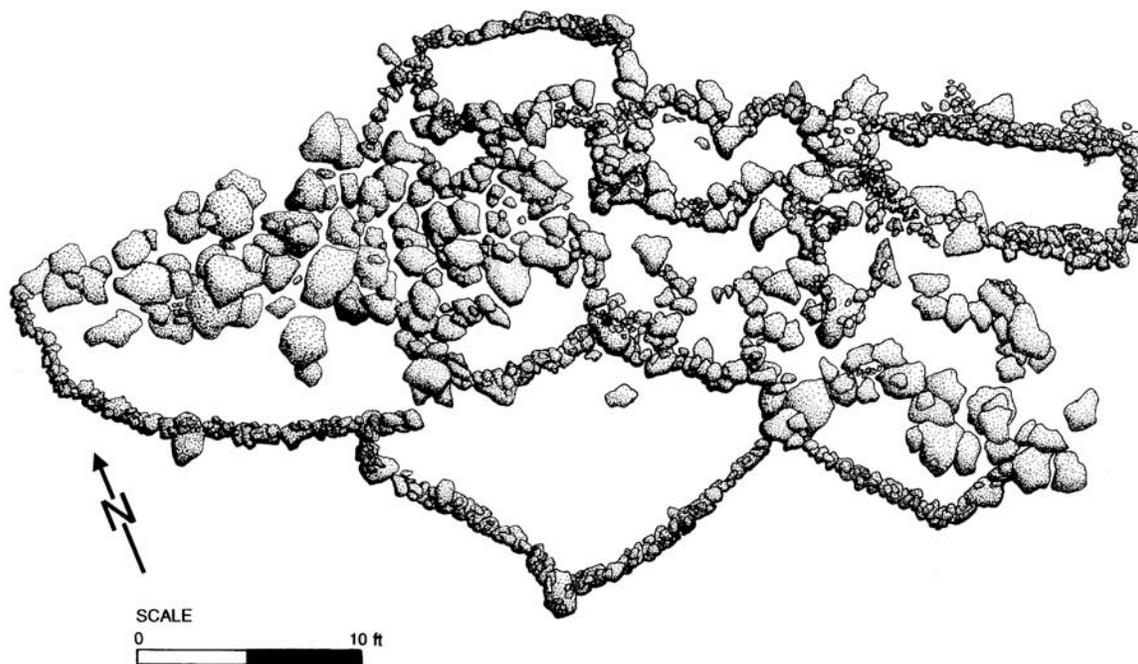


Figure I.6: Site 771, a multi-room enclosure on a ridge above Kamāka'ipō

Traditional wisdom among archaeologists has also concluded that this region would have been settled only after sweet potato was available, and after population densities had risen in the wetter areas, probably no earlier than about AD 1500 (Kirch 1985). Radiocarbon dates suggest somewhat earlier occupation may be possible, although the limited data make it hard to discern sporadic early use from a stable early habitation. An inland quarry yielded a radiocarbon date of AD 1260-1440, and the south Kamāka'ipō coastal site was dated between AD 1410-1955. A subsequent, unpublished date from the 1991 excavations at Site 654, in a coastal *imu* that Weisler originally recommended dating, provided an even earlier date of AD 1019-1211, confirming the suspicion that coastal areas were used much earlier than they were permanently settled.

The condition of Site 654, eroding from an exposed dune face, may be a result of the 1946 tsunami. The Cookes (1948, 1961) both wrote of the effect that this wave had on the west coast, impacting Kawakiu heavily and working its way a half mile inland at Pāpōhaku beach; it could easily have come well inland at Kamāka'ipō, where the alluvial flat is severely eroded. Even without tsunami, however, many sites at Kaluako'i have been damaged by erosion, itself catalyzed by cattle and deer grazing since the mid-Nineteenth Century and several periods of severe drought.

Because the archaeology of Kaluako'i is relatively well known, mitigation plans may be based not only on particular knowledge of the sites, but on the patterns evident in southwest Kaluako'i. Because the current project area mostly runs *mauka* of the sites, the data that will be recovered will be skewed toward traces of peripheral activities and agriculture. In the Data Recovery Plan, the effect of this on the techniques of data recovery and the research issues will be evident.

Papohaku Ranchlands Section

Then Papohaku Ranchland section of the project area is discussed separately here for two reasons. First, the presence of an aerial gunnery target range had a profound effects on the environmental setting and on the integrity of archaeological sites. Second, the fact that a formal inventory survey has not been reviewed by SHPD means that the preservation process in this portion of the project area is less advanced than elsewhere.

In 1998, under contract with the Army Corps of Engineers, archaeologists from the International Archaeological Research Institute, Inc, (IARII) attempted an inventory survey of the former gunnery range (Burtchard 2000). Unfortunately, funding was inadequate, and IARII was unable to do more than a reconnaissance of the area, meaning that coverage was not intense enough to guarantee location of all sites, and that excavation to determine age and function of sites was not performed. However, recording of the sites that were located is good, GPS locations make them easy to relocate, and the report is in fact better than some inventory surveys done on Moloka'i in earlier years. Age, function, and significance were estimated for all sites located during the reconnaissance, and will form the basis for treatments proposed in this plan.

Before describing sites in or near the corridor, however, some historical background specific to this new project area deserves attention. The target range mentioned above appeared on maps as early as 1952 (USGS Ilio Point Quad) as a "Bombing Range," and was apparently leased by the US Government from Molokai Ranch between 1944 and 1965 (Burtchard 2000). Documentation of what exactly occurred has not been located, but a combination of physical remains, recollections of residents, and photographs allows some reconstruction. An aerial photograph taken in 1955 shows that the largest feature of the range, a huge (about 600 m in diameter) circular target comprised of three concentric earth and rock rings, had not yet been constructed, although a smaller (about 200 m) one of similar plan was clearly visible. By 1965, facilities included the targets, three cement observation bunkers, a range control tower, a munitions dump, and another possible communication or observation tower. Grading for target and infrastructure development, as well as the direct effects of the munitions, have cleared large areas beyond the constructed features themselves, and the archaeological reconnaissance found several piles of disturbed stone *mauka* of the active range. Local residents recall the area being used for ground troop training in the 1950s and 1960s, and the abundant munitions on the ground confirm that aerial bombardment occurred as well. It is possible that other portions of the

project corridor may have been used for training, since a retired marine recalls participating in amphibious and land-based exercises around Kaupoa. Besides the impacts from thousands of men and heavy machinery being moved around, he noted specifically that they constructed C-shaped shelters (Dixon and Major 1993)

Subsequent to the military training era, the land was not heavily used, although it may have reverted to cattle pasture until the 1970s and 80s, when subdivision for residential development was planned. It was during this period that Hal Hammatt recorded four sites in an archaeological reconnaissance of 3,200 acres subsuming the current project area, and William Barrera recorded five more sites along proposed roads (Hammatt 1980 and Barrera 1982a, both cited in Burtchard 2000). Development of the subdivision resulted in construction of several roads, which also served as corridors for water and electrical infrastructure, which was all installed below ground. However, few of the lots have actually been developed. Near the coast (adjacent to the Po'olau beach access), grading has damaged archaeological features believed to be part of Site 45, a settlement with habitation, religious, and probably agricultural features. Sand dunes at the south end of Pāpōhaku Beach have also been surreptitiously mined during the 1970s through the 1990s. The extent of impacts resulting from development of the residential lots is undetermined.

The Hawaiian place names near the project area extension shed some light on the cultural landscape. Po'olau, the name for a gulch and the bay where it terminates, is left un-translated in *Place Names of Hawai'i*, but the word means "leaf base; butt end of a leaf" (Pukui and Elbert 1986). Many of the long time residents of Maunaloa, however, know it by the name "shit creek," apparently because it once received waste from the town. However, it should be noted that Po'olau Gulch terminates well below Maunaloa Town, and instead it is Wahīlahue Gulch that descends from Maunaloa to the coast, where it ends about one-third of the way from the south end of Pāpōhaku Beach. It appears that extension of that name to the entire beach may be a fairly recent phenomenon, since Monsarrat (who made the first Moloka'i map in 1886) was careful to find knowledgeable Hawaiians, and applied the name to a structure at the beach; Pāpohaku means "stone enclosure." Another name near the project area that appeared on the 1886 map was Pu'u Koa'i, which Pukui, Elbert and Mo'okini considered to be Pu'u Koa'e, or "tropicbird hill" (1974).

South of Po'olau, Kapukahehu Bay (whose origin and meaning are uncertain) is more commonly known now as "Dixie," and does not appear in either form on the old maps. "Dixie Maru," was a boat that crashed there, and the coastline is known for shipwrecks. In a less drastic way, Dixie is also the end of the road for cars, and locals and tourists alike frequent the sandy bay. Continuing south less than half a kilometer, the next gulch and bay are now called Kaunalā ("placing sun" Pukui, Elbert and Mo'okini 1974), although maps until 1924 used Kaunalu, or "placing wave" (ibid). Further south is Kapuhikani, or "sounding eel" (ibid), a point of land that has appeared on all maps beginning in 1886. Next is Kaheu, a gulch and bay whose name first appeared on the 1924 USGS map, and is thought to mean "the fuzz" (ibid). Kaheu is better known as Kaupoa, a name that first appeared as a mapping station on the 1897 map (which was made after the overthrow of the monarchy, and is suspect due to its omission of many Hawaiian place names or replacement with English names). The name was popularized by the Cooke family, who in 1925 built a house by the bay and named it Kaupoa.

Archaeologically, the action is at the bays, and the current project corridor is in the hinterlands. The general settlement pattern of the west coast is for habitations to cluster around the bays, and for the traces of human presence to diminish rapidly with increased elevation and distance from the bay. On the coast, *ko'a* (fishing shrines) and dispersed temporary habitations may occur between bays, and it is likely that dunes contain human burials. Heading inland from the bays, gulches contain terraces and stone piles indicative of attempts to retain freshet moisture and soil, and to clear the stony soil for planting, respectively. Aside from the agricultural features and temporary shelters (both C-shapes and pavements) associated with them, stone mounds that appear to be burials are the most common features at the margins of coastal settlements. Of the features occurring above 50 feet in elevation, few are outside of gulches.

Further inland (generally over 150 feet in elevation), the presence of temporary habitations (usually C-shapes) and concentrations of lithic debris present traces of traditional quarrying and stone tool manufacture sites. Quarries usually occur on gulch margins or ridges where a stratum of fine-grained basalt was accessible, and could be removed with relative ease. Primary reduction into cores and roughly formed adzes was done at the quarry, after which finer flaking and polishing at the coastal habitations resulted in finished tools. Between the quarries and the coastal habitations, stone cairns mark the trails and occasional concentrations of basalt flakes suggest limited lithic work, although the latter usually represent single episodes rather than the sustained or repeated behavior that happened in quarries.

Because it is inland of the coastal settlements, but not far enough in to be a part of the quarry activity, the current project corridor has few archaeological features. Only in Po'olau Gulch, where the corridor will cross an area of stone piles interpreted as agricultural clearing piles (Site 1758), does it directly encounter sites. However, a few sites are known to be relatively near the corridor, and will be described here.

Site 520. Located by Kulawai Loop near the beginning of Road T, this site consists of numerous features on the crest and in the lee of a ridge. Features atop the ridge include three C-shapes, three walls, a pit, and two platforms, forming a probable habitation site. Barrera (1982) excavated one C-shape, uncovering a large fire pit feature and cultural deposition extending to 60 cm in depth. Whereas Barrera only recorded five of the habitation features, Burtchard's crew spotted the additional features on the ridge, as well as a minimum of 23 small stone mounds extending down the southwest slope. He considered the mounds to be agricultural without specifying whether they were clearing or planting features, but wondered whether the windswept ridge crest would be an undesirable place for habitation, and suggested a possible religious function (Burtchard 2000). However, the walls and C-shapes are very typical of windbreak features, and the form of these and the platform-terrace is commonly associated with habitations in the region. Part of the religious interpretation appears to rest on the presence of a "rough basalt upright" near the pit, but religious uprights tend to be smooth (often waterworn) or have worked surfaces, which this apparently did not. Despite the good view from this location (an attribute of shrines in Kaluako'i), the C-shapes are not open toward the sea, as would be expected, and lack the typical stone platform/pavement interior or coral offerings. Although it is possible that the free standing platform could be a burial, the overall function of the site appears to have been habitation and

agriculture. Site 520 covers an area of 6,750 m² at an elevation of about 100 feet.² Site 520 has been evaluated as significant under Criterion D.

Site 658. This small, isolated stone mound appears to be one of the infrequent agricultural modifications to Kaheu Gulch, along with Site 659. It is significant under criterion D, and covers 4 m² at an elevation of 60 feet.

Site 659. About 200 m up Kaheu Gulch from Site 658, this consists of a single alignment of boulders on the south slope, forming a rough terrace. It is significant under criterion D, and covers 30 m² at an elevation of 90 feet.

Site 664. This site consists of five small cobble mounds, apparently associated with agricultural clearing in a small gulch north of Pu'u Kaheu. The site is significant under criterion D, and covers about 100 m² at an elevation of 60 feet.

Site 669. This site is on the north slope of Kaheu Gulch inland of the main settlement there. The components include a possible burial (a mound), and possibly areas of temporary habitation associated with agriculture (a C-shape, a terrace, an enclosure alignment, and a possible hearth). The site is unusually situated, being in the middle of a small gulch. A test excavation here in the enclosure yielded no cultural materials, and hit hardpan subsoil in only 10 cm (Dixon and Major 1993). The site was listed as significant under criterion D, but will be treated as possibly significant under criterion E due to the possible burial. The site covers about 2400 m² at an elevation of 85 feet.

Site 670. This site includes low, oblong mounds interpreted as agricultural features, a substantial C-shape with a cupboard interpreted as a shrine, and an unusual C-shape open toward the northeast tradewinds. Testing in the latter revealed a single, shallow layer with cultural materials including ash, hammerstones, basalt flakes, and a grindstone. Presence of a possible shrine among the other features led to positive significance evaluations including criteria D and E. The site covers an area of 1500 m² at an elevation of about 90 feet.

Site 674. This single stone mound was interpreted as a possible burial, and was assigned significance under criteria D and E. It covers 1m² at an elevation of 80 feet.

Site 675. This site appears to be an agricultural area with associated temporary habitation. It consists of an enclosure with a possible hearth, and several small stone rings interpreted as planting circles, and was listed as significant under criterion D. The site covers 1000 m² at an elevation of 70 feet.

Sites 1678-1680. These sites each consist of a single concrete bunker for observation of the nearby targets. None have been judged significant, and they probably do not meet the 50-year age requirement. Site 1680 is not in a potentially affected lot.

Sites 1683-1687. These were recorded by Burtchard (2000) as a series of rock piles made by the military. They probably represent stockpiles of stone used for target construction, or surface material pushed aside during construction of the target range. None have been judged significant, and they probably do not meet the 50-year age requirement. On the project area map, they are simply marked as "Rock Piles (Modern)."

² Burtchard (2000) reported an elevation of 30 feet, but his map and UTM locations place the site much higher. Apparently due to a GPS error, many sites in the IARII report have this problem. This report estimates elevations based on map and UTM locations, written descriptions, and USGS and Molokai Ranch topographic maps.

Site 1756. This site, well *mauka* of the corridor, lies on the opposite (south) side of Po'olau Gulch about 200 m up from Sites 1757-1759 and just inside Lot 236. Burtchard reported a terrace platform on an outcrop, but noted that more features could be expected in the high grass. This feature was described as having two "chambers" (2000). A fence post and 55-gallon drum were interpreted as ranching activity, and the overall site area was estimated to be 1500 m² at an elevation of about 200 feet.

Site 1757. Located in Po'olau Gulch, this site consists of 8 small piles of cobbles placed on low boulders on the first natural terrace above the gulch bottom. Because they are in a tight cluster and are rather low to the ground, they do not appear to be trail markers, such as those found in Kamāka'ipō Gulch. Instead, they have been interpreted as agricultural clearing mounds (piles of stone removed from the soil and put on boulders where nothing could be planted). These differ from so-called "sweet potato mounds," which were planting features in which soil or compost was covered with a mantle of cobbles that acted to conserve moisture. Presence of oblong cobbles on one mound caused Burtchard to speculate that it could conceivably have been a shrine. This site covers nearly 6,000 m² at an elevation of 150 feet, and is *mauka* of the proposed corridor

Site 1758. This is a larger set of 36 stone mounds like those found in Site 1757. These, too, are stacked on boulders and are interpreted as clearing piles. This site occurs in the flood plain of Po'olau Gulch, covering approximately 3,150 m² at an elevation of about 140 feet, just down the gulch from Site 1757. Burtchard speculated that these may actually be part of a single site, and noted that a few oblong stones were also present here. The proposed corridor traverses this site.

Site 1759. A third cluster of small clearing mounds (11 in number), this site occurs in a smaller area, also on the flood plain of Po'olau Gulch. This site covers about 800 m² at an elevation of approximately 130 feet, and is located down the gulch from 1758, and *makai* of the proposed corridor.

Site 1760. This consists of a single basalt adze preform, broken into two pieces. Because it was visible in an eroded area amid grass, Burtchard speculated that it might be part of a larger deposit. Analysis of aerial photographs shows several dirt roads in the area, and it is possible that the erosional scar is one of these roads. This artifact is about 80 m north of Site 1761 at an elevation of about 150 feet, and is just *mauka* of the proposed corridor.

Site 1761. The size (2.9 x 2.5 x .55 m and 1.3 x .75 x .35 m), shape (elongate), and stacked edges of these two stone mounds, as well as their placement on a small knoll, suggests that they are human burials, rather than agricultural features. However, this is rather far inland for burials (which are more often found at the inland margin of settlement complexes), and proximity to roads means that these could conceivably be historic features. They are located *mauka* of the northern end of the project corridor. The site covers 100 m² at an elevation of 150 feet.

Site 1783. This site consisted of some cobbles piled on a boulder. Burtchard speculated that they may simply have been cleared to provide a sitting area, and there was no evidence of formal construction. The site reportedly covers 400 m² at an elevation of 100 feet.

Site 1784. A rectangular platform and a small hearth comprise this site, which Burtchard (2000) interpreted as a habitation. The platform, measures more than 7 m in length, and is raised about 30 cm above the surrounding surface. The hearth, a small ring of stone is described as being 25 m southeast of the platform, but is

shown 25 m northeast on the site map. The site covers an area of 1050 m² at an elevation of approximately 110 feet.

Site 1785. This site on a flat area up-slope of Kapukahehu bay consists of a possible hearth, an alignment, and a stone slab interpreted as a shrine based on the presence of traditionally worked surfaces and its oblong shape. Site covers 300m² at an elevation of about 125 feet.

Site 1786. This site, north of 1785, occupies a small ridge and consists of a series of modifications to an outcrop, atop which appears to be an artificially set boulder upright. The modifications include low walls, alignments, and terraces, as well as what appears to be a trail leading up toward the upright. The immediate area around the boulder is defined by a rectangular platform incorporating natural boulders and set cobbles, and is the high point before the ridge descends toward the sea. Site 1786 covers about 875 m² at an elevation of about 150 feet.

Site 1787. This site consists of two large boulders, each with a small pile of cobbles on top. The absence of historical debris led to an estimation that the site is pre-Contact in origin (Burtchard 2000), and the feature type is similar to many found in southwest Moloka'i that have been interpreted as trail markers, based on their visibility and distribution in the landscape (Dixon and Major 1993). The site is reported as covering approximately 150 m² at an elevation of close to 190 feet.

Site 1788. This site is located in a low area near a seasonally wet depression interpreted by Burtchard as a possible spring (2000). Because of this proximity and the presence of an oblong boulder slab, the site was interpreted as a shrine. Although the concentration of stone here suggests that this is indeed a feature, the existing records are unclear, since the accompanying sketch depicts a smaller, more amorphous feature than the rectangular one described as retaining its integrity. Proximity to the heavily disturbed target range area warrants consideration that this may be a later feature, and the records fail to note attributes (phallic shape, smooth or worked surface) known to be associated with sacred stones, and the photograph seems to show a fractured, angular stone not commonly associated with that function. Site 1788 is near the 150 foot contour, and is said to have an area of 100 m², although the map shows less than 20 m², even if the spring is included.

Supplemental Data Collection

Two types of archaeological investigation that are not required by the regulatory historic preservation process will be done in association with the Lā'au subdivision. While elements of each have been part of the plans from the outset, the recent period of community consultation have made it clear that they are a priority to many community members and most Hawaiians on Moloka'i, and their importance is highlighted here. First, because construction of a new road and utility corridor represents the greatest single potential for impact, and is the initial step in construction for the new subdivision, the landowner has committed to re-survey the corridor, most of which as already been through the official review process. The character and methods for this are described beginning in the following section.

The second form of data collection relates to preservation sites within and close to proposed subdivision lots, where the process will amount to a thorough re-survey of sites that are to be protected within or in close proximity to new house lots. Because this type of work is to be done as part of the **Preservation Plan**

implementation, it will be described in more detail there, but it is important to note that it will be done well in advance of any house construction, and therefore any new or augmented finds may be considered in the design and construction process, so that new houses need not damage old sites. An overview for this process is included below.

Road Corridor Re-Survey

As described in the **Introduction**, the first fieldwork associated with these plans will be to re-examine the road corridor and verify descriptions of known sites, gather additional data if possible, and search for unrecorded archaeological deposits or features now observable due to changes in surface visibility. A preliminary plan for the road corridor has been prepared by engineers, the centerline of which will be staked on the ground by surveyors prior to commencement of archaeological fieldwork. The proposed road begins at the end of Kaluakoi Road, connects to a portion of Kulawai Loop (an existing road in the Papohaku Ranchlands subdivision), and then runs roughly southwest to a point just south of the Kaupoa House lot, and then more or less follows the shoreline down the west coast and along the south coast to the vicinity of Site 1155, south of Pu'u Hakina (see map). Along the way, 12 short spur roads depart from the main corridor, providing access to subdivision lots. No connections to the Hale-o-Lono harbor road or other existing roads are planned, and the old coastal road—a roughly graded, unpaved jeep trail—will be abandoned as part of the development plan due to its alignment through several archaeological sites and erosion-prone environments.

As noted above, the portion of the road corridor north of TMK 5-01-02-030 has not been officially inventoried, and a report for that portion of the road corridor survey will in fact be submitted to SHPD for review as an archaeological inventory with significance evaluations and treatment recommendations. Despite this procedural difference, survey techniques will remain the same throughout the road corridor.

The area for data collection consists of a 30 m wide swath on either side of the centerlines for the main and spur roads, and a 50 m radius surrounding each end point, where turn-arounds have been planned. The eventual impact of road construction and utility trenching will be less than the resulting 60 m wide corridor, but that width has been chosen both to provide the best archaeological understanding of the road and its context, and to provide intensive coverage that may be used to avoid additional survey or unexpected impacts should presence of sensitive sites within the corridor cause a need to adjust the alignment.

The survey team will consist of Moloka'i residents with archaeological experience and training led by the Principal Investigator, with additional archaeologists hired from off-island if necessary. The corridor will be divided into segments, and the crew will perform sweeps in each segment with a 5 m interval. Where grass is thick enough to obscure surface visibility, gas-powered string trimmers will be used to expose the surface within 10 m of the centerline, so that low-relief features such as pavements and lithic scatters will not escape notice. Vegetation will also be cleared around the periphery of any visible surface features found within the corridor (regardless of distance from the centerline) to allow their accurate documentation and to search for additional features or deposits.

Any finds within the corridor will be documented with scaled surface planviews, cross-sections and profiles as necessary, photographs, and descriptive notes. Where sediments occur that could contain buried cultural deposits, transects of probes will be employed to determine site boundaries and characterize site stratigraphy. Each

probe is to be excavated with a shovel, by stratigraphic layer as far as practicable, with the entire volume screened through $\frac{1}{4}$ -inch mesh. For each probe a representative profile will be drawn, referenced to the current ground surface. Any features encountered will be drawn and photographed in plan and profile and excavated as a separate stratigraphic context. All cultural materials will be collected, described, and recorded in a project inventory. Probe intervals will range from 1 to 5 m, depending on the area of sediment where buried features could occur, as well as the nature and density of the surface features and visible deposits. Probes will begin at the outer edge of surface features and radiate outward in at least two directions along grids established for each site (the orientation of which will be decided in the field by the PI according to topography and local conditions). Where probe intervals are greater than 2 m, follow-up probes will be used at tighter intervals to better determine the horizontal extent of the site.

For each site, a minimum of one datum point will be flagged and marked on site planviews to facilitate location on large maps. Initially, a GPS device will be used at each of these to provide a location; consumer-grade Garmin units used on property by Ranch staff have achieved accuracy to within 2-m of the UTM coordinates provided by survey grade GPS, and will be used during the re-survey to provide interim site locations. Subsequent to the initial fieldwork and prior to construction, these points will be plotted lot surveys to provide accurate, precise control points for site and buffer locations. Each datum point will be integrated into the engineering consultant's CADD system, along with either an appropriately-sized point buffer or a polygon derived from the site planview.

Sites that have been previously recorded will be reported in the Data Recovery or Preservation report, according to its status, including any newly-located features or artifacts found within 10 m of the known features. Features not associated with known sites will be reported in a Supplemental Inventory Survey report, submitted to SHPD along with significance evaluations and treatment recommendations. This report will also cover sites located north of TMK 5-1-02-030 in the Papohaku Ranchlands subdivision.

In a few cases where the site is minimal, Data Recovery measures proposed in the accompanying Data Recovery Plan may be done in conjunction with this phase of fieldwork. For example, Site 697 consists of lithic artifacts on a deflated hardpan surface, for which the proposed data recovery method is surface collection; rather than draw a planview (for the supplemental data collection) and return later to collect the artifacts (for data recovery), a single period of fieldwork will be done to satisfy both phases.

Subdivision Lot and Coastal Zone Re-Survey

Sites within proposed subdivision lots have reasonably accurate locations due to their proximity to coastal reference points, and many have been previously documented in detail by archaeologists. In order to ensure that all sites have been adequately recorded and those slated for preservation receive timely and effective preservation, land within and in close proximity to the subdivision lots will be re-surveyed as well. As with the road corridor, the aim is to verify extant site records, augment them as necessary, and search for any previously unrecorded sites.

Methods for investigating and recording sites will be the same as well, although the project area differs. Rather than a corridor defined by the road centerline, this survey area consists of the proposed private lots and the lands makai of them. Inclusion of the coastal land (most of it already zoned Conservation, and the

remainder to be so if the Ranch's petition to change some near-shore land from Agriculture is approved) in this phase stems from two facts. First, some sites straddle the boundary between Conservation land and lots. Second, as lots are occupied and coastal parks are opened, foot traffic through coastal sites will increase, subjecting them to a greater potential for impact than in recent decades.

Because so many sites have been recorded near the shoreline, this phase will begin with the known and work outward, annotating and augmenting site documentation as necessary, firmly establishing site boundaries. Areas between sites will be surveyed at 5-m intervals to search for any unrecorded features or deposits.

Vegetation clearing in this phase will focus on sites, exposing surface features and visible deposits to allow for mapping. However, clearing in Conservation lands will be limited to cutting grasses and vines, and close attention will be paid to any native plants, preserving them. A sampling of high probability landforms (ridge-tops, natural terraces within gulches, and level ground above slopes) will be cleared to check for unrecorded features in the private lots, but not within the coastal strip. In all cases, clearing will proceed with an awareness of soil, slope, and groundcover, to avoid exacerbating erosion.

In addition to the use of shovel probes to define site boundaries, some excavation will be done in this phase to help further the general conservation goals of the master plan and to better understand chronological and functional issues regarding the sites. Wherever hearths or *imu* are at risk from erosion, they will be excavated to reveal the stratigraphic relationship to other site components, and to collect charcoal for taxonomic identification, providing a basis for future re-vegetation efforts. Likewise, eroding deposits will be cleaned up to provide a representative vertical face for profile illustration, and a charcoal or other materials may be collected at this time.

Proposed Site Mitigation Measures

Sites will be dealt with differently depending on their significance, their position in the cultural landscape, and their location relative to private parcels, the proposed land trust, and conservation overlays. Options for site treatment include preservation, data recovery, and no action. Monitoring may be done in addition to other actions, and will also occur throughout the road corridor. Sites for which no action is planned are those that were deemed not significant in the 1993 inventory report, typically because they were recent hunting blinds or had been so badly damaged as to eliminate the possibility of determining their original form or salvaging meaningful data. **Table I-1** lists the categories of mitigation actions generally; the subsequent Preservation and Data Recovery plans will add more detailed information regarding specific practices.

The forms of mitigation dealt with in these plans derive from the process outlined in HAR 13-13-275, which describes the historic preservation review process in Hawai'i. Preservation, obviously, means avoiding damage to the site, although there are different degrees of this measure that will be described in the appropriate section. **Data Recovery** pertains to sites that are significant for their information only, and covers actions such as mapping, excavation, and surface collection that adequately gather that information. The objective is to collect information prior to construction, so that any damage during development is offset by gains in knowledge. Once data recovery has occurred and the report approved by SHPD, the site is officially considered "no longer significant," although the approach in this project is to monitor any unexcavated portion in hopes of gathering further

data that may be unearthed. **Monitoring** means having an archaeologist present during ground-disturbing activities that could potentially have an adverse impact on a significant site, and to gather data from inadvertently encountered sites. The objectives are twofold: to prevent incursion into preservation areas and damage to sites being preserved, and to collect data from any sites or deposits encountered outside of preservation areas. In some cases, monitoring may result in discovery of previously unknown features or deposits, leading to an expedited inventory and evaluation, and potentially to data recovery or even preservation. This will occur wherever activity with potential to impact sites occurs, and therefore is not listed at the site-specific level. **Preservation** differs from the other treatments in that sites are protected, and there is no impact to mitigate. Options within this treatment revolve around the degree and type of protective measures to be implemented, and whether the preservation is to be passive (avoidance) or active (stabilization, interpretation, and other measures). **Burial treatment** concerns not only the actions taken for sites that have documented or possible burial sites, but also measures that will be followed should an inadvertent discovery of human remains occur. Like monitoring, the procedures for burial treatment apply throughout the project area.

Because of uncertainty regarding some site locations and the fact that the final alignment of the proposed road corridor has not yet been designated, some treatments may change later pending community and SHPD approval. (All such changes will be from Data Recovery to Preservation, and no objections are anticipated.) Any site thought to be near the road or within a proposed subdivision lot has a detailed mitigation plan. At least 14 sites recommended for data recovery in the 2001 plan are now slated for preservation due to the road realignment and the revised approach to subdivision, and as many as 8 more appear likely to do the same. SHPD will be consulted regarding such changes. As mentioned above, the preliminary road corridor will be resurveyed prior to finalizing the plan, and every effort will be made to realign it around significant sites.

A few sites listed in 1993 lack specific mitigation measures described in this plan. Some of these are sites recorded prior to 1991 that could not be located or were destroyed by that time (State Sites 55, 653, 1108, and Bishop Museum Sites B5-58 and B5-61). However, most consist of recorded sites that lacked cultural or archaeological significance. Other gaps in the site numbers—653, 1133, 59-638, 700-735 and 783-1099—have been assigned to sites elsewhere on Moloka'i, and do not actually denote gaps in the 1993 site records.

Table I-1. Site Conversions and Mitigation Treatments

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Inventory	Preserve	Data Recovery	No Action
48	B6-61		X		
49	B6-62		X		
50	B6-63		X		
50	B6-64		X		
51	B6-65		X		
52	B6-66		X		
53	B6-68 and -97		X		
54	B6-69 to -73		X		
56	B6-76 and -77		X		
57	B6-78		X		
520	N/A	X	X		
639	B6-67		X		
640	B6-74		X		
641	B6-83		X		
642	B6-84		X		
643	B6-85		X		
644	B6-86		X		
645	B6-87		X		
646	B6-88		X		
647	B6-89		X		
648	B6-90		X		
649	B6-91		X		
650	B6-92		X		
651	B6-93		X		
652	B6-94		X		
654	B6-96		X		
655 (aka 53)	B6-97		X		
656	B6-98		X		
657	B6-107		X		
658	B6-108		X		
659	B6-109		X		
660	B6-110		X		
661	B6-111				X
662	B6-112		X		
663	B6-113		X		
664	B6-114		X		
665	B6-115		X		
666	B6-116		X		
667	B6-117		X		
668	B6-118		X		
669	B6-119		X		
670	B6-120		X		
671	B6-121		X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Inventory	Preserve	Data Recovery	No Action
672	B6-122		X		
673	B6-123		X		
674	B6-124		X		
675	B6-125		X		
676	B6-126		X		
677	B6-127				X
678	B6-128		X		
679	B6-129		X		
680	B6-130		X		
681	B6-131		X		
682	B6-132		X		
683	B6-133		X		
684	B6-134		X		
685	B6-135		X		
686	B6-136		X		
687	B6-137		X		
688	B6-138		X		
689	B6-139		X		
690	B6-140		X		
691	B6-141		X		
692	B6-142		X		
693	B6-143		X		
694	B6-144		X		
695	B6-145		X		
696	B6-146		X		
697	B6-147			X	
698	B6-148			X	
699	B6-149		X		
736	B6-150		X		
737	B6-151		X		
738	B6-152			X	
739	B6-153		X		
740	B6-154				X
741	B6-155		X		
742	B6-156		X		
743	B6-157			X	
744	B6-158		X		
745	B6-159			X	
746	B6-160			X	
747	B6-161		X		
748	B6-162		X		
749	B6-163			X	
750	B6-164		X		
751	B6-165		X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Inventory	Preserve	Data Recovery	No Action
752	B6-166		X		
753	B6-167		X		
754	B6-168		X		
755	B6-169			X	
756	B6-170			X	
757	B6-171				X
758	B6-172			X	
759	B6-173				X
760	B6-174			X	
761	B6-175		?	?	
762	B6-176			X	
763	B6-177		X		
764	B6-178		X		
765	B6-179		X		
766	B6-180				X
767	B6-181				X
768	B6-182		X		
769	B6-183		X		
770	B6-184		X		
771	B6-185		X		
772	B6-186		X		
773	B6-187		X		
774	B6-188		X		
775	B6-189		X		
776	B6-190		X		
777	B6-191		X		
778	B6-192		X		
779	B6-193		X		
780	B6-194		X		
781	B6-195		X		
782	B6-196		X		
1100	B5-59		X		
1101	B5-60		X		
1102	B5-62		X		
1103	B5-63		X		
1104	B5-64		X		
1105	B5-65		X		
1106	B5-66		X		
1107	B5-67		X		
1109	B5-69		X		
1110	B5-70		X		
1111	B5-71		X		
1112	B5-72		X		
1113	B5-73		X		
1114	B5-74		X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Inventory	Preserve	Data Recovery	No Action
1115	B5-75		X		
1116	B5-76		X		
1117	B5-77		X		
1118	B5-78		X		
1119	B5-79		X		
1120	B5-80		X		
1121	B5-81			X	
1122	B5-82		X		
1123	B5-83		X		
1124	B5-84			X	
1125	B5-85		?	?	
1126	B5-86		X		
1127	B5-87		X		
1128	B5-88		X		
1129	B5-89				X
1130	B5-90			X	
1131	B5-91			X	
1132	B5-92			X	
1134	B5-93			X	
1135	B5-94				X
1136	B5-95		?	?	
1137	B5-96				X
1138	B5-97				X
1139	B5-98		X		
1140	B5-99				X
1141	B5-100			X	
1142	B5-101		X		
1143	B5-102		X		
1144	B5-103		X		
1145	B5-104			X	
1146	B5-105		X		
1147	B5-106		X		
1148	B5-107		X		
1149	B5-108		X		
1150	B5-109		X		
1151	B5-110		X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Inventory	Preserve	Data Recovery	No Action
1152	B5-111		X		
1153	B5-112		X		
1154	B5-113		X		
1155	B5-114		X		
1156	B5-115		X		
1157	B5-116		X		
1158	B5-117		X		
1159	B5-118				X
1160	B5-119		X		
1161	B5-120		X		
1162	B5-121		X		
1163	B5-122		X		
1164	B5-123		X		
1165	B5-124				X
1166	B5-125		X		
1167	B5-126		X		
1168	B5-127		X		
1169	B5-128		X		
1170	B5-129		X		
1171	B5-130		X		
1172	B5-131		X		
1173	B5-132		X		
1174	B5-133		X		
1175	B5-134		X		
1176	B5-135		X		
1758	N/A	X	X		
1760	N/A	X	X		
1761	N/A	X	X		
1784	N/A	X	X		

NOTE: Treatments with an **outlined X** signal changes in status from Data Recovery to Preservation status. Sites slated for Inventory will all be recommended for Preservation. Question marks (?) indicate sites currently recommended for Data Recovery that may change to Preservation, pending precise site location.

DETAILED DATA RECOVERY PLAN, GENERAL

Site-specific data recovery actions will be presented in a subsequent section, but there are several aspects of data recovery that will be practiced at all sites. **First**, all sites near the development corridor (which consists of the road and infrastructure as well as construction in house lots)—including those that will be preserved rather than mitigated—will be checked to verify extant data. **Second**, any gaps in the existing data will be filled. In several cases, for example, without replacing the existing sketch maps with tape and compass or plane table maps, most site records are inadequate for management purposes. **Third**, because it is possible that the inventory survey missed some small but significant feature or artifact hidden beneath vegetation, vegetation clearing and intensive searches will extend out from data recovery site areas prior to construction. These actions augment the road and infrastructure corridor re-survey described in the **Introduction** of the revised plans.

Data Collection at Previously Recorded Sites

Verification

The first step in this phase of investigations will be to verify the existing data for known sites within the road corridor. This process will consist of examining the sites, comparing dimensions and descriptions to those contained in the 1993 report, and either affirming the inventory or adding corrected data. The inventory was reviewed and accepted by SHPD, but the fact that any site facing data recovery also faces construction impacts underscores the importance of having accurate site records.

Augmentation

The first action in augmentation will be to ensure that all features have been documented. It is possible that vegetation obscured smaller features or scatters or isolated artifacts, or that erosion since the survey has exposed additional deposits. Therefore, the road and infrastructure corridor will be resurveyed as described in the **Introduction** to search for such instances. Special attention will be focussed on known sites in or adjacent to the corridor, with intensive survey and clearing of the vicinity to guarantee 100% documentation of features and deposits within the area of potential impact. Eventually, as lots are sold and houses are planned, this process will be repeated in proposed construction areas within individual subdivision lots.

The second action will be to accurately place each site in space. Reference points for each site will be marked on the ground and site maps, located using a GPS receiver, and wherever possible recorded again by surveyors when the road corridor is laid out. These points will be identified by their UTM coordinates.

Another aspect of data augmentation is that while sites were documented, not all were mapped, and many were mapped only approximately. The nature of sites within the corridor is that they generally are not complex or large, and therefore tape and compass maps will be adequate to accurately record site plans. If the size and complexity of any un-mapped sites merits, plane table and alidade maps will be produced. Generally, 1:100 metric scale maps will be adequate, although 1:200 or higher may be appropriate for agricultural mound complexes, and 1:50 may be used for particularly interesting architecture.

Finally, if there is any information to add to that held in the 1993 report, it will be recorded at this time. For example, more detailed descriptions of architecture, lists of species present in midden, and other such details may be added.

New Data Collection

Once verification and augmentation have been completed, excavations can begin. The most basic goal of excavation will be to document the site stratigraphy, including natural and cultural components. Beyond this basic description and relative chronology, several research questions will provide the framework for interpretation of excavated assemblages; these revolve around cultural use of the lands located outside the nuclei of coastal settlements, and integration or contrasts between coastal and inland resource use. It is also anticipated that charcoal will be recovered that can be identified to provide environmental data, and dated to improve the local chronology. Research questions pertaining only to particular sites may also be investigated, and will be described later in the section on site-specific data recovery plans.

Documentation of Stratigraphic Sequence

The first goal of excavation is to establish the stratigraphic history of each site. Therefore excavations will be placed such that the depositional sequence(s) are exposed inside and outside of features. Underlying substrate and post-abandonment deposition will be distinguished from cultural deposits. Stratigraphy of particular features will be placed in the context of their sites, and sites will be placed within the context of the project area. Based on past work, it is anticipated that stratigraphy will be similar and simple throughout most of the project area, with potential for small areas of more complex layering within some heavily used features.

Documentation of Feature Chronology

Sites with surface features will be subject to excavation to determine the stratigraphic association of feature foundations, so that at least a relative chronology can be established. Likewise, subsurface features will be placed within the stratigraphic sequence. Although the expectation is that most excavations will encounter a lone cultural layer, any more complex stratigraphy will be placed in a Harris matrix system (Harris 1989), which will include all identifiable stages of surface feature construction, addition, and dismantling. This work will help construct a relative chronology, and radiocarbon dating will be used on at least a sample of features to provide absolute dates.

Documentation of Site and Feature Assemblages

Beginning with each minimum collection provenience (grid units for surface collections, and strata within excavation units for subsurface collections), the next basic task will be to create an inventory and basic description of cultural materials. Midden will be classified by taxa and weighed. Artifacts will be classified by material and type, measured, and weighed; samples of different types will be photographed and in some cases illustrated. Lithic debitage will be counted and weighed, the range of dimensions recorded for each lot, classified according to the degrees of decortication and modification, and finally described in terms of material, form, and any other salient attributes. Following these descriptive tasks, the assemblages of particular grid or stratigraphic units will be considered in

context of features and sites in an attempt to identify any systematic variation or patterning.

Research Questions

Although SHPD standards state that an inventory survey needs to go no further than documenting the resources present, the 1993 report did pose several research-oriented questions regarding southwest Kaluako'i, following topics suggested for the area by Weisler (1984). The nature of the project area forces revision of the research questions for this stage of investigation. Work will occur mostly within a corridor running approximately parallel to the coast, *mauka* of site concentrations. In addition, the project area includes several spurs leading to public beach accesses and to subdivision parcels; these are planned to avoid site complexes, and therefore will also relate more to peripheral areas than to core sites. Finally, data recovery is proposed for a limited number of sites within the subdivision lots, sites that mostly represent temporary habitation or workshops areas and are significant for their information only. Habitation in the data recovery sites is mostly limited to marginal features, with agriculture and lithic work sites being better represented, so the unbiased examination of settlement patterns attempted in 1993 will not be possible. Likewise, distance from the coast vastly reduces the amount of marine midden present, and therefore consideration of subsistence strategies will focus on agriculture. The earlier focus on lithic resources must be shifted to later stages of tool production, since few, if any sources of stone will occur within the project corridor. Finally, the consideration of sociopolitical complexity, difficult enough with the inventory data, would be presumptuous given the thin slice of the overall site spectrum that will be encountered.

The archaeological marginality of the data recovery sites makes them of limited use for considering the broad questions posed previously, but also creates its own opportunities. The margins of settlements clustering around the small bays of west and the coastal flats of the south may also be considered as frontiers, something akin to the high water mark of the culture that colonized these shores, where the modified and built landscape met the wild country. This kind of area has the potential to inform on land use in interesting ways, providing data that may reflect the Hawaiian zoning of the landscape into different types of use and degrees of human permanence (Malo 1951, Kamakau 1992, Handy and Handy 1972). On a different level, the sites may inform on central place theory, or core-periphery systems. As well as being the agricultural outlier of a coastal settlement, however, it is important to consider that the middle elevations also held the access routes between the more heavily used coastal and upland zones. The 1993 report showed that this was the case in Kāmaka'ipō, where a specific type of cairn marked *mauka-makai* trails. It was also evident that activities upon which coastal settlements depended, especially agriculture and stone tool manufacture, occurred primarily on the margins of habitation complexes. The irony of this is that the main road corridor, following a more or less unvarying elevation, becomes an important way of understanding the older *mauka-makai* trail corridors, since it will cross-cut the old trail networks and highlight patterns of where they occur and where they do not.

Land Use on the Settlement Margins

To the degree that the project area includes the peripheries of the major coastal settlements, it is useful in investigating the ways in which ancient residents of

Moloka'i used their frontier. Known sites suggest that agriculture was the dominant use, but this project will also attempt to evaluate the importance of lithic and temporary habitation sites by excavating samples at most such sites in the area of potential effect. Did these other functions occur independently, or may they be better understood as agriculturally related activities? Data recovery may occur primarily at the margins of coastal settlements, but by no means in inaccessible and remote land, and therefore it will be interesting to see the degree to which artifacts, midden, and feature styles prevalent at the bay settlements are also found here. In other words, how much does the cultural assemblage of the outlying sites conform to that of the coastal centers? Also, the permanence of the inland margin sites is worth investigation. Do they represent repeated, long-term use of this area, or were they short-lived frontier sites?

Sites that may be excavated regarding settlement margins will include: 520, 692, 694, 698, 743, 745, 746, 749, 753, 755, 756, 758, 1118, 1121, 1122, 1124, 1125, 1131, 1132, 1136, 1153, 1172, and 1784. Many of these sites will be outside the refined area of potential effect, and will therefore not be excavated. Unless a large number cannot be avoided, it is likely that all sites will at least have sample excavations.

Traditional Dryland Agricultural Features and Soils

Moving on from the issue of margins and frontiers, a narrower but crucial focus may be brought upon the practice of agriculture. This subject seems to have captivated archaeologists only where irrigation or vast field systems are involved, but as the basis for survival of Hawaiians it is of the utmost importance. Two types of features—planting circles and mounds—reflect the primitive state of archaeological understanding, since both tend to be interpreted with reference to archaeological folklore or occasionally to a few indigenous accounts. Excavation of these types of features will be directed toward understanding their agronomic benefits. Do they appear to aid in soil or moisture conservation? Does their construction involve use of organic or sediment fill? In the case of mounds, specific identification of planting versus clearing mounds will be sought, based on the types of stone present and the depth of topsoil present beneath the stones. Another class of agricultural features was the modified stone outcrop. These will be mapped and a sample excavated with the goal of understanding why such features may have been agriculturally useful.

After features, the second major source of data will be the soils. Traditional dryland agricultural practices by no means required features, and the presence of agriculturally viable soils will be tracked throughout the corridor, particularly with regard to their association with gulches or ridges. Soil samples from a variety of contexts will be sent for analysis to evaluate and compare their mineral nutrients, fertility, and acidity. Where it is available, charcoal will be collected for identification and dating. This data will inform on flora cleared from cultivation areas, and perhaps on the flora associated with cultivation. This approach is being used rather than pollen analysis because the scale being considered is more immediate (being wind-borne, pollen is more informative of regional than of local flora), and because comparative data are available for upland Kaluako'i sites. Erosion will be noted and possible links to agriculture will be considered, and features or modifications will be analyzed as to their potential to promote or retard erosion.

Sites that may address this topic include: 694, 736, 742, 745, 1130, and 1148. Many of these sites will be outside the refined area of potential effect, and will therefore not be excavated. Unless a large number cannot be avoided, it is likely that all sites will at least have sample excavations.

Lithic Production

Previous data have suggested that sources of tool-grade basalt occurred at higher elevations than most of the project area will include, and an obvious goal of this project is to verify this conclusion. Should any sources be found, the extent of their use will be evaluated, the suspicion being that any sources within the area of potential effect were probably relatively poor grade and were used briefly, perhaps only once, to supply blades rather than adzes or other more formal tools. If sources are not found, lithic work areas will be analyzed to determine the type(s) of materials present, type(s) of tools being made, and the stage(s) of production represented. In light of recent work near the Kukui Peak area (Major 2000), where evidence suggests that workshops were occupied by tool manufacturing specialists, lithics will be evaluated for evidence of the expertise involved, as reflected by regularity of technique, uniformity of production stage, quality of work, presence of specialized tools, and diversity of raw material.

Sites likely to address this research topic include: 692, 695-697, 738, 748, 1122, 1132, 1134, 1139, 1145, and 1151. Many of these sites will be outside the refined area of potential effect, and will therefore not be excavated. Unless a large number cannot be avoided, it is likely that all sites will at least have sample excavations.

Mauka-Makai Routes

The possibility that some of the data recovery sites could be nodes along travel or trade routes between the upland and coastal centers of occupation was raised earlier, and this presents an alternative to the wholesale conclusion that these sites are simply outliers to coastal settlements. In order to determine whether sites may be along *mauka-makai* trails, other sites beyond the project area must be considered first. This reveals *mauka-makai* oriented strings of sites in gulches (North and South Kamāka'ipō, as well as Kaheu and Kaunalā outside the area of potential effect), and atop ridges at Hakina and the southwest rift ridge extending northeast from Lā'au. (Interestingly, all of these converge in an area called "Pookohola" in Emory's 1922 notebook, itself a ridge on the southwest rift zone that provides a geologically convenient travel route toward Mauna Loa. This area has several lithic work areas and shelters—Site 1156-1158—and is also the route of the old lighthouse road, suggesting that it has been an important node in *mauka-makai* travel for centuries. Gentler, less rocky terrain and historical pineapple cultivation above this point make Pookohola the uppermost intact remain of the route.)

It is proposed that certain types of features—primarily cairns to mark routes and shelters for travelers to rest—are reflective of travel between the coast and the mountain, and therefore their locations will be carefully plotted. Assemblages of cultural materials found during surface collection and excavation may also indicate *mauka-makai* travel, since lithics from upland quarries or marine midden would have to be introduced. It is anticipated that charcoal identification may also help here.

Sites that are likely to address this research topic include: 692, 694, 738, 742, 743, 745, 748, 749, 756, 758, 760, 1130, 1139, 1141, and 1172. Many of these sites

will be outside the refined area of potential effect, and will therefore not be excavated. Unless a large number cannot be avoided, it is likely that all sites will at least have sample excavations.

Methods

Generally accepted archaeological practices and the draft SHPD rules for data recovery (HAR 13-13-278) will dictate the actions taken during this project. The initial step in fieldwork will be the relocation and verification of existing sites and search for additional surface sites within the project corridor. The entire area subject to impact, including the road corridor, turn-arounds, and staging areas, will be resurveyed to accomplish total documentation of surface sites and concentrations prior to excavation.

Locating Sites

Site locations will be fixed using a declination-adjusted compass in conjunction with aerial photographs with a topographic map overlay (using vegetation, landforms, eroded areas, and surveyed points serving for reference). In the case of artifacts observed without any formal features, the assemblage will be described and collections made. Artifact concentrations will be located on the topographic map in the same way as features. A GPS receiver may also be used to supplement ground surveys.

Excavation

Excavation of sites will employ three techniques that accommodate different purposes and accomplish varying degrees of control over vertical and horizontal control. What follows is a general discussion of excavation techniques and how they will be employed to optimize data recovery. Anticipated departures from these generic types will be mentioned in the site-specific data recovery plans later in this report; should field conditions dictate a modification of procedures, this will be reflected in the final report.

1 - Trenching (ST-#): Trenches are dug with picks, shovel, and when the deposit warrants, by trowel. Excavation is by stratigraphic unit, meaning any perceivable subdivision of the excavated volume, such as lithostratigraphic layers, depositional units, erosional faces, soil horizons, and features. Where trenching is used to expose a long profile in an area where burials or dense cultural deposits are unlikely, a backhoe may be used. Although backdirt is examined for cultural materials, only a limited sample of the matrix is screened in this type of excavation, since it is to be used primarily in agricultural features where the goal is to expose the stratigraphy and the feature's position within it. Profiles are drawn of all features and of at least representative portions of each cultural layer. Where features or particularly dense or complex deposits are encountered, controlled excavation techniques will be employed, and possible artifacts will be point provenienced relative to the trench datum.

2 - Probing (P-#): Done with shovels and/or trowels, these 30-40 cm circular units provide quick data regarding stratigraphy and cultural materials in known cultural deposits and features. Because of the likelihood of finding artifacts and midden, all sediment is screened through 1/4 inch mesh. Excavation is by stratigraphic unit, and

profiles are drawn of all features and of at least representative portions of each cultural layer. These will most often be employed in transect or grid formations to establish the boundaries of a cultural deposit and gain some understanding of its constituents.

3 - Controlled Testing (TU-#): Excavation by trowel and brush will be used in situations where more precise control is warranted, such as recovery of data from pit features. A combination of stratigraphic units and arbitrary levels within each are used for vertical control, and all matrix is screened through 1/4 inch mesh, or possibly 1/8 inch where conditions merit. Profiles and plan views will be drawn of each layer, all features, and of at least representative portions of each cultural layer. Features, tools and other significant attributes of stratigraphy or material culture are point-provenienced with reference to the unit datum. For units exceeding 1 m in length, collections for each 1 m portion are recorded and collected separately.

Sampling Strategy

In general, the type of excavation done depends on the type of deposits and data anticipated, as well as the degree of control necessary to interpret the site. Therefore probes will typically be an initial stage of excavation, in which the general stratigraphy is exposed and the vertical and horizontal extent of a site is defined. Probes may be followed by trenching in agricultural terraces, mounds, or planting circles so that a longer continuous exposure of stratigraphy can be recorded. If any of these types of features appears more complex, or has a noticeably denser cultural deposit, then a controlled test unit may be excavated to recover data with greater precision. Test units will also be used in C-shapes, enclosures, and pavements. Placement of excavation units will be determined by the type of feature being investigated, and sometimes by prior knowledge of the cultural deposits in a site.

C-shapes, for example, will be tested with controlled units laid out with a long axis extending from the opening through the back wall, recovering the majority of interior deposits and exposing a sectional view of the feature wall and its stratigraphic association. This placement generally results in discovery of any associated fire features within, but units may be extended.

Planting circles and **mounds** will typically be excavated with a trench or test unit placed over half of the feature so that a 50% sample of the fill will be screened and a cross-sectional profile will result; if warranted, the other half may then be excavated.

Terraces will likewise be excavated with trenches or test units, placed perpendicular to the terrace facing to reveal a sectional profile. The perpendicular orientation will show the type of terrace construction, amount of fill, and relationship between the built and natural strata. If there are relatively abundant cultural deposits indicating something more than agricultural use, probes will be used to determine the extents of the deposits, followed by controlled excavation; the procedure will follow that described below for sampling deposits.

Enclosures and **pavements** will be excavated using test units of various sizes and arrangements. A 50% sample of the interior of enclosures or the surface of pavements will be excavated, including central portions where fire features are commonly found. For features with interior or pavement areas exceeding 10 m²,

less than 50% may be excavated. In such cases, 5 m² of controlled units will be followed by removal of the contemporary horizon overburden to reveal any subsurface features, all of which will subsequently be excavated to recover at least 50% of their contents. Additional test units or stratigraphic trenches will be used to section one or more representative portions of any walls to provide a view of the foundations and its stratigraphic association.

Deposits of midden and **lithics** are documented or suspected in many of the project area sites, and a major task of data recovery is to delineate the boundaries of these and recover samples adequate for site interpretation. In many cases, complete excavation would be an immense task, and would go well beyond a point of diminishing returns for information. Once the extent and nature of a deposit has been determined, and the distribution of its component materials described and interpreted adequately, collection of redundant information is not necessary for data recovery purposes. The approach will be to collect a sample through the use of probes and controlled units.

The first step of this process will be to define the area that may be impacted, and create a grid covering it. Using a sample interval of 2 m (1 m where refinement is needed), the edges of a deposit will be defined, and a sample of the entire deposit collected. If the deposit is no more than 10 m², then it will be excavated with 1 m² units in a checkerboard arrangement to provide a minimum 50% sample. If the area is over 10 m² and less than 100 m², any post-abandonment overburden will be stripped away, and a 5-10% sample of the overall deposit excavated, with the potential for additional units if more are needed to cover the apparent range of variation. Subsurface features revealed will be excavated to provide a minimum 50% sample of the fill in each, regardless of whether they fall within a excavated grid square. When this has been done, machinery will be used to remove the cultural deposit to its average bottom depth, so that any deeper features penetrating the substrate may be seen and excavated as well. If machines are not available, a fraction of the area will be stripped with the same goal. If the deposit exceeds 100 m², the extra portion will be stripped by machine, to allow recovery of a minimum 50% sample from each feature fill.

Because the data recovery features will be impacted by construction, 50% controlled excavation is to be done first, so that a profile can be recorded. Following this, the remainder of the fill may be collected. In such instances, only the cultural fill will be recovered and not all materials may be collected.

Archaeological Presence During Construction

By definition, data recovery sites have already undergone mitigation, and therefore no longer retain integrity or significance. However, monitoring may be done in and near such sites, in part to be aware of any unexpected components to known deposits. Because data recovery excavations for this project will involve large, representative samples, it is not considered likely that anomalous or non-redundant information will be encountered near data recovery sites. However, since construction may be the last chance to collect information about sites before they lose integrity, monitoring will be done in many cases. For the most part, monitoring will consist of watching machine excavation and grading in order to search for undiscovered buried features. Any such features will be recorded and mitigated through controlled excavation. In addition, excavated sediments will be inspected visually, and in some cases sifted through quarter-inch mesh. Artifacts will be collected, whereas midden will be described. Discovery of relatively abundant

artifacts, midden, or charcoal will trigger a temporary work stoppage to determine if an intact remnant of the source deposit is still present; if so, it will be recorded and mitigated as appropriate. Because the sites where data recovery has been verified by SHPD are considered no longer significant, judgement of how much archaeological recovery to be done will be a matter for the field archaeologist to decide, although guidance of the Kūpuna Advisors will be sought in advance to determine their preference.

Lab Analyses and Collection Treatment

Materials collected during data recovery will be analyzed in Hawai'i. Artifacts and midden will be sorted by material and function, then measured and weighed, and described. This information will be recorded along with illustrations and/or photographs of representative specimens to form a complete catalog of cultural materials that will be included in the final report.

Charcoal identification will be performed in Honolulu by International Archaeological Institute, Inc., and radiocarbon dating by Beta Analytic in Florida. All collections, except for charcoal consumed during the dating procedure, will be returned to the landowner for storage on Moloka'i. Field notes, excavation forms, photographs, negatives, and unpublished documents will be retained by the consultant. Copies of the final report will be provided to the client, SHPD, and the Moloka'i Public Library upon acceptance by SHPD.

DETAILED DATA RECOVERY PLAN, BY SITE

Table D-1. Data Recovery Actions, by Site

(For Research Topics: M = Marginal land use, A = Agriculture, L = Lithics, R = Routes Mauka-Makai)

Site Number	Research Topic	Mapping	Grid Probes	Probes	Strat. Trench	Test Unit	C-shape Test Unit	Surface Collection
697	L	X						X
698	M	X	X		X			
743	M	X	X		X			
745	AM	X	X		X	X		
746	M	X	X		X			
749	M	X	X			X		
755	M	X	X		X			X
756	M	X	X					
758	M							
760	M			X				
761	<i>M</i>			<i>X</i>				
762	M	X	X					
1118	M	X		X		X		
1121	M	X	X					X
1124	AM	X	X			X		
1125	<i>M</i>	<i>X</i>	<i>X</i>			<i>X</i>		
1130	A	X	X		X		X	
1131	M	X	X		X			
1132	ML	X	X			X		
1134	ML	X	X			X		
1136	<i>M</i>	<i>X</i>	<i>X</i>					
1141	T	X	X			X		
1145	L	X	X			X		

NOTE: Sites in *italics* (761, 1125, and 1136) are likely to be outside of the subdivision, and if so will be preserved rather than subjected to data recovery. Their inclusion here covers the possibility that they may be within subdivision lots.

Site 697

This site consists of a 10 by 20 m area of lithic debris on hardpan. Data recovery will consist of surface collection.

Site 698

This site contains a wooden water tank and a trough, both built on stone platforms, which are probably older than 50 years based on a 1947 map that marks a “well” in this location. However, the main object of data recovery is to explore a stone wall remnant and determine if any intact cultural deposit remains at this location, since midden and lithics were observed on the surface.

Data recovery will begin with mapping of the surface features, which should suffice as data recovery for the historic features. This will be followed by excavation of a trench through the wall remnant to determine its age and stratigraphic association, as well as evaluate the likelihood of an intact cultural deposit. Should such a deposit appear likely, grid probe excavation will be done following the procedures outlined in **Sampling**.

Site 743

This site consists of a single stone alignment, where a 1929 bottle was found during the 1991 inventory.

Data recovery will begin with mapping, followed by excavation of a single trench through the feature to explore its stratigraphic association and determine the likelihood of a buried cultural deposit. If no buried materials are found, there will be no further data recovery. Otherwise, a grid and shovel probes will be used to determine the horizontal and vertical extent of any buried deposit and recover data following the procedure outlined in **Sampling**.

Site 745

This site consists of an outcrop with two small enclosures attached, and what was interpreted as a fire hearth a few meters away. Together, these minimal modifications were interpreted as a possible planting area and temporary habitation.

Data recovery will begin with mapping the three features and the outcrop. In addition, controlled excavation will be done at the three features, so that precise data regarding their cultural assemblages and their stratigraphic association can be gathered. A 1.0 by 1.0 m unit will be placed halfway across Feature 1 (the suspected hearth), providing a cross-section profile; after this is recorded, any remaining feature fill will be excavated within a second unit of the same size. Each of the planting circles will be similarly sectioned along axes perpendicular to the rock outcrop; if there are cultural materials suggestive of something more than planting soil, the remainder of the feature's fills will also be excavated. Following this, shovel probes along a grid will be used to determine the horizontal and vertical extent of the site, and recover data according to the procedures outlined in **Sampling**.

Site 746

This site consists of an outcrop with a stacked stone wall extending outward to form an enclosure, as well as two small stone mounds. Although it was interpreted as a ranching feature in the 1993 report, it is possible that it may have served a different function, and further investigation is warranted.

Data recovery will begin with mapping to more accurately record the surface features. This will be followed by trenches sectioning the mounds and going through part of the enclosure wall. If trenching confirms that the features are rather recent and there is no significant cultural deposit associated with them, data recovery will cease. If, however, trenches reveal a buried deposit, then probes will be excavated on a grid system, according to the procedures outlined in **Sampling**.

Site 749

This site consists of a boulder outcrop with a natural overhang shelter and several areas of stacked stone creating small enclosed areas. A single test excavation done here in 1991 demonstrated the presence of a thin cultural layer containing both traditional (basalt debitage and shell midden) and historically introduced (ungulate bones and teeth) materials. Although it is possible that a deeper or more discretely stratified cultural deposit exists at this site, it is not likely.

Data recovery will begin with mapping, followed by controlled excavations in each of the enclosed areas. The controlled units within modified areas are to augment results from the earlier (1991) excavations. These units will explore both the interior deposits and the stratigraphic associations of the walls. It is anticipated that excavation of 2 1.0 by 1.0 m units within each enclosed area will result in recovery of 50% or more of the available deposits, as well as reveal the stratigraphic associations of the architectural elements. It is also likely, however, that with slightly more effort nearly 100% of the deposits can be recovered, and an attempt will be made to do a larger excavation covering most or all of the overhang deposits.

Following controlled excavation, shovel probes will cover the area outside of defined features on a 2 m grid, determining the extent of buried deposits and recovering additional data according to the procedures detailed in **Sampling**.

Site 755

This site is a pair of adjacent enclosure walls utilizing a natural outcrop.

Data recovery will begin with mapping, followed by trenching through the shared wall and at least one of the enclosures' outer walls. Matrix will be screened, and if a rich or complex cultural deposit is found, excavation will proceed as a controlled test unit. Unless a buried deposit is absent, the next step will be excavation of probes along a grid, as described in the procedures for deposits in **Sampling**. Finally, the stone mortar used in the feature 1 wall will be collected.

Site 756

This site consists of a boulder outcrop with modifications that create a large enclosure, within which are several natural overhang shelters.

Data recovery will begin with mapping, after which the interior will be marked in a grid and probed according to the procedures outlined for deposits in **Sampling**.

Site 758

This site consists of a natural boulder concentration with a piled stone wall extending outward from it and creating an enclosure. Although midden was not observed, this feature was interpreted as a temporary habitation in the 1993 report.

Data recovery will begin with the production of a map of this site, since none was included in the inventory survey report. One or more trenches will be excavated through the pile stone wall to reveal its stratigraphic association. Subsequently, a grid of shovel probes will be excavated in order to determine the extent and nature of any cultural deposits following the procedures outlined for deposits in **Sampling**.

Site 760

This site consists of two enclosure walls attached to a large outcrop, and was interpreted in 1993 as a military feature, based on the style of construction and absence of traditional cultural materials.

Military training occurred on Moloka'i during WWII and in the mid-1950s, but was not well documented, and therefore it is not likely that the age (and thus eligibility under NRHP criteria) can be determined historically. Since a major criterion is that sites be more than 50 years old, the potential significance of WWII sites would have changed since the 1991 survey. This, plus the uncertainty of wall style as an indicator of age, means that at least some testing should occur here. Given the expectation that the features are in fact temporary historic structures, it is likely that testing will indicate a lack of significance, and will end in an evaluation of no significance, or discovery of poor deposits that can be mitigated immediately. The planned treatment for this site will be to excavate it in a way that will satisfy data recovery requirements.

Shovel probes will be placed on two transects parallel to the southwest walls. Should cultural deposits be encountered, the follow-up will consist of controlled excavation of all features, and of up to 5 m² of a general deposit. A trench will section one of the walls.

Site 761

This is another enclosure formed of a stacked wall attached to a boulder outcrop. Like Site 760, it appears to be historic based on the construction style.

Data recovery will consist of mapping and of shovel probes along a northeast-southwest transect, covering the interior and leeward exterior of the feature. In line with this transect, a small trench will be excavated through the wall to provide a cross-sectional view of its construction and stratigraphic association. If the probes indicate a buried cultural deposit, excavation of probes on a grid as described in **Sampling** will follow.

Uncertainty about the exact location of this site relative to the proposed subdivision boundary remains at the time of writing, and it may be that Site 761 is within the Shoreline Conservation Zone, in which the site treatment will change to preservation.

Site 762

This is another enclosure formed of a stacked wall attached to a boulder outcrop. Like Site 761 and 762, it appears to be historic based on the construction style.

Data recovery will consist of mapping and of shovel probes along a north-south transect, covering the interior and exterior of the feature. In line with this transect, a small trench will be excavated through a wall to provide a cross-sectional view of its construction and stratigraphic association. If the probes indicate a buried cultural deposit, excavation of probes on a grid as described in **Sampling** will follow.

Site 1118

This site consists of an outcrop with several natural overhang shelters, three of which have signs of temporary occupation.

Data recovery will begin with a more detailed map, followed by excavation of each shelter interior. The initial task would be to better document the site's surface attributes, producing a detailed map and defining the boundaries more precisely. Data recovery would focus on Feature 2, doing 100% excavation (approximately 1.5 m²) of that shelter. Each remaining shelter would be sectioned to excavate a 50% sample of the overall volume (less than 1 m² each), and reveal the stratigraphic sequence. The remaining cultural deposit would then be recovered to provide 100% recovery of its contents. Excavation of probes on a grid as described in **Sampling** will follow to determine the extent of midden and artifacts beyond the shelters.

Site 1121

This site has no constructed features, and instead consists of a small concentration of cowry shells amid natural boulders.

Data recovery will begin by establishing a grid centered on the shells, and measuring 6 to 8 m on a side. This will be used to map the distribution of midden, after which surface collection will be done. Probes will be placed at grid intersections to determine the presence or absence and extent of any subsurface deposit, and follow-up excavations may occur according to the procedures described in **Sampling**.

Site 1124

This site is another boulder outcrop with several small overhangs, one of which has midden. A short section of stacked stones at the south end is the only modification, and appears to be a hunting blind.

Data recovery will begin with a map. Next, a controlled excavation unit will be placed halfway across the overhang shelter, recovering 50% of the deposit and exposing a profile view. After this, the remaining cultural deposit will be recovered. Data recovery will be completed with a grid of shovel probes excavated to test and recover data from the deposit as described in **Sampling**.

Site 1125

This site is another boulder outcrop, this time with just one small overhang. Several marine shells and a 2 by 2-m area of level soil are present.

Data recovery will begin with a map. Next, a controlled excavation unit will be placed halfway across the overhang shelter, recovering 50% of the deposit and exposing a profile view. After this, the remaining cultural deposit will be recovered. Data recovery will be completed with a grid of shovel probes excavated to test and recover data from the deposit as described in **Sampling**.

Uncertainty about the exact location of this site relative to the proposed subdivision boundary remains at the time of writing, and it may be that Site 1125 is within the Shoreline Conservation Zone, in which the site treatment will change to preservation.

Site 1130

This site consists of four small enclosures (75-cm diameter) and one 1.5-m partial enclosure built around a concentration of larger boulders and interpreted as a

planting area. Features 1-4 are a cluster of similarly sized enclosures at the north end of the concentration, and Feature 5 is alone, but twice the size of the others.

Because of their small size, juxtaposition, and similarity, the Feature 1-4 set will be considered as one focus of data recovery excavation. A 1.0 by 1.5 m unit will be centered on Feature 2, exposing the walls dividing Feature 2 from 1, 3, and 4. The unit will also expose the exterior walls of Features 1-3, and some of the soil outside of the features for comparison. By excavating all but one wall of this set of enclosures, this unit will address issues of relative chronology: Do the features appear to be contemporaneous, or were some added later? Do the interior divisions separating these features appear to have been made originally, or could this have once been a larger enclosure (like Feature 5) that was later subdivided? In addition to these questions, sediments, stratigraphy, and cultural materials will be used to critically evaluate the existing interpretation of these features as planting areas.

Feature 5 will be excavated with a minimum 1.0 by 1.0 m unit, exposing 67% or more of the internal area. Although the enclosure wall will be at least partially excavated, the issues of relative chronology will not be pertinent to this enclosure, and the research focus will instead be on using data to evaluate the interpretation.

Following the controlled excavation units, a grid of shovel probes will be excavated to establish whether a cultural deposit is present, and if so, recover data from the deposit as described in **Sampling**.

There were no indications during the inventory survey that Site B5-90 went beyond the boulder concentration. Shovel probes may be used to test for deposits outside of features 1-5 should the known features yield assemblages indicating activity beyond agriculture, or if a field check turns up evidence of additional features or deposits.

Site 1131

This site consists of a small overhang shelter (.5-m wide and 0.75-m deep), outside of which is a 2-m section of stacked stone wall.

Data recovery will begin with a map, followed by controlled excavation of half of the shelter interior. After the resulting profile is recorded, any remaining cultural deposit within the shelter will be excavated. Depending on the content and extent of the deposit, either a trench or another controlled unit will extend to the southwest through the stacked wall, so that its foundation can be exposed in cross section. Finally, a grid of shovel probes will be excavated to test for and recover data from the deposit as described in **Sampling**.

Site 1132

Although this is another small overhang shelter associated with a natural outcrop, the quantity of midden and lithics is greater than at others, and the inventory reported that a fire pit was present. Cobbles atop the boulder appear to be a marker for this site.

Data recovery will begin with a map, followed by controlled excavation of half of the fire pit; after recording the resulting profile, any remaining cultural fill will be excavated. It is anticipated that a 1.0 by 1.0 m unit will provide complete coverage. Depending on the contents and density of any cultural deposit outside of the pit, controlled excavation will extend outward from the first unit, probably adding another two or three square meters of excavation. The outer boundaries of

the deposit will be established using a grid of shovel probes (and possibly additional controlled excavation) as described in **Sampling**.

Site 1134

This is another rock overhang shelter used for temporary habitation, and an additional modification in the form of a 1-m alignment of stones just outside the overhang. Basalt flakes and midden are present.

Data recovery will begin with a detailed map. Subsurface data recovery will begin with a 1.0 by 1.5 m excavation bounded by the back of the shelter on the east and extending through the alignment on the north reveal the stratigraphic associations of the alignment and the cultural deposit. This will also recover nearly 100% of the overhang interior as well as some of the exterior; if warranted by the contents and extent of the subsurface deposit, additional 1.0 by 1.0 m units will be excavated to the south and west. The next step would be to dig shovel probes on a grid to determine the total extent of the subsurface deposit and recover data as described in **Sampling**.

Site 1136

This site has a shallow overhang shelter in the lee of natural boulders, with a 3 by 3-m area of scattered shell midden. About 20-m to the southeast is a small stone cairn with a metal pole in the center.

Data recovery will consist of a single trench through from the back of the shelter to the edge of the midden, revealing a cross section profile and testing for the presence of a buried cultural deposit. If no deposit is present, data recovery will end, but if one is found, a grid of probes as described in **Sampling** will be used to determine its extent and recover data. The stone cairn will also be dismantled to confirm that it is a historic era feature.

Uncertainty about the exact location of this site relative to the proposed subdivision boundary remains at the time of writing, and it may be that Site 1136 is within the Shoreline Conservation Zone, in which the site treatment will change to preservation.

Site 1141

Because this site consists of just two boulders with cobble stacking on top and a seemingly natural, unutilized shelter beneath, data recovery will focus on surface attributes. A more detailed map will be produced, and the area will be resurveyed to determine if other similar features are present, indicating a traditional trail. Shovel probes will be excavated on a grid to determine if there is a buried cultural deposit, and if so, recovery will proceed according to the procedures for deposits described in **Sampling**.

Site 1145

This site is another boulder outcrop with a small overhang shelter beneath. Atop one boulder is a small lithic scatter.

Data recovery will begin with a map, followed by excavation of shovel probes along a grid according to the procedures for deposits described in **Sampling**. The grid will also serve for surface collection of the lithics on top of the boulder. A single controlled excavation unit will be placed halfway across the shelter to

determine whether there is a cultural deposit within and expose a profile. If cultural materials are present, the excavation will be extended to recover additional data; the total area of these excavations is expected to be between 1.0 and 2.0 m².

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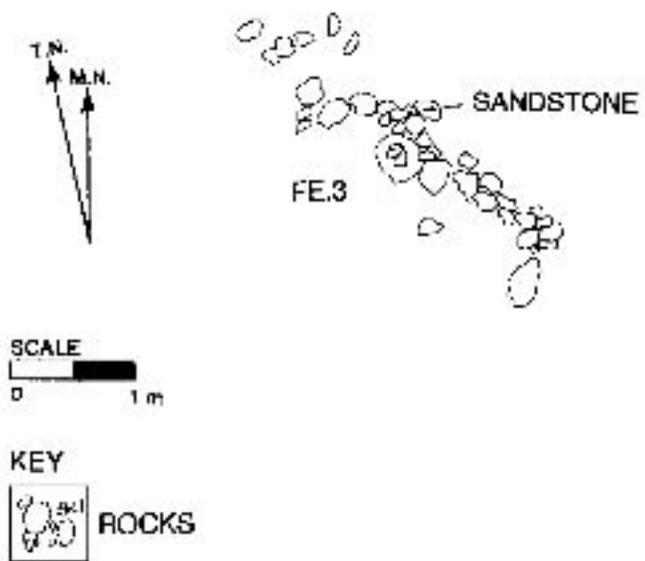
APPENDIX A

Site Data

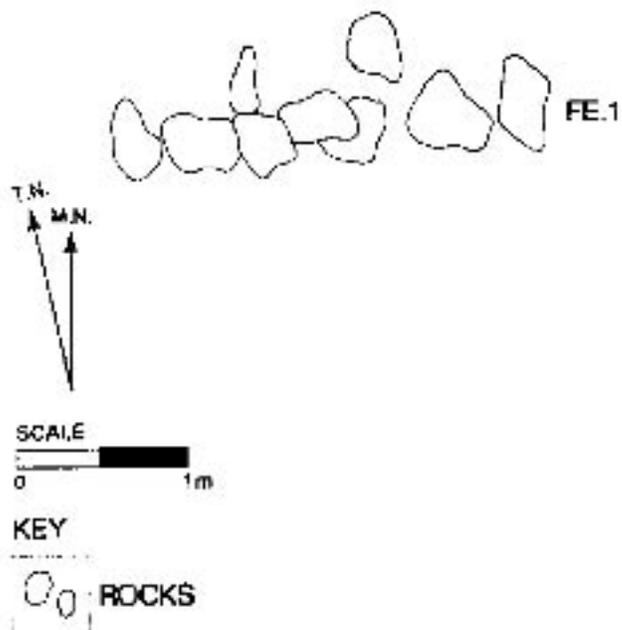
The following table and maps provide information from the inventory report (Dixon and Major 1993). Summaries of the site descriptions from that report appear in the Site Specific Data Recovery Plans in the body of this document.

Table RA-1: Site Inventory Data and Significance Summary

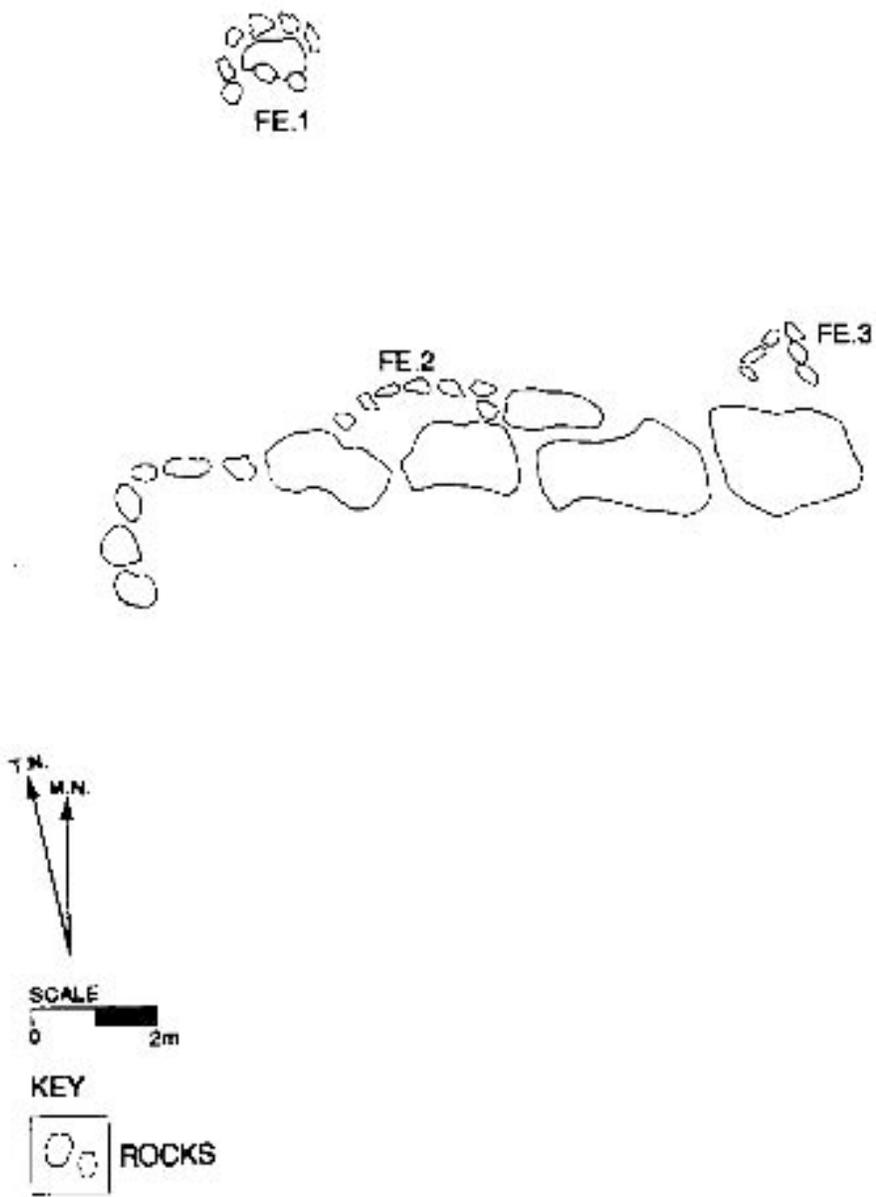
State Site Number	BPBM Site Number 50-MO-	Feature Types	Site Function	Site Area (meters)	Alt.	Signif.
697	B6-147	Lithic scatter	Lithic work	20 x 10	50	D
698	B6-148	Tank, Trough, Wall	Ranching, Possible habitation	20 x 10	30	D
743	B6-157	Alignment	Undetermined	10 x 5	30	D
745	B6-159	Alignment 2 enclosure alignments	Agriculture	30 x 20	60	D
746	B6-160	Enclosure 2 Mounds	Temporary Habitation, Historic	40 x 15	70	NS
749	B6-163	Rock shelter	Habitation	20 x 10	100	D
755	B6-169	2 Enclosures	Temporary Habitation	10 x 4	50	D
756	B6-170	2 Enclosures	Temporary Habitation	14 x 10	110	D
758	B6-172	Enclosure	Temporary Habitation	10 x 10	110	D
760	B6-174	2 Enclosures	Military/Hunting	30 x 15	100	NS
761	B6-175	Enclosure	Temporary Habitation, Historic	10 x 10	50	D
762	B6-176	Enclosure	Temporary Habitation, Historic	3 x 3	25	D
1118	B5-78	3 Rock shelters	Habitation	45 x 30	40	D
1121	B5-81	Midden	Historic Temporary Use	2 x 2	30	D
1124	B5-84	Rock shelter Wall	Temporary Habitation, Hunting	10 x 5	60	D
1125	B5-85	Rock shelter	Temporary Habitation	4 x 3	60	D
1130	B5-90	5 enclosure alignments	Agriculture	10 x 5	190	D
1131	B5-91	Modified Rock shelter	Temporary Habitation	2 x 2	170	D
1132	B5-92	Rock shelter	Temporary Habitation	5 x 5	60	D
1134	B5-93	Modified Rock shelter	Temporary Habitation	4 x 2	85	D
1136	B5-95	Rock shelter	Temporary Habitation	25 x 4	30	D
1141	B5-100	Rock shelter Cairn	Temporary Habitation	3 x 3	210	D
1145	B5-104	Rock shelter	Temporary Habitation, lithic work	2 x 2	150	D



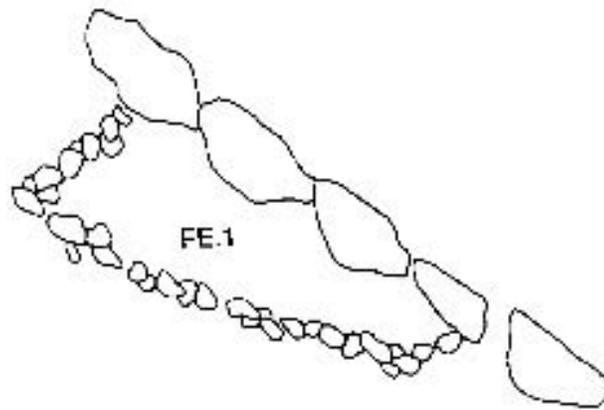
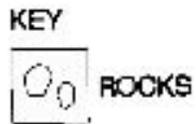
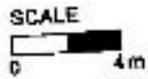
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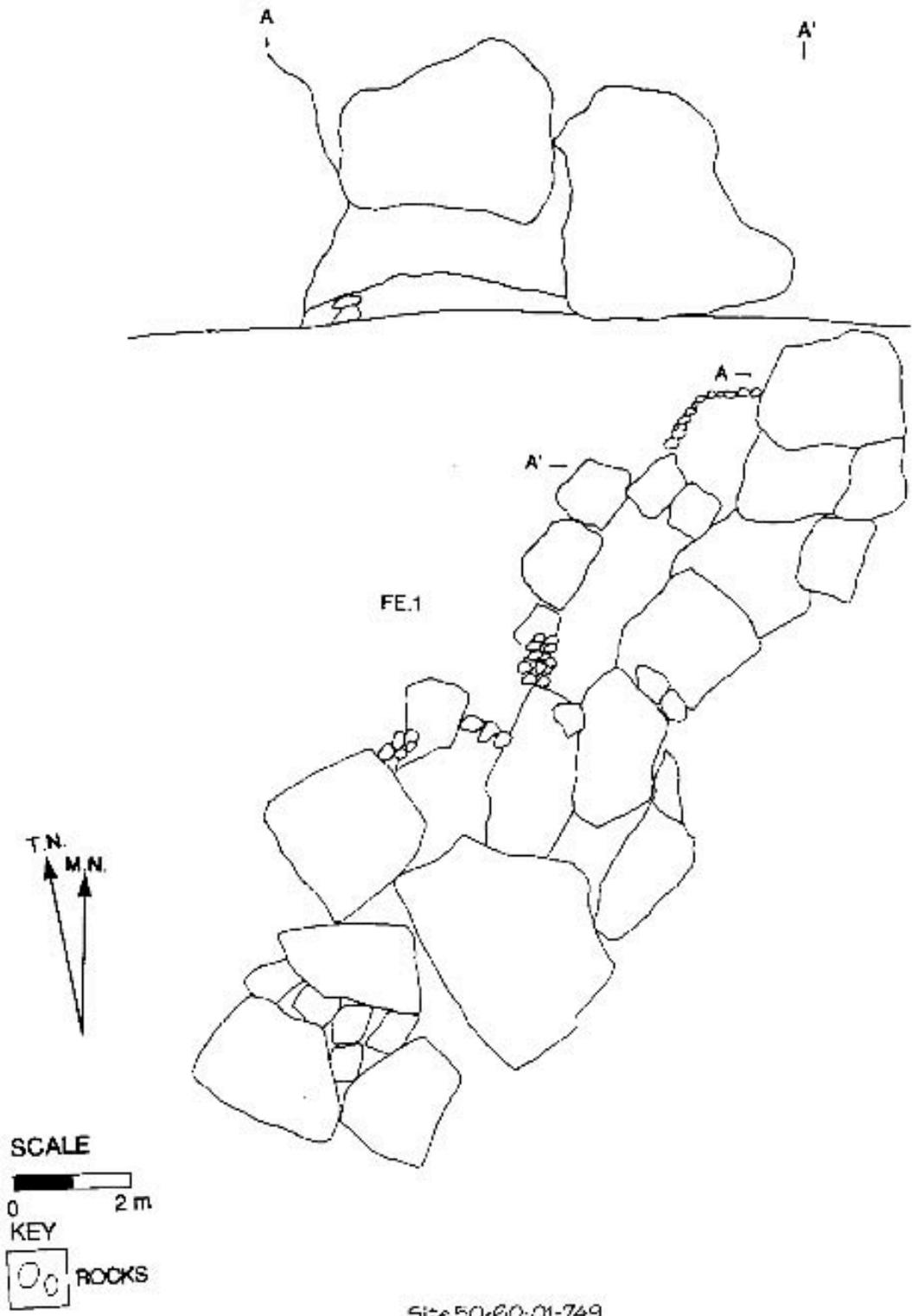
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Site 50-60-01-745



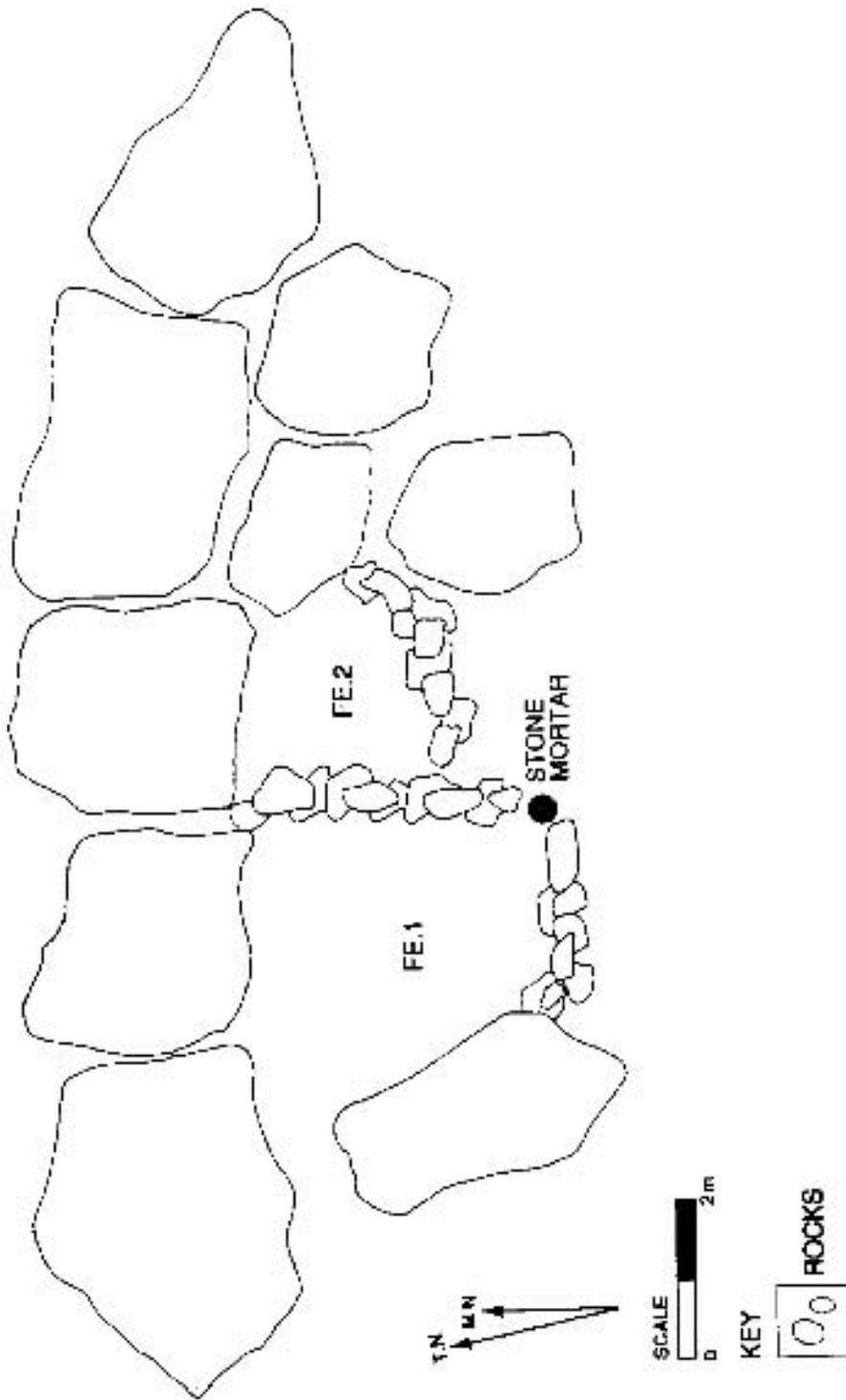
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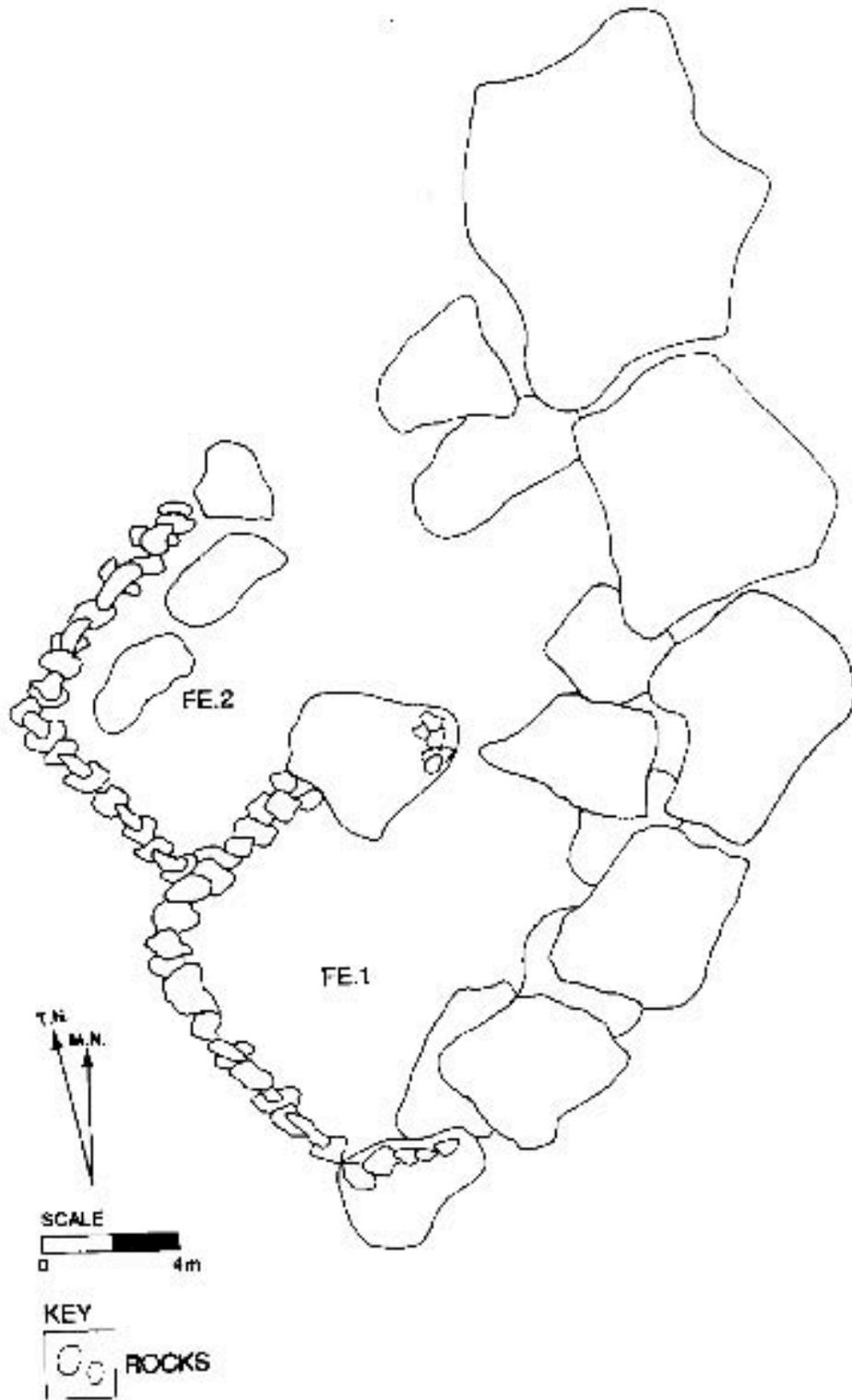
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Site 50-60-01-749

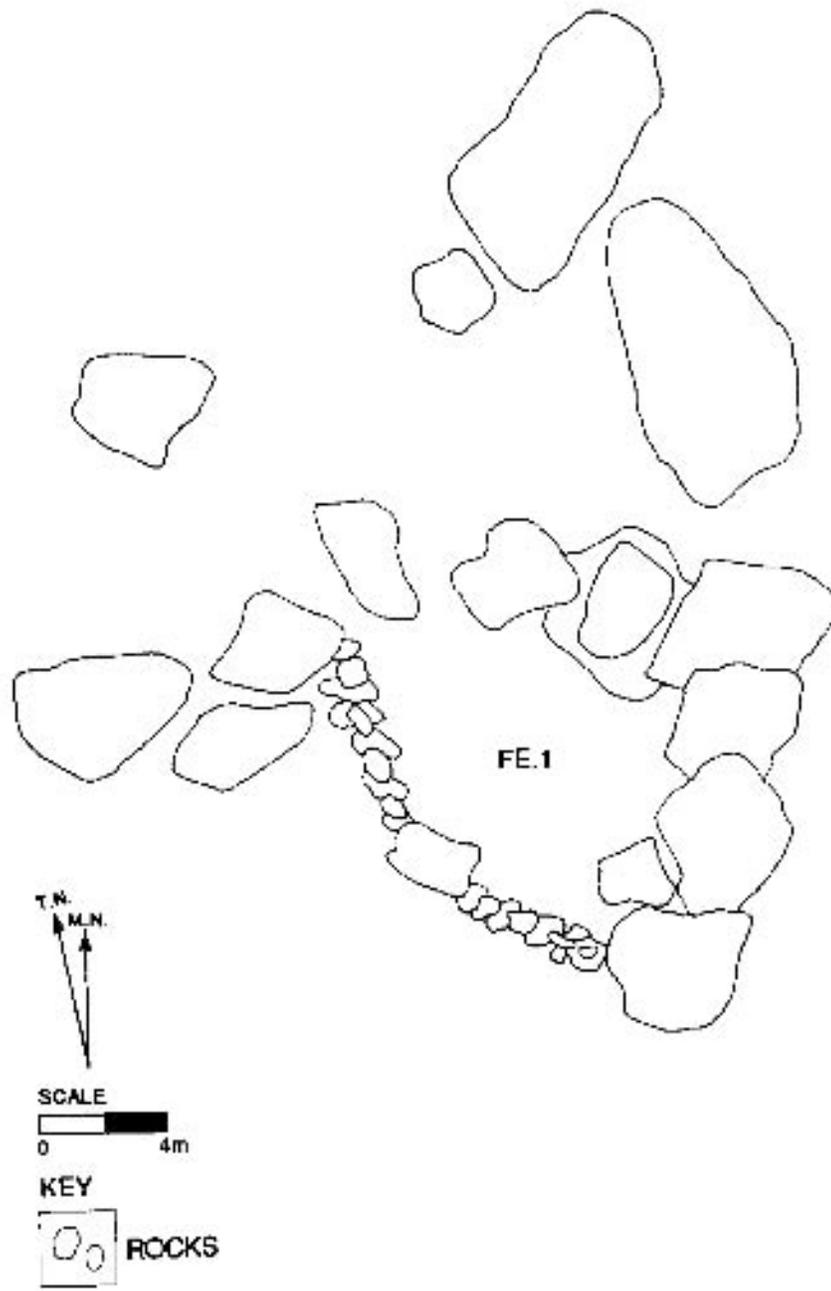
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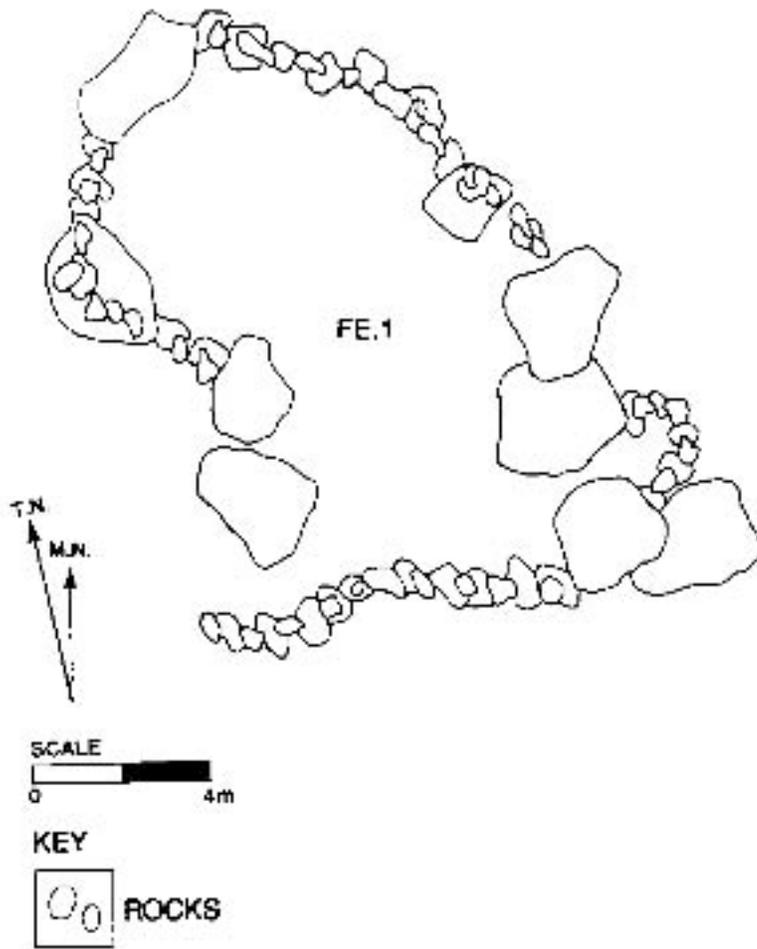
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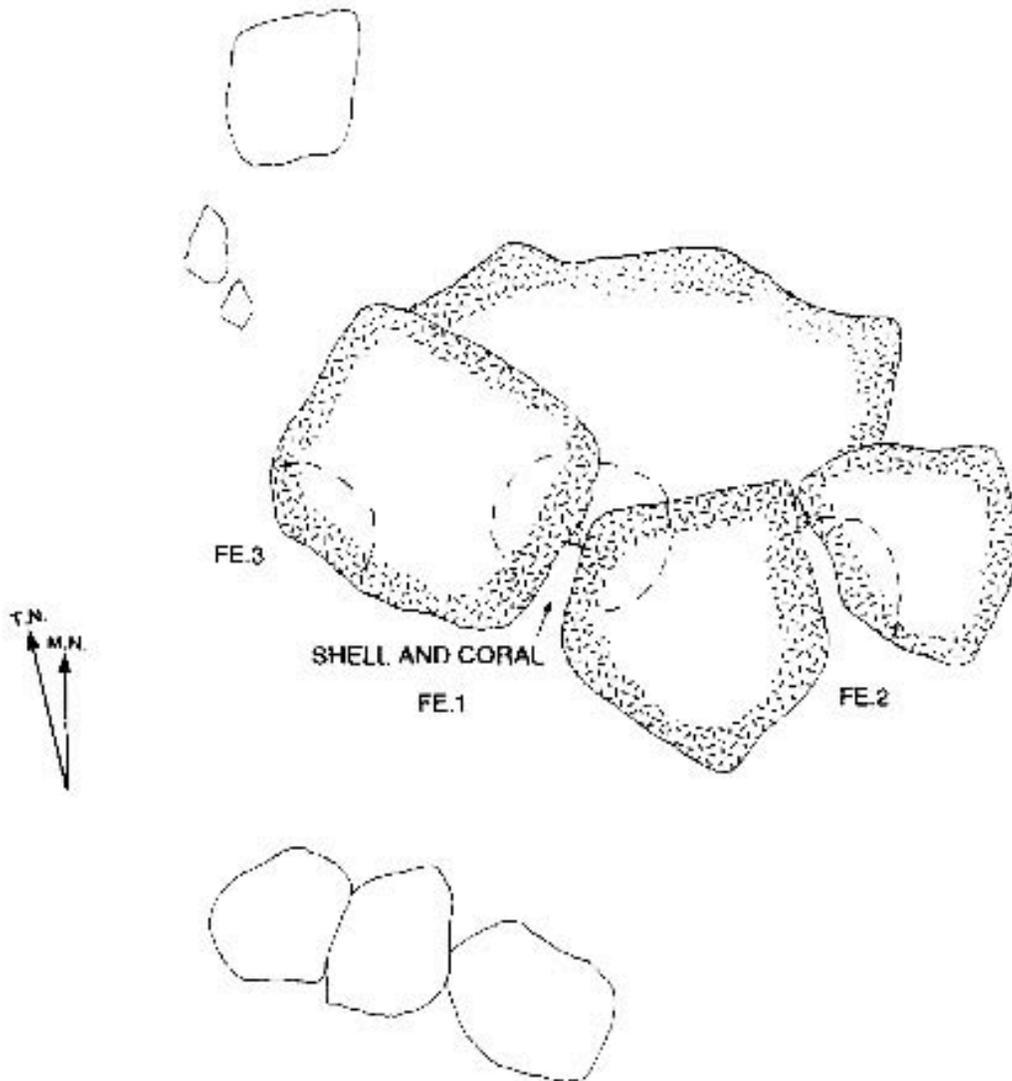
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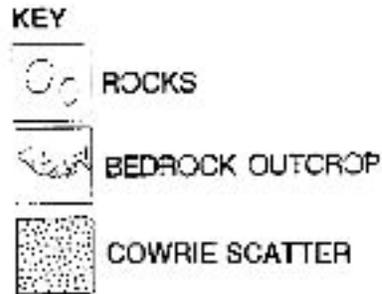
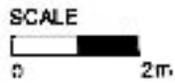
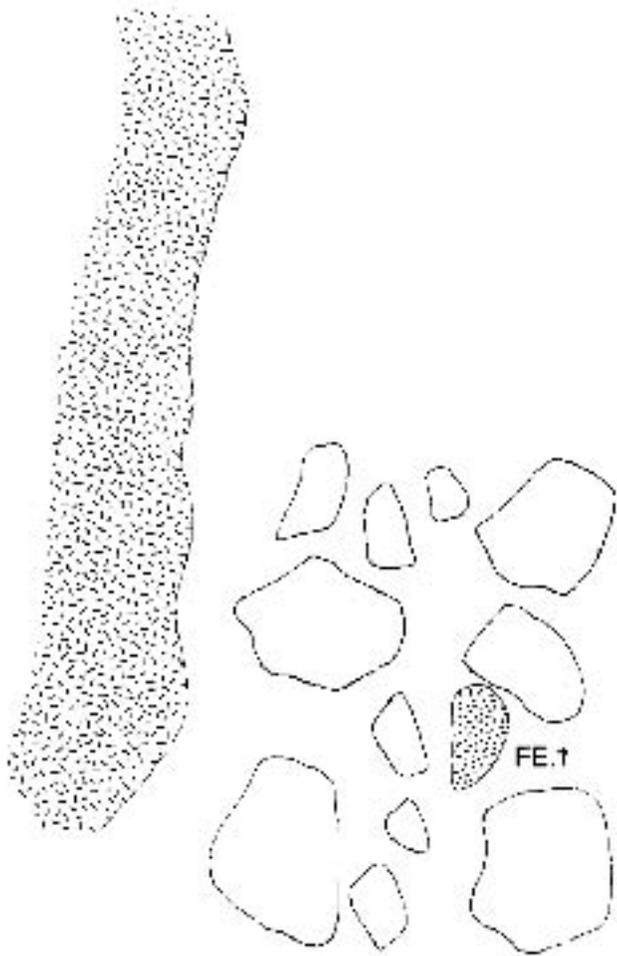
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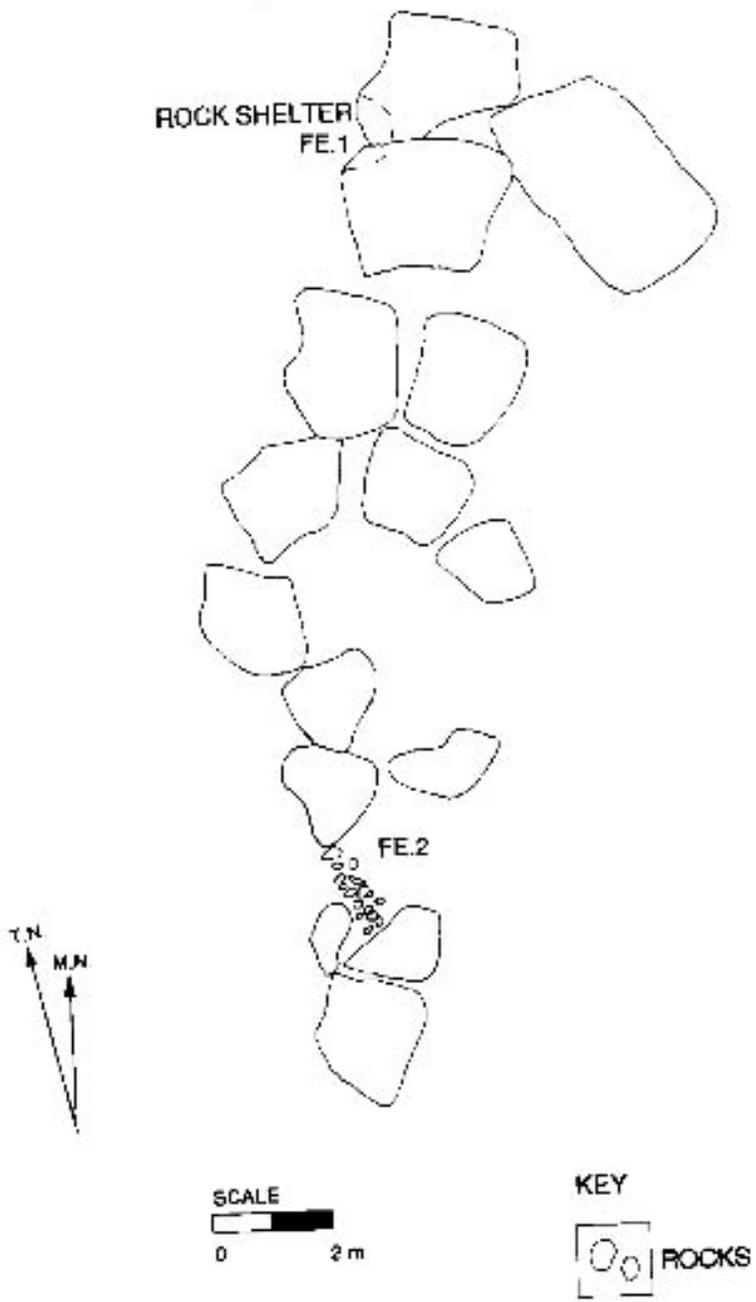
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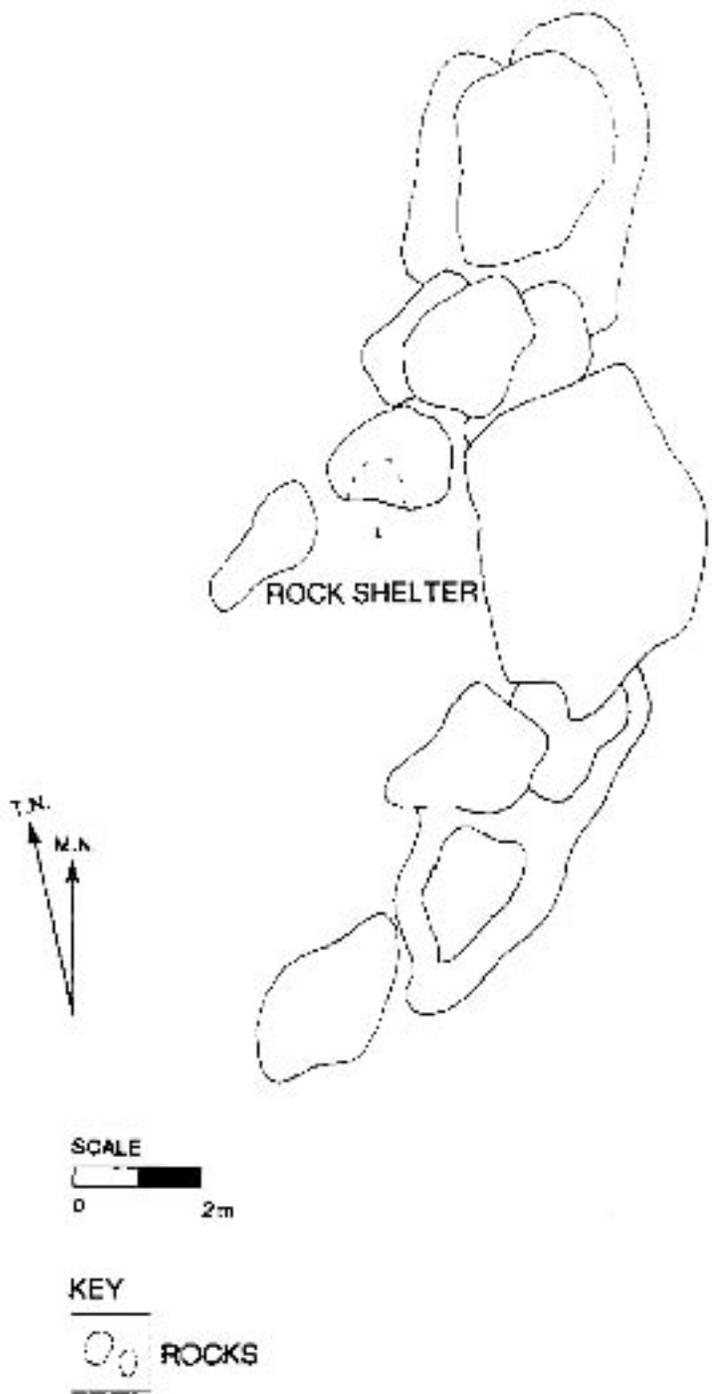
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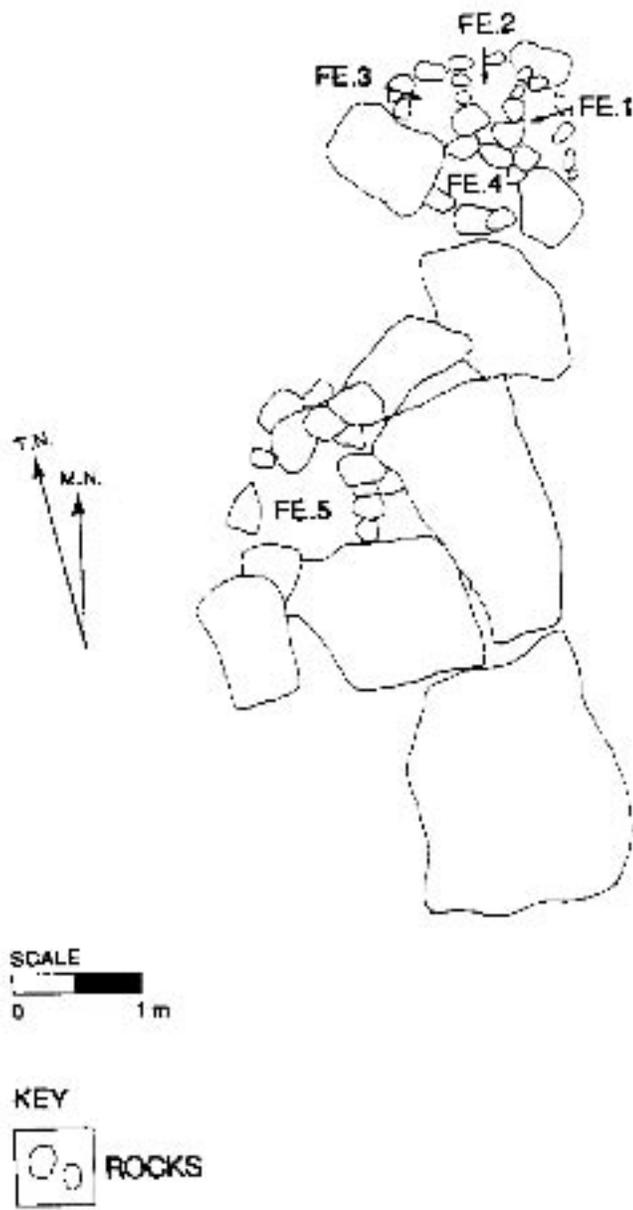
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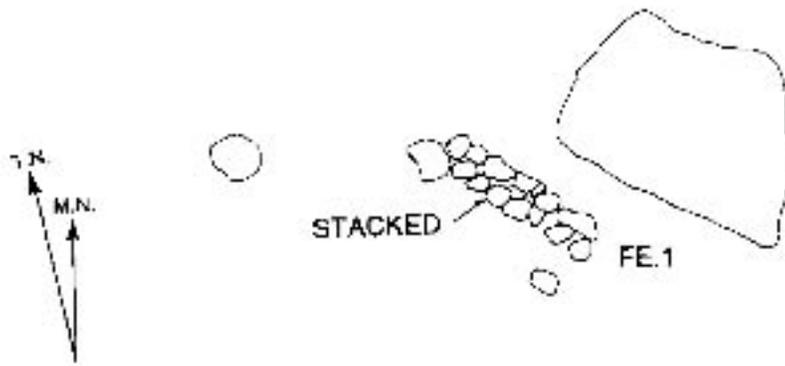
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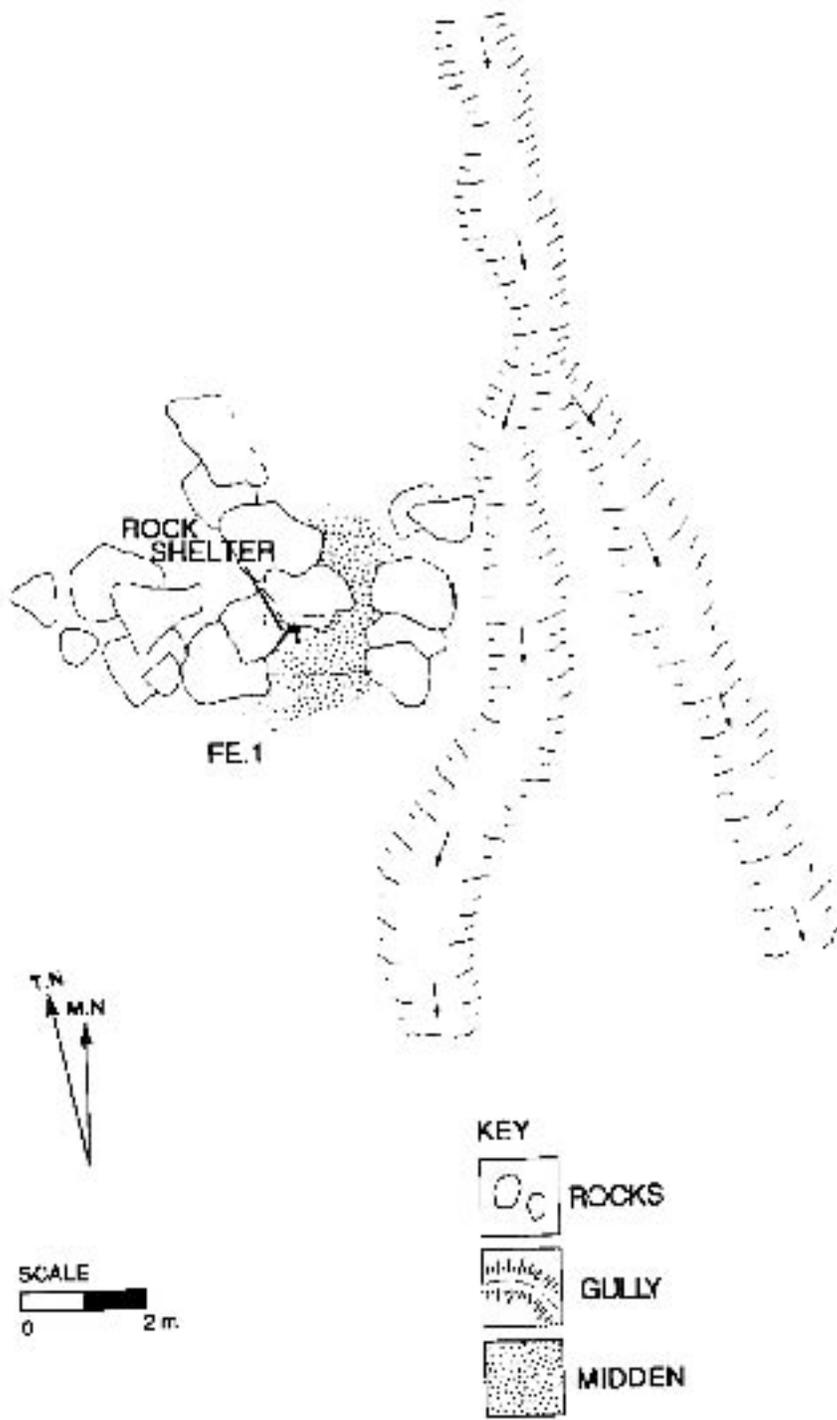
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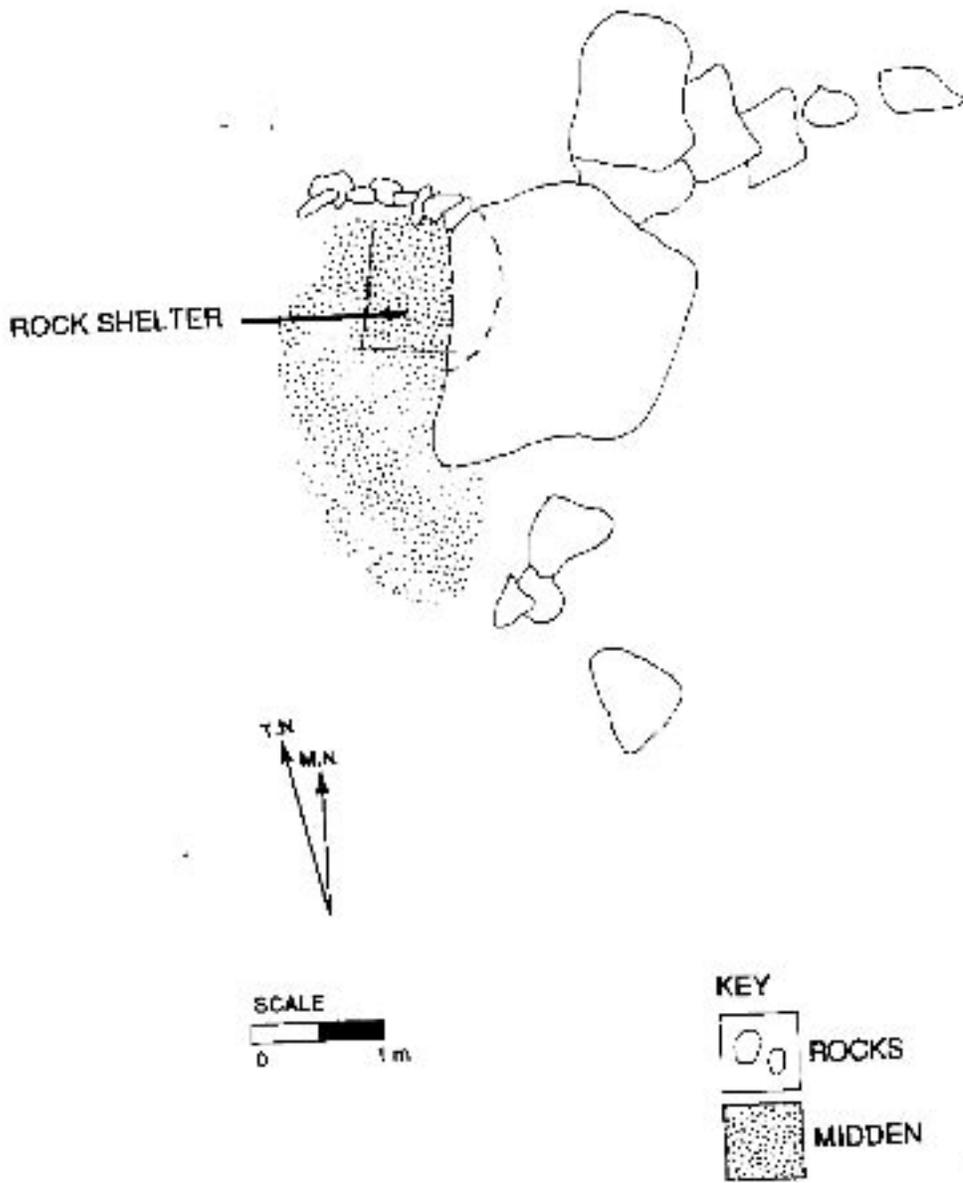
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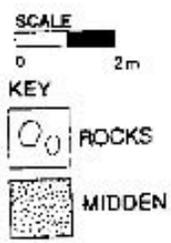
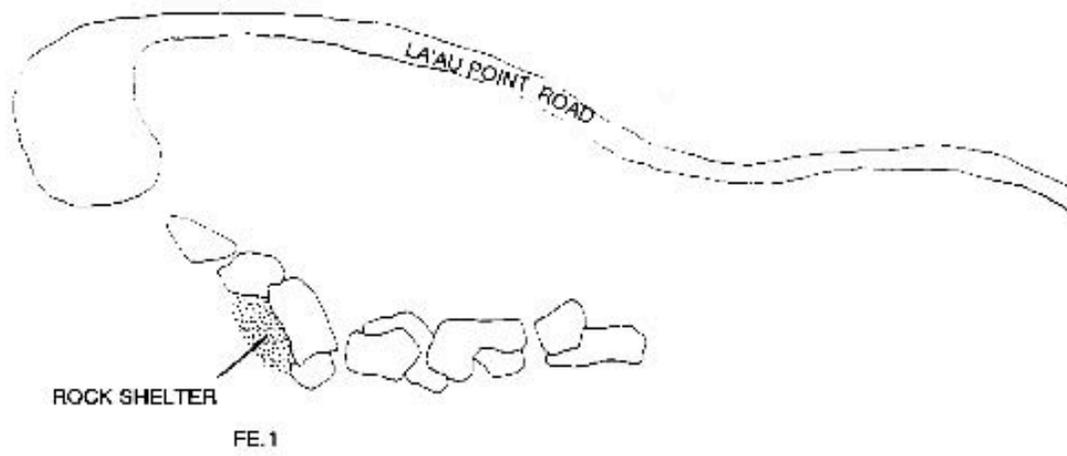
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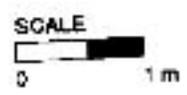
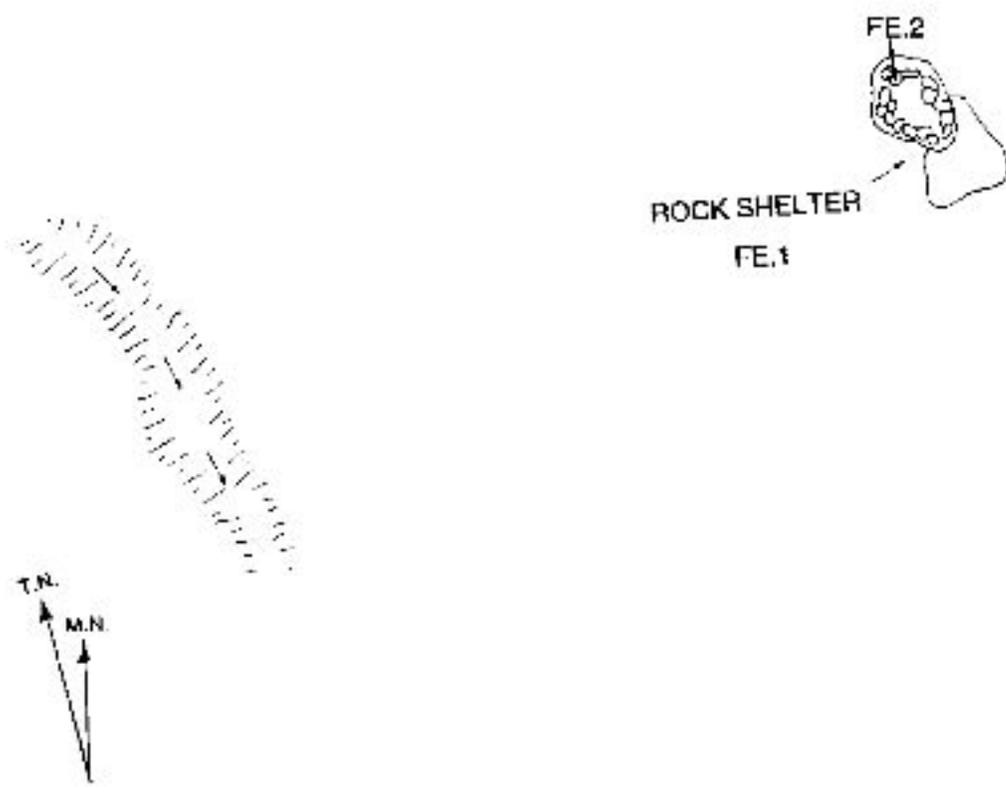
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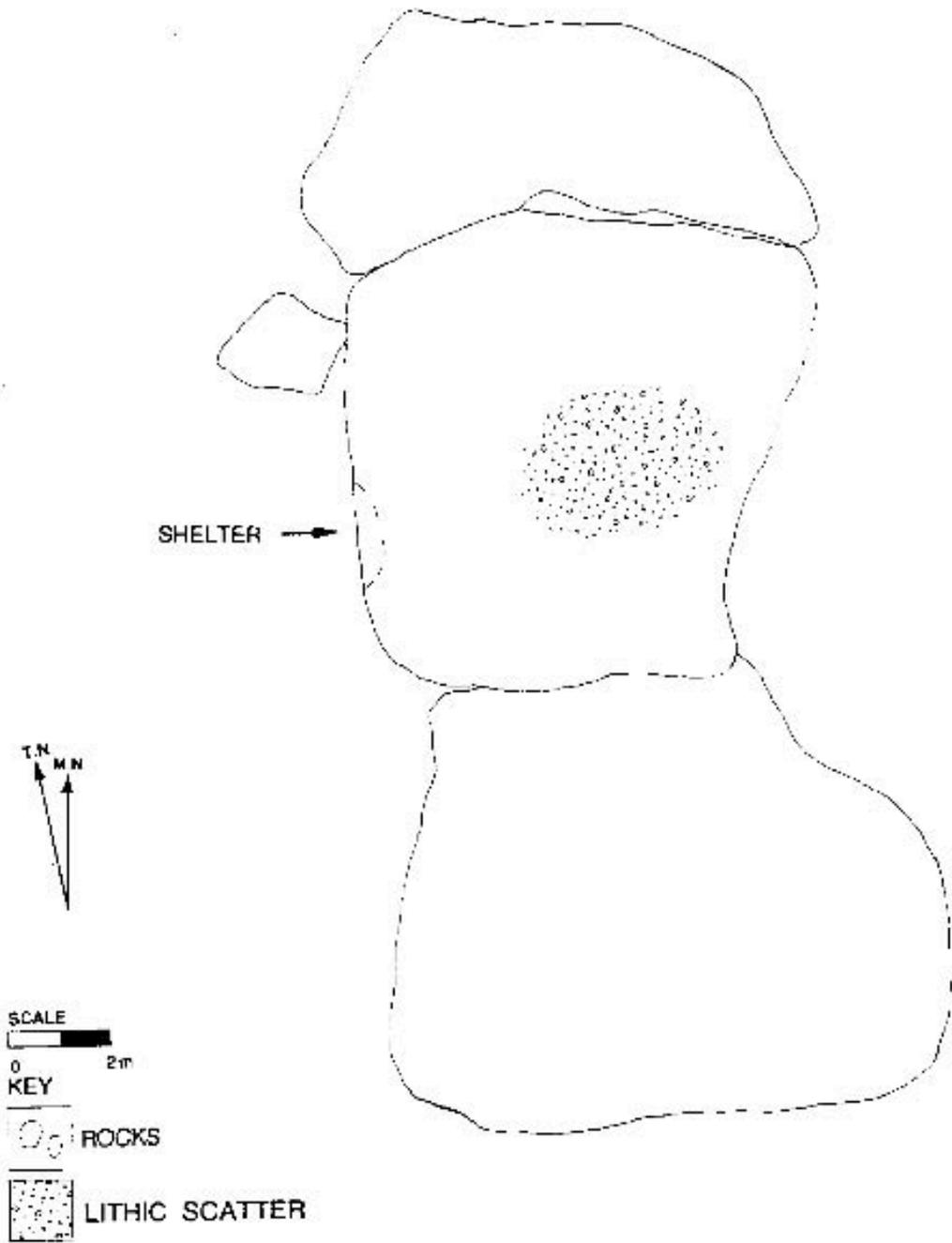
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Site 50-60-01-1136



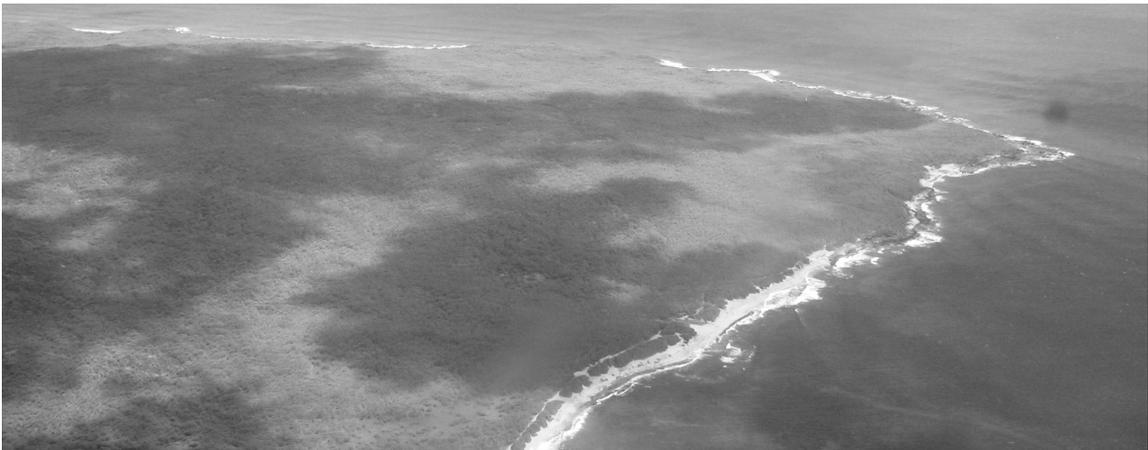
Site 50-60-01-1141



Site 50-60-01-1145

**Kapukahehu to Hakina, Ahupua'a o Kaluako'i,
Island o Moloka'i
(TMK 5-1-02-030)**

Revised Monitoring Plan



Prepared for Molokai Properties, Limited
by
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OVERVIEW OF LĀ'AU ARCHAEOLOGICAL PLANS

The archaeological plans for Lā'au include four sections for cultural resource needs that will arise in relation to 192 sites within the proposed development and preserves.¹ The plans are:

Preservation – Procedures for protecting and preserving 157 cultural sites.² Actions range from the immediate to the perpetual, and include site condition evaluation, stabilization, short and long-term protection, protocol education, periodic field checks, and data collection. The focus is on conservation of cultural landscapes, rather than isolated sites.

Data Recovery – Procedures and research issues for mapping and excavation of 21-24 sites within the road/infrastructure corridor and proposed subdivision lots. Since the most significant sites are being preserved, data recovery sites mostly consist of very simple agricultural modifications, lithic scatters, and more recent historical sites. All sites will undergo data recovery or, more likely, preservation, and samples within sites will be more robust than minimal SHPD requirements.

Monitoring – Procedures and responsibilities for archaeological maka 'ala of development activity. In addition to ensuring that preservation areas are not damaged, monitoring detects previously unknown cultural deposits, and halts work in an area, to evaluate finds, and if necessary consult with SHPD and interested parties to establish a preservation buffer or recover data.

Burial Treatment – Procedures for dealing with known, suspected, and inadvertently discovered burial sites (with no revisions to the accepted 2001 plan). All burials will be preserved in place, and all sites of unknown function for which burial is a possibility will be preserved. Newly found burials trigger consultation with the Moloka'i Island Burial Council.

Because the plans are interrelated, and important part of the general approach is to define the **process and sequence**. The past two years of community meetings can be considered the first phase, and with ongoing consultation helps define what happens next. The Ranch has committed to planning for the entire project area, to maintain or expand upon previous preservation commitments, and to have this revision include plans for all of the affected parcels including proposed subdivision lots, whose future owners must also abide by the plans. The process continues:

- Supplemental data collection in the road corridor to verify and augment site records, and search for new sites. Unexpectedly significant finds may cause re-routing. Also, the Papohaku Ranchlands section of the corridor will be described and reported at inventory level for SHPD review.
- Next, short-term preservation measures will be implemented, such as establishing protective buffers and emergency stabilization.
- Next, data recovery will be implemented. At the same time, implementation of long-term preservation measures will begin.
- During the course of construction, monitoring will occur.

¹ 193 sites appear in Table 1 because Sites 53 and 655 refer to the same site. 12 of the 192 lack integrity and significance and are not included in these plans.

² Of these 157, only 152 are definitely to be preserved. The remaining 5 currently are slated for Data Recovery, but will be preserved if possible, and so Preservation Plans are included here to cover that option.

- Final reports for each plan will be submitted for community feedback and submitted to SHPD for review as required by rules and statutes.

The original version of this plan (*Kahaiawa to Hakina, Ahupua'a of Kaluako'i, Island of Moloka'i*, Major 2001) dealt with a proposed subdivision in the former "Alpha USA" parcel (TMK 5-1-2:030). Since then, a smaller proposed subdivision has necessitated some revisions. More fundamentally, the Ranch's decision to engage the community in master planning has resulted in a scaled-back development with a more conservation-oriented approach, and the proposed land trust, resource management staff, and cultural protection zones have required that the preservation and data recovery plans be augmented and revised. For the most part, the archaeological plans closely resemble the 2001 version, which was accepted by SHPD. Changes in the revised version include:

- Re-assignment of several Data Recovery sites to Preservation.
- Shift from defining buffers around individual or clustered sites to instead establishing a confined development corridor and preserving large Cultural Protection Zones and the shoreline.
- Increased emphasis on active cultural resource management, anticipating as a neighbor a community land trust employing a cultural resource staff person.
- Recommendation to collect data from preservation sites to provide a better baseline for monitoring and help expand our understanding of the chronology and nature of settlement in the area, and specifically to guide environmental restoration.

MONITORING PLAN EXECUTIVE SUMMARY

This plan provides the monitoring for 192 sites in TMK 5-1-02:030, a parcel encompassing the southwest corner of the Kaluako'i *Ahupua'a* (traditional land district) on the Island of Moloka'i. State of Hawaii rules for historic monitoring (HAR 13-279) provide a framework for the plan, but community preferences and a desire on the part of the landowner to be a good steward of cultural resources have also shaped the plan.

Planning for a proposed residential subdivision (hereafter, the "Project Area") has already embodied historic preservation goals and cultural sensitivity, and thus the project area avoids all but a few sites. The majority of preservation sites occur in six "Cultural Protection Zones," large areas that encompass numerous individual sites and preserve them in the context of their natural settings and their neighboring sites. This allows preservation of settlement systems, rather than isolated sites, resulting in protection of entire ancient Hawaiian cultural landscapes. This approach also allows simplification of protective buffers, replacing a tangle of site-specific boundaries with a small number of larger buffers. Similarly, the Shoreline Conservation Zone surrounds the entire coastline makai of the project area, and protects most of the sites not already in one of the Cultural protection Zones.

In keeping with the regulatory requirements for Monitoring Plans (HAR 13-279-4), this document specifies the sites to be protected, the types and locations of cultural deposits that could be discovered during monitoring, the protection and documentation measures to be followed, the monitor's authority to halt work, a pre-construction meeting to ensure that project personnel are informed of monitoring protocols, the type of expected laboratory work, report preparation, and archiving of any collections.

The initial focus of monitoring will be on protection of Preservation sites within or adjacent to the proposed road corridor or subdivision construction. These will be buffered and fenced as described in the **Preservation Plan** (Major 2007), and archaeological monitors will be responsible for maintaining those buffers during construction.

The second monitoring task consists of inspecting any ground-breaking activity in the Project Area to search for traces of cultural materials, deposits, or features; these will be documented, and in some cases may be protected. Monitors will have the authority to halt work in the vicinity of any inadvertent find while that find is evaluated, necessary consultations are completed, and a final treatment is specified.

The final phase consists of site condition monitoring in preservation areas (individual preservation sites, Cultural Protection Zones, and the Shoreline Conservation Zone). This does not involve traditional construction monitoring, and instead will be a process of examining sites to evaluate their stability and integrity relative to baseline site descriptions put together as the **Preservation Plan** is implemented.

INTRODUCTION

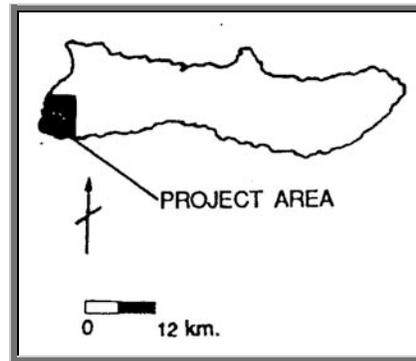


Figure 1. Project Area Location

This Monitoring Plan comprises one component of a set of integrated mitigation plans for TMK 5-1-02:030, a portion of which is being proposed for residential subdivision. The three types of monitoring covered in this plan represent interim and long term activities intended to enhance the preservation programs, comply with state rules for archaeological monitoring (HAR 13-279), and provide immediate response to inadvertent finds. These types of monitoring activity include:

- Site protection
- Documentation and evaluation of inadvertent finds during construction
- Site integrity and condition assessment.

Most sites within the project area will be preserved—152 compared to 138 in the 2001 plan and 46 originally recommended in the 1993 inventory report, an increase of 330%. In addition, eleven sites considered “not significant” in the 1993 report will be preserved by default, due to their locations within the Shoreline Conservation Zone, Cultural Protection Zones, or the Rural Landscape Reserve.³ Finally, five sites (738, 761, 1125, 1136, and 1145) that have been recommended for Data Recovery may be preserved once their precise location in relation to subdivision lots and the road corridor be determined. Conceivably, then, the total number of sites to be preserved may be as high as 167, a 363% increase over the 1993 recommendation, and 87% of the total number (192) of sites in the overall parcel.

Perhaps the most profound change embodied in this revision, though, is change in outlook from the traditional practice of defining a site and surrounding it with a protective buffer to defining a development area with few or no sites and enclosing it within what the Cultural Committee came to call a “bubble.” By reversing the approach from “Keep out of the fenced sites” to “Do not stray beyond the development corridor,” the current plans should result in two major preservation benefits: reduction of inadvertent archaeological finds, and increased preservation of cultural landscapes rather than site “islands” in a sea of development. Monitoring forms an important component of this overall approach to preservation in a development context, since it is monitoring that will protect these cultural landscapes.

³ These sites include: 677, 740, 759, 766, 767, 781, 1129, 1137, and 1138 in the RLR, 1165 in the Hakina CPZ, and 1140 in the SCZ.

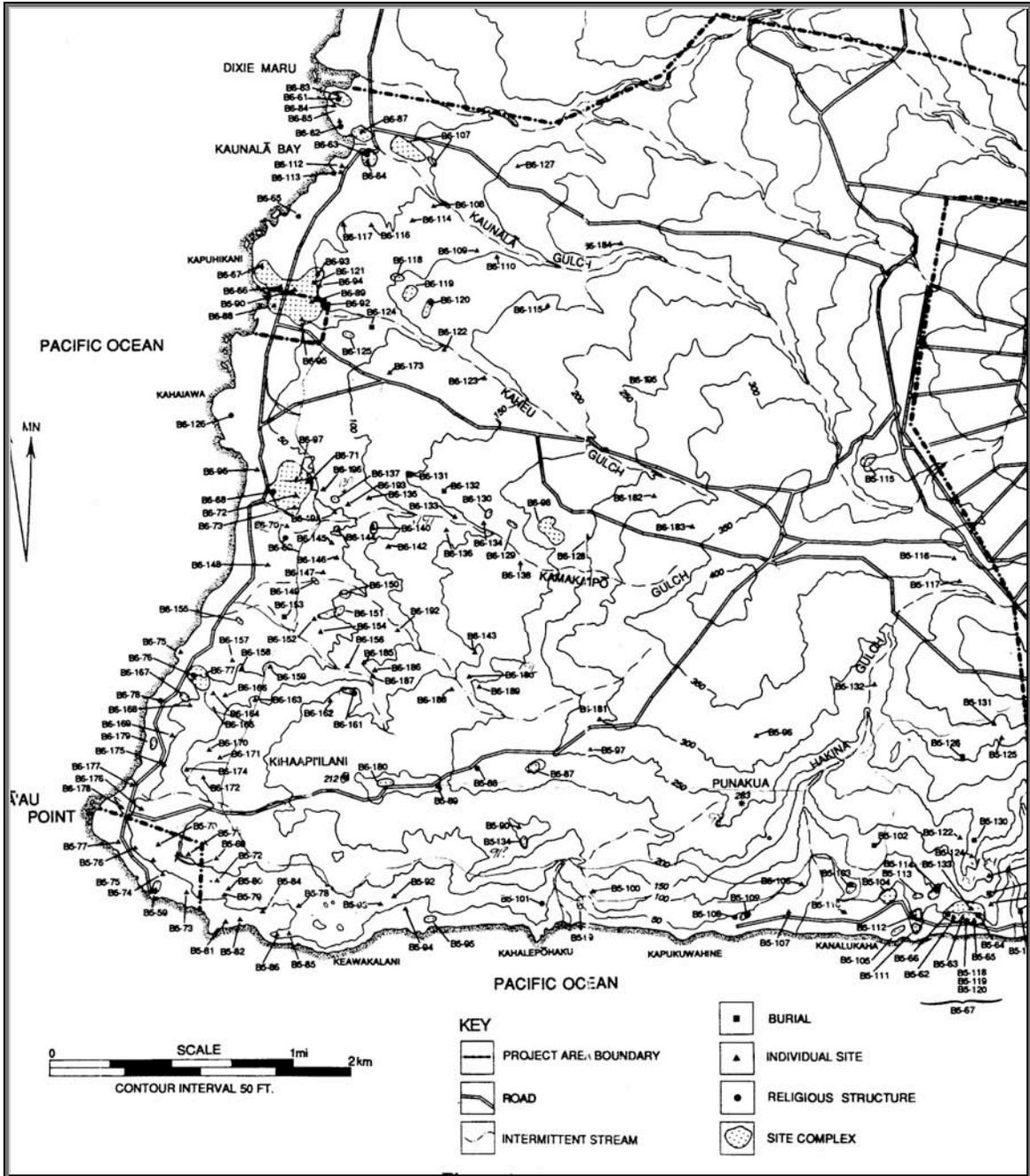


Figure 2. Archaeological Inventory Sites in TMK 5-1-02-030. From Dixon and Major 1993.

Figure 2 (above) depicts the sites located during archaeological inventory of the property encompassing the Project Area, using the Bishop Museum site numbers assigned in the early 1990s. Figure 3, a larger folio map attached with this plan, provides the State of Hawai'i site numbers, with their locations relative to the Project Area. As that map shows, the large majority of sites within TMK 5-1-02:030 are located outside the Project Area, and therefore are not at risk during development.

Table 1. Site Numbers and Mitigation Treatments

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Preserve	Data Recovery	No Action
48	B6-61	X		
49	B6-62	X		
50	B6-63	X		
50	B6-64	X		
51	B6-65	X		
52	B6-66	X		
53	B6-68 and -97	X		
54	B6-69 to -73	X		
56	B6-76 and -77	X		
57	B6-78	X		
639	B6-67	X		
640	B6-74	X		
641	B6-83	X		
642	B6-84	X		
643	B6-85	X		
644	B6-86	X		
645	B6-87	X		
646	B6-88	X		
647	B6-89	X		
648	B6-90	X		
649	B6-91	X		
650	B6-92	X		
651	B6-93	X		
652	B6-94	X		
654	B6-96	X		
655 (aka 53)	B6-97	X		
656	B6-98	X		
657	B6-107	X		
658	B6-108	X		
659	B6-109	X		
660	B6-110	X		
661	B6-111			X
662	B6-112	X		
663	B6-113	X		
664	B6-114	X		
665	B6-115	X		
666	B6-116	X		
667	B6-117	X		
668	B6-118	X		
669	B6-119	X		
670	B6-120	X		
671	B6-121	X		
672	B6-122	X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Preserve	Data Recovery	No Action
673	B6-123	X		
674	B6-124	X		
675	B6-125	X		
676	B6-126	X		
677	B6-127			X
678	B6-128	X		
679	B6-129	X		
680	B6-130	X		
681	B6-131	X		
682	B6-132	X		
683	B6-133	X		
684	B6-134	X		
685	B6-135	X		
686	B6-136	X		
687	B6-137	X		
688	B6-138	X		
689	B6-139	X		
690	B6-140	X		
691	B6-141	X		
692	B6-142	X		
693	B6-143	X		
694	B6-144	X		
695	B6-145	X		
696	B6-146	X		
697	B6-147		X	
698	B6-148		X	
699	B6-149	X		
736	B6-150	X		
737	B6-151	X		
738	B6-152	?	?	
739	B6-153	X		
740	B6-154			X
741	B6-155	X		
742	B6-156	X		
743	B6-157		X	
744	B6-158	X		
745	B6-159		X	
746	B6-160		X	
747	B6-161	X		
748	B6-162	X		
749	B6-163		X	
750	B6-164	X		
751	B6-165	X		
752	B6-166	X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Preserve	Data Recovery	No Action
753	B6-167	⌘		
754	B6-168	X		
755	B6-169		X	
756	B6-170		X	
757	B6-171			X
758	B6-172		X	
759	B6-173			X
760	B6-174		X	
761	B6-175	?	?	
762	B6-176		X	
763	B6-177	⌘		
764	B6-178	X		
765	B6-179	X		
766	B6-180			X
767	B6-181			X
768	B6-182	X		
769	B6-183	X		
770	B6-184	X		
771	B6-185	X		
772	B6-186	X		
773	B6-187	X		
774	B6-188	X		
775	B6-189	X		
776	B6-190	X		
777	B6-191	X		
778	B6-192	X		
779	B6-193	X		
780	B6-194	X		
781	B6-195	X		
782	B6-196	X		
1100	B5-59	X		
1101	B5-60	X		
1102	B5-62	X		
1103	B5-63	X		
1104	B5-64	X		
1105	B5-65	X		
1106	B5-66	X		
1107	B5-67	X		
1109	B5-69	X		
1110	B5-70	X		
1111	B5-71	X		
1112	B5-72	X		
1113	B5-73	X		
1114	B5-74	X		
1115	B5-75	X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Preserve	Data Recovery	No Action
1116	B5-76	X		
1117	B5-77	X		
1118	B5-78		X	
1119	B5-79	X		
1120	B5-80	X		
1121	B5-81		X	
1122	B5-82	X		
1123	B5-83	X		
1124	B5-84		X	
1125	B5-85	?	?	
1126	B5-86	X		
1127	B5-87	X		
1128	B5-88	X		
1129	B5-89			X
1130	B5-90		X	
1131	B5-91		X	
1132	B5-92		X	
1134	B5-93		X	
1135	B5-94			X
1136	B5-95	?	?	
1137	B5-96			X
1138	B5-97			X
1139	B5-98	X		
1140	B5-99			X
1141	B5-100		X	
1142	B5-101	X		
1143	B5-102	X		
1144	B5-103	X		
1145	B5-104	?	?	
1146	B5-105	X		
1147	B5-106	X		
1148	B5-107	X		
1149	B5-108	X		
1150	B5-109	X		
1151	B5-110	X		
1152	B5-111	X		
1153	B5-112	X		
1154	B5-113	X		
1155	B5-114	X		
1156	B5-115	X		
1157	B5-116	X		
1158	B5-117	X		
1159	B5-118			X
1160	B5-119	X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Preserve	Data Recovery	No Action
1161	B5-120	X		
1162	B5-121	X		
1163	B5-122	X		
1164	B5-123	X		
1165	B5-124			X
1166	B5-125	X		
1167	B5-126	X		
1168	B5-127	X		
1169	B5-128	X		
1170	B5-129	X		
1171	B5-130	X		
1172	B5-131	X		
1173	B5-132	X		
1174	B5-133	X		
1175	B5-134	X		
1176	B5-135	X		

NOTE: Treatments with an **outlined X** signal post-2002 changes in status from Data Recovery to Preservation status. Sites slated for Inventory will all be recommended for Preservation. Question marks (?) indicate sites currently recommended for Data Recovery that may change to Preservation, pending precise site location.

Project Area Components

The physical scope of the cultural resource management plans in this series remains limited to those portions of Kaluako'i *ahupua'a* that could be directly affected by the proposed subdivision (hereafter referred to as the "Lā'au Subdivision"), rather than all lands affected by the recent community planning process. Specifically, the revised cultural resource plans focus on the 1,492-acre project area described in the Ranch's petition to the State Land Use Commission, which requests a 613-acre area to be changed from Agricultural to Rural designation, 10 acres from Conservation to Rural (for a park), and 252 acres from Agricultural to Conservation.

In addition, this plan covers a proposed Rural Landscape Reserve, which corresponds to the remainder of TMK 5-1-02:030, the 6,350-acre parcel surveyed in 1991. All of the proposed Lā'au Subdivision lots will derive from that original parcel, although development activity will affect only a limited portion of it—400 acres of house lots and 153 acres of roads, infrastructure and parks, or less than 10% of the original parcel area.

A combination of official zones and project-specific landscape designations have been adopted as a way of managing cultural resources.

- The **Project Area** covers approximately 400 acres, and consists of three components:

- **Road Corridor** – All areas potentially affected by construction of the road and any adjacent utilities. As many as six preservation sites are in or near this corridor, but will be protected.
 - **Subdivision Lots** – All lots designated in the Lā’au Point Subdivision, including any where community-level facilities may be constructed. No preservation sites lie within lots, although some site buffers may extend into lots, and will be duly protected.
 - **Undeveloped Land** – Areas within the Project Area, but outside of the Road Corridor and Subdivision Lots. The only preservation sites in this area that are not dealt with in the SCZ or CPZ categories below are three suspected burials at the southeastern end of the Project Area.
- The **Shoreline Conservation Zone (SCZ)** fringes the entire Project Area and is subject to multiple jurisdictions, rules and statutes within its 465 acres. It merits special attention archaeologically because of the richness, diversity, and potential vulnerability of sites there.
 - **Cultural Protection Zones (CPZ)** have been devised as a means of protecting cultural and archaeological sites by encompassing their larger landscape settings. This preservation zone overlay will direct immediate and long-term land use in areas where cultural resources are concentrated. The majority of sites in TMK 5-1-02-030 are in CPZs, which extend to the Project Area and Shoreline Conservation Zone in several places. The total area of these areas will exceed 1,000 acres.
 - The **Rural Landscape Reserve (RLR)** comprises the remainder of TMK 5-1-02-030, and therefore is outside of the Project Area. There are 11 significant sites in this area, five of which are being preserved.

SEE ATTACHED FOLIO MAP

Figure 3: Lā’au Subdivision Project area, Sites, and Cultural Protection Zones

in this way: stable settlement concentrated on the bays of the west coast, in what is now the Lā'au Point lighthouse parcel (outside the scope of this project), and along the south coast at the eastern end of the Project Area. The size, diversity, and quantity of archaeological features decreases rapidly *mauka* of the coastal flat and the cliffs and finger ridges immediately above it. The large majority of sites more than 100-m from the current shoreline are either part of the large Kamāka'ipō alluvial flat settlement, or are associated with agricultural use of the gulches (where soil and water are more abundant) and quarrying activity on selected ridges. Other sites are ancillary to these functions (such as trail markers or temporary habitations), or reflect modern hunting activity. The exception to this pattern occurs at Sites 1127 and 1128, which appear to be ritual sites associated with birth.

Sites *mauka* of the immediate coastal settlement zone tend to have extremely limited cultural materials. Excavations conducted during inventory revealed a pattern of very short term occupation for the most part, although the more developed quarry areas showed repeated occupations, and sometimes very large quantities of debitage (Dixon and Major 1993, Dixon et. al, 1995). However, even the more abundant deposits did not exhibit much diversity of cultural materials.

Monitoring during construction of an ecotourism camp at Kaheu Bay (commonly known as the location of Kaupoa House, a historic Molokai Ranch retreat) revealed that the features on the southern and *mauka* periphery of the coastal settlement there were agricultural in function. Despite constant monitoring of grading and uprooting of hundreds of trees there, almost no cultural materials were found (Major 1998). Along with the surface data from the inventory, this observation provides evidence that cultural deposits are rare outside of the settlement complexes.

Historic over-grazing by livestock and a large naturalized deer population has facilitated extensive wind and rainfall-induced erosion in southwest Kaluako'i, resulting in large areas that lack intact soil or sediment. No precise estimate on the eroded area is available, but widespread presence of deflated surfaces is evident, and hardpan is frequently exposed. Along with the decrease in feature density as distance from the coast increases, this factor reduces the likelihood of archaeological monitors encountering new finds. Monitoring at Kaupoa revealed frequent lenses of ash indicative of wildfire, another factor in the de-vegetation and erosion of sediments in the proposed monitoring area.

Expectations for monitoring are that finds will be infrequent and isolated. The settings most likely to yield cultural materials will be gulch interiors (where buried agricultural modifications or sediments may occur), and possible outliers to the quarries, where flakes or other lithic debitage may occur either buried in sediments or on deflated surfaces previously obscured by vegetation.

Despite the relatively limited expectations for archaeological finds, monitoring will be done when ground disturbing activity occurs within all of TMK 5-1-02:030. This was specifically requested by OHA, reflecting a strong preservationist sentiment that is common in the Moloka'i community.

MONITORING SCOPE

Subdivision Project Area

Within the Project Area boundary are 26 sites requiring monitoring because they are designated for Preservation and are within 50 meters of possible construction areas. An additional three sites (1125, 1136, and 1145) currently slated for Data Recovery that will be preserved if possible, and may be subject to protective monitoring as well. Other sites in the Project Area are either Data Recovery sites, or are well outside the area of potential impacts, and do not require protective monitoring. Procedures for establishing buffers and other interim protective measures have been specified in the **Preservation Plan**.

Table 2. Project Area Preservation Sites outside of Cultural Protection and Shoreline Conservation Zones.

Site Number 50-60-01-							
744	1144	1155					

Table 3. Cultural Protection and Shoreline Conservation Zone Sites within 50 meters of development.

Site Number 50-60-01-							
57	664	739	751	752	754	763	764
765	780	782	1101	1106	1107	1112	1122
1123	1142	1149	1150	1151	1152	1154	

Monitoring in the Project Area will also include observation of all ground-breaking activity regardless of site proximity. Some portions of the Project Area have a higher likelihood of encountering buried, unrecorded cultural materials, but high likelihood areas such as the coastal sand flats, settlement peripheries, gulches, and quarries have been eliminated from the Project Area during the design process. The monitoring scope, therefore, represents an expansion of monitoring commitment beyond the minimal requirements, and reflects the property owner's sensitivity to community concerns, as well as a specific request by OHA that any ground disturbance be monitored. Monitoring outside of known site areas will focus on documentation and evaluation of inadvertent finds, rather than protection of known resources.

Condition and long term monitoring of sites in the project area is described in the next section because most of the sites also fall within a Cultural Protection or Shoreline Conservation Zone. However, condition monitoring according to these procedures will also occur for Sites 744, 1144, and 1155, all of which are outside said zones.

Cultural Protection and Shoreline Conservation Zones

As mentioned above, some sites within these zones also lie within the boundary of the Project Area, but both the Cultural Protection Zones (CPZ) and Shoreline Conservation Zone (SCZ) group large numbers of preservation sites within larger landscapes that extend beyond the Project Area.

Sites within these zones that could be within 50 m of development activity (i.e., within 50 m of the proposed road or subdivision lot boundaries) have been included in the **Project Area** section above. Those more than 50 m from construction will not require protective monitoring, and the appropriate protective measures have been addressed in the **Preservation Plan**.

Monitoring of sites in the Shoreline Conservation Zone will consist entirely of protective monitoring, since construction is not being proposed within that zone, and thus the potential for inadvertent finds is absent.

Because existing dirt roads may be improved for emergency access, protective monitoring may also be required there. These roads traverse the *mauka* portion of the Kamāka'ipō North CPZ and the southern tip of the Kamāka'ipō South – Kiha-a-Pi'ilani CPZ (See Figure 3). The **Preservation Plan** has already specified that road maintenance in those areas should not diverge from the existing corridor, but monitoring will occur during any grading to those roads. Sites subject to protective monitoring in those areas include: 678, 1127, and 1128. Additionally, monitoring in those areas will document and evaluate any inadvertent discoveries.

Monitoring will document any inadvertent discoveries within portions of the road traversing the Kaunalu, Kaheu, and Kamāka'ipō North CPZ's, as well as any grading of the dirt roads described in the previous paragraph. Any finds will be evaluated in terms of significance, and the appropriate consultations completed as described below under **Methodology**. Burials are very unlikely to be among the finds, but if they occur will be subject to the **Burial Treatment Plan**.

Condition and integrity of sites in the SCZ and CPZ will also occur. This will consist of periodic examination of the sites in these zones to determine whether they are deteriorating or stable. Data from these observations will guide long term and emergency preservation management. The specific actions involved in this type of monitoring, as well as the intervals between inspections are described below under **Methodology**.

Rural Landscape Reserve

Very few sites occur within the Rural Landscape Reserve, and as the **Preservation Plan** specifies, their treatment will consist of passive preservation. Ground disturbance within this area will not go beyond grading of existing dirt roads, an activity that will be monitored. The lone site that could potentially be affected by road maintenance is 1156, a quarry adjacent to a coral-paved road at the mauka edge of TMK 5-1-02:030 (see Figure 3).

Ground disturbance associated with the development of the subdivision and emergency access to it will be monitored in the RLR, and may include protective monitoring at 1156. Condition and integrity monitoring is not specified for the RLR in the context of this project.

METHODOLOGY

Pre-Construction Meeting and Work Stoppage

Prior to construction commencing, the archaeologist will meet with field personnel and the project manager to clarify the monitor's role and responsibility. As the person on site responsible for maintaining the integrity of protected areas and to document and evaluate (and if necessary, mitigate) new discoveries, the archaeological monitor will have the authority to call temporary work stoppages in specified areas.

If intact cultural deposits or buried features are inadvertently discovered, the monitor will stop work in the vicinity and evaluate the finds. This will include examination of both the excavated sediment and the hole or graded surface. The archaeological monitor has the authority to propose mitigation measures, including data recovery excavation, site recording, or preservation and avoidance. The SHPD will be called upon discovery of significant sites, and will review site records, significance evaluations, and treatment recommendations.

Consultation

The archaeological monitor will serve as a liaison with SHPD and/or the Burial Council if they need to be consulted, and will consult with members of the appropriate ethnic group (Native Hawaiians, in the anticipated scenario). Finds that could either change the significance of a known site, or that pertain to a previously unrecorded site, will lead to consultation with SHPD and the appropriate ethnic group. Since OHA has taken a strong interest in the project and has cultural staff on Moloka'i, they will be the initial contact with the Hawaiian community, although they may ask the monitor to talk with other community members, and the monitor may find that other individuals or groups have an interest and should be consulted as well.

Because of the expedited time frame involved with finds made during construction, deciding on the requirement for mitigation and the specific form it should take will be the responsibility of SHPD, in accordance with HAR 13-280-3, although the archaeological monitor will make every effort to aid SHPD with input from community consultation and the monitor's own assessment of the find.

Coverage

Should construction activities involve simultaneous ground disturbance in multiple areas having sediments with the potential to contain cultural deposits or features, additional monitors will be brought on site. It is the client's responsibility to notify the primary monitor (designated by the consulting archaeologist) with enough lead-time to bring in additional monitors.

If monitored construction activity in a given area has already resulted in removal or complete disturbance of sediment capable of containing intact cultural deposits, then subsequent work in that area may not be monitored. Such activities may include excavation or grading of sterile subsoil or bedrock, as well as introduction of outside fill. To ensure that such work does not stray into an area not previously disturbed, the monitor may erect flagging or fencing at the outer edge of the previously disturbed and monitored area. If the work may involve disturbance of any sediment capable of containing cultural materials, then monitoring will be required.

Documentation

The monitor will examine excavated sediments, as well as the profiles and bases of excavated and graded areas. The excavated volume will be sorted through as much as possible by hand, with trowels and shovels, and (where known deposits are being impacted, or the likelihood for undiscovered deposits is particularly high) sifted through one-quarter inch screens. Previous excavations in southwest Moloka'i this far from the coast have yielded mostly lithic artifacts and occasional shell, which does not require smaller mesh.

Excavation of remnant or intact features and deposits will consist of controlled hand digging by natural and cultural layers, with screening of all matrix through 1/4 inch mesh, until the culturally sterile subsoil had been excavated at least 10 cm. In settings where apparently sterile sediment could have been deposited over a buried cultural deposit or surface horizon, a shovel probe will be dug as deep as is required to demonstrate that deeper cultural deposits are not present. The total area of excavation will be determined by the size of the buried feature or deposit. Because such excavation will constitute the final chance for controlled data recovery, large samples will be preferred, but excavation need not be done for 100% of all deposits, and the upper threshold will be determined in terms of the usefulness or redundancy of data.

The monitor will keep a field notebook describing the areas monitored and the nature of the work being monitored in each. When construction results in archaeological finds, the monitor will document these with written descriptions of the types of materials encountered, their vertical and horizontal distribution, their location, and any other pertinent details. All finds will be plotted on a map of sufficient detail to pinpoint their location later. Where buried features or deposits are found and enough remains intact to do so, profiles will be drawn to scale and photographed. The sediment matrix containing artifacts, cultural layers, or buried features will be described according to standard practice in Hawaiian archaeology. Although such finds are not anticipated, those which reveal a horizontal shape will be mapped to scale in planview.

Laboratory Work

The majority of processing, describing, and analysis of materials collected during the project will be done on Moloka'i. Few specialized analyses are likely to be required, and the bulk of lab tasks will be to measure, weigh, photograph, and describe the materials, which are likely to be dominated by basalt debitage. The basic task will be to build a quantitative and qualitative data table for the Monitoring Report.

Because of the desire to have a broader foundation for interpretation, as well as the Land Trust's desire to re-vegetate areas with native (and possibly Polynesian introduced) species, charcoal will be of particular importance. It will be separated from non-charcoal, dried, and stored in foil according to each collection context. Once entered in the collections log (see **Archiving Collections** below), selected charcoal samples will be sent to an outside lab for taxonomic identification. Some of these will be sent to another lab for radiometric dating, most likely by the accelerator mass spectroscopy technique given the anticipated small sample size. The bases for this selection will be: confidence in the recovery context, a preference for feature contexts (or other well-defined events to be dated) rather than general layers, short-lived taxa (to avoid in-built "old wood" ages), and relevance to interpreted areas and themes.

Basalt flakes and other debitage will form the majority of the collection. Given the known importance of west Moloka'i as a lithic resource area, the Monitoring Report will endeavor to draw whatever conclusions it may about the procurement of stone from the area, the degree to which it was worked there, whether any indications of local use are apparent, and whether our understanding of the process of lithic production can be expanded based on the data. If resources allow, samples may be sent to the University of Hawai'i at Hilo, which has the facilities to do noninvasive geochemical source analysis on basalt. This has some potential to reveal stone from outside sources, although that is not expected, and instead would contribute to the statewide awareness of lithic quarry distribution.

Monitoring Report

At the conclusion of archaeological monitoring, the project Principal Investigator will prepare a report, to include all of the elements described in HAR 13-279-5.

Archiving Collections

It is not anticipated that a large volume of material will be collected during archaeological monitoring. Those that are recovered, however, will be maintained as a single project collection, and will be kept on the island. The total volume is expected to be less than 2 cubic feet, and thus can probably be stored in a single box. While the exact location has not been determined, it is likely to be in a Molokai Ranch or Molokai Properties office in Maunaloa, the closest secure facilities to the project area. Prior to completion of the monitoring, the collections may be housed in the Moloka'i office of the archaeological monitoring firm. In both cases, the collection shall be kept in a manner that protects the materials from loss or deterioration.

Collections shall be stored in bags, foil, or other containers bearing basic information to include (at a minimum) the site and feature number, a unique number (assigned to individual specimens or lots), the stratigraphic context designation (either "surface," a layer number, or a feature designation), the name of the specimen type, and the date collected. A log of all collected artifacts and samples must be maintained by the monitor. This will include the fields named above, as well as the material type, the collector, and comments. The log will also provide a means to note when objects or samples are removed for analysis, community education, or any other reason, it will specify when and why anything is removed, and to whom it went. Artifacts should not be removed from the Island of Moloka'i.

The exception to this will be any materials that must be sent elsewhere for analysis, such as wood charcoal that must be sent to laboratories on O'ahu, the mainland, and Hawai'i Island for taxonomic identification and radiometric dating of charcoal and geochemical sourcing of stone. It is expected that radiometric dating will be done on at least a small number of samples, and since the process consumes the charcoal, it will not be returned to the collection.

Burials

Should human remains be encountered, construction in the vicinity will be stopped while the SHPD Burials Program and the Moloka'i Island Burial Council are notified and consulted. The preferred treatment for burials will be to preserve them in place and divert development around them. It is not likely that burials will be encountered during this project, but if they are, the general **Burial Treatment Plan**

will be amended to reflect the specifics of each case. Rules for the treatment of human remains (HAR 13-300) are the basis for that plan and for any actions taken in the field.

The landowner and community both have expressed a strong desire to avoid removal and reinterment of burials, and the preferred option should any such find occur will be in situ preservation.

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**Papohaku to Hakina, Ahupua'a o Kaluako'i,
Island o Moloka'i
(TMK 5-1-02-030)**

Revised Preservation Plan



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NOTE: Inventory Site Maps in order of site number appear in Appendix B

OVERVIEW OF LĀ'AU ARCHAEOLOGICAL PLANS

The archaeological plans for Lā'au include four sections for cultural resource needs that will arise in relation to 192 sites within the proposed development and preserves.¹ The plans are:

Preservation – Procedures for protecting and preserving 157 cultural sites.² Actions range from the immediate to the perpetual, and include site condition evaluation, stabilization, short and long-term protection, protocol education, periodic field checks, and data collection. The focus is on conservation of cultural landscapes, rather than isolated sites.

Data Recovery – Procedures and research issues for mapping and excavation of 21-24 sites within the road/infrastructure corridor and proposed subdivision lots. Since the most significant sites are being preserved, data recovery sites mostly consist of very simple agricultural modifications, lithic scatters, and more recent historical sites. All sites will undergo data recovery or, more likely, preservation, and samples within sites will be more robust than minimal SHPD requirements.

Monitoring – Procedures and responsibilities for archaeological maka 'āla of development activity. In addition to ensuring that preservation areas are not damaged, monitoring detects previously unknown cultural deposits, and halts work in an area, to evaluate finds, and if necessary consult with SHPD and interested parties to establish a preservation buffer or recover data.

Burial Treatment – Procedures for dealing with known, suspected, and inadvertently discovered burial sites (with no revisions to the accepted 2001 plan). All burials will be preserved in place, and all sites of unknown function for which burial is a possibility will be preserved. Newly found burials trigger consultation with the Moloka'i Island Burial Council.

Because the plans are interrelated, and important part of the general approach is to define the **process and sequence**. The past two years of community meetings can be considered the first phase, and with ongoing consultation helps define what happens next. The Ranch has committed to planning for the entire project area, to maintain or expand upon previous preservation commitments, and to have this revision include plans for all of the affected parcels including proposed subdivision lots, whose future owners must also abide by the plans. The process continues:

- Re-survey the road corridor to verify and augment site records, and search for new sites. Unexpectedly significant finds may cause re-routing. Also, the Papohaku Ranchlands section of the corridor will be described and reported at inventory level for SHPD review.
- Next, short-term preservation measures will be implemented, such as establishing protective buffers and emergency stabilization.
- Next, data recovery will be implemented. At the same time, implementation of long-term preservation measures will begin.
- During the course of construction, monitoring will occur.
- Final reports for each plan will be submitted for community feedback and submitted to SHPD for review as required by rules and statutes.

¹ 193 sites appear in Table 1 because Sites 53 and 655 refer to the same site. 12 of the 192 lack integrity and significance and are not included in these plans.

² Of these 157, only 152 are definitely to be preserved. The remaining 5 currently are slated for Data Recovery, but will be preserved if possible, and so Preservation Plans are included here to cover that option.

The original version of this plan (*Kahaiawa to Hakina, Ahupua'a of Kaluako'i, Island of Moloka'i*, Major 2001) dealt with the former "Alpha USA" parcel (TMK 5-1-2-030). Since then, changes in the project area and the size and location of proposed subdivision lots have necessitated some revisions. More fundamentally, the Ranch's decision to engage the community in master planning has resulted in a scaled-back development with a more conservation-oriented approach, and the proposed land trust, resource management staff, and cultural protection zones have required that the preservation and data recovery plans be augmented and revised. For the most part, the archaeological plans closely resemble the 2001 version, which was accepted by SHPD. Changes in the revised version include:

- Re-assignment of several Data Recovery sites to Preservation.
- Shift from defining buffers around individual or clustered sites to instead establishing a confined development corridor and preserving large Cultural Protection Zones and the shoreline.
- Increased emphasis on active cultural resource management, anticipating as a neighbor a community land trust employing a cultural resource staff person.
- Recommendation to collect some data from preservation sites to provide a better baseline for monitoring and help expand our understanding of the chronology and nature of settlement in the area, and specifically to guide environmental restoration.

PRESERVATION PLAN EXECUTIVE SUMMARY

This plan provides the preservation treatments for 157 sites in TMK 5-1-02-030, a parcel encompassing the southwest corner of the *Ahupua'a* (traditional land district) on the Island of Moloka'i. State of Hawaii rules for historic preservation (HAR 13-277) provide a framework for the plan, but community preferences and a desire on the part of the landowner to go beyond mere compliance have also shaped the plan.

Planning for a proposed residential subdivision (hereafter, the "Project Area") has already embodied historic preservation goals and cultural sensitivity, and thus the project area avoids all but a few sites. The majority of preservation sites occur in six "Cultural Protection Zones," large areas that encompass numerous individual sites and preserve them in the context of their natural settings and their neighboring sites. This allows preservation of settlement systems, rather than isolated sites, resulting in protection of entire ancient Hawaiian cultural landscapes. This approach also allows simplification of protective buffers, replacing a tangle of site-specific boundaries with a small number of larger buffers. Similarly, the Shoreline Conservation Zone surrounds the entire coastline makai of the project area, and protects most of the sites not already in one of the Cultural protection Zones.

In keeping with the regulatory requirements for Preservation Plans, this document specifies the sites to be protected, the scope and results of community consultation, the form of protection, how buffers will be established, interim protection measures, and long term preservation measures. These appear in sections entitled **Consultation** and **Preservation Actions**. The requirement for site specific preservation plans has been detailed in a section by that name, in which site-specific plans are shown in a table, and described in groupings corresponding to their physical locations and management needs. In addition, the plan includes elements that are not required, but help its users understand the community foundations of the plan, the details of implementation, and so on. These appear in the **Introduction** and sections entitled **Preservation Goals**, **Preservation Phases**, and **Supplemental Data Collection**.

INTRODUCTION

Organization of this Plan

This Preservation Plan represents an expansion upon the minimal elements required by the State of Hawaii Administrative Rules for preservation of archaeological and historical sites (HAR 13-277). These elements include the following:

- Identify the form of preservation
- Specify protective buffers for sites
- Specify interim or short-term protective measures
- Describe the process and results of public consultation
- Specify long-term protective measures

The current plan places most of these elements in the **Site Specific Plans** (see Table of Contents). Because the Moloka'i community has had much to say regarding cultural resources, and the landowner has invested substantial time and effort in seeking their opinions and advice, and because few of the public comments have dealt with specific sites, the **Consultation** section is presented early in the Plan, at a project-wide level. Any consultation results specific to a site or area will be repeated in the appropriate site-specific section.

Additional sections of the Preservation Plan are presented at the project-wide level to avoid redundancy and to provide a high level of certainty with regard to the definition and phasing of preservation activities proposed herein. These include the following sections in order of appearance:

- **Introduction:** Synthesizes the archaeological knowledge of the place with historical and cultural accounts, as well as the physical environment. Summarizes the history of cultural resource management activity for the parcel.
- **Consultation:** Describes the process and scope of public input regarding cultural resources for the project area and surrounding lands, and presents a summary of the content.
- **Preservation Goals:** Provides a clear statement of objectives that shape this plan. Although not a required element, this section presents the foundations of a plan that is shaped not just by the rules, but by community values and the landowner's desire to move beyond minimal requirements.
- **Preservation Phases and Responsibilities:** Outlines the process and sequence of implementation of the plan, and states the entity responsible for each phase.
- **Preservation Actions:** Defines and describes each proposed activity related to preservation.
- **Site-Specific Plans:** Groups sites according to geographic and management categories, and specifies the **Buffers, Interim Measures, and Long-term Measures** for each.

- **Site Descriptions (Appendix):** Because the original inventory survey for the parcel is limited to a very few manuscript copies, site summaries have been included for the aid of SHPD and other readers who may want to know more about the preservation sites in the plan. The quantity of maps and data would make the body of the plan unwieldy, and as with the Data Recovery Plan for the same parcel, these data are presented as an appendix.

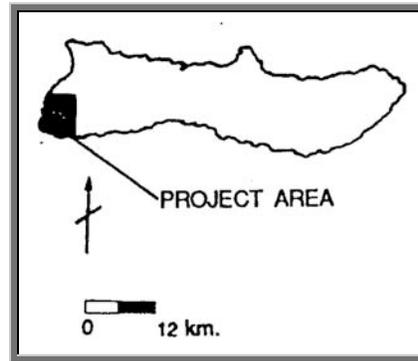


Figure 1. Project Area Location

Historic Preservation Review History

This Preservation Plan represents the culmination of a process that has evolved over several years as the landowner's plans have altered, as the scope of planning has grown to encompass most of western Molokai, and as the community has become more deeply involved in the process. Despite this recent history of change, many elements of the plans remain as they were in 2001 when SHPD undertook review of the initial draft plan:

- Preservation continues to be the most common treatment for archaeological sites,
- A process of verification and augmentation of existing inventory survey data precedes development activity, and
- Procedures for preservation remain much as they were in the original plans.

While the landowner and the community have engaged in far-reaching discussions about land use and resource management across a large portion of the island, this document focuses only on the southwest corner of the island in a portion of the *ahupua'a* of Kaluako'i (TMK 5-1-02-030). Companion volumes for the same parcel include a Data Recovery Plan (approved by SHPD in February, 2007), as well as Monitoring and Burial Treatment Plans currently under review.

Although information about sites had been reported sporadically during the 20th Century, and Catherine Summers (1971) had compiled this information along with her own field observations and research, explicit focus on sites as "cultural resources" to be preserved and otherwise managed did not occur until the 1980s, when Marshall Weisler (1984) undertook the systematic survey, recording, and evaluation of sites in portions of Kaluako'i. This work led to the establishment of the Southwest Molokai Archaeological District (Site 50-60-01-803, also referred to as the "SMAD"), a series of sites and areas that were listed on the State and

National Registers of Historic Places, and therefore afforded some protection against future development and alteration.

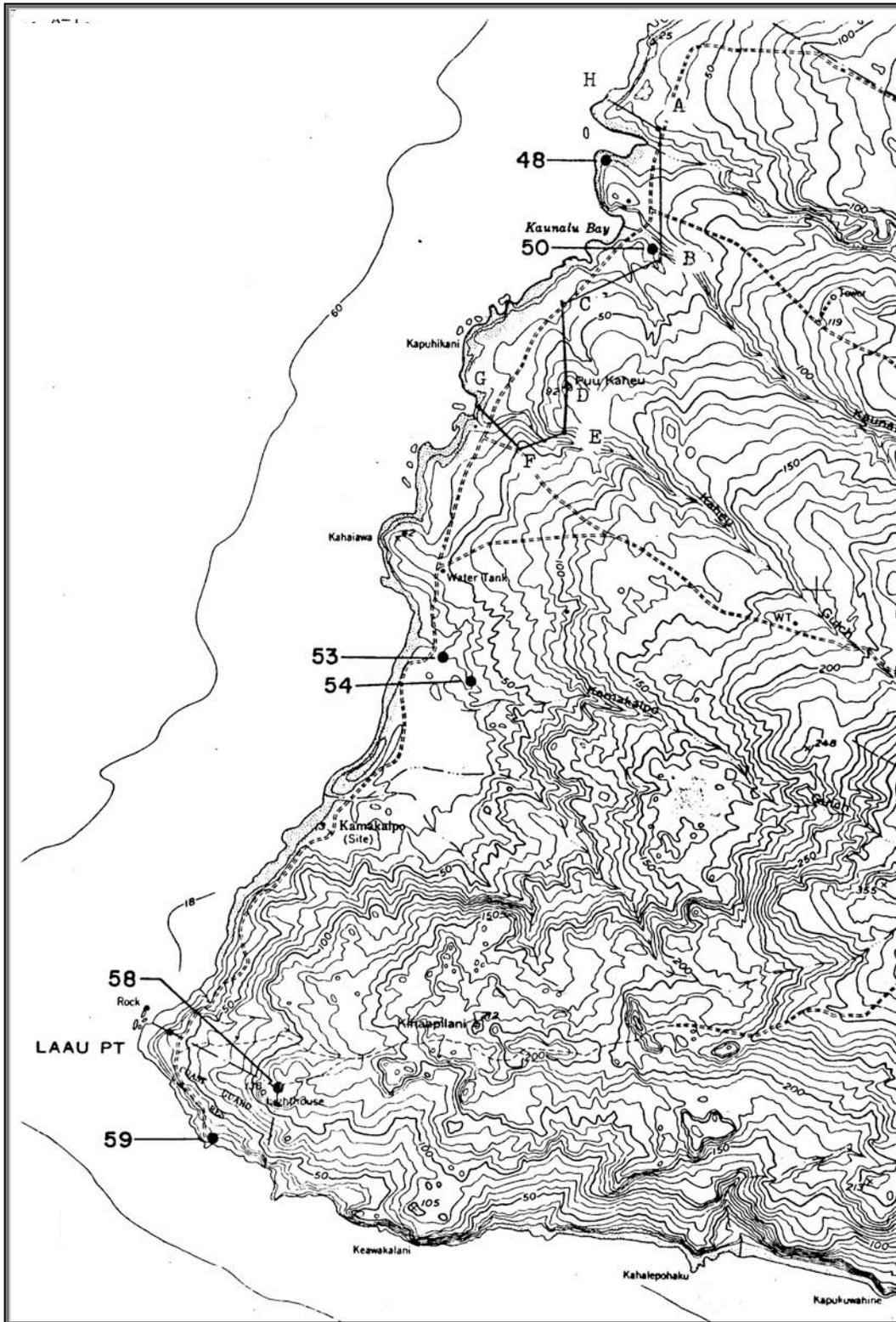


Figure 2: Southwest Molokai Archaeological District sites and areas. From Weisler 1984.

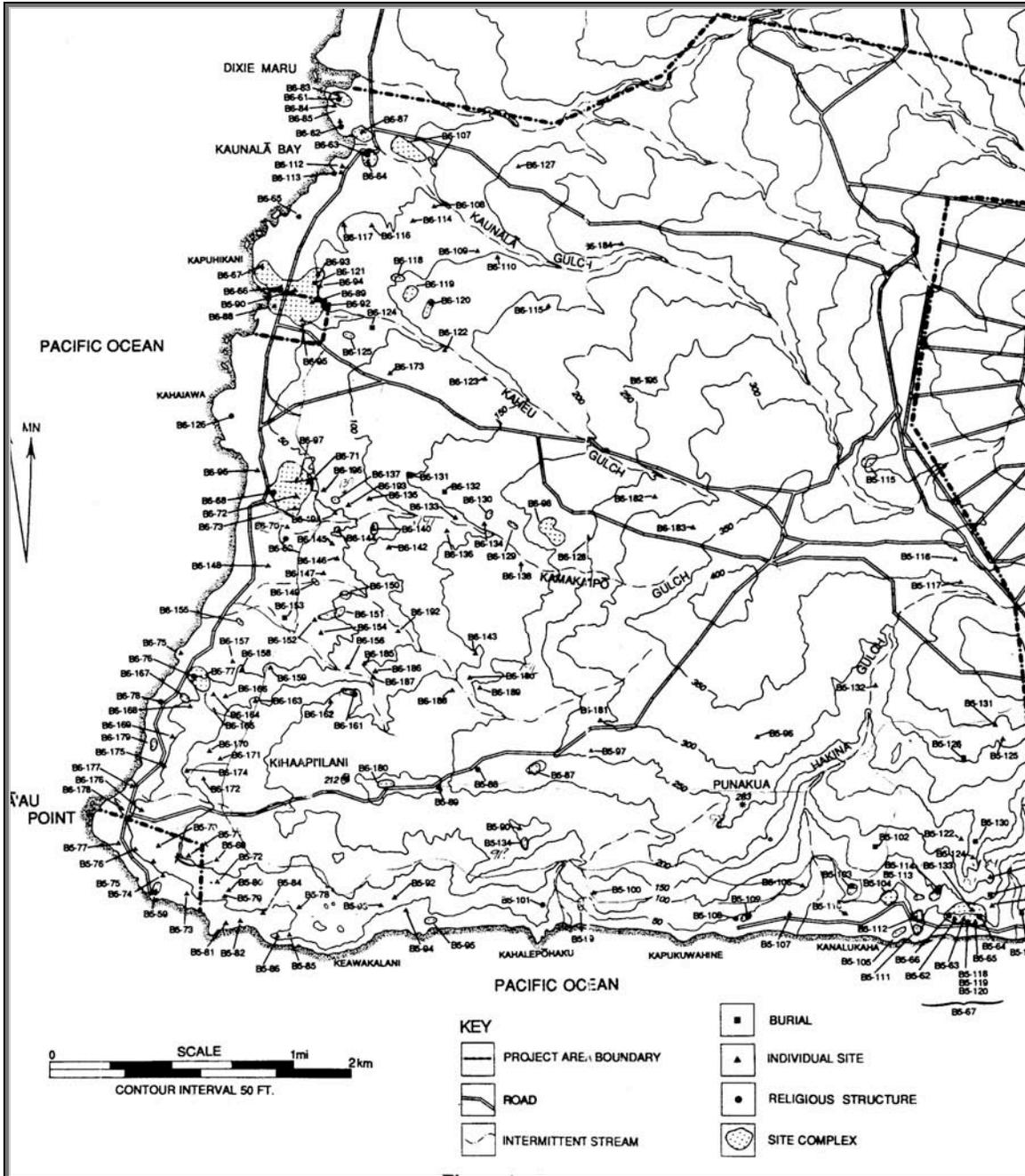


Figure 3. Archaeological Inventory Sites in TMK 5-1-02-030. From Dixon and Major 1993.

Several years later (in 1991), after the Japanese real estate company Alpha USA had purchased a 6,350-acre section of southwest Kaluako'i intending extensive development there, Bishop Museum's Applied Research Group performed archaeological survey of the parcel, describing sites well beyond those recorded by Weisler, as well as providing significance evaluations and treatment recommendations for each site (Dixon and Major 1993). The majority of the nearly 600 recorded features in 192 sites deserved further investigation or data recovery in the case of development plans that would have caused damage, a small number (due to more recent origin or very poor site integrity) were considered not

significant, and 46 sites were recommended for permanent preservation. The inventory, evaluations, and recommendations were reviewed and accepted by the State Historic Preservation Division (SHPD) in 1994.

A decade after the Bishop Museum survey, Alpha USA had sold the property and Cultural Landscapes was retained by the new owner to create a set of management plans for the property, including a Preservation Plan, a Data Recovery Plan, a Monitoring Plan, and a Burial Treatment Plan (Major 2001). These plans provided detailed mitigation and protection treatments for sites covered by the 1993 inventory report, and were intended to minimizing impacts; meanwhile, the development plans had downsized from a large resort to a residential subdivision. Although the 1993 report recommendations served as the starting point, the new plans emphasized avoiding rather than mitigating impacts, and so the number of sites slated for preservation grew from 46 to 138, including all of the sites outside the proposed subdivision as well as those between the new lots and the ocean, a large preserve encompassing a settlement system from the shore to an inland quarry, and sites within the proposed subdivision amounting to an estimated 10 – 15% of the area within subdivision parcels.

Shortly after SHPD had reviewed the 2001 plan (the Moloka'i Island archaeologist had provided verbal acceptance, but an official letter had not yet been generated), the landowner decided to change the subdivision plan by altering the proposed access road alignment, and Cultural Landscapes produced an addendum to the plans (Major 2002). Rather than having the new road meet up with the existing road from Maunaloa town to Hale o Lono Harbor on the eastern edge of the parcel, there would be a single entry to the subdivision from the north, from an old subdivision known as Papohaku Ranchlands. (Of that subdivision, shown as "Kaluakoi Estates" on some maps, the affected lots would be TMK 5-1-08-4, -5, and -14).

At that time, an archaeological reconnaissance had been carried out in the Papohaku Ranchlands subdivision for the Army, since the area had been a target range during and after WW II. The study's authors believed it would not meet inventory standards, and the client had not released the report or submitted it for SHPD review at the time of the Lā'au addendum. On the basis of a draft report recording 27 sites (Burtchard and Athens 2000), five of which were in or near the proposed Lā'au subdivision access road, the 2002 addendum proposed inventory survey within 30 m of either side of the proposed road centerline. These sites included one with habitation and agricultural features (Site 50-60-01-520), one habitation (Site 1784), one agricultural site (Site 1758), an isolated lithic artifact (Site 1760), and a possible burial (Site 1761); all except for 1760 had been deemed significant for their information content and recommended for inventory survey (ibid). The 2002 addendum to the Lā'au plans suggested that all of these sites could be preserved in place, and recommended that fieldwork be done that would bring the records up to inventory standards, but also begin implementation of site preservation measures such as establishing protective buffers, avoidance, and stabilization (Major 2002). Because the Papohaku Ranchlands subdivision does not yet have an accepted inventory, the current plans do not address this parcel except for its contextual value.

further reducing the scope and potential impacts of development, this process sought to increase preservation as a cultural resource management goal by establishing a community land trust tasked with preserving natural and cultural resources within lands deeded to it, by creating conservation easements and cultural overlay districts on privately held land, and by writing codes, covenants, and restrictions for the proposed subdivision that would help preserve sites therein and establish procedures for a management partnership between the new population of subdivision dwellers and Hawaiians who have been on Moloka'i for generations.

The proposed changes in land use, a reduced footprint for the subdivision, and the new approach toward managing cultural resources necessitated the 2006 revision of the 2001 plans and the 2002 addendum. Many elements of the existing plans remain the same, and this set of plans simply adjusts the plans to fit the current situation. So while most of the preservation measures remain the same, reconfigured boundaries make the status of some sites different; for example, the most recent subdivision plan, being smaller than before, changes the status of some sites from data recovery to preservation, and others from the more protection-oriented preservation of sites within subdivision lots to the avoidance-oriented preservation measures associated with sites outside of development areas. Responsibilities for implementation of some preservation measures have changed with the advent of greater community participation and the proposed establishment of a land trust employing a cultural resource staff person.

Given the more robust management program envisioned by the landowner and community, some measures have been added or augmented, such as: expanded data collection to aid preservation management and use of GPS to update site locations. In response to community concerns, the landowner has committed to additional archaeological fieldwork in advance of the road corridor construction, leading to a reorganization of the workflow envisioned in the 2001 plans. Because the 1993 report (Dixon and Major, for TMK 5-1-02-030) completed the inventory, evaluation, and treatment recommendations for the subdivision parcel, and was approved by SHPD, road corridor fieldwork consists of "supplemental data collection." This type of archaeological investigation exceeds regulatory requirements, and serves the landowner's and community's desire that final engineering and construction be based on an enhanced understanding of the archaeological sites in and near the proposed development corridor, as well as the imperative to base preservation measures and interpretation upon more detailed and refined data.

For the parcels north of the parcel being subdivided (TMK 5-1-08-4, -5, and -14), road corridor survey will in fact constitute an inventory survey, and the data collected from those areas will be prepared as a normal inventory report with site significance evaluations and treatment recommendations, all of which will be submitted to SHPD for review according to the Hawaii Administrative Rules, section 13-13-276.

Most sites within the project area will be preserved—152 compared to 138 in the 2001 plan and 46 originally recommended in the 1993 inventory report, an increase of 330%. In addition, eleven sites considered "not significant" in the 1993 report will be preserved by default, due to their locations within the Shoreline Conservation Zone, Cultural Protections Zones, or the Rural Landscape Reserve.³

³ These sites include: 677, 740, 759, 766, 767, 781, 1129, 1137, and 1138 in the RLR, 1165 in the Hakina CPZ, and 1140 in the SCZ.

Finally, five sites (738, 761, 1125, 1136, and 1145) that have been recommended for Data Recovery may be preserved once their precise location in relation to subdivision lots and the road corridor be determined. Conceivably, then, the total number of sites to be preserved may be as high as 167, a 363% increase over the 1993 recommendation, and 87% of the total number (192) of sites in the overall parcel.

Perhaps the most profound change embodied in this revision, though, is change in outlook from the traditional practice of defining a site and surrounding it with a protective buffer to defining a development area with few or no sites and enclosing it within what the Cultural Committee came to call a “bubble.” By reversing the approach from “Keep out of the fenced sites” to “Do not stray beyond the development corridor,” the current plans should result in two major benefits: reduction of inadvertent archaeological finds, and increased preservation of cultural landscapes rather than site “islands” in a sea of development.

SEE ATTACHED FOLIO MAP

Figure 5: Lā’au Subdivision Project area, Sites, and Cultural Protection Zones

Project Area Components

The physical scope of the cultural resource management plans in this volume remains limited to those portions of Kaluako’i *ahupua’a* that could be directly affected by the proposed subdivision (hereafter referred to as the “Lā’au Subdivision”), rather than all lands affected by the recent community planning process. Specifically, the revised cultural resource plans focus on the 1,492-acre project area described in the Ranch’s petition to the State Land Use Commission, which requests a 613-acre area to be changed from Agricultural to Rural designation, 10 acres from Conservation to Rural (for a park), and 252 acres from Agricultural to Conservation. In addition, this plan covers the “Lā’au Mauka” Rural Landscape Reserve, which corresponds to the remainder of TMK 5-1-02-030, the 6,350-acre parcel surveyed in 1991. All of the proposed Lā’au Subdivision lots will derive from that original parcel, although development activity will affect only a limited portion of it—400 acres of house lots and 153 acres of roads, infrastructure and parks, or less than 10% of the original parcel area.

A combination of official zones and project-specific landscape designations have been adopted as a way of managing cultural resources.

- The **Project Area** covers approximately 400 acres, and consists of three components:
 - **Road Corridor** – All areas potentially affected by construction of the road and any adjacent utilities. As many as six preservation sites are in or near this corridor, but will be protected.
 - **Subdivision Lots** – All lots designated in the Lā’au Point Subdivision, including any where community-level facilities may be constructed. No preservation sites lie within lots, although some site buffers may extend into lots, and will be duly protected.
 - **Undeveloped Land** – Areas within the Project Area, but outside of the Road Corridor and Subdivision Lots. The only preservation sites in this area that are not dealt with in the SCZ or CPZ categories below

are three suspected burials at the southeastern end of the Project Area.

- The **Shoreline Conservation Zone (SCZ)** fringes the entire Project Area and is subject to multiple jurisdictions, rules and statutes within its 465 acres. It merits special attention archaeologically because of the richness, diversity, and potential vulnerability of sites there.
- **Cultural Protection Zones (CPZ)** have been devised as a means of protecting cultural and archaeological sites by encompassing their larger landscape settings. This preservation zone overlay will direct immediate and long-term land use in areas where cultural resources are concentrated. The majority of sites in TMK 5-1-02-030 are in CPZs, which extend to the Project Area and Shoreline Conservation Zone in several places. The total area of these areas will exceed 1,000 acres.
- The **Rural Landscape Reserve (RLR)** comprises the remainder of TMK 5-1-02-030, and therefore is outside of the Project Area. There are 11 significant sites in this area, five of which are being preserved.

Environmental Setting

Southwest Kaluako'i lies on the flanks of Mauna Loa, the extinct shield volcano that formed the west side of Moloka'i prior to the eastern (Ko'olau) volcano. Mauna Loa, like most other Hawaiian volcanoes, formed through a series of bedded basaltic lava flows MacDonald et. al. 1983:412). The project area includes portions of the western and southern slopes of Mauna Loa, as well as traversing the southwest rift zone, a line of greater activity where vents and flows created a ridge between the summit and Ka Lae o Lā'au (Lā'au Point, the southwest tip of Moloka'i).

Although Mauna Loa is older, the drier conditions have produced less topographic variation than on the Ko'olau side of Moloka'i, where heavier rainfall has cut spectacular valleys. The gulches of Mauna Loa are relatively shallow, interspersed with broad, relatively undissected landscapes. Many of the smaller gullies between and feeding into the larger gulches are very young, the result of drought and overgrazing that denuded surface vegetation in the 19th and 20th Centuries, leaving it vulnerable to violent erosion during occasional downpours. Other consequences of this period of erosion have been exposure of hardpan subsoils on high ground and accumulation of wind and water-borne silt in leeward low areas and gulch bottoms.

Rainfall is concentrated during the winter months, but has amounted to an average of only 15 inches per year in modern times; on the lower slopes of the southwest region, that figure is lower (Baker et. al. 1968). One aspect of the local climate not mentioned in rainfall data is the typical cloud cover, which consists of a line of clouds parallel to and directly above the island. In dry periods, it barely extends past the high Ko'olau mountains, but often extends past the west coast. During wetter periods, this line of clouds brings rainfall that seems to be concentrated over the gulches of Kamāka'ipō, Kaheu, and Kaunalā. The tradewinds that cause these clouds to pile up over the island dominate, but on the south shore there is frequently little or no wind. When tradewinds are absent, land and sea breezes are more noticeable, and convection clouds (with occasional rain) may occur if humidity is sufficient. A traditional name for a wind of Kaluako'i is "Haleolono,"

which is also a place name for the land just east of the project area (Nakuina 1992:68).

Although there were reportedly a few springs in the past (Summers 1971, Kaimikaua personal communication 1999), there is no reported evidence of perennial streams that would support typical wetland taro agriculture. Another indication of the aridity of the project area is that there are no traces of traditional coastal fishponds, which generally were constructed where some fresh water input fostered plant growth. However, the wetland just behind the dunes at Site 1146 shows that at least brackish water is present at some coastal locations.

The general soil types of the project area are low humic latosols interspersed with lithosols (Foote et. al. 1972). Soil series represented in the project area are dominated by very stony eroded soil in the north and the interior, Kapuhikani along the southern shore to just south of Kamāka'ipō, and Mala silty clay in the Kamāka'ipō Gulch bottom (ibid.). Both Baker and Foote mention deep soils on the west end, but field experience shows that the project area generally has a very shallow soil cover, with rocky and hardpan areas exposed rather frequently, and substantial accumulation of sediments occurring only in the lower reaches of gulches. The 1991 excavations rarely went more than 50 cm in depth before reaching extremely hard clay.

The soil classifications interpret the project area as having very low productivity (Baker et. al. 1968, Foote et. al. 1972). This may be true for modern forms of agriculture and animal husbandry, but it is likely that higher rainfall occurred prior to upland deforestation, providing enough moisture and could cover to grow the less thirsty Polynesian crops such as 'uala (sweet potato, *Ipomoea batatas*), 'ipu (gourd, *Lagenaria siceraria*), and the thatching grass *pili* (*Heteropogon contortus*). George Cooke (1949), who managed Molokai Ranch in the first half of the 20th Century, saw Hawaiian *kō* (sugar cane, *Saccharum officinum*) growing in an old household garden at Kamāka'ipō. Terraces, planting circles, and areas cleared of stones show that Hawaiians once practiced agriculture within the gulches, and to a more limited extent, on the sloping lands. Monitoring at Kaupoa, then old ranch house on the outskirts of an ancient village at Kaheu gulch, revealed deposits of loamy soil sometimes exceeding 30 cm in depth, soil that appeared to have a relatively high organic content and held onto moisture for weeks after rainfall—attributes that would have been attractive to ancient farmers.

Currently, vegetation is dominated by *kiawe* (*Prosopis pallida*) forest, which sometimes forms dense thickets, but may also be open. *Lantana* (*Lantana camara*) forms an understory in the forested areas, and also occurs in the open areas. There are occasional grasslands, with various pasture and weedy species that have become naturalized. Chili peppers (*Capsicum frutescens*), bittermelon (*Momordica* species), and basil (*Ocimum* species) are also naturalized, representing historic household garden introductions, but possibly from elsewhere on Moloka'i, since birds readily disperse each. The native flora are much diminished, although hardier shrubs that are adapted to dry and disturbed conditions are still present; these include: 'uhaloa (*Waltheria indica*), 'ilima (*Sida fallax*), and *ma'ō* (native cotton, *Gossypium sandvicense*).

Insects and other arthropods dominate fauna of southwest Kaluako'i, and it is beyond the expertise of the archaeologists to list or evaluate these. Bird life includes game species introduced by Kamehameha V, and later by the territory and state, as well as exotic songbirds such as cardinals, mockingbirds, and mynahs. Herds of Axis deer, another of the king's introductions, wander Moloka'i's west

end, and along with the other introduced ungulates (cattle, sheep, and goats—only the former of which is still present) have affected the ecology significantly. More important to the human inhabitants of old was the marine fauna, from pelagic species at the offshore Penguin Banks, to reef fish, to shellfish and echinoderms found on the coast, and even the turtles that hauled up on shore.

The character of the southwest Moloka'i shoreline merits attention, not least because this is where ancient and historical people settled. Sand beaches cover most of the coastline, although basaltic ridges do extend to the shore in a few locations, with those at Lā'au Point and along the south shore being highest. Low dunes occur as well, although sand mining depleted those at the eastern end of the project area's south coast. Sandstone and limestone underlie the sand and are visible in many locations. Slabs of this material appear in ancient and historic construction, but the more consistently important aspect of such stone is that the shoreline and shallow waters where it occurs are riddled with holes and cracks that form excellent habitat for fish, lobsters, and other food. Because canoes formed the backbone of the ancient transportation system, the presence of numerous channels through the reef and sandy beach landings would have been an attractive trait of this shoreline in ancient times. The waters of Lā'au Point, however, remain notorious to this day, as currents traveling down each coast collide in a choppy, swirling mix that makes paddling dangerous.

In the reconnaissance of the gunnery range, Burtchard noted highly eroded areas and charcoal indicative of wildfire (2000). It is no great stretch to infer that live fire practice could have ignited vegetation in this parched landscape, and an aerial photo from 1965 shows what appears to be a recent burn area in the range. The reconnaissance also noted several graded and bulldozed areas, piles of stone, and military dumps. In an analysis of Burtchard's report; Dixon and Major's 1993 report; 1955, 1964, 1965, and 1969 aerial photos; Molokai Ranch color aerial photos from the 1990s; the publication *Detailed Land Classification – Island of Molokai* (Baker et. al., 1968); and USGS quad sheets from 1924 and 1983, Cultural Landscapes has been able to estimate the minimum extent of disturbance in and around the new corridor.

Between Po'olau and Wahīlahue Gulches, only a small, unnamed gulch appears to have escaped disturbance prior to the mid-1960s. Between about 100 and 250 feet in elevation, numerous dirt roads criss-cross the landscape here. Po'olau Gulch itself appears to have escaped much direct impact, except where roads crossed it—Burtchard's discovery of intact agricultural sites in the gulch is consistent with this. (His Site 1760 is a single adze preform in "an erosional scar" that may in fact be in a dirt road visible on aerial photographs.) South of Po'olau Gulch, almost everything inland of the old coastal road, north of where the south arm of Kulawai Loop meets Pohakuloa Road, and below about 250 feet in elevation has been heavily disturbed. Grading to clear the target areas, construct roads, and build observation towers and bunkers has obliterated nearly everything inside of Kulawai Loop, and as far east as the rock piles recorded as Sites 1683-1687. The single contra-indication to this situation may be Site 1788, a concentration of boulders including a slab that was interpreted as a fallen upright from a shrine (Burtchard 2000). Low, seasonably wet ground nearby (interpreted as a spring with which the shrine would have been associated) may have saved this area from grading, and is visible on air photos due to the vegetation.

South of Kulawai Loop, the situation changes markedly, and several sites were present beginning between the road and Kapukahehu Gulch. Sites have been

recorded in and between Kapukahehu and Kaunalu Gulches, with a few *maukamakai* roads being the only disturbance to the intervening ridge. The ridge south of Kaunalu Gulch, however, has been disturbed as far down as 100 feet in elevation, and the 1965 aerial photograph shows a series of lines following the contours from this elevation up to nearly 200 feet. It is uncertain what these are, although they appear to have a few intact trees, and may represent grubbing of pasture, an attempt at erosion control, or both. Kahehu Gulch and south appears to be far less disturbed, except for the road down the ridge to Kaupoa.

History and Archaeology

To achieve a more comprehensible and holistic understanding of southwest Kaluako'i's past, this document combines historical and archaeological background. This discussion summarizes what is currently known about the project area, and then offers a brief regional overview as a framework for the research plan. Site particulars appear with the detailed site mitigation plans below, to avoid redundancy and the need to flip pages constantly. A more developed discussion of overall patterns will be included in the final data recovery report.

The name of the *ahupua'a* containing all of these places, Kaluako'i, refers to the pits or quarries ("lua") from which adzes ("ko'i") were made. Kumu Hula John Kaimikaua notes that the largest quarries were inland at "Amikopala, Kahinawai, Koholalele, and Kamakahi," and that the best types of stone were named "Awalau...Awali'i, and Awauli" (Kaimikaua 1997:4). He also relates that when the Maui *ali'i* (chief) Kiha-a-Pi'ilani ruled over Moloka'i, he stationed his men in all of the coastal villages of Kaluako'i "to secure the mining rights of the valuable ko'i as an added wealth for the high chief," and that access to and security over the quarries was the reason he built his famed trail ("KealapūpūoKihaaPi'ilani, See Summers 1971:12-13) around the west end (Kaimikaua 1997:4).

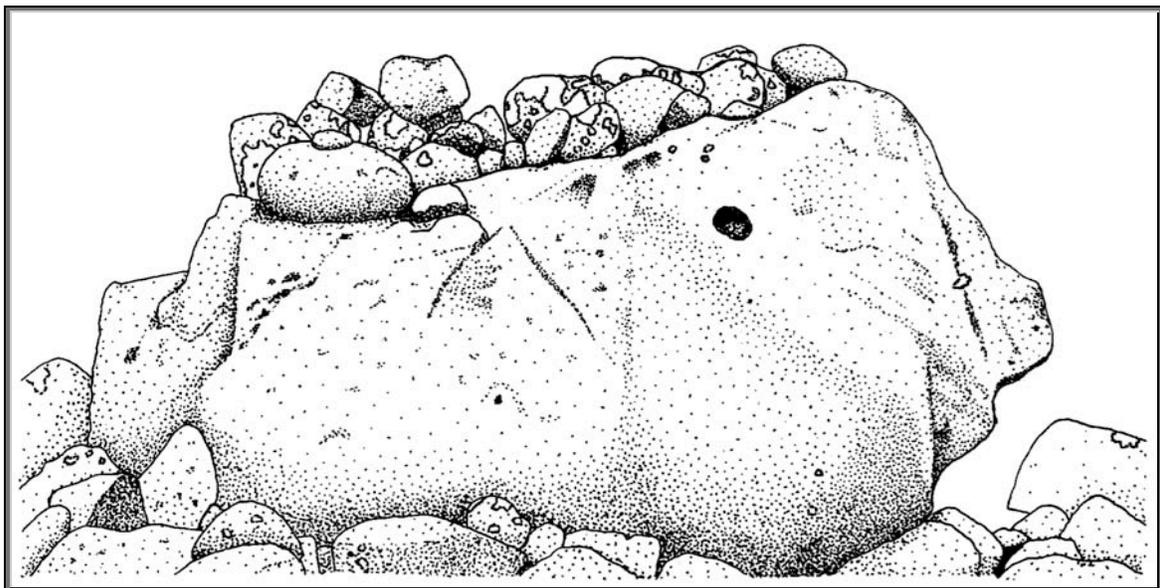


Figure 6. Trail marker at North Kamāka'ipō

One of the Moloka'i chiefs who provided labor for the trail, Kamāka'ipō, was immortalized in the name of the gulch and bay north of Lā'au Point. Kamāka'ipō

was also the name of an owl who lived at the place, and whose droppings appeared as a type of gray clay found there. Two Kamāka'ipō places known from traditional oral history that may have identifiable archaeological sites associated with them are a *heiau* dedicated to Hina that is supposed to be small and circular, and a hill named Ahoaho, a small hill where chiefs were buried (Kaimikaua 2001, personal communication).

By the time Europeans found the Hawaiian Islands, western Moloka'i was not heavily populated, although both the Cook and Vancouver expeditions noted that a small population was present prior to AD 1800 (see Dixon and Major 1993:9). Moloka'i also became a battleground in the struggles between Maui, Hawai'i, and O'ahu, and during the latter 18th Century lost much of its population due to warfare; a Hawaiian told the surgeon of the Vancouver expedition that Kamehameha had decimated the island (Menzies 1920:115, 118). Another source indicates that a generation earlier, the O'ahu chief Peleioholani raided and burned Moloka'i in revenge for his daughter being killed on the island (Fornander, cited in Summers 1971:18). Ash exists widely on the west end, observed in buried layers from at least Po'olau (Burtchard and Athens 1999) to Kaheu (also known as Kaupoa, Major 2000). An older explanation of the barrenness and low population may be found in the story of 'Ami'ikopalā, which said that the wells dug by that supernatural crab dried up when he was killed (Kaimikaua, personal communication 1999). Another *mo'olelo* told that other water sources dried up when people carelessly, and later maliciously, poisoned springs with pieces of the Kālaipāhoa gods (Kaimikaua 1988).

Regardless of the causes, the view that Kaluako'i was a dry, thinly populated area found its way into archaeological literature, and is accepted today. Stokes (1909) stated that "inhabitants of the western end of Molokai deserted or were removed from their homes nearly half a century ago" (Stokes 1909:30), a period when Kamehameha V had begun ranching operations on the island. Stokes concentrated on religious features, and near the current project area recorded *ko'a* (fishing shrines) on the coast at Kamākaipō (Sites 53 and 55), Lā'au (Site 58, destroyed by lighthouse construction before 1909), Keawakalai (probably Keawakalani, Site 59), Kahalepohaku (Site 61), and Pu'u Hakina (Site 62). At the latter place, he also recorded Kalalua Heiau (Site 67), which had an unusual reef rock slab construction, and was reportedly used for human sacrifice (ibid:31-32). Stokes further reported that local people identified Kahalepohaku as the place where Kihā-a-Pi'ilani had been raised.

During the 1920s and 1930s, most Moloka'i archaeology was done by visiting scholars such as Fowke (who wrote a brief paper for the Bureau of American Ethnology in 1922), and Phelps (who produced a monograph on Moloka'i archaeology in 1941). The Phelps paper is more interesting for its consideration of environmental variables than its site recording. He divided the island into ecological regions, of which the western was the driest; Phelps highlighted this aspect by repeating a Hawaiian newspaper story about the 18th Century *ali'i* Kaiakea, who ordered a well dug with adzes near Ka Lae o Lā'au (Phelps 1941:57). He stated that the advantages of Kaluako'i were its namesake adze quarries and its fine fishing grounds (ibid:55-60). He used the *ahupua'a* of Kaluako'i to support his conclusion that land divisions with the greatest area had the least population, and that the absence of valleys to provide natural divisions was what made Kaluako'i the largest *ahupua'a* (ibid:75-76).

Few new sites were recorded prior to the 1950s, when the Bishop Museum and University of Hawai'i began working together on Hawaiian archaeology, and on educating a new generation of scientists. One of these students, William Bonk, reiterated the conventional wisdom in his master thesis, which included the lines, "this was a decidedly marginal land for the inhabitants of Molokai. Fishing and the quest for adze stone brought people into the area, and fighting probably sent refugees into it, but temporarily" (1954:139). His excavation of a house site at Kamāka'ipō (Site 54) revealed less than 10 inches of midden, leading him to conclude that the intensity of habitation had perhaps increased over time, but that the site represented a fisherman's house, and that the area had little more in the way of permanent habitation (ibid:51-52).

Catherine Summers compiled historical and archaeological documentation over the next two decades, and published the results in 1971. Few of the sites are within the current project area, but the book is notable as the first and last attempt to bring together knowledge about sites island-wide. *Molokai: A Site Survey* includes notes made by Stokes and other early site recorders, as well as Hawaiian myths and oral histories, unpublished accounts, and historical documents. Based on all of this information, Summers concurs with the portrayal of Kaluako'i as a land blessed with excellent adze stone and fishing grounds, but also where habitation was limited by aridity (1971:39-40). Also implicit in her maps and descriptions is a settlement pattern in which the most heavily used areas are clustered at the bays and high in the uplands. The current project area occasionally reaches the margins of the coastal settlements, but is largely in the "empty" middle elevations. The Statewide Inventory of historical properties began shortly after the publication of Summers, but consisted more of an effort to relocate previously recorded sites than to discover new ones, and added no new information.

The same year that *Molokai: A Site Survey* was published, a University of Hawai'i student named Hal Strong documented some of the Kamāka'ipō habitations. He described and photographed four house sites and a variety of associated features, including: *ahu* (stone mounds), shrines, *ko'a*, a stone pile, and scatters of midden and artifacts strewn on the surface (Strong 1971).

In the early 1980s, Marshall Weisler surveyed coastal southwest Moloka'i, relocating and discovering eleven sites (State Sites 50-60-01-53 through -56, -655, 1118, and -1134) in or near what has become current project area. He reiterated an aspect of Phelps' settlement pattern in which topography was key—sites were concentrated in gulches and the bays where they met the sea—and added that there was a correlation between the size of the bay and the quantity and diversity of features (Weisler 1984:27). Another pertinent outcome of Weisler's work, creation of the Southwest Moloka'i Archaeological District (hereafter SMAD, Site 50-60-01-803) included some sites (53, 54, and 56), in or near the project area. This district is now on the State of Hawai'i and National Registers of Historic Places, meaning that sites within it are afforded additional protection.

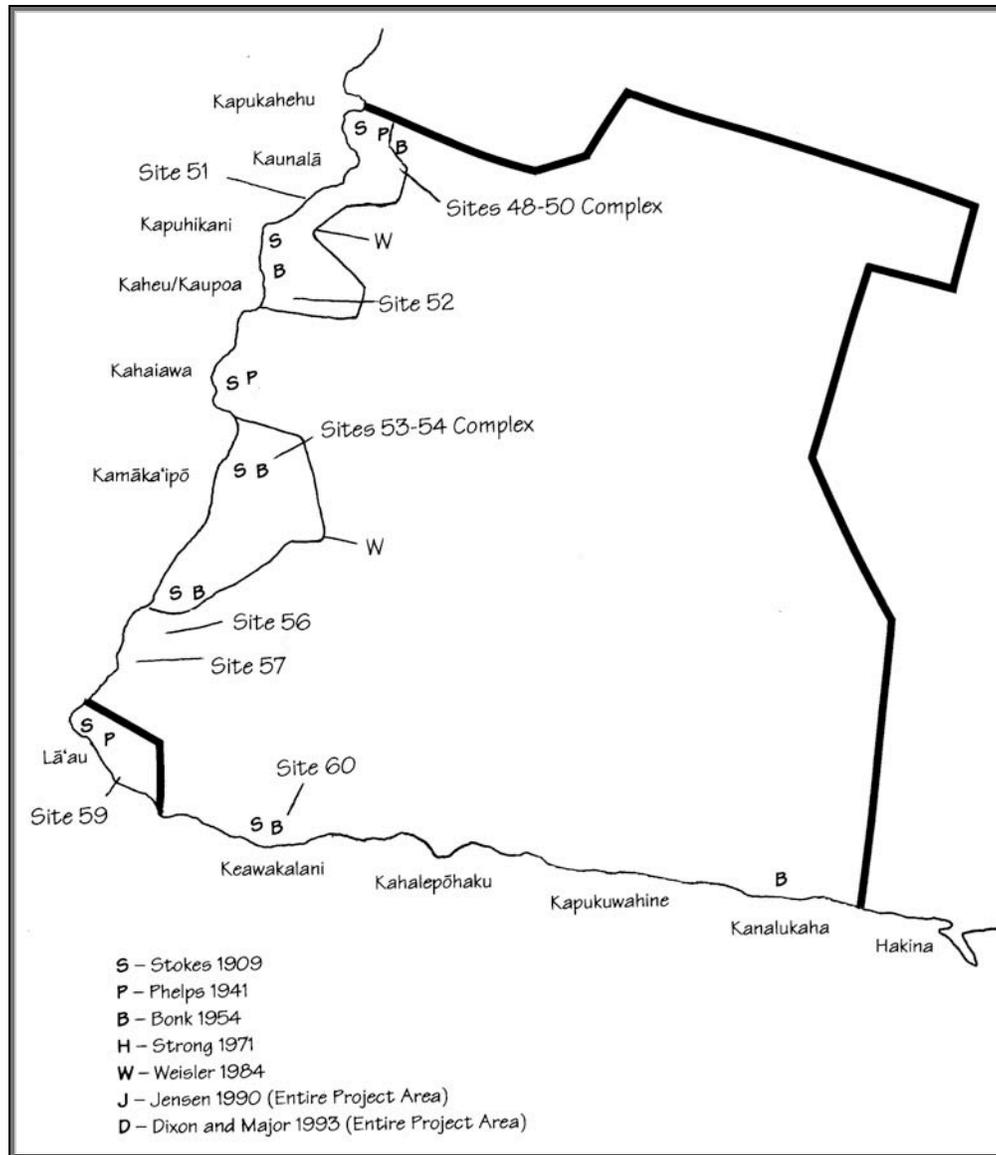


Figure 7. Previous archaeological study areas. (Note: Burtchard and Athens project area is north of this, and is shown in the Papohaku Ranchland map earlier in this report.)

In 1991, a survey of 6,350 acres of southwest Moloka'i done by Bishop Museum encountered features throughout southwest Moloka'i, including the current project area (Dixon and Major 1993, referred to in this report as the "1991 inventory" and the "1993 report"). This survey provided the most complete coverage of southwestern Kaluako'i to date, and the settlement pattern model that emerged from the inventory reinforces the main pattern mentioned above, that sites cluster around bays and gulches (Dixon and Major 1993:337). However, having a survey area that extended well inland from the coast, it was possible to refine the model. For example, although the inland margins of sites had the expected agricultural areas and lithic work stations, they had a surprising number of "temporary and semi-permanent residential compounds" (ibid:337).

Discovery of large, multi-roomed enclosures near the 100 foot elevation also went against conventional wisdom that inland features were marginal and ephemeral.

Two such enclosures occur in the Site 771-773 complex, each with six or more rooms, some of which display massive, well-built walls. Excavation revealed evidence of lithic manufacture (over 3,000 flakes from a single 100 by 50-cm excavation unit), while presence of a metal pick-ax head suggests that this could be a site that transcends the era of contact between Hawaiians and Europeans. A potential explanation for the anomalous development of this inland area is the traditional association of the locale with Kiha-a-Pi'ilani, the child of Maui high chief Pi'ilani, sent here to be raised in isolation from the frequent warfare on his home island (Kaimikaua, personal communication 1999). Although current vegetation makes it difficult to know how visible the multi-roomed enclosures would have been in the past, their relative seclusion and distance from the coast, as well as their position along a ridge would have made it possible to spot arriving canoes well before anyone could get to the sites, thus making them a defensible location. Furthermore, the intensity of lithic production here outstrips the local needs, and could be an indicator of a chiefly influence on the local economy. These sites remain enigmatic, but seem to suggest a degree of permanence or intensity previously not recognized on the west coast, and certainly not at that elevation.

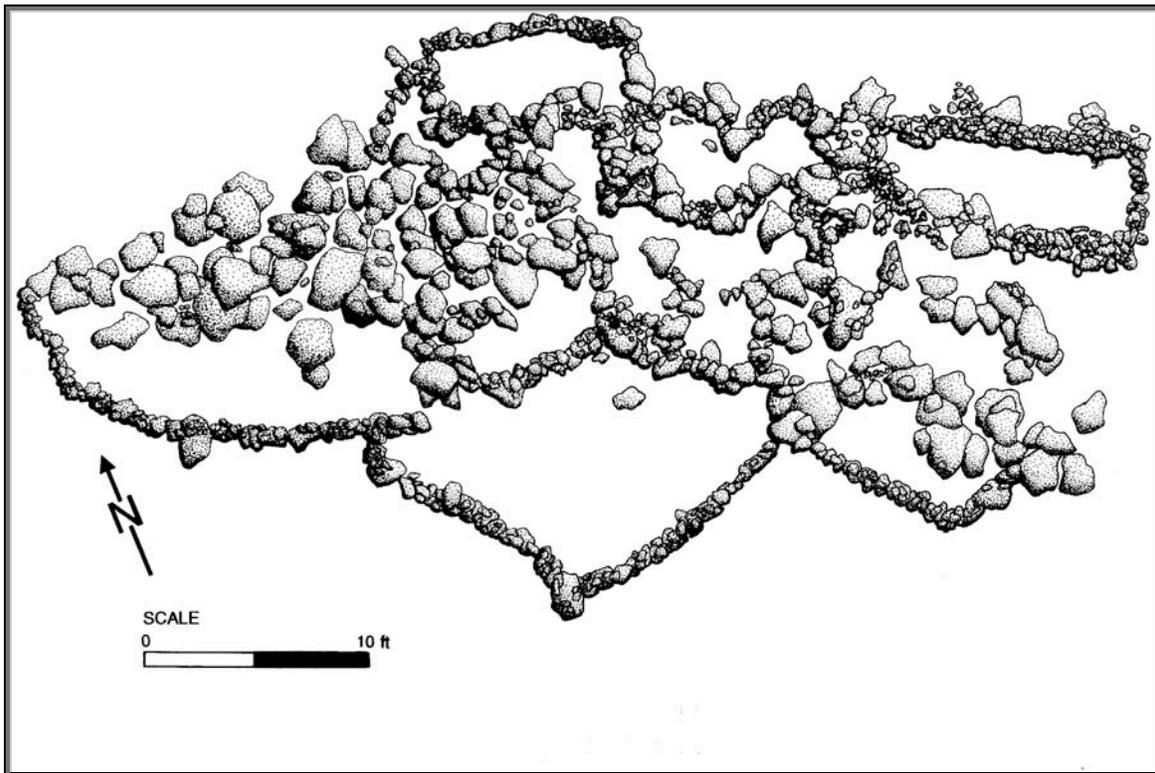


Figure 8. Site 771, a multi-room enclosure on a ridge above Kamāka'ipō. Adapted from Dixon and Major, 1993.

The 1991 project also documented variation between west coast settlements (where features clustered at the bays and stretched inland to gardening or quarrying areas) and south coast settlements (where habitations were spread laterally along the coast), indicating that the causes again related to topography (ibid:337-338). Analyses of subsistence strategies and lithic production, paired with the form and

distribution of features, suggested that rather than a temporarily occupied, culturally peripheral area, southwest Kaluako'i was probably permanently occupied late in prehistory, and that its access to fishing grounds and adze quarries meant that it was integrated into island-wide society (ibid:240-344). A more recent study including part of the north end of the current project area concluded that coastal habitations must have been permanent (Burtchard and Athens 1999). Presence of extensive occupations in the uplands (Summers 1971, Major 2000) and of major specialized features such as *heiau* (temples) and *holua* (sledding courses) in the lowlands (Summers 1971) provide evidence that the Kaluako'i area had permanent, perhaps socially stratified, occupants.

Traditional wisdom among archaeologists has also concluded that this region would have been settled only after sweet potato was available, and after population densities had risen in the wetter areas, probably no earlier than about AD 1500 (Kirch 1985). Radiocarbon dates suggest somewhat earlier occupation may be possible, although the limited data make it hard to discern sporadic early use from a stable early habitation. An inland quarry yielded a radiocarbon date of AD 1260-1440, and the south Kamāka'ipō coastal site was dated between AD1410-1955. A subsequent, unpublished date from the 1991 excavations at Site 654, in a coastal *imu* that Weisler originally recommended dating, provided an even earlier date of AD 1019-1211 (Major and Dixon 1993), confirming the suspicion that coastal areas were used much earlier than they were permanently settled. The material dated in this instance was charred grass, which eliminates the possibility of an in-built age.

The condition of Site 654, eroding from an exposed dune face, may be a result of the 1946 tsunami. The Cookes (1948, 1961) both wrote of the effect that this wave had on the west coast, impacting Kawakiu heavily and working its way a half mile inland at Pāpōhaku beach; it could easily have come well inland at Kamāka'ipō, where the alluvial flat is severely eroded. Even without tsunami, however, many sites at Kaluako'i have been damaged by erosion, itself catalyzed by cattle and deer grazing since the mid-Nineteenth Century and several periods of severe drought.

Because the archaeology of Kaluako'i is relatively well known, mitigation plans may be based not only on particular knowledge of the sites, but on the patterns evident in southwest Kaluako'i. Because the current project area mostly runs *mauka* of the sites, the data that will be recovered will be skewed toward traces of peripheral activities and agriculture. In the Data Recovery Plan, the effect of this on the techniques of data recovery and the research issues will be evident.

PROPOSED SITE MITIGATION MEASURES

The forms of mitigation dealt with in this and the accompanying Lā'au plans derive from the process outlined in HAR 13-13-284, which describes the historic preservation review process in Hawai'i. **Data Recovery** pertains to sites that are significant for their information only, and covers pre-construction actions such as mapping, excavation, and surface collection, so that any damage during development is offset by gains in knowledge. **Monitoring** means having an archaeologist present during ground-disturbing activities, and the objectives are twofold: to prevent incursion and impacts to preservation areas and damage to sites, and to document and evaluate any inadvertent finds that may occur during construction. **Preservation**, the subject of this plan, differs from the other treatments in that sites are protected, and there is no impact to mitigate. Options within this treatment revolve around the degree and type of protective measures to be implemented, and whether the preservation is to be passive or active. **Burial**

treatment concerns not only the actions taken for sites that have documented or possible burial sites, but also measures that will be followed should an inadvertent discovery of human remains occur. Like monitoring, the procedures for burial treatment apply throughout the project area. Table 1 shows all sites in the project area and their disposition relative to these categories.

Because the final alignment of the proposed road corridor has not yet been designated, some treatments may change later pending community and SHPD approval. All such changes will be from Data Recovery to Preservation, and no objections are anticipated. Any site thought to be near the road or within a proposed subdivision lot has a detailed mitigation plan. At least 14 sites recommended for data recovery in the 2001 plan are now slated for preservation due to the road realignment and the revised approach to subdivision, and as many as 8 more appear likely to experience the same shift. SHPD has already expressed a favorable attitude regarding changes from Data Recovery to Preservation, and will be notified of any additional ones as they become final. As mentioned above, the preliminary road corridor will be resurveyed prior to finalizing the plan, and every effort will be made to realign it around significant sites.

A few inventory sites lack specific mitigation measures described in this plan. Some are sites recorded prior to 1991 that could not be located or were destroyed by then (State Sites 55, 653, 1108, and Bishop Museum Sites B5-58 and B5-61). However, most are sites that lacked cultural or archaeological significance (primarily recent hunting blinds), and a few of which have been too heavily damaged to retain physical integrity. Other gaps in the site numbers—653, 1133, 59-638, 700-735 and 783-1099—have been assigned to sites elsewhere on Moloka'i, and do not actually denote gaps in the 1993 site records.

Table 1. Site Conversions and Mitigation Treatments

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Preserve	Data Recovery	No Action
48	B6-61	X		
49	B6-62	X		
50	B6-63	X		
50	B6-64	X		
51	B6-65	X		
52	B6-66	X		
53	B6-68 and -97	X		
54	B6-69 to -73	X		
56	B6-76 and -77	X		
57	B6-78	X		
639	B6-67	X		
640	B6-74	X		
641	B6-83	X		
642	B6-84	X		
643	B6-85	X		
644	B6-86	X		
645	B6-87	X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Preserve	Data Recovery	No Action
646	B6-88	X		
647	B6-89	X		
648	B6-90	X		
649	B6-91	X		
650	B6-92	X		
651	B6-93	X		
652	B6-94	X		
654	B6-96	X		
655 (aka 53)	B6-97	X		
656	B6-98	X		
657	B6-107	X		
658	B6-108	X		
659	B6-109	X		
660	B6-110	X		
661	B6-111			X
662	B6-112	X		
663	B6-113	X		
664	B6-114	X		
665	B6-115	X		
666	B6-116	X		
667	B6-117	X		
668	B6-118	X		
669	B6-119	X		
670	B6-120	X		
671	B6-121	X		
672	B6-122	X		
673	B6-123	X		
674	B6-124	X		
675	B6-125	X		
676	B6-126	X		
677	B6-127			X
678	B6-128	X		
679	B6-129	X		
680	B6-130	X		
681	B6-131	X		
682	B6-132	X		
683	B6-133	X		
684	B6-134	X		
685	B6-135	X		
686	B6-136	X		
687	B6-137	X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Preserve	Data Recovery	No Action
688	B6-138	X		
689	B6-139	X		
690	B6-140	X		
691	B6-141	X		
692	B6-142	X		
693	B6-143	X		
694	B6-144	X		
695	B6-145	X		
696	B6-146	X		
697	B6-147		X	
698	B6-148		X	
699	B6-149	X		
736	B6-150	X		
737	B6-151	X		
738	B6-152	?	?	
739	B6-153	X		
740	B6-154			X
741	B6-155	X		
742	B6-156	X		
743	B6-157		X	
744	B6-158	X		
745	B6-159		X	
746	B6-160		X	
747	B6-161	X		
748	B6-162	X		
749	B6-163		X	
750	B6-164	X		
751	B6-165	X		
752	B6-166	X		
753	B6-167	X		
754	B6-168	X		
755	B6-169		X	
756	B6-170		X	
757	B6-171			X
758	B6-172		X	
759	B6-173			X
760	B6-174		X	
761	B6-175	?	?	
762	B6-176		X	
763	B6-177	X		
764	B6-178	X		
765	B6-179	X		
766	B6-180			X

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Preserve	Data Recovery	No Action
767	B6-181			X
768	B6-182	X		
769	B6-183	X		
770	B6-184	X		
771	B6-185	X		
772	B6-186	X		
773	B6-187	X		
774	B6-188	X		
775	B6-189	X		
776	B6-190	X		
777	B6-191	X		
778	B6-192	X		
779	B6-193	X		
780	B6-194	X		
781	B6-195	X		
782	B6-196	X		
1100	B5-59	X		
1101	B5-60	X		
1102	B5-62	X		
1103	B5-63	X		
1104	B5-64	X		
1105	B5-65	X		
1106	B5-66	X		
1107	B5-67	X		
1109	B5-69	X		
1110	B5-70	X		
1111	B5-71	X		
1112	B5-72	X		
1113	B5-73	X		
1114	B5-74	X		
1115	B5-75	X		
1116	B5-76	X		
1117	B5-77	X		
1118	B5-78		X	
1119	B5-79	X		
1120	B5-80	X		
1121	B5-81		X	
1122	B5-82	X		
1123	B5-83	X		
1124	B5-84		X	
1125	B5-85	?	?	
1126	B5-86	X		
1127	B5-87	X		
1128	B5-88	X		
1129	B5-89			X

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Preserve	Data Recovery	No Action
1130	B5-90		X	
1131	B5-91		X	
1132	B5-92		X	
1134	B5-93		X	
1135	B5-94			X
1136	B5-95	?	?	
1137	B5-96			X
1138	B5-97			X
1139	B5-98	X		
1140	B5-99			X
1141	B5-100		X	
1142	B5-101	X		
1143	B5-102	X		
1144	B5-103	X		
1145	B5-104	?	?	
1146	B5-105	X		
1147	B5-106	X		
1148	B5-107	X		
1149	B5-108	X		
1150	B5-109	X		
1151	B5-110	X		
1152	B5-111	X		
1153	B5-112	X		
1154	B5-113	X		
1155	B5-114	X		
1156	B5-115	X		
1157	B5-116	X		
1158	B5-117	X		
1159	B5-118			X
1160	B5-119	X		
1161	B5-120	X		
1162	B5-121	X		
1163	B5-122	X		
1164	B5-123	X		
1165	B5-124			X
1166	B5-125	X		
1167	B5-126	X		
1168	B5-127	X		
1169	B5-128	X		
1170	B5-129	X		
1171	B5-130	X		
1172	B5-131	X		
1173	B5-132	X		
1174	B5-133	X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Preserve	Data Recovery	No Action
1175	B5-134	X		
1176	B5-135	X		

NOTE: Treatments with an **outlined X** signal post-2002 changes in status from Data Recovery to Preservation status. Sites slated for Inventory will all be recommended for Preservation. Question marks (?) indicate sites currently recommended for Data Recovery that may change to Preservation, pending precise site location.

One clear message from the community has been that prior preservation commitments must be honored. Both the original and revised plans actually commit to more extensive preservation than originally recommended, and no site previously slated for preservation will be removed from that status. Most changes result from the decisions that possible burial mounds will be preserved, rather than tested, and that many sites will be avoided and preserved rather than undergo data recovery. The Southwest Moloka'i Archaeological District (hereafter SMAD, Site 50-60-01-803), a discontinuous set of sites listed on the National Register of Historic Places (NRHP) in 1986 will continue to be indicated on plats and deeds, and will continue to be preserved within a larger preservation landscape. Being listed on the NRHP distinguishes sites with formal recognition of their significance, but does not provide site-specific treatment plans, which are therefore included here.

CONSULTATION

As mentioned previously, the current revised plan reflects priorities expressed in hundreds of hours of community-side meetings, as well as mediated discussions between the landowners and community leaders (some for, and some opposed to the proposed subdivision) and conclusions of a Cultural Committee chaired by Collette Machado, the Moloka'i OHA (Office for Hawaiian Affairs) Trustee. In addition to the "official" meetings and discussions, the author has solicited comments and opinions informally from Native Hawaiian residents of Moloka'i. This updated plan embodies community preferences regarding preservation, and therefore contains sections not required or normally included in some Preservation Plans.

As part of its master planning process, Molokai Ranch engaged the Conservation Fund (a land conservation organization) to assess natural and cultural resources on their land and to mediate a series of community meetings and focused discussion groups. The Cultural Committee, chaired by OHA Trustee Collette Machado assisted by Hālonā Ka'opuiki, focused on issues regarding cultural aspects of the landscape, particularly with regard to the effects of proposed development and conservation areas. In addition to recommending that the Ranch donate large tracts to a community-based land trust, the Committee advised the creation of cultural conservation zones that would overlay lands regardless of their eventual ownership and land use zoning. After consulting with a wide array of community members, the Cultural Committee advised that the revised preservation plan increase the level of data collection associated with preservation, leading to the commitment to re-survey the road corridor, to salvage and in some cases excavate data from fire

features to help learn about former vegetation, and to more clearly identify roles and responsibilities relative to sites in the Cultural Protection Zones where they either overlay or abut the subdivision project area. Similarly, the Committee and community at large recognized a need for this plan to address sites in the Shoreline Conservation Zone, which borders many subdivision lots. Community and Cultural Committee input has already fostered preservation, causing redesign of the infrastructure corridor and the subdivision boundaries to decrease the number and extent of proposed lots.

Through the Cultural Committee members and meetings, several organizations have contributed their *mana'o* (thoughts) regarding preservation at Lā'au. These include OHA, the Moloka'i Archaeological Society, Hui Aloha. The author apologizes for not having a complete list of organizations that may have been represented officially or informally by members. The original plan was also submitted for review by the Moloka'i Island Burial Council and a Kūpuna Advisory Committee. (None of the Burial Treatment Plan has changed since that time.)

Several individuals living on Moloka'i have offered opinions, proposed measures, and spoken with the author regarding preservation at Lā'au during the past decade. Most frequent among these has been Hālonā Ka'opuiki, a Moloka'i kama'āina ("child of the land," born to a family that has been on the island for many generations) who has taken a strong, sustained interest in the well-being of cultural sites in central and west Moloka'i. Members of the Aki 'ohana (Harry, Lawrence and his wife Catherine) also shared their *mana'o* regarding southwest Kaluako'i and supported cautious methodologies such as the use of string trimmers to achieve more thorough survey and preservation of possible burials rather than testing. Another long-term contributor to the discussion of preservation in Lā'au and elsewhere has been Walter Ritte, who spoke with the author directly and indirectly. More recently, a face-to-face talk story session with OHA trustee Collette Machado and Billy Akutigawa of the Molokai Archaeological Society helped clarify issues regarding access to sites, coastal preservation, and more. Also at that session was Alvin Burrows, a descendant of the original lighthouse keeper at Lā'au, whose opinion about this place holds a unique value. Though not always speaking directly to the Lā'au landscape, John Kaimikaua and Opuulani Albino have both been gracious enough to speak with this *haole* boy regarding the cultural significance of land and cultural places. Finally, though not directly commenting on the project, Davianna McGregor reviewed the most recent draft of the plans, and elicited further public opinion.

In addition to the Moloka'i community, the author sought advice from preservation professionals in an effort to ensure that the current plan is at the forefront of cultural preservation in Hawai'i. *Mahalo* to Myra Tomonari-Tuggle for general advice and a model of excellence. Sara Collins provided thoughtful review comments on the 2001-2002 plans in her capacity as the Moloka'i Island archaeologist at the State historic Preservation Division and since her departure from that position has responded to additional queries on a personal level. Alan Carpenter, an archaeologist at State Parks and long-time supporter of community-based preservation and cultural resource management efforts, offered reactions to the provisions of this plan and can be credited with "reversing the polarity" and advocating for circumscribed development areas rather than buffering numerous individual sites.

In the final analysis, the revised draft has become a more robust outgrowth of the original principals due to consultation with these groups and individuals. Many

preservation actions far exceed the minimal standards expressed by the state rules for preservation (HAR 13-13-277) because of the willingness of Moloka'i Hawaiians to stand up and express their *mana'o*. Consultation resulted in a plan that protects places and landscapes rather than site numbers, and which represents a great advance not just in acreage, but in the diversity and intensity of preservation actions proposed relative to the recommendations of 15 years ago, not to mention other islands to this day. Admittedly, a persistent minority opinion on Moloka'i—that no development ever occur on this island—could not be accommodated, but the desire to minimize the effects of development at every step has been a guiding principle for this plan. Another opinion—that cultural sites should be much more fully opened to cash-driven cultural tourism—was rejected after the majority objected strongly.

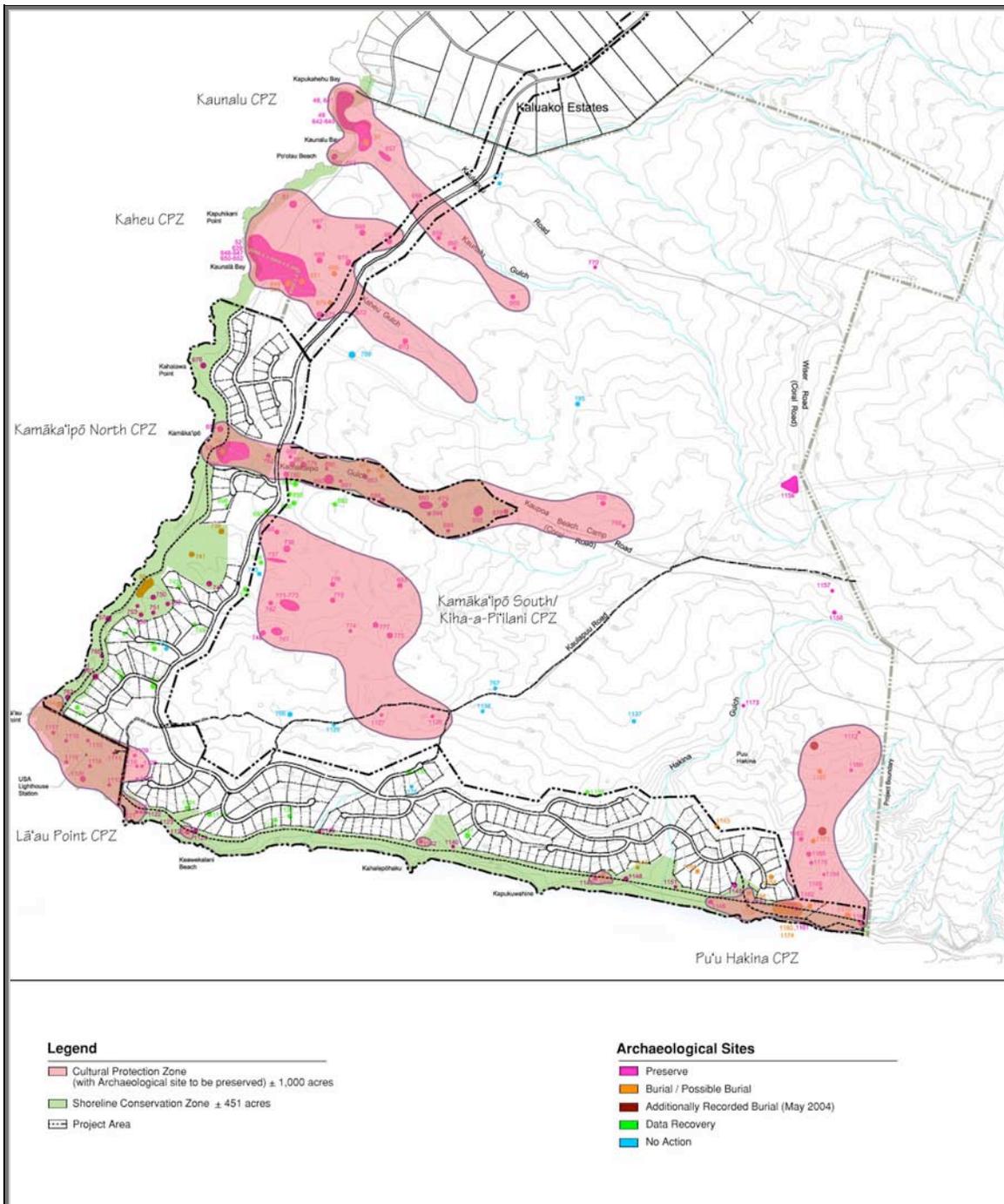


Figure 9: Cultural Protection and Shoreline Conservation Zones at Lā'au. Creation and expansion of these zones resulted from strong community input, and caused many sites to be changed to Preservation Status. Based on map produced by PBR.

PRESERVATION GOALS

Ongoing broad-based community consultation and focused Culture Committee meetings have yielded a consensus that site preservation serves the larger community goal of offsetting change with a renewed attention to Moloka'i heritage and culture. The Hawaiian renaissance of language, arts, agriculture, and culture in

general has grown for more than a generation now, and to *mālama* (protect) the sites is to protect a physical link between the modern and ancient culture. At the same time, a Preservation Plan fits within regulatory and scientific frameworks (HAR 13-13-277), and some goals stem from those aspects as well. Whether an individual is most interested in preserving a place for its *mana* (spiritual power) or its data, however, the goals listed here serve the interest of preservation.

- **Hana Like / Consult the Community** – Through the ongoing discussions of the past year, the process of consulting with Hawaiians and other interested parties is already well under way. As events move from generalities and plans to details and implementation of cultural resource preservation, however, it is important that community input be integrated with the archaeological viewpoint.
- **Ho'omau / Perpetuate** – Preservation of archaeological sites allows future generations of Hawaiians a link to their forebears. A preserved site may be a place to feel the *mana*, to appreciate the heritage, or to learn in ways that disembodied awareness and knowledge do not; *places* are important.
- **Ho'opa'a / Stabilize** – For sites subject to erosion, traffic, or other ongoing threats, stop the immediate damage and avert future impacts.
- **Kapu / Protect** – Protection of sites within or adjacent to development or high traffic areas means erecting barriers in the field and clearly marking sites on construction plans and deed maps.
- **Noho Pono / Behave** – Basic rules for what can and cannot be allowed within preservation areas need to be established clearly. Although they should apply generally, it is especially important that protocols be supplied to subdivision lot owners and the conservation staff. Protocols should be consistent with (and perhaps simplified versions of) management plans devised for the overall conservation areas.
- **Maka Ala / Monitor** – Archaeological monitoring is necessary for ground-disturbing activity adjacent to preserves or in data recovery areas. A second type of monitoring is the annual field-check of site conditions in public use areas and for particularly sensitive sites.
- **Respect Preservation Commitments** – The 2001/2002 plans, like the 1991 inventory, carry through with the preservation commitment made when the SMAD was listed on the State and National Registers of Historic Places. Additional recommendations made to preserve sites since then, although not formalized through listing on the National Register, should continue to be respected and implemented.
- **Management-oriented Evaluation** – Rather than static site significance assessments, management evaluation aims to identify old or ongoing preservation problems such as erosion or damage from animal or human traffic, as well as to evaluate opportunities for protective measures and data collection. This mode of evaluation should be continued into the future to maintain a preservation program that does not fall behind developing issues and problems.
- **Data Collection** – As opposed to data recovery done in a regulatory context, the preservation process is guided by a desire to not let information about the past disappear. Implementation of the preservation plans will involve salvage of data during stabilization, as well as mapping or excavation done

to better interpret sites of interest to the Hawaiian community, to provide re-vegetation plans with information about the ancient environment, or other bona fide management purposes.

PRESERVATION PHASES

Preservation of sites representing the long past of Lā'au itself represents a long-range effort, responding not just to immediate issues, but perpetuating the protection and *mālama* for generations. Historic preservation rules acknowledge this in the requirement to state both short and long-term measures in a Preservation Plan (and as this plan does in the next section), but Moloka'i residents have moved beyond this simple two-part approach in cultural resource planning. This section presents a sequence according to which preservation measures will be implemented.

Ongoing – Communication and Evaluation

During each of the phases listed below, it is important to continue to keep lines of communication open with Hawaiians and other interested parties in the community. Having Moloka'i people as resource staff is a major step in this direction, as is answering public queries and making the process as transparent as possible.

Ongoing evaluation is important to good resource management. Inevitably, unforeseen circumstances, field conditions, and other factors lead to situations in which strict adherence to plans does not serve preservation goals. Field personnel should be allowed some flexibility as long as changes or alterations are minor and are reported to supervisors. Should a larger problem arise (such as, operational changes that would require a new permit), evaluation and discussion among staff and relevant experts should precede any change in procedures. Periodic monitoring should also feed into evaluation, so that the preservation and conservation programs continue to achieve their goals over the long run.

At the present time, a Cultural Committee chaired by Collette Machado and Hālonā Ka'opuiki has taken the lead role in advising the landowners regarding cultural sites. In previous projects, such as the Kaupōa Camp re-survey and monitoring, a Kūpuna Advisory Council was consulted regarding cultural resources. Both groups have functioned well, providing archaeologists with the cultural perspective and wisdom necessary to protect cultural sites. Experience on Kaua'i involved a combination of the two, a group of people with cultural expertise to oversee normal operations, and a council of kūpuna to consider broader issues and provide the benefit of experience and wisdom.

Phase I – Relocate and Verify Archaeological Sites

A qualified archaeologist should relocate known sites thought to be in proximity to proposed subdivision lots, and if necessary refine site boundaries for preservation purposes such as marking permanent buffers. Once located, vegetation should be cleared 5-m beyond structures and the vicinity examined thoroughly to determine final site boundaries. If sediments merit, transects of shovel tests may be done to discover whether buried deposits or features occur beyond the surface features. (This means digging holes at 1 to 10-meter intervals as appropriate, screening the soil, and determining whether cultural deposits are present beyond the limit of surface features, which typically represent only the most recent phase of activity at a site.) If there are features with maps or records inadequate for preservation

management purposes, they should be augmented at this time. In addition, all surface features, visible deposits, and site settings should be photographed. Finally, verified site boundaries will be clearly flagged with their State inventory numbers, and GPS reference points established to update the location.

An additional area of verification will be the examination of the proposed road and utility corridor associated with the subdivision. Archaeological investigation of the corridor will occur during the planning process, so that any archaeological sites, if present, may be avoided. Because roads and utilities necessitate excavation and grading, the entire corridor will be covered, rather than just known sites. Wherever the proposed route enters a site, alternative routes will be investigated as well, to ensure the rerouting does not cause other impacts. Methods for verifying sites near the road will be the same as those described in the previous paragraph. Should any new features or artifacts be found during this process, the existence of a previously accepted inventory means that they technically will be classified as inadvertent finds, but the advantage of an early re-examination of the development corridor is to allow adequate time to assess the potential outcomes of such finds, allowing time for community and SHPD consultation as necessary, and adjust development plans accordingly to minimize any impacts.

Phase II – Re-evaluate Sites and Prioritize Actions

Sites in and adjacent to proposed infrastructure corridors and subdivision lots should now be evaluated with regard to general mitigation and specific treatments. It should be noted that Significance Evaluations have already been accepted, and this stage of the process instead focuses on a few cases where treatment may change from Data Recovery to Preservation, as well as examining sites in detail to make informed decisions regarding the type, extent, and priority of implementing specific preservation actions.

The sites proposed for Data Recovery in 2001 mostly consist of 20th Century sites, small areas of basalt flakes, possible planting areas, and modified outcrops; they were assigned to this category only if they appeared very marginal in importance, suffered diminished integrity due to previous damage or erosion, or were relatively recent. This point in the process is when subdivision planners must decide whether to retain data recovery as the site mitigation, or simply move the site to preservation status. Sites subject to this process are 738, 761, 1125, 1136, and 1145.

For Preservation sites, this is the time to assess particular needs in terms of stabilization, details of establishing permanent barriers, or data collection. Also sites should be prioritized so that those most at risk of erosion or other impact will be dealt with first.

Phase III – Stabilization and Protection

This is the time to erect fences or other barriers for interim protection of sites, to mark site boundaries and buffers, and to note restrictions to be placed on construction plans, parcel maps and deeds. Stabilization measures will be implemented so that sites at risk do not continue to degrade. Some data collection, such as recovery of eroded data or salvage of unstable deposits may be best accomplished in conjunction with these activities.

Phase IV – Data Collection and Permanent Barriers

Once sites have been verified, stabilized, and protected, further data collection may be done. Rather than the salvage of information that may occur during construction of a retaining wall, for example, this phase would consist of controlled excavations done to recover data from features or deposits not at immediate risk, but subject to long-term degradation (for example, cultural deposits at risk from unusually high surf).

Limited excavation may be done to support re-establishment of native vegetation or animals, since fire pits contain identifiable native and Polynesian charcoal and animal remains in an area dominated by exotic species today, or to gain better understanding of long-term environmental conditions. Interpretive questions identified during previous phases can be addressed at this time, such as excavation done to determine the relative or absolute age of a structure, or the intensity and timing of lithic production.

Permanent fences or other buffers will be installed during this phase. Wherever such buffers require ground disturbance, an archaeologist must be present to monitor the activity, recommend alterations to protect sites, and salvage data as necessary.

Phase V – Management Plan and Detailed Interpretive Plan

Building on the experience of the initial phases and the evaluations of those involved, the Management Plan can now be produced. The two main components of this document will be a report of all the findings and activities thus far, and a manual for the continued management of the archaeological preservation areas (North Kamāka'ipō Gulch, Shoreline, Sites in Subdivision Lots, Sites Straddling Lot/Conservation Boundaries, and Outliers).

Unlike this preservation plan, the Management plan will focus less on regulatory compliance than on integration of long term processes in the Project Area with preservation activities undertaken by the neighboring Land Trust, and refined policies regarding maintenance and ongoing evaluation. This document is intended for practical application by Land Trust staff, subdivision residents and maintenance personnel, and other individuals who may not have a historic preservation or archaeology background. The Management Plan will not change the measures proposed in the Preservation Plan, but will help distill and translate that Preservation Plan in order to facilitate implementation over the long run. A major element of the Management Plan will be a set of maps showing the final maps of preservation sites, so that any refinements or augmentations can be recorded as baseline data for future site condition monitoring.

Development of a Detailed Interpretive Plan is being proposed as an addendum or supplement to the current Preservation Plan for several reasons. First, implementation of the core Preservation Plan will yield additional data and situational awareness that may alter or augment understanding of the archaeological and cultural sites to be interpreted. For example, recovery of charcoal during Phases III and IV will expand our understanding of settlement chronology and environmental change. Because public accessibility to interpreted sites in North Kamāka'ipō and Pu'u Hakina will be more intense, the goal is to provide a richer interpretive program than inventory data allow. Also, as the Preservation Plan is implemented, community attention will be drawn to the area, and elicitation of residents' memories of the region, oral histories, and community preferences regarding the content and style of education and interpretation are sure

to emerge. While specific interpretations could be proposed at this time, waiting until later will result in a more informative, culturally appropriate program.

Interpretive planning is covered by the HAR 13-277 rule for preservation, but SHPD has allowed phased submittal of Detailed Interpretive Plans in the past. The current plan covers the more immediate site protection and specific preservation planning commitments that are urgent, and asks that SHPD accept this plan as is, including a commitment to prepare a Detailed Interpretive Plan based on community consultation for future SHPD review.

PRESERVATION ACTIONS

Preservation often means more than simply leaving a site alone. Between simple avoidance and interpretive restoration lie numerous preservation measures. Choosing which of these to apply requires consideration of the site's basic characteristics, its significance, its physical surroundings, and its context within landowner plans. These actions comprise both short and long-term measures that will protect sites during the subdivision process and for years to come.

General Preservation Categories

The basic division of Preservation treatments distinguished between "Avoidance and protection" (or "conservation") from "Active" (HAR 13-277-3-(1)). The latter includes stabilization, rehabilitation, restoration, reconstruction, interpretation, and appropriate cultural use. Because of the variety of site types and functions, as well as the large area covered by this plan, treatments vary. Site-specific treatments are generally determined by factors such as proximity to development, whether a site is in a Cultural Protection Zone, and whether a site is in an area where significant public use or access is anticipated.

Active preservation measures proposed in this Plan include stabilization, interpretation, and appropriate cultural use. The latter category applies to all sites in Cultural Protection Zones, although current active use is limited to a very small number of *ko'a* where some fishermen continue to place offerings. As the sites in the project area become more accessible, it is likely that cultural use will increase. Stabilization needs have been estimated based on current knowledge of site conditions, and will be limited to measures that halt the deterioration and erosion of sites, without going further and restoring them. Interpretation will focus on the North Kamāka'ipō and Pu'u Hakina Cultural Protection Zones, each of which will be partially developed as a public beach access and park. A detailed list of active preservation measures is presented for each site in Table 2.

Sites for which avoidance and protection are the only treatments are primarily located away from the subdivision Project Area. These sites appear on Table 2 as well, with the only applicable treatments consisting of two or more of the following: Avoidance, Mapping, Temporary Buffers, Permanent Boundary, and Protocol Education. Sites in this group include the following: 48-52, 639-652, 657-675, 693- 695, 736, 738, 742, 747, 748, 770-778, 1100, 1102-1111, 1113-1117, 1125, 1136, 1139, 1146, 1153, and 1155-1174. Of these, Sites 738, 1125, and 1136 are currently slated for Data Recovery, although it is possible that they may be preserved if development activity can avoid their locations.

Supplemental Data Collection

Two types of archaeological investigation that are not required by the regulatory historic preservation process will be done in association with the Lā'au subdivision. While elements of each have been part of the plans from the outset, the recent period of community consultation have made it clear that they are a priority to many residents and most Native Hawaiians on Moloka'i. The function of supplemental data collection is to refine and augment site records to a level at which they can aid in preservation management, which requires more detail and a thorough baseline understanding of sites, sometimes beyond the ability of Inventory level data to accommodate

First, because construction of a new road and utility corridor represents the greatest single potential for impact, and is the initial step in construction for the new subdivision, the landowner has committed to re-examine the corridor, which as already been through the an accepted archaeological inventory.

The second form of data collection relates to preservation sites within and close to proposed subdivision lots, where the process will amount to a thorough investigation of sites that are to be protected within or in close proximity to new house lots. Because this type of work is to be done as part of the Preservation Plan implementation, it will be described in more detail there, but it is important to note that it will be done well in advance of any house construction, and therefore any new or augmented finds may be considered in the design and construction process, so that new houses need not damage old sites. An overview for this process is included below.

Road Corridor

As described in the **Introduction**, the first fieldwork associated with these plans will be to re-examine the road corridor and verify descriptions of known sites, gather additional data if possible, and search for unrecorded archaeological deposits or features now observable due to changes in surface visibility. A preliminary plan for the road corridor has been prepared by engineers, the centerline of which will be staked on the ground by surveyors prior to commencement of archaeological fieldwork. The proposed road diverges from Kulawai Loop (an existing road in the Papohaku Ranchlands subdivision), and then runs roughly southwest to a point just south of the Kaupoa House lot where the subdivision begins, and then more or less follows the shoreline down the west south coasts to the vicinity of Site 1155, south of Pu'u Hakina (see map). Along the way, 12 short spur roads depart from the main corridor, providing access to subdivision lots. No connections to the Hale-o-Lono harbor road or other existing roads are planned, and the old coastal road—a roughly graded, unpaved jeep trail—will be abandoned as part of the development plan due to its alignment through several archaeological sites and erosion-prone environments.

As noted above, the portion of the road corridor north of TMK 5-01-02-030 has not been officially inventoried, and a report for that portion of the road corridor investigation will in fact be submitted separately to SHPD for review as an archaeological inventory with significance evaluations and treatment recommendations. Despite this procedural difference, techniques will remain the same throughout the road corridor.

The area for data collection consists of a 30 m wide swath on either side of the centerlines for the main and spur roads, and a 50 m radius surrounding each end point, where turn-arounds have been planned. The impact of road construction and

utility trenching will be less than the resulting 60 m wide corridor, but that width has been chosen both to provide the best archaeological understanding of the road and its context, and to provide intensive coverage that may be used to avoid additional survey or unexpected impacts should presence of sensitive sites within the corridor cause a need to adjust the alignment.

The survey team will consist of Moloka'i residents with archaeological experience and training led by the Principal Investigator, with additional archaeologists hired if necessary. The corridor will be divided into segments, and the crew will perform sweeps in each segment with a 5 m interval. Where grass is thick enough to obscure surface visibility, gas-powered string trimmers will be used to expose the surface within 10 m of the centerline, so that low-relief features such as pavements and lithic scatters will not escape notice. Vegetation will also be cleared around the periphery of any visible surface features found within the corridor (regardless of distance from the centerline) to allow their accurately augmented documentation.

Any sites within the corridor will be documented with scaled surface planviews, cross-sections and profiles as necessary, photographs, and descriptive notes. Where sediments occur that could contain buried cultural deposits, transects of probes will be employed to determine site boundaries and characterize site stratigraphy. Each probe is to be excavated with a shovel, by stratigraphic layer as far as practicable, with the entire volume screened through $\frac{1}{4}$ -inch mesh. For each probe a representative profile will be drawn, referenced to the current ground surface. Any features encountered will be drawn and photographed in plan and profile and excavated as a separate stratigraphic context. All cultural materials will be collected, described, and recorded in a project inventory. Probe intervals will range from 1 to 5 m, depending on the area of sediment where buried features could occur, as well as the nature and density of the surface features and visible deposits. Probes will begin at the outer edge of surface features and radiate outward in at least two directions along grids established for each site (the orientation of which will be decided in the field by the PI according to topography and local conditions). Where probe intervals are greater than 2 m, follow-up probes will be used at tighter intervals to better determine the horizontal extent of the site.

For each site, a minimum of one datum point will be flagged and marked on site planviews to facilitate location on large maps. Initially, a GPS device will be used at each of these to provide a location; consumer-grade Garmin units used on property by Ranch staff have achieved accuracy to within 2-m of the UTM coordinates provided by survey grade GPS, and will be used during the re-survey to provide interim site locations. Subsequent to the initial fieldwork and prior to construction, these points will be plotted on lot surveys to provide accurate, precise control points for site and buffer locations. Each datum point will be integrated into the engineering consultant's CADD system, along with either an appropriately sized buffer. (Site-specific buffers, it should be noted, may often fall within larger buffers created for the Shoreline Conservation Zone or Cultural Protection Zones.)

Sites that have been previously recorded will be reported in the Preservation Management Plan, including any newly located features or artifacts found during fieldwork. Features not associated with known sites will be reported to SHPD as inadvertent finds, along with significance evaluations and treatment recommendations.

Subdivision Lots and Coastal Zone

Sites within proposed subdivision lots have accurate locations due to their proximity to coastal reference points, and many have been previously documented in detail by archaeologists. In order to ensure that all sites have been adequately recorded and those slated for preservation receive timely and effective preservation, land within and in close proximity to the subdivision lots will be re-examined as well. As with the road corridor, the aim is to verify extant site records, augment them as necessary, and record any previously unrecorded artifacts or features.

Methods for investigating and recording sites will be the same as well, although the project area differs. Rather than a corridor defined by the road centerline, this survey area consists of the proposed private lots and the lands makai of them. Inclusion of the coastal land (most of it already zoned Conservation, and the remainder to be so if the Ranch's petition to change some near-shore land from Agriculture to Conservation is approved) in this phase stems from two facts. First, some sites straddle the boundary between Shoreline Conservation land and lots. Second, as lots are occupied and coastal parks are opened, foot traffic through coastal sites will increase, subjecting them to a greater potential for impact than in recent decades.

Because so many sites have been recorded near the shoreline, this phase will begin with the known and work outward, annotating and augmenting site documentation as necessary, firmly establishing site boundaries. Areas between sites will be surveyed at 5-m intervals to search for any unrecorded features or deposits.

Vegetation clearing in this phase will focus on sites, exposing surface features and visible deposits to allow for mapping. However, clearing in Conservation lands will be limited to cutting grasses and vines, and native plants will be preserved. A sampling of high probability landforms (ridge-tops, natural terraces within gulches, and level ground above slopes) will be cleared to check for visually unobtrusive features in the private lots, but not within the coastal strip. In all cases, clearing will proceed with an awareness of soil, slope, and groundcover, to avoid exacerbating erosion.

In addition to the use of shovel probes to define site boundaries, some excavation will be done in this phase to help further the general conservation goals of the master plan and to better understand chronological and functional issues regarding the sites. Wherever hearths or *imu* are at risk from erosion, they will be excavated to reveal the stratigraphic relationship to other site components, and to collect charcoal for taxonomic identification, providing a basis for future re-vegetation efforts. Likewise, eroding deposits will be cleaned up to provide a representative vertical face for profile illustration, and a charcoal or other materials may be collected at this time.

Establishing Site Buffers

Currently, the boundary of each known site is a perimeter enclosing all of the features and intact cultural deposits, constituting the site as recorded in 1991. State Historic Preservation rules (HAR 13-13-277-4) specify that a buffer zone must be established to surround and protect significant sites. This will be the initial task of preservation, and will be all that is done for sites that are not being interpreted or that are far from potential impact areas. The folio map (Figure 4) shows the buffers proposed in this plan.

Zone Buffers

Because wording in the rule describing how Preservation Plans must specify buffers requires that the report “specify buffer zones around each significant historic property” (HAR 13-277-3-(2)), the usual practice is to assign site-specific buffers. In keeping with this, site-specific buffers are proposed below based on a series of systematic rules. However, this Plan proposes that buffers be recognized on the level of larger zones that encompass numerous sites and their buffers. Defining buffers at the perimeters of the Shoreline Conservation Zone and the six Cultural Protection Zones will result in radically larger buffered areas that protect sites in their landscape and inter-site contexts. Where these zones abut the Project Area, or where individual sites do not fall within the protection of a larger zone, the site-specific zones proposed below will pertain, and in no case will a SCZ or CPZ buffer be less than the minimum 7 meter buffers for typical sites or 9 meters (in the case of Sites significant under Criterion E).

Because the Shoreline Conservation and Cultural Protection Zones are so expansive and go well beyond where they would be subject to effects from subdivision or road development, placing permanent barriers along their entire length would be impractical, and likely to trigger more impacts than it would prevent. However, these Zones must be identifiable to future landowners, land use planners, and preservation managers, and markings on the ground and on maps are necessary.

Locations where sites in the zones lie in close proximity to potential development areas may require temporary protective fencing during construction, and permanent buffer markers after that. These cases have been identified and are reported in the table and text of Plan’s the **Site-Specific** section.

Marking the buffers for Cultural Protection Zones where development is not a potential cause of impacts will be accomplished through a combination of land survey data and maps, marker posts, and signs. An archaeologist will first define the edges on the ground, ensuring that no site receives less than the mandated site-specific protection, and that the overall zone covers the area intended; this will be marked with highly visible flagging tape. Subsequently, the archaeologist will work with licensed land surveyors to mark the precise metes and bounds of the Cultural Protection and Shoreline Conservation Zones. These data will be transferred to maps of individual lots, the Project Area as a whole, and overview maps showing the Project Area in relation to the Shoreline Conservation Zone, the Cultural Protection Zones, and the Rural Landscape Reserve. The zone-level protective buffers will be recorded with the Bureau of Conveyances to ensure that they persist beyond any change of ownership.

Physical markers will consist of metal T-posts or durable wooden posts placed at intervals sufficient to relocate them on the ground using a map of the zone. In some of the heavily vegetated gulches, the interval may be as close as 10 m, while in the more open uplands they may be 10 times that far apart. Placement will be sufficient to mark any turns in the boundary, and an archaeologist will be involved to ensure that the markers do not impinge on the visual integrity of sites, and that their installation does not cause any adverse impacts. Each post will have a metal tag indelibly marked with the name of the Zone being marked.

Where roads traverse sections of Zones, signs will be installed informing drivers and maintenance crews that they are entering Cultural Protection Zones, and notifying them that they may not drive beyond the extant road or otherwise disturb the ground or cultural resources. These will be placed along the main subdivision

access road where it traverses the Kaunalu, Kaheu, and North Kamāka'ipō CPZs, as well as where extant dirt road (potential access routes for emergency vehicles) traverse sections of the North Kamāka'ipō, South Kamāka'ipō – Kiha-a-Pi'ilani, and Pu'u Hakina CPZs. Signs will also be placed at the north edge of the tourist eco-camp at Kaupoa where people could walk into the Kaheu CPZ, as well as at the far extremes of TMK 5-1-02-030, where shoreline pedestrian traffic will enter the Kaunalu CPZ at the south end of Kapukahehu Bay (north end of the west coast) and at Pu'u Hakina CPZ (at the east property boundary on the south shore). Signs will also be posted at the edges of the North Kamāka'ipō, Lā'au Point, and Pu'u Hakina CPZs where they abut subdivision lots. Test for the signs is shown in Appendix C.

Site-specific Buffers

For some sites (primarily those near the road corridor and those being interpreted), the first action will be to verify site boundaries. This is an extra safeguard to ensure that site components that may have been hidden by vegetation in 1991 are included, and will consist of intensive field checks of site boundaries, and possibly some additional vegetation clearing.

Once the boundaries have been verified, buffers will be established. For the majority of sites, buffers will consist of a 7 m strip extending radially out from the boundaries. In the case of single-feature sites, the buffer will be a 7 m radius extending from the feature edges. For burials and shrines, the radius will extend to 9 m; in the case of *ko'a* shrines, an additional aspect of the buffer will be a requirement to keep an open view plane toward the ocean. Another exception is the *Mauka-Makai* preserve at Kamāka'ipō, where the entire area will be a buffer, so that the overall character of the cultural landscape can be preserved. This preserve will be traversed by the subdivision access road at a single location; archaeological survey will be done prior to identify a corridor where no features will be impacted, and the corridor will be fenced to prevent any further encroachment into the preserve; this corridor will be narrower than the 100-m survey corridor. In cases where a site buffer radius extends into an old road grade or eroded area which has cut down to the culturally sterile substrate, the buffer may be moved closer to site boundaries. This will not only avoid the unnecessary "protection" of what has already been lost, but will also minimize overall project impacts by allowing use of existing roads. However, a minimum 2 m buffer from remaining features will be retained even where damage has reached all the way to site boundaries. Construction plans need to consider all buffers and avoid ground alteration that could cause erosion to cut into them.

Generally, no vehicles or ground altering activities will be allowed within buffers. In certain cases, such as developing an interpretive walking trail or stabilizing sediments, it may be useful to enter the buffers for the benefit of site preservation. Installation of signs and/or fencing around buffers will also involve ground disturbance. For all of these activities, written plans shall be submitted to the Kūpuna Advisory Committee and SHPD for review, and an archaeologist shall monitor implementation. For sites within the subdivision lots (the large common lot excepted) that are not near any planned construction, buffers will be marked with bright-colored flagging tape on which the site number is included. For sites near areas of potential impact, temporary fencing will be used as described below and in Table 2. The table also shows which sites will have permanent buffer markings as described below.

As stated above, most sites fall within the protective buffers of larger Culutral Protection Zones. In keeping with the technical requirements for site-specific

buffers, the following information is provided for sites that depart from the standard 7 m buffers. The exceptions to the standard site buffers are as follows:

- 48-52** is 10 m excepting previous grading and erosion, with a clear view to the ocean unless obscured by existing vegetation
- 639** is 7 m north and south, but otherwise goes from the road to the coast
- 641** is 9 m in all directions except *makai*, where it extends to the coast
- 645** is 7 m north and south, but otherwise goes from the road to the coast
- 648** is 9 m with an open view to the coast (excepting existing vegetation)
- 649** is 9 m with an open view to the coast (excepting existing vegetation)
- 651** is 7 m except for a 9 m radius around the shrine (Feature 18)
- 670** is 7 m except for a 9 m radius around the shrine (Feature 1)
- 671** is 9 m on all sides
- 674** is 9 m on all sides
- 1104** is 9 m to the east and west, and between the road and the coast
- 1105** is 9 m to the east and west, and between the road and the coast
- 1106** is 9 m with an open view to the coast (excepting existing vegetation)
- 1107** is 9 m with an open view to the coast (excepting existing vegetation)
- 1128** is 9 m except where the existing road encroaches within 9 m
- 676** is 9 m with a clear view to the ocean unless obscured by existing vegetation
- 1101** is 9 m with a clear view to the ocean unless obscured by existing vegetation
- 1146** is 9 m east and west, and between the road and the coast
- 1157** is 9 m with a clear view to the ocean unless obscured by existing vegetation
- 56** is 9 m to the north and south, and between the road and 9 m *mauka* of the most inland cairn feature.
- 741** 7 m except 9 m from Features 3 and 4
- 764** 7 m except 9 m from Feature 2
- 1119-1120** 7 m (possible shrines present, but not intact)
- 1142** is 9 m with a clear view to the ocean unless obscured by existing vegetation
- 1143-1144** is 9 m in all directions
- 1147** is 9 m in all directions
- 1149-1150** is 9 m with a clear view to the ocean unless obscured by existing vegetation
- 1154** is 9 m in all directions

Short Term Measures

Temporary Fencing and Protection

For sites that are in the area of potential impacts during construction, temporary buffers will be established. These will consist of brightly-colored construction fencing erected on the permanent site buffer boundary. Construction personnel will be alerted to their presence and significance, and will not be allowed to encroach. Once buffer zone markers are placed in the field, field personnel will be alerted to their presence and their meaning; no construction, ground-disturbing activity, traversing by vehicle, or stockpiling will be allowed within them. Buffers of this type differ from site boundaries, and extend 7 m or more beyond the outermost features of a site. An archaeologist will be present during ground-disturbing work in such locations to maintain the protective buffer, and to evaluate any inadvertent

discoveries that may occur nearby. The archaeologist will follow the procedures outlined below in **Monitoring: Methods**.

Evaluate Stability

Sites are part of a changing environment, and in Kaluako'i a widespread agent of environmental change is erosion; long dry periods and occasional downpours mean that many sites are vulnerable to sudden erosion. Generally, sites are at risk either from soil deflation or by more damaging collapses as gullies advance up-slope; in fact several previously buried cultural deposits were initially recorded because erosion had exposed them. More rarely, low-lying sites may be covered with silt washed down from above. For these reasons, sites where erosion appears to be a factor will be evaluated with regard to the damage that has already occurred and the risk of further adverse impacts from erosion. In addition to the sediments, stone features will be evaluated to determine the degree to which collapse has occurred and may be expected to continue. Recommendations for stabilizing sediments and structures will be made.

Recover Eroded Data

As stability is being evaluated, eroded data will be found at some sites. Unless they appear to be in imminent danger of erosion, intact deposits will not be excavated. Midden, artifacts, and charcoal that have eroded from formerly buried deposits will be collected for analysis. Because such data have lost their depositional integrity, controlled excavation techniques will not be used, although sediments will be screened. In cases where findings are limited, or original context cannot be reasonably inferred, data will be recorded in the field without collection. Other cases where data will be recorded but not collected include culturally sensitive features and deflated (but horizontally stable) deposits. Sites where data will be recorded in situ are marked "I" on the **Preservation Measures Table 2**. A report summarizing findings will be produced.

Long Term Measures

As-Is Preservation

For sites that are outside the subdivision, as well as some within that can easily be planned around, the primary treatment will be simple avoidance. These are sites that have no construction or ground-disturbing activities planned nearby. Sites preserved in this manner will have 7 m buffers unless otherwise noted, but because they are usually remote, will not have physical boundary markers. Instead, these sites will be marked on topographic maps (see attached), and current and future landowners will be notified of their presence, and of the buffer zones.

Mapping

Many sites, especially those where public access or frequent use may be expected, would benefit from accurate mapping. The inventory survey included plane table and alidade mapping of some sites, but most were only sketched. Mapping techniques for structural features will conform to those described in **Data Recovery: Methods**. Maps will become baseline illustrations of sites, allowing landowners to re-identify them and evaluate their condition in the future, as well as to recognize site buffers, which will be depicted on parcel plats. Copies of each map will be submitted to the SHPD office as part of a Preservation Report.

Physical Stabilization

For sites where erosion or historic development has resulted in an unstable deposit, measures may be taken to prevent further impacts. Physical stabilization refers to actions that replenish eroded sediments or create barriers preventing further erosion. Soil from upland pineapple fields may be introduced at some locations to cover deflated surfaces or fill in erosional gullies. No fill will be taken from archaeological sites. For features, previously toppled stones may be re-stacked to repair collapsed sections, but only to the degree that it prevents further degradation; complete restoration of walls or other features will be done only after SHPD has reviewed and accepted a site specific restoration plan. In a few cases, imminent damage may require use of retaining structures. These will consist of alignments or stacked stone facings, and will incorporate natural materials erected in traditional mortarless construction; to avoid confusion of stabilizing features with older sites, they will generally make use of a different type of stone so that they can be readily distinguished. Kiawe or other logs may also be used. Prior to implementation, specific treatments involving alteration of site landscapes will be submitted in writing for SHPD review. Subsequent to implementation, all forms of physical stabilization will be annotated on site maps, described specifically in a letter to SHPD, and identified in any educational materials that are developed for stabilized sites.

It should be noted that in all instances where Stabilization is specified as a treatment in Table 2 below, this is contingent on the Evaluation of Stability. Although the Site Treatment Table provides the best estimate of stabilization needs based on existing records, it is conceivable that field checks will reveal that some sites do not need stabilization.

Vegetative Stabilization

In sites where soil and water availability make it possible, plants will be used to stabilize damaged sites and prevent erosion of intact sites. In some cases where it is being recommended, it may not be practical to plant vegetation, due to hardpan surfaces or lack of water. In such cases, the approach will be to encourage growth of extant plants, particularly native plants and grasses that have become naturalized and help bind the soil. The technique will be to allow low-growing varieties to stay, rather than introducing them. Vegetation that is brought in and planted will consist of native and Polynesian introduced shrubs and groundcovers that are well suited to the dry environment. Shrubs may include species common in the project area, such as *ma'ō*, *'ilima*, and *'uhaloa*, as well as others that would have been expected prior to historic changes, such as *'akoko*, *'auhuhu*, *'āweoweo*, *maiapilo*, *naupaka*, and *'ūlei*. Ground covers will also include known and likely former species, such as *'ākulikuli*, *hinahina*, *'ihi*, *'ili'e'e*, *nanea*, *pōhuehue*, and *pōhinahina*. Choices of species for particular sites will depend on the availability of the varieties, physical environment, and consultation with ethnobotanical and botanical specialists.

Permanent Boundary

For some sites where public use is expected to be relatively high, permanent boundaries around site buffers are appropriate. Boundaries will more often be visual reminders of site preserves than actual fences. At some, openings will allow public access, and boundary markers will serve to direct foot traffic rather than prevent it. Boundaries will be wood post and rail construction, with any posthole digging to be monitored by a qualified archaeologist who will ensure that the

proper placement is achieved, and who will examine the excavated volume for cultural materials. Stone walls will not be used, to avoid confusion with the sites themselves. Access to and around boundaries will be planned on a local basis to minimize the potential for impacts. Signs at buffers will identify sites and advise visitors regarding protocol. (See Appendix.)

Interpretation

Because it is not immediately obvious to many people what a site is, selected sites will be interpreted, particularly in the North Kamāka'ipō and Pu'u Hakina Cultural Protection Zones. To the extent that available data and contextual knowledge allow, a site will be interpreted regarding its function, age, and cultural significance. Representative functional types including households, *ko'a*, *heiau*, agricultural areas, and stone tool manufacturing sites will be included among the interpreted sites. The overall theme will be that ancient Hawaiians developed cultural adaptations to the dry leeward landscape, including a *mauka-makai* settlement pattern that made use of ocean, gulch, and ridge environments and resources. Because of the number of sites and the predominance of thorny vegetation between them, only certain accessible sites are being chosen for interpretation, but an effort has been made to represent the range of site types in the project area, including several sites in the Southwest Moloka'i Archaeological District. North Kamāka'ipō will be the main interpretive area, since it is being preserved as a *mauka-makai* system. Because of its proximity to Hale-o-Lono boat harbor (where an annual canoe race draws hundreds of visitors, and where other boaters and island residents frequently visit), the landowner has also planned a public park at Pu'u Hakina, where interpretation will focus on settlement in the relatively broad sandy flat of the south shore.

An important consideration for interpretation is that not all sites should be presented to the public. Some, such as burials, will not be publicly accessible, although descendants may of course visit their *kūpuna*. Others, such as the *ko'a* mentioned above, are also sensitive, although community input suggested that Hawaiians and perhaps other fishermen should be allowed to visit them freely, and that a sample should be made known to visitors since they are such a strong aspect of the culture, but that not all should be known to outsiders. The *ko'a* being interpreted will restrict access beyond a respectable distance and include signage that asks visitors to respect the sanctity of the place.

In addition to brochures and other off-site interpretation, signs will be used at sites both for protection and interpretation (See Appendix C for examples), as well as to communicate Hawaiian place names to those who may not be familiar with them. The exception is for burials—other than those present in the North Kamāka'ipō area, where they are amid other sites being interpreted, they will not be subject to interpretation. Currently, cultural tours are available on adjacent lands owned by Molokai Ranch. Should organized activities such as this occur in this parcel, tour organizers must follow the cultural protocol and minimize the potential for adverse effects. This includes consultation with *kūpuna* and cultural experts regarding proper behavior, not using vehicles (including mountain bikes), and educating visitors regarding the importance of appropriate behavior and penalties for damaging sites.

To protect sites that are publicly accessible (ie., adjacent to roads or in public areas), signs will be posted at or outside of buffer perimeters identifying sites as significant and warning that damage to sites is punishable under Hawaii Revised Statutes Chapter 6E-11. Placement will be determined by accessibility and

visibility, and may occur at sites not otherwise interpreted. Printed interpretive materials will also include the legal message.

As stated elsewhere in this Plan, a **Detailed Interpretive Plan** will be developed at a future date to provide the specific interpretive messages that are to be communicated. This will be based on community consultation, especially with *kūpuna* familiar with the regional history, as well as archaeological investigations done during implementation of the Preservation Plan. In addition to interpretive content, the plan will specify the location, appearance, and maintenance considerations for interpretive locales. The interpretive program will not be implemented until SHPD approval has been received.

Protocol Education

All sites being preserved have significance at least for the information they can offer to our understanding of Moloka'i history. In some cases they also represent of a unique function or style, and many are valued for their cultural significance to *kanaka maoli* (indigenous Hawaiians) and other groups. For these reasons and the fact that they show the last physical traces left by former inhabitants, it is important to communicate new residents the importance of helping protect and respect ancient sites. As interpretive materials are developed, therefore, information on how to properly behave in sites will be included on printed materials and signs. From an archaeological perspective, this means leaving things as they are and avoiding actions that could damage or destabilize sites. Hawaiian cultural protocol builds on this to include other behaviors, especially with regard to *ko'a* and burial sites, and therefore the Kūpuna Advisors and cultural experts will be consulted. It is anticipated that protocol education will consist of two parts: a general notice for people to respect sites and leave them as they find them, and more detailed information about sites with religious or burial features.

Management Plan

Following completion of other preservation measures, a Management Plan will be produced to help lot owners, Land Trust staff, and others with the ongoing management of preservation sites. The primary purpose of this document will be to provide a smaller, more user-friendly distillation of this compliance-oriented Preservation Plan that will be more suited to practice. In addition to the simpler presentation of measures described here, the Management Plan will include details regarding management of the two proposed parks, which are currently only conceptual, and which will require additional preservation measures such as specification of landscape maintenance procedures as garbage removal. The second purpose will be to provide a set of detailed baseline maps and photos to preservation managers—these will include the refined and augmented maps produced during Preservation fieldwork.

Because the Management Plan will describe some measures covered by the HAR 13-277 preservation rule, it will be submitted as a Supplemental Preservation Plan for SHPD review.

Appropriate Cultural Use

Currently, the only site known to the author to be actively in use is the *ko'a* Site 676. It is possible that other *ko'a* are used similarly by fishermen who place offerings on or in front of them and as landmarks used by people at se locating

certain fishing grounds. As access becomes easier to the archaeological sites in the area, it is likely that cultural practice by Native Hawaiians will increase.

The paradox of designating “culturally appropriate use” as a preservation treatment is that authors of the plans (this one included) are typically not born into the culture, and are not adequate judges of what is appropriate. For that reason, “appropriate” is not strictly defined here, and must remain a matter of community standards, especially on the Island of Moloka‘i, where the *kanaka maoli* population is grounded by tradition. In the author’s experience, this means that within families, *kūpuna* exercise control over the younger individuals by teaching them how to behave, and by sanctioning inappropriate behavior. On a community level, *kūpuna* and the more culturally inclined people exercise the same controls on a larger social scale. It is very likely that these mechanisms will continue to shape the appropriate cultural use of sites.

From a historic preservation standpoint, some activities should not be included under blanket permission for cultural use. One is removal of artifacts or stones from sites—the traditional belief that taking such things is to *‘aihue* (to steal), already provides a check on such behavior, with sanctions that range from community disapproval to retribution by the spirits and guardians of the place. Another action that is inconsistent with historic preservation is to alter a site. This presents more a contradiction between traditional practice and historic preservation, since many Hawaiians wish to honor a site by repairing and cleaning it. Such activities can amount to a loss of physical integrity or reconfiguration of a site in a way different than it was originally built; both effects are adverse impacts from a strictly preservationist perspective. To allow for the urge to take care of sites and perhaps rebuild them, it is recommended that any such effort be preceded by a Restoration Plan that specifies exactly what is proposed, and is submitted for SHPD review.

Culturally Appropriate Use is not a treatment that can be applied to one site and not another, since appropriateness is a community (and in this case, Native Hawaiian) parameter.

SITE-SPECIFIC PLANS

This section provides details of preservation actions being recommended for each site. The total population of archaeological sites has been broken down into groups reflecting the categories mentioned in the **Introduction** to this plan, so that sites with similar locations and levels of potential for impact may be dealt with together, and needless repetition may be avoided.

Table 2. Site Preservation Measures
(I denotes recording data in the field without collection)

Site (50-60-01-)	Avoidance	Temporary Buffers	Mapping	Evaluate Stability	Recover Eroded Data	Physical Stabilization	Vegetative Stabilization	Permanent Boundary	Interpretation	Protocol Education
48	X									X
49	X									X
50	X									X
51	X									X
52	X									X
53		X	X	X	X	X	X	X	X	X
54		X	X	X	X	X	X	X	X	X
56			X	X		X	X	X		X
57			X	X		X		X		X
639	X									X
640	X									X
641	X									X
642	X									X
643	X									X
644	X									X
645	X									X
646	X									X
647	X									X
648	X									X
649	X									X
650	X									X
651	X									X
652	X									X
654		X	X	X	X	X	X	X	X	X
655		X	X	X	X	X	X	X	X	X
656			X	X		X			X	X
657	X									X
658	X	X								X
659	X	X								X
660	X									X
662	X									X
663	X									X
664	X	X								X
665	X									X
666	X									X
667	X									X
668	X									X
669	X									X
670	X									X

Site (50-60-01-)	Avoidance	Temporary Buffers	Mapping	Evaluate Stability	Recover Eroded Data	Physical Stabilization	Vegetative Stabilization	Permanent Boundary	Interpretation	Protocol Education
671	X									X
672	X									X
673	X									X
674	X									X
675	X									X
676			X	X		X		X	X	X
678			X	X		X		X	X	X
679			X	X		X		X	X	X
680			X	X		X		X	X	X
681			X	X		X		X	X	X
682			X	X		X		X	X	X
683			X	X		X		X	X	X
684			X	X		X		X	X	X
685			X	X		X		X	X	X
686			X	X		X		X	X	X
687			X	X		X		X	X	X
688			X	X		X		X	X	X
689		X	X	X		X		X	X	X
690			X	X		X		X	X	X
691			X	X		X		X	X	X
692			X	X	X					
693	X									X
694	X		X							X
695	X									X
696	X									X
699			X	X	X	X				X
736	X		X							X
737			X	X						X
738	X									X
739			X	X		X		X		X
741			X	X	X	X		X		X
742	X									X
744		X	X	X					X	X
747	X									X
748	X		X							X
750		X	X	X				X		X
751		X	X	X				X		X
752		X	X	X				X		X
753		X	X	X				X		X
754		X	X	X				X		X
761	X	X	X	X	I			X		X
763	X	X	X	X						X
764		X	X	X	I	X	X	X	X	X
765		X	X	X				X		X

Site (50-60-01-)	Avoidance	Temporary Buffers	Mapping	Evaluate Stability	Recover Eroded Data	Physical Stabilization	Vegetative Stabilization	Permanent Boundary	Interpretation	Protocol Education
768	X		X	X	X	X		X	X	X
769	X		X	X	X	X		X	X	X
770	X									X
771	X									X
772	X									X
773	X									X
774	X									X
775	X									X
776	X									X
777	X									X
778	X									X
779			X	X	X	X		X	X	X
780		X	X	X	X	X		X	X	X
781	X		X	X	X	X		X	X	X
782		X	X	X	X	X		X	X	X
1100	X									X
1101		X	X	X	I	X	X	X	X	X
1102	X									X
1103	X									X
1104	X									X
1105	X									X
1106	X									X
1107	X									X
1109	X		X							X
1110	X									X
1111	X									X
1112		X	X	X	I					X
1113	X									X
1114	X									X
1115	X									X
1116	X									X
1117	X									X
1119			X	X	I	X				X
1120			X	X						X
1122		X	X	X						X
1123		X	X	X						X
1125	X	X	X							X
1126	X	X	X	X						X
1127	X		X	X				X	X	X
1128	X		X	X				X	X	X
1136	X	X	X							X
1139	X		X							X
1142		X	X	X	I	X		X		X
1143		X	X	X				X		X

Site (50-60-01-)	Avoidance	Temporary Buffers	Mapping	Evaluate Stability	Recover Eroded Data	Physical Stabilization	Vegetative Stabilization	Permanent Boundary	Interpretation	Protocol Education
1144		X	X	X	X			X		X
1145		X	X	X	X			X		
1146	X								X	X
1147		X	X	X	I	X	X	X		X
1148		X	X	X				X		X
1149		X		X	I	X		X		X
1150		X	X	X		X		X		X
1151		X	X	X				X		X
1152			X	X	X	X		X		X
1153		X	X							X
1154		X	X	X	I			X		X
1155	X	X						X		X
1156	X									X
1157	X									X
1158	X									X
1160	X									X
1161	X									X
1162	X									X
1163	X									X
1164	X									X
1166	X									X
1167	X									X
1168	X									X
1169	X									X
1170	X									X
1171	X									X
1172	X									X
1173	X									X
1174	X									X
1176	X									X

Rural Landscape Reserve

Many of the sites encountered during inventory lie outside the project area altogether, in the large *mauka* portion of the original parcel. Sites are thinly distributed, consisting mostly of lithic quarries and work sites, temporary camps, and a few agricultural areas in the gulches. Other than a few sites in North Kamāka’ipō Gulch, which will be covered in the Cultural Protection Zone described below, these will receive be preserved as is.

This means that vehicles may not traverse sites (unless by existing road) and no ground disturbing activities may occur within 7 m of features. The 1993 inventory recommendations will not be changed, and these sites will not be reevaluated at this time. Future activity in site areas should be preceded by data verification and augmentation to provide more precise information about significant sites. Caution should be exercised in planning any ground disturbing activity in the vicinity of

these sites. If impacts are possible in site areas, an updated detailed mitigation plan will be submitted for SHPD review. Otherwise, no action beyond avoidance will occur.

Table 3. Preservation Sites in the Rural Landscape Reserve

Site Number 50-60-01-								
692	694	695	696	770	1139	1143	1156	1157
1158	1173	--	--	--	--	--	--	--

Sites in the Shoreline Conservation Zone

Sites along the coastal strip have unique preservation issues both physically and in terms of management. Although outside of the subdivision parcels, these sites will be subject to increased potential for damage as the number of beach users increases. Site protection measures cannot include barriers that prevent normal public access along the beach, but because the sites are above the high water mark, they are not on State of Hawai'i land and will be dealt with here.

Table 4. Preservation Sites within the Shoreline Conservation Zone

Site Number 50-60-01-							
56	57	676	739	741	750	751	752
753	754	761	763	765	1122	1123	1125
1126	1136?	1142	1147	1148	1149	1150	1151

First, the stability of a site and its surrounding soil will be evaluated, so erosion hazards can be identified. Where deposits are at risk of erosion, they will be stabilized. If there are active gullies heading into a deposit, they will be filled with soil from the old pineapple field in the uplands (where the local soil is silty clay) or sand from the beach (where the soil is sandy). Other sites will not be disturbed to provide fill. The decision to fill an eroded site will be based on the feasibility of doing so in terms of practicality and any applicable permitting process, and the potential for adverse impacts. If necessary, landscaping fabric or small retaining terraces using traditional mortarless stacking will be employed to halt erosion. Any such terraces will be identified as new on site records and in interpretive materials, so that they are not confused with the older site. Where possible, a distinct, but natural, type of material will be used for such terraces; for example, use of coral or sandstone slabs would differentiate new retaining walls from most sites, which are made of basalt stone.

Both the newly filled and existing surface will be stabilized. Although some use may be made organic landscape fabric for areas prone to severe erosion, the preference will be to encourage existing vegetation and plant additional vegetation. Because of the arid nature of the project area and the difficulty in obtaining water for irrigation, native xeriphytic groundcover and shrub species will be used.

Choices on which plants to use will depend on their availability, access to water, and consultation with the cultural advisors.

Once the stability of a *makai* site is not at risk, boundaries of a permanent buffer will be marked for those where foot traffic is likely, or where the sites are close to a proposed subdivision lot. Unlike buffers used during monitoring, these will be relatively unobtrusive. Wooden post and rail fencing such as that employed at sites near Kaupoa Camp (See Appendix B)) may be used, although other options are being considered. One is a rail fence of stacked natural logs, and another is a simple perimeter marking of *kiawe* logs laid on the ground. The advantage of these over the post and rail form is that no postholes need to be dug, and therefore the potential to encounter buried deposits is averted. In some cases, existing or new shrubs may also function as part of the buffer. Because many of the coastal sites are religious in nature and Native Hawaiians' access to them is protected by law, they will not be shut off completely. For the typical beach user, however, an access route around the site—rather than into it—should be the focus. For the sites that are not perched at the edge of the rocky shoreline, access routes will go on the *makai* side of the sites. This will be the case for Sites 654, 676, 1126, 1146, and 1152. Site 1101, a *ko'a* on Keawakalani Point, may not have an accessible route on the beach side. (Site 654 will be dealt with in a subsequent section, but is also included here due to its accessibility and location on the beach.)

Several sites in the Shoreline Conservation Zone will be within the Project Area as well. While these do not fall within the actual development area, steps will be taken to protect them when construction occurs in neighboring lots. Highly visible temporary fencing will be erected along margins of the site buffers or along the lot boundary, whichever provides the greater protected area.

Interpretation will focus on the coastal portion of the North Kamāka'ipō preserve, showing how the early date of Site 654 likely represents early temporary use of the Kaluako'i coastline by fishermen, and the habitation and religious sites show a later intensification to the point that there were several permanent residences. Just to the north, Site 676 will be identified as a fishing shrine; because it was in use when it was recorded in 1991, it will be maintained as an active, accessible site. Another feature in the North Kamāka'ipō preserve (B6-68, part of Site 53) has been identified in previous archaeological studies as a *ko'a*, but the form is atypical and that evaluation derives from the presence of coral alone; interpretive materials developed for this project will identify the feature and communicate this uncertainty. Site 1101, another *ko'a*, is close to a planned public access on the south coast in the Pu'u Hakina CPZ, and will also be identified as a shrine and cleared for viewing. (Clearing the *makai* side of *ko'a* is appropriate regardless of interpretive goals because an open line of site to and from the sea was an integral part of how such shrines functioned. Such clearing will be done for other *ko'a* unless it is likely to increase exposure to impact, but they will not be identified and made accessible to the public.) In a more general sense, coastal habitation and religious sites will figure into interpretive material that covers the project area.

Sites in the Proposed Subdivision Project Area

Because of the minimum 2-acre lot size and the practical and regulatory limitations that will apply to development within any lot, it should not be difficult to plan around sites within the subdivision. In fact, sites in the data recovery category are there primarily because they are either eroded (hence of limited integrity and difficult to preserve) or consist of small, temporary use areas (hence difficult for

non-archaeologists to identify, and most significant for their lithic data). Data verification and augmentation (See **Data Collection**) will establish site locations with greater precision than required for the inventory, presenting the most valuable preservation tool for subdivision lots, defining an avoidance zone for owners and architects. In practice the preservation areas will consist of features plus a buffer. Any future plans that could impinge on sites or their buffers must include notification of SHPD and, if required by that agency, a revised treatment plan. Even if direct impacts are not likely, future planners should consider and minimize sources of secondary effects, such as erosion, changes in drainage patterns, and traffic.

Table 5. Preservation Sites within the Project Area

Site Number 50-60-01-							
744	1136?	1144	1155				
The following sites are in or near the proposed road construction corridor:							
664	1152	1154					

In addition to getting a precise location, it will be necessary for most subdivision sites to produce a more detailed map to aid in preservation management and monitoring their condition. Mapping will also provide an opportunity to evaluate the stability of a site, and identify areas damaged by erosion. If warranted, sites may be stabilized and data collected or recorded at this time.

For sites that are agricultural fields, temporary camps or workshops, and modified outcrops, permanent fencing will not be erected, and their preservation zones will be identified on maps and with site tags and flagging in the field. For sites with a known or suspected burial, and for religious features, permanent boundaries will be marked 9 m from the outer walls or edges. For sites without permanent boundary markers, temporary markers should be placed 7 m from any feature during any construction activities. As mentioned in the Shoreline Conservation Zone section, sites adjacent to subdivision lots will also be protected with temporary fencing during construction, and with permanent buffer fencing if they are shrines or burials. The form that permanent markers take will consist of a wooden fence.

The subdivision project area also includes the road and infrastructure corridor. In a few cases, preservation sites may fall within the 60 m wide data collection corridor, but are far enough from the road alignment to allow preservation. Such sites will have temporary fencing erected at buffer perimeters during construction; the 150-foot setback from the road in which house construction cannot occur in lots will prevent impacts by lot construction, although fencing may be left in place to avoid impacts from driveway grading. (This would be a precautionary measure, since all preservation sites and buffers will be marked on parcel plats and future owners will be bound to maintain preservation commitments.) If the road encroaches on a buffer in its proposed alignment, it will be realigned unless it is clear that previous disturbance has compromised the integrity of sediments and potential cultural deposits, as described previously in this plan.

Details about preservation measures to be implemented where the proposed road traverses Cultural Protection Zones are described in the next section.

Cultural Protection Zones

Preservation Plans in Hawai'i typically focus on individual sites, but a convergence of landowner and community preferences, and the presence of large undeveloped landscapes offers a different opportunity here. Typical settlements in southwest Moloka'i consist of a core habitation zone by the shore, clustered around bays and beaches, with a periphery of temporary shelters and agricultural features. The latter usually decrease in density, size, and diversity as the distance from the coast increases, and most occur in or near gulches. In some cases, the presence of a quarry for tool-grade stone may result in a settlement system that reaches further mauka or beyond the confines of a gulch. The 75 to 120-foot elevations of a ridge south of Kamāka'ipō have uncharacteristically large, complex sites, in part due to lithic tool production, but perhaps also because of the presence of the Maui chief Kiha-a-Pi'ilani, who according to oral history lived in the vicinity.

By establishing Cultural Protection Zones, sites are protected and preserved in a larger context, so that not only the stone structures are preserved, but also their situation within the natural and cultural landscape, as well as their relationships to each other. By encompassing many sites within CPZs, the diminishment of preservation, scientific, and cultural value wrought by the usual approach of preserving only fragments is avoided. Future generations will be able to view, study, and experience Hawaiian land use systems as integrated wholes in the Cultural Protection Zones. Included within this plan are several such systems based on the Bay-Gulch landform, as well as one such system augmented by a mauka quarry, as well as another at Lā'au Point itself, another in the southern Kamāka'ipō uplands where Kiha-a-Pi'ilani may have lived, and another on the makai slope of Pu'u Hakina, where the system focuses more on a broad ridge than gulch.

The *ahupua'a* of Kaluako'i appears to be ancient, and is the land unit in the first historic documents that were cognizant of Hawaiian land divisions, such as the mid-nineteenth century Mahele land claims. It does include—as far as is possible on the relatively low and dry mountain of Mauna Loa—the classic cross section of ecological and resource zones from the mountain to the sea, but Kaluako'i covers the entire mountain and is not divided into the pie-shaped wedges associated with *ahupua'a*. This anomaly is usually attributed in archaeological literature to the absence of valleys and the presumed low population density of west Moloka'i (Kirch 1985, Summers 1971).

However, when looking at the settlement patterns of the west end, it is clear that Kaluako'i was divided. Although not recognized historically as distinct land units, the gulches of Kaluako'i are the foci of *mauka-makai* oriented landscape use. From north to south, the gulches and bays of Kawākiu, Kaka'ako, Pāpōhaku, Wahīlahue, Po'olau, Kapukahehu, Kaunalā, Kaheu, and Kamāka'ipō are where sites cluster. Between these gulches, the ridges and flat lands have relatively few traces of human presence.

Although not all of these gulch systems have been surveyed, there appears to be a general pattern, which will provide the basis for interpretation. Beginning at the coast, there are sites beginning at the high water mark. At least some probably reflect very early visits by residents of other areas landing during fishing trips, but the most obvious aspect of coastal sites is that they became fairly well developed. For example, there are often multiple permanent habitations, fishing shrines, and abundant cultural deposits clustering around the bays. Inland of these, the lower gulches have a mixture of agricultural fields, temporary (or perhaps lower status) habitations, and work areas. Further inland, sites become more sporadic, and

multi-function sites are less common—small planting areas, lithic work areas, and trail markers are most common. The complete *makai-mauka* system ends up in the summit region where there are again rather numerous religious, habitation, agricultural, lithic, and other types of sites, but here the peaks and plateaus provide the foci for settlement, and gulches are less relevant. The *mauka* end of the gulch settlement system is often a source of stone quarried to make adzes and other tools. Beyond this there are few sites until the summit, although it is possible that the land was cultivated or otherwise used so that traces were minimal and easily obscured by historic pineapple cultivation.

Cultural Protection Zones will be marked on maps, but will also require some form of identification in the field. Metal tags with site numbers will be placed in sites, but boundaries of the area will also be marked. Because of the large size, markers such as those discussed in **Permanent Boundaries** are not feasible, although they may be used at the *makai* sites (53-54) near the public access. For the rest of the preserve, the boundary will be marked with signs located at the north and south edges of the gulch near site areas. Precise locations for these will be determined after sites have been visited and mapped, but the north edge will be approximately from Site 654 to 680 to 678, and the south edge from Site 655 to 690 to 686 to 684 to 688 to 678.

Although some of the most impressive sites in the Cultural Protection Zones have been mapped in detail, more detailed and precise maps are required for adequate preservation management of some sites. Mapping will be done with tape and compass for simple sites, and with plane table and alidade for those which are more complex. In conjunction with mapping, the condition and stability of each site will be evaluated. For some sites (such as 654, 655, 779, 780, and 782), it is already clear that enough erosion has already occurred that data should be collected as described in **Recovering Eroded Data** above.

The proposed road traverses Cultural Protection Zones in four locations where it crosses gulches: Kaunala, Kaheu, and North Kamāka'ipō. Because each of these zones extends well inland, rerouting around them would require several miles of additional road, the potential environmental impacts of which, not to mention the certain visual impacts, would exceed carefully planned and monitored traverses of the protection zones. Sites which may be in or near the 60 m road survey corridor are 664 (5 small agricultural mounds), 687 (habitation), 689 (L-shaped wall, possible temporary habitation), 780 (lithic tool-manufacture debris), and 782 (lithic tool-manufacture debris). Most of these appear to be outside of the 60 m corridor, but lingering uncertainty about their location at this time mean that their relocation will be an important mission of the re-survey. If they end up within 7m of the proposed road edge, the road will be rerouted.

Where the proposed road cuts through Cultural Protection Zones, several efforts will be made to minimize its physical and visual impacts. First, no turn-arounds, stockpiles, or other construction support features will be allowed within these zones—the intent is to make the affected area as narrow as possible, limiting impacts to the road and shoulder. Likewise, utilities buried in these zones should be as close to the road center as possible to avoid having multiple impact corridors. Once project engineers and field personnel have come to an agreement with the archaeologist on the narrowest possible development corridor, the edges will be clearly marked to prevent encroachment beyond. Because of the preservation intent and the fact that most of the traverses occur in gulches, road design and construction shall take into account the potential effects to run-off and drainage.

Given the past history of erosion, it should be possible to construct roadways that not only cause no adverse effects, but actually slow down runoff and stabilize nearby sediments. Finally, design and construction in the Cultural Protection Zones shall strive to minimize the visual impact of the road by avoiding an unnecessarily obtrusive roadbed and signs, and above-ground utilities. If roadside landscaping is planned, historic and modern introductions should be avoided, and viewplanes from traditional features should be maintained; in some cases vegetation may be useful as a visual screen to decrease the sense that a site is near a road. As the road enters a Cultural Protection Area, a sign should identify the place by its Hawaiian name. Where it crosses the Kamāka'ipō preserve, the road should provide a means for people hiking the interpretive trail to cross safely, preferably with means such as speed bumps or other signals on the road itself, with a minimum of signs.

Kaunalu

This northernmost Cultural Protection Zone extends from Kaunalu Bay up the gulch to about the 175-foot elevation. Most of the *makai* sites fall within the SMAD, and are concentrated on the north side of the bay below 30 fasl (feet above sea level). Site density and complexity decreases radically above this, although agricultural modifications are present in the gulch.

Table 6. Preservation Sites within Kaunalu CPZ

Site Number 50-60-01-							
48	49	50	641	642	643	644	645
657	658	659	660	662	663	665	--

Kaunalu CPZ will be an archaeological and cultural reserve, with passive preservation. Rather than clearing and interpretation, the focus will be on protecting the area from incursion. Toward that end, the CPZ will be marked on project maps, and those who buy lots in the proposed Lā'au subdivision will be educated regarding the need to leave sites there alone.

This CPZ is well to the north of the Project Area, and the only potential effect caused by the proposed subdivision will be in the area of the road corridor, which traverses Kaunalu Gulch about 2200 feet from the coast. This location is about midway between Sites 658 (a single agricultural clearing mound) and 659 (a terrace alignment), sites separated by a gap of approximately 300 meters (1000 feet). This area is *mauka* of the settlement area, and the road will not have any adverse effect on the cultural landscape. To ensure that no such effects occur, the road corridor will be re-examined in this area, and may be re-routed if necessary to avoid significant archaeological resources. Should the proposed road pass within 100-m of a site, protective fencing will be put in place and the construction crews informed of the need to avoid impacts. Any work in or adjacent to the preserve will be monitored by a qualified archaeologist.

Kaheu

The Kaheu CPZ is also located north of the Project Area, with the only area of potential effect being where the proposed access road traverses it. The densest portion of the settlement is within the SMAD, although the inventory reported more features than were known when the SMAD was listed on the National Register. As

with Kaunalu, most of the features are located north of the bay and gulch, although it is possible that the early 20th Century construction of Molokai Ranch owner George Cooke's "Kaupoa House" south of the bay removed older sites there. Although the overall area of the settlement here exceeds that at Kaunalu, density and complexity also decreases rapidly away from the shore.

Kaheu CPZ will be an archaeological and cultural reserve, with passive preservation. Rather than clearing and interpretation, the focus will be on protecting the area from incursion. Toward that end, the CPZ will be marked on project maps, and those who buy lots in the proposed Lā'au subdivision will be educated regarding the need to leave sites there alone.

Table 7. Preservation Sites within Kaheu CPZ

Site Number 50-60-01-							
51	52	639	640	646	647	648	649
650	651	652	664	666	667	668	669
670	671	672	673	674	675	--	--

The road is planned to pass just *mauka* of the northern lobe of the CPZ, where it may be within 100 m of Site 664, a group of five small agricultural clearing mounds; these will be protected with fencing during construction. At the point where the road crosses Kaheu Gulch, it will traverse a section of the Kaheu CPZ, but not in the vicinity of any sites. South of the gulch, the road data collection corridor (30-m on either side of the proposed road center line) may include part of Site 675, a temporary habitation and group of planting circles. The location of 675 in relation to the road will be verified, and protective measures taken as appropriate.

Kamāka'ipō North

North Kamāka'ipō Gulch exemplifies settlement systems on the west coast of Kaluako'i; because it has a good array of sites that remain relatively undisturbed, this has been chosen for preservation. By preserving not just obvious archaeological features, but also the landscape connecting them (approximately 130 acres), this *mauka-makai* area will preserve the overall cultural landscape, valuable not just for study, but for seeing and experiencing a Hawaiian settlement.

Table 8. Preservation Sites within Kamāka'ipō North CPZ

Site Number 50-60-01-							
53	54	654	655	656	678	679	680
681	682	683	684	685	686	687	688
689	690	691	768	769	779	780	781
782	--	--	--	--	--	--	--

It is anticipated that most sites in North Kamāka'ipō need stabilization of some type, but for most it should consist of minor re-stacking and setting retaining

alignments. Because filling all of the deflated and eroded surfaces in sites like 53, 54, and 656 would require enormous (and impractical) amounts of fill, stabilization will focus more on preventing further damage than repairing past damage. For example, eroding banks where artifacts are being washed out may be covered with landscaping fabric or some other means of preventing further loss of sediment. Should parts of the site be opened for educational purposes, foot traffic would be routed to avoid any areas where it could cause erosion or collapse of features and deposits.

Interpretation in the North Kamāka'ipō preserve will consider particular sites within the context of the gulch system from the coast (Sites 53, 54, and 654) up to the quarry (Site 656). The coastal sites, being on either side of the public access to the beach, will be the primary focus of interpretation, with signs identifying various features and relating what is known of them. Information recovered during the current project will be synthesized with previous archaeological work from the project area and Kaluako'i, with Hawaiian oral traditions, and with other relevant research and information. Existence of a traditional trail up to the quarry provides an opportunity for an interpretive trail that can be used to better explain ancient adaptation to the *mauka-makai* continuum of habitats and resources.

Pending Kūpuna advisor and SHPD approval of a Detailed Interpretive Plan, an interpretive trail will wend its way through this preserve. Although the precise routing will depend on field inspections, site boundary verification, and consultation, the approximate route will go from Site 656 to 679 and 680 descending the north slope of the gulch, across to Site 686 and 691, back across to Site 685 and to the coast at Site 54. These sites are a series of basalt tool-making sites, shelters, and trail markers. The original trail will be followed to the extent that it can be identified and followed safely and without causing erosion. Features will not be traversed or breached, vehicles and bicycles will not be allowed, and clearing will be limited to opening sight lines without stripping the landscape. Parking at the top will be north and inland of Site 656 in a disturbed area. Access and parking at the lower end can occur at multiple locations without causing adverse impacts, since Site 54 is in fact a broad alluvial fan that consists of feature clusters interspersed with heavily eroded areas. Any development will occur outside of a 7 m buffer from features (9 m for shrines and burials).

Additional vegetation clearing may be done to increase visibility of sites without actually walking through features, but complete removal of canopy and surface vegetation will be avoided so that erosion risk is not increased. Because of the lack of water, plantings will be unfeasible or very limited, and is not anticipated beyond parts of Sites 654, 53, and 54. At other features, string trimmers will be used to get rid of tall grasses and encourage groundcover grasses as described in the Kaupoa Preservation Plan (Major 1997). Throughout the preserve, native species will be encouraged to maintain and spread their coverage. Some sites that are not part of the interpretive program will not be cleared.

South Kamāka'ipō – Kiha-a-Pi'ilani

This area extends from about 40-fasl at Site 699, just mauka of the Kamāka'ipō alluvial flat to 270-fasl at Site 1128, on a hill along the southwest rift zone of the Maunaloa volcano. Most of the sites are widely dispersed, but among them are the best examples of large-multi-roomed enclosures, a distinctive site type in this non-coastal setting. Oral histories suggest that this vicinity may have been the isolated outpost where the son of Maui paramount chief Pi'ilani was raised, a refuge from

the wars of his home island. Archaeological evidence shows that at least some of these features in Sites 771 – 773 and 747 were intensive lithic tool production shops, and fine basalt sources are also present. Furthermore, Site 1128 is known as a “*Piko* stone,” a boulder with a natural cupboard in it that was used by certain families to place the umbilical cord of newborn children; it is also reported to have held fishhooks used by people traveling between Lā’au Point and the uplands. At the southeastern end of this CPZ, Site 1127 consists of a crescent-shaped boulder propped against another larger boulder, forming a seat that aces *makai* (south). A similar feature is described at the Moloka’i Museum as a birthing stone, and given the presence of each of 1127 and 1128 along the same ridge, on an east-west axis about 300 m apart, it is likely that the same function pertains to this site. Politically, economically, and culturally, then, this area is more significant than its thin, dry soils would normally allow, and it represents a departure from the normal pattern in which the inland portion of settlement systems focused on gulches.

Table 9. Preservation Sites within South Kamāka’ipō – Kiha-a-Pi’ilani CPZ

Site Number 50-60-01-							
693	699	736	737	742	747	748	771
772	773	774	775	776	777	778	1127
1128	--	--	--	--	--	--	--

The far northwest extreme of this CPZ extends into the data collection corridor for the proposed road, although none of the sites themselves do, and it is anticipated that no individual site buffer would be encroached upon by that corridor. Neither does this preserve coincide with any subdivision lots. Nevertheless, a primary task of data collection will be to ensure that the development area does not encroach on site buffers. Site 699 comes closest to the road (approximately 100-m outside the data collection corridor, but will be fenced should it turn out to be within the area of potential effects.

An old dirt road that goes from Lā’au Point to Maunaloa along the southwest rift zone ridge passes through the Kamāka’ipō – Kiha-a-Pi’ilani Cultural Protection Zone, coming within 50 meters of Sites 1127 and 1128. Known to have been used at least as far back as the 19th Century, when the lighthouse keeper traveled it, the road likely follows (more or less) an ancient trail. Although it will not be a road open to subdivision or public traffic, the landowner wants to keep this as an emergency vehicle access route. No improvements have been specified, but even limited maintenance such as grading will be confined to the extant road corridor. Although any ground disturbing activity is automatically subject to monitoring in the CPZ, Sites 1127 and 1128 will be further protected by erecting permanent buffer fencing on the side toward the road, and will be identified as sacred places with on-site signs.

Lā’au Point

Most of the sites located at Ka Lae o Lā’au (Lā’au Point) are within the U.S. Coast Guard reservation, and therefore are neither part of the project area nor legally subject to this Preservation Plan. Because the cluster of sites in that parcel is contiguous with sites in the project area, however, and because the Coast Guard

has not taken an active role in the management of cultural resources, the Lā'au Cultural Protection Zone encompasses these sites as well. Lā'au is a special place in Hawaiian culture, being associated with myths and oral histories, as well as being a place where souls departed the physical plane.

Sites in the Coast Guard reservation cannot be actively managed, and therefore preservation for them will be entirely passive. To the north and east, however, preservation sites within the Lā'au CPZ will require more action. First, maps for these sites will be refined and augmented beyond inventory level, to be useful in condition monitoring and other preservation management goals such as defining precise locations relative to lot boundaries and roads.

Table 10. Preservation Sites within Lā'au Point CPZ

Site Number 50-60-01-							
764	1101	1109	1112	1119	1120	--	--
The following sites are within the US Coast Guard Lighthouse Reserve							
1100	1110	1111	1113	1114	1115	1116	1117

Sites 764 (a multi-roomed enclosure) and 1101 (a *ko'a*) are accessible to people walking the coastline, and will receive basic protective treatment in the form of permanent fences and signs identifying them as sensitive archaeological sites. Site 1112, which is close to the development area, will also have temporary protective fencing during construction and a permanent buffer fence thereafter.

Pu'u Hakina

Located on the southern shore at the far southeast end of the project area (as well as mauka of the project area, The Pu'u Hakina Cultural Protection Zone is the second area where public access and interpretation will make for a more active preservation program. Sites here include the only named heiau (Kalalua, Site 1104), as well as numerous and diverse indications of a long term settlement. The Pu'u itself, a hill reaching 300-feet, is outside of the CPZ, but local residents generally refer to all the land to either side and makai of the hill as Pu'u Hakina. Oral history mentions the hill and the settlement, and the presence of at least two heiau (Kalalua reportedly having been a *luakini* class, used in human sacrifice), massive and well-constructed architecture, fishing shrines, a natural brackish pond, abundant evidence of lithic work, burials, and other feature types makes this perhaps the most densely settled portion of the entire parcel.

Table 11. Preservation Sites within Pu'u Hakina CPZ

Site Number 50-60-01-							
1102	1103	1104	1105	1106	1107	1146	1152
1153	1154	1160	1161	1162	1163	1164	1165
1166	1167	1168	1169	1170	1171	1172	1174
1176	--	--	--	--	--	--	--

Because of the abundant cultural and archaeological sites here, and the fact that this will be the location of the southern shoreline park and access point for pedestrians coming from nearby Hale-o-Lono harbor, both protective measures and interpretive efforts are appropriate here more than in remote preserves. Site-specific actions have been listed in the table at the beginning of the section.

The process will begin by marking a permanent buffer to protect sites from encroachment. Rather than marking this buffer radially from surface features of each individual site, this permanent buffer will correspond with the edges of the development area as defined by lot boundaries. If the lot boundaries themselves encroach on any individual site buffer, then the permanent boundary will extend into the lot. However, design of the subdivision has already anticipated the need for site protection, and the use of lot boundaries will result in a much larger buffer than the 7 – 9 meter radial buffers specified for individual sites. A single fence-line at the edge of the subdivision where it abuts the CPZ will prove less visually and physically disruptive than a series of individual site buffers, and will accomplish the site protection function for a continuous cultural landscape, rather than a fragmented series of site-specific buffers.

Buffers may also be required along the edges of an existing dirt road that follows the coastline through part of the CPZ. This road will not be open to vehicle traffic except for emergency vehicles, but in order to protect likely burial features at 1152, 1154, 1170 and 1176, limited sections of fencing may be installed. Road maintenance will be restricted to grading the existing corridor, and will be monitored.

Sites in the CPZ generally have high quality maps for inventory level reporting, but need to be upgraded for preservation functions in what is the most accessible heavily used portion of the coast. In addition to providing greater detail for a baseline used in condition monitoring, the maps will be expanded and integrated with one another and the local terrain. At the time of mapping, sites will also be evaluated in terms of stability, and both physical and vegetative stabilization will be employed as appropriate. (These methods have been described in detail in the **Preservation Actions** section above.)

The detailed maps will also be used in interpretive and educational aspects of the program, which will be described in a **Detailed Interpretive Plan**. This document will form a supplement to this plan, and will provide SHPD and interested parties with details regarding the specific interpretations that will be made about this and other areas. Information compiled during the Supplemental Data Collection phase, site stability evaluations, and consultation with knowledgeable kūpuna will form the foundation of these interpretive elements.

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Inventory Data for Preservation Sites

All sites recorded during inventory of TMK 5-1-03-030 are included in the following table. This is intended as a quick reference, and summarizes site-level information for readers. Individual feature descriptions and more detailed discussion of sites can be found in the inventory report (Dixon and Major 1993).

Table 12. Archaeological Inventory Site Data

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Feature Types	Site Function	Site Area (m ²)	Altitude	Significance
48	B6-61	Enclosure	Habitation	15 x 15	20	D,E
49	B6-62	Platform	Religious	5 x 5	20	D,E
50	B6-63	Platform	Habitation, Religious	15 x 10	20	C,D,E
50	B6-64	6 Alignment 4 C-shape 3 Enclosure Pavement Mound	Habitation, Religious	20 x 20	20	C,D,E
51	B6-65	Enclosure	Religious	20 x 20	20	D,E
52	B6-66	Platform Wall	Religious, Lithic work	10 x 10	30	D,E
53	B6-68	Remnant Platform Lithic debitage	Lithic work, Religious, Trail	20 x 15	20	C,D,E
54	B6-69 to -73	9 Terrace 9 Enclosure 6 Mound 5 Terrace 5 Platform 4 C-shape 4 Wall 3 Remnant Cairn	Habitation, Trail, Burial, Men's House Poss. burial	275 x 150	45	C,D,E
56	B6-76 and -77	6 Enclosure 6 Cairn 6 Mound 4 C-shape 3 Wall 2 Platform 2 Cupboard	Habitation, Religious, Poss. Burial	120 x 75	20	C,D,E
57	B6-78	Platform	Religious	3 x 3	20	D,E
639	B6-67	6 Enclosure 6 C-shape 3 Platform 2 Wall remnant Mound	Habitation, Religious, Canoe Shed	90 x 60	20	C,D,E
640	B6-74	Mound	Undetermined	1 x 1	35	D
641	B6-83	2 Enclosure	Religious,	100 x 50	20	D,E

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Feature Types	Site Function	Site Area (m ²)	Altitude	Significance
			Habitation, Lithic work			
642	B6-84	Enclosure	Habitation	10 x 5	15	D
643	B6-85	Lithic debitage	Lithic work	5 x 5	15	D
644	B6-86	2 C-shape	Habitation	10 x 10	25	D
645	B6-87	4 C-shape 3 Enclosure Cairn	Habitation, Canoe shed, Trail	20 x 10	20	C,D
646	B6-88	Lithic debitage	Lithic work, Midden	5 x 5	15	D
647	B6-89		Habitation, Agricultural	40 x 20	40	D
648	B6-90		Habitation, Religious, Poss. burial	50 x 30	30	D,E
649	B6-91	2 Mound C-shape Platform Enclosure	Habitation, Religious, Poss. burial	20 X 15	35	D,E
650	B6-92		Agricultural, Temp. Hab.	100 x 40	60	D
651	B6-93	9 Enclosure 6 C-shape 2 Mound Platform	Agricultural, Temp. Hab., Religious	80 x 60	60	D,E
652	B6-94	4 C-shape Anclosure Alignment	Agricultural, Habitation	30x20	60	D
654	B6-96	Midden deposit	Habitation	7 x 3	8	D
655 (aka 53)	B6-97	4 C-shape Enclosure	Habitation	20 x 15	40	D
656	B6-98	4 C-shape	Lithic quarry	80 x 50	240	D
657	B6-107	4 Alignment 3 Mod. Outcrop 3 Terrace	Agricultural, Temp. Hab.	75 x 25	20	D
658	B6-108	Mound	Agricultural	2 x 2	60	D
659	B6-109	Terrace	Undetermined	10 x 3	90	D
660	B6-110	C-shape Mound	Temp. Hab.	8 x 5	110	D
662	B6-112	Enclosure Bait mortar	Temp. Hab.	30 x 15	10	D
663	B6-113	Enclosure	Temp. Hab.	30 x 15	10	D
664	B6-114	5 Mound	Agricultural	10 x 10	60	D
665	B6-115	Lithic debitage	Lithic work	4 x 4	160	D
666	B6-116	C-shape	Temp. Hab.	4 x 3	60	D
667	B6-117	Enclosure	Habitation	5 x 5	50	D
668	B6-118	7 Enclosure 2 C-shape Pavement	Agricultural, Temp. Hab.	180 x 75	100	D
669	B6-119	C-shape	Agricultural,	60 x 40	120	D

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Feature Types	Site Function	Site Area (m ²)	Altitude	Significance
		Enclosure Mound Terrace Alignment	Temp. Hab.			
670	B6-120	3 Mound 2 C-shape Cupboard Remnant	Religious, Temp. Hab.	60 x 25	130	D,E
671	B6-121	2 Mound	Burial	10 x 5	50	D,E
672	B6-122	4 Terrace	Soil retention	50 x 30	150	D
673	B6-123	Terrace	Soil retention	5 x 2	180	D
674	B6-124	Mound	Burial	1 x 1	80	D,E
675	B6-125	5 Enclosure	Temp. Hab., Agricultural	40 x 25	70	D
676	B6-126	Platform	Religious	35 x 15	40	D,E
678	B6-128	Enclosure	Planting circle	2 x 2	245	D
679	B6-129	4 Enclosure 3 C-shape Cairn	Temp. Hab., Agricultural, Poss. Trail	25 x 10	215	D
680	B6-130	2 Enclosure C-shape Wall remnant	Lithic quarry, Lithic work	60 x 40	165	D
681	B6-131	Mound	Poss. burial	3 x 2	130	D,E
682	B6-132	Mound	Poss. burial	2 x 2	130	D,E
683	B6-133	Terrace	Temp. Hab.	10 x 5	140	D
684	B6-134	C-shape	Temp. Hab.	3 x 3	155	D
685	B6-135	Enclosure	Temp. Hab.	3 x 3	80	D
686	B6-136	C-shape Cairn	Temp. Hab., Trail	5 x 4	150	D
687	B6-137	2 C-shape Enclosure Terrace Mound	Habitation	20 x 10	50	D
688	B6-138	Lithic debitage	Lithic work	N/A	165	D
689	B6-139	L-shape	Temp. Hab.	5 x 5	60	D
690	B6-140	4 Mound 3 Mod. Outcrop Enclosure Platform Alignment	Religious, Habitation, Agricultural?	35 x 20	80	D,E
691	B6-141	C-shape	Temp. Hab.	4 x 3	120	D
692	B6-142	Alignment	Lithic work	30 x 10	120	D
693	B6-143	Lithic debitage	Lithic work	2 x 1	140	D
694	B6-144	2 Terrace	Agricultural	20 x 5	40	D
695	B6-145	Lithic debitage	Lithic work	5 x 5	40	D
696	B6-146	Lithic debitage	Lithic work	20 x 10	60	D
699	B6-149	Enclosure Faced pit Alignment	Habitation, Well, Trail?	70 x 30	30	D
736	B6-150	10 Mod. Outcrop	Agricultural	40 x 30	40	D

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Feature Types	Site Function	Site Area (m ²)	Altitude	Significance
737	B6-151	6 Mound C-shape Alignment Cairn	Agricultural, Temp. Hab., Poss. trail	80 x 40	50	D
739	B6-153	Pavement	Poss. burial	4 x 3	15	D,E
741	B6-155	2 Mound Enclosure Cairn	Habitation, Trail, Burial	50 x 20	35	D,E
742	B6-156	Lithic debitage	Lithic work	50 x 15	60	D
744	B6-158	2 Cairn	Trail marker	8 x 3	60	D
747	B6-161	2 Wall Enclosure	Lithic quarry, Lithic work	50 x 20	160	D
748	B6-162	Enclosure C-shape	Military, Lithic work	20 x 10	160	D
750	B6-164	Cairn	Trail marker	1 x 1	70	D
751	B6-165	Cupboard	Storage	2 x 1	80	D
752	B6-166	Cairn	Trail marker	2 x 1	80	D
753	B6-167	Enclosure	Temp. Hab.	5 x 4	40	D
754	B6-168	Cupboard Mod. Outcrop	Temp. Hab.	5 x 3	40	D
761	B6-175	Enclosure	Temp. Hab.	10 x 10	50	D
763	B6-177	C-shape	Temp. Hab.	2 x 2	25	D
764	B6-178	Enclosure Platform	Habitation, Poss. burial	30 x 15	30	D,E
765	B6-179	3 Enclosure 3 Cairn	Temp. Hab.	60 x 40	30	D
768	B6-182	Lithic debitage	Lithic work	5 x 5	280	D
769	B6-183	C-shape	Temp. Hab.	4 x 4	330	D
770	B6-184	C-shape	Temp. Hab.	4 x 4	160	D
771	B6-185	12 Enclosure 5 Pit Terrace	Habitation	30 x 20	90	C,D
772	B6-186	5 Enclosure 2 Pit	Habitation	20 x 10	110	C,D
773	B6-187	Enclosure Cairn	Habitation	25 x 10	105	C,D
774	B6-188	Lithic debitage	Lithic work	20 x 20	180	D
775	B6-189	6 Enclosure C-shape	Habitation	50 x 25	210	C,D
776	B6-190	Lithic debitage	Lithic work	10 x 5	80	D
777	B6-191	Lithic debitage	Lithic work	20 x 20	190	D
778	B6-192	Lithic debitage	Lithic work	10 x 5	80	D
779	B6-193	Lithic debitage	Lithic work	10 x 5	60	D
780	B6-194	Lithic debitage	Lithic work	10 x 5	50	D
781	B6-195	Lithic debitage	Lithic work	20 x 10	240	D
782	B6-196	Lithic debitage	Lithic work	10 x 5	60	D
1100	B5-59	Lithic debitage	Religious	80 x 20	20	D,E
1101	B5-60	Platform	Religious	15 x 10	70	D,E
1102	B5-62	Platform	Habitation, Poss. burial	9 x 8	30	D,E

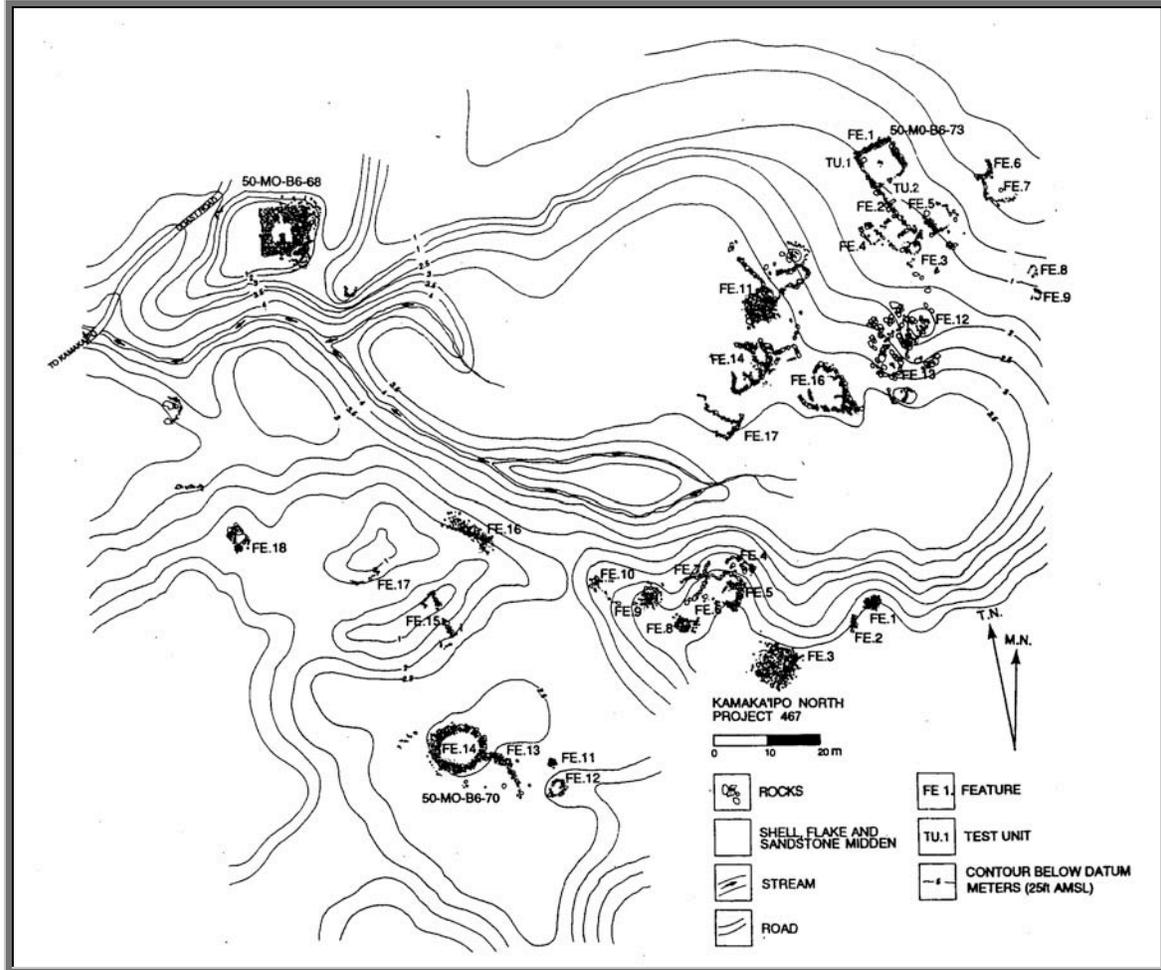
State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Feature Types	Site Function	Site Area (m ²)	Altitude	Significance
1103	B5-63	Enclosure	Canoe shed	16 x 4	10	C,D
1104	B5-64	Platform 2 Alignments	Religious	10 x 5	10	C,D,E
1105	B5-65	C-shape	Habitation, Poss. religious	5 x 4	10	C,D,E
1106	B5-66	Enclosure 2 Cupboards	Religious	20 x 20	40	C,D,E
1107	B5-67	2 Platforms 3 Cupboards 3 Enclosures Mound Bi-level platform	Habitation, Burial, Poss. religious	250 x 50	45	D,E
1109	B5-69	Wall	Lighthouse	10 x 5	110	D
1110	B5-70	Enclosure	Undetermined	7 x 6	85	D
1111	B5-71	Enclosure Wood railroad	Lighthouse, Ranching	100 x 70	110	D
1112	B5-72	Overhang 4 Terraces	Agricultural, Habitation	50 x 45	90	D
1113	B5-73	4 Mod. Overhang, 2 Overhang 2 Enclosure	Temp. Hab.	45 x 30	40	D
1114	B5-74	Enclosure	Temp. Hab., Lithic work	30 x 30	30	D
1115	B5-75	2 Enclosure	Temp. Hab., Military	35 x 20	30	D
1116	B5-76	Cairn	Trail marker	2 x 2	50	D
1117	B5-77	Overhang	Temp. Hab.	5 x 5	30	D
1118	B5-78	3 Overhang	Habitation	45 x 30	40	D
1119	B5-79	Wall 2 Cairn 2 C-shape Overhang Mound	Religious, Temp. Hab.	25 x 20	50	D,E
1120	B5-80	2 Overhang Mound	Religious, Temp. Hab.	20 x 10	80	D,E
1122	B5-82	Mod. Outcrop	Temp. Hab.	8 x 5	40	D
1123	B5-83	5 Pits	Undetermined	60 x 20	35	D
1125	B5-85	Overhang	Temp. Hab.	4 x 3	60	D
1126	B5-86	3 Overhang	Temp. Hab.	16 x 12	60	D
1127	B5-87	C-shape Cairn Alignment Mound	Poss. boundary	40 x 30	240	D
1128	B5-88	Natural cupboard	Piko stone	4 x 4	240	A,C,D,E
1136	B5-95	Overhang Cairn	Temp. Hab.	25 x 4	30	D
1139	B5-98	Lithic debitage	Lithic quarry	2 x 2	250	D
1142	B5-101	2 Platforms Natural cupboard Overhang	Religious	15 x 15	70	D,E

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Feature Types	Site Function	Site Area (m ²)	Altitude	Significance
		Lithic debitage				
1143	B5-102	Mound	Poss. burial	3 x 3	120	D,E
1144	B5-103	2 Mound	Poss. burial	25 x 5	60	D,E
1146	B5-105	Natural Wetland	Fishpond	75 x 40	5	D
1147	B5-106	Enclosure 2 Terrace 2 Mound	Temp. Hab., Burial	N/A	45	D,E
1148	B5-107	Terrace Wall	Agricultural	10 x 8	30	D
1149	B5-108	2 Platform Terrace	Religious	15 x 10	40	D,E
1150	B5-109	C-shape 6 Cairn 2 Mound	Burial, Religious	60x 50	45	D,E
1151	B5-110	7 C-shape Alignment Wall	Lithic work	20 x 20	40	D
1152	B5-111	2 Mound 2 Platform	Burial, Religious	20 x 20	60	D,E
1153	B5-112	Enclosure Mound	Temp. Hab., Road	30 x 5	70	D
1154	B5-113	2 Mound	Burial Lithic work	60 x 60	80	D,E
1155	B5-114	C-shape 2 Mound	Burial, Lithic work	20 x 10	80	D,E
1156	B5-115	5 C-shape Lithic debitage	Lithic work Lithic quarry	50 x 30	400	D
1157	B5-116	Alignment	Temp. Hab.	3 x 3	390	D
1158	B5-117	Lithic debitage	Lithic work	5 x 3	350	D
1160	B5-119	Cement foundation Pavement	Ranching Poss. burial	20 x 20	12	D
1161	B5-120	2 Mound	Lithic quarry	5 x 3	50	D
1162	B5-121	Lithic debitage	Lithic work	1 x 1	150	D
1163	B5-122	Lithic debitage	Lithic work	2 x 1	130	D
1164	B5-123	Cairn	Lithic work	1 x 1	160	D
1166	B5-125	Enclosure Wall	Lithic work	40 x 30	310	D
1167	B5-126	2 Platform	Burial	25 x 10	300	D,E
1168	B5-127	L-shape 2 Mound	Lithic quarry	30 x 15	25	D
1169	B5-128	4 Mound Enclosure	Burial, Lithic work	45 x 25	90	D,E
1170	B5-129	Mound	Burial, Lithic work	5 x 5	35	D,E
1171	B5-130	Mound	Poss. burial	3 x 3	210	D,E
1172	B5-131	2 Terrace	Undetermined	25 x 20	350	D
1173	B5-132	Cairn	Trail marker?	3 x 2	270	D
1174	B5-133	5 Terrace 4 Mound 3 Platform	Religious, Burial, Habitation	75 x 50	35	C,D,E

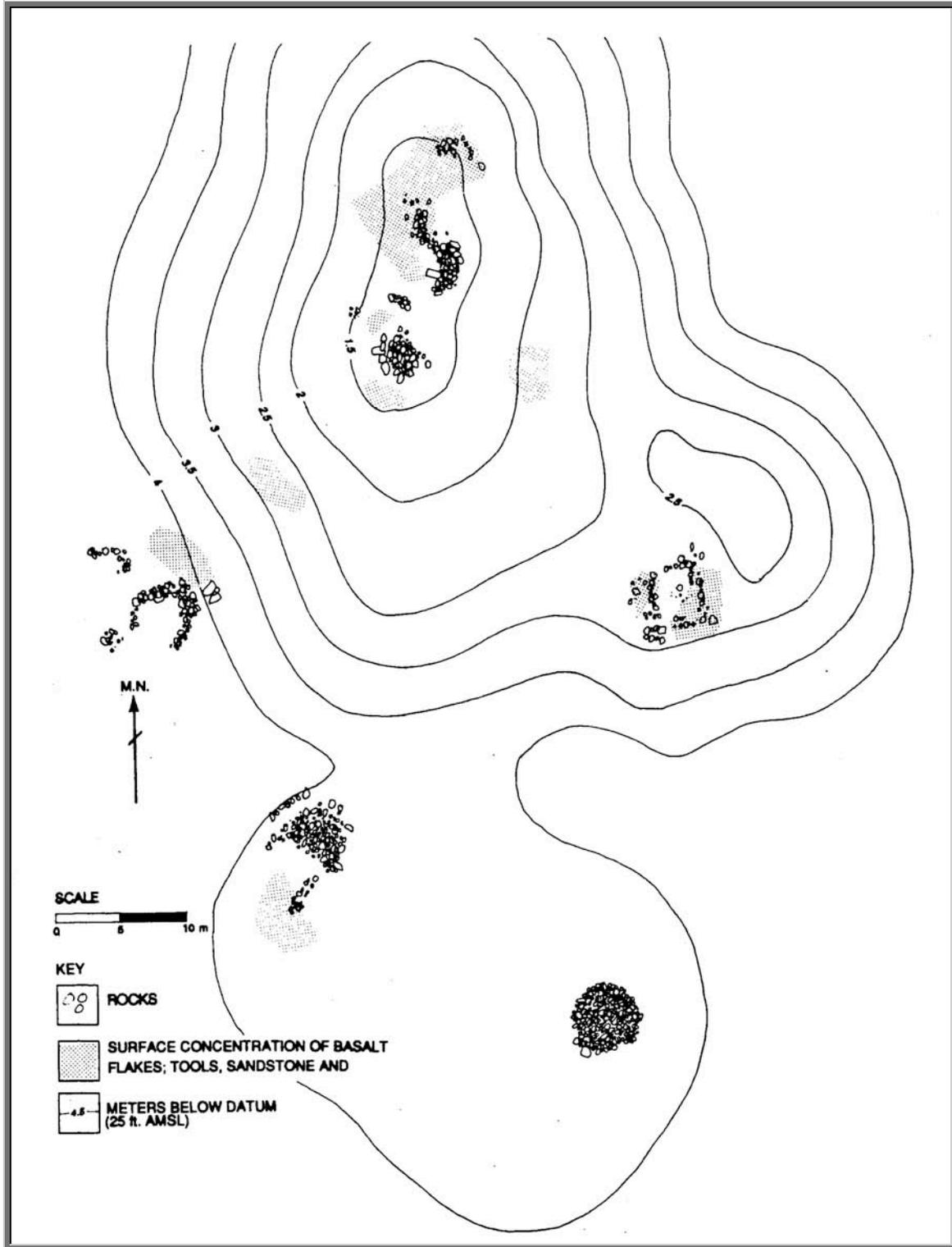
State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Feature Types	Site Function	Site Area (m ²)	Altitude	Significance
		C-shape Lithic debitage Enclosure				
1175	B5-134	Lithic debitage	Litchi work	5 x 5	200	D
1176	B5-135	5 Terrace 4 Mound 2 Enclosure Wall C-shape Lithic debitage	Temp. Hab.	5 x 3	70	D

Selected Site Maps

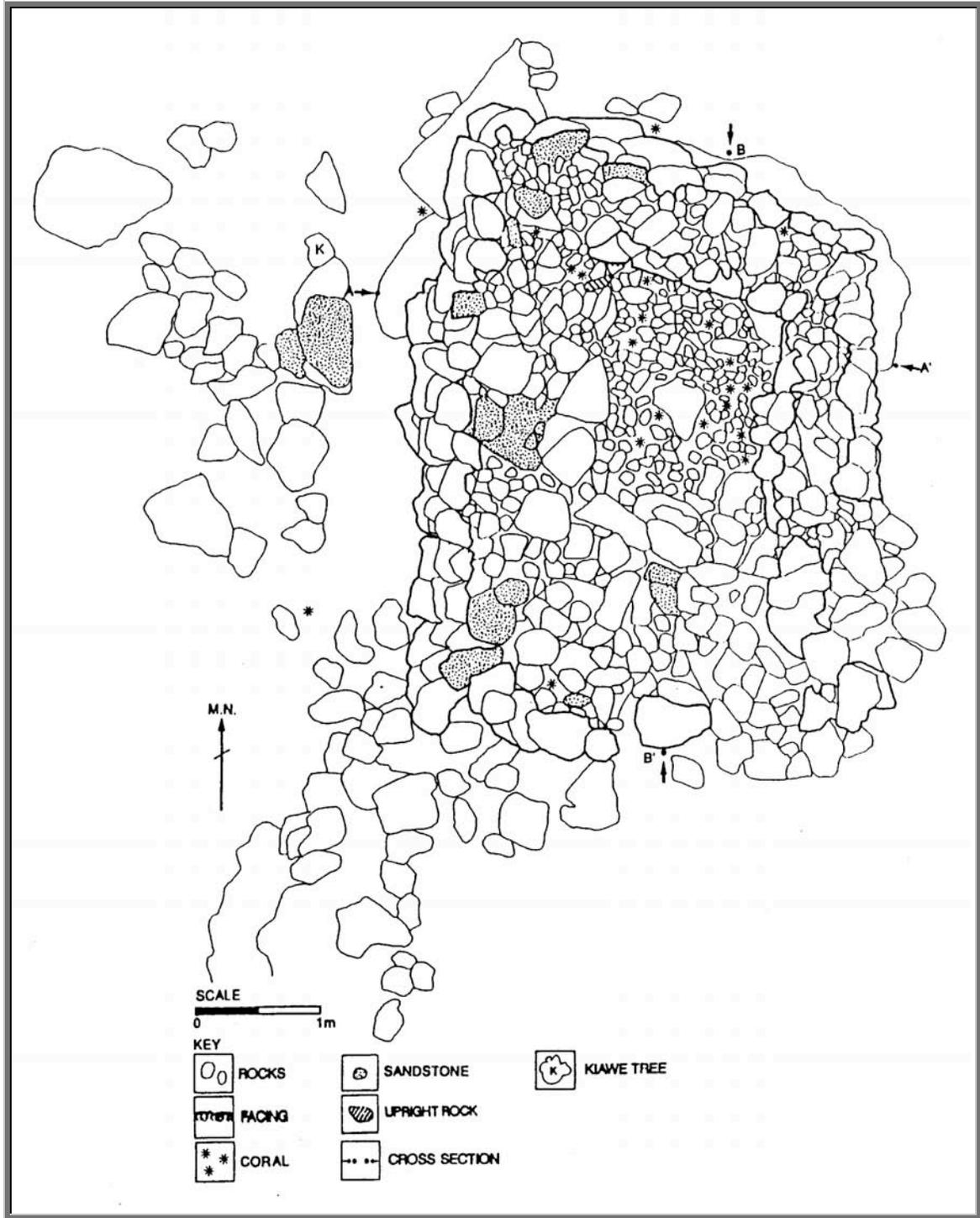
The following gallery of maps depicts sites in and near the Project Area, as well as some representative samples of other areas in TMK 5-1-02-030, and of the range of site types. Sites not included in this gallery are either well away from the areas of potential effects (such as the Kaunalu and Kaheu Cultural Protection Zones), or are extremely redundant. Dixon and Major (1993) and Weisler (1984) include additional inventory maps not shown here.



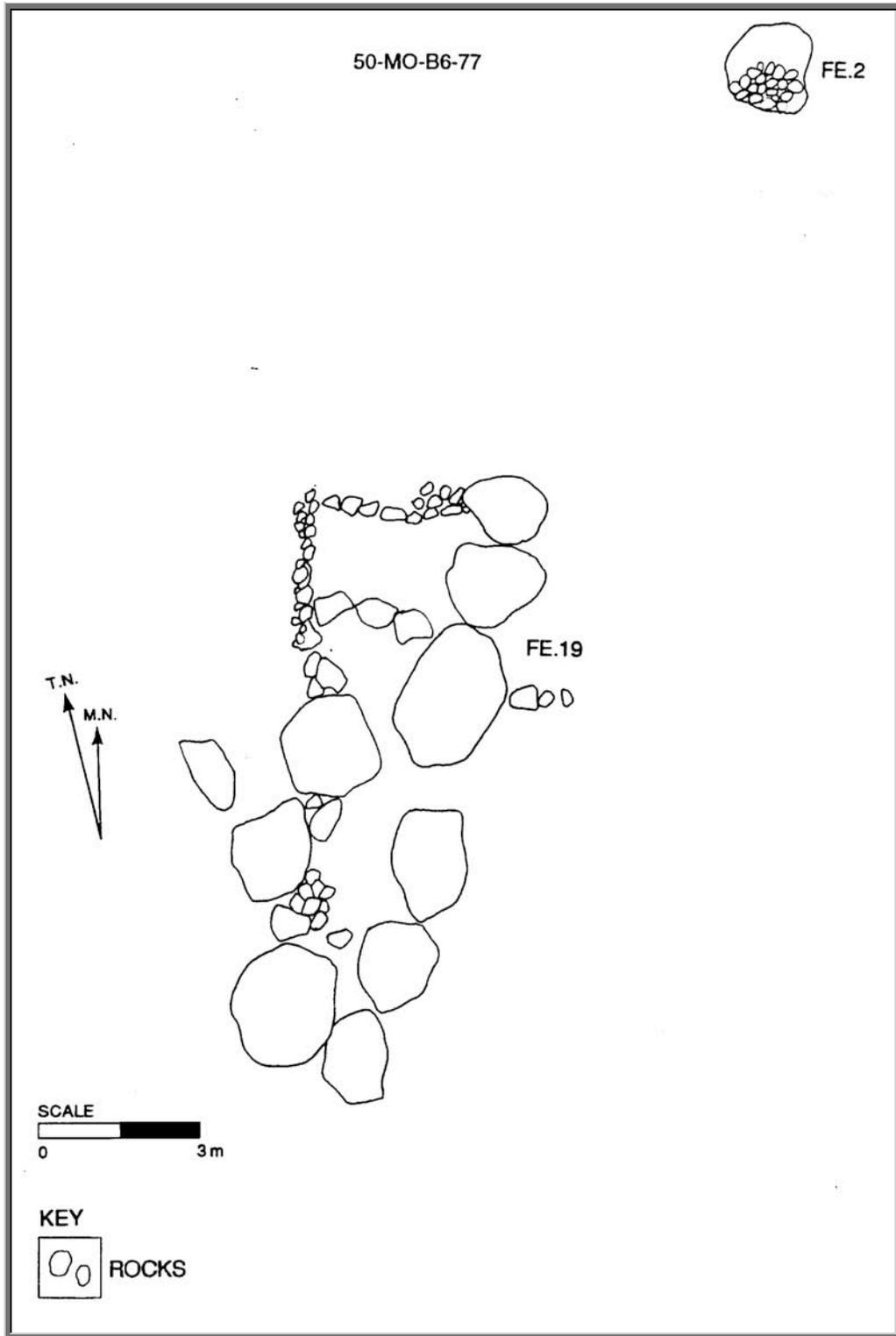
Site 54. North Kamaka'ipō Coastal Complex (B6-68, -70, -73). From Dixon and Major 1993.



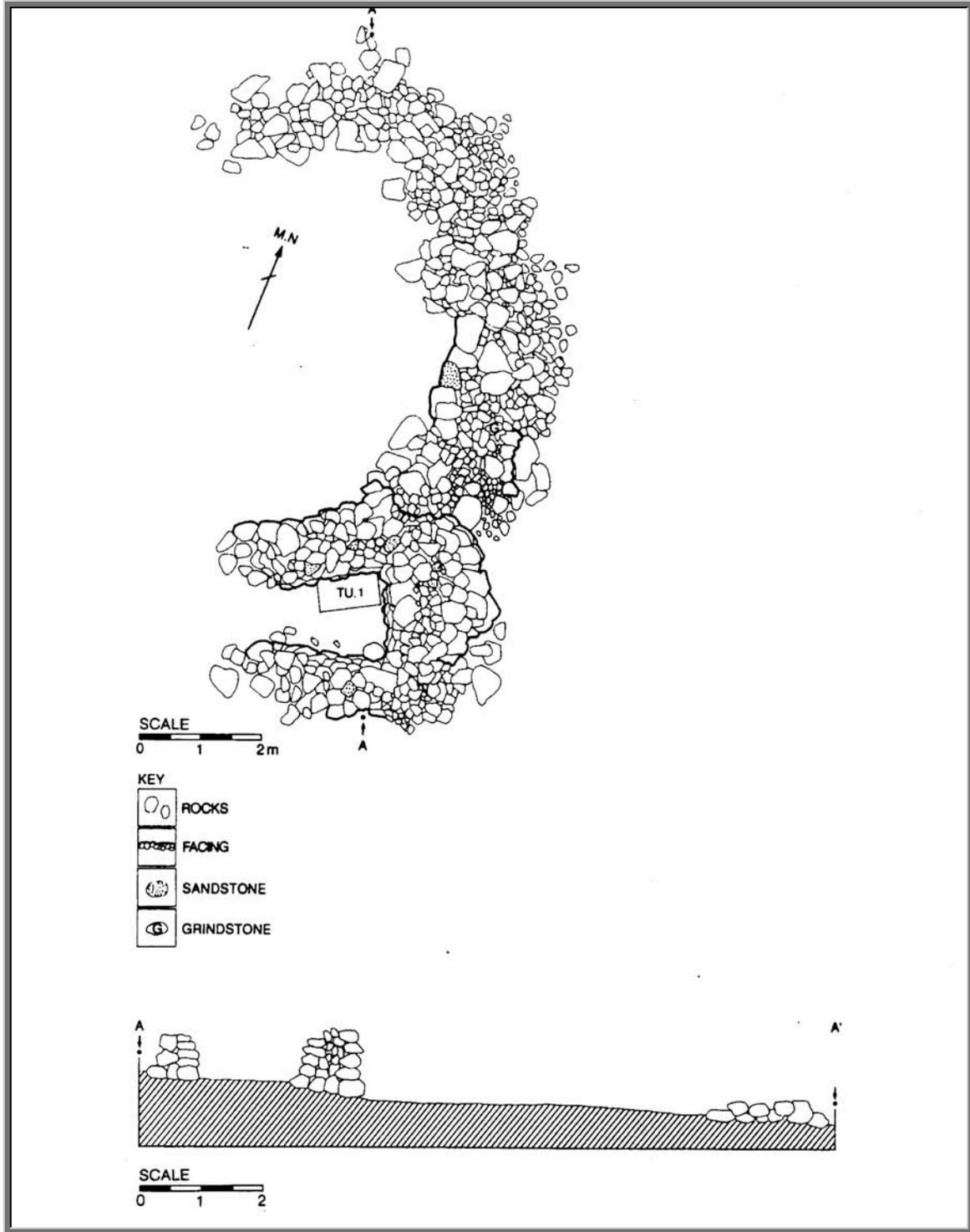
Site 54. North Kamaka'ipō Complex (B6-69). From Dixon and Major 1993.



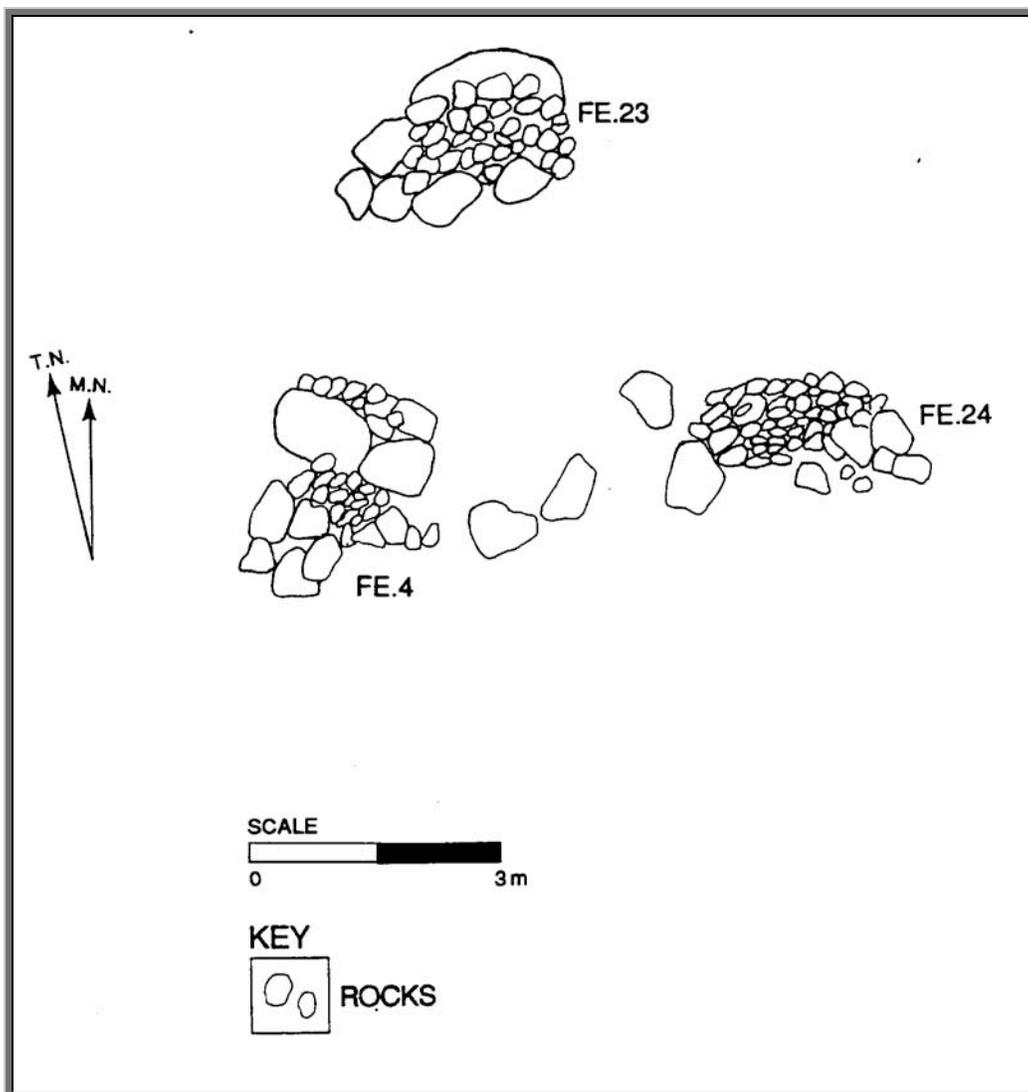
Site 56, Feature 1, Coastal Kamāka'ipō ko'a (fishing shrine). From Dixon and Major 1993.



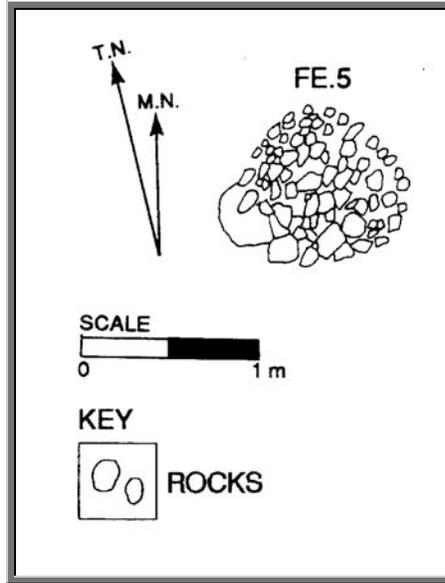
Site 56, Features 2 and 19, Coastal Kamāka'ipō. From Dixon and Major 1993.



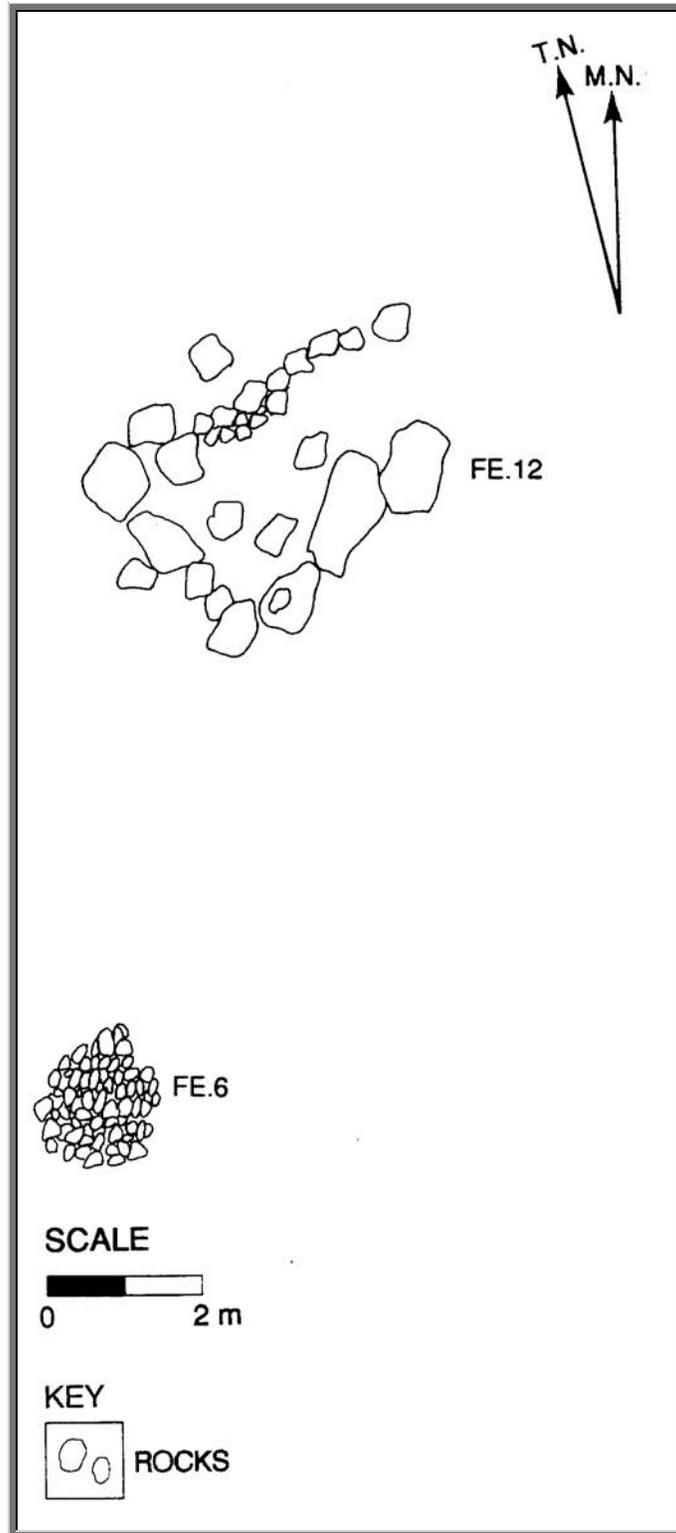
Site 56, Feature 3, Coastal Kamāka'ipō C-shape with tail. From Dixon and Major 1993.



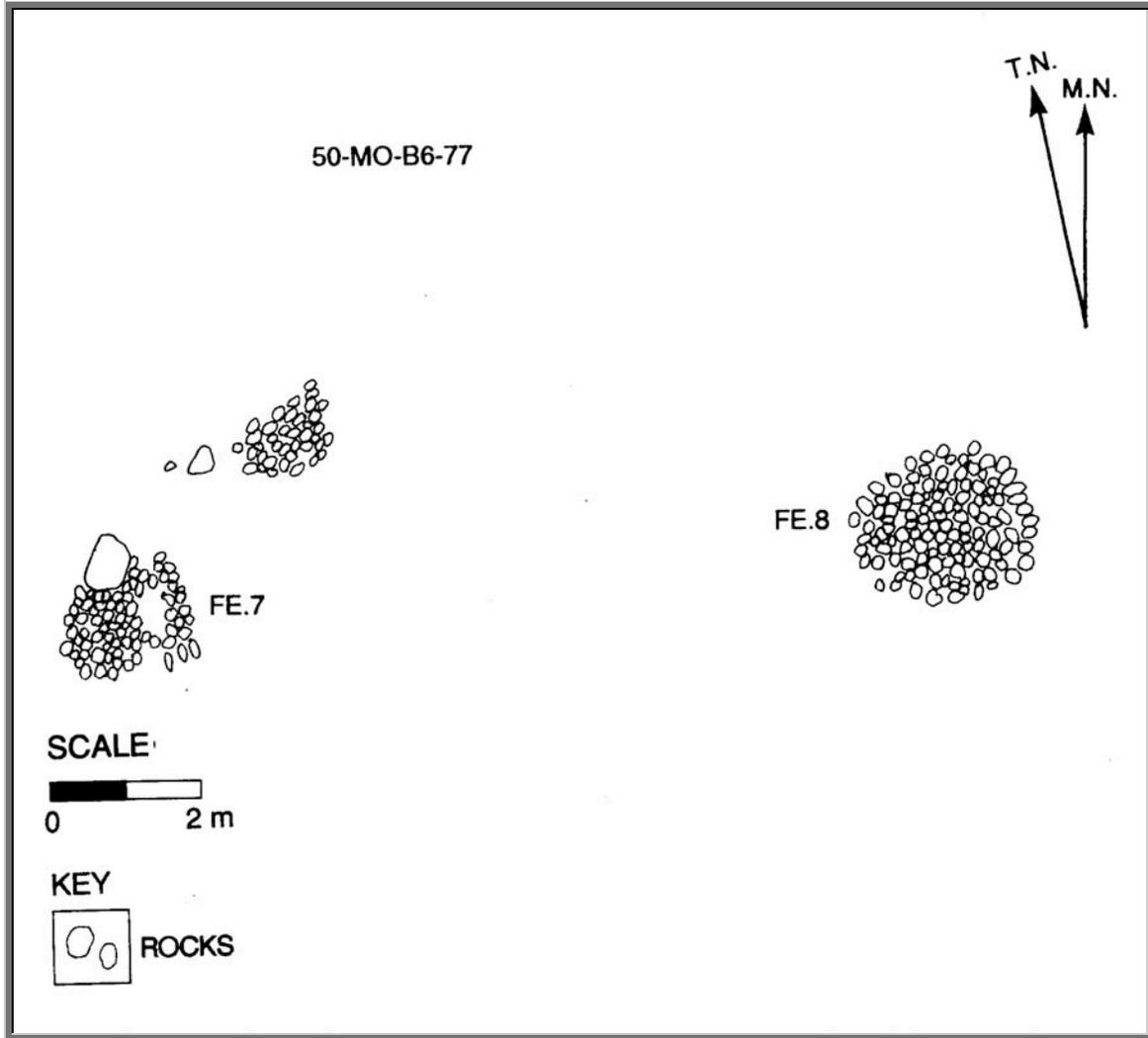
Site 56, Features 4, 24, and 25 Coastal Kamāka'ipō. From Dixon and Major 1993.



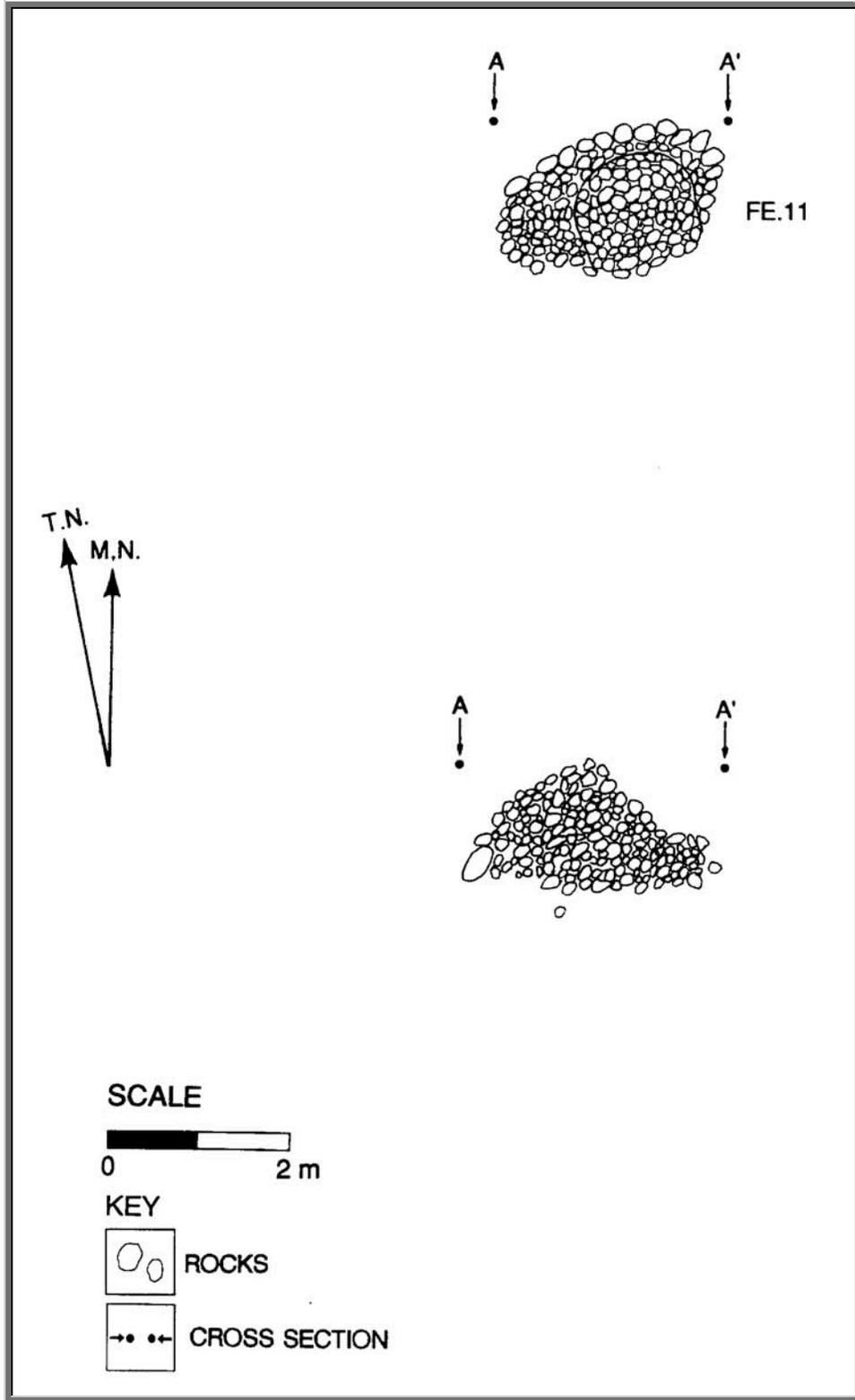
Site 56, Feature 5, Coastal Kamāka'ipō mound. From Dixon and Major 1993.



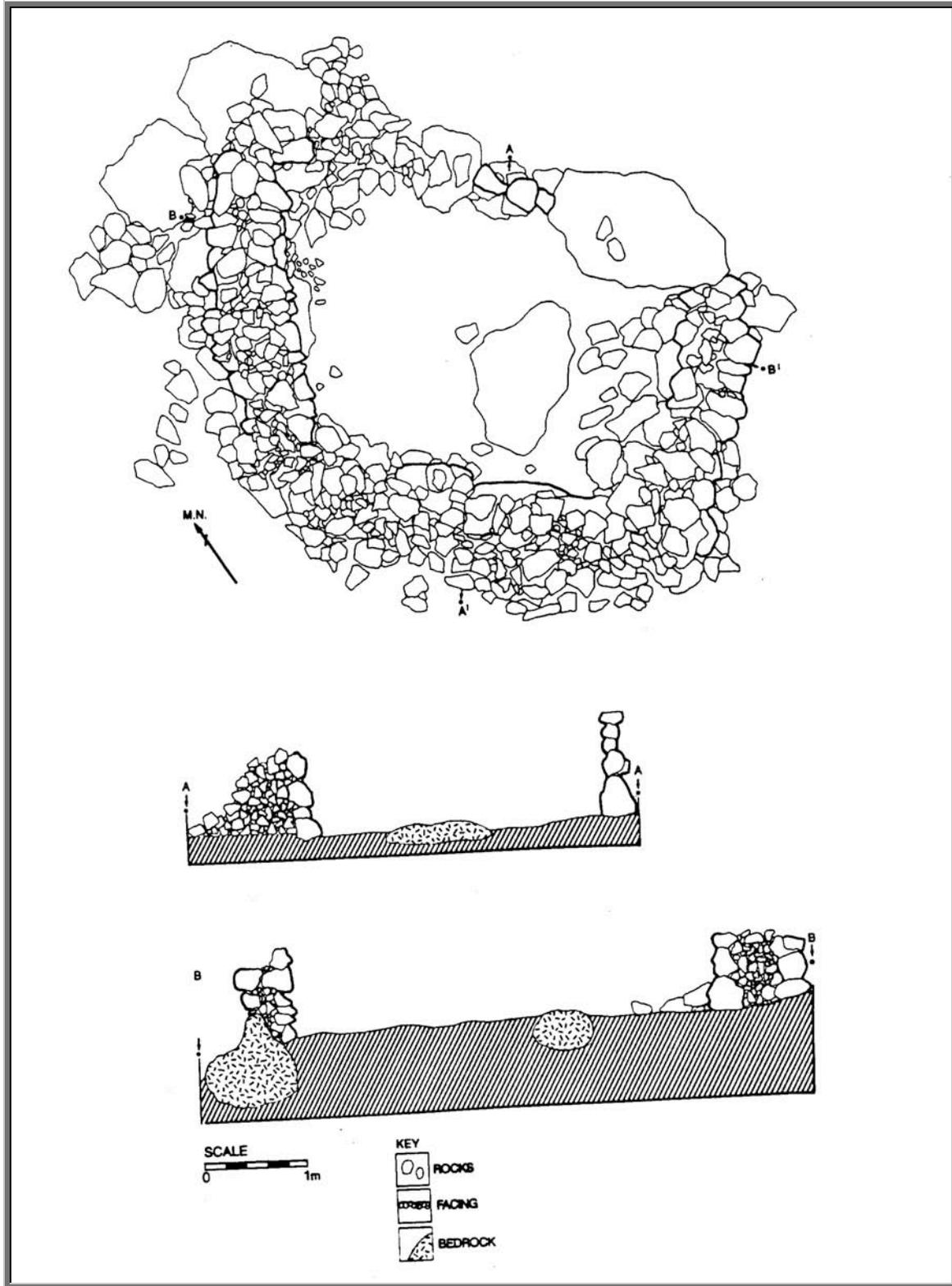
Site 56, Features 6 and 12 Coastal Kamāka'ipō. From Dixon and Major 1993.



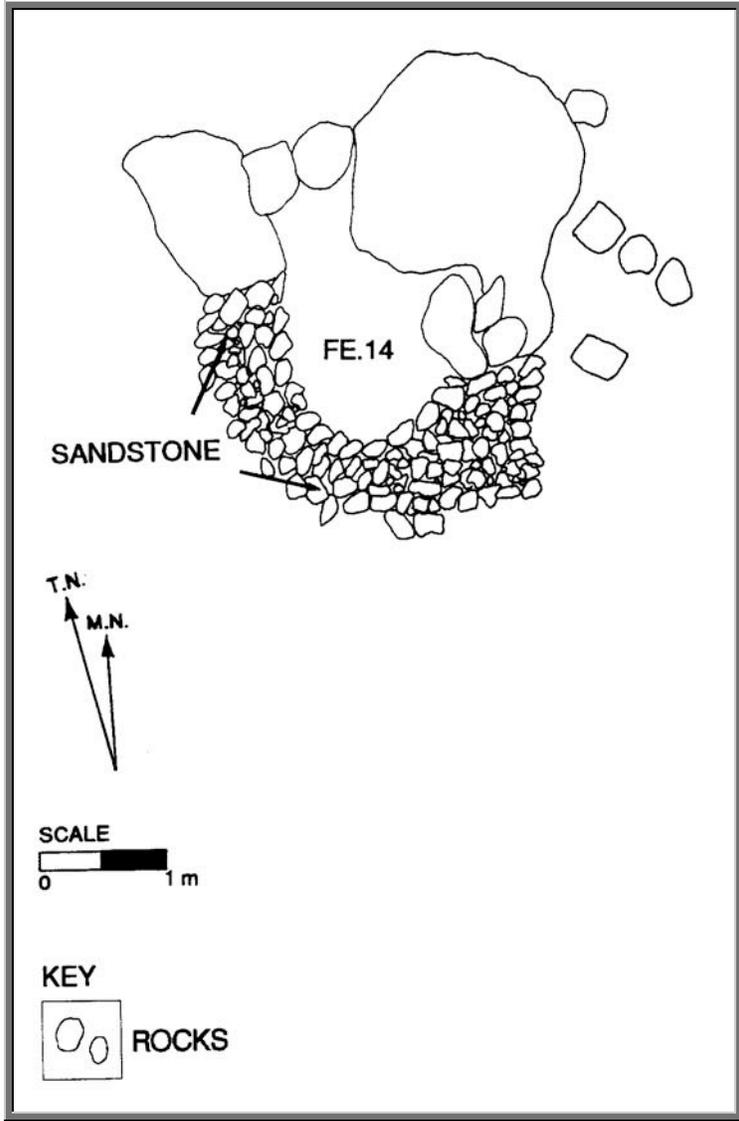
Site 56, Features 7 and 8 Coastal Kamāka'ipō. From Dixon and Major 1993.



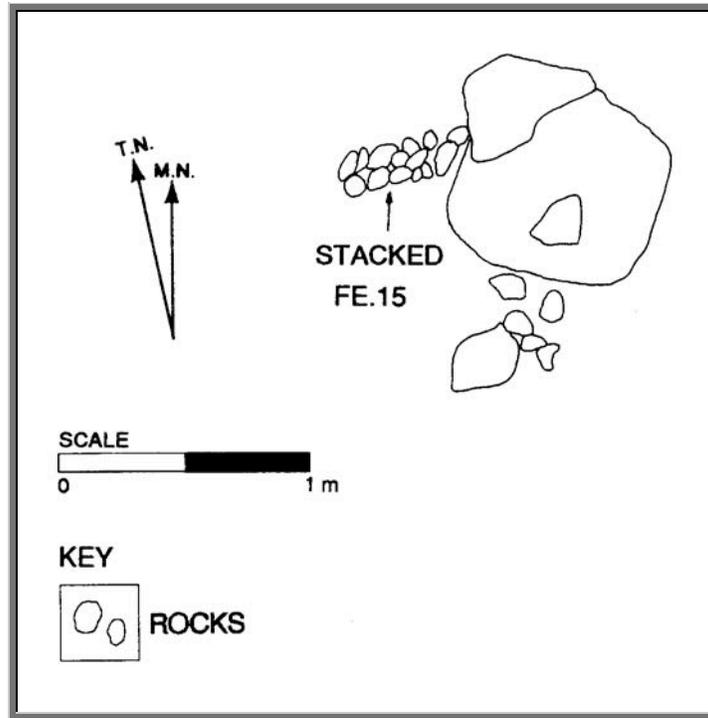
Site 56, Feature 12, Coastal Kamāka'ipō burial. From Dixon and Major 1993.



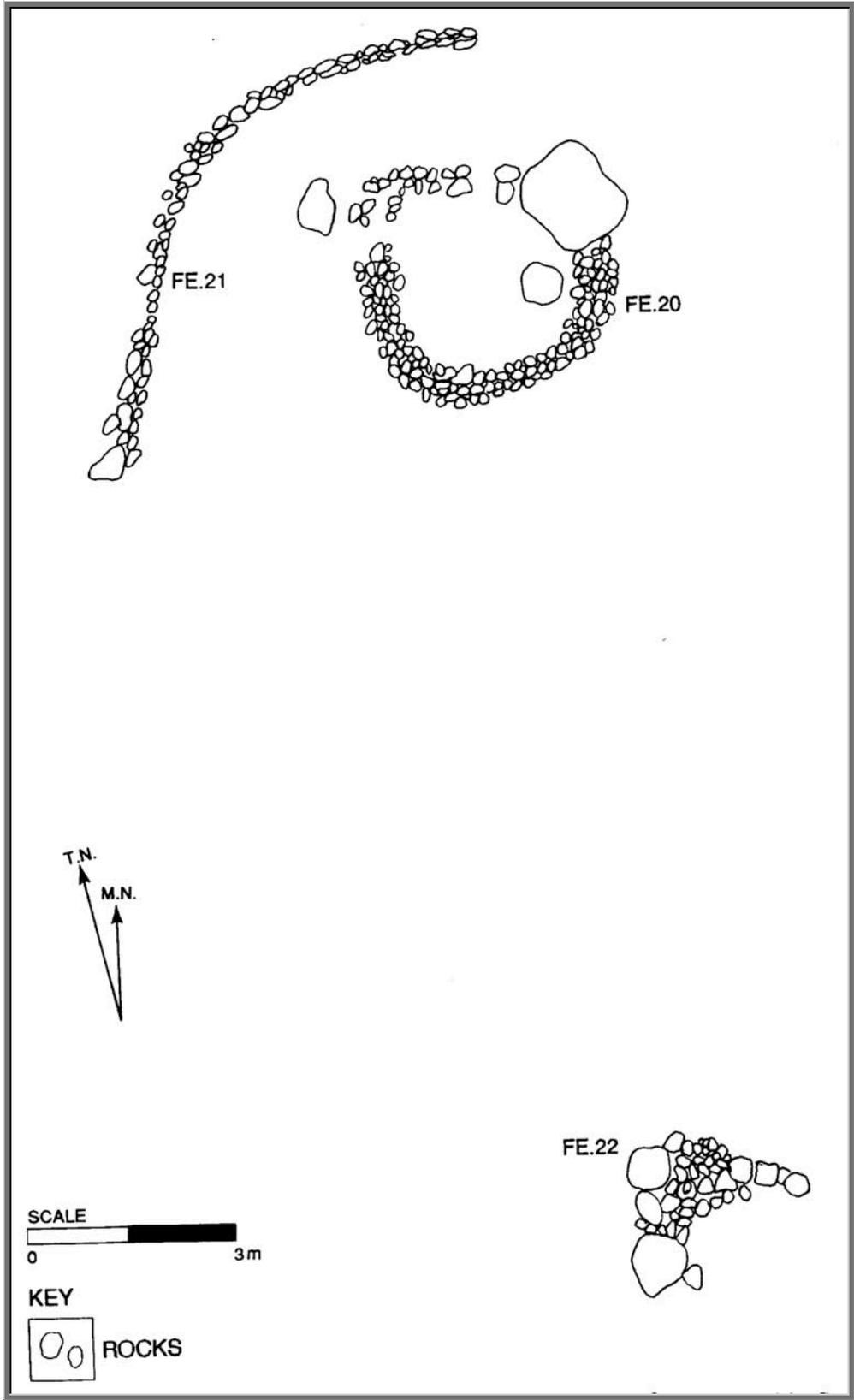
Site 56, Feature 13, Coastal Kamāka'ipō enclosure. From Dixon and Major 1993.



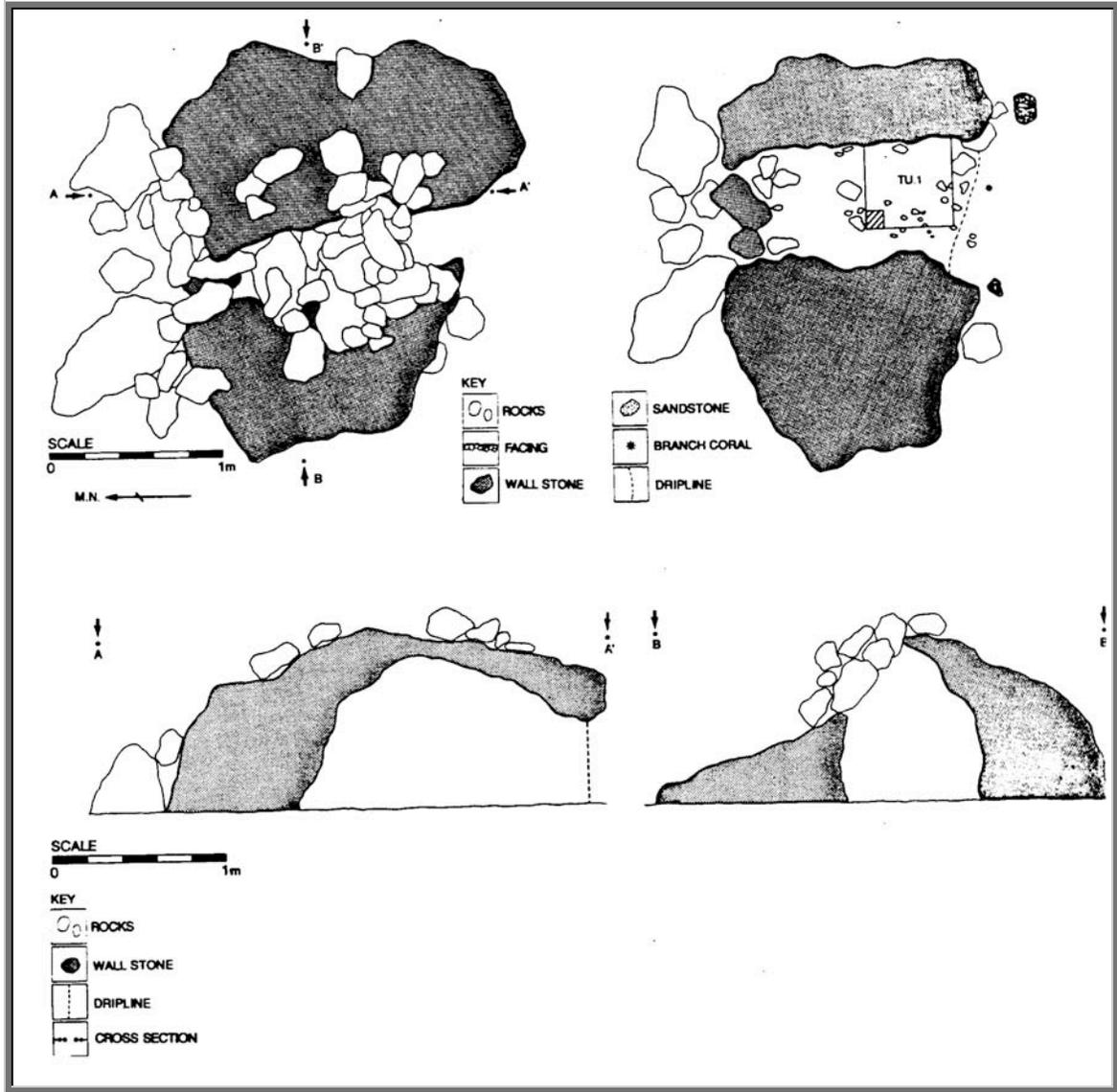
Site 56, Feature 14, Coastal Kamāka'ipō. From Dixon and Major 1993.



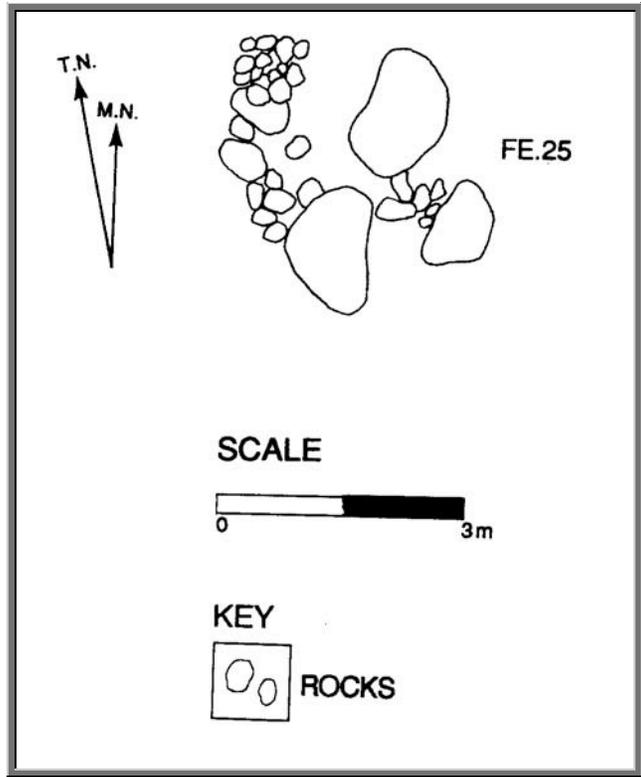
Site 56, Feature 15, Coastal Kamāka'ipō. From Dixon and Major 1993.



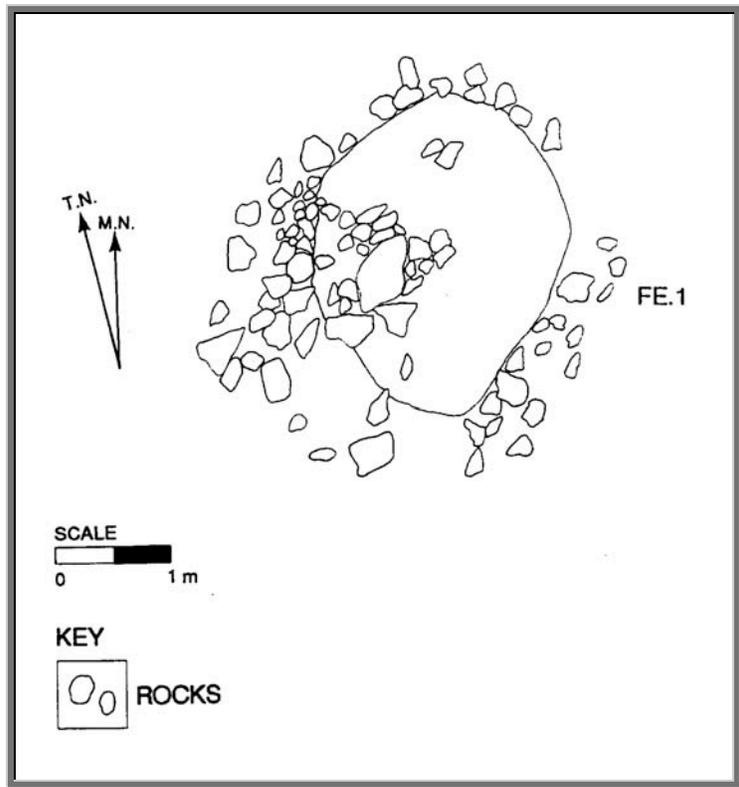
Site 56, Features 20-22, Coastal Kamāka'ipō. From Dixon and Major 1993.



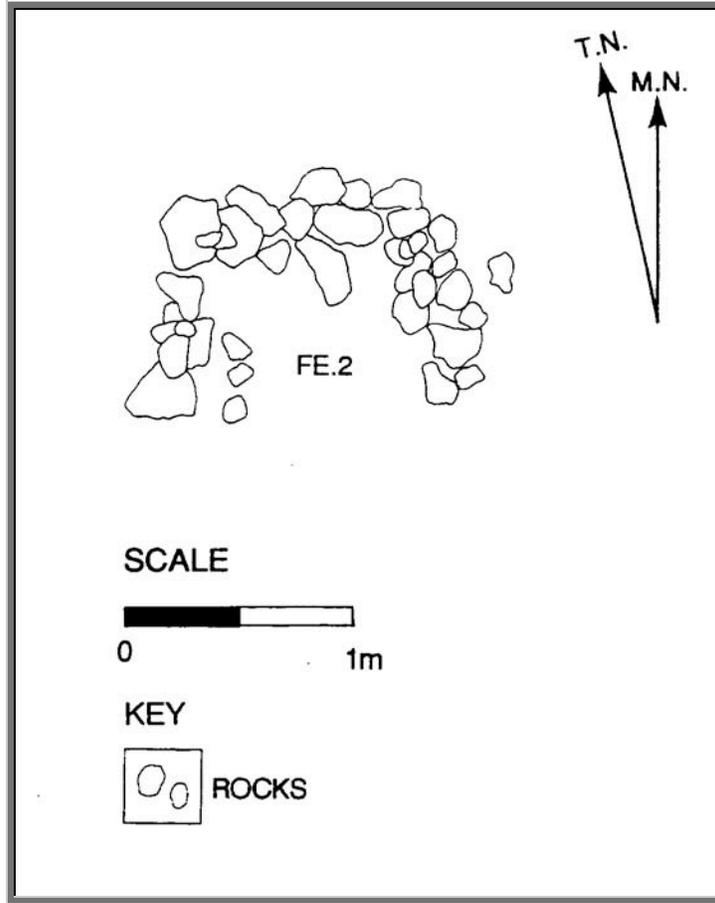
Site 56, Feature 24, Coastal Kamāka'ipō cupboard. From Dixon and Major 1993.



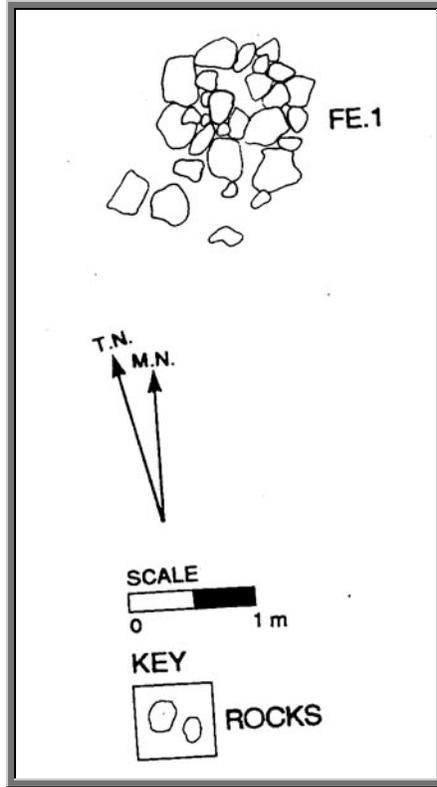
Site 56, Feature 25, Coastal Kamāka'ipō. From Dixon and Major 1993.



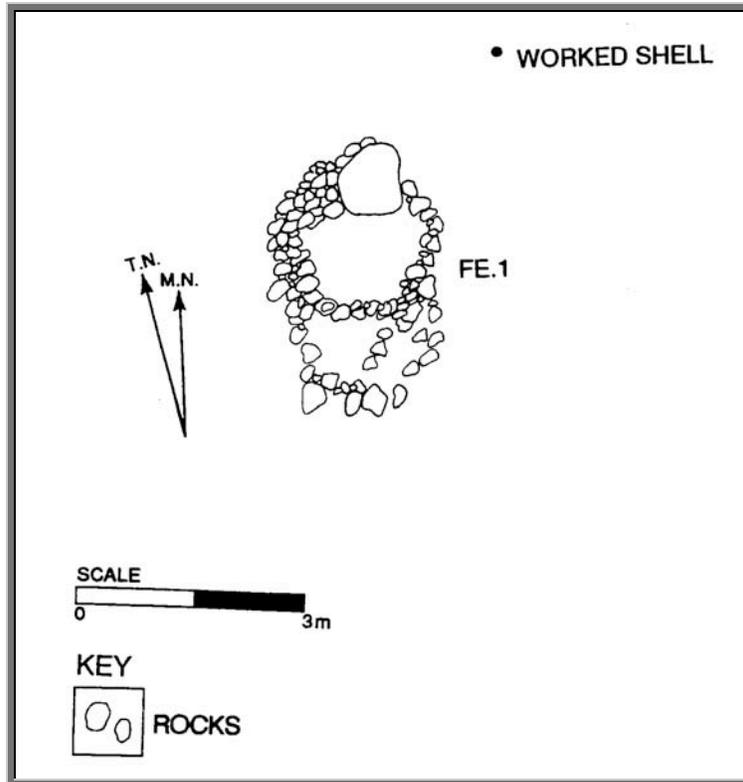
Site 679, Feature 1, Upper North Kamāka'ipō Gulch. From Dixon and Major 1993.



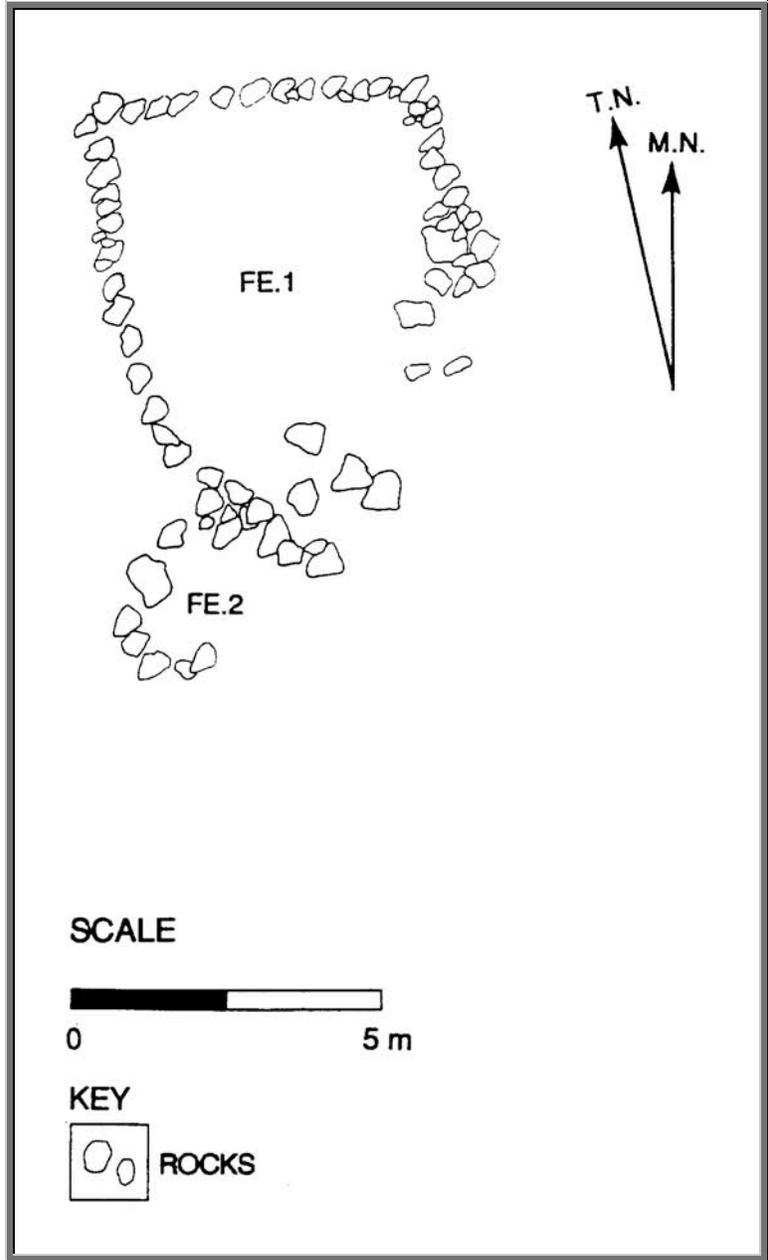
Site 679, Feature 2, Upper North Kamāka'ipō Gulch C-shape. From Dixon and Major 1993.



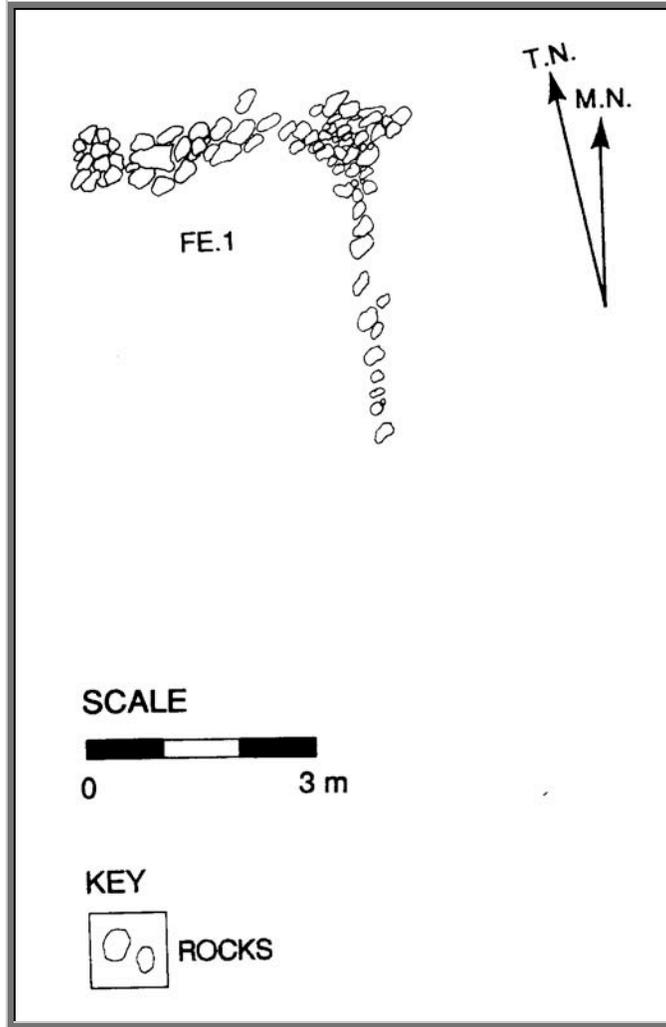
Site 682, Feature 1, Upper North Kamāka'ipō Gulch. From Dixon and Major 1993.



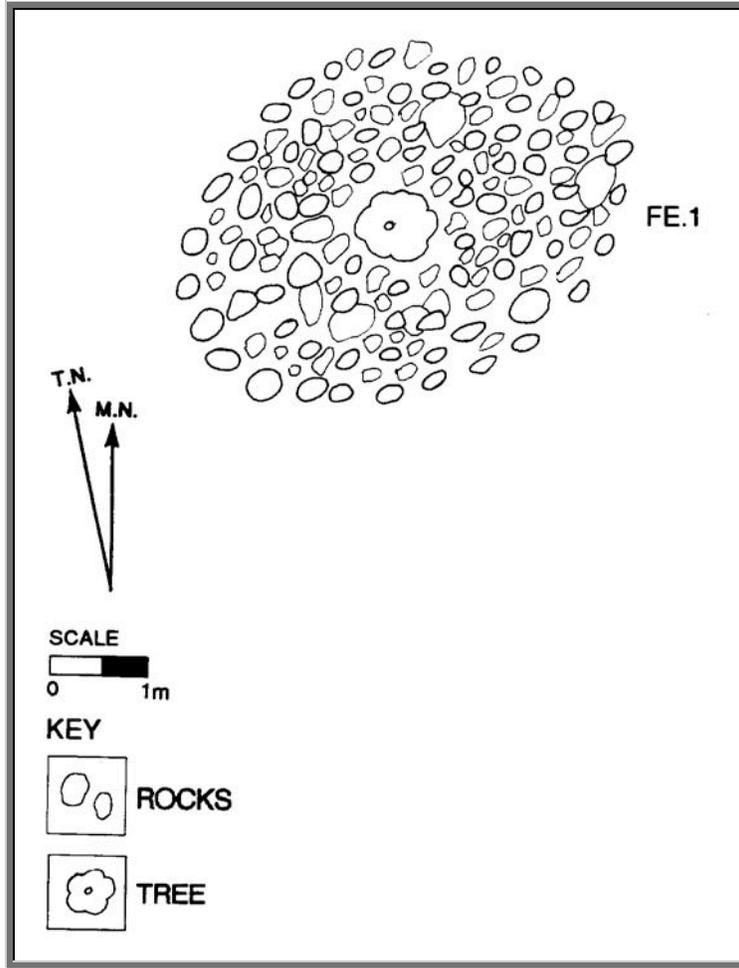
Site 685, Feature 1, Upper North Kamāka'ipō Gulch. From Dixon and Major 1993.



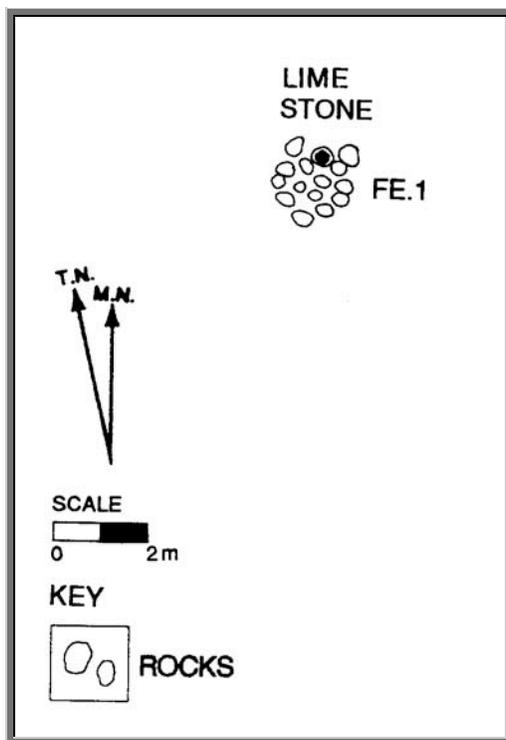
Site 687, Feature 1, North Kamāka'ipō Gulch. From Dixon and Major 1993.



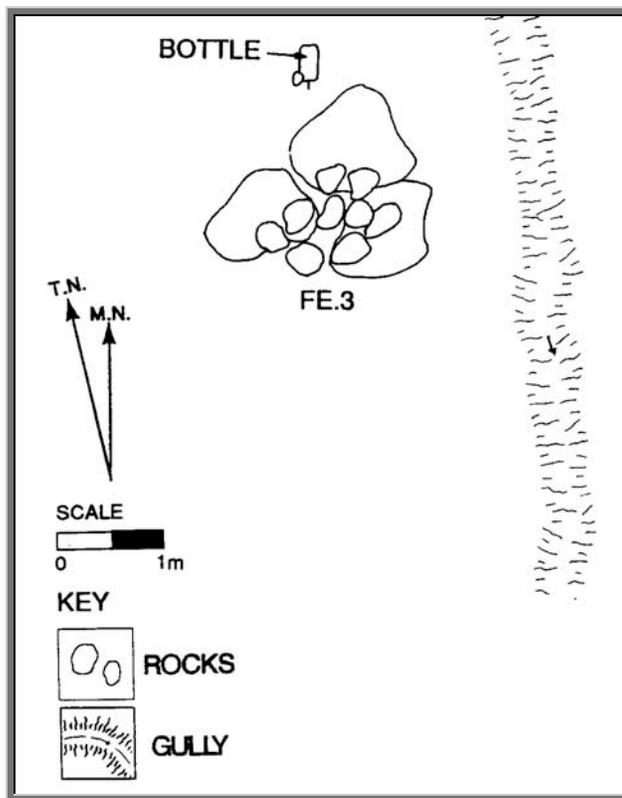
Site 689, Feature 1, North Kamāka'ipō Gulch. From Dixon and Major 1993.



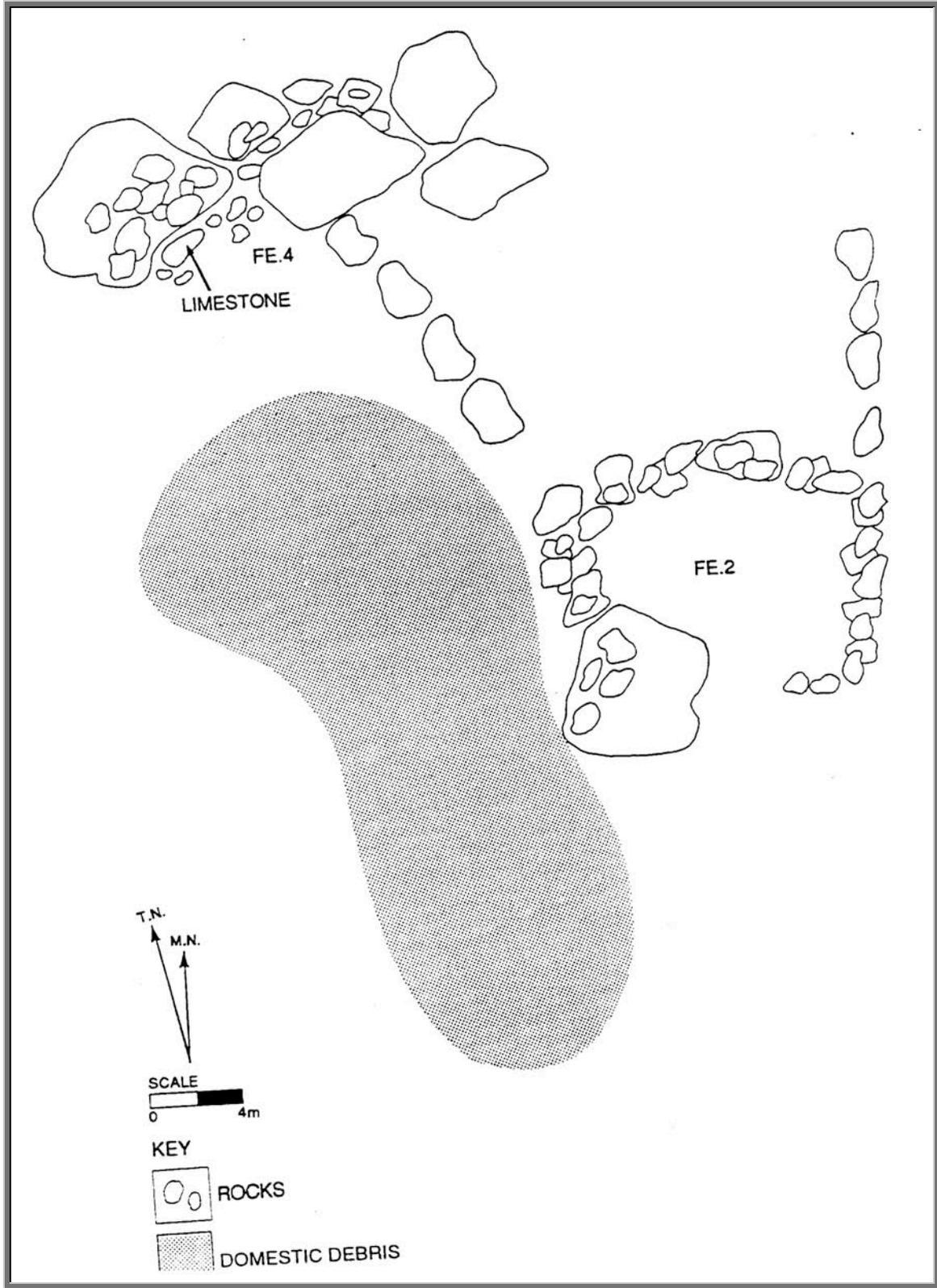
Site 739, Feature 1, Coastal Kamāka'ipō. From Dixon and Major 1993.



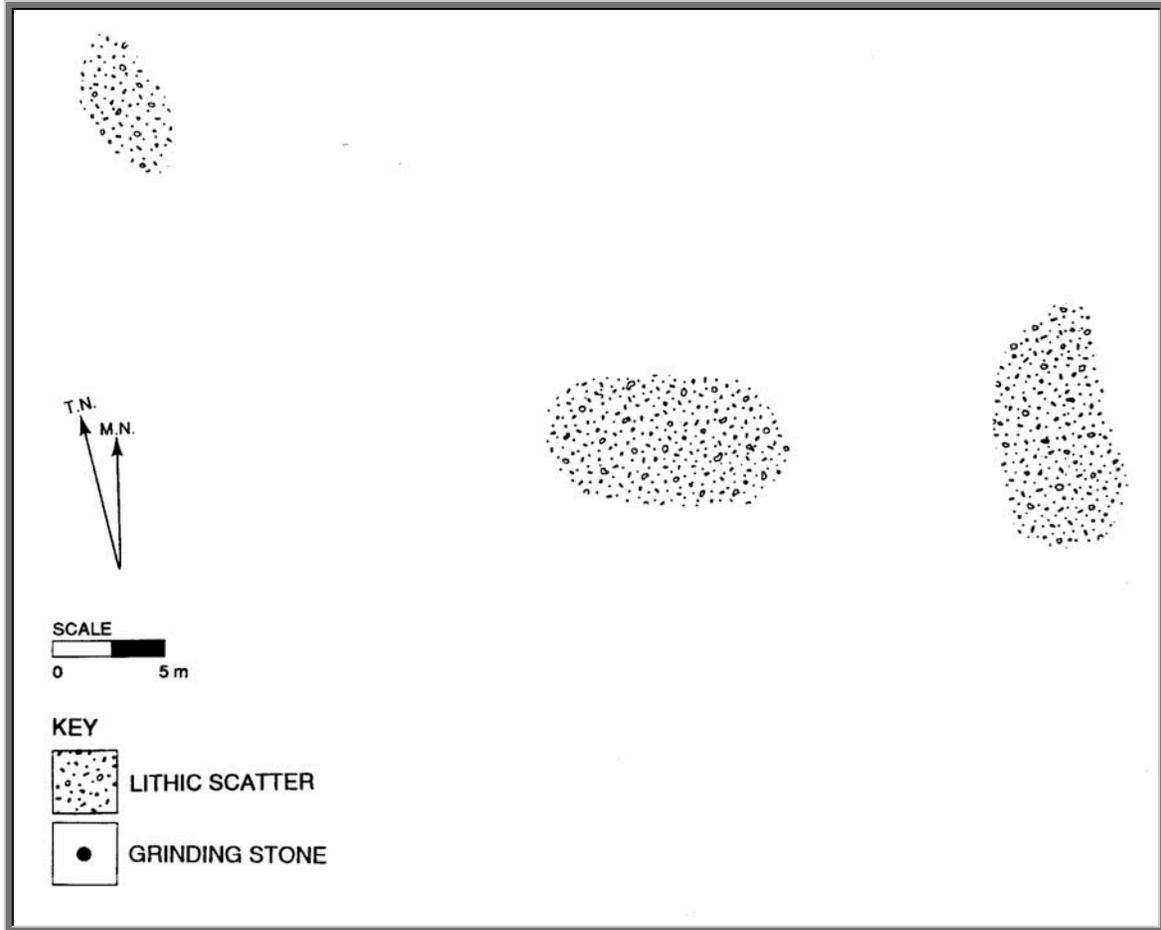
Site 741, Feature 1, Coastal Kamāka'ipō. From Dixon and Major 1993.



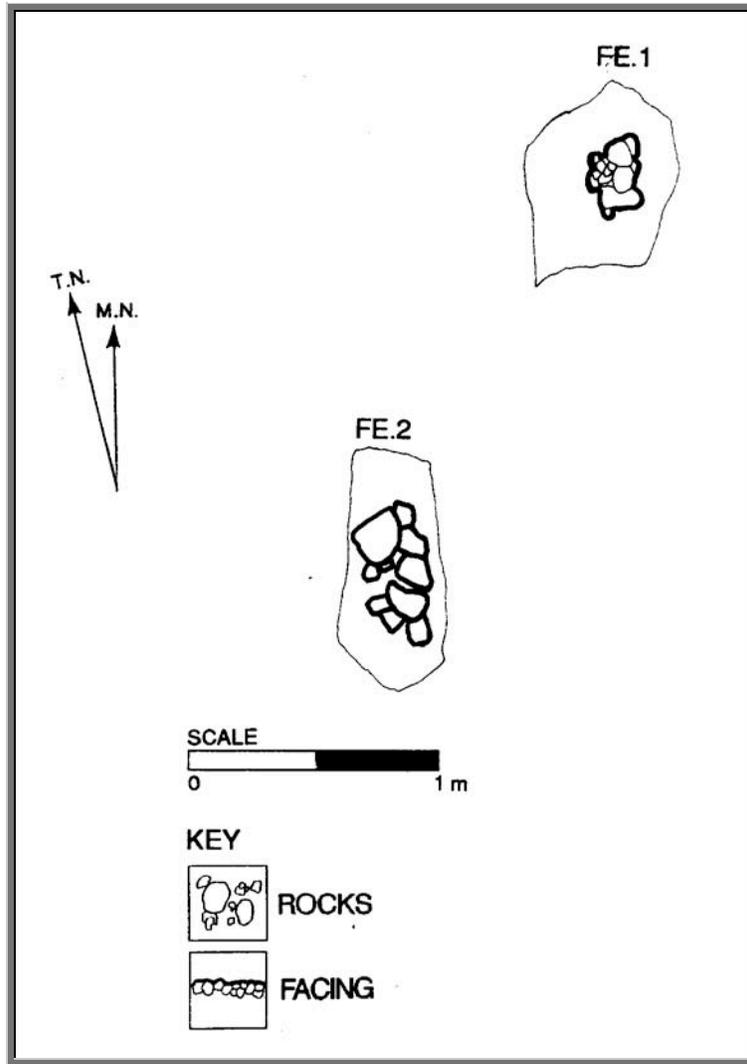
Site 741, Feature 3, Coastal Kamāka'ipō Trail Marker. From Dixon and Major 1993.



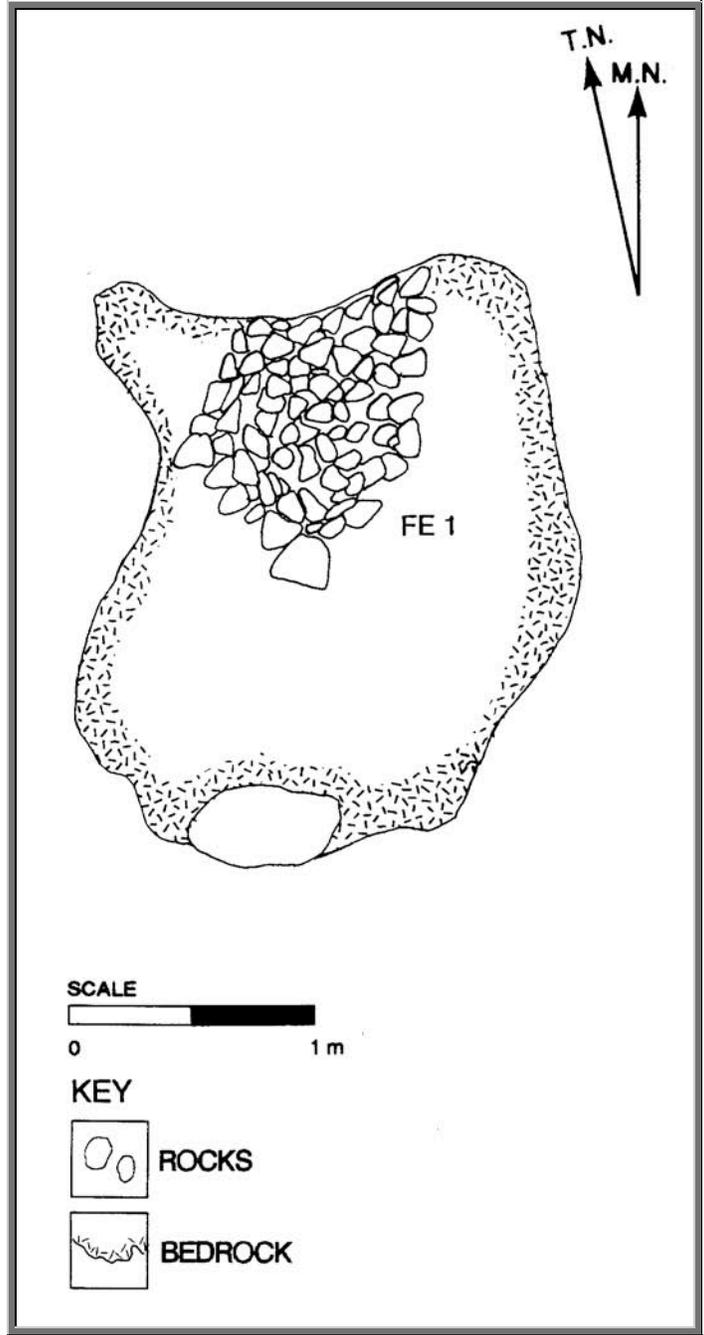
Site 741, Features 2 and 4 with midden, Coastal Kamāka'ipō. From Dixon and Major 1993.



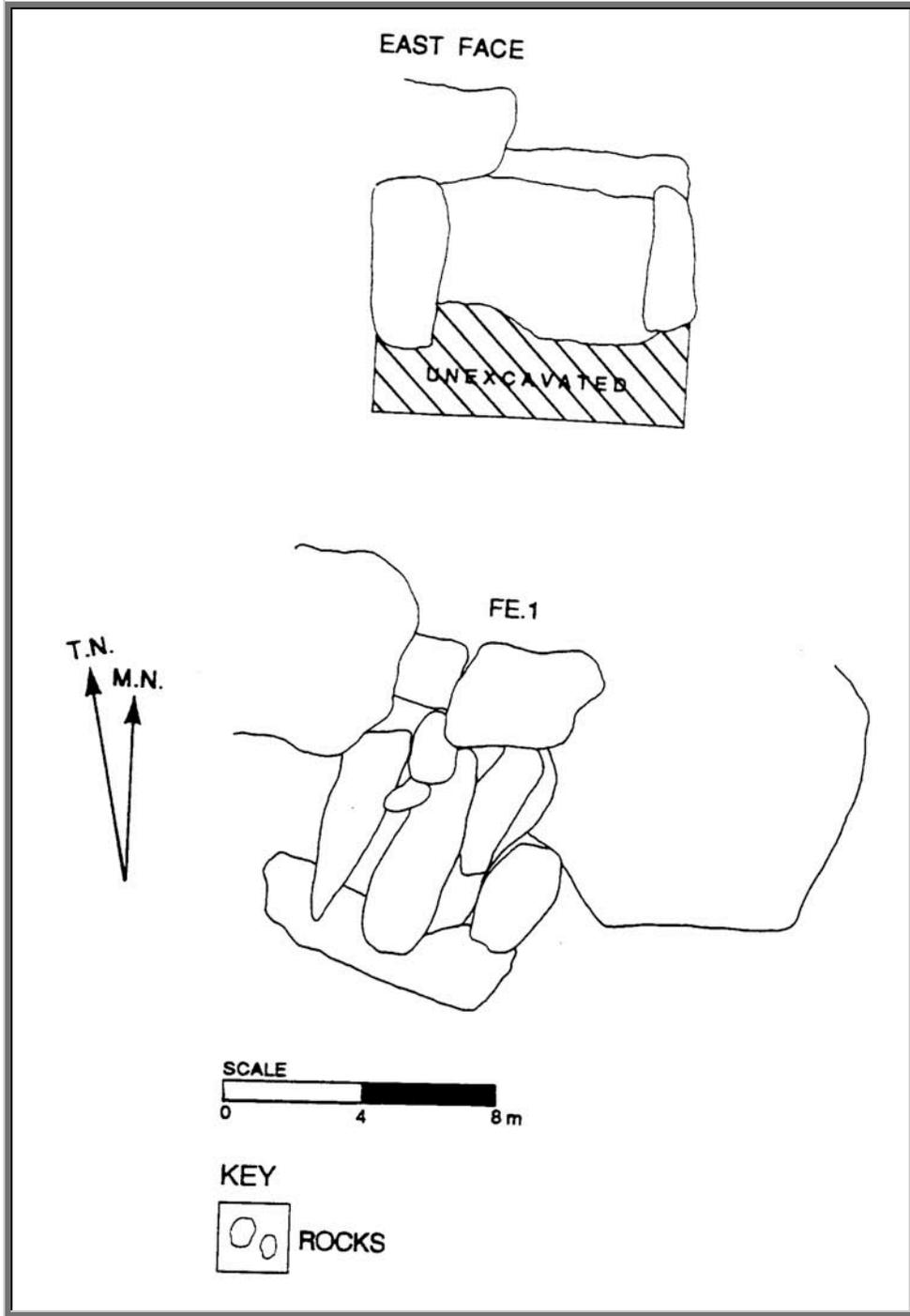
Site 742, Kamāka'ipō South ridge lithic work area. From Dixon and Major 1993.



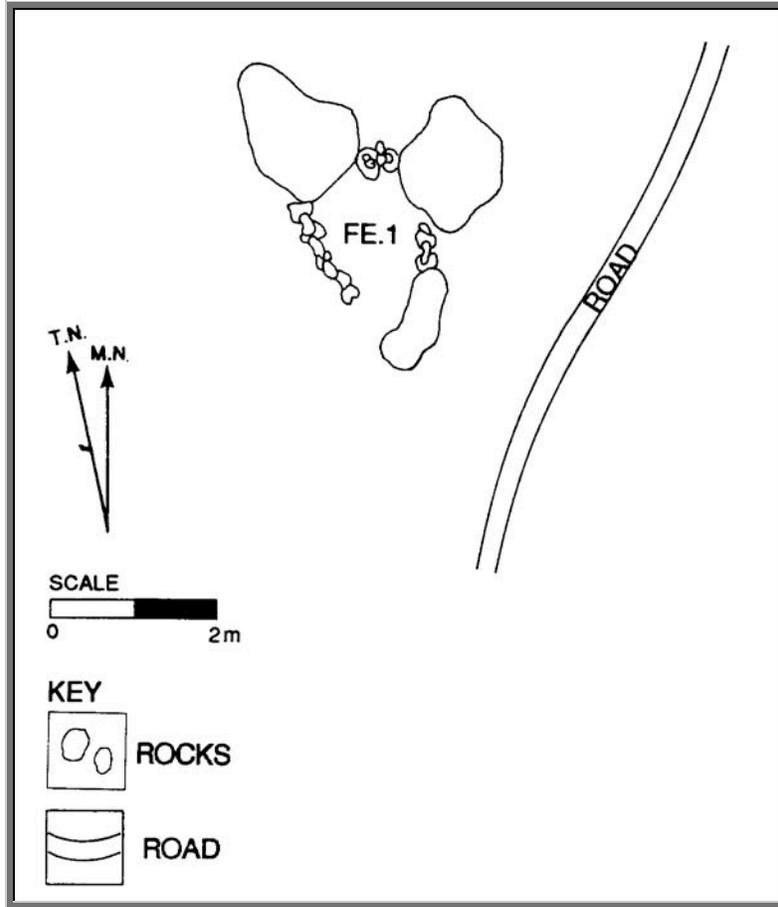
Site 744, Coastal Kamāka'ipō South. From Dixon and Major 1993.



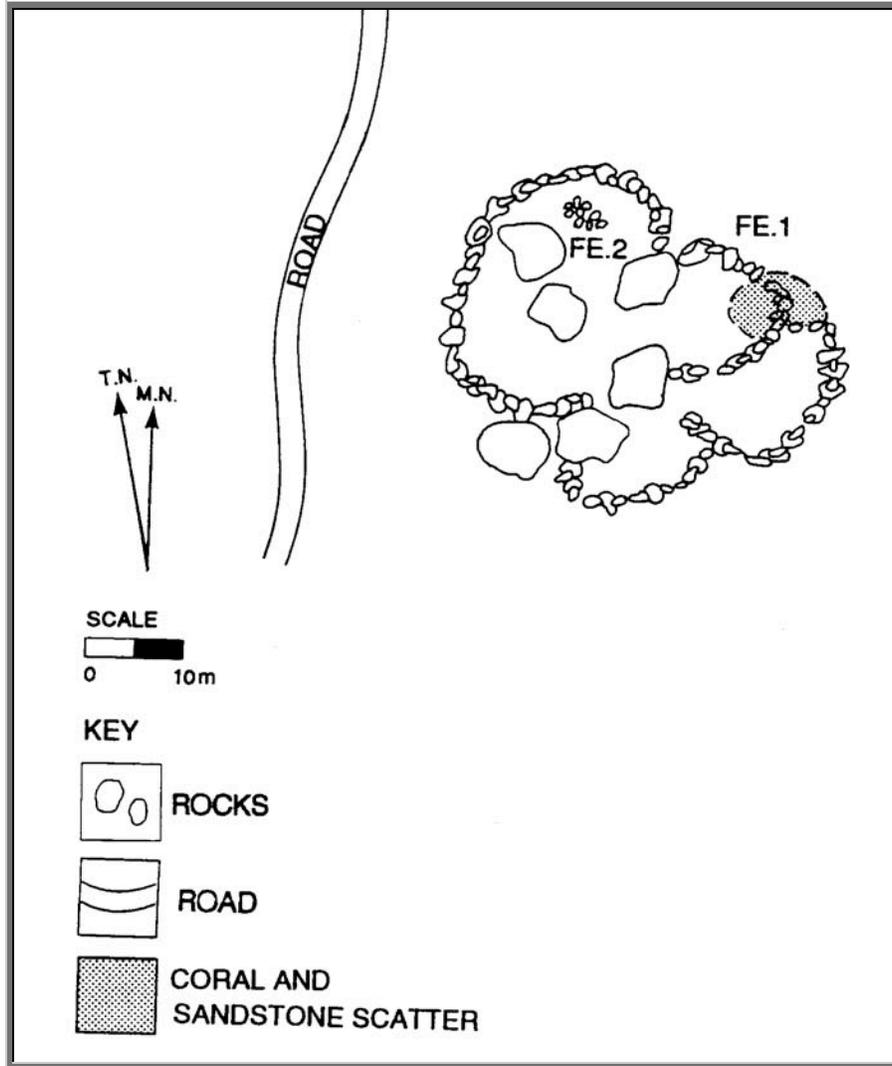
Site 750, Kamāka'ipō South trail marker. From Dixon and Major 1993.



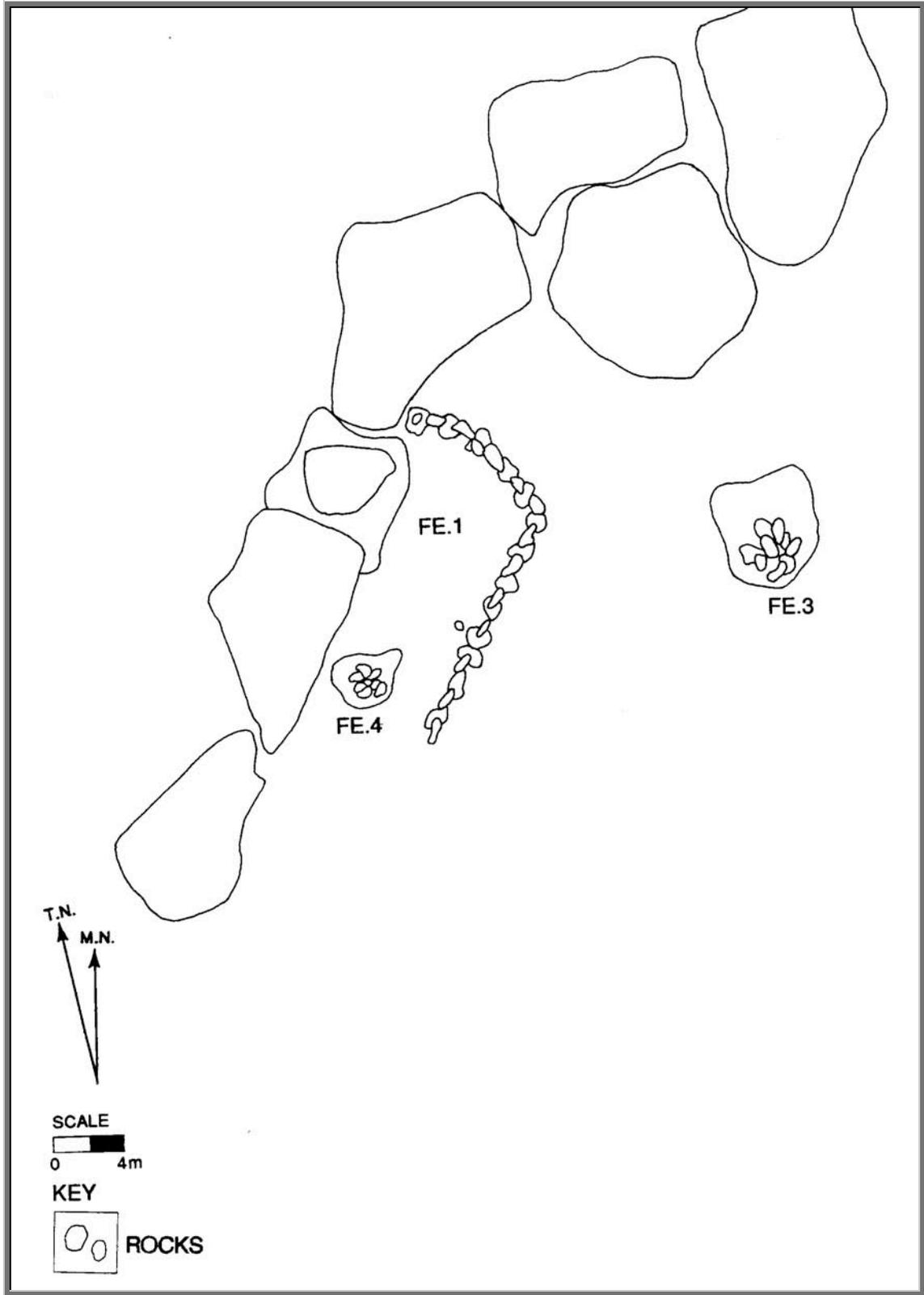
Site 751, Kamāka'ipō South cupboard. From Dixon and Major 1993.



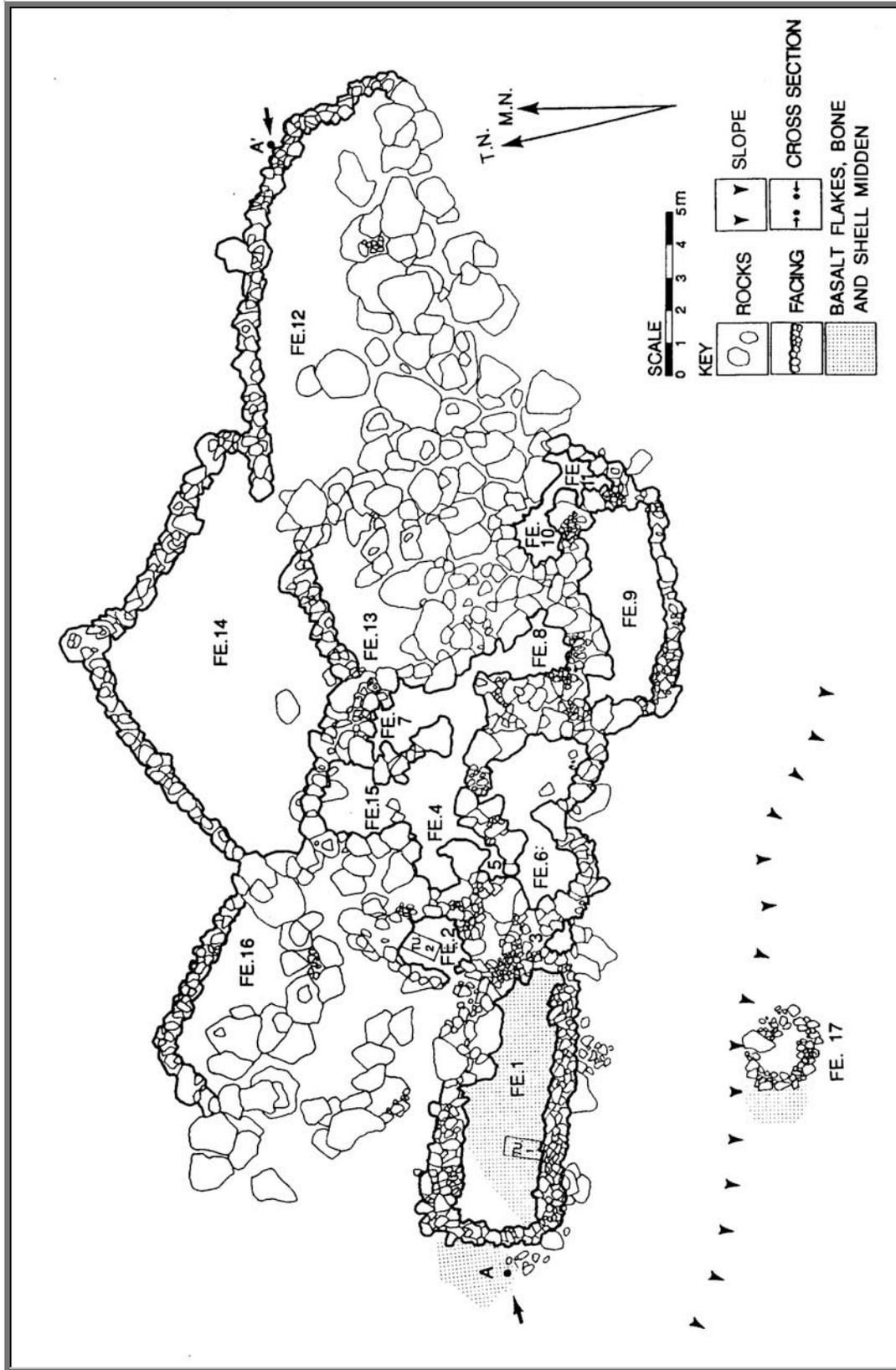
Site 763, Lā'au Point modified outcrop enclosure. From Dixon and Major 1993.



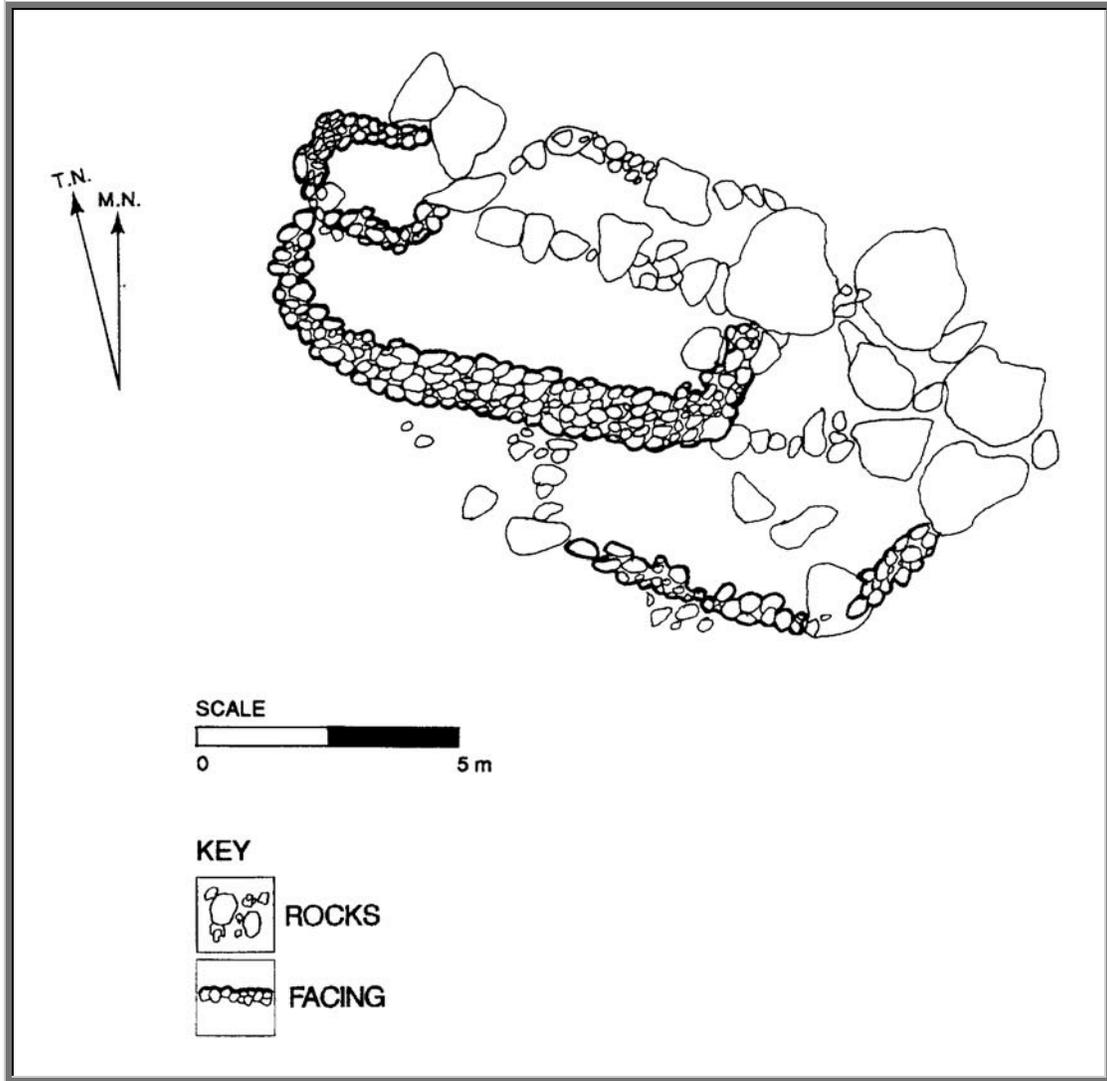
Site 764, Lā'au Point multi-room enclosure. From Dixon and Major 1993.



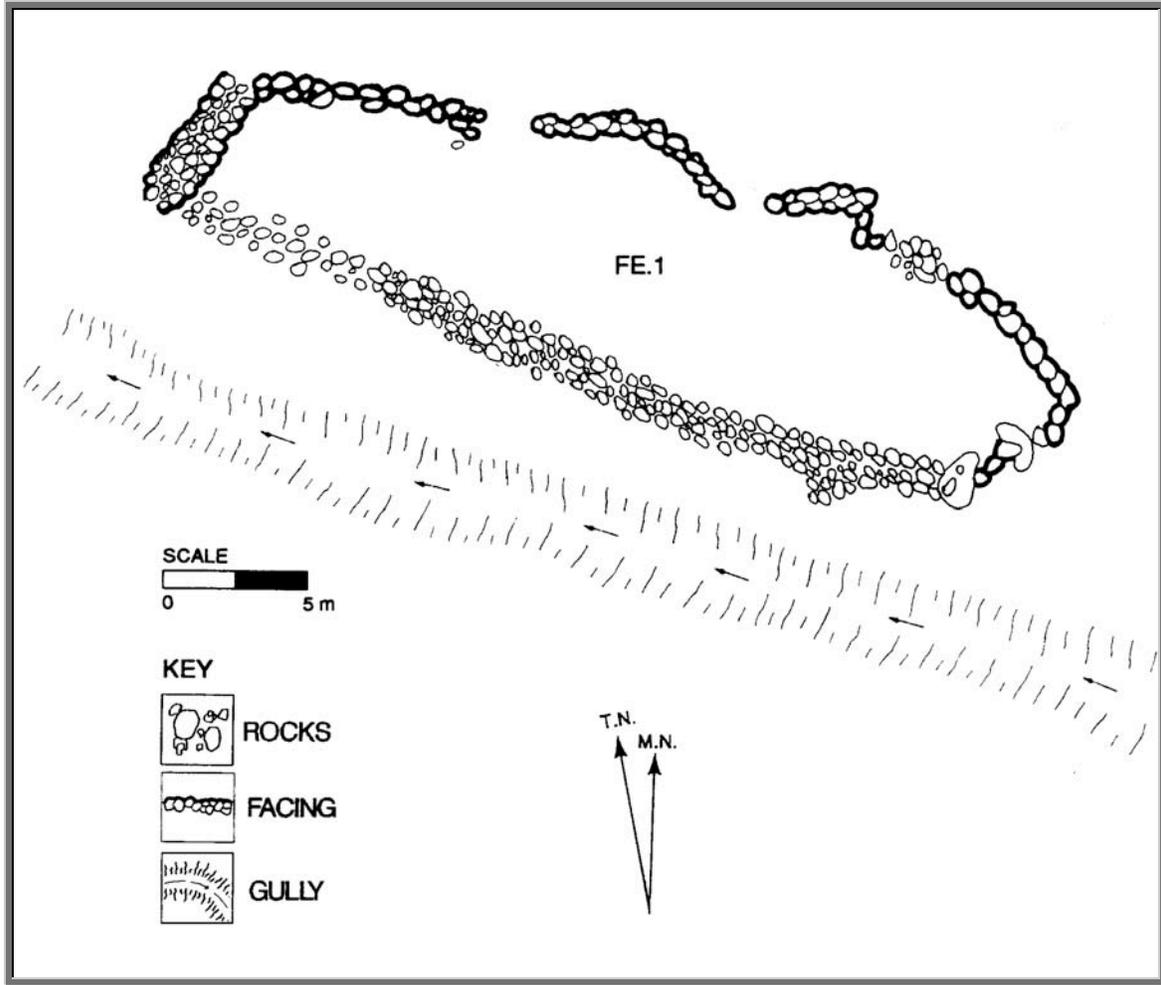
Site 765, Features 1, 3, and 4. Lā'au Point modified outcrop and markers. From Dixon and Major 1993.



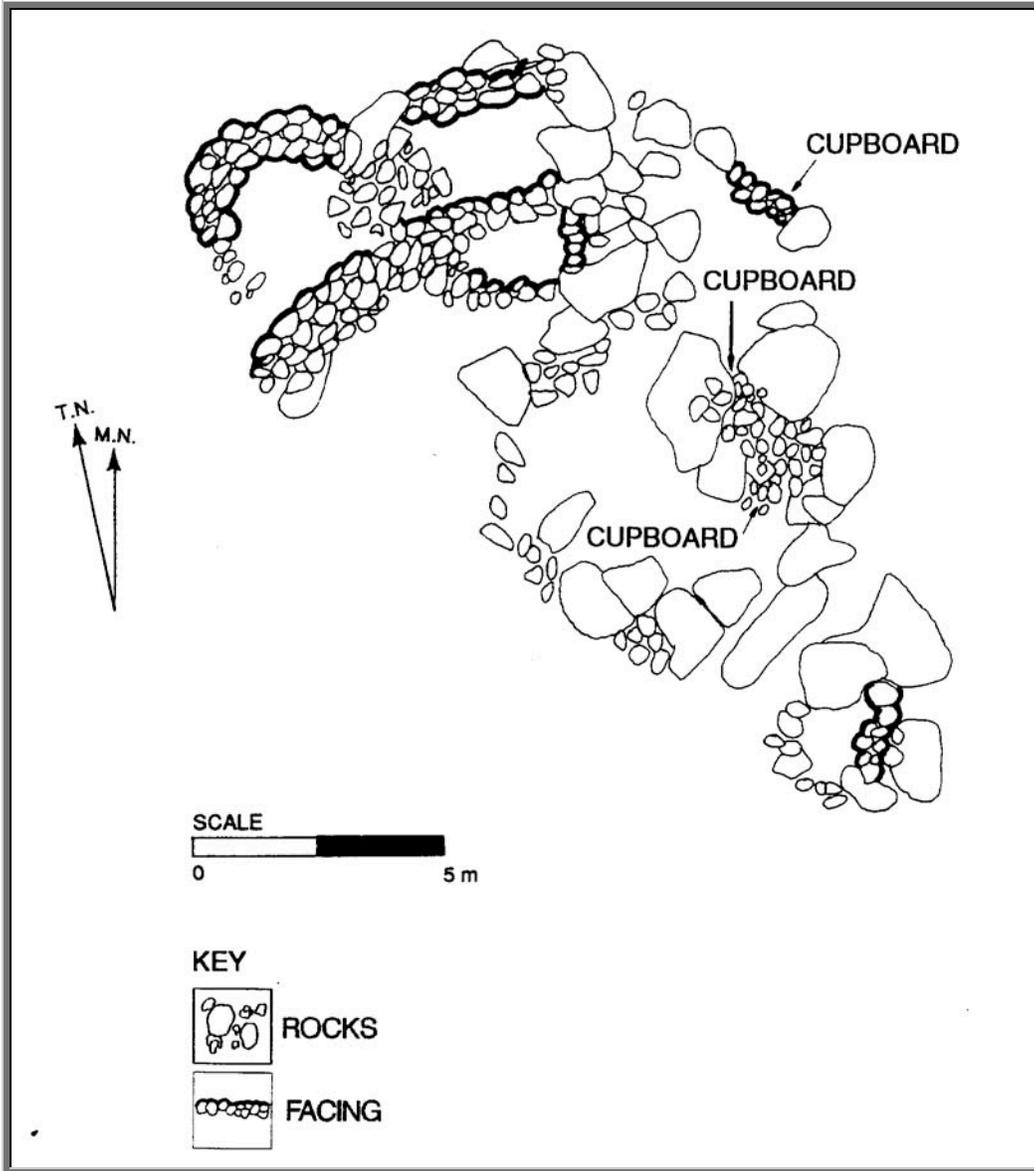
Site 771. Large multi-room enclosure. Upland Kamāka'ipō South. From Dixon and Major 1993.
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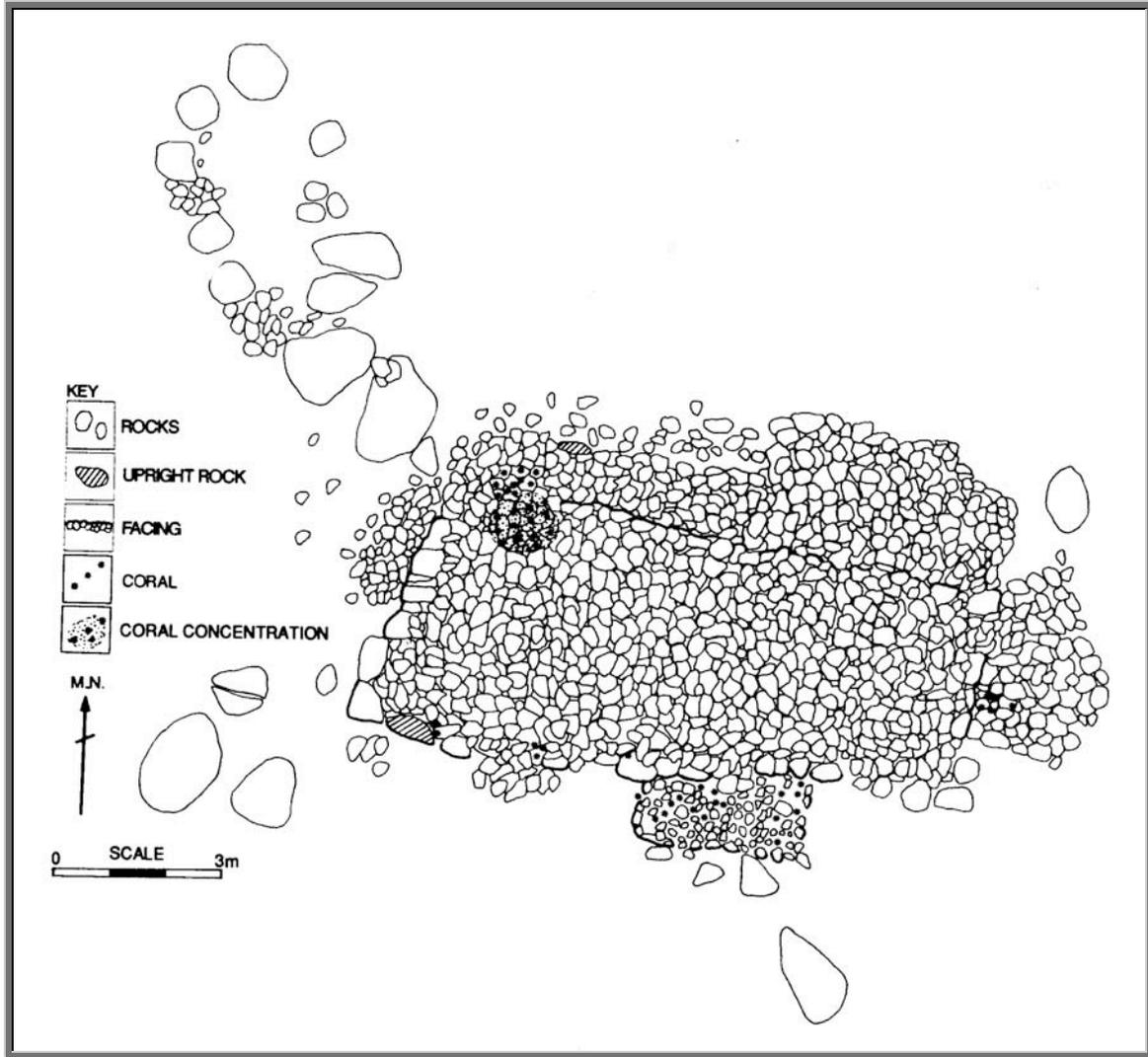
Site 772. Large multi-room enclosure. Upland Kamāka'ipō South. From Dixon and Major 1993.



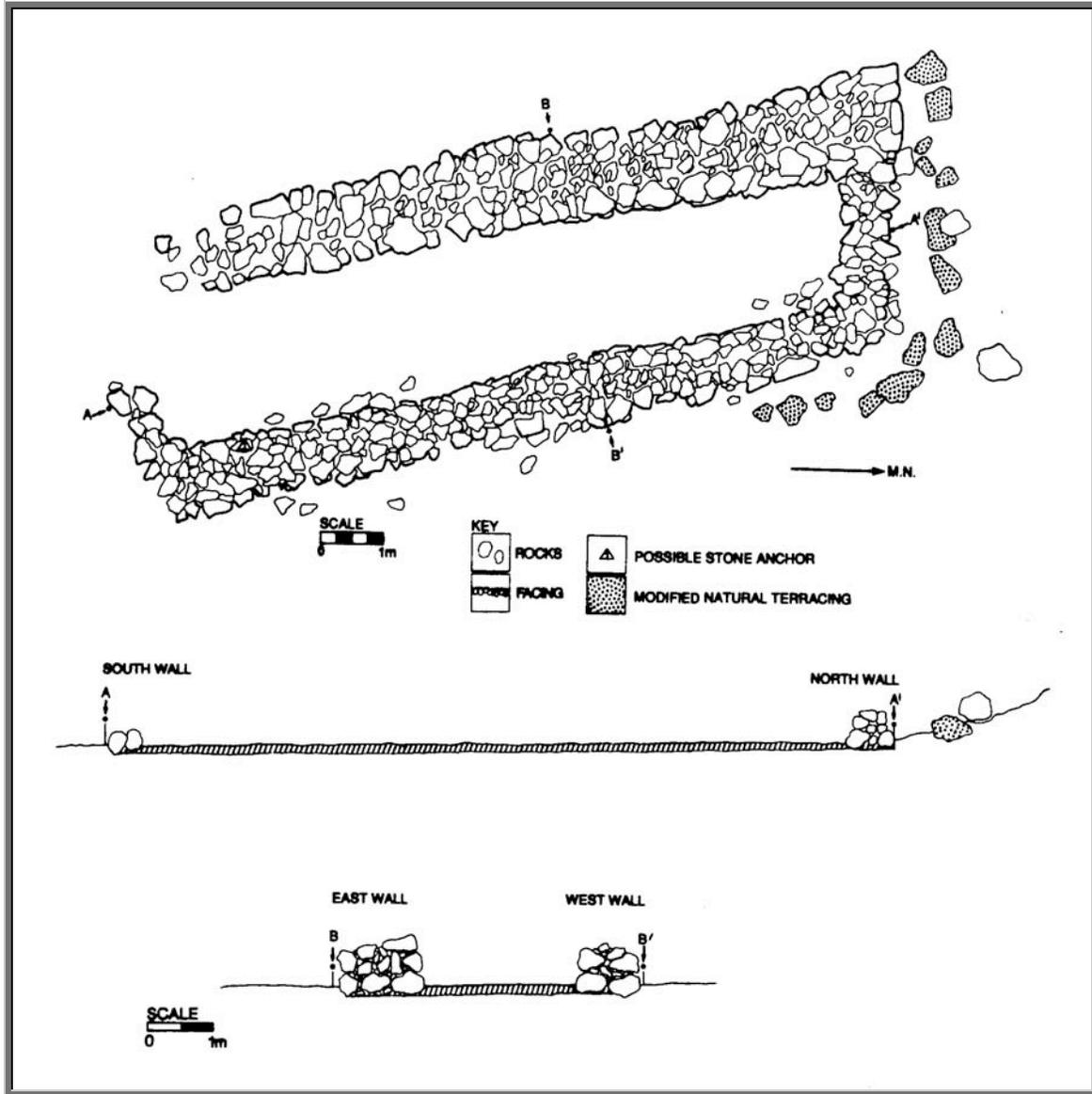
Site 773. Large single-room enclosure. Upland Kamāka'ipō South. From Dixon and Major 1993.



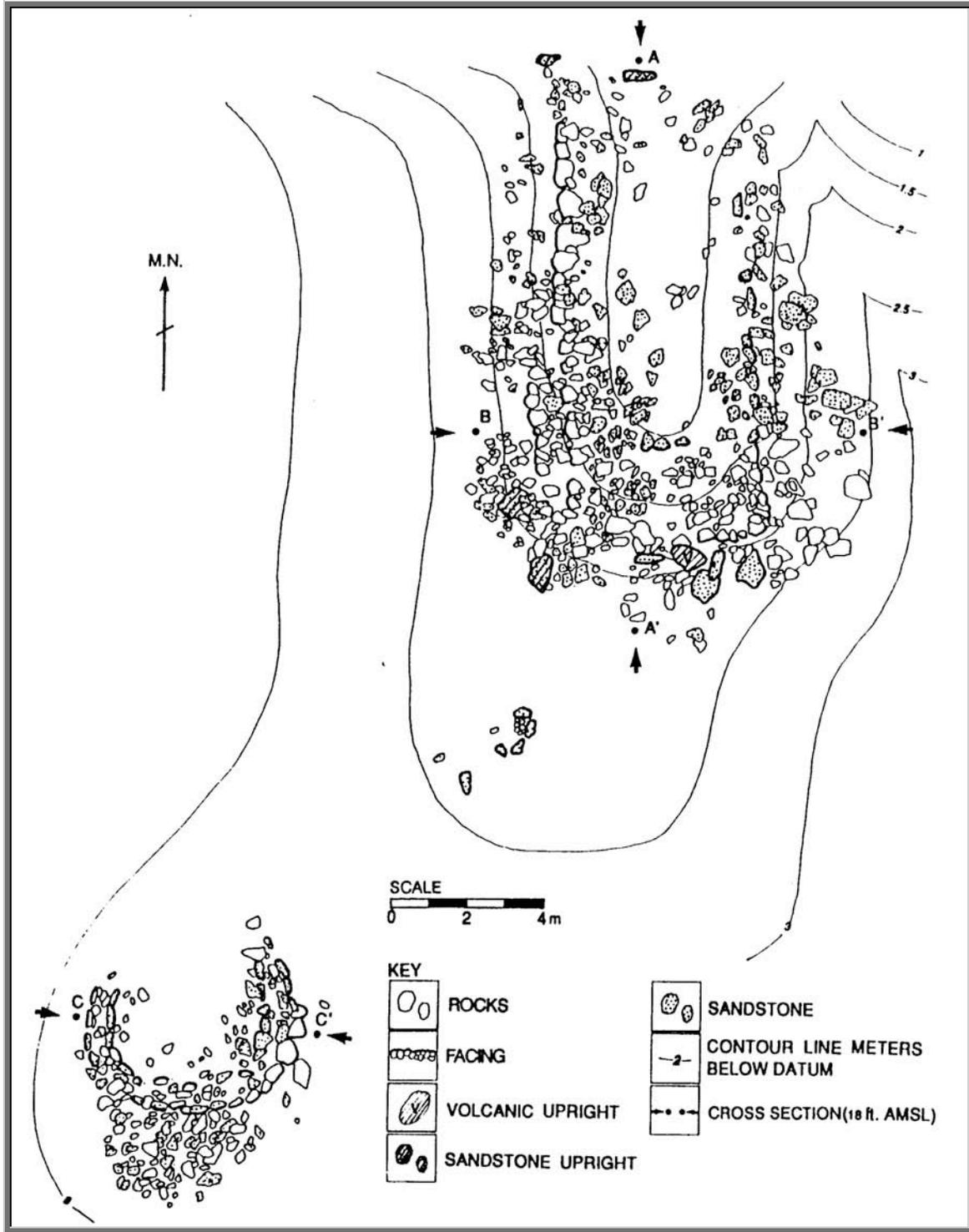
Site 775. Large multi-room enclosure. Upland Kamākaʻipō South. From Dixon and Major 1993.



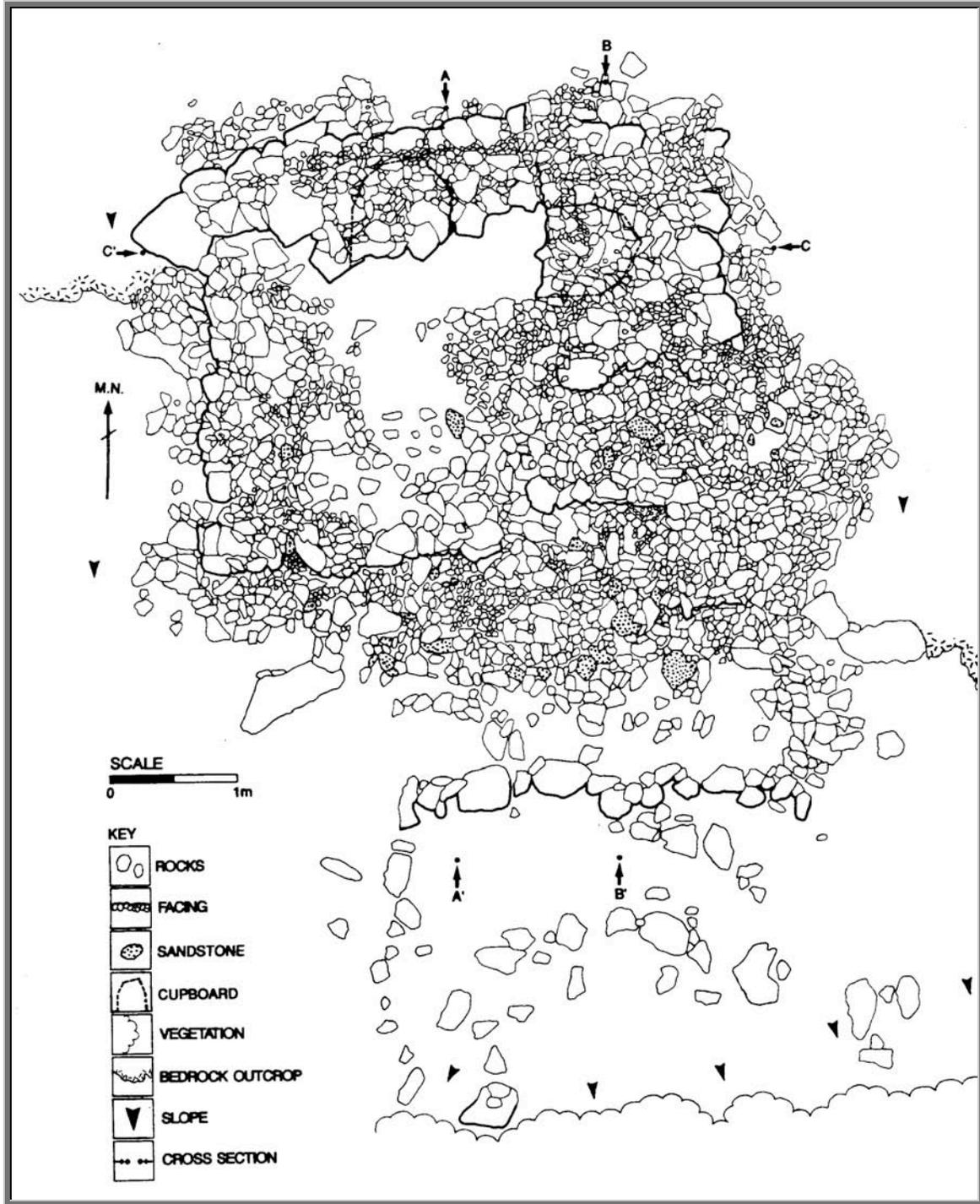
Site 1101. South shore platform ko'a. From Dixon and Major 1993.



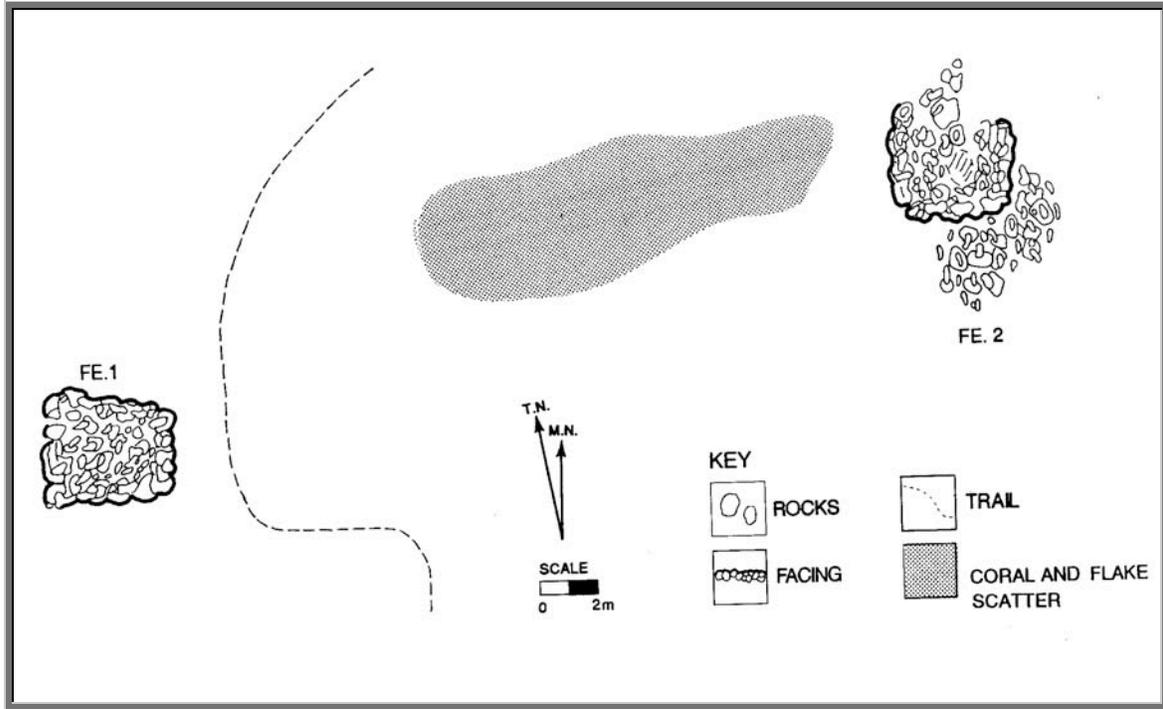
Site 1103. Coastal Pu'u Hakina canoe shed. From Dixon and Major 1993.



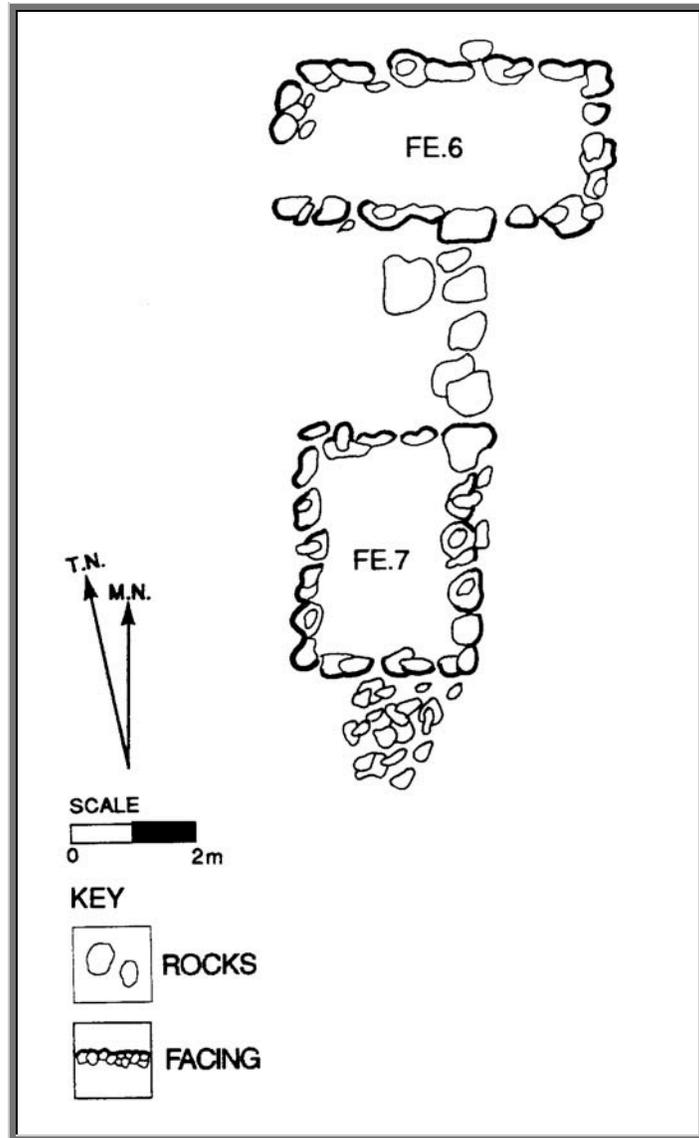
Site 1104. Kalalua Heiau at Coastal Pu'u Hakina. From Dixon and Major 1993.



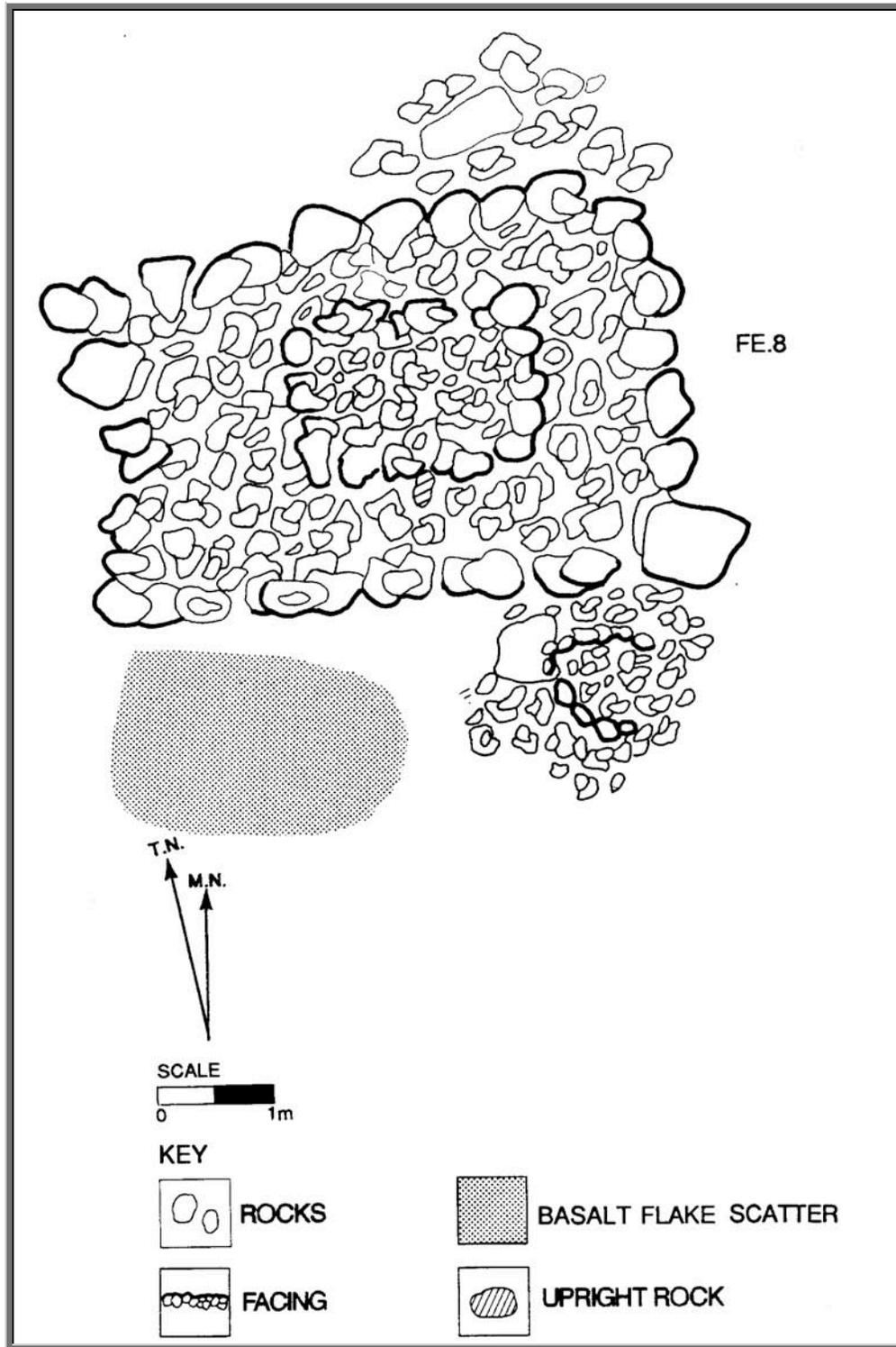
Site 1106. Coastal Pu'u Hakina heiau. From Dixon and Major 1993.



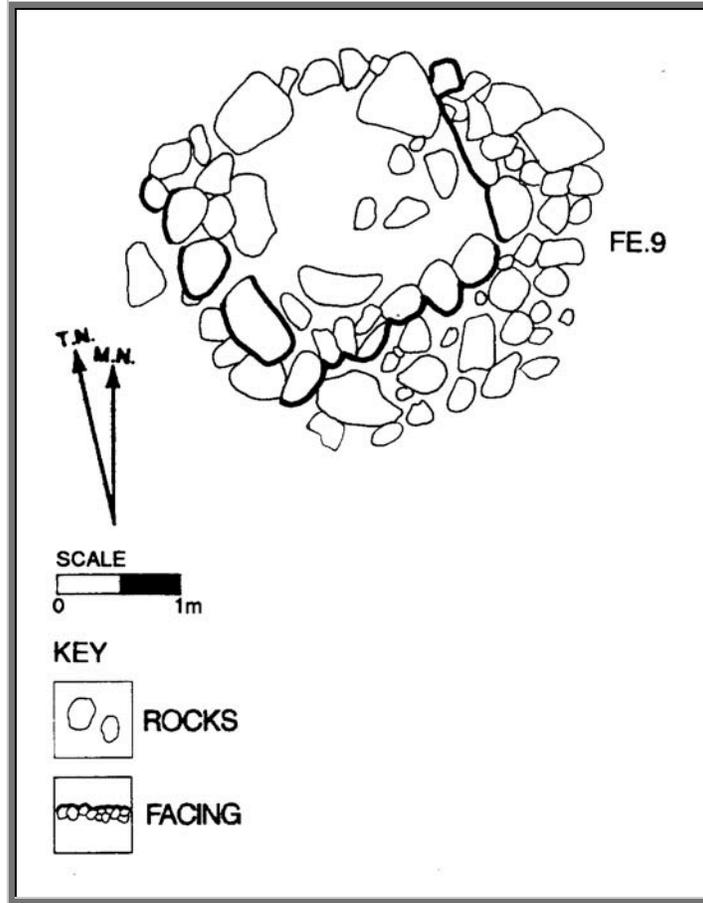
Site 1107, Features 1 and 2. Coastal Pu'u Hakina habitation complex. From Dixon and Major 1993.



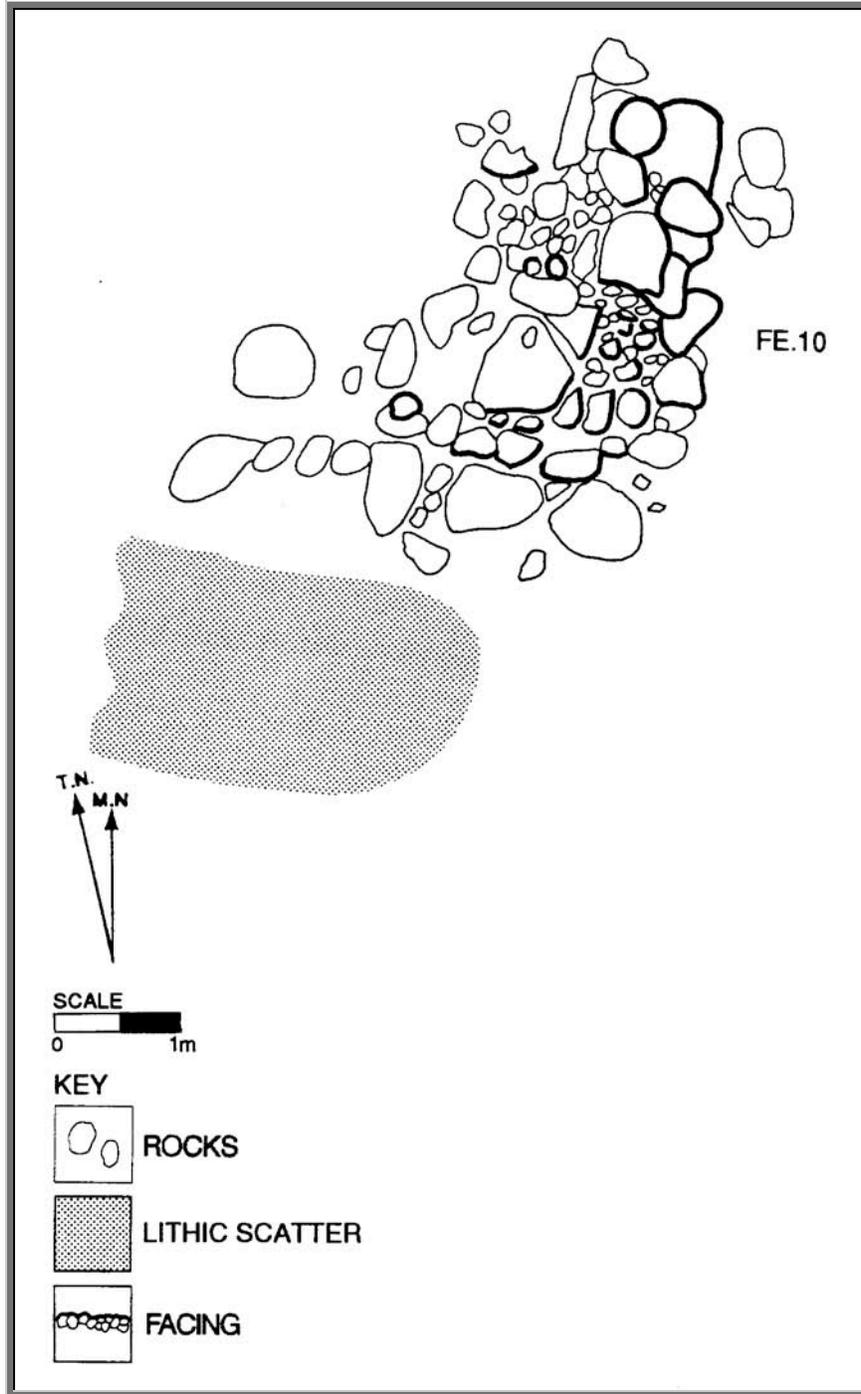
Site 1107, Feature 6 and 7 enclosures. Coastal Pu'u Hakina habitation complex. From Dixon and Major 1993.



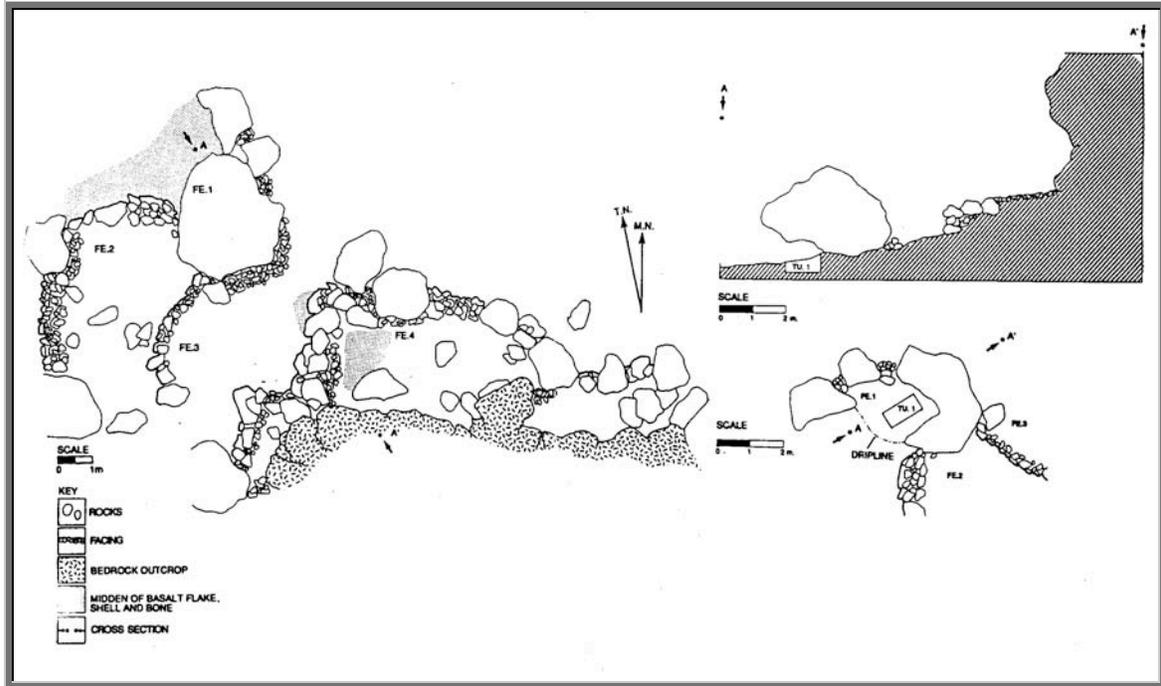
Site 1107, Feature 8 complex platform burial. Coastal Pu'u Hakina habitation complex. From Dixon and Major 1993.



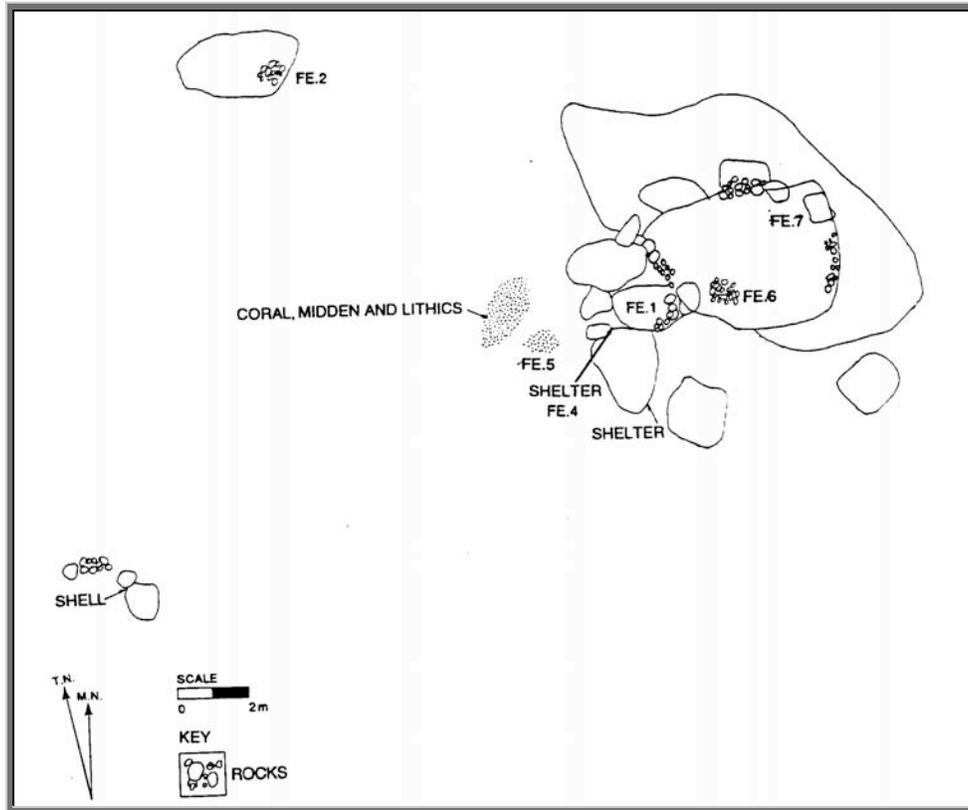
Site 1107, Feature 9 enclosure. Coastal Pu'u Hakina habitation complex. From Dixon and Major 1993.



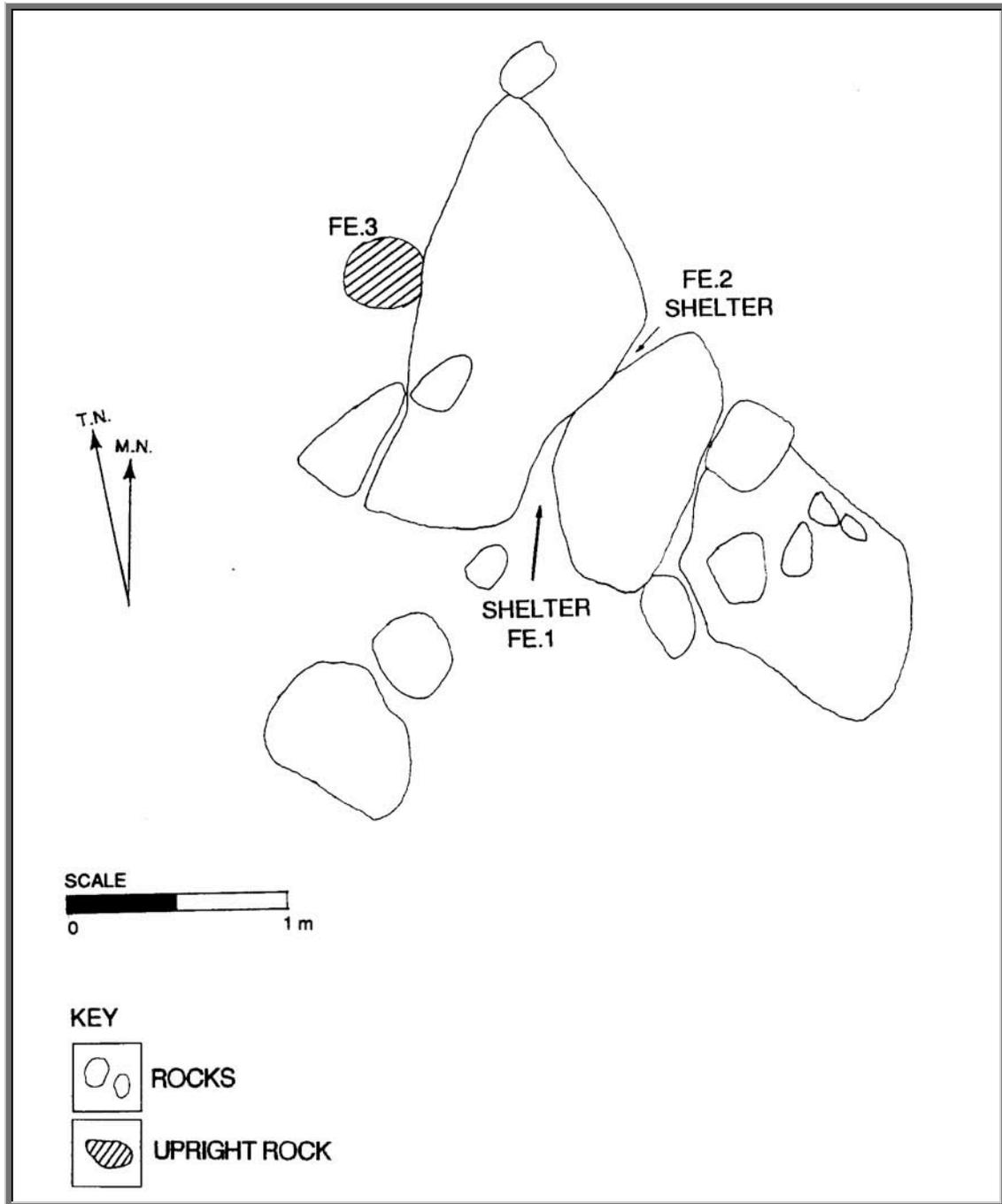
Site 1107, Feature 10 mound (possible burial. Coastal Pu'u Hakina habitation complex. From Dixon and Major 1993.



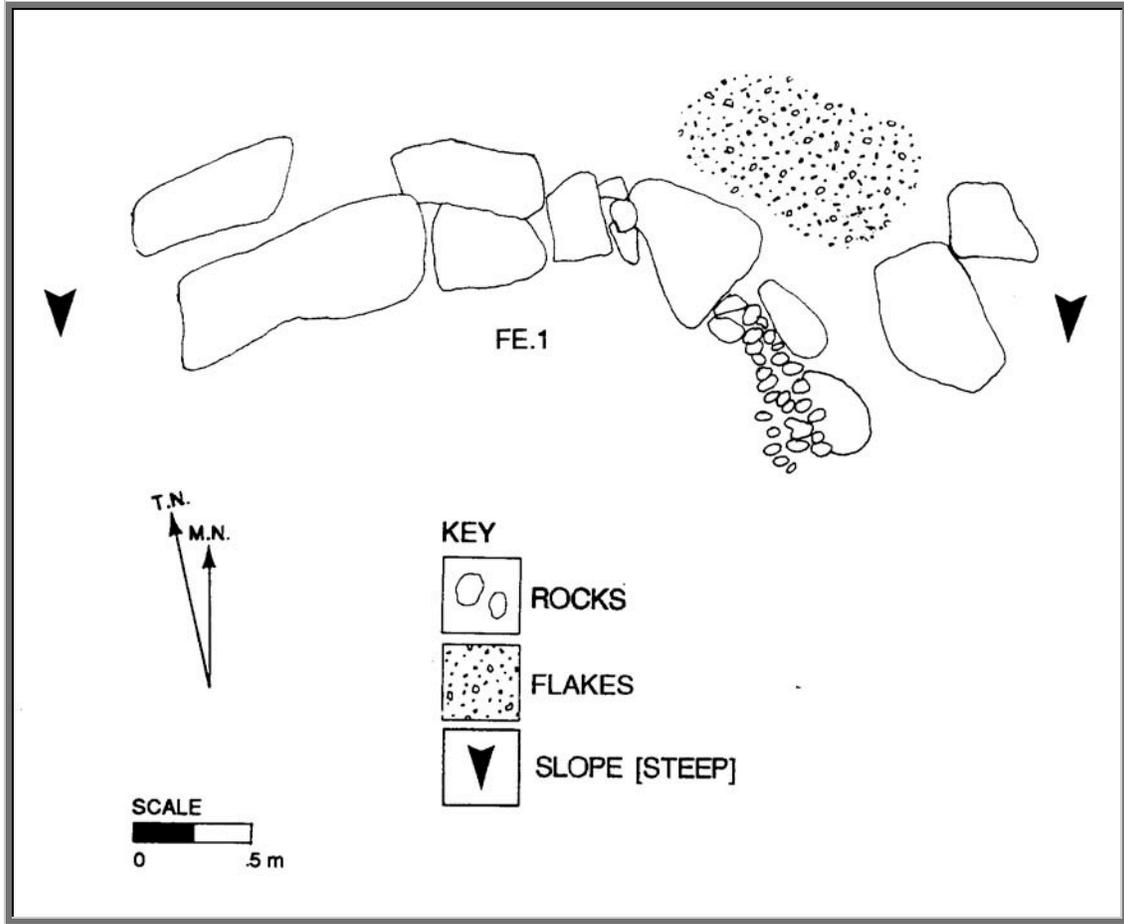
Site 1112. Lā'au Point Modified Outcrops and Overhang shelters. From Dixon and Major 1993.



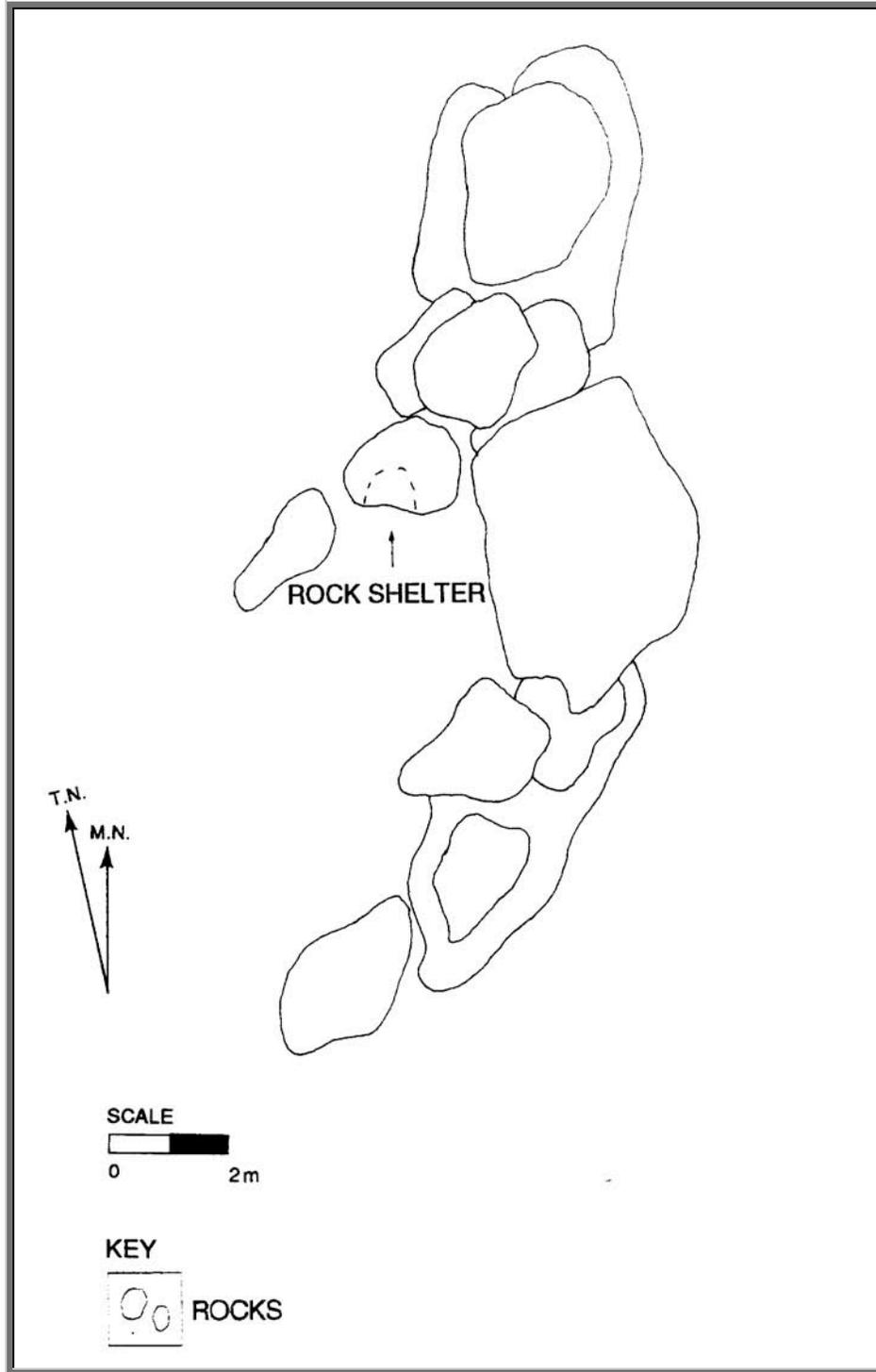
Site 1119. Lā'au Point Modified Outcrops and Overhang shelters. From Dixon and Major 1993.



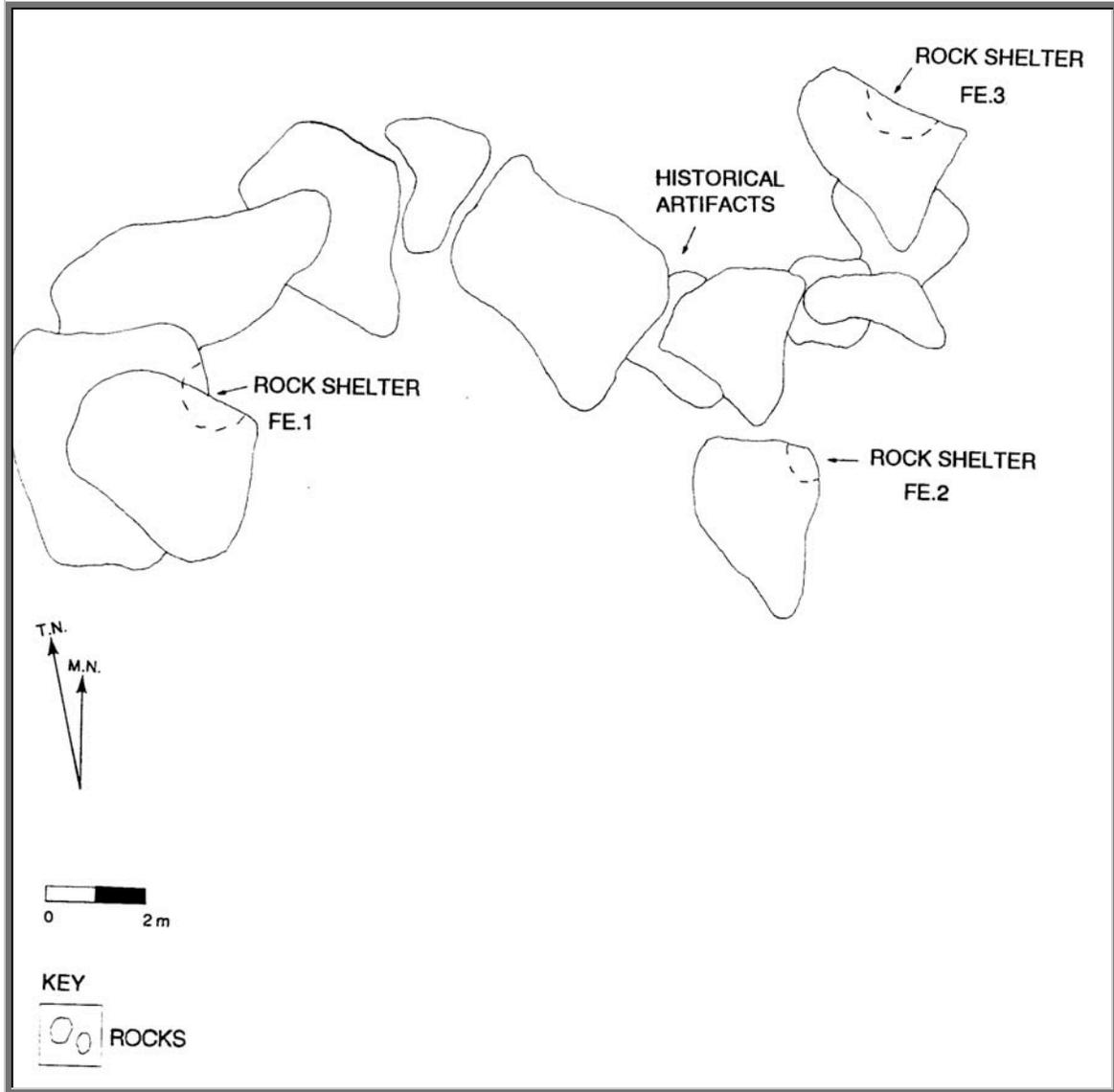
Site 1120. Lā'au Point Modified Outcrops and Overhang shelters. From Dixon and Major 1993.



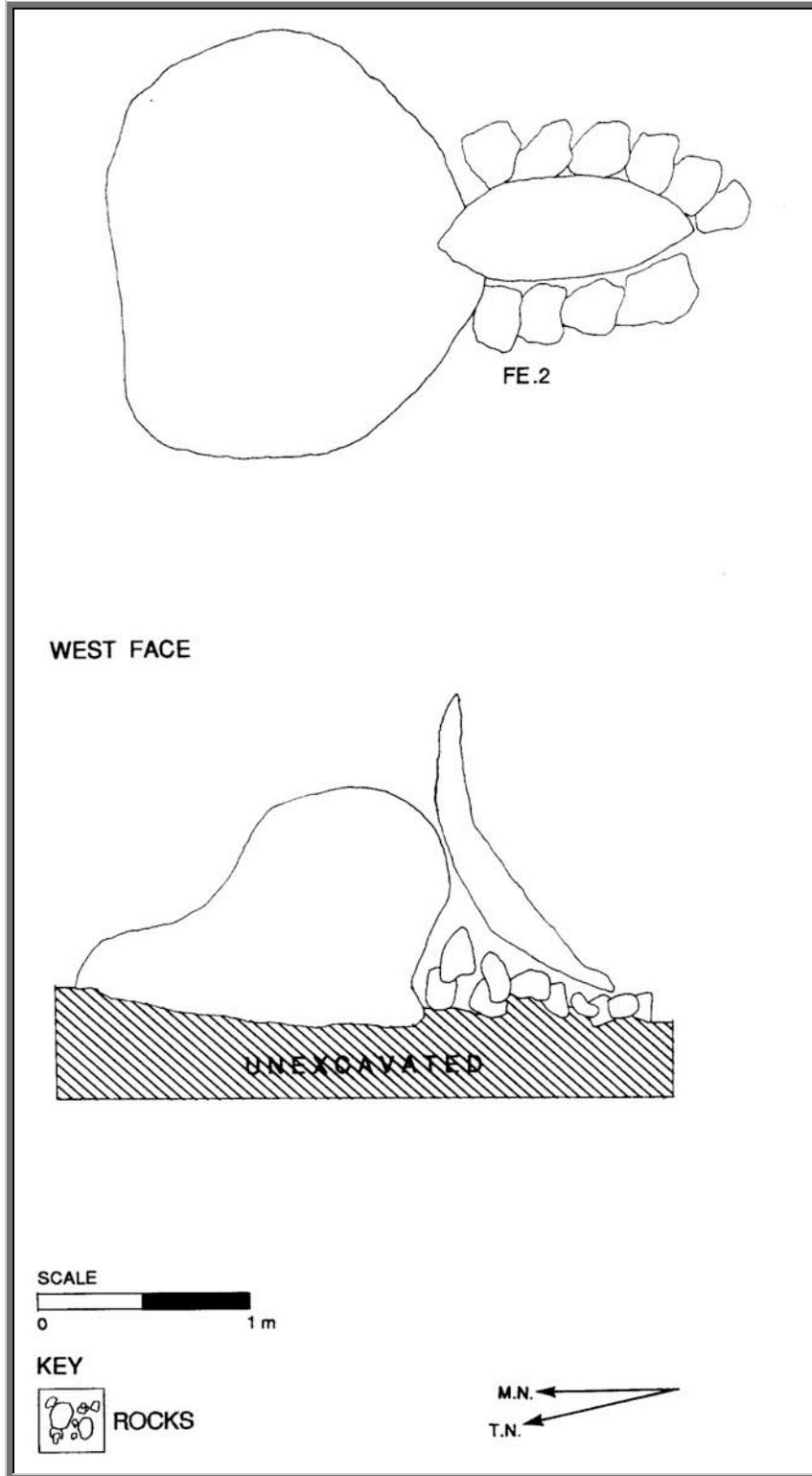
Site 1122. Coastal Keawakalani Lithic work area. From Dixon and Major 1993.



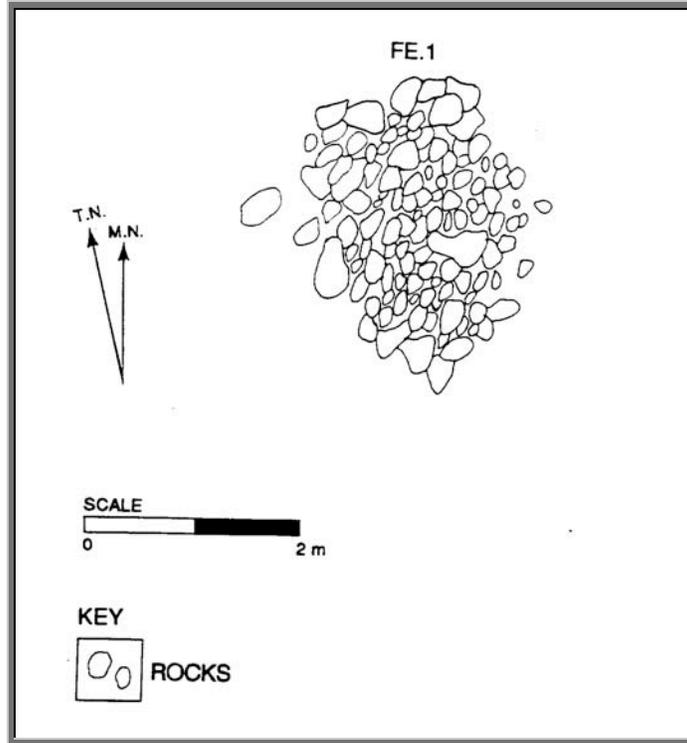
Site 1125. Coastal Keawakalani. Overhang shelter. From Dixon and Major 1993.



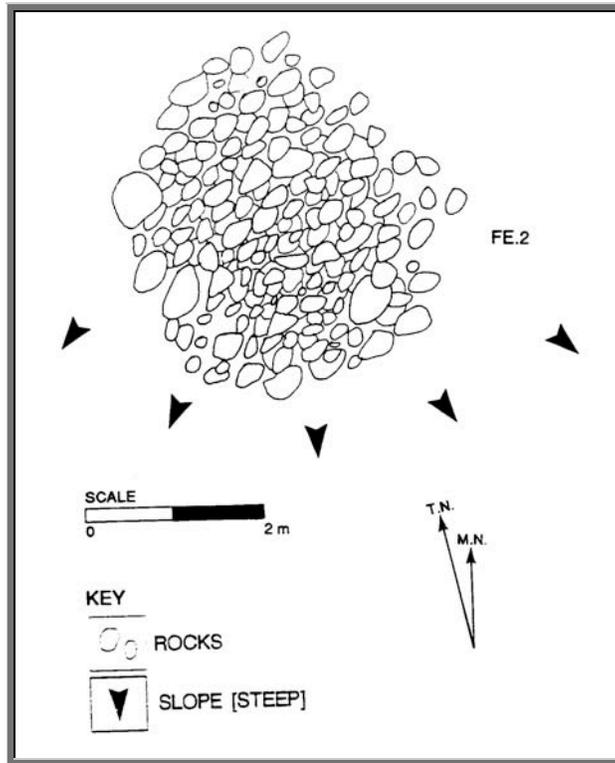
Site 1126. Coastal Keawakalani. Overhang shelters. From Dixon and Major 1993.



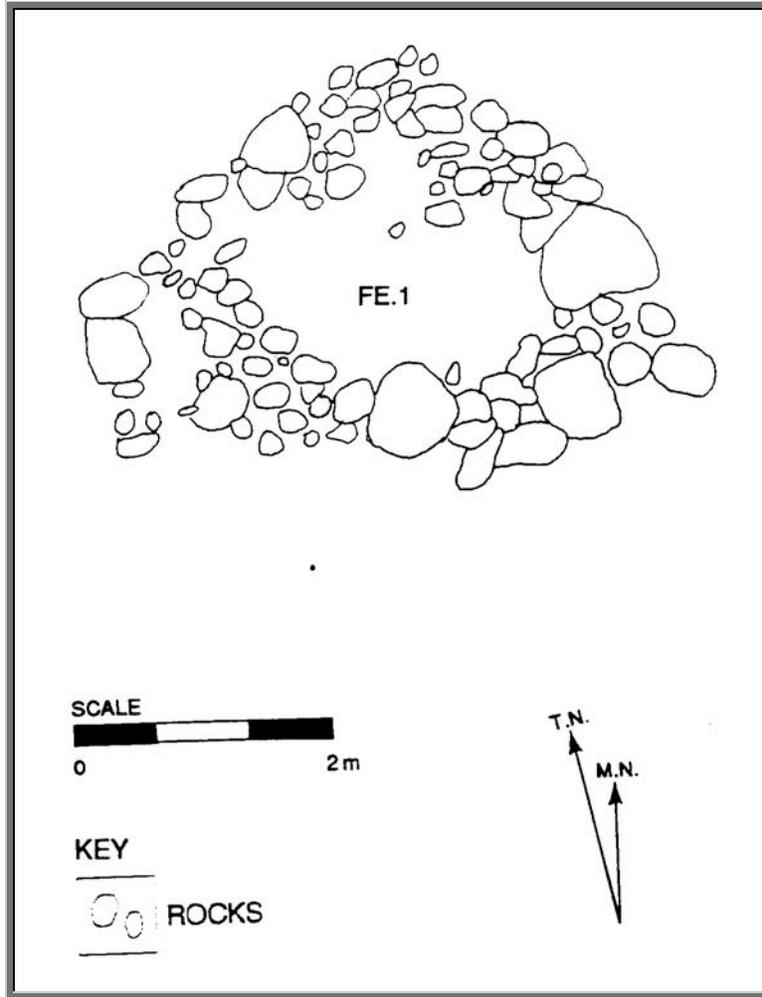
Site 1127, Feature 2. Mauka Pookohola. Possible birthing feature. From Dixon and Major 1993.



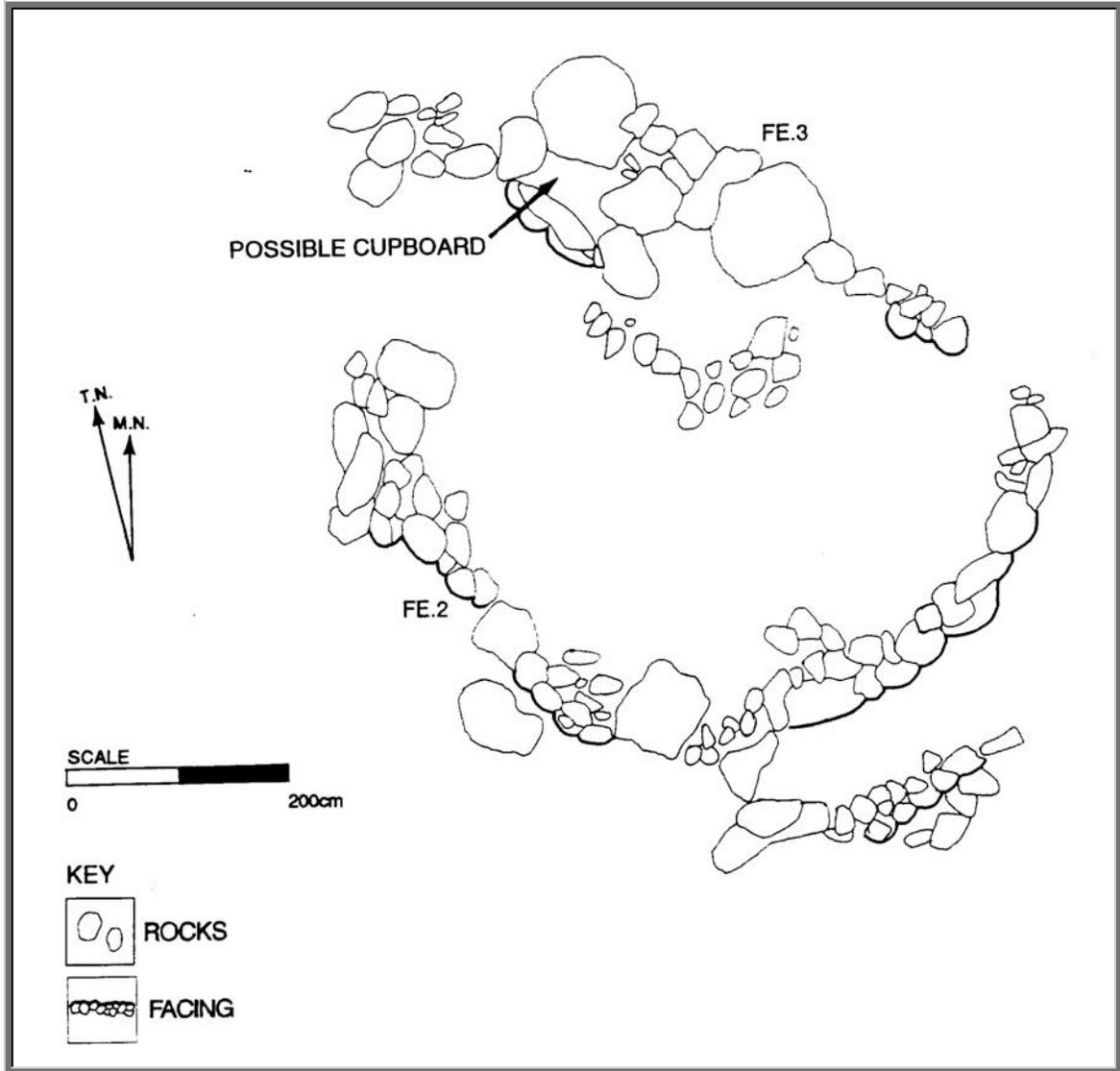
Site 1143. Possible burial mound. Pu'u Hakina. From Dixon and Major 1993.



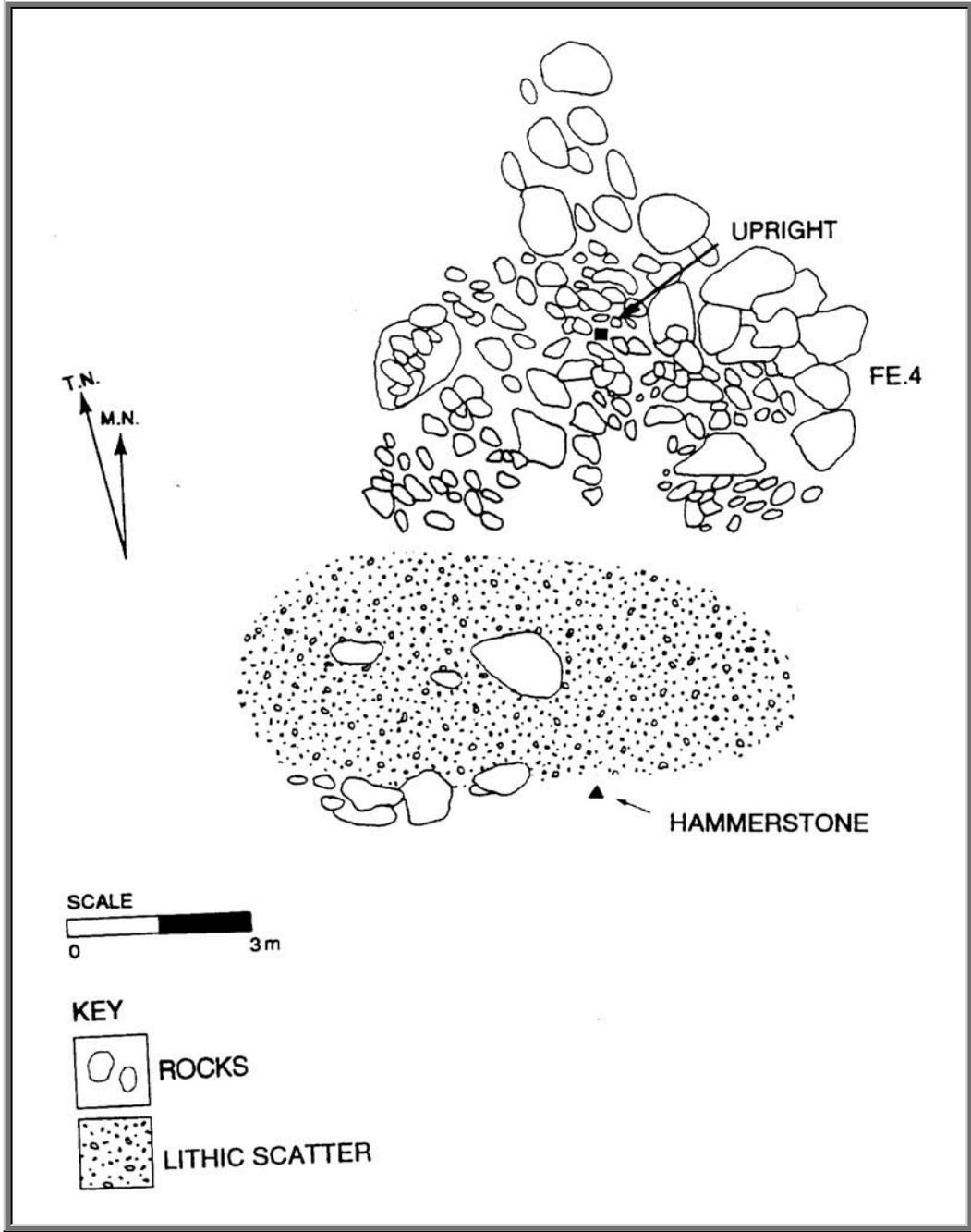
Site 1144. Possible burial mound. Pu'u Hakina. From Dixon and Major 1993.



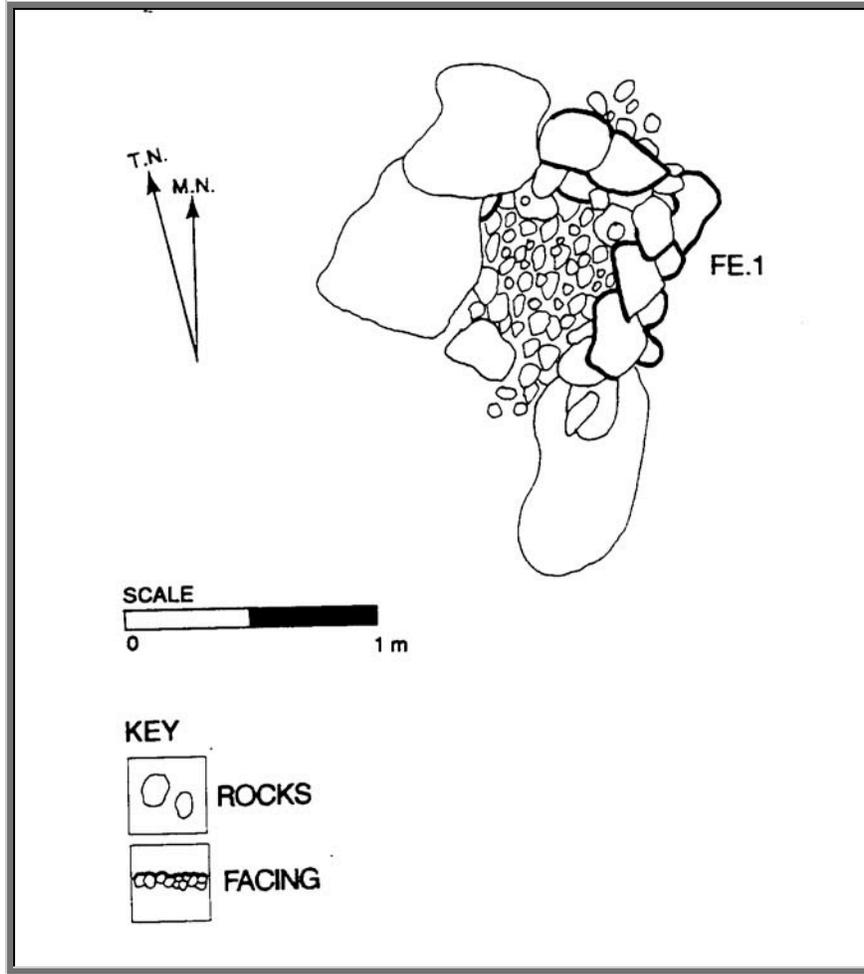
Site 1147, Feature 1. Coastal enclosure west of Hakina Gulch. From Dixon and Major 1993.



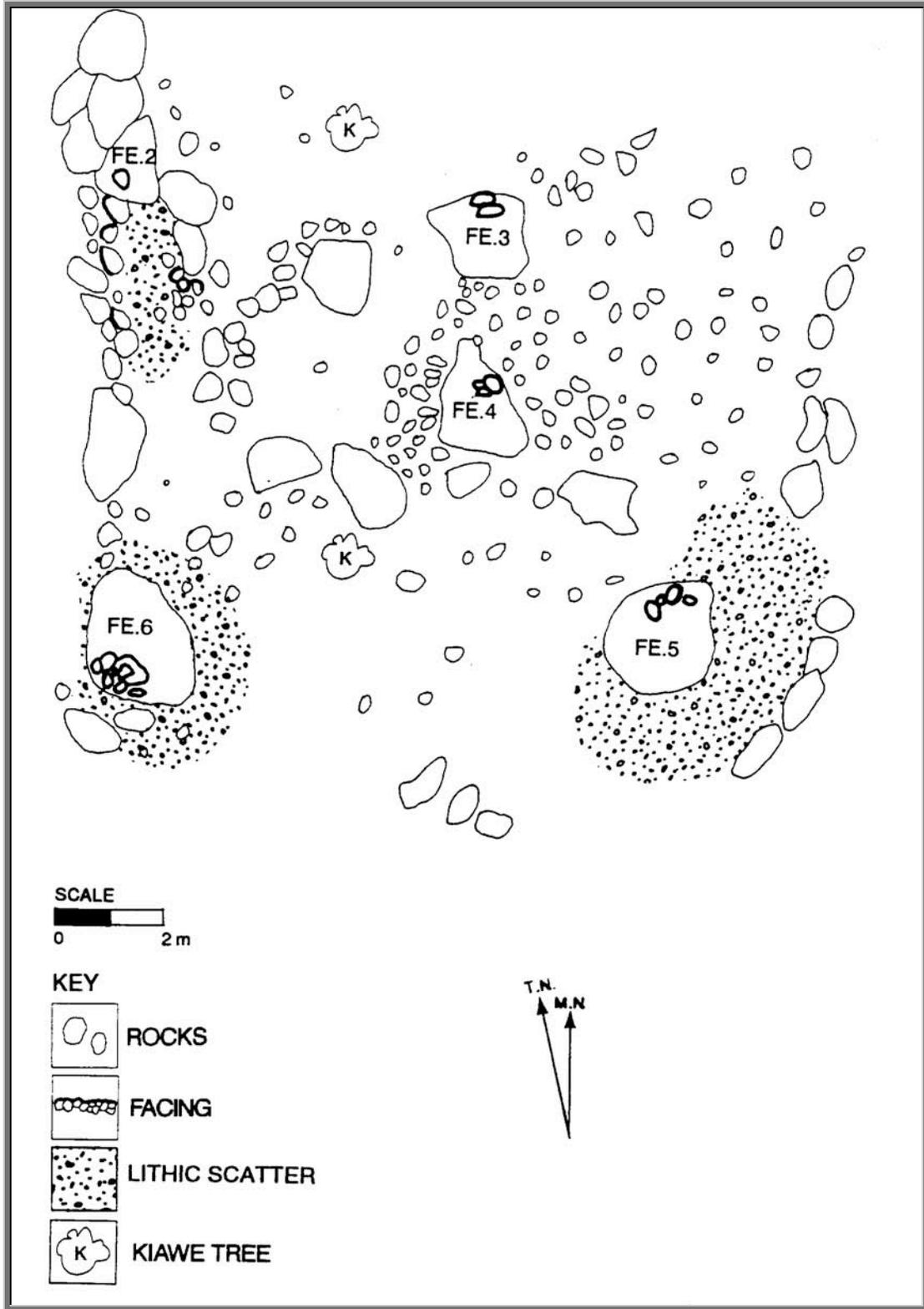
Site 1147, Feature 3. Coastal terrace and cupboard west of Hakina Gulch. From Dixon and Major 1993.



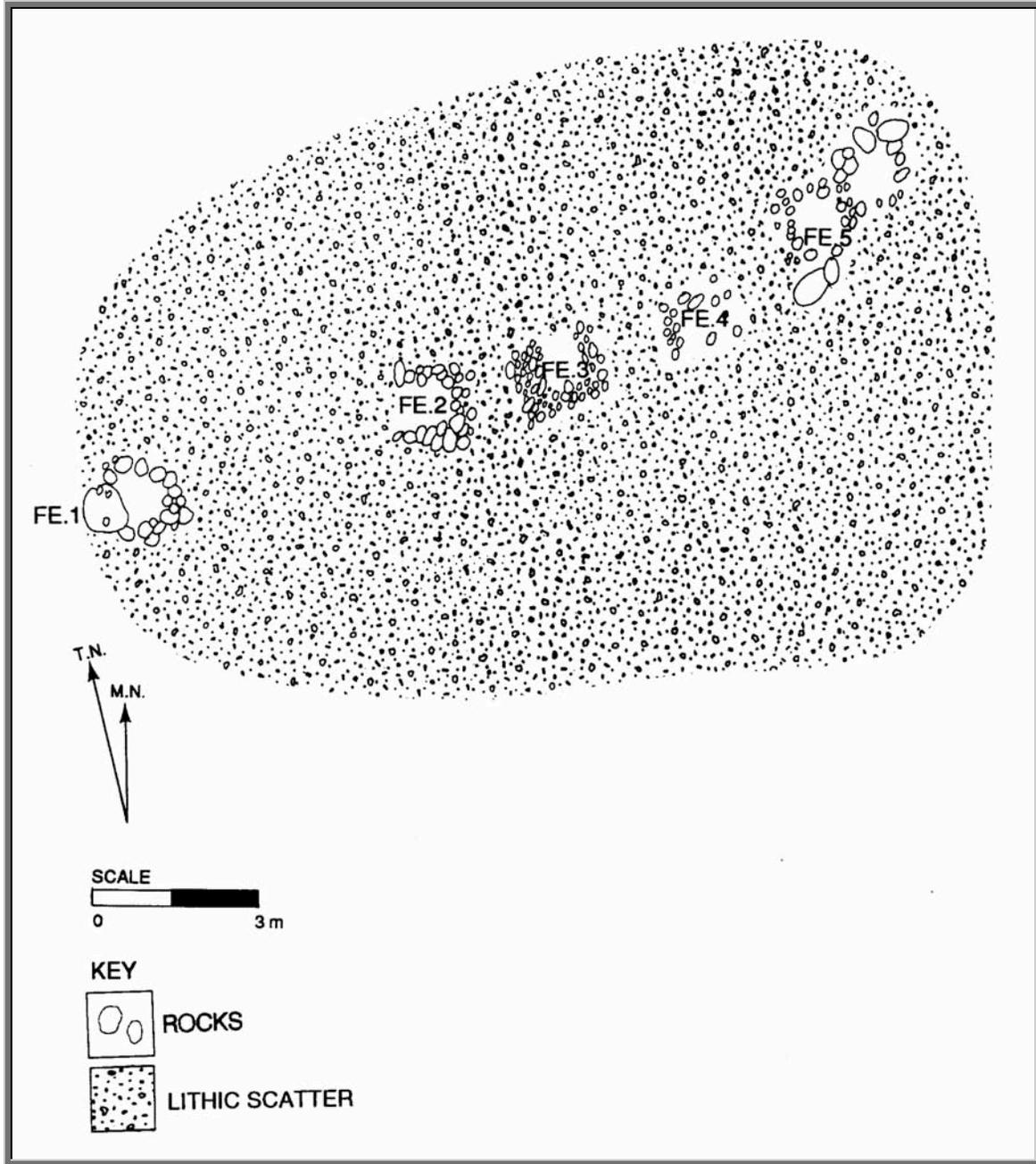
Site 1147, Feature 4. Coastal mound (possible shrine or burial) and lithic work area west of Hakina Gulch. From Dixon and Major 1993.



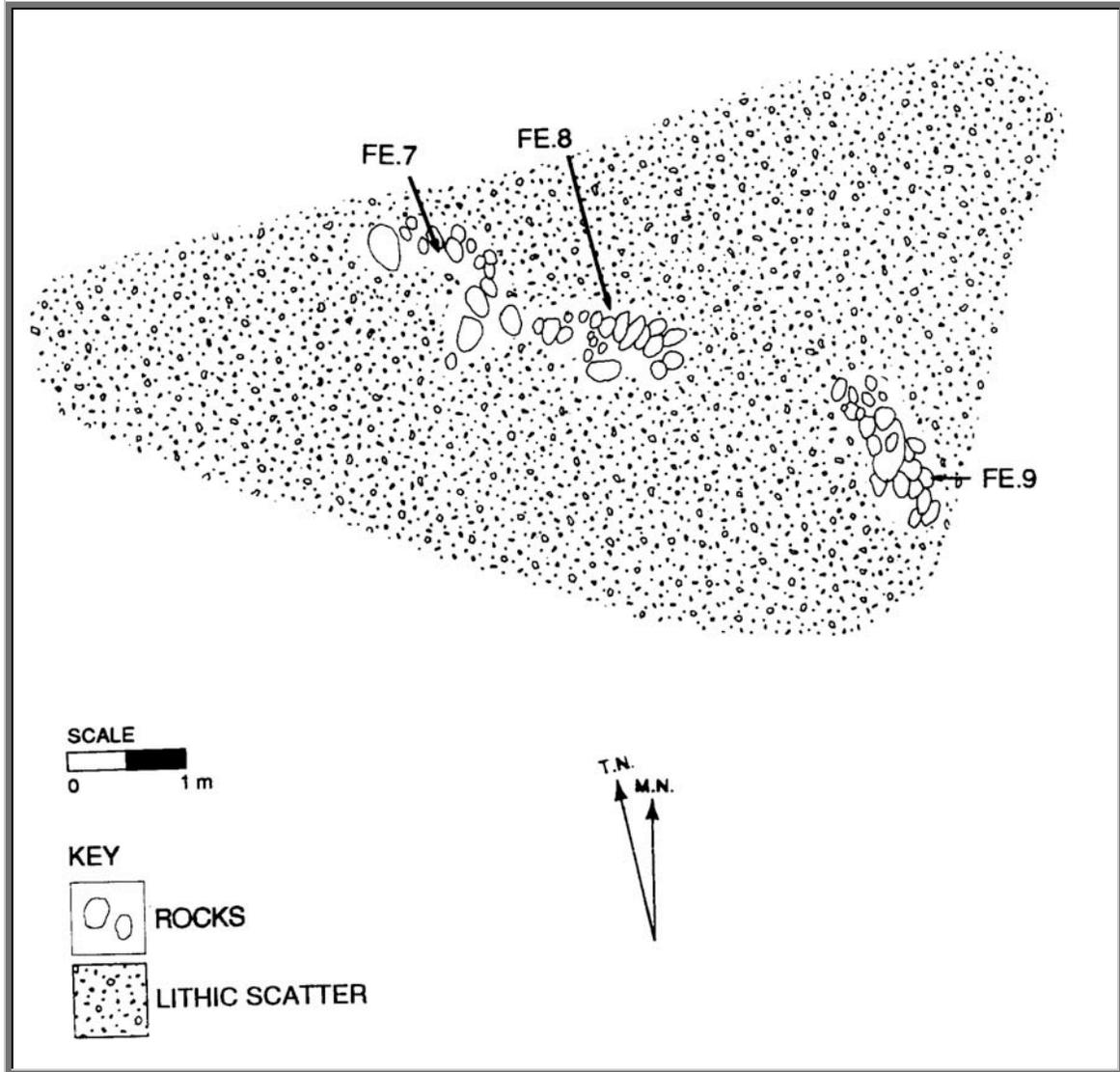
Site 1150, Feature 1. Ko'a shrine west of Hakina Gulch. From Dixon and Major 1993.



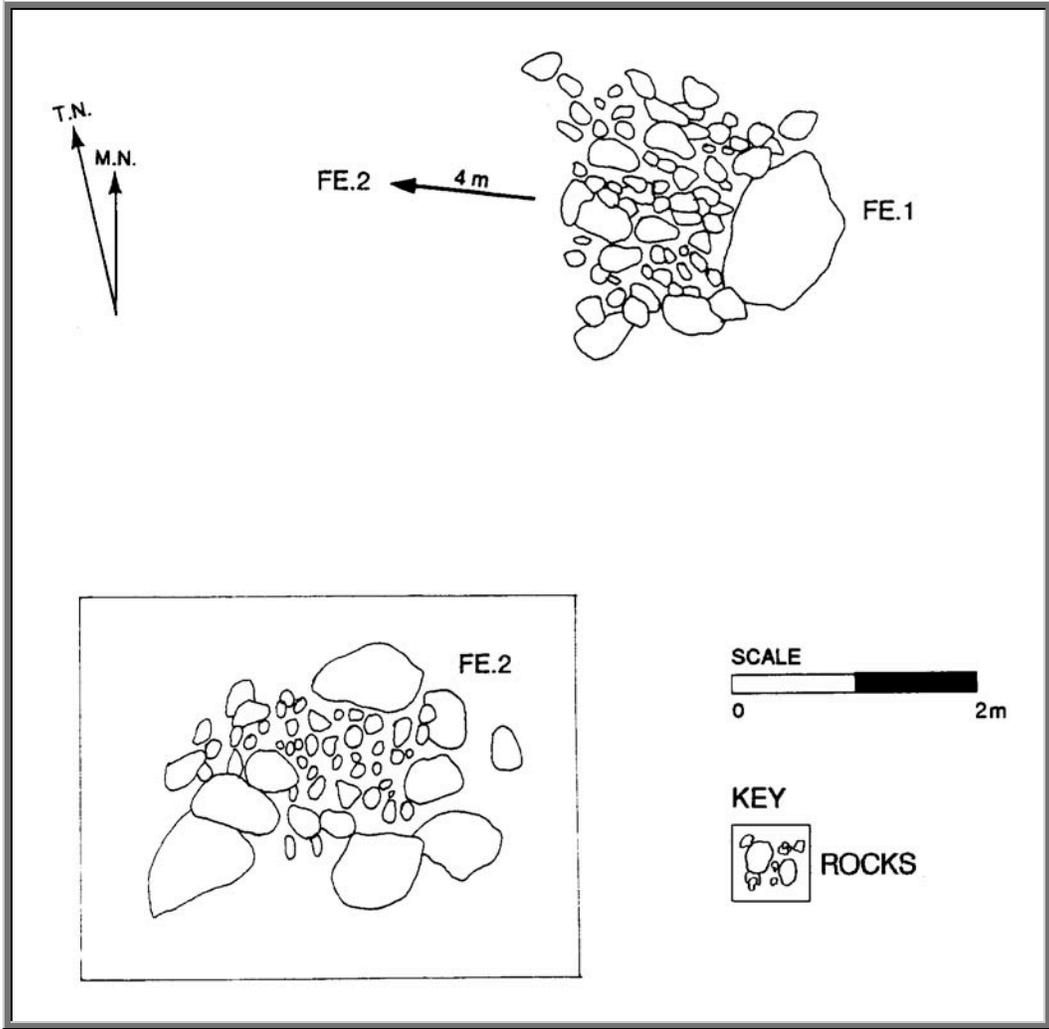
Site 1150, Features 2 – 6. Cairns and lithic work area west of Hakina Gulch. From Dixon and Major 1993.



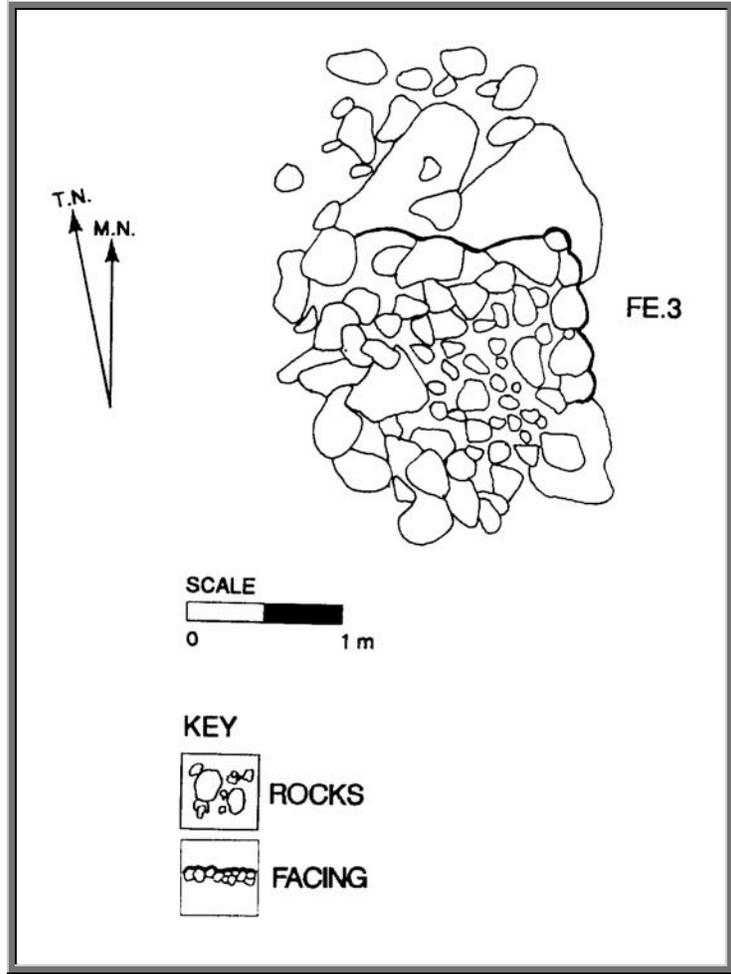
Site 1151, Features 1–6. Coastal ridge lithic work area at Pu'u Hakina. From Dixon and Major 1993.



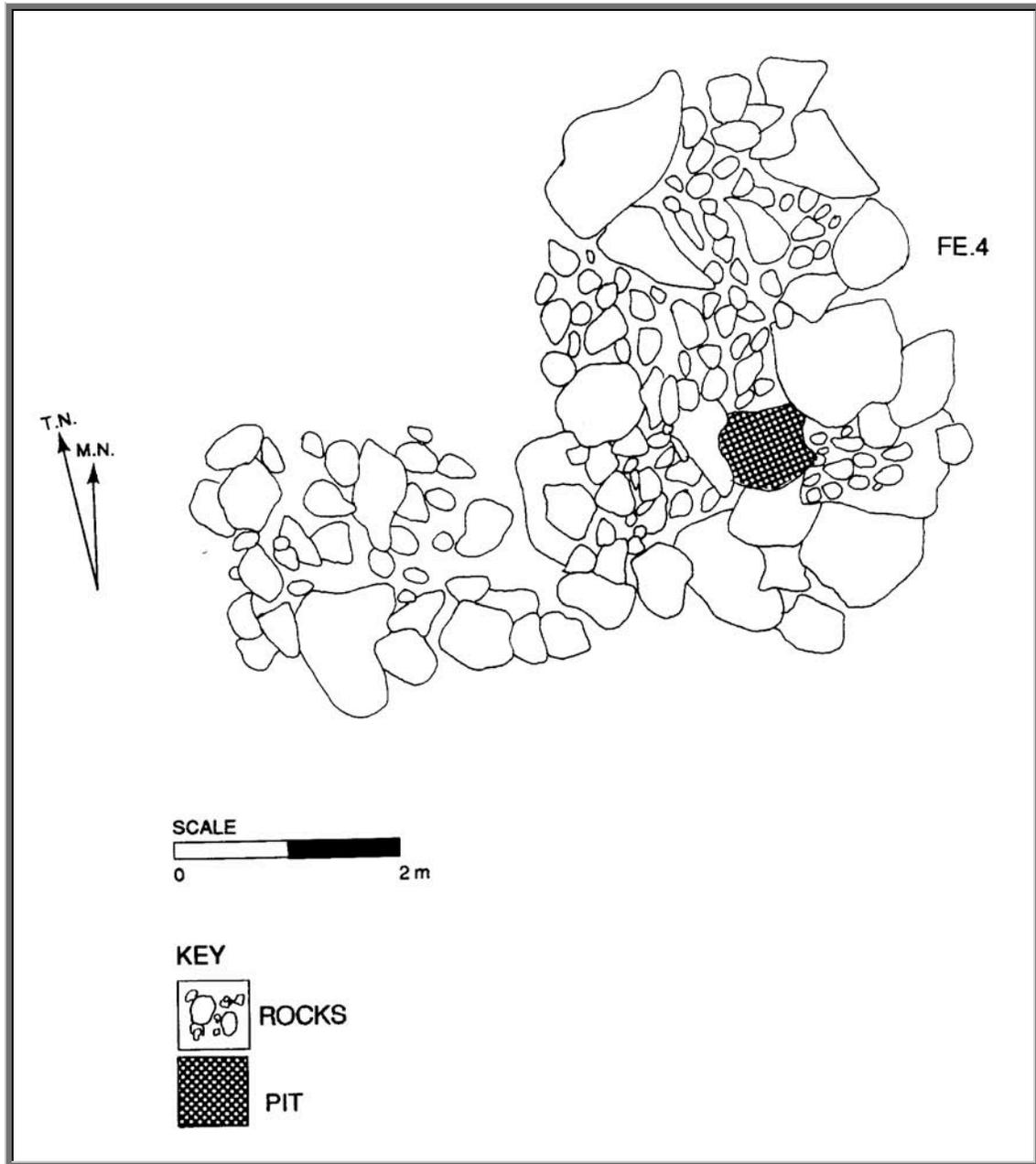
Site 1151, Features 7-9. Coastal ridge lithic work area at Pu'u Hakina. From Dixon and Major 1993.



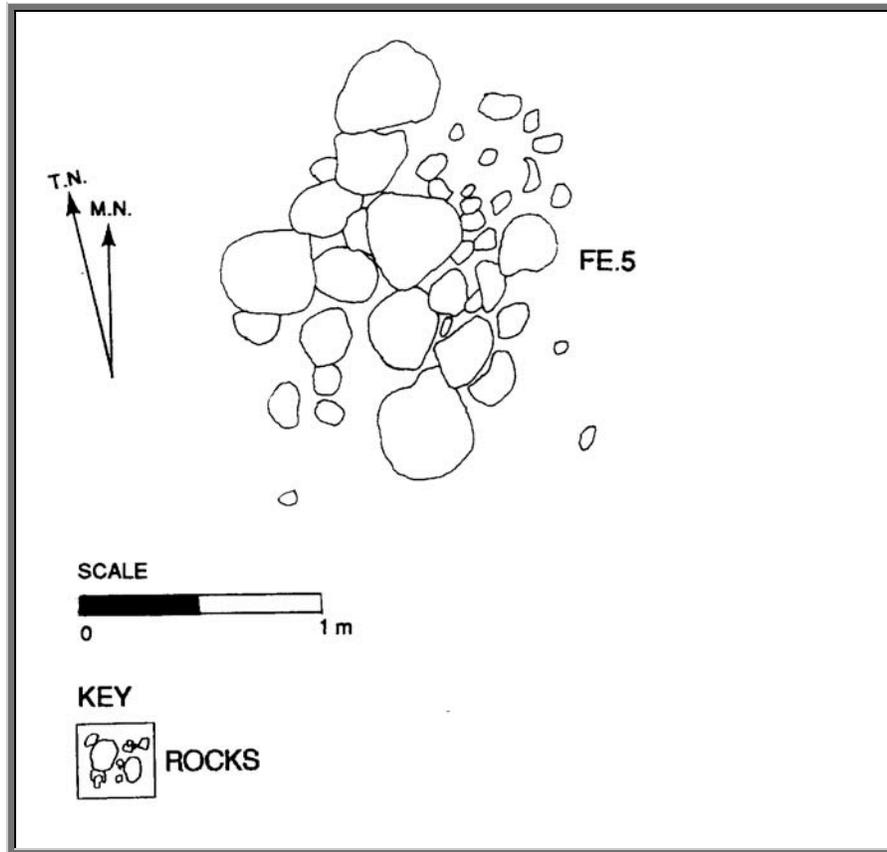
Site 1152, Features 1–2. Possible burial mounds, coastal Pu'u Hakina. From Dixon and Major 1993.



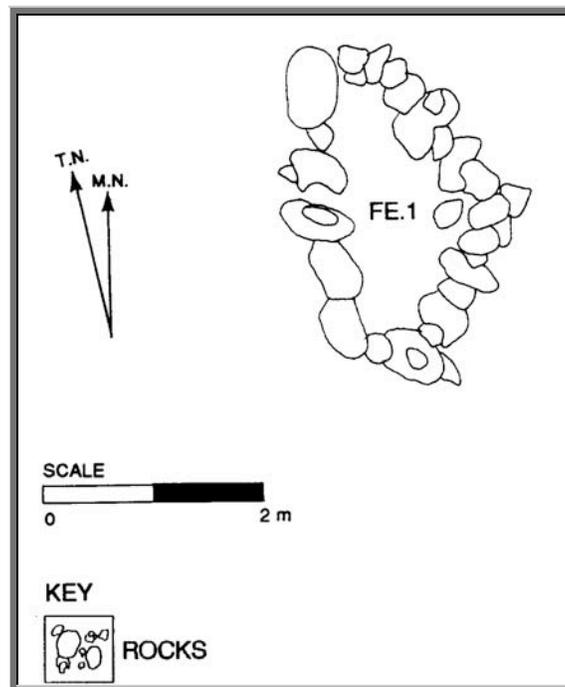
Site 1152, Feature 3. Coastal ridge platform burial at Pu'u Hakina. From Dixon and Major 1993.



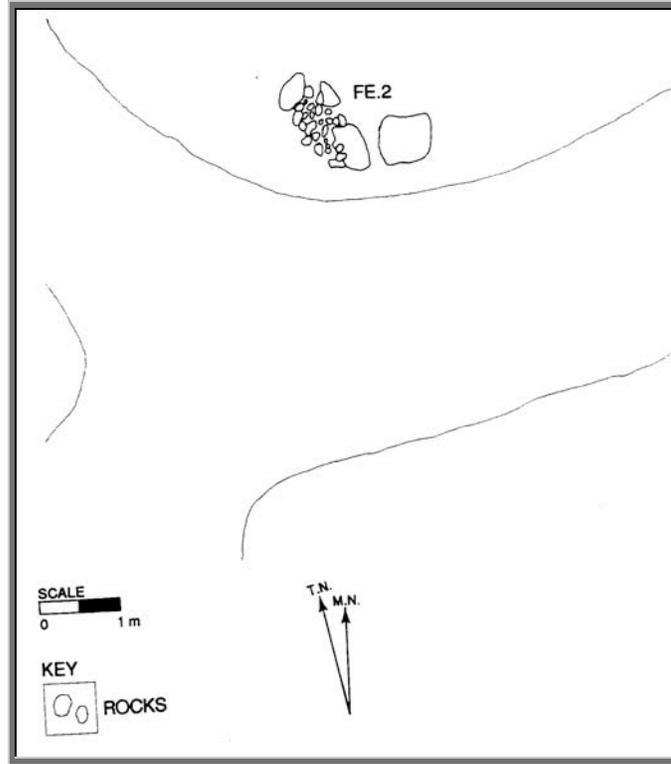
Site 1152, Feature 4. Coastal ridge ko'a at Pu'u Hakina. From Dixon and Major 1993.



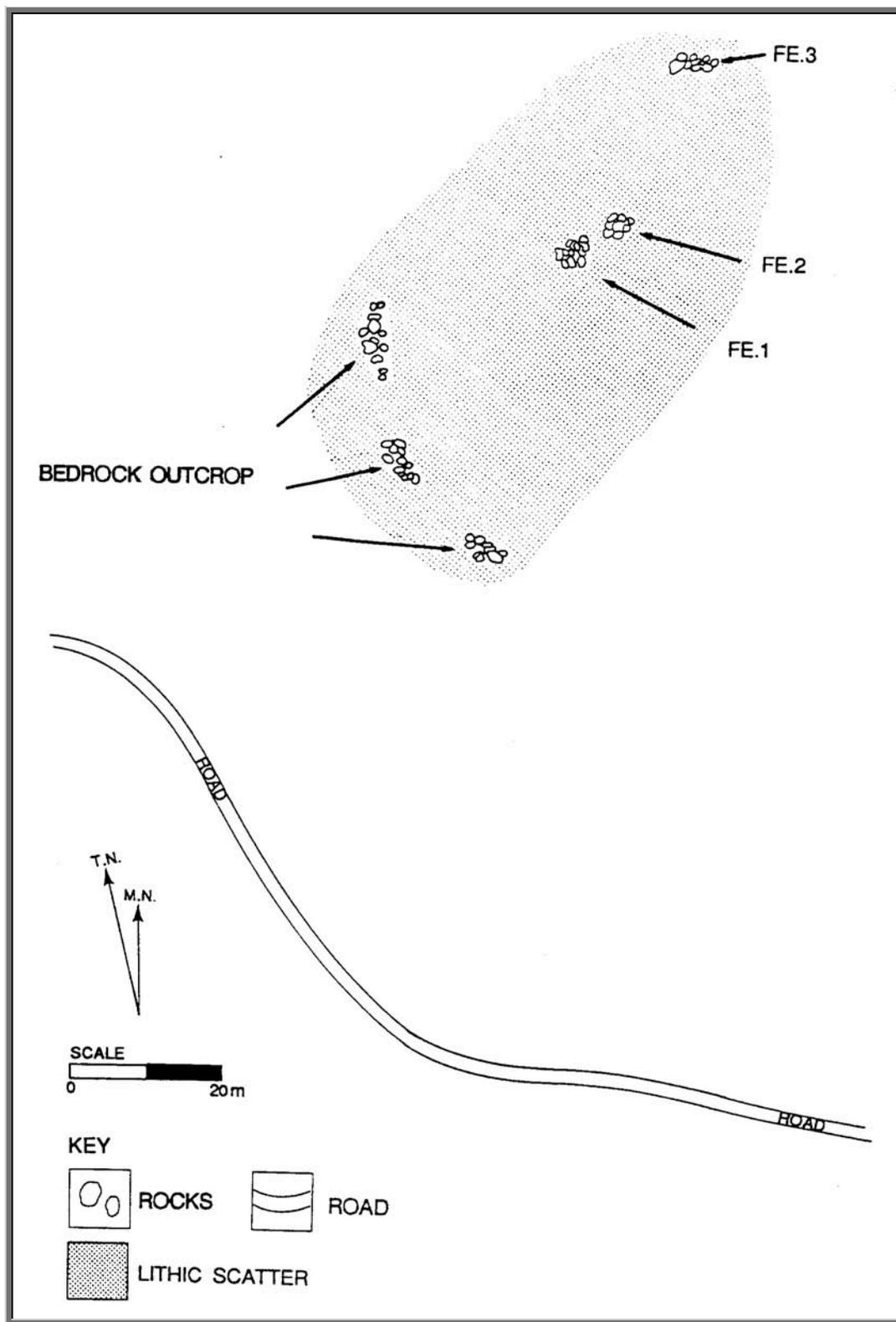
Site 1152, Feature 5. Coastal ridge non-burial mound at Pu'u Hakina. From Dixon and Major 1993.



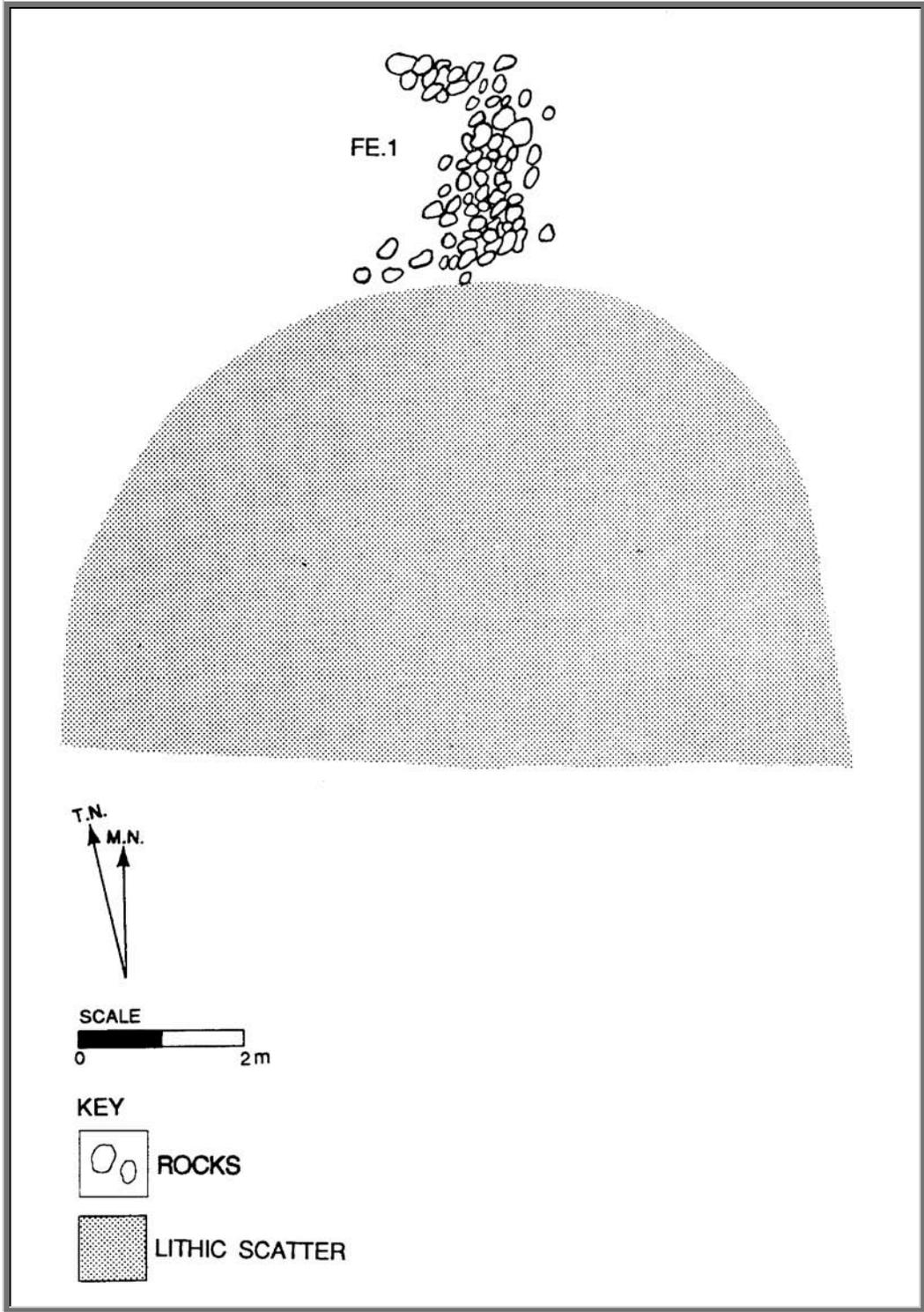
Site 1153, Feature 1. Coastal ridge enclosure at Pu'u Hakina. From Dixon and Major 1993.



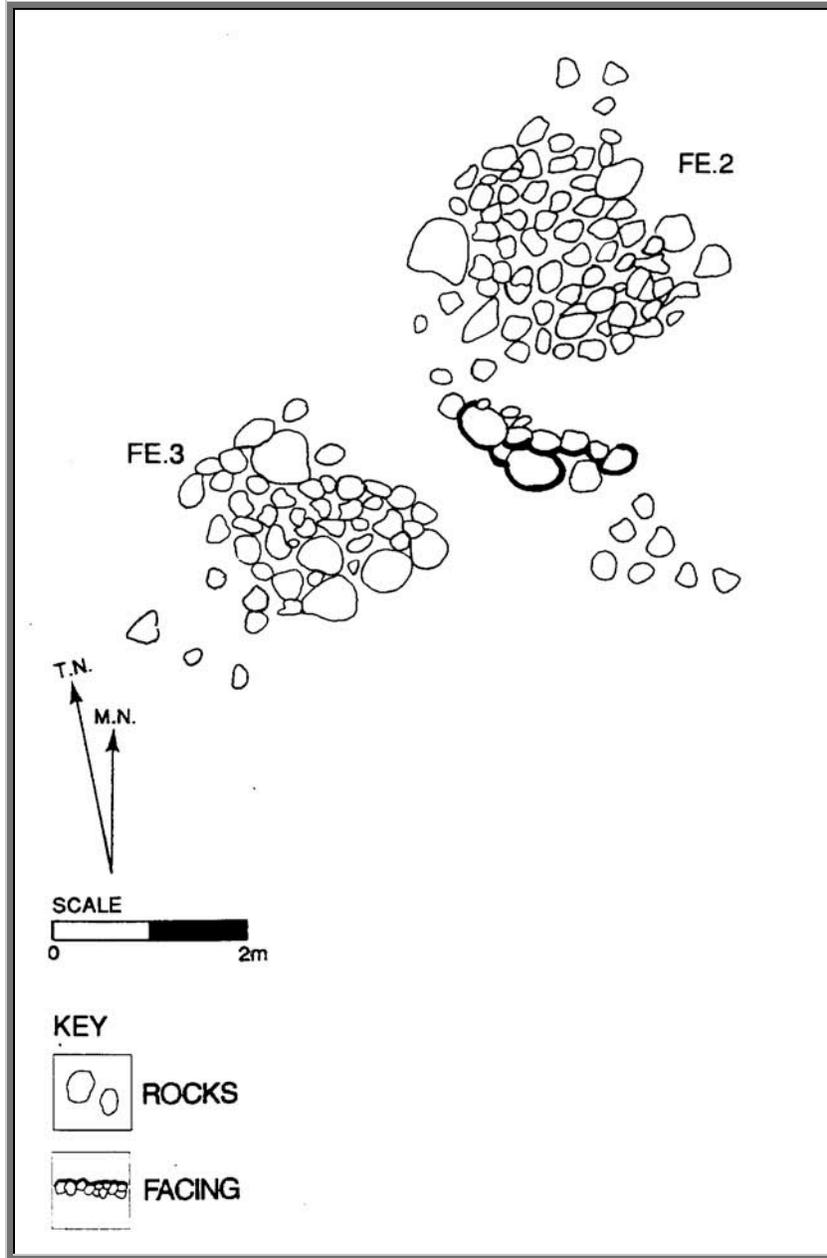
Site 1153, Feature 2. Coastal ridge mound at Pu'u Hakina. From Dixon and Major 1993.



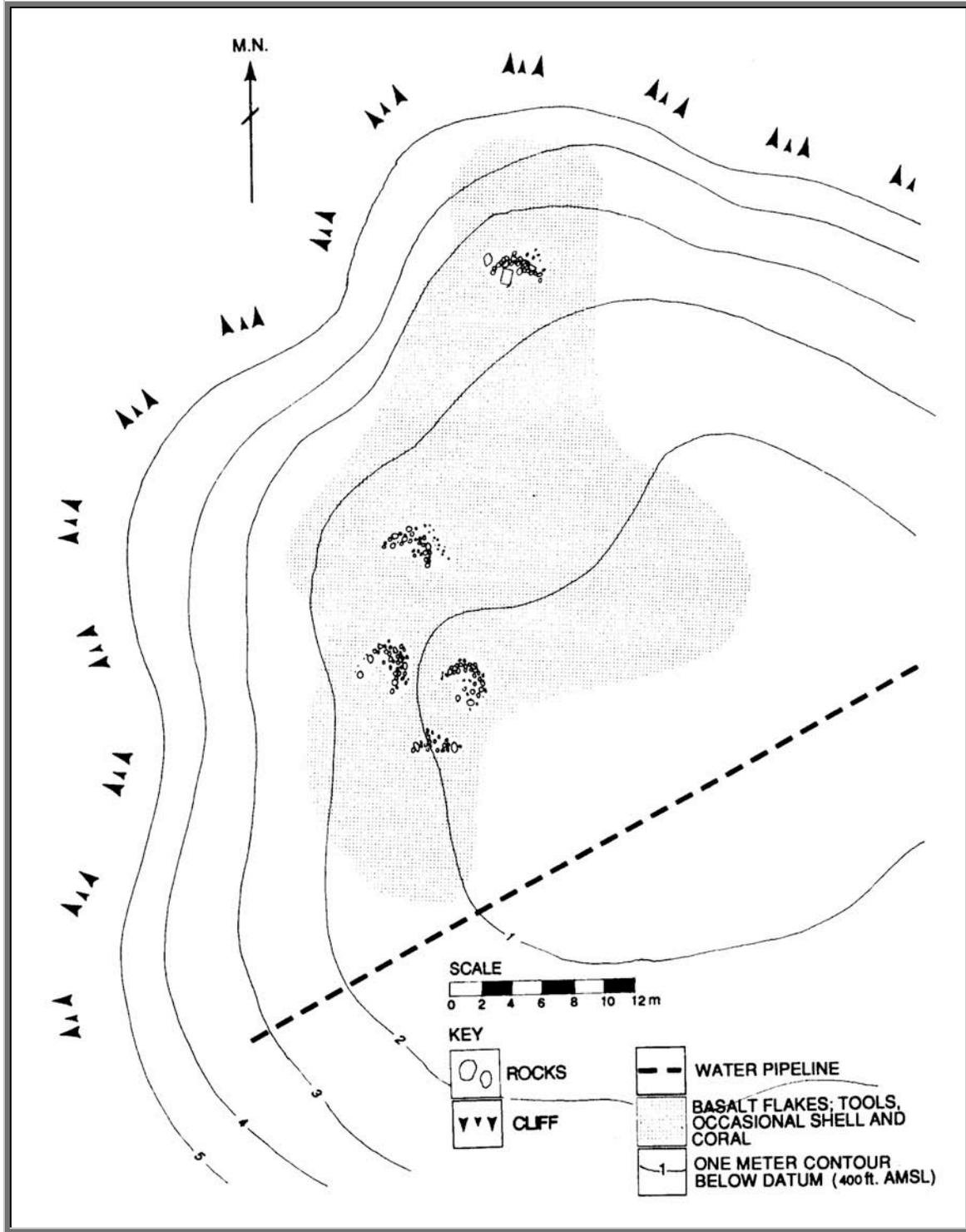
Site 1154. Lithic work area at Pu'u Hakina. From Dixon and Major 1993.



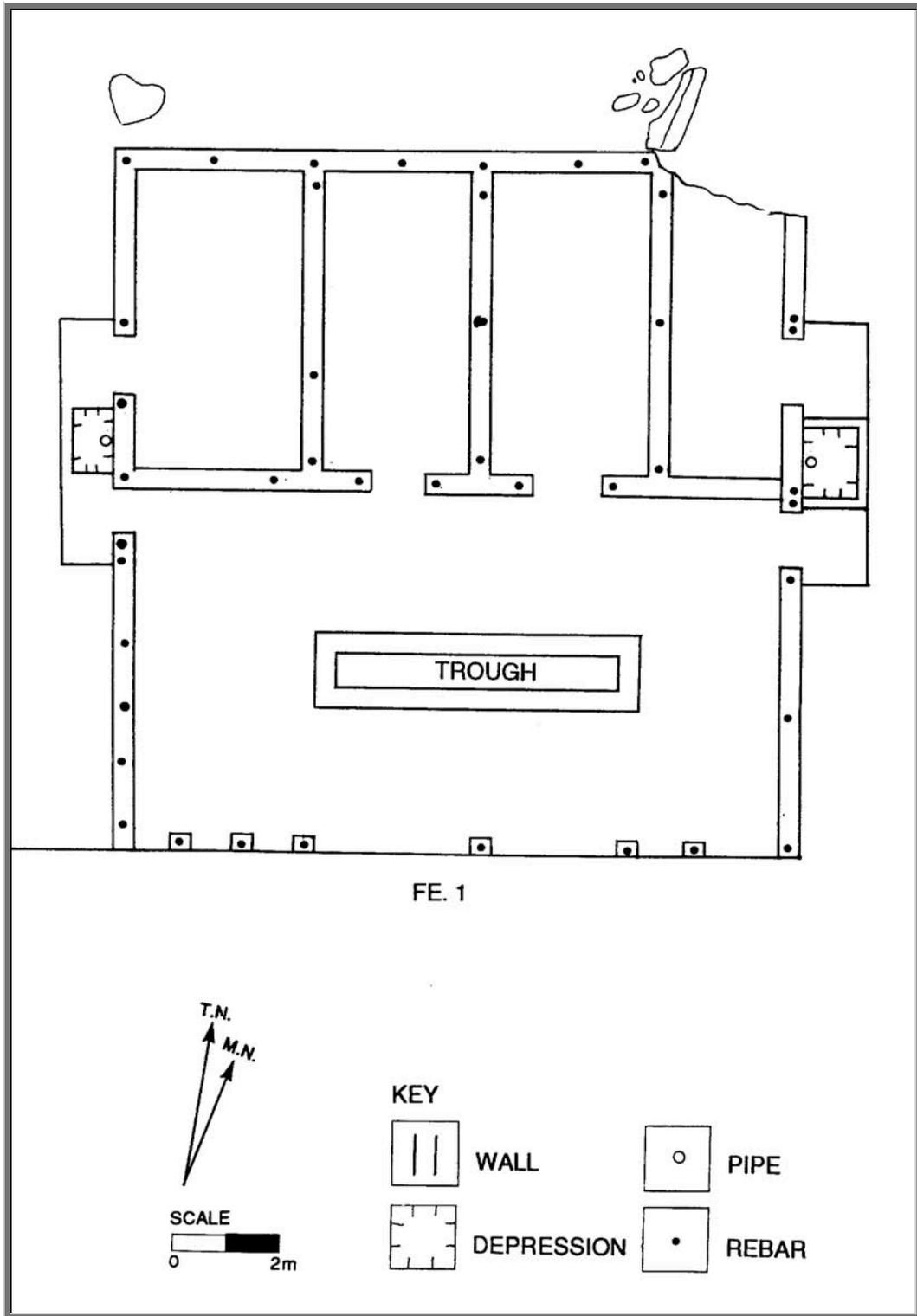
Site 1155, Feature 1. Lithic work area at Pu'u Hakina. From Dixon and Major 1993.



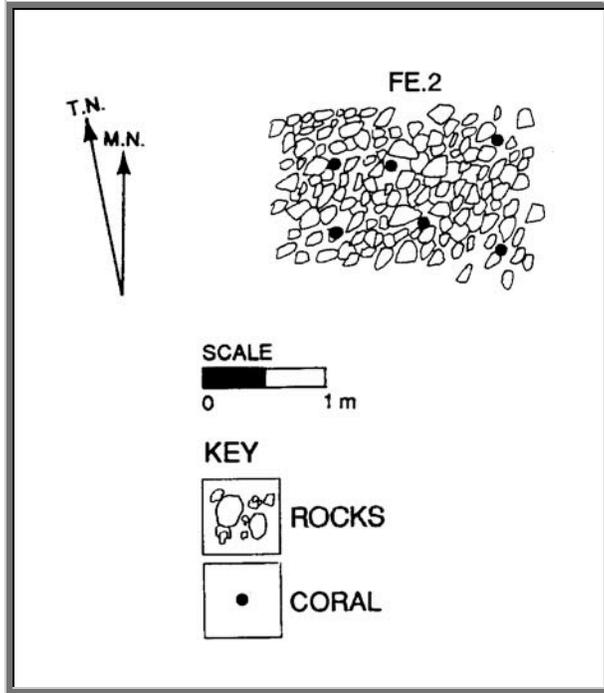
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Site 1156. Lithic work area near head of Kaunalu Gulch (400' elevation). From Dixon and Major 1993.



Site 1160, Feature 1. Historic Ranch structure foundation. From Dixon and Major 1993,



Site 1160, Feature 2, burial. From Dixon and Major 1993.

Sample Text For Signs

Example A: Buffer Marker

“This site was built and used centuries ago by Hawaiians. Please help preserve this place by staying on marked trails and by not moving rocks. Damage to sites is punishable under Hawai’i law (Chapter 6E-11). Take with you memories and photos, but please remove no objects from this site. Aloha.”

Example B: Interpretive Sign

SITE 656 – STONE TOOL QUARRY

By about 1400 AD, Hawaiians often ventured inland from their coastal settlements to quarry dense-grained basalt that was used to make adzes and other tools. This became so common that the name of the land district in west Moloka’i came to be “Kaluako’i” meaning “the adze pit.”

Hawaiians used other stones to strike this fine basalt, chipping away flakes until the rough shape of an adze emerged. Some of this work occurred here, where workers would camp. Polished adzes are uncommon here, but are more so at the coast, leading archaeologists to believe that final stages of manufacture occurred at the more permanent settlements by the ocean.

[Illustration showing hammerstone and adze preform, and perhaps map of quarry location.]

Example C: Photo of Sign and Fencing at Kaupoa Camp.



**Papohaku to Hakina, Ahupua'a o Kaluako'i,
Island o Moloka'i**
(Portions of TMK 5-1-02-030, 5-1-08-4 through 15, -19, and -23)

Revised Burial Treatment Plan



Prepared for Molokai Ranch
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LĀ'AU ARCHAEOLOGICAL PLAN SUMMARY

The archaeological plans for Lā'au include four sections for cultural resource needs that will arise in relation to 196 sites within the proposed development and preserves.¹ The plans are:

Preservation – Procedures for protecting and preserving 160 cultural sites. Actions range from the immediate to the perpetual, and include site condition evaluation, stabilization, short and long-term protection, protocol education, periodic field checks, and data collection. The focus is on conservation of cultural landscapes, rather than isolated sites.

Data Recovery – Procedures and research issues for mapping and excavation of 21-24 sites within the road/infrastructure corridor and proposed subdivision lots. Since the most significant sites are being preserved, data recovery sites mostly consist of very simple agricultural modifications, lithic scatters, and more recent historical sites. All sites will undergo data recovery or, more likely, preservation, and samples within sites will be more robust than minimal SHPD requirements.

Monitoring – Procedures and responsibilities for archaeological maka 'ala of development activity. In addition to ensuring that preservation areas are not damaged, monitoring detects previously unknown cultural deposits, and halts work in an area, to evaluate finds, and if necessary consult with SHPD and interested parties to establish a preservation buffer or recover data.

Burial Treatment – Procedures for dealing with known, suspected, and inadvertently discovered burial sites (with no revisions to the accepted 2001 plan). All burials will be preserved in place, and all sites of unknown function for which burial is a possibility will be preserved. Newly found burials trigger consultation with the Moloka'i Island Burial Council.

Because the plans are interrelated, and important part of the general approach is to define the **process and sequence**. The past two years of community meetings can be considered the first phase, and with ongoing consultation helps define what happens next. The Ranch has committed to planning for the entire project area, to maintain or expand upon previous preservation commitments, and to have this revision include plans for all of the affected parcels including proposed subdivision lots, whose future owners must also abide by the plans. The process continues:

- Re-survey the road corridor to verify and augment site records, and search for new sites. Unexpectedly significant finds may cause re-routing. Also, the Papohaku Ranchlands section of the corridor will be described and reported at inventory level for SHPD review.
- Next, short-term preservation measures will be implemented, such as establishing protective buffers and emergency stabilization.
- Next, data recovery will be implemented. At the same time, implementation of long-term preservation measures will begin.
- During the course of construction, monitoring will occur.
- Final reports for each plan will be submitted for community feedback and submitted to SHPD for review as required by rules and statutes.

¹ 197 sites appear in Table I-1 because Sites 53 and 655 refer to the same site. 12 of the 196 lack integrity and significance and are not included in these plans.

The original version of this plan (*Kahaiawa to Hakina, Ahupua'a of Kaluako'i, Island of Moloka'i*, Major 2001) dealt with the former "Alpha USA" parcel (TMK 5-1-2-030). Since then, changes in the project area and the size and location of proposed subdivision lots have necessitated some revisions. More fundamentally, the Ranch's decision to engage the community in master planning has resulted in a scaled-back development with a more conservation-oriented approach, and the proposed land trust, resource management staff, and cultural protection zones have required that the preservation and data recovery plans be augmented and revised. For the most part, the archaeological plans closely resemble the 2001 version, which was accepted by SHPD. Changes in the revised version include:

- Re-assignment of several Data Recovery sites to Preservation.
- Shift from defining buffers around individual or clustered sites to instead establishing a confined development corridor.
- Increased emphasis on active cultural resource management, anticipating as a neighbor a community land trust employing a cultural resource staff person.

Recommendation to collect some data from preservation sites to provide a better baseline for monitoring and help expand our understanding of the chronology and nature of settlement in the area, and specifically to guide environmental restoration.

INTRODUCTION

Background

The cultural resource management plans contained in this volume represent the culmination of a process that has evolved over several years as the landowner's plans have altered, as the scope of planning has grown to encompass most of western Moloka'i, and as the community has become more deeply involved in the process. Despite this recent history of change, many elements of the plans remain as they were in 2001: preservation continues to be the most common treatment for archaeological sites, a process of verification and augmentation of existing inventory survey data precedes development activity, and procedures for preservation, data recovery, monitoring, and burial treatment remain much as they were in the original plans. And while the landowner and the community have engaged in far-reaching discussions about land use and resource management across a large portion of the island, this document focuses only on the southwest corner of the island in a portion of the *ahupua'a* of Kaluako'i.

A brief history of cultural resource management in this area clarifies some of the changes that have happened with regard to this set of plans (archaeological findings of previous studies appear in the following **History and Archaeology** section). Although information about sites had been reported sporadically during the 20th Century, and Catherine Summers (1971) had compiled this information along with her own field observations and research, explicit focus on sites as "cultural resources" to be preserved and otherwise managed did not occur until the 1980s, when Marshall Weisler (1984) undertook the systematic survey, recording, and evaluation of sites in portions of Kaluako'i. This work led to the establishment of the Southwest Moloka'i Archaeological District (Site 50-60-01-803, also referred to as the "SMAD"), a series of well-defined areas that were listed on the State and National Registers of Historic Places, and therefore afforded some protection against future development and alteration.

Several years later (in 1991), after the Japanese real estate company Alpha USA had purchased a 6,350-acre section of southwest Kaluako'i intending extensive development there, Bishop Museum performed archaeological survey of the parcel, producing an inventory extending in scope beyond the major sites recorded by Weisler, as well as significance evaluations and treatment recommendations for each site (Dixon and Major 1993). The majority of the nearly 600 recorded sites deserved further investigation or data recovery in the case of development plans that would have caused damage, a small number (due to more recent origin or very poor site integrity) were considered not significant, and 46 sites were recommended for permanent preservation. The inventory, evaluations, and recommendations were reviewed and accepted by the State Historic Preservation Division (SHPD) at that time.

A decade after the Bishop Museum survey, Alpha USA had sold the property and Cultural Landscapes was retained by the new owner to create a set of management plans for the property, including a Preservation Plan, a Data Recovery Plan, a Monitoring Plan, and a Burial Treatment Plan (Major 2001). These plans provided detailed procedures and site treatments for sites covered by the 1993 inventory report, and were intended to minimize and mitigate any impacts that a smaller subdivision would have on sites. Although the 1993 report recommendations served as the starting point, the new plans emphasized avoiding rather than mitigating impacts, and so the number of sites slated for preservation grew from 46

to 138, including all of the sites outside the proposed subdivision as well as those between the new lots and the ocean, a large preserve encompassing a settlement system from the shore to an inland quarry, and sites within the proposed subdivision amounting to an estimated 10 – 15% of the area within subdivision parcels.

Shortly after SHPD had reviewed and accepted the 2001 plan, the landowner decided to change the subdivision plan by altering the proposed access road alignment, in response to which Cultural Landscapes produced an addendum to the plans (Major 2002). Rather than having the road meet up with the existing road from Maunaloa town to Hale o Lono Harbor on the eastern edge of the parcel, there would be a single entry to the subdivision from the north, from an old subdivision known as Papohaku Ranchlands. (Of that subdivision, the affected lots would be TMK 5-1-08-4, -5, and -14). At that time, an archaeological reconnaissance had been carried out in the Papohaku subdivision for the Army, since the area had been a target range during and after WW II. Although this project produced some good maps and site descriptions (Burtchard and Athens 2000), its authors believed it would not meet inventory standards, and the client had not released the report or submitted it for SHPD review at the time of the Lā'au addendum. On the basis of a draft report recording 27 sites, five of which were in or near the proposed Lā'au subdivision access road, the 2002 addendum proposed inventory survey within 30 m of either side of the propose road centerline. These sites included one with habitation and agricultural features (Site 50-60-01-520), one habitation (Site 1784), one agricultural site (Site 1758), an isolated lithic artifact (Site 1760), and a possible burial (Site 1761); all except for 1760 had been deemed significant for their information content and recommended for inventory survey by Burtchard and Athens (2000). The 2002 addendum to the Lā'au plans suggested that all of these sites could be preserved in place, and recommended that fieldwork be done that would bring the records up to inventory standards, but also begin implementation of site preservation measures such as establishing protective buffers, avoidance, and stabilization (Major 2002). This plan has been integrated into the current revision.

The most recent period of cultural resource management has witnessed a new willingness on the part of the landowner to engage in master planning for all of their holdings and a greatly increased role for the community. In the past two years, a series of meetings with both the general public and of smaller committees composed of Molokai Ranch staff, representatives of various Hawaiian organizations, and interested members of the public have worked on plans to conserve and manage not just cultural resources, but biological and other natural resources as well. The Cultural Committee called on Cultural Landscapes to provide information regarding sites on Ranch lands, archaeological and regulatory concerns regarding cultural resources, and planning for a much-expanded preservation program. Besides further reducing the scope and potential impacts of development, this process sought to increase preservation as a cultural resource management goal by establishing a community land trust tasked with preserving natural and cultural resources within lands deeded to it, by creating conservation easements and cultural overlay districts on privately held land, and by writing codes, covenants, and restrictions for the proposed subdivision that would help preserve sites therein and establish procedures for a management partnership between the new population of subdivision dwellers and Hawaiians who have been on Moloka'i for generations.

The proposed changes in land use, a reduced footprint for the subdivision, and the new approach toward managing cultural resources necessitated this revision of the 2001 plans and the 2002 addendum. Many elements of the existing plans remain the same, and this set of plans simply adjusts the plans to fit the current situation. So while most of the procedures for archaeological measures remain the same, reconfigured boundaries make the status of some sites different; for example, the most recent subdivision plan, being smaller than before, changes the status of some sites from data recovery to preservation, and others from the more protection-oriented preservation of sites within subdivision lots to the avoidance-oriented preservation measures associated with sites outside of development areas. Responsibilities for implementation of some preservation measures have changed with the advent of greater community participation and the proposed establishment of a land trust employing a cultural resource staff person.

Given the more robust management program envisioned by the landowner and community, some measures have been added or augmented, such as: re-survey of development areas, use of GPS to increase site location accuracy, and an increased effort to identify and mark ancient trails. In response to community concerns, the landowner has committed to additional archaeological fieldwork in advance of the road corridor construction, leading to a reorganization of the work-flow envisioned in the 2001 plans. Namely, re-survey of the road corridor will be completed prior to fieldwork done strictly in relation to preservation and data recovery plans. Because the 1993 report (Dixon and Major, for TMK 5-1-02-030) completed the inventory, evaluation, and treatment recommendations for the subdivision parcel, and were approved by SHPD, road corridor fieldwork may be best considered as a “supplemental data collection,” a type of archaeological investigation that exceeds the regulatory requirement, but which serves the landowner’s and community’s desire that final engineering and construction be based on an enhanced understanding of the archaeological sites in the proposed development corridor. Although this does not fit within the usual SHPD review process, a report will be prepared in case of any significant sites located during the new fieldwork, or if new information leads to revised significance evaluations or treatment recommendations. If, however, a known site is encountered during the supplemental survey, but the description does not change substantially, and does not lead to a re-evaluation of significance or different treatment recommendation, then whatever new information is collected will be reported in the preservation or data recovery report that follows those phases, depending on the status of the site.

For the parcels north of the parcel being subdivided (TMK 5-1-08-4, -5, and -14), road corridor survey will in fact constitute an inventory survey, and the data collected from those areas will be prepared as a normal inventory report with site significance evaluations and treatment recommendations, all of which will be submitted to SHPD for review according to the Hawaii Administrative Rules, section 13-13-276.

Perhaps the most profound change embodied in this revision, though, is change in outlook from the traditional practice of defining a site and surrounding it with a protective buffer to defining a development area and enclosing it within what the Cultural Committee came to call a “bubble.” By reversing the approach from “Keep out of the fenced sites” to “Do not stray beyond the development corridor,” the current plans should result in two major benefits: reduction of inadvertent archaeological finds, and increased preservation of cultural landscapes rather than site “islands” in a sea of development.

Rural Landscape Reserve, which corresponds to the remainder of the 6,350-acre parcel surveyed in 1991. All of the proposed Lā'au Subdivision lots and most of the infrastructure derive from that original parcel (TMK 5-1-02-030), although development activity will affect only a limited portion—400 acres of house lots and 153 acres of roads, infrastructure and parks, or less than 10% of the original parcel area. Finally, the total acreage for the road and utility corridor leading into the Lā'au Subdivision includes several lots in the older Papohaku Ranchlands subdivision. This volume proposes treatments for each of those subdivision lots where potential effects could occur (a total of approximately 15 acres), but does not encompass the entirety of Papohaku Ranchlands.

Because they concern separate actions in the State Historic Preservation Division administrative rules (the general process being described in Hawaii Administrative Rules 13-13-275), this volume presents Preservation (detailed in HAR 13-13-277), Data Recovery (HAR 13-13-278), Monitoring (HAR 13-13-279), and Burial Treatment (HAR 13-13-300) plans as separate sections. A single Introduction and set of appendices serve all of these sections to reduce repetition and save paper.

A final note regarding figures. The original and addendum plans included numerous reproductions of site sketches and maps from the Dixon and Major 1993 and Burtchard and Athens 2000 reports. As these are now available in at least two documents, paper conservation wins out in this revised plan.

Environmental Setting

Southwest Kaluako'i lies on the flanks of Mauna Loa, the extinct shield volcano that formed the west side of Moloka'i prior to the eastern (Ko'olau) volcano. Mauna Loa, like most other Hawaiian volcanoes, formed through a series of bedded basaltic lava flows (MacDonald et. al. 1983:412). The project area includes portions of the western and southern slopes of Mauna Loa, as well as traversing the southwest rift zone, a line of greater activity where vents and flows created a ridge between the summit and Ka Lae o Lā'au (Lā'au Point, the southwest tip of Moloka'i).

Although Mauna Loa is older, the drier conditions have produced less topographic variation than on the Ko'olau side of Moloka'i, where heavier rainfall has cut spectacular valleys. The gulches of Mauna Loa are relatively shallow, interspersed with broad, relatively undissected landscapes. Many of the smaller gullies between and feeding into the larger gulches are very young, the result of drought and overgrazing that denuded surface vegetation in the 19th and 20th Centuries, leaving it vulnerable to violent erosion during occasional downpours. Other consequences of this period of erosion have been exposure of hardpan subsoils on high ground and accumulation of wind and water-borne silt in leeward low areas and gulch bottoms.

Rainfall is concentrated during the winter months, but has amounted to an average of only 15 inches per year in modern times; on the lower slopes of the southwest region, that figure is lower (Baker et. al. 1968). One aspect of the local climate not mentioned in rainfall data is the typical cloud cover, which consists of a line of clouds parallel to and directly above the island. In dry periods, it barely extends past the high Ko'olau mountains, but often extends past the west coast. During wetter periods, this line of clouds brings rainfall that seems to be concentrated over the gulches of Kamāka'ipō, Kaheu, and Kaunalā. The tradewinds that cause these clouds to pile up over the island dominate, but on the south shore there is frequently little or no wind. When tradewinds are absent, land and sea breezes are

more noticeable, and convection clouds (with occasional rain) may occur if humidity is sufficient. A traditional name for a wind of Kaluako'i is "Haleolono," which is also a place name for the land just east of the project area (Nakuina 1992:68).

Although there were reportedly a few springs in the past (Summers 1971, Kaimikaua personal communication 1999), there is no reported evidence of perennial streams that would support typical wetland taro agriculture. Another indication of the aridity of the project area is that there are no traces of traditional coastal fishponds, which generally were constructed where some fresh water input fostered plant growth. However, the wetland just behind the dunes at Site 1146 shows that at least brackish water is present at some coastal locations.

The general soil types of the project area are low humic latosols interspersed with lithosols (Foote et. al. 1972). Soil series represented in the project area are dominated by very stony eroded soil in the north and the interior, Kapuhikani along the southern shore to just south of Kamāka'ipō, and Mala silty clay in the Kamāka'ipō Gulch bottom (ibid.). Both Baker and Foote mention deep soils on the west end, but field experience shows that the project area generally has a very shallow soil cover, with rocky and hardpan areas exposed rather frequently, and substantial accumulation of sediments occurring only in the lower reaches of gulches. The 1991 excavations rarely went more than 50 cm in depth before reaching extremely hard clay.

The soil classifications interpret the project area as having very low productivity (Baker et. al. 1968, Foote et. al. 1972). This may be true for modern forms of agriculture and animal husbandry, but it is likely that higher rainfall occurred prior to upland deforestation, providing enough moisture and could cover to grow the less thirsty Polynesian crops such as 'uala (sweet potato, *Ipomoea batatas*), 'ipu (gourd, *Lagenaria siceraria*), and the thatching grass *pili* (*Heteropogon contortus*). George Cooke (1949), who managed Molokai Ranch in the first half of the 20th Century, saw Hawaiian *kō* (sugar cane, *Saccharum officinum*) growing in an old household garden at Kamāka'ipō. Terraces, planting circles, and areas cleared of stones show that Hawaiians once practiced agriculture within the gulches, and to a more limited extent, on the sloping lands. Monitoring at Kaupoa, then old ranch house on the outskirts of an ancient village at Kaheu gulch, revealed deposits of loamy soil sometimes exceeding 30 cm in depth, soil that appeared to have a relatively high organic content and held onto moisture for weeks after rainfall—attributes that would have been attractive to ancient farmers.

Currently, vegetation is dominated by *kiawe* (*Prosopis pallida*) forest, which sometimes forms dense thickets, but may also be open. *Lantana* (*Lantana camara*) forms an understory in the forested areas, and also occurs in the open areas. There are occasional grasslands, with various pasture and weedy species that have become naturalized. Chili peppers (*Capsicum frutescens*), bittermelon (*Momordica* species), and basil (*Ocimum* species) are also naturalized, representing historic household garden introductions, but possibly from elsewhere on Moloka'i, since birds readily disperse each. The native flora are much diminished, although hardier shrubs that are adapted to dry and disturbed conditions are still present; these include: 'uhaloa (*Waltheria indica*), 'ilima (*Sida fallax*), and *ma'o* (native cotton, *Gossypium sandvicense*).

Insects and other arthropods dominate fauna of southwest Kaluako'i, and it is beyond the expertise of the archaeologists to list or evaluate these. Bird life includes game species introduced by Kamehameha V, and later by the territory and

state, as well as exotic songbirds such as cardinals, mockingbirds, and mynahs. Herds of Axis deer, another of the king's introductions, wander Moloka'i's west end, and along with the other introduced ungulates (cattle, sheep, and goats—only the former of which is still present) have affected the ecology significantly. More important to the human inhabitants of old was the marine fauna, from pelagic species at the offshore Penguin Banks, to reef fish, to shellfish and echinoderms found on the coast, and even the turtles that hauled up on shore.

The character of the southwest Moloka'i shoreline merits attention, not least because this is where ancient and historical people settled. Sand beaches cover most of the coastline, although basaltic ridges do extend to the shore in a few locations, with those at Lā'au Point and along the south shore being highest. Low dunes occur as well, although sand mining depleted those at the eastern end of the project area's south coast. Sandstone and limestone underlie the sand and are visible in many locations. Slabs of this material appear in ancient and historic construction, but the more consistently important aspect of such stone is that the shoreline and shallow waters where it occurs are riddled with holes and cracks that form excellent habitat for fish, lobsters, and other food. Because canoes formed the backbone of the ancient transportation system, the presence of numerous channels through the reef and sandy beach landings would have been an attractive trait of this shoreline in ancient times. The waters of Lā'au Point, however, remain notorious to this day, as currents traveling down each coast collide in a choppy, swirling mix that makes paddling dangerous.

In the reconnaissance of the gunnery range, Burtchard noted highly eroded areas and charcoal indicative of wildfire (2000). It is no great stretch to infer that live fire practice could have ignited vegetation in this parched landscape, and an aerial photo from 1965 shows what appears to be a recent burn area in the range. The reconnaissance also noted several graded and bulldozed areas, piles of stone, and military dumps. In an analysis of Burtchard's report; Dixon and Major's 1993 report; 1955, 1964, 1965, and 1969 aerial photos; Molokai Ranch color aerial photos from the 1990s; the publication *Detailed Land Classification – Island of Molokai* (Baker et. al., 1968); and USGS quad sheets from 1924 and 1983, Cultural Landscapes has been able to estimate the minimum extent of disturbance in and around the new corridor.

Between Po'olau and Wahīlahue Gulches, only a small, unnamed gulch appears to have escaped disturbance prior to the mid-1960s. Between about 100 and 250 feet in elevation, numerous dirt roads criss-cross the landscape here. Po'olau Gulch itself appears to have escaped much direct impact, except where roads crossed it—Burtchard's discovery of intact agricultural sites in the gulch is consistent with this. (His Site 1760, a single adze preform in "an erosional scar" that may in fact be in a dirt road visible on aerial photographs.) South of Po'olau Gulch, almost everything inland of the old coastal road, north of where the south arm of Kulawai Loop meets Pohakuloa Road, and below about 250 feet in elevation has been heavily disturbed. Grading to clear the target areas, construct roads, and build observation towers and bunkers has obliterated nearly everything inside of Kulawai Loop, and as far east as the rock piles recorded as Sites 1683-1687. The single contra-indication to this situation may be Site 1788, a concentration of boulders including a slab that was interpreted as a fallen upright from a shrine (Burtchard 2000). Low, seasonably wet ground nearby (interpreted as a spring with which the shrine would have been associated) may have saved this area from grading, and is visible on air photos due to the vegetation.

South of Kulawai Loop, the situation changes markedly, and several sites were present beginning between the road and Kapukahehu Gulch. Sites have been recorded in and between Kapukahehu and Kaunalu Gulches, with a few *mauka-makai* roads being the only disturbance to the intervening ridge. The ridge south of Kaunalu Gulch, however, has been disturbed as far down as 100 feet in elevation, and the 1965 aerial photograph shows a series of lines following the contours from this elevation up to nearly 200 feet. It is uncertain what these are, although they appear to have a few intact trees, and may represent grubbing of pasture, an attempt at erosion control, or both. Kahehu Gulch and south appears to be far less disturbed, except for the road down the ridge to Kaupoa.

History and Archaeology

To achieve a more comprehensible and holistic understanding of southwest Kaluako'i's past, this document combines historical and archaeological background. This discussion summarizes what is currently known about the project area, and then offers a brief regional overview as a framework for the research plan. Site particulars appear with the detailed site mitigation plans below, to avoid redundancy and the need to flip pages constantly. A more developed discussion of overall patterns will be included in the final data recovery report.

The name of the *ahupua'a* containing all of these places, Kaluako'i, refers to the pits or quarries ("lua") from which adzes ("ko'i") were made. Kumu Hula John Kaimikaua notes that the largest quarries were inland at "Amikopala, Kahinawai, Koholalele, and Kamakahi," and that the best types of stone were named "Awalau...Awali'i, and Awali" (Kaimikaua 1997:4). He also relates that when the Maui *ali'i* (chief) Kiha-a-Pi'ilani ruled over Moloka'i, he stationed his men in all of the coastal villages of Kaluako'i "to secure the mining rights of the valuable ko'i as an added wealth for the high chief," and that access to and security over the quarries was the reason he built his famed trail ("KealapūpūoKihaaPi'ilani, See Summers 1971:12-13) around the west end (Kaimikaua 1997:4).

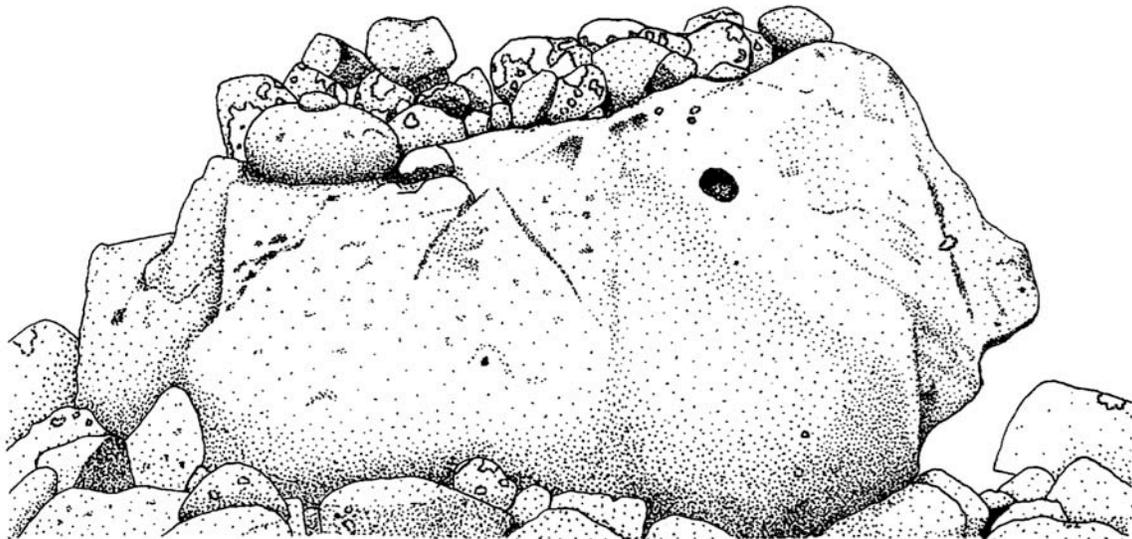


Figure I.3: Trail marker at North Kamāka'ipō

One of the Moloka'i chiefs who provided labor for the trail, Kamāka'ipō, was immortalized in the name of the gulch and bay north of Lā'au Point. Kamāka'ipō was also the name of an owl who lived at the place, and whose droppings appeared as a type of gray clay found there. Two Kamāka'ipō places known from traditional oral history that may have identifiable archaeological sites associated with them are a *heiau* dedicated to Hina that is supposed to be small and circular, and a hill named Ahoaho, a small hill where chiefs were buried (Kaimikaua 2001, personal communication).

By the time Europeans found the Hawaiian Islands, western Moloka'i was not heavily populated, although both the Cook and Vancouver expeditions noted that a small population was present prior to AD 1800 (see Dixon and Major 1993:9). Moloka'i also became a battleground in the struggles between Maui, Hawai'i, and O'ahu, and during the latter 18th Century lost much of its population due to warfare; a Hawaiian told the surgeon of the Vancouver expedition that Kamehameha had decimated the island (Menzies 1920:115, 118). Another source indicates that a generation earlier, the O'ahu chief Peleioholani raided and burned Moloka'i in revenge for his daughter being killed on the island (Fornander, cited in Summers 1971:18). Ash exists widely on the west end, observed in buried layers from at least Po'olau (Burtchard and Athens 1999) to Kaheu (also known as Kaupoa, Major 2000). An older explanation of the barrenness and low population may be found in the story of 'Ami'ikopalā, which said that the wells dug by that supernatural crab dried up when he was killed (Kaimikaua, personal communication 1999). Another *mo'olelo* told that other water sources dried up when people carelessly, and later maliciously, poisoned springs with pieces of the Kālaipāhoa gods (Kaimikaua 1988).

Regardless of the causes, the view that Kaluako'i was a dry, thinly populated area found its way into archaeological literature, and is accepted today. Stokes (1909) stated that "inhabitants of the western end of Molokai deserted or were removed from their homes nearly half a century ago" (Stokes 1909:30), a period when Kamehameha V had begun ranching operations on the island. Stokes concentrated on religious features, and near the current project area recorded *ko'a* (fishing shrines) on the coast at Kamākaipō (Sites 53 and 55), Lā'au (Site 58, destroyed by lighthouse construction before 1909), Keawakalai (probably Keawakalani, Site 59), Kahalepohaku (Site 61), and Pu'u Hakina (Site 62). At the latter place, he also recorded Kalalua Heiau (Site 67), which had an unusual reef rock slab construction, and was reportedly used for human sacrifice (ibid:31-32). Stokes further reported that local people identified Kahalepohaku as the place where Kihā-a-Pi'ilani had been raised.

During the 1920s and 1930s, most Moloka'i archaeology was done by visiting scholars such as Fowke (who wrote a brief paper for the Bureau of American Ethnology in 1922), and Phelps (who produced a monograph on Moloka'i archaeology in 1941). The Phelps paper is more interesting for its consideration of environmental variables than its site recording. He divided the island into ecological regions, of which the western was the driest; Phelps highlighted this aspect by repeating a Hawaiian newspaper story about the 18th Century *ali'i* Kaiakea, who ordered a well dug with adzes near Ka Lae o Lā'au (Phelps 1941:57). He stated that the advantages of Kaluako'i were its namesake adze quarries and its fine fishing grounds (ibid:55-60). He used the *ahupua'a* of Kaluako'i to support his conclusion that land divisions with the greatest area had the least population, and that the absence of valleys to provide natural divisions was what made Kaluako'i the largest *ahupua'a* (ibid:75-76).

Few new sites were recorded prior to the 1950s, when the Bishop Museum and University of Hawai'i began working together on Hawaiian archaeology, and on educating a new generation of scientists. One of these students, William Bonk, reiterated the conventional wisdom in his master thesis, which included the lines, "this was a decidedly marginal land for the inhabitants of Molokai. Fishing and the quest for adze stone brought people into the area, and fighting probably sent refugees into it, but temporarily" (1954:139). His excavation of a house site at Kamāka'ipō (Site 54) revealed less than 10 inches of midden, leading him to conclude that the intensity of habitation had perhaps increased over time, but that the site represented a fisherman's house, and that the area had little more in the way of permanent habitation (ibid:51-52).

Catherine Summers compiled historical and archaeological documentation over the next two decades, and published the results in 1971. Few of the sites are within the current project area, but the book is notable as the first and last attempt to bring together knowledge about sites island-wide. *Molokai: A Site Survey* includes notes made by Stokes and other early site recorders, as well as Hawaiian myths and oral histories, unpublished accounts, and historical documents. Based on all of this information, Summers concurs with the portrayal of Kaluako'i as a land blessed with excellent adze stone and fishing grounds, but also where habitation was limited by aridity (1971:39-40). Also implicit in her maps and descriptions is a settlement pattern in which the most heavily used areas are clustered at the bays and high in the uplands. The current project area occasionally reaches the margins of the coastal settlements, but is largely in the "empty" middle elevations. The Statewide Inventory of historical properties began shortly after the publication of Summers, but consisted more of an effort to relocate previously recorded sites than to discover new ones, and added no new information.

The same year that *Molokai: A Site Survey* was published, a University of Hawai'i student named Hal Strong documented some of the Kamāka'ipō habitations. He described and photographed four house sites and a variety of associated features, including: *ahu* (stone mounds), shrines, *ko'a*, a stone pile, and scatters of midden and artifacts strewn on the surface (Strong 1971).

In the early 1980s, Marshall Weisler surveyed coastal southwest Moloka'i, relocating and discovering eleven sites (State Sites 50-60-01-53 through -56, -655, 1118, and -1134) in or near what has become current project area. He reiterated an aspect of Phelps' settlement pattern in which topography was key—sites were concentrated in gulches and the bays where they met the sea—and added that there was a correlation between the size of the bay and the quantity and diversity of features (Weisler 1984:27). Another pertinent outcome of Weisler's work, creation of the Southwest Moloka'i Archaeological District (hereafter SMAD, Site 50-60-01-803) included some sites (53, 54, and 56), in or near the project area. This district is now on the State of Hawai'i and National Registers of Historic Places, meaning that sites within it are afforded additional protection.

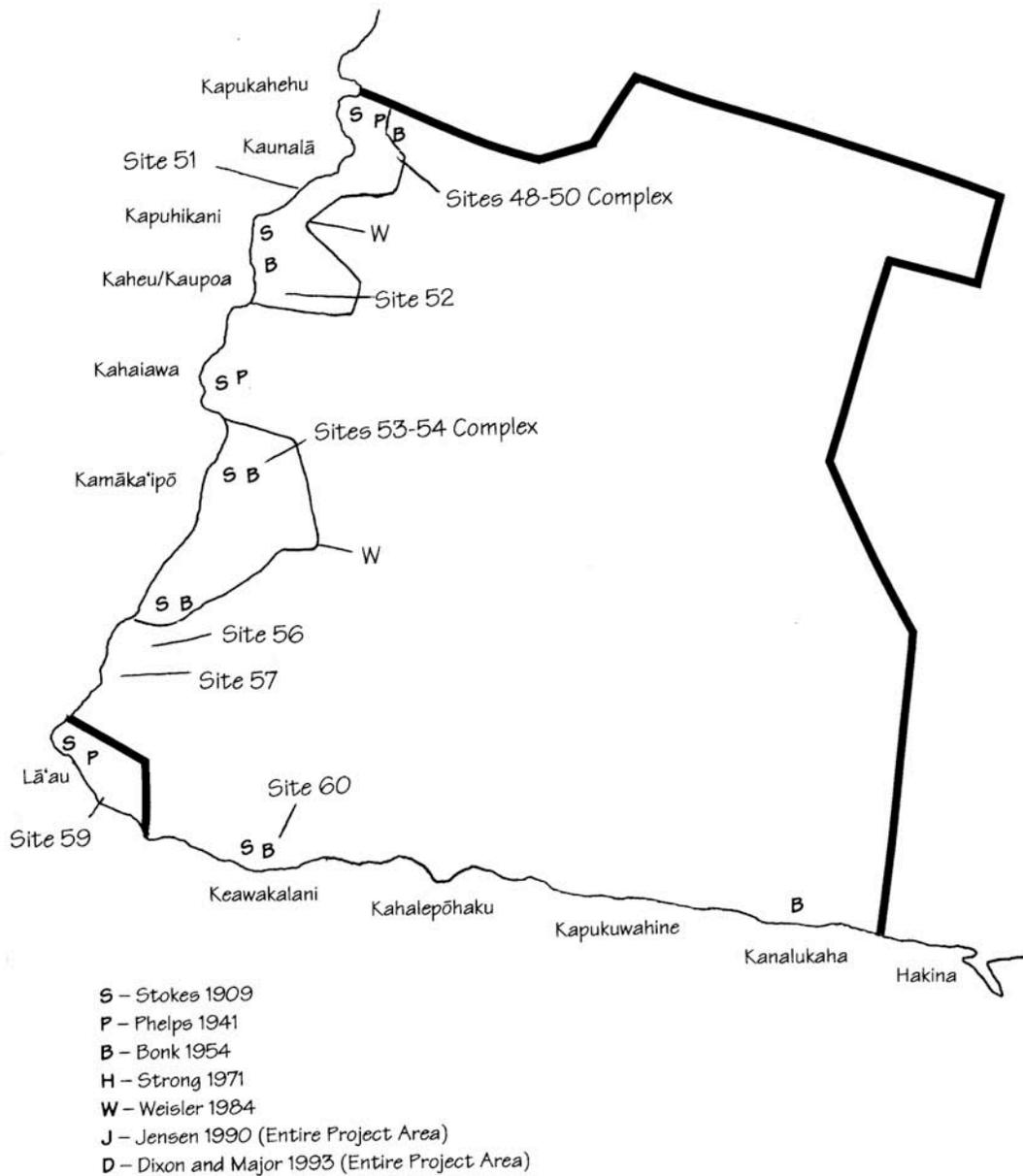


Figure I.4: Previous archaeological study areas. (Note: Burchard and Athens project area is north of this, and is shown in the Papohaku Ranchland map earlier in this report.)

In 1991, a survey of 6,350 acres of southwest Moloka'i done by Bishop Museum encountered features throughout southwest Moloka'i, including the current project area (Dixon and Major 1993, referred to in this report as the "1991 inventory" and the "1993 report"). This survey provided the most complete coverage of southwestern Kaluako'i to date, and the settlement pattern model that emerged from the inventory reinforces the main pattern mentioned above, that sites cluster around bays and gulches (Dixon and Major 1993:337). However, having a survey area that extended well inland from the coast, it was possible to refine the model. For example, although the inland margins of sites had the expected agricultural areas and lithic work stations, they had a surprising number of "temporary and semi-permanent residential compounds" (ibid:337).

Discovery of large, multi-roomed enclosures near the 100 foot elevation also went against conventional wisdom that inland features were marginal and ephemeral. Two such enclosures occur in the Site 771-773 complex, each with six or more rooms, some of which display massive, well-built walls. Excavation revealed evidence of lithic manufacture (over 3,000 flakes from a single 100 by 50-cm excavation unit), while presence of a metal pick-ax head suggests that this could be a site that transcends the era of contact between Hawaiians and Europeans. These sites remain enigmatic, but seem to suggest a degree of permanence or intensity previously not recognized on the west coast, and certainly not at that elevation.

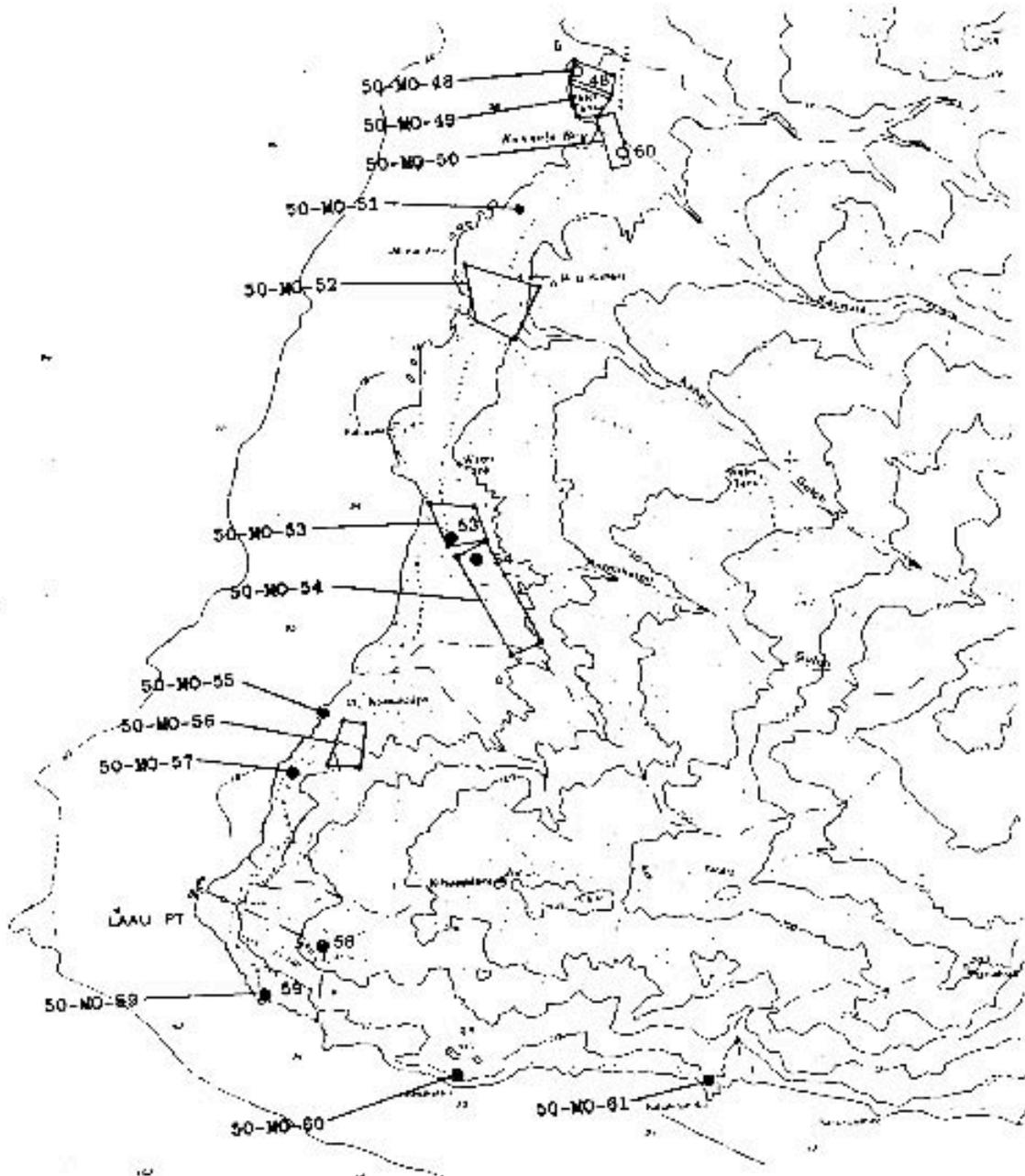


Figure I.5: Southwest Molokai Archaeological District sites and areas.

The 1991 project also documented variation between west coast settlements (where features clustered at the bays and stretched inland to gardening or quarrying areas) and south coast settlements (where habitations were spread laterally along the coast), indicating that the causes again related to topography (ibid:337-338). Analyses of subsistence strategies and lithic production, paired with the form and distribution of features, suggested that rather than a temporarily occupied, culturally peripheral area, southwest Kaluako'i was probably permanently occupied late in prehistory, and that its access to fishing grounds and adze quarries meant that it was integrated into island-wide society (ibid:240-344). A more recent study including part of the north end of the current project area concluded that coastal habitations must have been permanent (Burtchard and Athens 1999). Presence of extensive occupations in the uplands (Summers 1971, Major 2000) and of major specialized features such as *heiau* (temples) and *holua* (sledding courses) in the lowlands (Summers 1971) provide evidence that the Kaluako'i area had permanent, perhaps socially stratified, occupants.

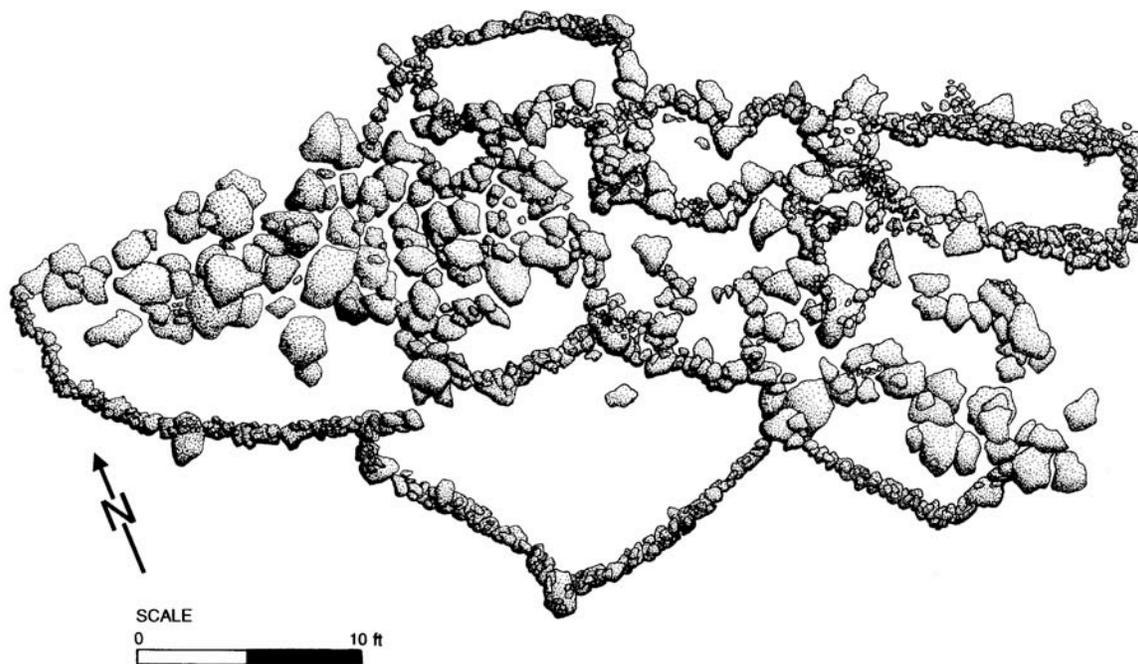


Figure I.6: Site 771, a multi-room enclosure on a ridge above Kamāka'ipō

Traditional wisdom among archaeologists has also concluded that this region would have been settled only after sweet potato was available, and after population densities had risen in the wetter areas, probably no earlier than about AD 1500 (Kirch 1985). Radiocarbon dates suggest somewhat earlier occupation may be possible, although the limited data make it hard to discern sporadic early use from a stable early habitation. An inland quarry yielded a radiocarbon date of AD 1260-1440, and the south Kamāka'ipō coastal site was dated between AD 1410-1955. A subsequent, unpublished date from the 1991 excavations at Site 654, in a coastal *imu* that Weisler originally recommended dating, provided an even earlier date of AD 1019-1211, confirming the suspicion that coastal areas were used much earlier than they were permanently settled.

The condition of Site 654, eroding from an exposed dune face, may be a result of the 1946 tsunami. The Cookes (1948, 1961) both wrote of the effect that this wave had on the west coast, impacting Kawakiu heavily and working its way a half mile inland at Pāpōhaku beach; it could easily have come well inland at Kamāka'ipō, where the alluvial flat is severely eroded. Even without tsunami, however, many sites at Kaluako'i have been damaged by erosion, itself catalyzed by cattle and deer grazing since the mid-Nineteenth Century and several periods of severe drought.

Because the archaeology of Kaluako'i is relatively well known, mitigation plans may be based not only on particular knowledge of the sites, but on the patterns evident in southwest Kaluako'i. Because the current project area mostly runs *mauka* of the sites, the data that will be recovered will be skewed toward traces of peripheral activities and agriculture. In the Data Recovery Plan, the effect of this on the techniques of data recovery and the research issues will be evident.

Papohaku Ranchlands Section

Then Papohaku Ranchland section of the project area is discussed separately here for two reasons. First, the presence of an aerial gunnery target range had a profound effects on the environmental setting and on the integrity of archaeological sites. Second, the fact that a formal inventory survey has not been reviewed by SHPD means that the preservation process in this portion of the project area is less advanced than elsewhere.

In 1998, under contract with the Army Corps of Engineers, archaeologists from the International Archaeological Research Institute, Inc, (IARII) attempted an inventory survey of the former gunnery range (Burtchard 2000). Unfortunately, funding was inadequate, and IARII was unable to do more than a reconnaissance of the area, meaning that coverage was not intense enough to guarantee location of all sites, and that excavation to determine age and function of sites was not performed. However, recording of the sites that were located is good, GPS locations make them easy to relocate, and the report is in fact better than some inventory surveys done on Moloka'i in earlier years. Age, function, and significance were estimated for all sites located during the reconnaissance, and will form the basis for treatments proposed in this plan.

Before describing sites in or near the corridor, however, some historical background specific to this new project area deserves attention. The target range mentioned above appeared on maps as early as 1952 (USGS Ilio Point Quad) as a "Bombing Range," and was apparently leased by the US Government from Molokai Ranch between 1944 and 1965 (Burtchard 2000). Documentation of what exactly occurred has not been located, but a combination of physical remains, recollections of residents, and photographs allows some reconstruction. An aerial photograph taken in 1955 shows that the largest feature of the range, a huge (about 600 m in diameter) circular target comprised of three concentric earth and rock rings, had not yet been constructed, although a smaller (about 200 m) one of similar plan was clearly visible. By 1965, facilities included the targets, three cement observation bunkers, a range control tower, a munitions dump, and another possible communication or observation tower. Grading for target and infrastructure development, as well as the direct effects of the munitions, have cleared large areas beyond the constructed features themselves, and the archaeological reconnaissance found several piles of disturbed stone *mauka* of the active range. Local residents recall the area being used for ground troop training in the 1950s and 1960s, and the abundant munitions on the ground confirm that aerial bombardment occurred as well. It is possible that other portions of the

project corridor may have been used for training, since a retired marine recalls participating in amphibious and land-based exercises around Kaupoa. Besides the impacts from thousands of men and heavy machinery being moved around, he noted specifically that they constructed C-shaped shelters (Dixon and Major 1993)

Subsequent to the military training era, the land was not heavily used, although it may have reverted to cattle pasture until the 1970s and 80s, when subdivision for residential development was planned. It was during this period that Hal Hammatt recorded four sites in an archaeological reconnaissance of 3,200 acres subsuming the current project area, and William Barrera recorded five more sites along proposed roads (Hammatt 1980 and Barrera 1982a, both cited in Burtchard 2000). Development of the subdivision resulted in construction of several roads, which also served as corridors for water and electrical infrastructure, which was all installed below ground. However, few of the lots have actually been developed. Near the coast (adjacent to the Po'olau beach access), grading has damaged archaeological features believed to be part of Site 45, a settlement with habitation, religious, and probably agricultural features. Sand dunes at the south end of Pāpōhaku Beach have also been surreptitiously mined during the 1970s through the 1990s. The extent of impacts resulting from development of the residential lots is undetermined.

The Hawaiian place names near the project area extension shed some light on the cultural landscape. Po'olau, the name for a gulch and the bay where it terminates, is left un-translated in *Place Names of Hawai'i*, but the word means "leaf base; butt end of a leaf" (Pukui and Elbert 1986). Many of the long time residents of Maunaloa, however, know it by the name "shit creek," apparently because it once received waste from the town. However, it should be noted that Po'olau Gulch terminates well below Maunaloa Town, and instead it is Wahīlahue Gulch that descends from Maunaloa to the coast, where it ends about one-third of the way from the south end of Pāpōhaku Beach. It appears that extension of that name to the entire beach may be a fairly recent phenomenon, since Monsarrat (who made the first Moloka'i map in 1886) was careful to find knowledgeable Hawaiians, and applied the name to a structure at the beach; Pāpohaku means "stone enclosure." Another name near the project area that appeared on the 1886 map was Pu'u Koa'i, which Pukui, Elbert and Mo'okini considered to be Pu'u Koa'e, or "tropicbird hill" (1974).

South of Po'olau, Kapukahehu Bay (whose origin and meaning are uncertain) is more commonly known now as "Dixie," and does not appear in either form on the old maps. "Dixie Maru," was a boat that crashed there, and the coastline is known for shipwrecks. In a less drastic way, Dixie is also the end of the road for cars, and locals and tourists alike frequent the sandy bay. Continuing south less than half a kilometer, the next gulch and bay are now called Kaunalā ("placing sun" Pukui, Elbert and Mo'okini 1974), although maps until 1924 used Kaunalu, or "placing wave" (ibid). Further south is Kapuhikani, or "sounding eel" (ibid), a point of land that has appeared on all maps beginning in 1886. Next is Kaheu, a gulch and bay whose name first appeared on the 1924 USGS map, and is thought to mean "the fuzz" (ibid). Kaheu is better known as Kaupoa, a name that first appeared as a mapping station on the 1897 map (which was made after the overthrow of the monarchy, and is suspect due to its omission of many Hawaiian place names or replacement with English names). The name was popularized by the Cooke family, who in 1925 built a house by the bay and named it Kaupoa.

Archaeologically, the action is at the bays, and the current project corridor is in the hinterlands. The general settlement pattern of the west coast is for habitations to cluster around the bays, and for the traces of human presence to diminish rapidly with increased elevation and distance from the bay. On the coast, *ko'a* (fishing shrines) and dispersed temporary habitations may occur between bays, and it is likely that dunes contain human burials. Heading inland from the bays, gulches contain terraces and stone piles indicative of attempts to retain freshet moisture and soil, and to clear the stony soil for planting, respectively. Aside from the agricultural features and temporary shelters (both C-shapes and pavements) associated with them, stone mounds that appear to be burials are the most common features at the margins of coastal settlements. Of the features occurring above 50 feet in elevation, few are outside of gulches.

Further inland (generally over 150 feet in elevation), the presence of temporary habitations (usually C-shapes) and concentrations of lithic debris present traces of traditional quarrying and stone tool manufacture sites. Quarries usually occur on gulch margins or ridges where a stratum of fine-grained basalt was accessible, and could be removed with relative ease. Primary reduction into cores and roughly formed adzes was done at the quarry, after which finer flaking and polishing at the coastal habitations resulted in finished tools. Between the quarries and the coastal habitations, stone cairns mark the trails and occasional concentrations of basalt flakes suggest limited lithic work, although the latter usually represent single episodes rather than the sustained or repeated behavior that happened in quarries.

Because it is inland of the coastal settlements, but not far enough in to be a part of the quarry activity, the current project corridor has few archaeological features. Only in Po'olau Gulch, where the corridor will cross an area of stone piles interpreted as agricultural clearing piles (Site 1758), does it directly encounter sites. However, a few sites are known to be relatively near the corridor, and will be described here.

Site 520. Located by Kulawai Loop near the beginning of Road T, this site consists of numerous features on the crest and in the lee of a ridge. Features atop the ridge include three C-shapes, three walls, a pit, and two platforms, forming a probable habitation site. Barrera (1982) excavated one C-shape, uncovering a large fire pit feature and cultural deposition extending to 60 cm in depth. Whereas Barrera only recorded five of the habitation features, Burtchard's crew spotted the additional features on the ridge, as well as a minimum of 23 small stone mounds extending down the southwest slope. He considered the mounds to be agricultural without specifying whether they were clearing or planting features, but wondered whether the windswept ridge crest would be an undesirable place for habitation, and suggested a possible religious function (Burtchard 2000). However, the walls and C-shapes are very typical of windbreak features, and the form of these and the platform-terrace is commonly associated with habitations in the region. Part of the religious interpretation appears to rest on the presence of a "rough basalt upright" near the pit, but religious uprights tend to be smooth (often waterworn) or have worked surfaces, which this apparently did not. Despite the good view from this location (an attribute of shrines in Kaluako'i), the C-shapes are not open toward the sea, as would be expected, and lack the typical stone platform/pavement interior or coral offerings. Although it is possible that the free standing platform could be a burial, the overall function of the site appears to have been habitation and

agriculture. Site 520 covers an area of 6,750 m² at an elevation of about 100 feet.² Site 520 has been evaluated as significant under Criterion D.

Site 658. This small, isolated stone mound appears to be one of the infrequent agricultural modifications to Kaheu Gulch, along with Site 659. It is significant under criterion D, and covers 4 m² at an elevation of 60 feet.

Site 659. About 200 m up Kaheu Gulch from Site 658, this consists of a single alignment of boulders on the south slope, forming a rough terrace. It is significant under criterion D, and covers 30 m² at an elevation of 90 feet.

Site 664. This site consists of five small cobble mounds, apparently associated with agricultural clearing in a small gulch north of Pu'u Kaheu. The site is significant under criterion D, and covers about 100 m² at an elevation of 60 feet.

Site 669. This site is on the north slope of Kaheu Gulch inland of the main settlement there. The components include a possible burial (a mound), and possibly areas of temporary habitation associated with agriculture (a C-shape, a terrace, an enclosure alignment, and a possible hearth). The site is unusually situated, being in the middle of a small gulch. A test excavation here in the enclosure yielded no cultural materials, and hit hardpan subsoil in only 10 cm (Dixon and Major 1993). The site was listed as significant under criterion D, but will be treated as possibly significant under criterion E due to the possible burial. The site covers about 2400 m² at an elevation of 85 feet.

Site 670. This site includes low, oblong mounds interpreted as agricultural features, a substantial C-shape with a cupboard interpreted as a shrine, and an unusual C-shape open toward the northeast tradewinds. Testing in the latter revealed a single, shallow layer with cultural materials including ash, hammerstones, basalt flakes, and a grindstone. Presence of a possible shrine among the other features led to positive significance evaluations including criteria D and E. The site covers an area of 1500 m² at an elevation of about 90 feet.

Site 674. This single stone mound was interpreted as a possible burial, and was assigned significance under criteria D and E. It covers 1m² at an elevation of 80 feet.

Site 675. This site appears to be an agricultural area with associated temporary habitation. It consists of an enclosure with a possible hearth, and several small stone rings interpreted as planting circles, and was listed as significant under criterion D. The site covers 1000 m² at an elevation of 70 feet.

Sites 1678-1680. These sites each consist of a single concrete bunker for observation of the nearby targets. None have been judged significant, and they probably do not meet the 50-year age requirement. Site 1680 is not in a potentially affected lot.

Sites 1683-1687. These were recorded by Burtchard (2000) as a series of rock piles made by the military. They probably represent stockpiles of stone used for target construction, or surface material pushed aside during construction of the target range. None have been judged significant, and they probably do not meet the 50-year age requirement. On the project area map, they are simply marked as "Rock Piles (Modern)."

² Burtchard (2000) reported an elevation of 30 feet, but his map and UTM locations place the site much higher. Apparently due to a GPS error, many sites in the IARII report have this problem. This report estimates elevations based on map and UTM locations, written descriptions, and USGS and Molokai Ranch topographic maps.

Site 1756. This site, well *mauka* of the corridor, lies on the opposite (south) side of Po'olau Gulch about 200 m up from Sites 1757-1759 and just inside Lot 236. Burtchard reported a terrace platform on an outcrop, but noted that more features could be expected in the high grass. This feature was described as having two "chambers" (2000). A fence post and 55-gallon drum were interpreted as ranching activity, and the overall site area was estimated to be 1500 m² at an elevation of about 200 feet.

Site 1757. Located in Po'olau Gulch, this site consists of 8 small piles of cobbles placed on low boulders on the first natural terrace above the gulch bottom. Because they are in a tight cluster and are rather low to the ground, they do not appear to be trail markers, such as those found in Kamāka'ipō Gulch. Instead, they have been interpreted as agricultural clearing mounds (piles of stone removed from the soil and put on boulders where nothing could be planted). These differ from so-called "sweet potato mounds," which were planting features in which soil or compost was covered with a mantle of cobbles that acted to conserve moisture. Presence of oblong cobbles on one mound caused Burtchard to speculate that it could conceivably have been a shrine. This site covers nearly 6,000 m² at an elevation of 150 feet, and is *mauka* of the proposed corridor

Site 1758. This is a larger set of 36 stone mounds like those found in Site 1757. These, too, are stacked on boulders and are interpreted as clearing piles. This site occurs in the flood plain of Po'olau Gulch, covering approximately 3,150 m² at an elevation of about 140 feet, just down the gulch from Site 1757. Burtchard speculated that these may actually be part of a single site, and noted that a few oblong stones were also present here. The proposed corridor traverses this site.

Site 1759. A third cluster of small clearing mounds (11 in number), this site occurs in a smaller area, also on the flood plain of Po'olau Gulch. This site covers about 800 m² at an elevation of approximately 130 feet, and is located down the gulch from 1758, and *makai* of the proposed corridor.

Site 1760. This consists of a single basalt adze preform, broken into two pieces. Because it was visible in an eroded area amid grass, Burtchard speculated that it might be part of a larger deposit. Analysis of aerial photographs shows several dirt roads in the area, and it is possible that the erosional scar is one of these roads. This artifact is about 80 m north of Site 1761 at an elevation of about 150 feet, and is just *mauka* of the proposed corridor.

Site 1761. The size (2.9 x 2.5 x .55 m and 1.3 x .75 x .35 m), shape (elongate), and stacked edges of these two stone mounds, as well as their placement on a small knoll, suggests that they are human burials, rather than agricultural features. However, this is rather far inland for burials (which are more often found at the inland margin of settlement complexes), and proximity to roads means that these could conceivably be historic features. They are located *mauka* of the northern end of the project corridor. The site covers 100 m² at an elevation of 150 feet.

Site 1783. This site consisted of some cobbles piled on a boulder. Burtchard speculated that they may simply have been cleared to provide a sitting area, and there was no evidence of formal construction. The site reportedly covers 400 m² at an elevation of 100 feet.

Site 1784. A rectangular platform and a small hearth comprise this site, which Burtchard (2000) interpreted as a habitation. The platform, measures more than 7 m in length, and is raised about 30 cm above the surrounding surface. The hearth, a small ring of stone is described as being 25 m southeast of the platform, but is

shown 25 m northeast on the site map. The site covers an area of 1050 m² at an elevation of approximately 110 feet.

Site 1785. This site on a flat area up-slope of Kapukahehu bay consists of a possible hearth, an alignment, and a stone slab interpreted as a shrine based on the presence of traditionally worked surfaces and its oblong shape. Site covers 300m² at an elevation of about 125 feet.

Site 1786. This site, north of 1785, occupies a small ridge and consists of a series of modifications to an outcrop, atop which appears to be an artificially set boulder upright. The modifications include low walls, alignments, and terraces, as well as what appears to be a trail leading up toward the upright. The immediate area around the boulder is defined by a rectangular platform incorporating natural boulders and set cobbles, and is the high point before the ridge descends toward the sea. Site 1786 covers about 875 m² at an elevation of about 150 feet.

Site 1787. This site consists of two large boulders, each with a small pile of cobbles on top. The absence of historical debris led to an estimation that the site is pre-Contact in origin (Burtchard 2000), and the feature type is similar to many found in southwest Moloka'i that have been interpreted as trail markers, based on their visibility and distribution in the landscape (Dixon and Major 1993). The site is reported as covering approximately 150 m² at an elevation of close to 190 feet.

Site 1788. This site is located in a low area near a seasonally wet depression interpreted by Burtchard as a possible spring (2000). Because of this proximity and the presence of an oblong boulder slab, the site was interpreted as a shrine. Although the concentration of stone here suggests that this is indeed a feature, the existing records are unclear, since the accompanying sketch depicts a smaller, more amorphous feature than the rectangular one described as retaining its integrity. Proximity to the heavily disturbed target range area warrants consideration that this may be a later feature, and the records fail to note attributes (phallic shape, smooth or worked surface) known to be associated with sacred stones, and the photograph seems to show a fractured, angular stone not commonly associated with that function. Site 1788 is near the 150 foot contour, and is said to have an area of 100 m², although the map shows less than 20 m², even if the spring is included.

Supplemental Data Collection

Two types of archaeological investigation that are not required by the regulatory historic preservation process will be done in association with the Lā'au subdivision. While elements of each have been part of the plans from the outset, the recent period of community consultation have made it clear that they are a priority to many community members and most Hawaiians on Moloka'i, and their importance is highlighted here. First, because construction of a new road and utility corridor represents the greatest single potential for impact, and is the initial step in construction for the new subdivision, the landowner has committed to re-survey the corridor, most of which as already been through the official review process. The character and methods for this are described beginning in the following section.

The second form of data collection relates to preservation sites within and close to proposed subdivision lots, where the process will amount to a thorough re-survey of sites that are to be protected within or in close proximity to new house lots. Because this type of work is to be done as part of the **Preservation Plan**

implementation, it will be described in more detail there, but it is important to note that it will be done well in advance of any house construction, and therefore any new or augmented finds may be considered in the design and construction process, so that new houses need not damage old sites. An overview for this process is included below.

Road Corridor Re-Survey

As described in the **Introduction**, the first fieldwork associated with these plans will be to re-examine the road corridor and verify descriptions of known sites, gather additional data if possible, and search for unrecorded archaeological deposits or features now observable due to changes in surface visibility. A preliminary plan for the road corridor has been prepared by engineers, the centerline of which will be staked on the ground by surveyors prior to commencement of archaeological fieldwork. The proposed road begins at the end of Kaluakoi Road, connects to a portion of Kulawai Loop (an existing road in the Papohaku Ranchlands subdivision), and then runs roughly southwest to a point just south of the Kaupoa House lot, and then more or less follows the shoreline down the west coast and along the south coast to the vicinity of Site 1155, south of Pu'u Hakina (see map). Along the way, 12 short spur roads depart from the main corridor, providing access to subdivision lots. No connections to the Hale-o-Lono harbor road or other existing roads are planned, and the old coastal road—a roughly graded, unpaved jeep trail—will be abandoned as part of the development plan due to its alignment through several archaeological sites and erosion-prone environments.

As noted above, the portion of the road corridor north of TMK 5-01-02-030 has not been officially inventoried, and a report for that portion of the road corridor survey will in fact be submitted to SHPD for review as an archaeological inventory with significance evaluations and treatment recommendations. Despite this procedural difference, survey techniques will remain the same throughout the road corridor.

The area for data collection consists of a 30 m wide swath on either side of the centerlines for the main and spur roads, and a 50 m radius surrounding each end point, where turn-arounds have been planned. The eventual impact of road construction and utility trenching will be less than the resulting 60 m wide corridor, but that width has been chosen both to provide the best archaeological understanding of the road and its context, and to provide intensive coverage that may be used to avoid additional survey or unexpected impacts should presence of sensitive sites within the corridor cause a need to adjust the alignment.

The survey team will consist of Moloka'i residents with archaeological experience and training led by the Principal Investigator, with additional archaeologists hired from off-island if necessary. The corridor will be divided into segments, and the crew will perform sweeps in each segment with a 5 m interval. Where grass is thick enough to obscure surface visibility, gas-powered string trimmers will be used to expose the surface within 10 m of the centerline, so that low-relief features such as pavements and lithic scatters will not escape notice. Vegetation will also be cleared around the periphery of any visible surface features found within the corridor (regardless of distance from the centerline) to allow their accurate documentation and to search for additional features or deposits.

Any finds within the corridor will be documented with scaled surface planviews, cross-sections and profiles as necessary, photographs, and descriptive notes. Where sediments occur that could contain buried cultural deposits, transects of probes will be employed to determine site boundaries and characterize site stratigraphy. Each

probe is to be excavated with a shovel, by stratigraphic layer as far as practicable, with the entire volume screened through $\frac{1}{4}$ -inch mesh. For each probe a representative profile will be drawn, referenced to the current ground surface. Any features encountered will be drawn and photographed in plan and profile and excavated as a separate stratigraphic context. All cultural materials will be collected, described, and recorded in a project inventory. Probe intervals will range from 1 to 5 m, depending on the area of sediment where buried features could occur, as well as the nature and density of the surface features and visible deposits. Probes will begin at the outer edge of surface features and radiate outward in at least two directions along grids established for each site (the orientation of which will be decided in the field by the PI according to topography and local conditions). Where probe intervals are greater than 2 m, follow-up probes will be used at tighter intervals to better determine the horizontal extent of the site.

For each site, a minimum of one datum point will be flagged and marked on site planviews to facilitate location on large maps. Initially, a GPS device will be used at each of these to provide a location; consumer-grade Garmin units used on property by Ranch staff have achieved accuracy to within 2-m of the UTM coordinates provided by survey grade GPS, and will be used during the re-survey to provide interim site locations. Subsequent to the initial fieldwork and prior to construction, these points will be plotted lot surveys to provide accurate, precise control points for site and buffer locations. Each datum point will be integrated into the engineering consultant's CADD system, along with either an appropriately-sized point buffer or a polygon derived from the site planview.

Sites that have been previously recorded will be reported in the Data Recovery or Preservation report, according to its status, including any newly-located features or artifacts found within 10 m of the known features. Features not associated with known sites will be reported in a Supplemental Inventory Survey report, submitted to SHPD along with significance evaluations and treatment recommendations. This report will also cover sites located north of TMK 5-1-02-030 in the Papohaku Ranchlands subdivision.

In a few cases where the site is minimal, Data Recovery measures proposed in the accompanying Data Recovery Plan may be done in conjunction with this phase of fieldwork. For example, Site 697 consists of lithic artifacts on a deflated hardpan surface, for which the proposed data recovery method is surface collection; rather than draw a planview (for the supplemental data collection) and return later to collect the artifacts (for data recovery), a single period of fieldwork will be done to satisfy both phases.

Subdivision Lot and Coastal Zone Re-Survey

Sites within proposed subdivision lots have reasonably accurate locations due to their proximity to coastal reference points, and many have been previously documented in detail by archaeologists. In order to ensure that all sites have been adequately recorded and those slated for preservation receive timely and effective preservation, land within and in close proximity to the subdivision lots will be re-surveyed as well. As with the road corridor, the aim is to verify extant site records, augment them as necessary, and search for any previously unrecorded sites.

Methods for investigating and recording sites will be the same as well, although the project area differs. Rather than a corridor defined by the road centerline, this survey area consists of the proposed private lots and the lands makai of them. Inclusion of the coastal land (most of it already zoned Conservation, and the

remainder to be so if the Ranch's petition to change some near-shore land from Agriculture is approved) in this phase stems from two facts. First, some sites straddle the boundary between Conservation land and lots. Second, as lots are occupied and coastal parks are opened, foot traffic through coastal sites will increase, subjecting them to a greater potential for impact than in recent decades.

Because so many sites have been recorded near the shoreline, this phase will begin with the known and work outward, annotating and augmenting site documentation as necessary, firmly establishing site boundaries. Areas between sites will be surveyed at 5-m intervals to search for any unrecorded features or deposits.

Vegetation clearing in this phase will focus on sites, exposing surface features and visible deposits to allow for mapping. However, clearing in Conservation lands will be limited to cutting grasses and vines, and close attention will be paid to any native plants, preserving them. A sampling of high probability landforms (ridge-tops, natural terraces within gulches, and level ground above slopes) will be cleared to check for unrecorded features in the private lots, but not within the coastal strip. In all cases, clearing will proceed with an awareness of soil, slope, and groundcover, to avoid exacerbating erosion.

In addition to the use of shovel probes to define site boundaries, some excavation will be done in this phase to help further the general conservation goals of the master plan and to better understand chronological and functional issues regarding the sites. Wherever hearths or *imu* are at risk from erosion, they will be excavated to reveal the stratigraphic relationship to other site components, and to collect charcoal for taxonomic identification, providing a basis for future re-vegetation efforts. Likewise, eroding deposits will be cleaned up to provide a representative vertical face for profile illustration, and a charcoal or other materials may be collected at this time.

Proposed Site Mitigation Measures

Sites will be dealt with differently depending on their significance, their position in the cultural landscape, and their location relative to private parcels, the proposed land trust, and conservation overlays. Options for site treatment include preservation, data recovery, and no action. Monitoring may be done in addition to other actions, and will also occur throughout the road corridor. Sites for which no action is planned are those that were deemed not significant in the 1993 inventory report, typically because they were recent hunting blinds or had been so badly damaged as to eliminate the possibility of determining their original form or salvaging meaningful data. **Table I-1** lists the categories of mitigation actions generally; the subsequent Preservation and Data Recovery plans will add more detailed information regarding specific practices.

The forms of mitigation dealt with in these plans derive from the process outlined in HAR 13-13-275, which describes the historic preservation review process in Hawai'i. Preservation, obviously, means avoiding damage to the site, although there are different degrees of this measure that will be described in the appropriate section. **Data Recovery** pertains to sites that are significant for their information only, and covers actions such as mapping, excavation, and surface collection that adequately gather that information. The objective is to collect information prior to construction, so that any damage during development is offset by gains in knowledge. Once data recovery has occurred and the report approved by SHPD, the site is officially considered "no longer significant," although the approach in this project is to monitor any unexcavated portion in hopes of gathering further

data that may be unearthed. **Monitoring** means having an archaeologist present during ground-disturbing activities that could potentially have an adverse impact on a significant site, and to gather data from inadvertently encountered sites. The objectives are twofold: to prevent incursion into preservation areas and damage to sites being preserved, and to collect data from any sites or deposits encountered outside of preservation areas. In some cases, monitoring may result in discovery of previously unknown features or deposits, leading to an expedited inventory and evaluation, and potentially to data recovery or even preservation. This will occur wherever activity with potential to impact sites occurs, and therefore is not listed at the site-specific level. **Preservation** differs from the other treatments in that sites are protected, and there is no impact to mitigate. Options within this treatment revolve around the degree and type of protective measures to be implemented, and whether the preservation is to be passive (avoidance) or active (stabilization, interpretation, and other measures). **Burial treatment** concerns not only the actions taken for sites that have documented or possible burial sites, but also measures that will be followed should an inadvertent discovery of human remains occur. Like monitoring, the procedures for burial treatment apply throughout the project area.

Because of uncertainty regarding some site locations and the fact that the final alignment of the proposed road corridor has not yet been designated, some treatments may change later pending community and SHPD approval. (All such changes will be from Data Recovery to Preservation, and no objections are anticipated.) Any site thought to be near the road or within a proposed subdivision lot has a detailed mitigation plan. At least 14 sites recommended for data recovery in the 2001 plan are now slated for preservation due to the road realignment and the revised approach to subdivision, and as many as 8 more appear likely to do the same. SHPD will be consulted regarding such changes. As mentioned above, the preliminary road corridor will be resurveyed prior to finalizing the plan, and every effort will be made to realign it around significant sites.

A few sites listed in 1993 lack specific mitigation measures described in this plan. Some of these are sites recorded prior to 1991 that could not be located or were destroyed by that time (State Sites 55, 653, 1108, and Bishop Museum Sites B5-58 and B5-61). However, most consist of recorded sites that lacked cultural or archaeological significance. Other gaps in the site numbers—653, 1133, 59-638, 700-735 and 783-1099—have been assigned to sites elsewhere on Moloka'i, and do not actually denote gaps in the 1993 site records.

Table I-1. Site Conversions and Mitigation Treatments

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Inventory	Preserve	Data Recovery	No Action
48	B6-61		X		
49	B6-62		X		
50	B6-63		X		
50	B6-64		X		
51	B6-65		X		
52	B6-66		X		
53	B6-68 and -97		X		
54	B6-69 to -73		X		
56	B6-76 and -77		X		
57	B6-78		X		
520	N/A	X	X		
639	B6-67		X		
640	B6-74		X		
641	B6-83		X		
642	B6-84		X		
643	B6-85		X		
644	B6-86		X		
645	B6-87		X		
646	B6-88		X		
647	B6-89		X		
648	B6-90		X		
649	B6-91		X		
650	B6-92		X		
651	B6-93		X		
652	B6-94		X		
654	B6-96		X		
655 (aka 53)	B6-97		X		
656	B6-98		X		
657	B6-107		X		
658	B6-108		X		
659	B6-109		X		
660	B6-110		X		
661	B6-111				X
662	B6-112		X		
663	B6-113		X		
664	B6-114		X		
665	B6-115		X		
666	B6-116		X		
667	B6-117		X		
668	B6-118		X		
669	B6-119		X		
670	B6-120		X		
671	B6-121		X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Inventory	Preserve	Data Recovery	No Action
672	B6-122		X		
673	B6-123		X		
674	B6-124		X		
675	B6-125		X		
676	B6-126		X		
677	B6-127				X
678	B6-128		X		
679	B6-129		X		
680	B6-130		X		
681	B6-131		X		
682	B6-132		X		
683	B6-133		X		
684	B6-134		X		
685	B6-135		X		
686	B6-136		X		
687	B6-137		X		
688	B6-138		X		
689	B6-139		X		
690	B6-140		X		
691	B6-141		X		
692	B6-142		X		
693	B6-143		X		
694	B6-144		X		
695	B6-145		X		
696	B6-146		X		
697	B6-147			X	
698	B6-148			X	
699	B6-149		X		
736	B6-150		X		
737	B6-151		X		
738	B6-152			X	
739	B6-153		X		
740	B6-154				X
741	B6-155		X		
742	B6-156		X		
743	B6-157			X	
744	B6-158		X		
745	B6-159			X	
746	B6-160			X	
747	B6-161		X		
748	B6-162		X		
749	B6-163			X	
750	B6-164		X		
751	B6-165		X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Inventory	Preserve	Data Recovery	No Action
752	B6-166		X		
753	B6-167		X		
754	B6-168		X		
755	B6-169			X	
756	B6-170			X	
757	B6-171				X
758	B6-172			X	
759	B6-173				X
760	B6-174			X	
761	B6-175		?	?	
762	B6-176			X	
763	B6-177		X		
764	B6-178		X		
765	B6-179		X		
766	B6-180				X
767	B6-181				X
768	B6-182		X		
769	B6-183		X		
770	B6-184		X		
771	B6-185		X		
772	B6-186		X		
773	B6-187		X		
774	B6-188		X		
775	B6-189		X		
776	B6-190		X		
777	B6-191		X		
778	B6-192		X		
779	B6-193		X		
780	B6-194		X		
781	B6-195		X		
782	B6-196		X		
1100	B5-59		X		
1101	B5-60		X		
1102	B5-62		X		
1103	B5-63		X		
1104	B5-64		X		
1105	B5-65		X		
1106	B5-66		X		
1107	B5-67		X		
1109	B5-69		X		
1110	B5-70		X		
1111	B5-71		X		
1112	B5-72		X		
1113	B5-73		X		
1114	B5-74		X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Inventory	Preserve	Data Recovery	No Action
1115	B5-75		X		
1116	B5-76		X		
1117	B5-77		X		
1118	B5-78		X		
1119	B5-79		X		
1120	B5-80		X		
1121	B5-81			X	
1122	B5-82		X		
1123	B5-83		X		
1124	B5-84			X	
1125	B5-85		?	?	
1126	B5-86		X		
1127	B5-87		X		
1128	B5-88		X		
1129	B5-89				X
1130	B5-90			X	
1131	B5-91			X	
1132	B5-92			X	
1134	B5-93			X	
1135	B5-94				X
1136	B5-95		?	?	
1137	B5-96				X
1138	B5-97				X
1139	B5-98		X		
1140	B5-99				X
1141	B5-100			X	
1142	B5-101		X		
1143	B5-102		X		
1144	B5-103		X		
1145	B5-104			X	
1146	B5-105		X		
1147	B5-106		X		
1148	B5-107		X		
1149	B5-108		X		
1150	B5-109		X		
1151	B5-110		X		

State Number (50-60-01-)	Bishop Museum Number (50-Mo-)	Inventory	Preserve	Data Recovery	No Action
1152	B5-111		X		
1153	B5-112		X		
1154	B5-113		X		
1155	B5-114		X		
1156	B5-115		X		
1157	B5-116		X		
1158	B5-117		X		
1159	B5-118				X
1160	B5-119		X		
1161	B5-120		X		
1162	B5-121		X		
1163	B5-122		X		
1164	B5-123		X		
1165	B5-124				X
1166	B5-125		X		
1167	B5-126		X		
1168	B5-127		X		
1169	B5-128		X		
1170	B5-129		X		
1171	B5-130		X		
1172	B5-131		X		
1173	B5-132		X		
1174	B5-133		X		
1175	B5-134		X		
1176	B5-135		X		
1758	N/A	X	X		
1760	N/A	X	X		
1761	N/A	X	X		
1784	N/A	X	X		

NOTE: Treatments with an outlined X signal changes in status from Data Recovery to Preservation status. Sites slated for Inventory will all be recommended for Preservation. Question marks (?) indicate sites currently recommended for Data Recovery that may change to Preservation, pending precise site location.

BURIAL TREATMENT PLAN

General Procedures

Within the project area are several sites with known or suspected burial features. These will be preserved in place, as described previously in the **Preservation Plan**. This Burial Treatment Plan does not propose specific actions on a feature by feature basis, since the plan is to avoid all burials and possible burials.

Prior to any construction, the SHPD Burials Program will be consulted to determine if any individuals or groups have registered as lineal or cultural descendants with a bona fide interest in southwest Kaluako'i burials. Construction will be planned to avoid any burials or suspected burials recorded in previous studies and during the supplemental road corridor survey. Therefore, it is very unlikely that any burials will be disturbed, but awareness of descendants will help resolve any issues that arise in a timely manner.

Should it prove extremely difficult to plan around a *possible* burial, then (as a last resort) that feature may be tested to determine its actual function. If it is in fact a human burial, then it will be covered, and preserved in place. Human remains encountered during such a test will not be removed, photographed, or collected. If testing does not encounter human remains, the feature will be subject to data recovery according to the procedures and standards described in the **Data Recovery Plan**.

If, during the course of the project, and human burials are inadvertently discovered, work in the vicinity will be halted while the archaeologist determines if they are likely to have been in place for more than 50 years. If not, the matter comes under the jurisdiction of local police, who will be notified. If so, then any registered descendants, the Moloka'i Island Burial Council, and the SHPD Burials Program will be consulted. The preferred treatment will be to leave any burials in the location they were found, and avoid any further disturbance.

Lineal or cultural descendants who have registered their interest with SHPD have a right to visit known burials, and future landowners will be notified by the current landowners that human burials in Hawai'i are held in public trust, and are not their property. It will be up to landowners and descendants to arrange for access as the need arises.

Descendants

This plan addresses burials and possible burials within the *ahupua'a* of Kaluako'i, which was awarded to Bernice Pauahi Bishop. Her husband and heir, Charles Reed Bishop, received the land upon her death, and sold it to individuals who established Molokai Ranch in 1898 (Cooke 1949). No Land Commission Awards were made anywhere near the burials in question, and although one family of Japanese descent (Egusa) and another of Hawaiian descent (Burrows) were known to have lived in the Kamāka'ipō and Lā'au Point areas, respectively, neither has indicated that they know of ancestors buried in the sites. Informal inquiries with Hawaiian families historically associated with Molokai Ranch lands, some of them working there in the 1990s, failed to produce evidence of burials with known descendants. These included members of the Aki, Duvachelle, Kaōpuiki, Kekahuna, Lima, and Poepoe families. John Kaimikaua, a *kumu hula* and student of Moloka'i culture and history, did indicate that a hill called Ahoaho at the south end of Kamāka'ipō was the burial place for local chiefs (Personal communication,

2001); this is thought to be the mauka portion of Site 56 (reported as Bishop Museum Site 50-MO-B6-76). Attempts to receive guidance from the Burials Program during initial preparation of this plan in 2001-2002 did not produce any additional names for consultation.

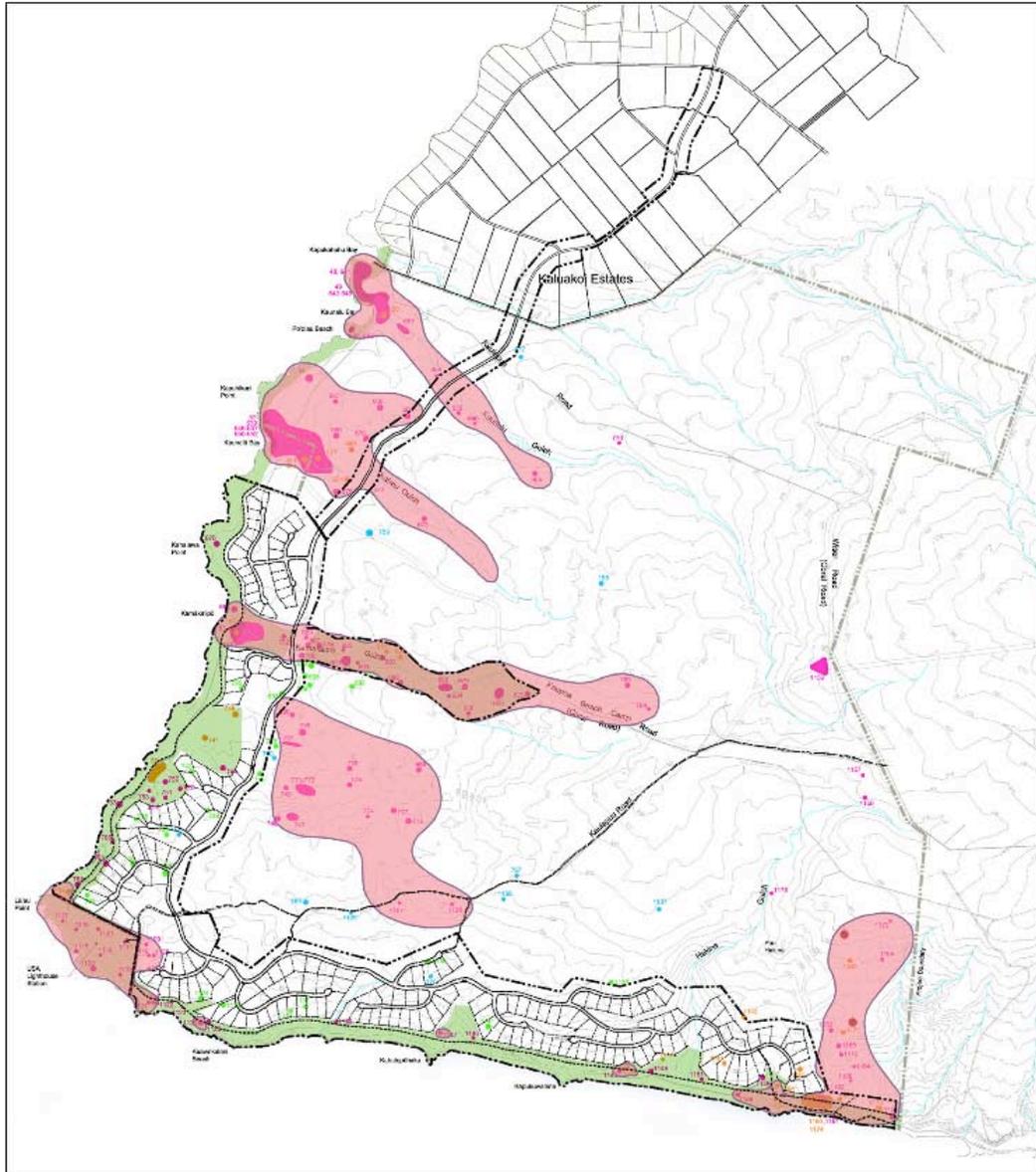
Burial and Possible Burial Sites

The following is a list of burials and possible burials. Features were designated as burials due to their form (generally mounds and small platforms), their size (between 1 and 3 meters in length), and their location relative to other features (burials often occur in and near habitations, and in the *mauka* land behind settlements). The interpretations are fairly certain; test excavation is not considered necessary for management purposes. Possible burials, on the other hand, may have matched only one of these criteria, or simply lacked an obvious alternative interpretation. Undoubtedly, some possible burials do contain human remains, but others may be agricultural clearing mounds or other types of features. Although this project will err on the side of caution by avoiding possible burials, it is important for future students of the cultural landscape, for landowners, and for cultural descendants to understand the distinction. Possible burials, for example, do not enjoy the same public trust status that actual burials do. Rather than conduct test excavations, which in the case of an actual burial would cause a temporary exposure of human remains, the landowner has chosen the more culturally sensitive option of avoidance.

Table B-1. Burials and Possible Burials, by Site

State Site Number	Inventory Site:Fe. Number	Form	Burial	Possible Burial	Zone Location
50	B6-64:9	Mound		X	Cultural Protection
54	B6-69:2,4,5,7	Mounds	X		Cultural Protection Shoreline Conservation
	B6-72:2	Mound		X	
	B6-73:11	Mound	X		
	B6-73:13	Mound		X	
56	B6-77:4-8	Mounds	X		Shoreline Conservation
520	N/A	Mounds		X	Papohaku Ranchlands
648	B6-90:6	Mound		X	Cultural Protection
649	B6-91:4	Mound		X	Cultural Protection
669	B6-119:3	Mound		X	Cultural Protection
671	B6-121:1,2	Mounds	X		Cultural Protection
674	B6-124:1	Mound		X	Cultural Protection
681	B6-131:1	Mound		X	Cultural Protection
682	B6-132:1	Mound		X	Cultural Protection
739	B6-153:1	Pavement		X	Shoreline Conservation
741	B6-155:3	Mound		X	Shoreline Conservation
764	B6-178:2	Platform		X	Cultural Protection Shoreline Conservation
1102	B5-62:1	Pit in Platform		X	Cultural Protection Shoreline Conservation
1107	B5-67:1,2,8 B5-67:6,7,10	Platforms Enclosures	X		Cultural Protection Shoreline Conservation

State Site Number	Inventory Site:Fe. Number	Form	Burial	Possible Burial	Zone Location
1143	B5-102:1	Mound		X	Project Area
1144	B5-103:1,2	Mounds		X	Project Area
1147	B5-106:4	Mound with Upright		X	Shoreline Conservation
1150	B5-109:8	Mound		X	Cultural Protection Shoreline Conservation
1152	B5-111:1-2 B5-111:3	Mounds Platform		X	Cultural Protection Shoreline Conservation
1154	B5-113:1,2	Mounds		X	Cultural Protection Shoreline Conservation
1155	B5-114:2,3	Mounds		X	Project Area
1160	B5-119:2	Pavement (Historic)		X	Cultural Protection Shoreline Conservation
1167	B5-126:1,2	Platforms (Historic?)		X	Cultural Protection
1170	B5-129:1	Mound		X	Cultural Protection
1171	B5-130:1	Mound		X	Cultural Protection
1174	B5-133:5-8, 10	Mounds Platforms		X	Cultural Protection
1176	B5-135:3	Mound		X	Cultural Protection
1761	Fe. 1-2	Mounds	X		Papohaku Ranchlands



- Legend**
- Cultural Protection Zone (with Archaeological site to be preserved) = 1,000 acres
 - Shoreline Conservation Zone = 451 acres
 - Project Area
- Archaeological Sites**
- Preserve
 - Burial / Possible Burial
 - Additionally Recorded Burial (May 2004)
 - Data Recovery
 - No Action

Figure 5
Cultural & Historic Resources Map
Lā'au Point

ISLAND OF MOLOKAI



Note: For planning purposes only.

Figure B.1: Inventoried Burial and Possible Burial Site Locations

Site Locations

Table B-1 also reports the location of burial and possible burial sites in relation to the proposed Lā'au Subdivision project area and to overlay zones proposed for Cultural Protection and Shoreline Conservation. The accompanying map (Figure B.1) shows the location of burial sites (which appear in orange). This map also depicts two areas, Pu'u Hakina (adjacent to Site 1171) and another ridge mauka of that that were identified by the Cultural Committee as likely burial areas during consultations between the Ranch and the community in 2004. These do not have recorded features, but were identified by Native Hawaiian residents of Moloka'i as burial places; both are within the large mauka-makai preserve beyond the eastern edge of the proposed development.

Although the table includes information about the two sites (520 and 1761) with possible burials in Papohaku Ranchlands (Labeled "Kaluakoi Estates" in Figure B.1), they have not yet been adequately reported for inventory purposes, a step that must be completed before the landowner can present preservation and burial treatment plans. Their inclusion here simply acknowledges the likely result of an inventory study and provides contextual information.

All but three of the burial and possible burial sites lie within proposed land use zones for Cultural Protection and/or Shoreline Conservation, and to not face potential effects from construction. Sites 1143, 1144, and 1155 comprise five stone mounds located near the eastern extreme of the proposed subdivision (Figure B.1, lower right corner). However, proposed subdivision lot boundaries have been drawn so that even these possible burial features will not fall within the subdivision, and all will be preserved in place. During construction, they will be protected as described below.

Site Descriptions

Table B-1 includes the State and original Bishop Museum designations of features that were interpreted as burials and possible burials, as well as the feature form and the interpretation of "burial" or "possible burial" from the original report descriptions and feature inventory table (Dixon and Major 1993). Detailed dimensional data, sketch maps, and brief descriptions are available in that report, and will not be reported here. What follows are descriptive summaries of the features covered in this plan.

Site 50. This site was located prior to the 1991 survey, and is part of a relatively extensive habitation complex at Kaunalā Gulch. Mound Feature 9 is considered a possible burial mound. A heiau and permanent habitation in the site complex suggest a stable occupation, which makes burials likely.

Site 54. This site subsumes several Bishop Museum sites, of which B6-69, B6-72, and B6-73 have burials or possible burials, along the north edge of Kamāka'ipō Gulch and in its alluvial plane. Again, extensive evidence of habitation and ritual structures indicate a stable occupation, and increase the likelihood that burials are present. In particular, Site 73, Feature 11, a substantial platform-like mound with a smaller cairn piled on the surface, appears to be a burial feature, perhaps containing multiple interments.

Site 56. In this site, B6-77 contains five mounds (Feature 4-8) whose form and location at the margins of a settlement suggest burial function. A hill-like ridge at the southeast end of this complex may be the hill called "Ahoaho," which John Kaimikaua identified as the burial place for the chiefs of Kamāka'ipō.

Site 648. This mound, located in the “Kaupoa Camp” parcel, is already protected in a site preserve there. It is associated with a ko’a shrine.

Site 649. Similar to 648 in form and its proximity to a ko’a, this mound is just north of the Kaupoa parcel.

Site 669. Located in the flood plane of a small gulch, this is a small habitation site, of which a stone mound may be a possible burial. Condition is relatively poor, having been exposed to erosion.

Site 671. This site consists of two mounds on a ridge at the mauka periphery of the Kaunalā Bay settlement complex. The location and oblong shape strongly indicate burial function.

Site 674. This mound is just a meter in area and two stones high, and its location on a slope behind the Kaheu Gulch settlement is the primary factor in its interpretation as a possible burial.

Site 681. This partially-eroded mound is located on the slope of Kamāka’ipō Gulch, inland of the main settlement and agricultural area.

Site 682. This partially-eroded mound is located on the slope of Kamāka’ipō Gulch, inland of the main settlement and agricultural area, and about 20 feet higher in elevation than Site 681.

Site 739. This is an oval-shaped pavement of stones lacking midden or other evidence of habitation.

Site 741. This mound is nearly 2-m in diameter, and is located on a slope near trail markers.

Site 764. This is located just north of the lighthouse reservation boundary, and consists of a low platform within the largest room of a multi-room structure. It may be associated with the occupation of the lighthouse keeper Burrows.

Site 1102. This consists of a rectangular depression on the surface of a platform feature interpreted as a habitation.

Site 1107. Part of a south-shore complex of sites including the above-mentioned habitation platform (Site 1102) and a heiau (1106), this site includes three platforms (Features 1, 2, and 8) as well as three rectangular enclosure alignments (Features 6, 7, and 10) interpreted as burials due to their form and their location on the mauka periphery of the Hakina settlement. It is possible that a more thorough documentation of the site could result in additional burial or possible burial designations, since additional mounds are present.

Site 1143. This is an isolated stone mound whose 2 by 3-m size is consistent with a burial.

Site 1144. This site consists of a large and a small stone mound. Abundant lithic debris between and near the features suggests that they may be associated with lithic production rather than burial.

Site 1147. This site has two terraces, midden, and lithic debitage indicative of habitation, Feature 4 is a mound into which an upright stone has been incorporated; although adjacent to a hammerstone and lithic debitage concentration, its form and location near habitation suggest burial as a possible function.

Site 1150. This site is a concentration of cairns (too small to contain burials), a ko'a shrine, and Feature 8, a large mound considered to be a possible burial.

Site 1152. This site contains a structure thought to be a ko'a, as well as two substantial mounds thought to be possible burials. The site has been damaged by historic road construction, although the mounds appear in fair condition.

Site 1154. Although associated with an extensive lithic debris concentration and a historic hunting blind, the presence of two mounds in this site suggest possible burial function.

Site 1155. This site includes two mounds on the brow of a ridge overlooking the coast below.

Site 1160. This site has a concrete structure foundation associated with ranching, but it is a rectangular pavement with multiple pieces of branch coral that indicate a burial, probably also historic.

Site 1167. The good condition of these two platforms and their proximity to a fenced corral indicate that they are historic in origin. One is round (a possible indicator that it supported a water tank), and the other rectangular. Burial is one possible interpretation of these features, which are at a higher elevation than most in the project area.

Site 1170. This consists of a single stone mound on the slope just behind the coastal sand flats.

Site 1171. Located mauka of most features, this is an unusual soil mound with a partial stone veneer. Its position near the brow of a prominent ridge as well as its size suggest burial as a possible function.

Site 1174. This site contains numerous features on the slope behind the Hakina settlement complex, of which two mounds and a platform appear to be possible burials.

Site 1176. This site includes 13 features arrayed on the slope just mauka of the coastal flat, of which one mound appears to be a possible burial.

Current Site Condition

Although some sites have been observed in the interim, the burial or possible burial sites have been systematically documented since the 1991 inventory survey. At that time, the condition of the features was not recorded in detail, but the general status was that all appeared to have at least minimal integrity, but none appeared to be in excellent condition. (Where specific observations of condition were provided in the inventory report, they have been paraphrased in the above site descriptions. Basically, stones appear to remain in their original vicinity, although collapse and toppling of features was typical. None were reported to have been dismantled or looted, and in no case were human remains reported to have been visible on the surface. Because most features consist of mounds, whose degree of collapse and original form can be difficult or impossible to assess, their absolute integrity cannot be determined.

As part of the re-survey of the proposed road corridor and subdivision lots, which will include survey beyond the actual construction area, all sites located will be evaluated more carefully for integrity. Likewise, implementation of the Preservation Plan will include relocation of the burial and possible burial sites, augmentation of their documentation, evaluation of their condition and integrity, and

recommendations for stabilization or reconstruction. Finally, ongoing consultation with the community, as well as review of this draft plan by the SHPD Burials Program and Moloka'i Island Burial Council will likely result in a more detailed plan with regard to stabilization and restoration. At this time, however, no specific measures are proposed for stabilization and restoration.

Burial Protection Measures

The measures listed below also appear in the Preservation Plan, which has been submitted simultaneously with this plan. All of the burial and possible burial sites fall within the Preservation treatment, and will be left in their original locations. Table B-2 lists the specific measures to be implemented at burial sites. The following sections explain the short and long term measures included in the table.

NOTE: The categories of “Recover Eroded Data” and “Interpretation” are included here because the historic preservation process deals with sites, rather than individual features, and the sites to which the burial or possible burial features belong have these as proposed preservation treatments. However, burials will not be part of public interpretation or collection of eroded data.

Table B-2. Burial Preservation Measures.

Site (50-60-01-)	Avoidance	Temporary Buffers	Mapping	Evaluate Stability	Recover Eroded Data	Physical Stabilization	Vegetative Stabilization	Permanent Boundary	Interpretation	Protocol Education
50	X									X
54		X	X	X	X	X	X	X	X	X
56			X	X		X		X	X	X
520	X	X	X	X		X	X	X		X
648	X									X
649	X									X
669	X									X
671	X									X
674	X									X
681			X	X		X		X	X	X
682			X	X		X		X	X	X
739			X	X		X		X		X
741			X	X	X	X		X	X	X
764		X	X	X	I	X	X	X	X	X
1102	X									X
1107	X									X
1143			X	X				X		X
1144		X	X	X	X			X		X
1147			X	X	I	X	X	X		X
1150			X	X		X		X		X
1152			X	X	X	X		X		X
1154			X	X	I			X		X
1155	X									X
1160	X									X
1167	X									X

Site (50-60-01-)	Avoidance	Temporary Buffers	Mapping	Evaluate Stability	Recover Eroded Data	Physical Stabilization	Vegetative Stabilization	Permanent Boundary	Interpretation	Protocol Education
1170	X									X
1171	X									X
1174	X									X
1176	X									X
1761	X	X	X							X

Short Term Protection

Temporary Fencing and Protection. For sites that are in the area of potential impacts during construction, temporary buffers will be established. These will consist of brightly-colored construction fencing erected on the permanent site buffer boundary. Construction personnel will be alerted to their presence and significance, and will not be allowed to encroach. Once buffer zone markers are placed in the field, field personnel will be alerted to their presence and their meaning; no construction, ground-disturbing activity, traversing by vehicle, or stockpiling will be allowed within them. Buffers of this type differ from site boundaries, and extend 7 m or more beyond the outermost features of a site. An archaeologist will be present during ground-disturbing work in such locations to maintain the protective buffer, and to evaluate any inadvertent discoveries that may occur nearby. The archaeologist will follow the procedures outlined below in **Monitoring: Methods.**

Evaluate Stability. Sites are part of a changing environment, and in Kaluako'i a widespread agent of environmental change is erosion; long dry periods and occasional downpours mean that many sites are vulnerable to sudden erosion. Generally, sites are at risk either from soil deflation or by more damaging collapses as gullies advance up-slope; in fact several previously buried cultural deposits were initially recorded because erosion had exposed them. More rarely, low-lying sites may be covered with silt washed down from above. For these reasons, sites where erosion appears to be a factor will be evaluated with regard to the damage that has already occurred and the risk of further adverse impacts from erosion. In addition to the sediments, stone features will be evaluated to determine the degree to which collapse has occurred and may be expected to continue. Recommendations for stabilizing sediments and structures will be made.

Long Term Measures

As-Is Preservation. For sites that are outside the subdivision, as well as some within that can easily be planned around, the primary treatment will be simple avoidance. These are sites that have no construction or ground-disturbing activities planned nearby. Sites preserved in this manner will have 7 m buffers unless otherwise noted, but because they are usually remote, will not have physical boundary markers. Instead, these sites will be marked on topographic maps (see attached), and current and future landowners will be notified of their presence, and of the buffer zones.

Mapping. Many sites, especially those where public access or frequent use may be expected, would benefit from accurate mapping. The inventory survey included plane table and alidade mapping of some sites, but most were only sketched. Mapping techniques for structural features will conform to those described in **Data Recovery: Methods.** Maps will become baseline illustrations of sites, allowing landowners to re-identify them and evaluate their condition in the future, as well as to recognize site buffers, which will be depicted on parcel plats. Copies of each map will be submitted to the SHPD office as part of a Preservation Report.

Physical Stabilization. For sites where erosion or historic development has resulted in an unstable deposit, measures may be taken to prevent further impacts. Physical stabilization refers to actions that replenish eroded sediments or create barriers preventing further erosion. Soil from upland pineapple fields may be introduced at some locations to cover deflated surfaces or fill in erosional gullies. No fill will be taken from archaeological sites. For features, previously toppled stones may be re-stacked to repair collapsed sections, but only to the degree that it prevents further degradation; complete restoration of walls or other features will be done only after SHPD has reviewed and accepted a site specific restoration plan. In a few cases, imminent damage may require use of retaining structures. These will consist of alignments or stacked stone facings, and will incorporate natural materials erected in traditional mortarless construction; to avoid confusion of stabilizing features with older sites, they will generally make use of a different type of stone so that they can be readily distinguished. Kiawe or other logs may also be used. Prior to implementation, specific treatments involving alteration of site landscapes will be submitted in writing for SHPD review. Subsequent to implementation, all forms of physical stabilization will be annotated on site maps, described specifically in a letter to SHPD, and identified in any educational materials that are developed for stabilized sites.

Vegetative Stabilization. In sites where soil and water availability make it possible, plants will be used to stabilize damaged sites and prevent erosion of intact sites. In some cases where it is being recommended, it may not be practical to plant vegetation, due to hardpan surfaces or lack of water. In such cases, the approach will be to encourage growth of extant plants, particularly native plants and grasses that have become naturalized and help bind the soil. The technique will be to allow low-growing varieties to stay, rather than introducing them. Vegetation that is brought in and planted will consist of native and Polynesian introduced shrubs and groundcovers that are well suited to the dry environment. Shrubs may include species common in the project area, such as *ma'oa*, *'ilima*, and *'uhaloa*, as well as others that would have been expected prior to historic changes, such as *'akoko*, *'auhuhu*, *'āweoweo*, *maiapilo*, *naupaka*, and *'ūlei*. Ground covers will also include known and likely former species, such as *'ākulikuli*, *hinahina*, *'ihi*, *'ili'e'e*, *nanea*, *pōhuehue*, and *pōhinahina*. Choices of species for particular sites will depend on the availability of the varieties, physical environment, and consultation with ethnobotanical and botanical specialists.

Permanent Boundary. For some sites where public use is expected to be relatively high, permanent boundaries around site buffers are appropriate. Although some especially sensitive sites may have boundaries preventing access except by bona fide cultural practitioners or descendants, they will more often be visual reminders of site boundaries. At some, openings will allow public access, and boundary markers will serve to direct foot traffic rather than prevent it. Before making boundaries, the Kūpuna Advisory Committee will be consulted, but the intent is to use wood or other natural materials that will be visible, yet not too distracting.

Stone walls will not be used, to avoid confusion with the sites themselves. Access to and around boundaries will be planned on a site-by-site basis to minimize the potential for impacts. Signs at buffers will identify sites and advise visitors regarding protocol. (See Appendix.)

Protocol Education. All sites being preserved have significance at least for the information they can offer to our understanding of Moloka'i history. In some cases they also represent of a unique function or style, and many are valued for their cultural significance to *kanaka maoli* (indigenous Hawaiians) and other groups. For these reasons and the fact that they show the last physical traces left by former inhabitants, it is important to communicate new residents the importance of helping protect and respect ancient sites. As interpretive materials are developed, therefore, information on how to properly behave in sites will be included on printed materials and signs. From an archaeological perspective, this means leaving things as they are and avoiding actions that could damage or destabilize sites. Hawaiian cultural protocol builds on this to include other behaviors, especially with regard to *ko'a* and burial sites, and therefore the Kūpuna Advisors and cultural experts will be consulted. It is anticipated that protocol education will consists of two parts: a general notice for people to respect sites and leave them as they find them, and more detailed information about sites with religious or burial features.

Preservation Report. Following completion of preservation measures, a report will describe their implementation, present data collected at preservation sites, and refine the long-term preservation measures. Interpretive themes and messages based on consultation with cultural experts, other research, and data recovery results will also be detailed in the final Preservation Report.

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APPENDIX A

Sample Text For Signs

Example A: Buffer Marker

This is a traditional site built and used centuries ago by Hawaiians. Please help preserve this place by staying on marked trails and by not moving rocks. Damage to sites is punishable under Hawai'i law (Chapter 6E-11). Take with you memories and photos, but please remove no objects from this site. Aloha

Example B: Interpretive Sign

SITE 656 – STONE TOOL QUARRY

By about 1400 AD, Hawaiians often ventured inland from their coastal settlements to quarry dense-grained basalt that was used to make adzes and other tools. This became so common that the name of the land district in west Moloka'i came to be "Kaluako'i" meaning "the adze pit."

Hawaiians used other stones to strike this fine basalt, chipping away flakes until the rough shape of an adze emerged. Some of this work occurred here, where workers would camp. Polished adzes are uncommon here, but are more so at the coast, leading archaeologists to believe that final stages of manufacture occurred at the more permanent settlements by the ocean.

[Illustration showing hammerstone and adze preform, and perhaps map of quarry location.]

Example C: Photo of Kaupoa Sign and Fencing

