

# KĀWĀ RESOURCES MANAGEMENT PLAN

## DRAFT



KĀWĀ  
RESOURCES MANAGEMENT PLAN

DRAFT

FEBRUARY 2017

PREPARED FOR:



PREPARED BY:



***I kekahi la nae, hiki maikai iho la  
ka nalu o Maliu a me  
Kapaelauhala, olioli iho la ke keiki  
haehae poko o  
Naalehu,  
ka heenalu lala o Kawa.***

One day when the waves of Maliu and Kapaelauhala were rolling in magnificently, the cut-worm tearing son of Naalehu resolved to show the skill he had got through practice [in surfing] on the bent wave of Kawa.

“Ka Moolelo o Kamehameha I”  
S.M. Kamakau, 1867

## ACKNOWLEDGEMENTS

Mahalo nui to the Ka'ū community for welcoming the planning team into their community, and to all who shared their mana'o and contributed to this management plan.

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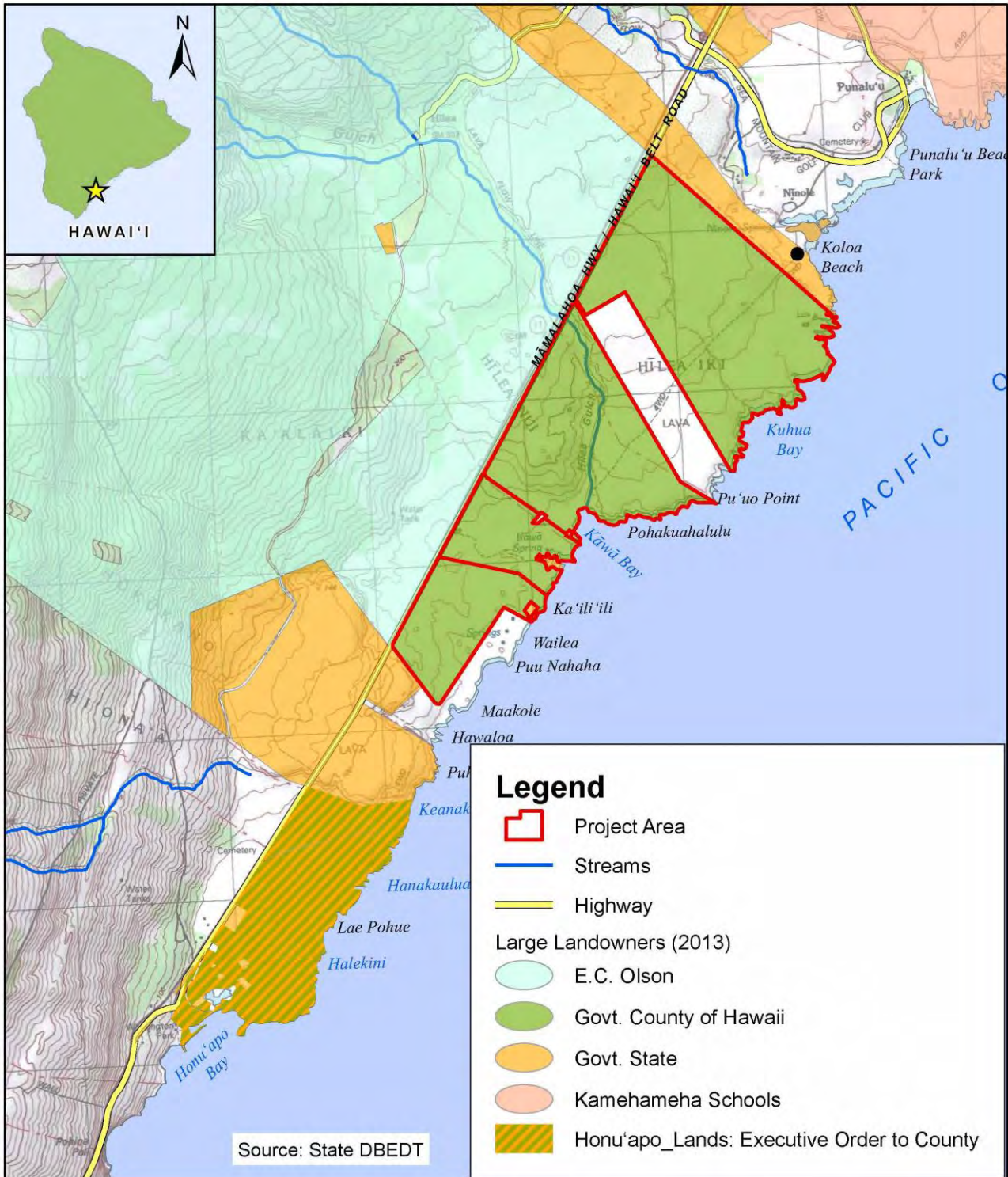
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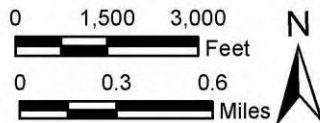
## **ACRONYMS AND ABBREVIATIONS**

AIS	Archaeological Inventory Survey
CBSFA	Community-based Subsistence Fishing Area
DAR	Department of Aquatic Resources
DLNR	Department of Land and Natural Resources
DOFAW	Division of Forestry and Wildlife
DPR	Department of Parks and Recreation
HAR	Hawai'i Administrative Rules
HCFD	Hawai'i County Fire Department
HIHTRP	Hawai'i Island Hawksbill Turtle Recovery Project
HRS	Hawai'i Revised Statutes
HWF	Hawai'i Wildlife Fund
LLCP	Legacy Land Conservation Program
MHI	Main Hawaiian Islands
MOU	Memorandum of Understanding
NMFS	National Marine Fisheries Service
PONC	Public Access, Open Space, and Natural Resources Preservation Commission
RLA	Recovery Land Acquisition
SHPD	State Historic Preservation Division
TMA	Three Mountain Alliance
TMK	Tax Map Key
UH	University of Hawai'i
USFWS	U.S. Fish and Wildlife Service

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Kāwā Resources Management Plan  
 FIGURE 1. LANDS MANAGED BY COUNTY OF HAWAII



By:   
 Date: November 2016

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## EXECUTIVE SUMMARY

Kāwā is a treasured wahi pana, not only for the people of Ka‘ū, but also for residents from other regions of Hawai‘i Island. At Kāwā, one will find the picturesque Kāwā Bay, that serves as a popular surfing spot for Ka‘ū residents, fresh water springs that feed an estuary once serving as a fishpond, Hīlea Stream, one of the largest intact heiau in the region, and numerous Hawaiian cultural sites that provide a glimpse into what was once home to generations of Hawaiian families.

This historically and culturally rich place is also home to a diversity of native plants and animals, including a number of threatened and endangered<sup>1</sup> species. Kāwā provides habitat for two federally listed sea turtles: the endangered hawksbill turtle (*Eretmochelys imbricata*) and the threatened green turtle (*Chelonia mydas*). Suitable wetland habitat for the endangered Hawaiian coot (*Fulica alai*) can be found in Kāwā’s estuaries and marsh area; and the mouth of Hīlea Stream provides habitat for an endangered insect called the orange-black Hawaiian damselfly (*Megalagrion xanthomelas*). It is crucial that this special place be protected and preserved for its historic and cultural significance as well as for the important role it plays in the overall ecosystem of the island.

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<sup>1</sup> The Federal Endangered Species Act of 1973 defines federally endangered species as “any species that is in danger of extinction throughout all or a significant portion of its range,” while a federally threatened species is defined as “any species that is likely to become an endangered species within the foreseeable future through all or a significant portion of its range.”

Recognizing the importance of this place, the County of Hawai‘i (hereinafter referred to as “County”) purchased the first phase of these Kāwā lands, a 234-acre parcel fronting Kāwā Bay, in 2008. The County then acquired the second phase, consisting of three parcels, in 2011. Together, these four undeveloped, coastal parcels, located within the ahupua‘a of Ka‘alāiki, Hīlea Nui, and Hīlea Iki, total approximately 785 acres.

The County purchased these lands by using funds from the Public Access, Open Space, and Natural Resources Preservation Commission (PONC) program and by leveraging funds from state and federal sources [the State Department of Land and Natural Resources Legacy Land Conservation Program and the U.S. Fish and Wildlife Service Recovery Land Acquisition (RLA) program]. As set forth in the RLA Grant Agreement No. E-17-RL-1 and in the “*Agreement to Subgrant between County of Hawai‘i and the State of Hawai‘i*” dated September 7, 2011, the County is required to develop this resources management plan for the Kāwā lands.

The County also manages 222.7 acres of Ka‘ū coastal lands located to the south of the Kāwā acreage. Now known as “Honu‘apo Park,” these lands were purchased by the State in 2006 and were set aside to the County by Executive Order No. 4164. With the more recent acquisition of the Kāwā lands, the County now has the opportunity – and the responsibility – of planning for and managing approximately 1,000 acres of coastal Ka‘ū lands.

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This resources management plan inventories the vast array of natural and cultural resources at Kāwā; outlines specific management strategies and actions to ensure resources within the County's property are properly cared for, particularly habitat for native, threatened, and endangered plants and animals; and discusses a management framework for Kāwā and other PONC lands.

The overall management theme for Kāwā is that this very special place must be protected for future generations and should not be developed; these lands should remain open and wild—"less is more." This management plan assumes that there will be no significant infrastructure improvements as it is recognized that improved amenities and access would alter the undeveloped, natural landscape of Kāwā and ultimately impact the spirit of this wahi pana. The desired outcome is a safe environment for all to use and enjoy. The sense of place that is uniquely Kāwā is maintained. The demand for recreational areas is balanced with the need to protect the natural environment from overuse. Native plants and animals are protected and can exist in harmony with human activities. Cultural practices and knowledge are perpetuated, existing landscape and viewplanes are intact, and natural and cultural resources are cared for.

As specified in the *Kāwā Bay Acquisition and Habitat Restoration Project* (Hawai'i DLNR-DOFAW, 2007), the management of natural habitat for the following four threatened and endangered species at Kāwā should be a priority for the County: Hawksbill sea turtle, Green sea turtle, Hawaiian coot, and Orange-black Hawaiian damselfly.

Management actions are presented in this plan to enhance and restore habitats for these four priority species. Strategies relating to small mammal predator control, managing threats from pigs and dogs, vegetation management, and protection from human activities are described.

Additional management actions specifically to protect cultural resources from inadvertent disturbances and intentional looting, and to perpetuate cultural knowledge and practices are presented.

Critical to maintaining the sense of place that is uniquely Kāwā is the County's ability to strictly enforce rules and to maintain control of these lands, especially if human use is anticipated to increase in the future.

Regarding on-going management of the land and water resources of Kāwā, as well as management of other PONC lands, it is recommended that a new Branch or Office within the County's Finance Department be created to provide staff support for the PONC program, administer and manage the maintenance fund, and actively maintain and preserve lands and easements acquired by the PONC fund.

Implementation of management strategies identified in this plan will require partnership amongst state and county agencies, community organizations, and lineal descendants to carry out many of the actions outlined. A collective effort is key to successfully execute the actions described in this plan, as it is a task beyond the capacity of just one organization or government agency.

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# 1 INTRODUCTION

Kāwā is a treasured wahi pana, not only for the people of Ka’ū, but also for residents from other regions of Hawai’i Island. For many, Kāwā connects the past to the present and evokes memories of Old Hawai’i and what it means to be Hawaiian. In the past, it was one of the places people would access for fishing in Ka’ū. It was not only important for survival, but the practice often involved camping at the beach for several days which facilitated families spending time together. During this time, core Hawaiian values, such as mālama, kōkua, aloha and were learned and lived out through taking care of resources and each other. For others, Kāwā serves as a pu’u honua, or place of refuge. Hidden from the main highway are two pāhoehoe roads intertwined through shrubland which lead to breathtaking views of the coastline and natural landscape. At Kāwā, one will find the picturesque Kāwā Bay, that serves as a popular surfing spot for Ka’ū residents; fresh water springs that feed an estuary once serving as a fishpond; Hīlea Stream; one of the largest intact heiau in the region; and numerous Hawaiian cultural sites that provide a glimpse into what was once home to generations of Hawaiian families.

This historically and culturally rich place is also home to a diversity of native plants and animals, including a number of threatened and endangered<sup>2</sup> species. Kāwā provides

<sup>2</sup> The Federal Endangered Species Act of 1973 defines federally endangered species as “any species that is in danger of extinction throughout

habitat for two federally listed sea turtles: the endangered **hawksbill turtle** (*Eretmochelys imbricata*) and the threatened **green turtle** (*Chelonia mydas*). Suitable wetland habitat for the endangered **Hawaiian coot** (*Fulica alai*) can be found in Kāwā’s estuaries and marsh area; and the mouth of Hīlea Stream provides habitat for an endangered insect called the **orange-black Hawaiian damselfly** (*Megalagrion xanthomelas*). It is crucial that this special place be protected and preserved for its historic and cultural significance as well as for the important role it plays in the overall ecosystem of the island.

Located within the ahupua’a of Ka’alāiki, Hīlea Nui and Hīlea Iki, District of Ka’ū, island of Hawai’i, these Kāwā lands consist of four undeveloped, coastal parcels totaling approximately 785 acres. The County of Hawai’i (hereinafter referred to as “County”) acquired the first phase of the Kāwā lands in 2008 and the second phase in 2011 using funds from the Public Access, Open Space, and Natural Resources Preservation Commission<sup>3</sup> (PONC) program to eliminate the threat of development. In addition to funds from the PONC program, State and

all or a significant portion of its range,” while a federally threatened species is defined as “any species that is likely to become an endangered species within the foreseeable future through all or a significant portion of its range.”

<sup>3</sup> Hawai’i County Code Chapter 2, Article 42, Section 2-214; Hawai’i County Charter, Section 10-1

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federal funds were also used to purchase the Kāwā lands.

The County also manages 222.7 acres of Ka‘ū coastal lands located to the south of the Kāwā acreage (Figure 1). Now known as “Honu‘apo Park,” these lands were purchased by the State in 2006 and were set aside to the County by Executive Order No. 4164. In 2009 to 2010, Townscape, Inc., under contract with the County, developed the *Honu‘apo Park Resources Management Plan* for these lands. The plan included several adjacent small parcels, including the County’s existing Whittington Beach Park. The overall goal of the plan was “to provide land use guidance to help protect and restore the important natural and cultural resources of the property while providing integrated and respectful recreational and educational opportunities for the Ka‘ū community.” With the more recent acquisition of the Kāwā lands, the County now has the opportunity – and the responsibility – of planning for and managing approximately 1,000 acres of coastal Ka‘ū lands.

This management plan inventories the vast array of natural and cultural resources at Kāwā; outlines specific management strategies and actions to ensure resources within the County’s property are properly cared for, particularly habitat for native, threatened, and endangered plants and animals; and discusses a management framework for Kāwā and other PONC lands. The plan reflects values important to kūpuna and residents of the Ka‘ū community. It also provides a guide for the County to coordinate management and stewardship activities for this treasured wahi pana for the benefit of Hawai‘i Island families and future generations.

## 1.1 BACKGROUND

### Overview of the PONC Program

The PONC program (also known as the Open Space or 2% Fund) was established in 2006, and receives funding for land conservation from two percent of the County’s annual real property tax revenues. The program is currently administered and managed by the County’s Finance Department, Property Management Division.

The PONC program provides monies to purchase or acquire lands and easements in the County for:

- Public outdoor recreation and education, including access to beaches and mountains;
- Preservation of historic or culturally important land areas and sites;
- Protection of natural resources, significant habitat or eco-systems, including buffer zones;
- Preservation of forests, beaches, coastal areas, natural beauty and agricultural lands; and
- Protection of watershed lands to preserve water quality and water supply.

In order for a property to be acquired using the PONC funds, the public must nominate a property that they believe should be purchased and preserved to the

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Commission<sup>4</sup>. Once a property is submitted, the Commission reviews the property based on factors such as historic and culturally important features; opportunities for outdoor recreation and education; public access to beaches or mountains; preservation of forests, beaches, coastal areas, and natural beauty; and the overall benefit the property provides to the public. The Commission develops a list of priority projects for conservation every year, which is submitted to the mayor for comments and recommendations. After comments and recommendations are provided by the mayor, the list is then submitted to the County Council for consideration.

Since the inception of the PONC program, more than 1,300 acres have been preserved for open space using funds from the PONC program (Table 1). The first property purchased using the PONC funds was the Waipi'o Lookout in Hāmākua in 2007, followed by the first phase of Kāwā a year later. Other PONC properties include Kaiholena and Pa'o'o in North Kohala, and Kipapa Park, White Sand Mauka, and 'O'oma in North Kona. Several of the PONC properties, including Kāwā, were acquired by leveraging funds with state and federal sources: the State Department of Land and Natural Resources (DLNR) Legacy Land Conservation Program (LLCP) and the U.S. Fish and Wildlife Service (USFWS) Recovery Land Acquisition (RLA) program.

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<sup>4</sup> The Commission consists of nine members, appointed by the mayor and confirmed by the County Council. One member must reside in each County Council district. Members serve staggered terms of five years. (Hawai'i County Code Chapter 2, Article 42, Section 2-215)

Lands acquired using the PONC funds contain a restrictive covenant in their recorded deeds of conveyance that states:

“This land was acquired with moneys from the Public Access, Open Space, and Natural Resources Preservation Fund. It shall be held in perpetuity for the use and enjoyment of the people of Hawai'i County and may not be sold, mortgaged, traded or transferred in any way.”

#### **Public Access, Open Space, and Natural Resources Preservation Maintenance Fund**

A charter amendment in 2012 established a public access, open space, and natural resources preservation maintenance fund (hereinafter “maintenance fund”), which sets aside 0.25 percent of annual real property tax revenues (in addition to the two percent to purchase lands), to provide funding for maintaining properties acquired by the PONC fund. The maintenance fund will ensure that money is dedicated to preserve the land, promote public safety, and maintain healthy stewardship. Monies from the maintenance fund may be used solely for public safety maintenance and preservation of lands and easements acquired by the PONC fund. Hawai'i County Charter, Article 10, Section 10-16 outlines permitted uses of the maintenance fund, which may include expenditures relating to:

- (1) Reparation (fixing, mending, repair work, and servicing);
- (2) Preservation (damage control, salvaging, safekeeping, and safeguarding);

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- (3) Conservation of soil, forests, shorelines, native wildlife, streams, wetlands, watershed, and floodways;
- (4) Restoration (replacement, reclamation, reconditioning, and remediation);
- (5) Wildlife and fire prevention;
- (6) Repair of existing buildings to meet the current code requirements, if the building is deemed reasonable to save;
- (7) Replacing signs to meet the current code requirements;
- (8) Installation, repair, or replacement fencing and gate or access mechanisms;
- (9) Installation or repair of cattle guards;
- (10) Mitigation of flooding problems including repair or restoration of existing culverts, drainage features, or other similar flood control mitigation;
- (11) Archaeological survey and buffering of historical or cultural sites after appropriate consultation with Native Hawaiian descendants and cultural practitioners;
- (12) Biological studies for the protection of Native Hawaiian species of plants and animals; or
- (13) Mitigation of Americans with Disabilities Act compliance issues that may arise during the course of public safety maintenance and preservation.

**Table 1. Properties Acquired with PONC funds (as of 12/2016)**

PROPERTY	LOCATION	ACREAGE	ACQUISITION YEAR	OTHER FUNDING SOURCE
Waipi'o Valley Lookout Parcel	Hāmākua	1.804	2007	--
Kāwā	Ka'ū	234.293	2008	State-DLNR LLCP
Kaiholena (north)	North Kohala	151.615	2010	--
Pa'o'o	North Kohala	10.61	2010	State – DLNR LLCP
Kāwā	Ka'ū	550.871	2011	State-DLNR LLCP; Federal USFWS RLA
'O'oma	North Kona	217.566	2013	Private Donation
Kipapa Park/White Sands Mauka	North Kona	16.7865	2014	--
Hāwī Banyan Trees Property	North Kohala	0.911	2015	--
Kaiholena (south)	North Kohala	76.615	2013, 2015	State-DLNR LLCP
Kahua Olohu	Ka'ū	13.000	2016	--
Pohoiki Bay	Puna	26.762	2015	--
Kahuku Coastal Property	Ka'ū	3,127.95	2016	State-DLNR LLCP; Federal USFWS RLA

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501(c)3 nonprofits or organizations operating under the umbrella of a 501(c)3 nonprofit may apply for stewardship grants issued from the maintenance fund for uses outlined above. Grants are awarded annually. The first stewardship grant was awarded in 2016 to a non-profit organization to protect, preserve, and restore the Waipi'o Valley Lookout property.

**Purchase of Kāwā Lands**

For many years, Kāwā was identified by the PONC as a top priority for protection because of its outstanding natural and cultural resources, including providing habitat for at least four federally threatened and endangered species. In 2008, the County purchased the first phase of the Kāwā lands, a 234-acre parcel [Tax Map Key (TMK) 9-5-017: 007; Table 2] fronting Kāwā Bay from the Edmund Olson Trust using funds from PONC and the State DLNR LLC. In 2011, the County acquired the second phase of the Kāwā lands, which consisted of three parcels (TMKs 9-5-017: 005 and 9-5-016: parcels 006 and 025) totaling approximately 550 acres. Matching funds from the State DLNR LLC and the USFWS RLA Program were used to acquire the second phase of the Kāwā lands.

**Table 2. Parcels of the County's Kāwā Property**

TAX MAP KEY	YEAR COUNTY ACQUIRED	ACREAGE
9-5-016: 006	2011	81.303
9-5-016: 025	2011	106.380
9-5-017: 007	2008	234.293
9-5-017: 005	2011	363.188
<b>Total Property Area</b>		<b>785.164</b>

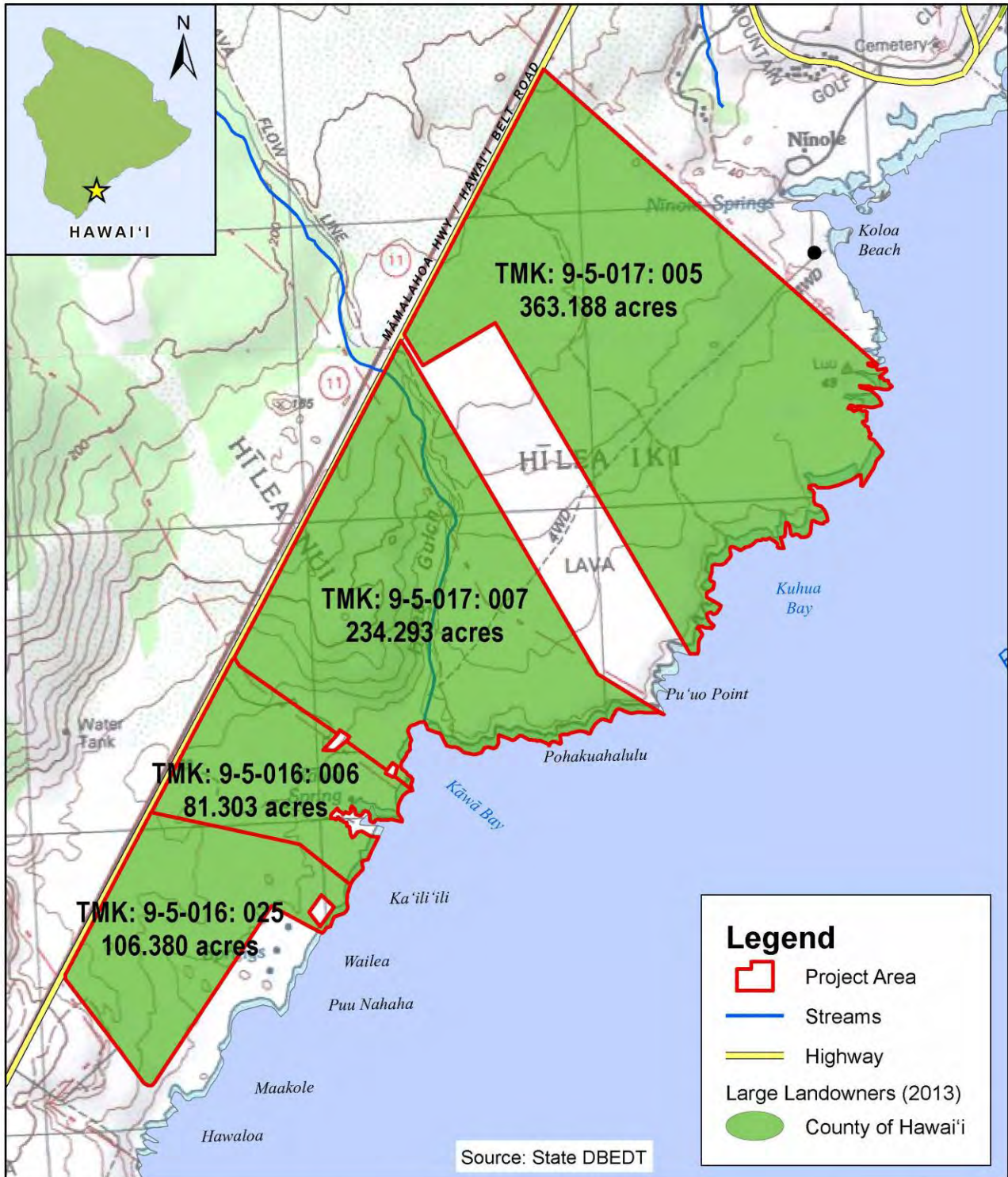
Together, these four parcels will be collectively referred to as “the Property,” or simply “Kāwā” (Figure 2).

It should be noted that there are five other parcels totaling approximately 104 acres dispersed throughout the Property that are not considered in this project: three are privately-owned (TMKs 9-5-017: parcels 006, 011 and 012) and two are owned by the State (TMKs 9-5-016: 007 and 9-5-16: 030). A description of these excluded parcels is provided in Table 3 and identified in Figure 3.

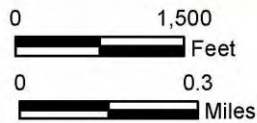
**Table 3. Excluded Parcels at Kāwā (not County-owned)**

TAX MAP KEY	LAND OWNER	DESCRIPTION	ACREAGE
9-5-016: 007	State of Hawai'i	Former school grant	1.147
9-5-016: 030	State of Hawai'i	Encompasses Kāwā pond and springs	2.13
9-5-017: 006	Private	Former kuleana parcel awarded to Maluae as LCAw. 10190 in 1848	0.65
9-5-017: 011	Private	LCAw. 7733:1	0.25
9-5-017: 012	Private	Flag lot that extends from Highway 11 to the coast in Hīlea Iki ahupua'a	100
<b>Total Excluded Area</b>			<b>104.177</b>

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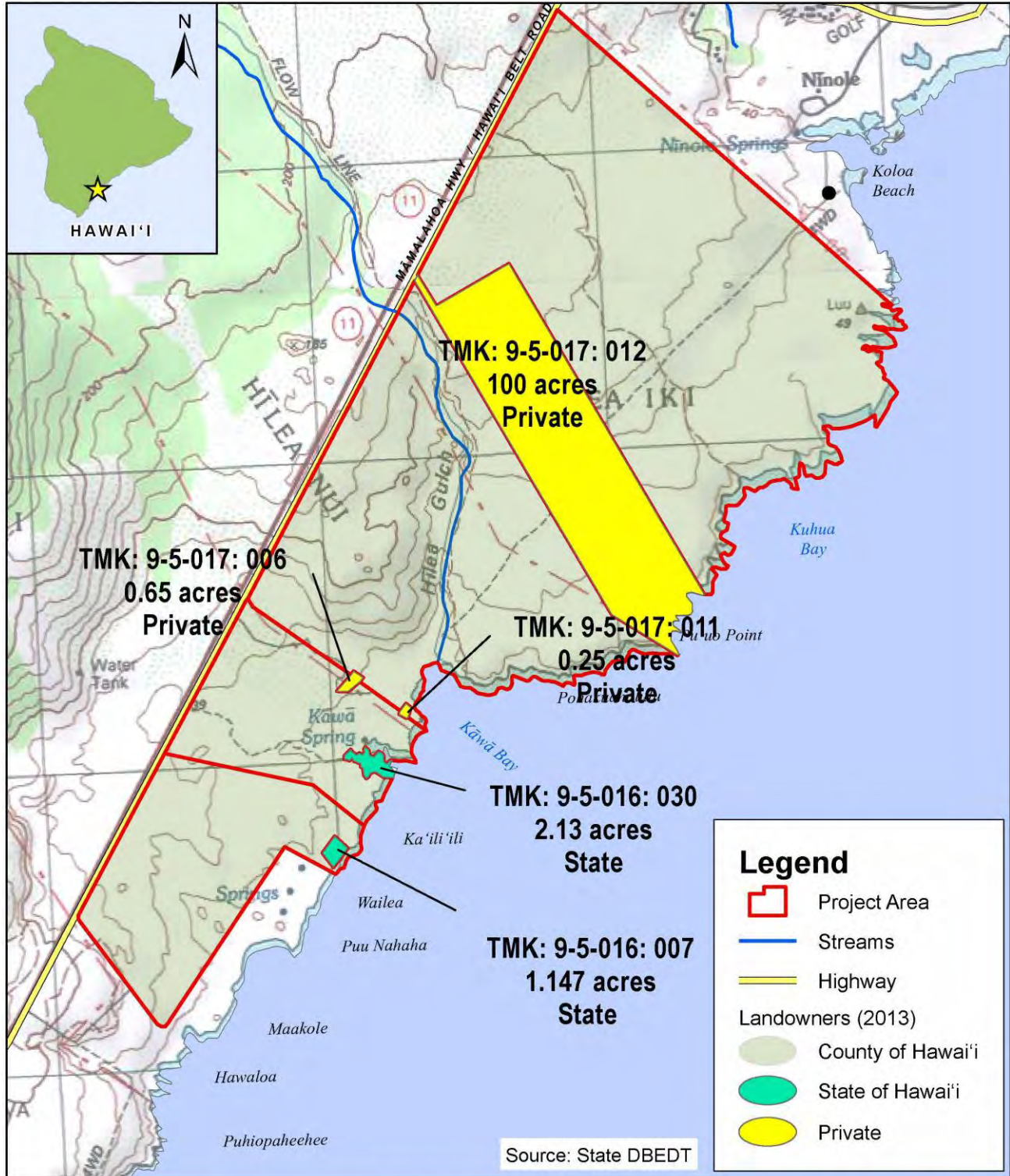
Kāwā Resources Management Plan  
 Figure 2. County's Kāwā Parcels



By:  TOWNSCAPE

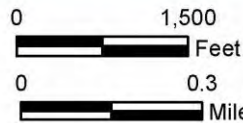
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Kāwā Resources Management Plan

Figure 3. Excluded Parcels from County's Kāwā Property



By:



Date: November 2016

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## 1.2 PURPOSE AND REQUIREMENTS FOR THE MANAGEMENT PLAN

The Kāwā lands were acquired by the County with the goal to protect the land in perpetuity as a conservation area; to protect habitat for native, threatened, and endangered plants and animals, coastal open space, cultural resources, and coastal resources; and for passive public recreation.

Usage of funds from the USFWS RLA Program set forth the requirement to develop this resources management plan. As stated in the RLA Grant Agreement (Grant Agreement No. E-17-RL-1) and in the “*Agreement to Subgrant between County of Hawai‘i and the State of Hawai‘i*” dated September 7, 2011, the County shall:

- a. Support the conservation of threatened and endangered species according to the respective priorities and planning documents listed within the Recovery Land Acquisition Grant Proposal
- b. Create an integrated Management Plan for restoring the wetland habitat and coastal strand areas of the Property;
- c. Incorporate into the Management Plan the protection of threatened or endangered species habitat, including:
  - i. The goals, objectives, and implementation steps for predator control on the Property;
  - ii. The goals, objectives, and implementation steps for invasive species removal on the Property;
- d. Seek external funding for implementation of the Management Plan;
- e. Implement the Management Plan;

- f. Manage, conduct, and oversee the restoration efforts specified in the Management Plan;
- g. Restore the wetlands habitat by removing invasive species in the wetlands and buffer areas;
- h. Control predators through exclusion or eradication;
- i. Work with local community and cultural groups to create an archaeological conservation plan; and
- j. Implement the archaeological conservation plan, which may include the preservation and restoration of archaeological features of the site including heiau and burial areas.

In addition to fulfilling requirements set forth in the RLA Grant Agreement, this resources management plan will provide a framework for the County to manage their Kāwā lands, and other PONC lands.

## 1.3 GOALS

The overall management theme for Kāwā is that this very special place must be protected for future generations and should not be developed; these lands should remain open and wild—“**less is more.**” This management plan assumes that there will be no significant infrastructure improvements as it is recognized that improved amenities and access would alter the undeveloped, natural landscape of Kāwā and ultimately impact the feel of this wahi pana. The desired outcome is a safe environment for all to use and enjoy. The sense of place that is uniquely Kāwā is maintained. The demand for recreational areas is balanced with the need to protect the natural environment from overuse. Native plants and animals are protected and

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can exist in harmony with human activities. Cultural practices and knowledge are perpetuated, existing landscape and viewplanes are intact, and natural and cultural resources are cared for.

The goals for the management of Kāwā are thus to:

- Maintain the integrity of Kāwā to continue to serve as a special place for the community and future generations;
- Protect, restore and maintain habitat for threatened and endangered species, including the endangered hawksbill sea turtle, the threatened green sea turtle, the endangered Hawaiian coot, and the endangered orange-black Hawaiian damselfly;
- Protect, restore and maintain habitat for other native flora and fauna species, with emphasis on wetland and coastal strand areas;
- Protect and perpetuate cultural knowledge, cultural resources and cultural practices unique to Kāwā; and
- Provide opportunities for place-based educational programs at Kāwā.

## 1.4 PLAN DEVELOPMENT METHODOLOGY

This management plan was developed based on field visits and consultations with Ka’ū community members and kūpuna who are knowledgeable about the place, and with agencies and organizations involved in the management of resources specific to Kāwā. A summary of the community consultation describing the value of Kāwā, vision for the place, wahi pana, mo’olelo,

cultural practices and resources of the place is provided in Appendix A.

## 1.5 RELEVANT COURT CASES

### Civil Case No. 4590 (1980)

The Findings of Fact and Conclusions of Law, dated October 14, 1980, in Barba v. Okuna, Civil No. 4590, Third Circuit Court, states that the landowners must provide the general public reasonable access to Kāwā Bay and the adjacent shoreline along several rights-of-way as described in the Civil Case No. 4590 (Appendix B). Easements include a “10-foot vehicular, equestrian and pedestrian easement along the Corral Gate Road” and a “3-foot wide pedestrian easement along the Hīlea Trail.”

### Civil Case No. 03-1-0226 (2008)

Civil Case No. 03-1-0226 (Appendix B) states that “the PASH rights ordered conveyed by the court in trust include a right of entry, possession, repair, and reconstruction of the houses and other appurtenant sites according to traditional Hawaiian culture, in perpetuity, according to law” and that “the Basil ‘Āpiki PASH Rights trustee and beneficial interest holders have rights of reasonable ingress and egress to the premises and appropriate rights to the spring water at Kawa’a Springs for traditional and customary use...” It also states that “the Basil ‘Āpiki PASH Rights trustee shall work with the State of Hawai’i and the County of Hawai’i to reasonably address plans and policies relating to the future utilization of the area as required by law.”

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## 1.6 CURRENT MANAGEMENT AND PROJECTS

### 1.6.1 Current Management

The County's Finance Department, Property Management Division manages the Kāwā property, along with the other PONC properties; but, generally is relying on community groups to provide stewardship at the present time. For example, Pohala I Ka Lani, a community group, provides land stewardship and cultural education for the Waipi'o Valley Lookout, a 1.8-acre PONC parcel acquired by the County in 2007. Funds from the PONC maintenance fund were awarded to Pohala I K Lani to "preserve the land, promote public safety, and maintain a healthy stewardship," which includes activities such as reducing invasive species and propagating native plants.

At Kāwā, there are numerous groups consisting of lineal and cultural descendants and community organizations that care deeply about Kāwā and have expressed interest in long-term stewardship of the place. These groups share common goals of restoring, caring for and protecting the natural and cultural resources. Some of the current activities by these groups include: maintenance of house sites by lineal and cultural descendants; vegetation maintenance and restoration work by Na Mamo o Kāwā, a local community group; and removal of invasive plant species at Kāwā Pond by Hawai'i Wildlife Fund. These undertakings have also served as educational tools by involving and engaging the larger community and student groups.

### 1.6.2 Māmalahoa Highway Drainage Improvements at Kāwā Flats

Drainage improvements are planned for a section of Māmalahoa Highway (State Route 11) fronting the Kāwā property by the Hawaii State Department of Transportation. Improvements will impact approximately 3,700 feet of the highway located near Corral Gate Road. A section of the highway's surface would be raised a maximum of about 10 feet, which would place the road surface approximately two feet above the 50-year flood level. Improvements will also include installation of a reinforced concrete box culvert beneath the highway to provide for adequate drainage capacity. The project will include work outside of the right-of-way on adjacent properties on both sides of the highway, including the County's Kāwā property.

According to the Final Environmental Assessment (July 2012), the public will continue to have access to the shoreline via the trails and roads referenced in the Civil Case No. 4590. However, the existing access to Corral Gate Road from the highway will no longer be accessible because the road will be raised as part of the drainage improvements. Therefore, a 20-foot gravel frontage road connecting to the Corral Gate Road is proposed on the County's property. No changes to the wetlands or coastal ecosystems are anticipated, as the proposed project will not change the quantity or sediment characteristics of the flood waters.

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# 2 KĀWĀ RESOURCES

## 2.1 NATURAL RESOURCES

Kāwā is home to a diversity of native plants and animals, including a number of threatened and endangered species. Kāwā provides habitat for two federally listed sea turtles: the endangered hawksbill turtle and the threatened green turtle. There is suitable wetland habitat for the endangered Hawaiian coot in Kāwā's estuaries and marsh area. An endangered insect called the orange-black Hawaiian damselfly inhabits the habitat at the mouth of Hīlea Stream. There is also suitable habitat for other threatened and endangered species that could be present at Kāwā but have not necessarily been documented, including the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), an endangered species of yellow-faced bee (*Hylaeus anthracinus*), and the endangered Hawaiian monk seal (*Monachus schauinslandi*), and native migratory shorebirds. Refer to Appendix C for a detailed list of species that are known or suspected to be periodically present at Kāwā.

### 2.1.1 Sea turtles

#### *Hawksbill Sea Turtles*

The beaches at Kāwā, including Kāwā Beach and Ka'ili'iili Beach, are well-documented nesting beaches for the endangered Hawksbill sea turtles or honu'ea. Hawksbills are the rarest of all sea turtle species in the entire Pacific and were



HAWKSBILL TURTLES COME ON LAND ONLY TO NEST

Photo Credit: [www.tinybubblescuba.com](http://www.tinybubblescuba.com)

the first marine turtle species to be listed under the Endangered Species Act.

While little is known about the home range sizes and migratory patterns of Hawksbills in Hawai'i (or globally), they spend almost their entire lives in the ocean foraging primarily for sponges. Gravid females only come ashore to dig nests on beaches to lay their eggs. After hatching, Hawksbill hatchlings find their way to the ocean, not to reach sexual maturity for at least 20 years. The majority of documented hawksbill nests in the Hawaiian Islands are found in the Ka'ū District.

#### *Green Sea Turtles*

The federally threatened green sea turtles or honu are commonly seen in the nearshore waters around the Property as well as resting on the beach at Kāwā or Ka'ili'iili. Green sea turtles do not typically

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nest in the Main Hawaiian Islands (MHI), but they can be found foraging for limu (seaweed) and algae in shallow waters and hauling out onto beaches to rest or bask in the sun throughout the MHI. Unlike the global trend, Hawai'i's population of honu has been increasing since they became federally protected.



A GREEN TURTLE FORAGING ON LIMU

Photo Credit: [www.turtles.org](http://www.turtles.org)

### 2.1.2 Birds

There is a diversity of native bird species that are known or suspected to be periodically present at Kāwā for foraging, nesting, or for simply flying over as they go to and from the sea, including multiple threatened and endangered species. Some species have not been recently seen at Kāwā, yet it is likely that they are at least occasionally present because they are known to be in the area and/or there is suitable habitat at Kāwā.

#### Waterbirds

Notable are several native waterbird species. The federally endangered and endemic Hawaiian coot or 'alae ke'oke'o has been recorded at nearby Punalu'u and therefore may use habitat at Kāwā. Terry et al. (2014) recorded the presence of a black-

crowned night-heron ('Auku'u; *Nycticorax nycticorax hoactli*), an indigenous wetland bird that forages in ponds associated with marshes and Hīlea Stream at Kāwā. The



KĀWĀ HAS SUITABLE HABITAT FOR THE ENDANGERED HAWAIIAN COOT

Photo Credit: U.S. Fish and Wildlife Service

federally endangered Black-necked stilt (ae'o; *Himantopus mexicanus knudseni*) and the federally endangered Hawaiian goose (nēnē; *Branta sandvicensis*) have not recently been observed but could also conceivably be present at Kāwā (Terry et al., 2014). There is also suitable habitat for migratory waterfowl such as northern pintails (*Anas acuta*) and northern shovelers (*Anas americana*).

#### Shorebirds

Shorebirds at Kāwā include the indigenous Pacific golden-plovers (kōlea; *Pluvialis fulva*), a relatively common migratory shorebird that is present in Hawai'i from August through April, and spends its summers foraging and breeding in Alaska. Other shorebirds that likely make use of the Property but have not been recently documented include the wandering tattler (*Heteroscelus incanus*), ruddy turnstone (*Arenaria interpres*), bristle-thighed curlew

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(*Numenius tahitiensis*), sanderling (*Calidris alba*), and various other sandpipers (Terry et al. 2014).



THE MIGRATORY PACIFIC GOLDEN PLOVER USES HABITAT AT KĀWĀ

Photo Credit: Audubon Society

### Birds of Prey

Native birds of prey that are known in the area and are presumably present at times in Kāwā include the federally endangered Hawaiian hawk or 'io (*Buteo solitaries*) and the federally threatened Hawaiian short-eared owl or pueo (*Asio flammeus sandwichensis*). However, much of the habitat at Kāwā is not ideal for these birds, as 'io generally nest in tall 'ōhia trees and pueo prefer extensive grasslands as their prime habitat (Terry et al. 2014).

### Seabirds

There are also several types of seabirds that may fly over Kāwā. The federally endangered Hawaiian petrel ('ua'u; *Pterodroma sandwichensis*) and the federally threatened Hawaiian subspecies of Newell's shearwater ('a'o; *Puffinus newelli*) likely utilize the airspace above Kāwā at night as they fly to the ocean from their high mountain burrows. However, no suitable

nesting habitat for either of these seabird species is present on the Property (Terry et al., 2014). Additionally, the band-rumped storm-petrel ('akē'akē; *Oceanodroma castro*), a candidate for listing under the Endangered Species Act, may also fly over the area as it flies out

to sea, but there is again no suitable habitat at Kāwā. Other seabirds that may be seen within or flying over the Property include black noddies (noio; *Anous minutus melanogenys*), white-tailed tropicbirds (koa'e kea; *Phaethon lepturus dorotheae*), great frigatebirds ('iwa; *Fregata minor palmerstoni*), and boobies (*Sula spp.*). Of these, only black noddies were observed during the survey conducted by Terry et al. (2014).

### 2.1.3 Mammals

The only native land mammal in Hawai'i, the federally endangered Hawaiian hoary bat or 'ōpe'ape'a (*Lasiurus cinereus semotus*), is ubiquitous in Ka'ū and is undoubtedly present at Kāwā. The Hawaiian monk seal or 'Īlio holo i



ENDANGERED HAWAIIAN PETRELS LIKELY USE THE AIRSPACE OVER KĀWĀ TO FLY TO AND FROM THE SEA

Photo Credit: U.S. Fish and Wildlife Service



ENDANGERED HAWAIIAN HOARY BATS ARE LIKELY PRESENT AT KĀWĀ

Photo Credit: U.S. Geological

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ka uaua (*Neomonachus schauinslandi*), also federally endangered, is also known to occasionally rest on the beach at Kāwā.

#### 2.1.4 Invertebrates

Kāwā’s unique environment provides habitat for a multitude of invertebrate species, including two endangered insect species: the orange-black Hawaiian damselfly (pinao’ula) and Hawai’i’s yellow-faced bee.

The orange-black Hawaiian damselfly was once one of the most abundant and widespread of the endemic Hawaiian damselflies. Historically present on the six largest Hawaiian Islands, today it is no longer abundant on any island and is limited to the remaining suitable coastal, dry or mesic aquatic habitat on just a few islands. At Kāwā, it was found in the low, brackish pond at the mouth of Hīlea Stream.

There are numerous species of Hawaiian yellow-faced bees (*Hylaeus spp.*). At Kāwā, there is suitable coastal and lowland dry forest habitat for the endangered, endemic species, *H. anthracinus*. Although it can sometimes be found in moderate numbers, the bee’s suitable habitat has been significantly diminished on all islands,



THE ENDANGERED ORANGE-BLACK HAWAIIAN DAMSELFLY IS FOUND AT KĀWĀ IN THE BRACKISH ESTUARY FORMED AT MOUTH OF HĪLEA STREAM

Photo Credit: Karl Magnacca

making it very rare. Terry et al. (2014) documented and observed another species of yellow-faced bee, *H. flavipes*, along the four-wheel drive access road and at Kāwā Beach. According to Terry, there is an abundance of native and nonnative host plants for *Hylaeus* at Kāwā, making it likely that additional species are present but not yet documented.

There is also at least one unknown species of shrimp in the brackish estuary formed at the mouth of Hīlea Stream.



AN ENDANGERED SPECIES OF HAWAIIAN YELLOW-FACED BEE, *HYLAEUS ANTHRACINUS*, HAS NOT BEEN DOCUMENTED AT KĀWĀ BUT MAY BE PRESENT SINCE THERE IS SUITABLE HABITAT AND OTHER SPECIES OF *HYLAEUS* ARE PRESENT

Photo Credit: Karl Magnacca

#### 2.1.5 Vegetation

Since much of the land on the Property consists of lava rock, there are a limited number of plant species that are well adapted. Of the plants that do manage to grow, many of the native species are out-competed by non-natives such as koa haole (*Leucaena leucocephala*) and

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Christmasberry (*Schinus terebinthifolius*), and invasive grasses such as Guinea grass (*Megathyrsus maximus*).

The biological survey conducted by Terry et al. of the Property in 2014 did not find any currently listed endangered plants, however, eight individuals of the rare species Maiapilo (*Capparis sandwichiana*), better known from the Kona area, were located on the lava flows. The endangered 'ohai (*Sesbania tomentosa*) has also been historically reported at Kāwā but has not recently been observed.

One native plant species that is relatively common throughout the Property is 'uhaloa (*Waltheria indica*). The area near Kāwā Springs has some relatively intact native coastal plant communities, with plants such as naupaka (*Scaevola taccada*), 'ilima (*Sida fallax*), pā'ū o hi'iaka (*Jacquemontia ovalifolia*), pōhuehue (*Ipomoea pescaprae brasiliensis*), 'ākulikuli (*Sesuvium portulacastrum*), milo (*Thespesia populnea*), nanea (*Vigna marina*), and 'ohelo kai (*Lycium sandwicense*). Other common plants along the coast include tree heliotrope (*Tournefortia argentea*), various grasses, and a number of coconut palms (*Cocos nucifera*).



MAIAPILO IN LAVA FIELDS AT KĀWĀ

The makai shores of the pond are covered with the invasive seashore paspalum (*Paspalum vaginatum*), while the marsh areas inland of the pond are filled with the highly invasive California grass (*Brachiaria mutica*). These grasses grow quickly, outcompeting native species and impeding the flow of water in the pond ecosystem. Native reed nānaku can be found in some areas of the pond.



COASTAL VEGETATION AT KĀWĀ. LEFT TO RIGHT: 'ILIMA; PĀ'Ū O HI'IAKA; PŌHUEHUE

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## 2.2 HABITAT DESCRIPTIONS AND THREATS TO PRIORITY SPECIES

As specified in the *Kāwā Bay Acquisition and Habitat Restoration Project* (Hawai'i DLNR-DOFAW, 2007), the management of important habitat for the following four federally listed species at Kāwā should be a priority for the County:

- Hawksbill sea turtle
- Green sea turtle
- Hawaiian coot
- Orange-black Hawaiian damselfly

This section describes the suitable habitat for each of these species at Kāwā. One important benefit of protecting the habitat for these four species is that it will also protect important habitat for many of the other common native, rare, threatened, and endangered species that may be found at Kāwā (discussed in previous section). In general, most natural resources management activities tend to act synergistically to improve the overall health of an ecosystem, which in turn has direct and indirect benefits for all native species in the ecosystem. While there may not always be a clear distinction, direct benefits are related to intentionally protecting a species' important nesting or foraging habitat while indirect benefits are related to improving overall ecosystem health.

Some of the species that may directly benefit from protecting suitable habitat for the four aforementioned threatened and endangered species are mentioned in the following sections, where relevant. Species that may indirectly benefit from protection of the suitable habitat include (but are not

limited to): Hawaiian yellow-faced bees, Blackburn's sphinx moth, the Hawaiian hoary bat, the Hawaiian hawk, the Hawaiian short-eared owl, and the many species of seabirds that may fly over the Property.

### 2.2.1 Habitat Descriptions

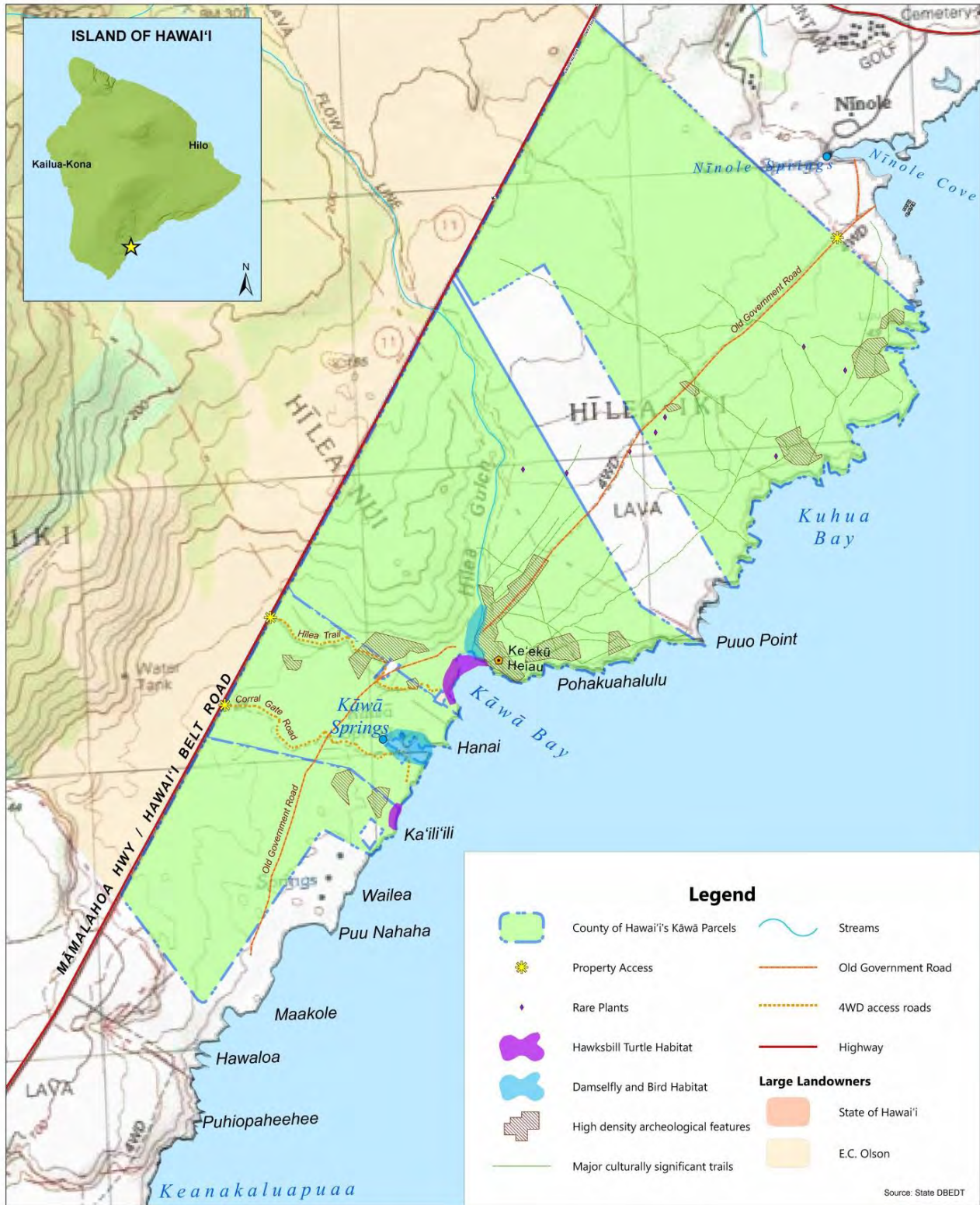
#### Hawksbill Sea Turtle

Suitable habitat for Hawksbill turtles on the Property includes Kāwā Beach and Ka'ili'ili Beach, as well as the nearshore environment (Figure 4). Most of the information in this section is derived from data collected by the Hawai'i Island Hawksbill Turtle Recovery Project (HIHTRP; Seitz et al., 2012). HIHTRP has monitored and managed hawksbill nesting on Hawai'i Island since the early 1990s. However, access to Kāwā and Ka'ili'ili beaches has been limited in the past due to conflicts with beach inhabitants and legal landowners.

HIHTRP defines suitable nesting habitat in Hawai'i as "an area above the high tide line with substrate in which a nesting turtle is capable of digging an egg chamber." Nesting sites are typically found in small isolated pockets of sand with scattered cobblestones and/or coral, such as at Kāwā and Ka'ili'ili beaches. Beach vegetation varies by site, but typically includes naupaka, pōhuehue, and various non-native plants.

Kāwā Beach was reported to be a hawksbill nesting site dating back to the 1970s and is identified by the USFWS and National Marine Fisheries Service (NMFS) as a nesting area in the Recovery Plan for the U.S. Pacific populations of hawksbills. The beach consists of gray and black sand,

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Kāwā Resources Management Plan  
**Figure 4. Suitable Habitat Areas**



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by scattered vegetation that includes naupaka, Christmasberry, and koa haole. The total area of the beach is about 21,780 square feet, with approximately 1,700 square feet of potential nesting site. In the past, vehicles were able to drive and park directly on the nesting site.

Nesting activity at Ka‘ili‘ili Beach was first documented by HIHTRP in 1992. The beach is composed of cobblestones with a few scattered pockets of black sand and is bordered by naupaka. The total area of the beach is approximately a 5,060 square feet, with approximately 480 square feet of suitable nesting area. Similar to Kāwā Beach, vehicles were able to drive over the nesting area in the past. On two occasions, HIHTRP staff noted hawksbill tracks and signs of nesting, however, the egg chambers were never located due to sand compaction and numerous tire tracks. To prevent this from occurring, a small rock wall was built around the prime nesting site with an interpretive sign to discourage vehicular access. However, according to

HIHTRP, these temporary measures were frequently removed by community members.

Data collected by HIHTRP between the early 1990s and 2009 indicate that hawksbill nesting on Hawai‘i Island has a strong seasonal pattern, with nesting primarily occurring from May through December and peaking between July and September. Adult females may nest every two to eight years and return to the same geographic location where they hatched. Hawksbills can lay one to five nests per nesting season with an average of 20 days in between nesting events. Clutch sizes average 180 eggs per nest with an incubation period between 55 to 70 days. At Ka‘ili‘ili Beach, the average incubation period was 65 days for thirteen nests monitored between 1992 and 2009 (eighteen nests in total were documented). An estimated 2,056 hatchlings reached the ocean from the thirteen nests.



LEFT: KA‘ILI‘ILI BEACH, LOOKING SOUTH. RIGHT: A HAWKSBILL SEARCHING FOR SUITABLE NESTING SITE AT KA‘ILI‘ILI BEACH

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### Green Sea Turtle

The 1998 USFWS and NMFS *Recovery Plan for U.S. Pacific Populations of Green Turtles* identifies the protection of foraging areas as a priority action. At Kāwā, green sea turtles are commonly seen in the nearshore coral reef environment where they feed on limu and algae as well as on the beaches where they haul out to presumably rest or bask in the sun.

Protection of green sea turtle habitat will also benefit the Hawaiian monk seal since the nearshore waters surrounding the Property are suitable habitat for the seal. Like green turtles, Hawaiian monk seals can occasionally be seen resting on the beach at Kāwā.

### Hawaiian Coot

The USFWS *Recovery Plan for Hawaiian Waterbirds* identifies the protection of the endemic Hawaiian coot as a priority (Second Revision, 2011). The species has not been recently documented at Kāwā, however there is suitable habitat for the coot at Kāwā and it is known from nearby Punalu'u, therefore, the bird may use habitat at Kāwā. Natural habitat for the Hawaiian coot consists of coastal wetlands with suitable emergent plant growth interspersed with open water. Hawaiian coots prefer freshwater wetlands, but will use brackish wetlands or estuaries, and rarely, saline habitats. Potential habitat for the Hawaiian coot at Kāwā includes the estuary formed at the mouth of Hīlea



KĀWĀ POND, A TWO-ACRE SPRING-FED INTERTIDAL POND, PROVIDES IMPORTANT HABITAT FOR MANY NATIVE AND ENDANGERED SPECIES

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Stream, as well as the spring-fed, intertidal Kāwā Pond.

Protection of suitable habitat for the Hawaiian coot would also directly benefit a number of other bird species known or thought to be at Kāwā, including many species of shorebirds and waterbirds mentioned in Section 2.1.2.

**Orange-Black Hawaiian Damselfly**

The low, brackish estuary or pond that forms at the mouth of Hīlea Stream provides important habitat for the orange-black Hawaiian damselfly. The mouth of the stream sometimes becomes completely blocked by sediments and forms a brackish, spring-fed pond. This habitat supports some of the highest densities of this rare species known anywhere. The damselfly requires slow or standing waters associated with coastal wetlands or lower reaches of perennial streams for breeding. They lay their eggs in the tissues of aquatic plants



THE BRACKISH ESTUARY FORMED AT MOUTH OF HĪLEA STREAM PROVIDES HABITAT FOR THE ORANGE-BLACK HAWAIIAN DAMSELFLY AND POTENTIALLY FOR THE HAWAIIAN COOT

associated with these habitats. Naiads (the immature aquatic stage) of this species are active swimmers and rest on exposed areas of the bottom on submerged vegetation.

**2.2.2 Primary Threats to Priority Species**

This section describes the primary threats facing populations of the Hawksbill sea turtle, the green sea turtle, the Hawaiian coot, and the orange-black Hawaiian damselfly at Kāwā. While there may be other threats facing populations elsewhere in Hawai‘i (or globally), only the threats that may be relevant to the Property are presented (Table 4).

**Table 4. Summary of Threats to Priority Species**

	Hawksbill Turtle	Green Turtle	Hawaiian Coot	Orange-Black Hawaiian Damselfly
<b>Human Recreation &amp; Use</b>	X	X	X	X
<b>General Habitat Degradation/Loss</b>	X	X	X	X
<b>Predators</b>	X		X	X
<b>Invasive Plants</b>	X		X	X
<b>Entanglement in Marine Debris</b>	X	X		
<b>Disease</b>	X	X	X	
<b>Other</b>	X			

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## Human Recreation & Use

- Large numbers of people using the area for surfing, swimming, fishing, camping, etc. often results in disturbed habitats, littered beaches, and contamination of the environment, ultimately affecting all four species. Fishing gear such as nets and lines left along the shoreline can entangle hawksbill and green turtles.
- Off-road driving can damage hawksbill nests and hatchlings and compact the sand, making nesting more difficult for females and emergence more difficult for hatchlings. The USFWS calls unmanaged vehicular traffic a “serious problem” for hawksbills.
- Artificial lights from vehicular traffic, campers’ flashlights, lanterns, and campfires disorient nesting females and hatchlings, increasing the risk of stranding, injury, and death.

hawksbill access to nesting beaches. An increase in the amount of artificial light as a result of development is detrimental to nesting hawksbills and hawksbill hatchlings.

- Water management practices for agriculture, urban development, and ground water development can result in habitat loss or degradation for the Hawaiian coot and the orange-black Hawaiian damselfly.
- Climate change and other factors negatively affecting the health of coral reef ecosystems threaten hawksbill and green turtles because they depend on coral reefs for foraging habitat.
- The loss of riparian vegetation and degradation of water quality due to grazing, disease, and possibly environmental contaminants threatens the Hawaiian coot and the orange-black Hawaiian damselfly.



VEHICULAR TRAFFIC HAS DAMAGED HAWKSBILL NESTING HABITAT AT KĀWĀ IN THE PAST

Photo Credit: Julia Neal; kaunewsbriefs.blogspot.com

## General Habitat Degradation or Loss

- Any kind of development that results in the loss or degradation of wetland, beach, or aquatic habitats threatens all four species. Beach armoring or other alterations of the beach can limit

## Predators

### Mammalian Predators

- Predation by feral cats, mongooses, and rats is one of the greatest threats to the Hawaiian coot. All three of these predators are widespread and common in most habitats on Hawai’i Island and are undoubtedly present at Kāwā, although the relative densities of these species is currently unknown. The HIHTRP regularly traps these three species at several other Hawksbill nesting beaches in the Ka’ū District. Mongooses may be more commonly observed than cats and rats because they are diurnal and are often seen scavenging for food. Rats are nocturnal, small, and shy so their presence in a

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natural setting can go unnoticed. Feral cats are also mostly nocturnal in their habits and are the most cryptic of the three predators. Cats, mongooses, rats, and feral pigs also prey on Hawksbill hatchlings and eggs by digging up nests.

- Domestic dogs are known to prey on birds, including the Hawaiian coot, and may pose risks to other species as well.
- The threat of predation by pigs or dogs is assumed to be low at Kāwā; however, they should not be disregarded, especially if Hawaiian coots are observed on the Property.
- The abundance of human food and trash can increase the populations of all of these predators.



A FERAL CAT ON O’AHU WITH A DEAD HAWAIIAN COOT

Photo Credit: Michael Walther; nene.net

Avian Predators

- Hawaiian coot eggs and chicks are vulnerable to predation by nonnative birds such as cattle egrets (*Bulbulcus ibis*) and barn owls (*Tyto alba*).

Aquatic Predators

- Bullfrogs have been known to prey on Hawaiian coot eggs. They may also pose a risk to the orange-black Hawaiian damselfly. It is not known whether bullfrogs are present at Kāwā.
- The orange-black Hawaiian damselfly is known to be depredated by nonnative invertebrates, including backswimmers (aquatic true bugs; Heteroptera) and multiple species of odonates. Additionally, competition for space and resources with other nonnative insects, such as *Trichoptera* (caddisflies), is a potential threat to the damselfly. It is not known whether these species are present in Hīlea Stream.
- Orange-black Hawaiian damselflies are vulnerable to predation by nonnative poeciliid fish (mosquito fish), introduced for mosquito control. It is not known whether poeciliid fish are present in Hīlea Stream.



INVASIVE AND PREDATORY MOSQUITO FISH (POECILIID) ARE COMMON IN HAWAII’S STREAMS

Photo Credit: Yamamoto and Tagawa; www.pbrc.hawaii.edu

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### Invasive Plants

- Habitat loss caused by invasive plants such as invasive koa haole Christmasberry, and coconut can reduce available Hawksbill nesting habitat.
- Roots of invasive plants can form dense matrices in the sand making it difficult for female Hawksbills to dig nests. The roots can also trap hatchlings that become entangled during emergence.
- Nonnative plant species, such as the highly invasive California grass, can form dense stands that can completely eliminate open water habitat for the Hawaiian coot and the orange-black Hawaiian damselfly. Moreover, nonnative grasses provide fuel for wildfires.
- Invasive plants alter the structure and vegetation composition of habitats for all four species.



CALIFORNIA GRASS CAN ELIMINATE OPEN WATER HABITAT FOR THE HAWAIIAN COOT AND THE ORANGE-BLACK HAWAIIAN DAMSELFLY

Photo Credit: [www.botany.hawaii.edu](http://www.botany.hawaii.edu)

### Marine Debris & Fishing Gear Entanglement

- Marine debris, including discarded fishing gear, can entangle hawksbill and green turtles at sea causing them to eventually drown.
- Incidental capture by commercial fishing operations can cause hawksbills to drown.



A GREEN TURTLE ENTANGLED IN MONOFILAMENT FISHING LINE

Photo Credit: NOAA Fisheries Pacific Islands Regional Office

### Disease

- A disease called fibropapillomatosis affects many green turtles in Hawai'i.
- Hawaiian coots can be affected by diseases such as botulism. They can also be affected by contaminants in water, including lead and zinc.

### Other

- The rocky substrate at Kāwā and Ka'ili'ili beaches can make it difficult for hawksbills to dig a nest. Hatchlings can also be trapped under rocks when emerging from nests or can become stranded amongst cobblestones on the beach. In the past, the HIHTRP assisted the majority of hatchlings to the ocean due to these obstacles.

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## 2.3 CULTURAL RESOURCES

In addition to the diverse plants and animals present, the landscape at Kāwā is rich in cultural resources including burials, heiau, house sites and other archaeological features. More than 300 iwi, petroglyphs, and kōnane boards have been found at Kāwā. This section focuses on the wahi pana, mo'olelo, cultural practices and resources, and archaeology of the Property.

### 2.3.1 Wahi Pana

The project area overlaps the ahupua'a of Hīlea Nui and Hīlea Iki on the northern section of the property and Ka'alāiki to the south. Hīlea is described by Mary Kawena Pukui as: "village, gulch, and land division, Honu-'apo qd." in Ka'ū. It translates literally as, "careless or shiftless" named for the people of Hīlea village who were known for having dirty taro as told in the 'ōlelo no'eau, "Hīlea 'eka'eka; Hīlea of the dirty taro," which referred to anyone who is careless or inefficient in their work.

Hīlea Stream rises at 4,600 feet elevation within Hīlea Nui ahupua'a and flows to Kāwā Bay which is described as a bay, springs, and an ancient surfing area near Hīlea. Kāwā translates literally as "distance" and it appears in an 'ōlelo no'eau, 'ili'ili hānau o Kō-loa, ka nalu ha'i o Kāwā; birth pebbles of Kō-loa, breaking waves of Kāwā." Two general variations of the name of the bay, "Kāwā" and "Kawa'a", appear in the literature. Pukui, widely regarded as the authority on Hawaiian place names, lists both alternative spellings in the publication *Place Names of Hawai'i*, however, notes attributed to Pukui in the Bishop Museum Archive holdings state that the place name is Kāwā not Kawa'a. For the purposes of

this project, Kāwā is the name applied to the bay, ponds, and springs, as well as the general name used for the project area throughout this report.

Adjacent to Hīlea Nui is Ka'alāiki ahupua'a or Ka'alā-iki, which translates literally as, "small lava rock." The seaward boundary between Ka'alāiki and Hīlea Nui ahupua'a is said to be a large rock in the sea called Kapohakumoi, and then a line running to "Kahalehuki, an oioina, an ahua nui, mauka of Kauhale of Kaawaa." The seaward boundary between Hīlea Nui and Hīlea Iki ahupua'a is said to be at a point called Puuainako, and then a line running "across 'a'a to Keahupuaa at the government road, thence to Ahupoho." The boundary between Hīlea Iki and Nīnole ahupua'a is said to be "at an ana kai between the point of Ahunui on Nīnole and Kapukini, a point on Hīleaiki (Kokoaahu is a point on Ninole near the boundary); thence mauka to Pohaku a Kamamalu, a rock at the road where Kamamalu slept; thence mauka to Puunahaha."

### 2.3.2 Mo'olelo

The lands associated with the project area have various mo'olelo suggesting that the area was once well-populated. The following section shares mo'olelo associated with Kāwā.

In *Majestic Ka'ū: Mo'olelo of Nine Ahupua'a*, Marion Kelly describes the people of Ka'ū as independent and known for their dignity. Even though ruled by various ali'i, the people of Ka'ū were known to overthrow rulers that were abusive. Three chiefs whose deaths were attributed to the abuse of their people are: Koihala, Halaea, and Kohā-i-ka-lani. The last is directly

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associated with the project area. A version of the story is told by Kelly of an oppressive ali'i who ordered the people from Punalu'u and Hīlea to carry thousands of baskets of pebbles from beaches of Koloa in Nīnole, to Makanau plateau in the mauka region of the ahupua'a of Hīlea.

A chief living in the district of Ka'ū directed that a large temple be built and dedicated to the gods to increase his mana. It was built on the top of a high promontory, Makanau, about three miles from the shore. All the men in the district were conscripted to transport stones from Koloa beach at Nīnole. They formed a human chain and passed the stones up to the site in baskets. The taboo for building such a structure was strict. Not a word could be spoken. If a stone dropped, it could not be picked up. This work took several weeks. When the structure was completed, without giving the men time to tend to their food crops, the chief insisted on erecting a wooden image to be carved from the biggest tree in the forest several miles away. The men became angry but they cut down the tree and dragged it from the forest to the temple site. Instead of allowing it to be brought up the low sloping side of the hill, the chief insisted it be brought up the steepest side.

This last demand was too unreasonable. Together with the priest in charge of the construction, the people planned a course of action. Placing the great log heading up the steep incline and

securing ropes on it so that the people at the top of the hill might pull it up, the priest then asked the chief to stand under the bottom end of the log and place his hands on it so his great mana as a powerful chief would flow into the log and make it easy for the tired people to pull it to the top.

Blinded by his own ego, the chief took the fatal position. The log was hauled up a few feet. The priest giving the signal, the ropes were cut. The thoughtless chief came to his end.

### **Kūmauna, Kū of the Mountain**

Ku-mauna (Kū of the mountain), according to Beckwith (1970), is one of the forest gods banished by Pele for refusing to destroy Lohiau at her bidding. He is said to have lived as a banana planter in the valley above Hi'ilea in Ka'ū where he incurred the wrath of Pele. Today, the large boulder of lava which retains his shape in the bed of the valley is worshiped as a rain god. Tangarō (2005) further explains that Kūmauna is the local deity of rain in the Hīlea area. Kūmauna is known for growing the iholena variety of banana and an extensive plantation of iholena banana remains at the base of Pu'u Kaiholena that perhaps were the remains of Kūmauna's plantation.

### **Pu'u 'Enuhe**

The mo'olelo of Pu'u 'Enuhe, or Caterpillar Hill, is thought to have originated in the vicinity of the project area and is told by Pukui (in Handy and Handy, 1970) in the following account:

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In Ka‘ū, Hawaiians never burned the fields because it was believed that an epidemic of caterpillars would follow. Pu‘u ‘Enuhe, or Caterpillar Hill, is a hill in Ka‘ū where Kumuhea, the caterpillar god lived. Because of his cruel treatment of his wife, whose only food was sweet potato leaves (which is the food of caterpillars), his father cut him up and made little caterpillars of him. It was because Kumuhea chose to live in Ka‘ū, that his district was the home of caterpillars. Ka‘ū has ever been subject to caterpillar epidemics, when the caterpillars swarm over everything, eating grass, the foliage of taro and potatoes, and even stripping the trees. It is because of this that Ka‘ū has been a land of periodic famines.

It is believed that the ‘enuhe were forms (kino lau) of Kumuhea and kapu to certain families, thus, when a farmer in Ka‘ū finds the first caterpillar on his sweet potato patch, he plucks the caterpillar off the leaf and carries it to the corner of his patch, lays it on a mound of sweet potatoes and says to the caterpillar:

O Kumu-hea, eat all you want [of the leaves],  
 Leave your excrement for me, the human being,  
 That I may have life and those of my household,  
 That the animals may have food and the strangers that may come to our house.

“Excrement” referred to the sweet potato in the mounds. Pukui also adds that when the fat green caterpillars came, they were not killed. A caterpillar plague was said to have occurred in December of 1900 which lasted for one week and “there were millions moving down the slopes to seaward, leaving destruction in the fields” (In Handy and Handy, 1970:146).

### **Nu‘uanupa‘ahu**

In 1867, the newspaper, Kū‘oko‘a, featured a story by Samuel Kamakau about Nu‘uanupa‘ahu, a chief of Ka‘ū known for his surfing skills. The following is an excerpt from this mo‘olelo where Kamakau referred to Nu‘uanupa‘ahu as “the cut-worm tearing son of Nā‘ālehu,” a direct reference to the famous mo‘olelo of Pu‘u ‘Enuhe and notes that the chief learned his surfing skills at Kāwā:

I kekahi la nae, hiki maimai iho la  
 ka nalu o Maliu a me

Kapaelauhala, olioli iho la ke keiki  
 haehae poko o

Naalehu, ka heenalu lala o Kawa;

One day when the waves of Maliu  
 and Kapelauhala

Were rolling in magnificently, the  
 cut-worm tearing son

Of Nā‘ālehu resolved to show the  
 skill he had got through

Practice [in surfing] on the best  
 wave of Kāwā.

The mo‘olelo tells of how Nu‘uanupa‘ahu traveled to the district of Kohala where he became a threat to Kalani‘ōpu‘u, high chief of Hawai‘i Island. Kalani‘ōpu‘u challenged Nu‘uanupa‘ahu to surf at Kauhola in

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SURF BREAK AT KĀWĀ

Hala'ula. Nu'uanupa'ahu won the admiration and respect of Kalani'ōpu'u but he died shortly thereafter in Pololū from shark wounds.

***Ho'i i Hīlea i kalo 'eka'eka. Go to Hīlea of the dirty taro.*** An 'ōlelo no'eau, said of a careless person which suggests the prevalence of kalo in the culture of Hīlea. Once, Kohāikalani, a chief of Ka'ū, was living at Punalu'u. Poi was brought for him from various parts of the district, and a tiny speck of taro peeling was found in the poi from Hīlea. The makers of the poi were put to death. To say that someone hails from Hīlea is to say that he is unclean.

### **Nānaele, Chiefess of Ka'alāiki**

Pukui and Green (1995) tell the story of Nāhele, a beautiful and favored chiefess of Ka'alāiki who became married to Nānaele, a promiscuous chief from Kohala. The couple was married at Ka'alāiki and the event was celebrated with a great feast. The couple returned to Kohala and soon after, Nānaele returned to his promiscuous ways leaving Nānaele at home with no food. Her body wasted away until she was nothing but bone. One day, a man found her passed out among a herd of pigs so he took her home and his wife cared for Nānaele. Rumor of the chiefess had reached the people of Ka'alāiki and Kāwā so they went and

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returned their chiefess home. Pukui and Green (1995) wrote that:

Some went from Kahuku, some from Kona, still others from Kohala. Two of them went to the place where Nānaele was staying, taking a mānele in which she was placed and then borne with care some distance to a place where other men were waiting to relieve the weary bearers of their burden. Thus was she taken by relays until she reached Ka'alāiki. After a year had passed, Nāliko heard that Nānaele had recovered her health, that she was twice as beautiful as before, and that many suitors from the mountains to the sea were seeking her favor. So this neglectful husband arose and started out to take his wife back to Kohala. Some of the retainers of Nānaele, perceiving his movements, ran to report them to her parents. Nānaele was removed to Kāwā and there concealed. Meanwhile, a great feast was prepared at Ka'alāiki for Nāliko. When he arrived there, he was welcomed by his parents-in-laws and informed that his wife and her woman attendants had gone bathing in the sea and would return late that evening.

A feast was held in celebration while the men of Ka'alāiki planned to kill Nāliko and hide his body in a secret cave. However, Nāliko was warned by an old man who helped him escape by traversing an underground cave, until they reached the Kapāpala stock ranch where they ran along between the mountains of Hualālai and

Maunaloa until Nāliko could go on his own district. Nānaele was happy to be reunited again with her loving parents and her own people.

### 2.3.3 Cultural Practices and Resources

This sub-section describes cultural practices and resources shared during consultations for this project. Consultations indicated that Kāwā was and continues to be accessed by Native Hawaiians for various traditional cultural practices. These include fishing, surfing, salt gathering, and religious practices. A kupuna explained:

Families would “go down” to Kāwā for kids to surf and some would go fishing and gathering. Plantation workers who used to work further mauka, would also go down there.

Of these practices, salt gathering is no longer practiced though salt was once gathered at Kāwā. A kupuna who frequented Kāwā recalled gathering salt from Punalu'u all the way down to South Point. “We'd scoop salt with the large 'opihi shells and just go along the coast and scoop,” she reminisced as she identified salt pans along the pāhoehoe rocks of Kāwā where she gathered salt from as a child.

**Fishing.** Historically, fishing was an important activity at Kāwā and was accessed by residents of nearby towns and plantation villages for fish. “We Hawaiians, we went there to get food. We went there for a purpose,” a kupuna said who explained that the primary purpose of families going to Kāwā was for fish. Fishing

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involved families camping at the beach for several days where fish would be processed and dried. She shared the following memories of fishing at Kāwā:

Kāwā was a small beach. Mostly, the Ka'alāiki people [would] get good stuff from down there: the limu, pīpīpī, everything you can think of. Used to have 'ōhua, wana, hā'uke'uke... The land was not like now. Was all rocks. Kāwā never had sand. The bay was all rocks all the way up and in the 1930s, the place had boulders.

Another kupuna recalled fishing from Kāwā Pond using cast nets drawn from one side of the pond to the other. A salt water pond was also identified more towards the South Point side of the Property where she remembered fishing for 'opihi, wana, crabs,

and "all kinds of fish." She also explained that eating turtle was normal back then but her grandfather stopped them from catching turtles. She fondly reminisced about those days they spent at the beach as a child and how her grandfather taught her and her siblings how to fish.

Though fishing is not as prominent for survival today as in the past, people still access Kāwā for fish, particularly for net fishing. A lineal descendent of Kāwā remembered that the old Filipino men, who used to work in the sugar plantations nearby, were good fishermen who mostly threw net at Kāwā. "These guys were really good. They knew where to go get fish," he said. He added that fishermen from Ka'ū preferred going to South Point where ocean conditions are more favorable particularly for line fishing. Nevertheless, he himself explained that he also learned to fish at Kāwā where he spent his summers away from his home in Hilo. Another participant explained that every one of her uncles was a fisherman who used to throw-net at Kāwā.

**Surfing.** Today, Kāwā is reported to be accessed most frequently by surfers as it has one of the few accessible surfing breaks in the Ka'ū District which is generally referred to as Kāwā. "Only surfers go there [now], explained a kupuna. Several informants in their mid to late twenties who frequently surf at Kāwā explained that a second



SALT PANS AT KĀWĀ

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surf break called Windmills, breaks off of Kāwā Pond during large surf events. A young surfer shared that his wife and kids would swim at the springs while he surfs.

**Religious Practices.** Consultations did not collect much information pertaining to religious practices at Kāwā except to suggest that Native Hawaiian families still practice protocol of paying their respects to their ancestors, as well as the significance of Ke'ekū Heiau.

Other resources unique to Kāwā include freshwater springs, Hīlea Stream, and Kāwā Pond.

**Freshwater Resources.** Consultations indicated that freshwater resources are available at Kāwā that come from Hīlea Stream and freshwater springs around the area surrounding Kāwā Pond. Informants noted that there are many underwater freshwater springs all along the coastline of Ka'ū that includes Kāwā. Staff of the State DLNR Division of Aquatic Resources (DAR) referred to the aquatic areas surrounding the mouth of Hīlea Stream and including the coastline of Kāwā Bay, as well as the areas surrounding Kāwā Pond, as estuarine environments because of the presence of freshwater. They indicated that estuaries provide important habitats for certain fauna



AT THE MOUTH OF HĪLEA STREAM

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and flora and they also serve as important breeding grounds for juvenile fish. The DAR initially considered Kāwā for an island-wide estuarine study for juvenile sport fish but excluded the site because Kāwā Bay and Kāwā Pond were too small for a cast-net methodology necessary for the study.

**Hīlea Stream.** An informant explained that Hīlea Gulch originates in the mountain regions at Pu‘u One and carries water down into the ocean at Kāwā, therefore, Hīlea Stream changes depending on the rain and also on ocean swells. Consultations also indicated that Kāwā Bay is in a flood inundation zone and that Kāwā now floods but never used to in the past. It was observed that the water during flooding events at Kāwā, originate in Ka‘alāiki mauka. ‘O‘opu, shrimp, and various species of fish, particularly juvenile fish, were reported to be found at and around the mouth of Hīlea Stream. A kupuna remembered that there used to be tilapia at Hīlea Gulch.

**Kawa Pond.** Consultations indicated that Kāwā Pond is one of the most prominent and significant features at Kāwā. Historically, the freshwater springs surrounding the pond were a source of freshwater for nearby residents and visitors to Kāwā. A kupuna explained that when they would visit Kāwā, they only brought poi

and chili pepper water with them to the beach. “We never had to bring our own water,” she said. “My grandparents taught us how to gather.” He also taught them how to gather freshwater for drinking from the brackish water ponds. She explained that in those days, there were many brackish water ponds so Kāwā was a beautiful place to be. She recalled that the existing pond was larger and it used to have islets where they could swim to from the banks as children. She also remembered a pond adjacent to the Kāwā Pond that had a coconut tree growing in it and it was their “drinking” pond where her uncles would dive down to get freshwater.

She explained that the native reeds that grow by the stream now used to grow further inland. ‘O‘opu is prevalent in Hīlea stream and also in the pond. The Ka‘ū ‘o‘opu is said to be different from other ‘o‘opu in that regular ‘o‘opu swim upstream but the Ka‘ū one swims through to the aquifer.

### 2.3.4 Archaeology

A number of archaeological surveys and studies have been conducted for Kāwā, including several studies by the Bishop Museum in the 1960s. The most recent survey is the *Archaeological Reconnaissance Survey of the County of*



DIFFERENT VIEWS OF KE‘EKŪ HEIAU, LOCATED ON THE CLIFF TO THE NORTHEAST OF KĀWĀ BEACH.

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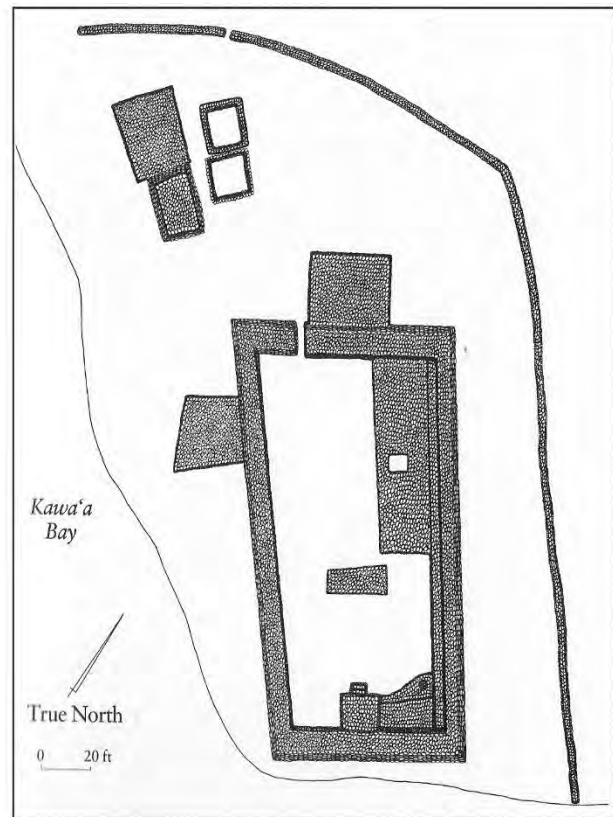
*Hawai'i Kāwā Property (TMKs: 3-9-5-16:006 and 025, 3-9-5-17:005 and 007) Hīlea Nui, Hīlea Iki, Ka'alāiki Ahupua'a, Ka'ū District, Island of Hawai'i* prepared by Rechtman Consulting, LLC., 2013. For more detailed information on the archaeological resources at Kāwā, refer to the study prepared by Rechtman Consulting, LLC.

**Ke'ekū Heiau** is a prominent feature at Kāwā that continues to stand on the outcropping of cliffs north of the surf at Kāwā. Some describe Ke'ekū Heiau as the piko of Kāwā and feel it is an important part of the history of Ka'ū, therefore, believe the heiau should be restored and preserved.

**Ala Loa Trail** is an ancient lateral trail that traversed the entire island of Hawai'i and enabled people to travel along the coast and around the island. Early inhabitants were able to traverse the rough terrain of Ka'ū using mauka-makai trails that enabled people living in the mountain regions to access the coast. The Ala Loa Trail currently runs through the ahupua'a of Hīlea Nui and Hīlea Iki. This trail was particularly important for trading between mauka and makai inhabitants where those from the mountains would bring their crops and vegetables like poi to trade with fish and seafood from coastal people. Trading often happened along this trail.

In 2000, the remaining known portions of the Ala Loa were designated as part of the Ala Kahakai National Historic Trail (NHT) by the National Park Service (NPS); "Ala Kahakai" meaning "trail by the sea." The Ala Kahakai NHT runs through more than 200 ahupua'a and stretches 175 miles along the coast. While Kāwā is located outside of the "priority area" for implementing NPS's *Ahupua'a Trail System Plan* for maintaining

**Figure 5. Plan View of Ke'ekū Heiau (from Stokes and Dye, 1991)**



the Ala Kahakai NHT over the next 15 years (NPS, 2009), proper management and care should be taken to protect the integrity of the trail, as well as to protect all of Kāwā's varied cultural resources.

Previous studies (1961 and 1967) conducted by Bishop Museum identified a significant number of sites at Kāwā, including approximately 97 sites in Ka'alāiki ahupua'a, nine sites in Hīlea Nui ahupua'a, and fourteen sites Hīlea Iki ahupua'a. Of these 120 sites, the majority of the sites are located within the coastal areas of the project area. Table 5 provides a description of sites located within the project area with

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their assigned Statewide Inventory of Historic Places (SIHP)<sup>5</sup> numbers. Locations of the sites are shown in Figure 6 (last 4-digits of the SIHP site numbers are shown on the map).

### **Ka'alāiki Ahupua'a**

Of the 97 sites found in Ka'alāiki ahupua'a, 60 of the sites are located within the southwestern boundary of the project area. These sites include Kāwā Springs, a well, 20 house sites, six agricultural sites, 23 burial sites (containing a minimum of 24 burial features), 5 platforms of unspecified use, an enclosure, a pen, a fisherman's shelter, and a shelter cave (on TMKs 3-9-5-16: 005 and 025).

### **Hīlea Nui Ahupua'a**

Of the 9 sites found in Hīlea Nui ahupua'a, 8 are clustered around Kāwā Bay on TMK 3-9-5-17: 007. These sites include Ke'ekū Heiau, five house sites, a burial in a stone-lined pit, and a petroglyph.

### **Hīlea Iki Ahupua'a**

Fourteen sites were found in Hīlea Iki ahupua'a, which consisted of three trails, two platforms, two house sites, two campsites, a 3-sided wall structure, a circular walled pen, a large rectangular leveled area, a large boulder with stone walls, and a small shelter cave (all located on TMK 3-9-5-17: 005).

<sup>5</sup> The State Parks Division of the Department of Land and Natural Resources documented the historic resources of the Ka'ū District in June 1973. The documentation included a visual inspection of mostly coastal areas and the preparation of brief written descriptions of the encountered sites and features, along with the assigning of SIHP site numbers.

## **2.3.5 Primary Threats to Cultural Resources**

This sub-section describes the primary threats to cultural resources at Kāwā.

### **Human Recreation & Use**

- Public use of Kāwā is anticipated to increase in the future posing threats to archaeological sites both from inadvertent impact and intentional destruction. Sites most susceptible to inadvertent disturbances and intentional looting will be those located along pedestrian and vehicular access ways of Corral Gate Road and the Hīlea Trail, and those in the most frequented use areas which are the coastal areas surrounding Kāwā Pond to Kāwā Bay.
- The area between Hīlea Stream to Nīnole is on occasion accessed by fishermen and though not many vehicles currently access the Old Māmalahoa Trail from Nīnole, there is potential for increased vehicular access in the future.
- Wildfires are common in Hawai'i particularly in the dry season and pose threats to the cultural landscape at Kāwā. Of particular concern is the potential impact of firefighting activities on cultural resources such as the use of bulldozing to create firebreaks.
- Consultations indicated that fishing is an important cultural practice that occurs at Kāwā and though no immediate threats of overfishing were identified, community members were concerned over potential marine resource depletion in the future at Kāwā due to overfishing in other nearby fishing grounds.

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**Table 5. List of SIHP Sites in the Project Area**

SIHP NUMBER	NAME	DESCRIPTION
50-10-74-3530	Ke'ekū Heiau	A very large and heavy-walled enclosure, with several platforms. A major heiau of human sacrifice, well-preserved. Should be a historical monument.
50-10-74-3531	House Site	---
50-10-74-4369	Kuhua Bay Complex	Features, in good condition, constructed in 'ā'ā; likely a habitation complex for people of a lower social status than those at Koloa.
50-10-68-4370	Luu Complex	Features are between 100 and 200 feet from the sea. Sites consist of low walled enclosures, cleared areas in the lava, ili ili midden areas, cupboards, trails and shelters. Well-used habitation area. Likely pre-historic. Recommended to State Register.
50-10-74-4371	Kawaa Complex:	A series of house compounds, enclosures, and possible burial platforms to the south of Kāwā Bay. May be older than inland sites and probably damaged by the 1868 tsunami and earthquake.
50-10-74-4372	Kaalaiki Complex 1 or Kailiili (Inland) Complex 1	A complex of dwellings situated over pāhoehoe overlooking Kāwā Spring to the north east and the sea to the south. Appears to date from the late 19 <sup>th</sup> century to early 20 <sup>th</sup> century from bottle glass fragments and informant data.
50-10-74-4373	Kaalaiki Complex II or Kailiili (Seaward) Complex II:	Site record missing from file at DLNR-SHPD
50-10-74-4374	Wailea Complex I	Located at Wailea in an area of a group of natural springs. Consists of enclosures, house sites, and burials. Recommended to be placed in the reserve classification because of its significant value for studying of Hawaiian cultural history particularly to understand historic period construction techniques.

**Invasive Plants**

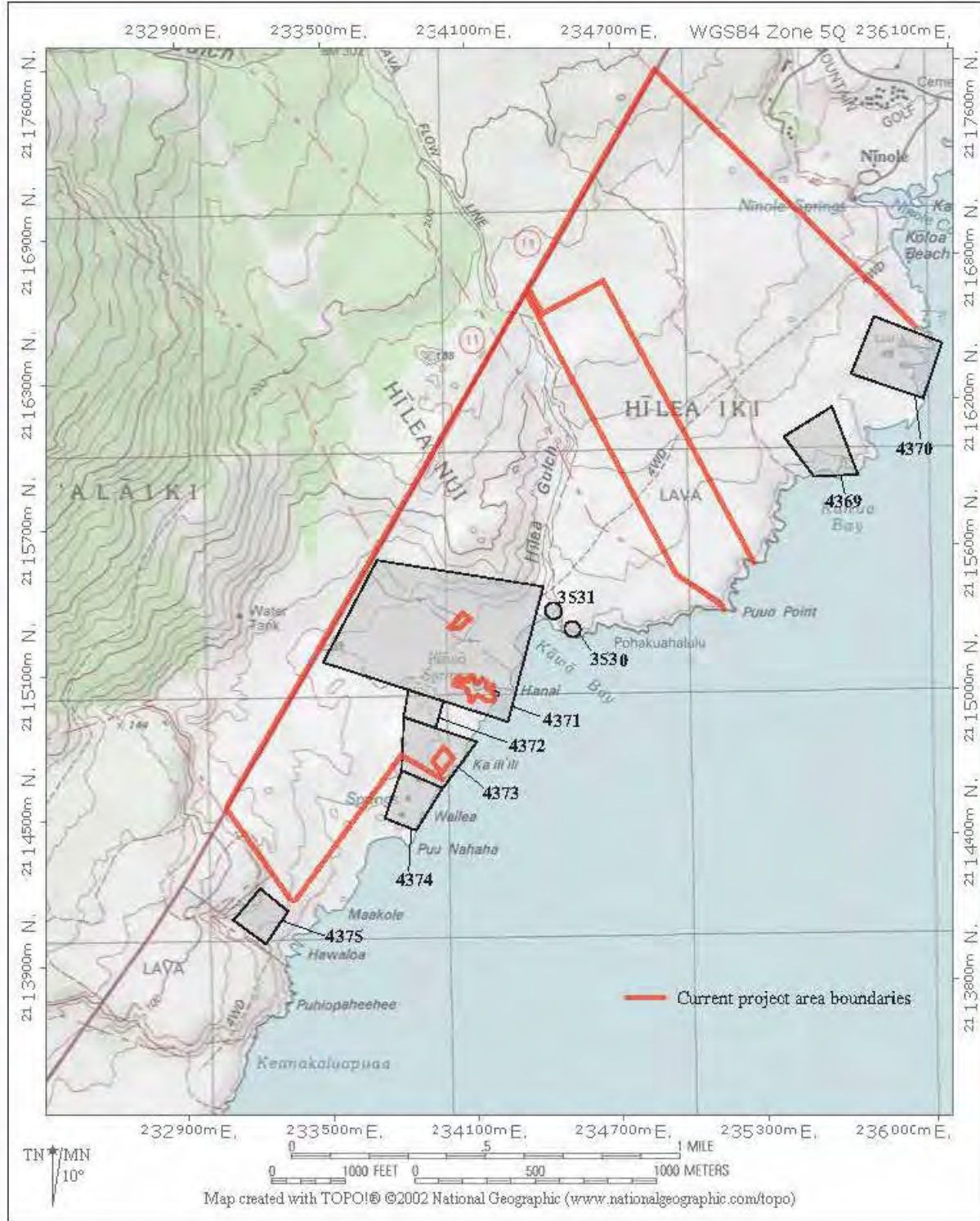
- Invasive plants affect archaeological sites directly through root systems growing on and breaking up structures such as house sites, walls, etc. It also indirectly affects archaeological sites as overgrown bushes inhibit proper archaeological surveys of the sites and it provides habitat for feral ungulates

that may potentially trample on and destroy sites.

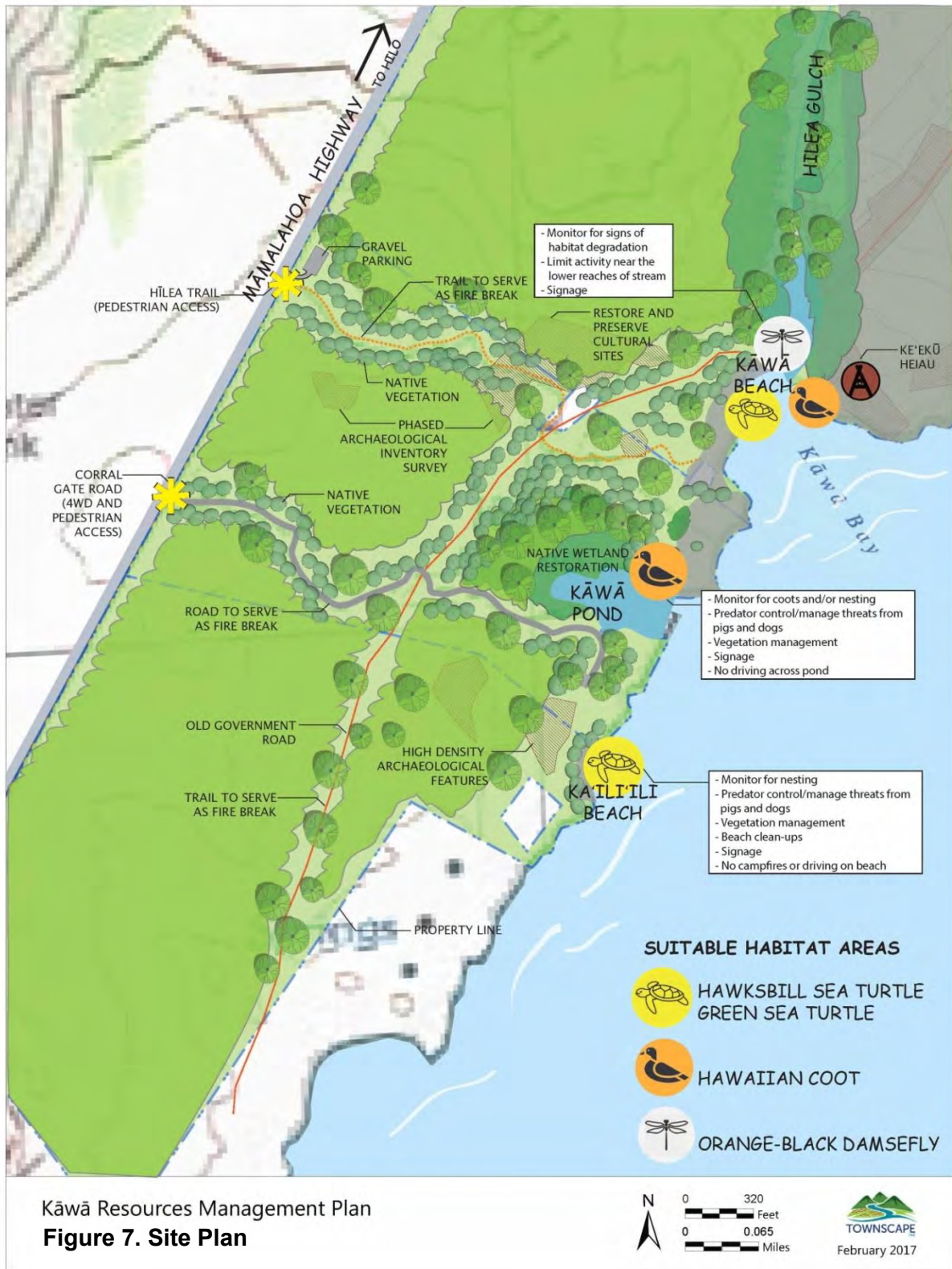
- Consultations indicated that Christmas berry and koa haole are the two species of greatest threat to archaeological sites that dominate the forested regions of the Property, therefore methods for the eradication of these target species is critical.

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**Figure 6. Map showing site locations recorded during the 1973 Statewide Inventory of Historic Places (From Rechtman Consulting, LLC., 2013)**



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Kāwā Resources Management Plan  
**Figure 7. Site Plan**

# 3 STEWARDSHIP OF NATURAL AND CULTURAL RESOURCES AT KĀWĀ

Management strategies for natural and cultural resources at Kāwā are presented in this chapter, and are presented graphically in Figure 7.

## 3.1 OVERVIEW OF MANAGEMENT STRATEGIES FOR PRIORITY SPECIES

This section presents management strategies to protect the four priority species at Kāwā: the hawksbill sea turtle, the green sea turtle, the Hawaiian coot, and the orange-black Hawaiian damselfly. For more information about these four species and how they utilize habitat at Kāwā, refer to Chapter 2. Three general management actions to consider for the protection of these species and to enhance and restore their habitats are described in the following sections (Figure 8). The final section, titled “Application of Management Strategies for the Priority Species,” explains how the various management actions described in the following sections can be applied for the management of each of the four priority species. Note that management activities that directly impact federally listed threatened and endangered species will require a permit from USFWS before management actions may be implemented.

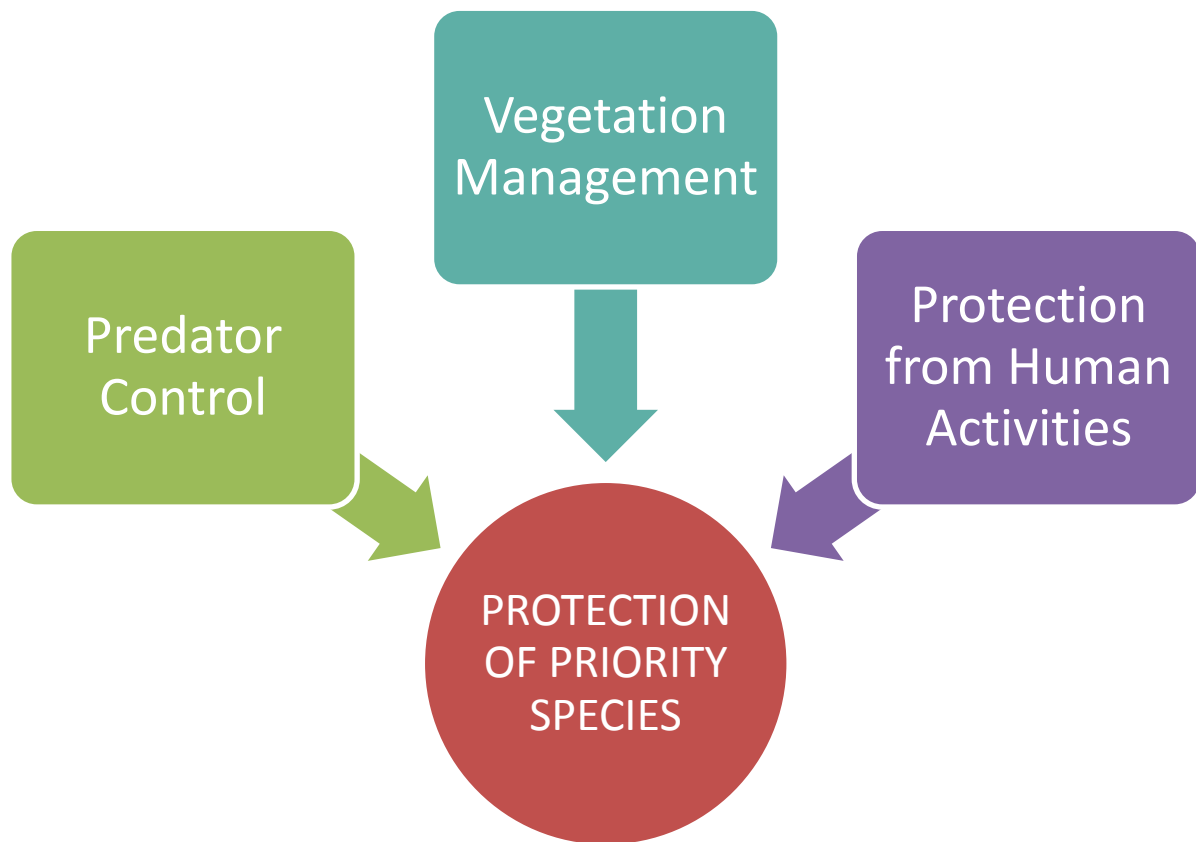
**Predator Control.** The focus of predator control is on controlling small mammal populations and managing threats from pigs and dogs. Threats from small mammalian predators such as non-native mongoose, rats, and feral cats are a concern at Kāwā. Mongooses may be more commonly observed than cats and rats because they are diurnal and are often seen scavenging for food. Rats are nocturnal, small, and shy so their presence in a natural setting can go unnoticed. Feral cats are also mostly nocturnal in their habits. These animals are often concentrated where human food and trash are found. Pigs and dogs pose threats to native species either directly (i.e. through predation) or indirectly (i.e. through habitat disturbance). Pigs have been occasionally observed at Kāwā and in surrounding areas, however, the size of pig population in the area is not known. Dogs at Kāwā are typically pets of community members and visitors. Threats from avian and aquatic predators are not well understood at the present time at Kāwā, but should be evaluated.

**Vegetation Management.** Ideally, the entire Kāwā property should be restored with native vegetation, as the majority of the site consists of non-native or invasive plant species. Given that intensive labor is required for invasive plant removal, the priority is to manage vegetation near habitat for threatened and endangered species.

**Protection from Human Activities.** Unmanaged human activities are a significant threat to both the natural and cultural resources, as it can cause degradation of habitat for many native species. Many people use this area for swimming, picnicking, fishing, surfing, and other recreational activities. Visitor demand at Kāwā is significantly lower compared to

other places in Ka‘ū such as South Point; however, public use of Kāwā is anticipated to increase in the future as more stringent rules are enforced at other recreational places. It is crucial that the County impose strict rules to protect resources at Kāwā now and to avoid future risk of degradation.

**Figure 8. Protection of Priority Species**



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### 3.1.1 Predator Control

#### Small Mammals

Full scale control of small mammals typically requires continual and intensive trapping (using live traps or lethal traps) to reduce populations to a level that decreases the risk of predation. Three methods of predator control are presented in this section: live traps, lethal traps, and fencing.

Rodenticides can also be used to control rodent populations in the area; however, a permit for use in natural areas is typically required and permit requirements can be difficult to comply with.

The risk of catching non-target species in traps (e.g. birds) is important to consider when implementing a predator control program. Care should be taken to avoid placing traps in areas where non-target animals would be likely to encounter the trap. Traps should be monitored for non-target catches and mitigation efforts should be pursued if non-target species are caught. For example, snap traps can be placed under a protective cover that could limit the chances of a non-target species accidentally encountering the trap.

#### *Predator Control with Live Traps*

One of the methods for conducting predator control is through the use of live traps, such as the one pictured to the right. These traps can be used to catch rats, mongooses, and cats. Place the traps in shaded areas throughout the habitat, as well as around the periphery of the habitat. For targeting smaller mammals (such as rats), the traps should be spaced close together to increase the chances of interception (e.g., traps may be spaced 25 yards apart or closer). For

larger animals (such as cats), the traps could be spaced farther apart. It is recommended to use bait that is attractive to all target predators, such as sardines. The bait should be replaced every time the trap is checked (unless it appears to still be fresh). The traps should ideally be checked on a daily basis to remove and dispatch any caught animal for humane reasons.

#### *Predator Control with Lethal Traps*

There are many different types of lethal traps (also referred to as kill traps) that can be used to control small mammals. The most relevant and practical types of traps are discussed below. Note that none of the lethal trapping methods described below target cats; if cat control is required, live traps should be used or more research into kill traps for cats should be conducted.

#### Snap Traps

The most commonly used type of kill trap targets rats. These traps,



EXAMPLE OF A LIVE TRAP (TOP) AND A SNAP TRAP (BOTTOM) FOR PREDATOR CONTROL OF SMALL MAMMALS.

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commonly called “snap traps,” are inexpensive and easy to use. They can be tethered and set on the ground or secured onto the branches of shrubs/trees. The more snap traps that are deployed in an area, the better the predator control will be. A grid of snap traps should be spaced no more than 25 yards apart throughout the habitat and around the periphery. A variety of baits can be used on snap traps, however, peanut butter has been found to be very attractive to rats by a number of conservation organizations in Hawai‘i. The traps should be checked and baited as often as possible, since the more frequently the traps are baited and re-set, the more successful the predator control effort will be. Ants and slugs are an issue in some areas as they can rapidly remove the bait from the trap. In the beginning of the trapping effort, it may be beneficial to reset the traps more frequently (e.g. daily or every other day) for a couple of weeks to significantly reduce the population of rats in the trapping area to make the long-term trapping effort more successful. Victor® brand snap traps (shown in the picture above) work well for targeting rats (and are relatively low in cost). Note that snap traps should be carefully used around native bird habitat (such as the Hawaiian coot) to reduce the risk of

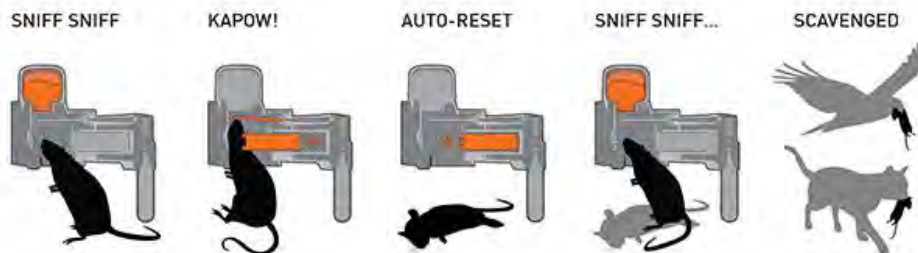


GOODNATURE® A24 AUTOMATIC MULTI-KILL

accidental take (e.g. traps could be secured above the ground or placed in a tunnel/box).

Automatic Multi-Kill Trap

The Goodnature® A24 automatic multi-kill trap is a new type of rat trap available from a New Zealand-based company called Goodnature®. The trap is powered by a small carbon dioxide (CO<sub>2</sub>) canister and is designed to humanely kill rats (see image below). A24s have also been shown to effectively kill mongooses. The traps can be fired up to 24 times before the CO<sub>2</sub> canister needs to be replaced. It is very common that the carcasses beneath the trap are scavenged by other animals.



AUTOMATIC MULTI-KILL TRAP

from <http://www.goodnature.co.nz/products/rat-stoat/>

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The primary benefit of using an automatic multi-kill trap is that it reduces the amount of labor that is required for other trapping methods since the automatic traps remain set and baited for a longer period. Automatic multi-kill traps should be mounted on trees or stakes approximately seven inches (i.e. roughly the height of a 'shaka') from the ground or above a branch jutting out horizontally from a tree. If there are ground nesting birds or other species of concern in the area, the traps should be mounted higher off the ground, perhaps above a horizontal branch. In fact, it has been documented that black rats in Hawai'i spend a significant amount of time in trees so installing some traps higher up on trees may be beneficial. Consider making signs to display in the area that warn of the dangers of tampering with the traps.

Automatic traps can be spaced farther apart from each other in a grid than one would place snap traps since they are multi-kill devices (e.g. as in a large area, A24s could be spaced 50 yards apart). However, as with most predator control devices, the more traps that are placed in an area, the more likely it is that a predator will encounter a trap. Bait is placed in a jar compartment inside the trap. To maximize the utility of an automatic trap, it is important to use bait that is both long-lasting and attractive to rats/mongoose. Goodnature® has a number of bait products, including ones with preservatives, available for purchase. Alternatively, different formulations, such as adding preservatives to peanut butter, may be experimented with.

Goodnature® A24 traps have been shown to be effective in some areas at reducing predator populations and protecting resources. They have been tested in

Hawai'i and are being used for conservation purposes on other islands worldwide. Goodnature® A24 traps are significantly more expensive than other types of traps, costing approximately \$123 (USD) for one A24 trap and starter kit. However, this relatively higher upfront investment will save money in the long-term with reduced labor costs required for predator control.

### *Fencing*

#### Predator-Proof Fences

A predator-proof fence is specifically designed to exclude all mammalian predators, including mice, rats, mongooses, cats, dogs, and pigs. Various features are incorporated into the fence design to prevent these predators from accessing the enclosed habitat. For example, Xcluder, a brand from New Zealand, is designed to prevent rats and other animals from climbing over the top of the fence with the use of a curved hood at the top of the fence (see image above). After construction of a predator-proof fence, an intensive trapping effort needs to occur to remove all predators



*PREDATOR FENCE AT KA'ENA POINT, O'AHU*

from

<http://roweenvironment.weebly.com/hawaii.html>

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from within the fenced area. Even when eradication is achieved, on-going monitoring and occasional trapping is necessary to maintain a predator-free habitat. Constructing a predator-proof fence is a costly yet effective option that works to exclude all predators, including small mammals as well as pigs and dogs, from the fenced area. Predator-proof fencing has many ecological benefits, however it is very expensive to construct and maintain and it may also alter the undeveloped, natural character of the landscape at Kāwā. Recent cost estimate for predator proof fence is approximately \$300 per meter, according to a locally-based conservation organization.

## Pigs and Dogs

### Hogwire or Hog Panel Fences

Providing the best protection for vulnerable native species from the risk of predation by pigs and dogs would typically require fencing. As with trapping methods, there are a number of different types of fences that can be constructed to exclude predators. Generally, hogwire or hog panel fences are used to exclude large animals (e.g. pigs and dogs). Note that hogwire or hog panel fences do not exclude small mammalian predators (e.g. mice, rats, mongooses, and cats).

The most common type of fence used to exclude pigs and dogs is made out of four-foot-tall “hogwire.” These fences are relatively inexpensive to construct; the cost per foot of hogwire is approximately \$1.27 for materials (Sailer, 2006). Another option for fences to exclude pigs and dogs is semi-rigid hog panels (36 inches or 52 inches high) with graduated mesh. This type of fence is becoming more commonly used for

conservation purposes because it is more flexible, stronger, and simpler to construct. However, panel fences are more expensive to construct than hogwire fences. A 16-foot long, 52-inch-high panel costs approximately \$40 or \$2.50/foot (Sailer, 2006).



*EXAMPLE OF HOGWIRE PANEL FENCE IN MĀKAHA VALLEY, O’AHU.*

Fenced areas can be very small with the intent to provide protection to a specific habitat (e.g. around a hawksbill nesting beach or around the Kāwā Pond), or fenced areas can be large to provide protection to a larger ecosystem. Once a fence is constructed, all pigs and dogs should be removed from the area and care should be taken to prevent reinvasion. Fences would need to be checked, maintained, and repaired regularly.

Domestic dogs should be kept on a leash at all times and should not be allowed to roam freely on-site during the hawksbill nesting season and/or if coots are observed at Kāwā.

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Table 6 summarizes the advantages and disadvantages of the various predator control methods described in this plan.

### 3.1.2 Vegetation Management

Vegetation management for the protection of the four priority species is critical near the wetlands and the beaches at Kāwā, although ideally non-native or invasive plant species should be removed and native vegetation should be restored throughout the entire Kāwā property.

#### *Wetlands*

Restoration improvements should involve gradually removing invasive vegetation covering the pond and the majority of the wetlands. The highly invasive seashore paspalum grows within and along the banks of the pond. It has an extensive root system that grows deep and holds the sand and soil together. California grass, another invasive grass, covers a significant section of Kāwā Pond and the surrounding area. Removal of these invasive plant species will allow the native reeds and other native coastal vegetation (such as ‘akulikuli, ‘ae‘ae and naupaka) to re-populate the pond and wetlands. Removal of the invasive plant species will also provide easier access to the freshwater springs and will open up surface water flows since the invasive grasses inhibit the flow of water to and from the ocean.

The Kāwā estuarine marshes can provide suitable habitat for native bird species, such as the federally listed endangered and endemic Hawaiian coot. Restoring the wetlands will enhance the natural habitat for these waterbirds; therefore, if and when Hawaiian coots return to Kāwā estuaries,



*INVASIVE CALIFORNIA GRASS COVERS A SIGNIFICANT SECTION OF KĀWĀ POND*

improvements during the restoration phase will need to make sure that efforts do not disturb or negatively impact the birds. If Hawaiian coots are observed or should coot nesting occur during restoration work, it is recommended that a buffer be created around Hawaiian coots and/or nests where

**Table 6. Summary of Predator Control Methods**

ADVANTAGES	DISADVANTAGES
<b>Live Traps</b>	
<ul style="list-style-type: none"> <li>• Easy to use and check</li> <li>• Catches all small target mammal species (rats, mongooses, cats)</li> <li>• Can see the number of animals trapped</li> </ul>	<ul style="list-style-type: none"> <li>• Labor intensive; must be checked frequently (for humane reasons)</li> <li>• Animals must be “dispatched” (killed on-site or removed from site)</li> <li>• Potentially unpopular in visible public areas</li> </ul>
<b>Snap Traps</b>	
<ul style="list-style-type: none"> <li>• Cheap – can use more</li> <li>• Easy to use</li> <li>• Don’t have to check as often as live traps</li> <li>• Effectively used as sole rat control device for other Hawaiian species (e.g. by the Army to protect the O’ahu Elepaio)</li> </ul>	<ul style="list-style-type: none"> <li>• Only targets rats (does not kill mongooses or cats)</li> <li>• Scavenging of carcasses may make it difficult to determine catches</li> <li>• Can be accidentally triggered (e.g. by a branch), rendering the trap useless</li> <li>• Bait is often removed by slugs/insects between checks</li> <li>• Potential to catch non-target species (e.g. birds)</li> <li>• Potentially unpopular in visible public areas</li> </ul>
<b>Automatic Multi-Kill Trap</b>	
<ul style="list-style-type: none"> <li>• Requires less maintenance (and staff time) than other trapping methods</li> <li>• Shown to be effective for rat control in some areas (in Hawai’i and elsewhere)</li> </ul>	<ul style="list-style-type: none"> <li>• Up-front purchase cost</li> <li>• Does not control cats (only rats and mongooses)</li> <li>• Scavenging of carcasses may make it difficult to determine catches (Note: Counting devices are available for purchase)</li> <li>• Finding a long-lasting bait that is attractive to both rats and mongooses (Note: Goodnature® has a number of bait products available for purchase)</li> </ul>
<b>Predator-Proof Fences</b>	
<ul style="list-style-type: none"> <li>• Provides total protection from all mammalian predators</li> </ul>	<ul style="list-style-type: none"> <li>• Very large up-front investment – most expensive option (construction and predator eradication)</li> <li>• Likely some community opposition (e.g. perceived as an “eye sore,” unnecessary, or preventing access)</li> <li>• A gate system would be required to allow pedestrian access</li> </ul>
<b>Hogwire or Hog Panel Fences</b>	
<ul style="list-style-type: none"> <li>• Protects resources from pigs and dogs</li> </ul>	<ul style="list-style-type: none"> <li>• Large up-front investment (compared to not having a fence) and potentially high maintenance costs (with rust near the ocean)</li> <li>• May be some community opposition (e.g. perceived as an “eye sore,” unnecessary, or preventing access)</li> <li>• A gate system may be required to allow pedestrian access</li> </ul>

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*INVASIVE SEASHORE PASPALUM WITH AN EXTENSIVE ROOT SYSTEM*

restoration work will be avoided, and the DLNR Division of Forestry and Wildlife should be contacted immediately.

For the area around Hīlea Stream, vegetation management should be conducted with moderation and caution since the orange-black Hawaiian damselfly lays eggs on both native and nonnative plants. See the discussion in Section 3.1.4.

*Kāwā Beach and Ka’ili’ili Beach*

Kāwā Beach consists of gray and black sand, pebbles, and cobblestones. It is bordered by scattered vegetation that includes naupaka, Christmas berry, and koa haole. Ka’ili’ili Beach is mostly composed of cobblestones with a few scattered pockets of black sand and is bordered by naupaka. Both these beaches provide suitable Hawksbill sea turtle nesting habitat; therefore, it is critical that restoration of native vegetation near these beaches does

not include outplanting plants or trees with extensive root systems, as it could make nesting difficult for Hawksbill sea turtles (see Section 2.2).

Vegetation restoration should be done in consultation with local community groups, cultural practitioners, organizations such as HIHTRP and Hawai’i Wildlife Fund, and other stakeholders to ensure that proposed plant removal and outplanting do not affect threatened and endangered species habitat and/or cultural resources.

In addition to recommended vegetation management strategies specific for the threatened and endangered species, the following are suggested guidelines for overall vegetation management at Kāwā:

- As a priority, focus efforts on removing invasive plants near areas identified with the most intact native plant communities.
- Invasive plants should be removed through the use of hand tools if possible; however, the use of herbicide for the forested regions of the Property could be considered, as removal of invasive species will require continuous physical labor and maintenance.
- Herbicide can be a valuable tool for weed control; however, extreme care should be taken when using herbicides near waterbodies. Herbicide should always be applied according to the label; while some herbicides are especially formulated to be used near waterbodies, most are not. For the sake of protecting aquatic and marine resources, this plan does not recommend the use of herbicides near waterbodies.

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- Work carefully near culturally sensitive areas when removing invasive plants to avoid disturbance.
- Native plants should be outplanted concurrently with invasive plant removal; however, outplanting should be not conducted in areas where sensitive cultural sites and/or burials are located.
- Rare and threatened native plant species should only be introduced once more hardy vegetation has been re-established in the area.
- Vegetation outplanted should be aligned with vegetation suitable for threatened and endangered species (for example, plants with extensive root systems such as coconut and morning glory should not be planted near critical hawksbill sea turtle nesting beaches).

### 3.1.3 Protection from Human Activities

Fishermen, campers, surfers, and other uncontrolled beach goers constitute a significant threat to the general ecosystem and can cause degradation of the habitat for native plants and animals, including the four priority species covered in this plan. Human activities often result in disturbed habitats, littered beaches, and contamination of the environment. This section describes management actions that are generally applicable to manage and protect the habitat for all four priority species. Additional actions for protecting specific species from human activities are described in their respective subsections in Section 3.1.5. The following management actions relating to protection from human activities are recommended for Kāwā:

- **Limit vehicular access to the Property**

At present, vehicular access for the public to the Property is provided by Corral Gate Road to the south side of Kāwā Pond. Another vehicular access is provided along Hīlea Trail to the shoreline north of Kāwā Pond although gate access is required. It is critical that vehicles are not allowed to drive across the pond or near the coastline, as it can cause significant degradation of the habitat for threatened and endangered species, as well as the overall ecosystem (see Section 3.1.4 for direct impacts to habitat for hawksbill sea turtles).



VEHICLES PARKED NEAR KĀWĀ POND

Ideally, vehicular access should be completely prohibited throughout the Property because of the presence of sensitive natural resources and cultural sites found at Kāwā. However, there are several rights of way easements on the County’s property whereby vehicular access must be provided to the general public. Civil No. 4590 Judgement dated October 14, 1980 states that the “general public are entitled to reasonable access to Kāwā Bay and the adjacent shoreline” via a 10-foot wide vehicular, equestrian and pedestrian easement along the Corral Gate Road.

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Given the existing easements on the Property, strict rules must be established and enforced to avoid any vehicular use on or near the coastal areas, specifically across the pond and beaches. Specific areas should be designated for parking near the coast. At present, temporary rock barriers have been constructed by local community members to prevent vehicular access onto the beaches. It is important that these rock barriers remain and/or more permanent barriers be constructed without compromising the natural character of the landscape. On-site enforcement may be needed as future use of Kāwā increases.

- **Designate specific parking areas**

At present, the public can either park adjacent to Māmalahoa Highway by Hīlea Trail gate or anywhere along the coastline if they drive in from Corral Gate Road. It is recommended that safer parking options be provided near Hīlea Trail. The County should consider relocating the existing Hīlea Trail gate further makai from Māmalahoa Highway to allow for a buffer between vehicles and the road since visitors are currently getting in and out of the their vehicles on the road shoulder. An area designating a specific parking area for visitors who access the Property from Corral Gate Road. Vehicular access along the Corral Gate Road should lead to a designated parking area. Vehicles should not be allowed to drive freely along the coast within the Property.

- **Consider providing toilets near the coast**

Two portable toilets are located near Māmalahoa Highway on the Hīlea Trail, but there are no sanitary facilities closer to the coastline at Kāwā. Adequate sanitary facilities are crucial to maintaining a safe

and clean environment, especially if public use is anticipated to increase in the future. Areas near the “Napolean Shack” have been reported to be littered with toilet paper and used as a bathroom because existing portable toilets are located too far away. It is recommended that the County considers placing toilets closer to Kāwā Beach in an area that does not contain significant cultural sites and would not impact habitat for threatened and endangered species. However, note that increasing amenities may attract more visitors to Kāwā and will require on-going maintenance. Accessibility by maintenance trucks must also be taken into consideration.

Another option for providing sanitary facilities closer to the coast is the use of composting toilets. It should also be noted that a facilities manager for Kamehameha Schools has shared that the composting toilets at a number of their sites have not worked because: (1) any level of heavy use results in problems with disposing of the filled-up containers of “organic” material; and (2) there are no Hawai'i-based companies that know how to repair the fans/circulation systems in composting toilets.

- **Reduce trash and maintain trash receptacles throughout the Property**

Trash is present throughout the site, and marine debris is especially prevalent at Ka'ili'ili Beach and Kāwā Beach. There are several waste receptacles currently located on-site near the Hīlea Trail gate by the highway and near Kāwā Beach; however, they are frequently overflowing with trash. Trash and food scraps can attract non-native predators to an area, such as mongooses, rats, feral cats, and pigs. The waste receptacles need to be secured,

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covered, and maintained regularly so they do not attract these non-native predators that may pose harm to native species. The need for additional waste receptacles should be assessed periodically if public use is anticipated to increase in the future.

Beach clean-ups should also be conducted when necessary. Trash and marine debris removal will improve nesting suitability and lessen the risk of entanglement for sea turtles, and also improve the overall health of the Property.

- **Educate and engage the public**

Educate the public about the sensitive resources present at Kāwā and the value of conserving threatened and endangered

species. The community should be actively engaged in restoration and preservation efforts in order to promote a greater sense of respect for the place. Educational outreach could include: installing interpretive educational signs to raise public awareness about the significance of suitable habitat areas for priority species and the presence of cultural sites at Kāwā; conducting a series of talk story events in the community; partnering with local schools; and/or providing volunteer opportunities at Kāwā to restore and maintain the place.



*STUDENTS FROM A LOCAL SCHOOL HELP TO COLLECT TRASH AND MARINE DEBRIS AT KA'ILI'ILI BEACH*

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### 3.1.4 Application of Management Strategies for the Priority Species

This section explains how the general management strategies described in the previous sections can be specifically applied to manage habitat and protect the four priority species at Kāwā.

In consideration of current resources (labor/staffing), three tiers of proposed predator control measures are presented, where appropriate. Tier 1 represents actions that should be conducted at minimum, followed by Tiers 2 and 3 with higher levels of protection for resources. Note that any management activities that directly impact federally listed threatened and endangered species will require a permit from USFWS before implementing management actions.

#### Hawksbill Sea Turtle Management

Hawksbill sea turtles have been confirmed to occasionally nest at Kāwā, and hawksbill nests and hatchlings are very vulnerable to predation. If signs of hawksbill sea turtle nesting are observed, the Hawai'i Island Hawksbill Turtle Recovery Project (HIHTRP) should be contacted immediately.

##### *Small Mammal Predator Control*

Mongoose, rats, and feral cats can destroy hawksbill sea turtle eggs and prey on hatchlings, if not controlled.

The following recommendations (Table 7) are proposed to protect hawksbill sea turtles from small mammals during the nesting season (generally from May to December):

- **Patrol beaches** for signs of nesting. Kāwā and Ka'ili'ili beaches should be



STAFF FROM THE HAWAII ISLAND HAWKSBILL TURTLE RECOVERY PROJECT CONSTRUCTS A TEMPORARY NEST ENCLOSURE AROUND NESTS TO PROVIDE PROTECTION FROM PREDATORS, VEHICLES, AND PEOPLE

monitored for signs of nesting activity at a minimum of once daily in the morning (or as frequently as possible). If possible, personnel should camp overnight at Kāwā to conduct nightly watches to detect any signs of nesting turtles or emerging hatchlings.

- **Install predator traps** in the vicinity of the nesting area, creating at least a 25-yard buffer around the nest (Tier 1). Traps should be installed in the vegetation along the periphery of the nesting beach creating a buffer of protection. If live traps are used, they should ideally be maintained twice daily (to bait the traps and check for animals). If kill traps are used, they can be baited and checked less often, however, the more frequently the traps are baited and re-set the more effective the predator control will be. Snap traps would need to be secured to a root or branch. Refer to Section 3.1.1 for more detailed information on traps for predator control. Tier 2 recommends conducting on-going

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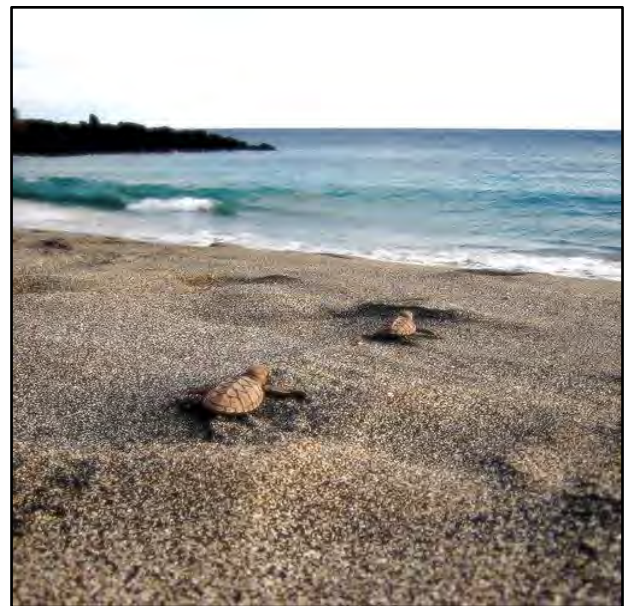
small mammal predator control year-round to overlap with Hawaiian coot habitat and to provide ecosystem-wide benefits. Tier 3 recommends constructing a fence around nesting habitat to exclude all mammalian predators. However, fencing could alter the scenic views of the landscape and could also be perceived as posing limitations to community access.

*Managing Threats from Pigs & Dogs*

Feral ungulates, such as pigs and uncontrolled dogs have been known to prey on hawksbill sea turtle hatchlings and eggs by digging up nests. At the present time, pigs and dogs do not seem to be a significant threat to hawksbill sea turtles at Kāwā. Three tiers for managing threats from pigs and dogs are provided. Tier 1 recommends that a hui assist in monitoring the impacts of pigs and dogs, especially if animals are seen on-site. Members of the hui would assist in hunting and trapping feral pigs, and monitor for stray dogs. Domestic dogs should be kept on a leash at all times and should not be allowed to roam freely on-site. Should pigs and dogs pose a significant threat at Kāwā, then Tier 2 should be considered. Tier 2 recommends fencing for Kāwā and Ka’ili’ili beaches. During and/or after fence construction, all pigs and dogs would be removed from the area enclosed by the fence using hunting, trapping, or snaring methods. However, a challenge with fencing of the beaches is that the fence ends will need to remain open to provide hawksbill sea turtles with access to and from the ocean. Predators would then be able to access the fenced-area during low tide. Therefore, effectiveness of fencing for the beaches will need to be further

examined should pigs and dogs pose a significant threat for Kāwā. Refer to Sections 3.1.1 and 3.1.2 for more information on fences for predator control.

Tier 3 recommends a predator-proof fence to exclude all mammalian predators, including mice, rats, mongooses, cats, dogs, and pigs. Fences with a gate for human access would require people to be accountable for closing the gate and not letting pigs and/or dogs in the enclosed areas.



*HAWKSBILL HATCHLINGS HEAD FOR THE OCEAN*

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### *Vegetation Management*

Habitat for hawksbill sea turtles is threatened by: non-native plants such as invasive koa haole and Christmas berry that can reduce the available hawksbill sea turtle nesting habitat; and plants and trees with extensive root systems such as coconut tree and morning glory (*Ipoemea indica*) that can form dense matrices in the sand making it difficult for female hawksbills to dig nests, and can entangle eggs and hatchlings. Thus, outplanting near critical nesting beaches should not use plants and trees with extensive root systems. Habitat restoration improvements should be done in consultation with organizations such as HIHTRP and HWF. Restoration work near critical nesting beaches should be accomplished using only manual labor and hand tools.

The use of heavy equipment can crush turtle eggs and hatchlings and can remove sand vital to eggs incubating below. In addition to removing invasive vegetation, beach clean-ups should be conducted at nesting beaches.

### *Protection from Human Activities*

Artificial lighting near the coast directly impacts hawksbill sea turtles. The female hawksbill sea turtles come to shore for the sole purpose of digging nests in the sand to lay their eggs, which is typically done at night. Hawksbill hatchlings typically emerge from the nest at night as well. Female hawksbills and hatchlings are guided to the sea by the light of the moon; therefore, any artificial light from vehicular traffic, campers' flashlights, lanterns, and campfires may disorient them, increasing the risk of stranding, injury, and death.

Vehicles can cause severe damage to habitat for hawksbill sea turtles by compacting the sand and accelerating erosion. Driving on nesting beaches may crush incubating eggs, crush hatchlings in the nest, and trap hatchlings after they emerge from the nest cavity and begin their trek to the sea.

The following strategies are recommended to minimize adverse impacts specifically for hawksbill sea turtles:

- Prohibit use of artificial lights near coastal areas during nesting and hatching seasons;
- Prohibit use of campfires near nesting beaches;
- Work with neighboring landowners to use proper lighting methods, such as retrofitting artificial lights with downward directing shields;
- Encourage other best practices such as covering flashlights with red cellophane; and
- Prohibit driving on or near beaches.

TABLE 7. RECOMMENDED HAWKSBILL SEA TURTLE MANAGEMENT

Strategy	Actions
<b>Monitor beaches for signs of nesting activity</b>	Monitor beaches once daily in the morning, or as frequently as possible. If possible, camp overnight to conduct nightly watches during the nesting season.
<b>Place temporary enclosures over identified nests</b>	Place temporary enclosures over the nest when signs of nesting activity are observed
<b>Conduct predator control for small mammals</b>	<p><b>Tier 1:</b> Install traps for small mammals in the vicinity of the nesting area when signs of nesting activity are observed, creating at least a 25-yard buffer around the nest</p> <p><b>Tier 2:</b> Conduct on-going small mammal predator control year-round to overlap with Hawaiian coot habitat and to provide ecosystem-wide benefits.</p> <p><b>Tier 3:</b> Fence nesting habitat to exclude all mammalian predators.</p>
<b>Manage threats from pigs and dogs</b>	<p><b>Tier 1:</b> Monitor area for pigs. Hunt and trap pigs if sighted on the Property. Set regulation where domestic dogs must be kept on a leash at all times</p> <p><b>Tier 2:</b> Fence habitat with hogwire or hog panels to exclude large animals should pigs and dogs pose a significant threat on the Property.</p> <p><b>Tier 3:</b> Fence nesting habitat to exclude all mammalian predators.</p>
<b>Manage habitat near nesting areas</b>	<ul style="list-style-type: none"> <li>• Conduct beach clean-ups to remove debris</li> <li>• Remove non-native plants and trees with extensive root vegetation near nesting beaches; restore with native vegetation</li> </ul>
<b>Reduce impacts from human activities</b>	<ul style="list-style-type: none"> <li>• Prohibit use of nighttime artificial lights during nesting and hatching seasons</li> <li>• Set regulation to prohibit driving on and/or near nesting beaches</li> <li>• Work with neighboring landowners to use proper lighting methods</li> <li>• Install signage to inform visitors of the important habitat for hawksbill sea turtles</li> <li>• Construct barriers around nesting beaches to prevent damage from human activities, particularly from vehicular access</li> </ul>

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### Green Sea Turtle Management

Predation by small mammals, pigs and dogs is not a significant threat for green sea turtles at Kāwā; however, pigs and dogs can contribute to general loss or degradation of habitat. Therefore, any measures taken to control pigs and dogs at Kāwā will ultimately contribute to protection of habitat for green sea turtles and other native species. Vegetation management actions, as

described for the hawksbill sea turtles, will also help to protect habitat for the green sea turtle. These actions should include removing non-native plants at Kāwā and Ka‘ili‘ili beaches and restoring the habitat with native vegetation. Beach clean-ups should be conducted regularly. Management actions, also as described for the hawksbill sea turtles, to reduce impacts from human activities should be implemented. These actions should include prohibiting driving on beaches, installing educational signage, and constructing barriers to prevent vehicular access.



BEACHES ARE AN IMPORTANT PART OF GREEN SEA TURTLE HABITAT; PHOTO TAKEN AT NEARBY PUNALU‘U BEACH

TABLE 8. RECOMMENDED GREEN SEA TURTLE MANAGEMENT	
Strategy	Actions
Manage habitat	<ul style="list-style-type: none"> <li>• Conduct beach clean-ups to remove debris</li> <li>• Remove non-native plants and plants and trees with extensive root vegetation near nesting beaches</li> <li>• Restore with native vegetation</li> </ul>
Manage threats from pigs and dogs	See management actions for Hawksbill Sea Turtles.
Reduce impacts from human activities	<ul style="list-style-type: none"> <li>• Set regulation to prohibit driving on beaches</li> <li>• Install signage to inform visitors of the important habitat for green sea turtles</li> <li>• Construct barriers around beaches to prevent damage from human activities, particularly from vehicular access</li> </ul>

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## Hawaiian Coot Management

At the present time, Hawaiian coot nesting is not known at Kāwā nor is there a confirmed presence of a Hawaiian coot population at Kāwā, although it is known to be present at nearby Punalu'u. On-going trapping and fencing, in addition to intensive restoration and continuous vegetation management, are essential if the goal is to establish a consistent and growing population of coots. Hawaiian coots will not be successful at nesting without managing predation (a coot biologist shared that a single cat can wipe out an entire flock in a short amount of time).

If Hawaiian coots are observed or should nesting occur at Kāwā, the DLNR Division of Forestry and Wildlife (DOFAW) should be contacted immediately.

### *Small Mammal Predator Control*

Predation by mongoose and feral cats has been documented on adult and young Hawaiian coots, and predation by rats has been documented on eggs and chicks. As stated earlier, Hawaiian coot nesting is not known at Kāwā nor have they been recently documented at Kāwā, although it is known to be present at nearby Punalu'u. However, if coots are found or should nesting occur at Kāwā, it is crucial that predator control occurs in order to avoid becoming a “sink” for populations of coots. It is possible that coots could visit Kāwā or spend some time foraging in the wetlands and never nest there.

Three tiers of small mammal predator control is recommended for Hawaiian coot management. Tier 1 recommends monitoring the wetlands for signs of coot

presence and installing predator traps around the perimeter of the wetlands (with at least a 25-yard buffer around the wetlands) should Hawaiian coots be observed or should nesting occur at Kāwā. Cat (and other small mammal predators) control is extremely important and must be implemented if coots begin to nest at Kāwā or if coots are found at Kāwā. Tier 2 recommends conducting on-going small mammal predator control to overlap with hawksbill sea turtle habitat and to provide ecosystem-wide benefits. Tier 3 recommends fencing the wetlands to exclude all mammalian predators.

### *Managing Threats from Pigs & Dogs*

Pigs in other areas in Hawai'i are known to damage Hawaiian coot habitat. Dogs have also been documented as predators of both young and adult Hawaiian coots in other areas. Similar to management measures recommended for the hawksbill sea turtles, three tiers for managing threats from pigs and dogs are proposed. Tier 1 recommends a hui to assist with monitoring, trapping, and hunting pigs, and to assist with monitoring for stray dogs. Domestic dogs should be kept on a leash at all times and should not be allowed to roam freely on-site. However, if there is a confirmed presence of a Hawaiian coot population at Kāwā or if nesting does occur at Kāwā, Tier 2 or 3 are recommended. Tier 2 recommends fencing habitat with hogwire and/or hog panels to protect the nesting birds and their habitat. The exact location of the fence will need to be determined based upon site conditions and practicability. Tier 3 recommends installing a predator-proof fence around the wetlands to exclude all mammalian predators.

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### *Vegetation Management*

Vegetation management for the wetlands should consist of removing invasive vegetation and planting of native vegetation. Note that a significant section of the wetlands may be located within the State-owned parcel, TMK 9-5-016: 030, and not within the County's Kāwā property. Options for land acquisition of this parcel are discussed in Chapter 4.

If Hawaiian coots are observed or should coot nesting occur during restoration work for the wetlands, a buffer should be created around the coots and/or nests where restoration work will be avoided and the DLNR DOFAW should be contacted immediately.

### Invasive Vegetation

Some species of non-native invasive plants that reduce value of wetland habitat for Hawaiian coots include California grass, water hyacinth (*Eichornia crassipes*), red mangrove (*Rhizophora mangle*), and Indian fleabane (*Pluchea indica*). The highly invasive California grass (also commonly known as buffalo grass) is present at Kāwā and can form dense stands that can completely eliminate open water habitat for the Hawaiian coot. Additionally, the California grass can impede the flow of water in the pond ecosystem. Removal of this non-native vegetation would not only protect and improve coot habitat, but would also improve the estuarine fish habitat. Removing invasive plants and grasses such as seashore paspalum and California grass from the estuary is recommended for coot habitat protection.

### Native Vegetation

Certain types of vegetation provide better feeding and nesting conditions for Hawaiian coots, which also enhances the wetlands. Desirable native plant species are listed in Table 9. 'Ae'ae (*Bacopa monnieri*), which is found at Kāwā, is an indigenous plant that is important for coot habitat because it provides vegetative cover on which to build nests and harbors lots of invertebrates for coots to eat. Outplanting of native species should be conducted at the same time as invasive plant removal.

### *Protection from Human Activities*

The springs/pond is a popular swimming and fishing spot for residents. It is the area with the largest potential conflict between human use and endangered waterbirds. The springs/pond area has a high potential to attract endangered waterbirds such as Hawaiian coots. It is recommended that the County:

- Prohibit vehicular access across the pond;
- Provide secured waste receptacles that are covered with a lid and maintained regularly to minimize attracting predators; and
- Provide educational signage near coot habitat to inform the public of the important habitat

Signage should include information about resources in the area, important habitat, and language such as "Please Do Not Feed Wildlife," and reasons why coots should not be fed.

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**Table 9. Desirable Native Plant Species for Coot Habitat**

SCIENTIFIC NAME	COMMON NAME	HAWAIIAN NAME
<i>Bolboschoenus maritimus</i>	Bulrush, Makai sedge, Saltmarsh bulrush	Kaluhā, Makai
<i>Cyperus javanicus</i>	Marsh cyperus, Java sedge, Javanese flatsedge	‘Ahu‘awa
<i>Cyperus laevigatus</i>	Smooth flatsedge	Makaloa
<i>Cyperus polystachyos</i>	Manyspike flatsedge	
<i>Cyperus trachysanthos</i>	Sticky flatsedge, Sticky galingale	Ka‘a, Pu‘uka‘a
<i>Eleocharis obtusa</i>	Spikerush	Kohekohe, Pīpīwai
<i>Ludwigia octovalvis</i>	Primrose willow	
<i>Ruppia maritima</i>	Ditchgrass, Widgeongrass, Tassel pondweed	
<i>Schoenoplectus juncooides</i> and <i>S. lacustris</i> , <i>S. tabernaemontani</i>	Giant bulrush	‘Aka‘akai, Nānaku
<i>Bacopa monnieri</i>	Water hyssop, Baby tears	‘Ae‘ae

**TABLE 10. RECOMMENDED HAWAIIAN COOT MANAGEMENT**

Strategy	Actions
Monitor Property for signs of Hawaiian coots	Monitor for presence of Hawaiian coots.
Conduct predator control for small mammals	<p><b>Tier 1:</b> Install traps for small mammals around the perimeter of the wetlands, creating at least a 25-yard buffer around the wetlands, should Hawaiian coots be sighted or should nesting occur at Kāwā.</p> <p><b>Tier 2:</b> Conduct on-going small mammal predator control year-round to overlap with hawksbill sea turtle habitat and to provide ecosystem-wide benefits.</p> <p><b>Tier 3:</b> Fence nesting habitat to exclude all mammalian predators.</p>
Manage threats from pigs and dogs	<p><b>Tier 1:</b> Monitor area for pigs. Hunt and trap pigs if sighted on the Property. Set regulation where domestic dogs must be kept of a leash at all times.</p> <p><b>Tier 2:</b> Fence habitat with hogwire or hog panels to exclude large animals should pigs and dogs pose a significant threat on the Property.</p> <p><b>Tier 3:</b> Fence habitat to exclude all mammalian predators.</p>
Restore wetlands	<ul style="list-style-type: none"> <li>Remove non-native invasive plants such as California grass and seashore paspalum</li> <li>Outplanting of native species</li> </ul>
Reduce impacts on habitat from human activities	<ul style="list-style-type: none"> <li>Prohibit driving across the wetlands</li> <li>Provide secured and covered waste receptacles; maintain waste receptacles regularly.</li> <li>Install educational signage to inform the public about the resources and important habitat at Kāwā, to not feed wildlife, and reasons why wildlife should not be fed.</li> </ul>

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## **Orange-black Hawaiian Damselfly Management**

The low, brackish estuary or pond that forms at the mouth of Hīlea Stream provides suitable habitat for the orange-black Hawaiian damselfly. While small mammals are not a significant threat for the orange-black Hawaiian damselfly, the damselfly is vulnerable to nonnative invertebrates including backswimmers (aquatic true bugs; *Heteroptera*) and non-native poeciliid fish (mosquito fish introduced for mosquito control). An aquatic biological survey of the lower reaches of Hīlea Stream should be conducted to better understand possible threats from predation by nonnative fish and aquatic invertebrates on the orange-black Hawaiian damselfly at Kāwā. Mitigative measures should be taken to control or eliminate nonnative predators if any are identified.

### *Managing Threats from Pigs & Dogs*

Predation by pigs and dogs is not a direct threat for orange-black Hawaiian damselflies, but pigs and dogs can contribute to natural habitat loss. Pigs spend much of their time rooting or digging with their noses in search of food items, which increases the rate of erosion and results in poor water quality. Pig droppings may also affect water quality. Likewise, dogs may contribute to poor water quality. Thus, monitoring for pigs and dogs near Hīlea Stream is recommended. A hui (as described for hawksbill sea turtle management) should assist with monitoring, hunting and trapping pigs at Kāwā. Fencing to exclude pigs and dogs may be considered in the future if pigs and/or dogs pose a serious problem at Kāwā. Domestic

dogs should not be allowed to roam freely on the Property.

### *Vegetation Management*

The damselfly requires slow or standing waters associated with coastal wetlands or lower reaches of perennial streams for breeding. They lay their eggs in the tissues of native and non-native aquatic plants associated with these habitats. Monitoring for signs of habitat degradation at the mouth of Hīlea Stream is recommended. Vegetation management may be necessary if the estuary becomes overgrown with invasive plants that impede streamflow and threaten the integrity of the habitat. However, extreme care should be taken when conducting any kind of vegetation management in damselfly habitat to not degrade water quality in the estuary by wading in the water excessively. Additionally, since damselflies lay eggs on most types of plants (native and nonnative), removal of vegetation may result in “take” of the damselflies. Therefore, vegetation management should only be conducted if the perceived benefits outweigh the potential risks to the damselflies.

### *Protection from Human Activities*

The lower reaches of Hīlea Stream should be protected from heavy use or any activities that may degrade the water quality in the estuary. Educational signage should be considered near the lower reaches of Hīlea Stream and possibly in other areas to inform the public about the important habitat and explain why non-native plants and animals should not be intentionally introduced to the area.

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**TABLE 11. RECOMMENDED ORANGE-BLACK HAWAIIAN DAMSELFLY MANAGEMENT**

Conduct an aquatic biological survey of the lower reaches of Hīlea Stream to better understand possible threats from predation by nonnative fish and aquatic invertebrates on the Orange-black Hawaiian damselfly at Kāwā.

Limit activity near the lower reaches of Hīlea Stream to prevent degradation of habitat from human disturbance.

Monitor for signs of habitat degradation near the lower reaches of Hīlea Stream; apply appropriate measures such as vegetation management with care, moderation, and only when the benefits outweigh the risks to damselflies.

Install education signage to inform the public about the important habitat and why people should not introduce new plants and animals to the area.



*SIGNAGE TO INFORM VISITORS ABOUT HABITAT; PHOTO TAKEN NEAR TRIPLER MEDICAL HOSPITAL, O'AHU*



*EXAMPLE OF SIGNAGE FOR THE ORANGE-BLACK HAWAIIAN DAMSELFLY; PHOTO TAKEN NEAR TRIPLER MEDICAL HOSPITAL, O'AHU*

### 3.2 OVERVIEW OF MANAGEMENT STRATEGIES FOR CULTURAL RESOURCES AND PRACTICES

This section presents management strategies to protect cultural resources and practices at Kāwā. For more information about the cultural resources and major threats to the resources, refer to Section 2.3. Four general management actions to protect resources from inadvertent disturbances and intentional looting and to perpetuate cultural knowledge and practices

are described in the following sections (Figure 9). The strategies described in this section are consistent with recommendations provided in the Archaeological Reconnaissance Survey of the County of Hawai'i Kāwā Property prepared by Rechtman Consulting, LLC, 2013.

It is understood that Kāwā is unique and that conditions may change over time; therefore, an adaptive management approach is key to successful management and protection of cultural resources. Strategies should be periodically reassessed and modified as needed.

**Figure 9. Protection of Cultural Resources and Practices**



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### 3.2.1 Protection from Human Activities

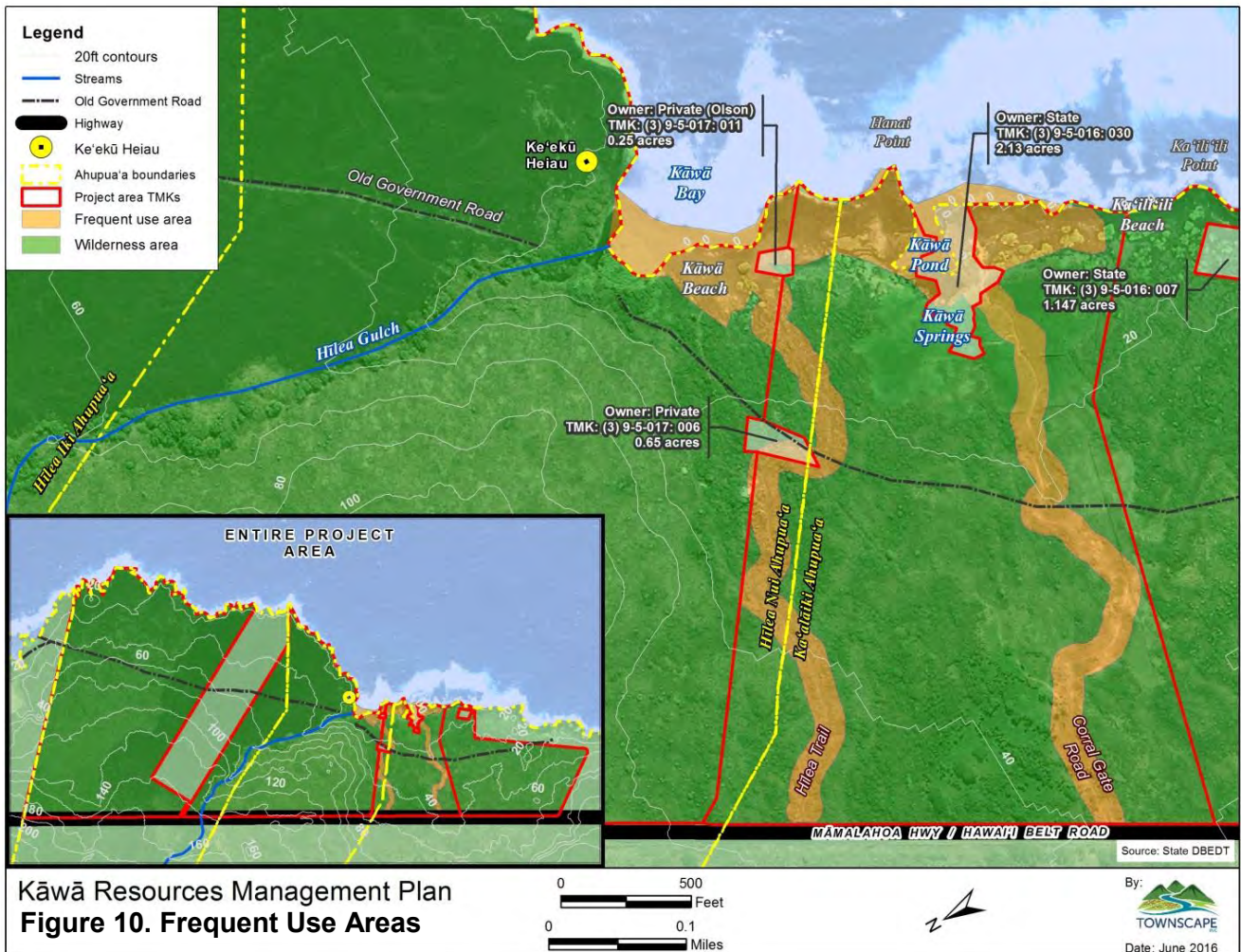
Management strategies described in Section 3.1.4 to protect the priority species are also applicable for the protection of cultural resources from human activities. Additional measures to protect cultural resources at Kāwā from inadvertent disturbances and intentional looting are described below.

- **Conduct a phased Archaeological Inventory Survey**

Numerous archaeological studies conducted for this property previously indicate the presence of a rich cultural landscape at Kāwā with a vast array of

archaeological features, including burials. At present, no AIS has been conducted for the Property. The *Archaeological Reconnaissance Survey of the County of Hawai'i Kāwā Property* prepared by Rechtman Consulting, LLC, 2013 provides the most current archaeological information of sites at Kāwā and should be used to develop an AIS in compliance with HAR Chapter 13-275. The AIS would serve as a regulatory guidance document upon approval from the DLNR-State Historic Preservation Division (SHPD).

Considering the large area of the Property, a phased approach to the AIS is recommended. Areas most



Kāwā Resources Management Plan  
Figure 10. Frequent Use Areas

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susceptible to human impact should be identified as “Frequent Use” areas where an AIS should be conducted as a priority. Figure 10 identifies suggested areas (highlighted in orange) that should be designated as frequent use. The AIS would provide significant evaluations and treatment recommendations for all sites within the area.

Typically, AIS projects are conducted by private consulting firms which can be expensive especially if the project area is significant. However, it is recommended that the processes of collecting and synthesizing archaeological data for an AIS at Kāwā be conducted by local communities and/or through education programs. This approach is unique and provides opportunities to build the capacity of local communities by teaching them archaeology and mapping techniques, while creating a cumulative record of data gathered over time that can be used towards the development of the AIS. This approach has been adopted by education centers, such as Kamehameha Schools’ Maluaka site in Keauhou, Kona, and is consistent with the use of Kāwā as a place for education. Data collected may be presented as Geographic Information System (GIS) maps that represent a baseline of archaeological sites that can be updated regularly.

- **Education and Enforcement**  
Archaeological sites can also be protected from human activities through education and enforcement which can be implemented through the use of signage, disseminating information

about Kāwā through sponsored talks, and involving community participation in the process. Working in partnership with the NPS Ala Kahakai NHT to provide proper management and care to protect the integrity of the trails at Kāwā is recommended. Signs should be posted along susceptible areas identified as “Frequent Use,” inform the public about the archaeological and cultural significance of the area, caution the public about disturbing the sites, and cite penalties for violations of preservation laws. The community, particularly lineal descendants, should be encouraged to participate in creating and posting signs to promote local ownership over stewardship of resources. Also, community awareness days could be sponsored by the County (e.g., a series of talks on specific resources at Kāwā; kūpuna share their experiences and knowledge of Kāwā).

- **Nominate Kāwā as a Historic District to the State and National Historic Places**  
Formalizing nominations to the Hawai’i and/or the National Register of Historic Places<sup>66</sup> may provide an additional layer of protection for archaeological sites. These registers are the official lists of properties worthy of preservation within the state and nationally and are administered by the SHPD. Rechtman Consulting, LLC (2013) described Ke’ekū Heiau as one of the most significant sites at Kāwā and while some

<sup>66</sup> Hawaii Register of Historic Places is established by HRS Chapter 6: Historic Preservation. It is administered by the State SHPD.

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of its architectural elements have been altered in modern times, the bulk of the site is intact and in excellent condition. The study recommended that Ke'ekū Heiau be nominated to both the Hawai'i and National Register of Historic Places for additional enforceable protection. However, considering Kāwā's rich cultural landscape, it is recommended that Kāwā be nominated as a historic district that would include Ke'ekū Heiau. Consultations with lineal and cultural descendants should be conducted to determine if this option is appropriate. The register status might also provide opportunities for funds for the treatment and perpetuation of such resources.

- **Consider designation of a Community-based Subsistence Fishing Area**

Hoā'āina or ahupua'a tenants in Hawai'i have constitutional rights to access both government and privately-owned land for traditional and customary Native Hawaiian subsistence, cultural, and religious purposes (McGregor 1996). These rights extend to lineal and cultural descendants of Kāwā, whose rights must be protected. However, the availability of natural resources is necessary to sustain these customary practices. Therefore, the management of natural and cultural resources at Kāwā is essential not only for the perpetuation of culture, but for maintaining the integrity of ecosystems.

Rules for fishing in the State of Hawai'i are set forth by the DLNR and summarized in a booklet titled, "Hawai'i Fishing Regulations, August 2011." However, lack of enforcement of rules is common especially in remote areas like

Kāwā. Consultations indicated a desire to designate Kāwā as a Community-based Subsistence Fishing Area (CBSFA). A CBSFA represents a state recognized avenue for local community groups to steward resources, by proposing regulatory recommendations and management activities to sustain the health and abundance of marine resources important to native Hawaiian subsistence and cultural practices. This designation is consistent with the historical use of Kāwā as a place for subsistence for lineal and cultural descendants of Kāwā and for residents of nearby towns. Under HRS Chapter 188-22.6, the DLNR can designate CBSFAs and carry out fishery management strategies for such areas by adopting rules in accordance with HRS Chapter 91.

The process of CBSFA designation is lengthy and takes years to complete. General steps for CBSFA designation are provided in Appendix D. To date, only the two communities of Hā'ena on Kaua'i and Mo'omomi on Molokai have participated in this process in Hawai'i with the former taking eight years to complete and the latter, almost 20 years. On Hawai'i Island, the community of Ka'ūpulehu responded to the impacts of marine resource depletion by adopting a 10-year kapu on fishing in a designated area through their Try Wait initiative. Therefore, there are examples for communities in Ka'ū to learn from in developing a CBSFA. Considering the previous use of Kāwā as a place of subsistence, the presence of various endangered aquatic species, and the presence of existing community groups

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who are keen to steward Kāwā, a CBSFA designation should be considered.

### 3.2.2 Vegetation Management

Invasive plant species pose threats not only to the native ecosystem of Kāwā but also to archaeological sites. In addition to the areas discussed under Section 3.1.2, consultations indicated that invasive plants are problematic in and around Kāwā Pond and also throughout the forested regions of the Property. Since most of the archaeological sites are located outside of Kāwā Pond, this section focuses on the forested areas of the Property.

Invasive plants affect archaeological sites directly through root systems growing on and breaking up structures such as house sites and walls. It also indirectly affects the sites as overgrown bushes inhibit proper archaeological surveys of sites and provide

habitat for feral ungulates that may potentially trample on and destroy sites. An *Invasive Plant Removal Plan* is recommended to be conducted in conjunction with AIS evaluations of priority areas. Consultations indicated that Christmas berry and koa haole are the two species of greatest threat to archaeological sites that dominate the forested regions of the Property, therefore methods for the eradication of these target species should be incorporated into the *Invasive Plant Removal Plan*.

A hui to assist in the overall efforts to remove invasive plants and restore native plants is recommended. Members of the hui may include lineal descendants who have genealogical ties to the land and sites at Kāwā. Existing invasive plant removal work has been limited by County hours that only permit work at Kāwā from 6 a.m. to 6 p.m. However, annual or bi-annual work



INVASIVE VEGETATION REMOVED NEAR A HOUSE SITE

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weekends to allow members of the hui to camp from Friday (6 a.m.) to Sunday (6 p.m.) to carry out plant removal and restoration work should be considered. While camping is not permitted by the County, making allowances for this hui to carry out their work will promote consistent maintenance work at Kāwā throughout the year, as well as nurture and develop stewardship ownership among members in caring for Kāwā.

### 3.2.3 Fire Management

Consultations indicated that the Hawai'i County Fire Department (HCFD) has discretion over the firefighting methods employed to combat a fire and often use bulldozing methods to contain fires particularly in areas with human settlement. However, the lack of residential areas within and around Kāwā would allow the HCFD to take their time in extinguishing fires at Kāwā and adhere to a fire management protocol that prioritizes the protection of cultural sites. The County, HCFD, and community members with knowledge of the cultural resources should work together to develop an appropriate fire management plan for Kāwā. At minimum, the Nā'ālehu and Pahala fire stations should be alerted about the presence of sensitive cultural sites at Kāwā so that extra care be taken should fire response be needed.

The use of bulldozing should be avoided at Kāwā. Instead, emphasis should be placed on using fire lines, also called a firebreak, to control fires. A fire line is a gap in vegetation or "fuel" to stop the spread of a fire. Existing natural features of the place, such as the access roads, trails, and lava flows, could serve as firebreaks. Kāwā is unique in that

Māmalahoa Highway (State Route 11) serves as a mauka fire break and the ocean as the makai fire break, therefore, fire lines can be established along exposed lava flows on the southwest and northeast sides of the property running perpendicular to the highway to contain fires.

Currently, the two access roads into Kāwā, as well as Hīlea Steam, also serve as fire lines. Fire lines should also be placed strategically near areas with aggregates of cultural sites. Since most archaeological sites in the ahupua'a of Hīlea Iki and Hīlea Nui are located in lava rock with little vegetation, fires in this region of the Property will not be an issue. The majority of cultural sites are located in the coastal areas of Ka'alāiki ahupua'a and seaward of the Old Māmalahoa Highway. Therefore, identifying the Old Māmalahoa Highway from Hīlea Stream to south of the Property not only highlights the historical significance of this trail but also serves as an additional fire line around a major aggregation of sites. Fire lines will need to be maintained regularly and should be incorporated into service learning projects for Kāwā or become part of Kāwā's regular maintenance protocol. Ancient mauka-makai trails, particularly between Hīlea Stream and Nīnole that emergency personnel could use to access the coast line should also be identified.

To protect cultural resources from damage resulting from fires, it is recommended that a fire management protocol be developed and adopted for Kāwā whereby:

- Fires be allowed to burn without creating bulldozed firebreaks;
- Fire lines running perpendicular to Māmalahoa Highway are created to

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form a contained firebreak around Kāwā; and

- Old Māmalahoa Highway that extends laterally and south from Hīlea Stream is identified as a fire line in Ka'alāiki Ahupua'a.

### 3.2.4 Maintaining Sense of Place

Place is intertwined with identity and self-determination of today's Native Hawaiians in complex and intimate ways<sup>7</sup>. It is through place that many Hawaiians share their spiritual way-finding to a Hawaiian identity that is essential to their existence as a people and culture, both past and present. This connection to place and significance of place to identity was evident at Kāwā, as lineal and cultural descendants shared that Kāwā is part of their identity as Native Hawaiians and as Ka'ū people. However, separation from the land and the loss of land from development sever these connections and challenge identity by alienating people from their relationships to places. Therefore, maintaining the integrity and sense of place of unique places like



KĀWĀ SPRINGS

<sup>7</sup> Kana'iaupuni and Malone 2006. This Land Is My Land: The Role of Place in Native Hawaiian Identity.

Kāwā is important for communal well-being and cultural survival.

Consultations indicated unanimous agreement that Kāwā should not be developed and should remain the way that it is. Consistent with community desires to protect and preserve the natural, undeveloped character of this place, this management plan assumes that there will be no man-made structures to be developed in the future except for the possibility of building a Hawaiian-style hale as a gathering place. It is also recognized that improved access would increase human activity and ultimately impact the resources and feel of the place and many references were made to nearby South Point as an example of what Kāwā should never become. To prevent this problem from occurring in the future, maintaining on-site control is crucial. As stated in the Judgement dated October 14, 1980 (Civil No. 4590, Third Judicial Circuit), vehicular access must be provided to the general public via the Corral Gate Road. However, the County must designate a specific parking area accessible from Corral Gate Road to prevent vehicles from driving throughout the Property.

To maintain the sense of place that is uniquely Kāwā, the following recommendations are proposed:

- Keep Kāwā unaltered and undeveloped to remain as it is;
- Limit human activity by limiting vehicular access within the Property; and
- Increase awareness through signage about wahi pana and mo'olelo and education programs that connect people to place.

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VIEWS OF KĀWĀ BEACH

# 4 MANAGEMENT APPROACH AND IMPLEMENTATION

Implementation of management strategies identified in Chapter 3 will require partnership amongst state and county agencies, community organizations, and lineal descendants to carry out many of the actions outlined. A collective effort is critical to successfully execute the actions described in this plan, as it is a task beyond the capacity of just one organization or government agency. Partnerships with agencies and organizations with expertise in managing and protecting the priority species and their habitat are important. Management activities that directly impact federally listed threatened and endangered species will require a permit from the USFWS before actions may be implemented. The County must set and actively enforce rules to maintain site control and to ensure that Kāwā is not exploited and degraded the way other open space lands in remote areas have been.

At present a major challenge to fully implement all recommended strategies is the lack of personnel to provide continuous management of the place, which is vital for enhancing and expanding habitat. Intensive management, especially to conduct predator control, is needed.

As stated earlier, the County also manages 222.7 acres of Ka'ū coastal lands located to the south of the Kāwā acreage. Now known

as “Honu'apo Park,” these lands were purchased by the State in 2006 and were set aside to the County by Executive Order No. 4164 (see Figure 1). In 2009 to 2010, Townscape, Inc., under contract with the County, developed the *Honu'apo Park Resources Management Plan* for these lands. The plan included several adjacent small parcels, including the County's existing Whittington Beach Park. The overall goal of the plan was “to provide land use guidance to help protect and restore the important natural and cultural resources of the property while providing integrated and respectful recreational and educational opportunities for the Ka'ū community.” With the more recent acquisition of the Kāwā lands, the County now has the opportunity – and the responsibility – of planning for and managing approximately 1,000 acres of coastal Ka'ū lands.

Regarding on-going management of the land and water resources of Kāwā, as well as management of other PONC lands, it is recommended that a new Branch or Office within the County's Finance Department be created to: provide staff support for the PONC program; administer and manage the maintenance fund; and actively maintain and preserve lands and easements acquired by the PONC fund. Responsibilities relating to lands and easements acquired by the PONC fund are

currently dispersed between the County’s Department of Parks and Recreation (DPR) and Department of Finance; however, a single managing entity will improve efficiency and management of these lands. A new branch, such as the “Office of Public Access, Open Space, and Natural Resources Preservation,” should be created with the mission to maintain and preserve PONC lands (Figure 11).

Future management and maintenance of Kāwā, and other PONC lands, will require dedicated staff to maintain the natural and cultural resources of these lands. Personnel for the proposed “Office of Public Access, Open Space, and Natural Resources Preservation” will be required to provide a higher level of maintenance than needed for typical neighborhood parks, beach parks, playgrounds, or other recreational facilities.

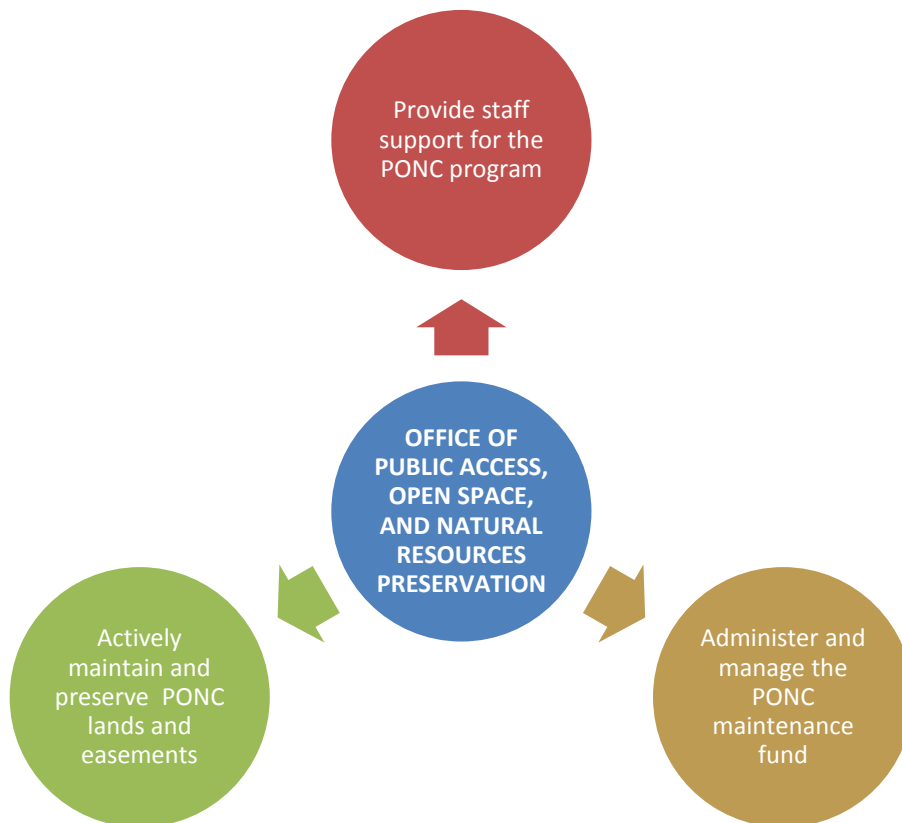
Staff personnel should have some knowledge about natural and/or cultural resources management.

At minimum, the following staff personnel are recommended for the proposed “Office of Public Access, Open Space, and Natural Resources Preservation”:

- Administration/Stewardship Program Coordinator
- Natural Resources Professional
- Caretaker/Maintenance Worker

The natural resources professional will manage the predator control program and monitor habitat for threatened and endangered species. This person will also coordinate activities and work with stewardship groups for the site. The caretaker/maintenance worker will maintain

**Figure 11. Management for PONC Lands**



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the site daily. Duties specifically for Kāwā may include closing the gate daily at a designated time; maintaining waste receptacles; maintaining vegetation along Hīlea Trail for pedestrian access; maintaining portable/composting toilets; maintaining and keeping the beaches clear of trash and/or marine debris; monitoring human activities on-site; and providing information to visitors if needed. The administration/stewardship program coordinator will provide administrative support to the PONC program and oversee a stewardship program to help care for PONC lands' resources. The program coordinator could also assist with establishing a formal volunteer program and coordinating activities with organizations. More staff will be needed in the future for the proposed "Office of Public Access, Open Space, and Natural Resources Preservation" as more lands are acquired under the PONC program.

In addition to dedicating staff to manage and maintain the PONC lands, emphasis should be placed on partnering with organizations to steward the place. For example, the HIHTRP and HWF could assist with monitoring during the hawksbill sea turtle nesting season. Partnering with organizations and programs (i.e. Three Mountain Alliance's Imi Pono no ka 'Āina, local Ka'ū schools, and Youth Challenge) that facilitate connecting people, particularly youth, to the natural and cultural environment is recommended. Kāwā offers many educational opportunities for 'āina-based, or place-based, learning about the natural environment and about Hawaiian cultural practices, knowledge, and resources. These programs could be coordinated with the staff person overseeing

the stewardship program, as mentioned earlier.

To provide additional stewardship support for PONC lands, the County should consider entering into a Memorandum of Understanding (MOU) with non-profit organization(s). For Kāwā, community consultations have revealed that numerous groups consisting of lineal and cultural descendants and community organizations care deeply about Kāwā and have expressed interest in long-term stewardship of the place. These groups share common goals of restoring, caring for and protecting the natural and cultural resources; however, each group is generally interested in different aspects of restoration work for Kāwā. For example, restoration efforts for some of the lineal and cultural descendants are focused on maintaining the house sites, while restoration work by Na Mamo o Kāwā, a local community group, consists of activities such as re-establishing native plants. Taking this into consideration, there are opportunities for various parties to steward different aspects of Kāwā while coordinating and partnering with other groups who share similar goals of restoring and maintaining the place. Unlike nearby Honu'apo lands where the County has executed an MOU with one local non-profit organization, it is recommended that the County consider entering into more than one MOU with different organizations for various areas within Kāwā. Stewardship of the entire 700+ acre property is beyond the capacity of any one organization, especially if the majority of labor from community organizations is assumed to continue on a volunteer basis.

To ensure consistency and long-term availability of community stewardship for

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this treasured place, the County should consider amending the County Charter to allow the use of the PONC maintenance fund to: provide for the payment of labor of community organizations that assist as “caretakers” of the lands and easements acquired by the PONC fund; and to provide for the funding of educational programs that help to care for resources at Kāwā and other PONC lands.

At present, a challenge faced by many community organizations is the inability to use stewardship grants from the maintenance fund to pay for the cost of labor (as it currently only provides for the cost of supplies and equipment). See Appendix E for the County Charter. For most people, time spent volunteering at Kāwā means time spent away from a job that provides money to support and feed their families. Therefore, amending the County Charter to allow stewardship grants from the maintenance fund to pay for the cost of labor would alleviate issues faced by many community organizations. Note that there are alternative ways for community organizations to seek other funding sources to pay for labor (e.g., working with their Councilmember to get “discretionary funds,” similar to the Waipio Ranger Program); however, use of the maintenance fund monies would be a more reliable source in the long-term.

### **Land Acquisition**

In order to implement actions relating to Kāwā Pond and surrounding wetlands, approval from the State is required since the parcel (TMK 9-5-016: 030) is under the jurisdiction of the State of Hawai‘i. The County could request to lease the parcel from the State which would give the County

control of the land and full management abilities. A smaller 1.147-acre parcel (TMK 9-5-016: 007) located near the coast by Ka‘ili‘ili Beach is also owned by the State. Both of these State-owned parcels could be set aside to the County under an Executive Order from the Governor (Section 171-11, HRS, as amended). With full management abilities of the pond and wetlands, the County can better coordinate restoration work to make the highest and best use of the land, and better manage the entire coastline as a whole.

### **Coastline Protection**

The Property is located within the Conservation District—Limited, Resource, and General subzones<sup>8</sup>. A map showing the subzone designations is provided in Appendix F. Certain uses that may not be aligned with the goals of the PONC program (e.g., a single-family residence; HAR 13-5) would be allowed with the existing subzone designations. The County may wish to revise the subzone designation of the Kāwā lands to ensure additional protection from any development in the future. The County should also discuss with the landowners of the private 100-acre parcel situated between the County’s property (TMK 9-5-017: 012) whether re-designation of their property to a more protective designation is appropriate at this time. Public records indicate multiple landowners for the parcel.

Depending on the outcome of discussions with the landowners, the County and/or landowners of the 100-acre privately-owned

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<sup>8</sup> Lands within the Conservation District are classified into one of five subzones: protective, limited, resource, general, and special (from most protective to least).

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parcel could request a change to the subzone designation with the State DLNR, Office of Conservation and Coastal Lands.

Similarly, the County should discuss with landowners of the two smaller privately-owned parcels (TMKs 9-5-017: 006 and 011) dispersed within the County's Kāwā property to ensure that future land uses are aligned with the goals of this management plan.

### **Summary of Management Measures and Estimated Costs**

A summary of estimated costs for management measures discussed in this plan is provided in Table 12. Note that this plan recommends using an adaptive management approach. Therefore, cost estimates may be better determined after implementation of some measures. For example, conducting some predator control will provide the County with a better idea of the level of predator control needed.

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**Table 12. Summary of Management Measures and Estimated Costs**

<b>CAPITAL COSTS (ONE-TIME COSTS)</b>	
<b><i>Predator Control Management</i></b>	
Tier 1: Temporary Enclosures, Live and Lethal Traps	\$9,000 - \$35,700 <sup>9</sup>
Tier 2: Live and Lethal Traps, and Hog Wire/Hog Panel Fencing	\$66,000 - \$107,000 <sup>10</sup>
Tier 3: Predator-proof fence and trapping	\$400,000 <sup>11</sup>
<b><i>Vegetation Management</i></b>	
Equipment and Supplies (chainsaws, weed eaters, etc.)	\$10,000 - \$20,000
<b><i>Cultural Resources Management</i></b>	
Phased Archaeological Inventory Survey	\$50,000 - \$100,000+ <sup>12</sup>
Equipment (GPS)	\$6,000
<b><i>General Land Management/Education</i></b>	
Signage	\$2,000 - \$4,000
Waste receptacles	\$1,000 - \$3,000
<b>ANNUAL OPERATING COSTS</b>	
Staff personnel for the proposed “Office of Public Access, Open Space, and Natural Resources Preservation”	\$150,000 - \$170,000 <sup>13</sup>
Portable Toilets (rental and maintenance)	\$4,800 - \$9,600 <sup>14</sup>
Equipment fuel	\$2,000 - \$4,000
<b><i>Predator Control Management</i></b>	
Replacement of snap traps	\$7,200 <sup>15</sup>
Bait for predator control	\$600 - \$1,200 <sup>16</sup>
Fence maintenance	\$500 - \$1,000
<b><i>Vegetation Management</i></b>	
Vegetation outplanting	\$8,000 - \$10,000 <sup>17</sup>

<sup>9</sup> Assumes buffer of 75 feet around suitable habitat areas with kill traps spaced 10 feet apart, live traps spaced 75 feet apart, and/or automatic multi-kill traps spaced 25 feet apart. Cost will vary depending on type of lethal traps (snap trap or automatic multi-kill trap) used. Note that automatic kill-traps can be spaced further apart with consistent rat control spanning several acres (e.g. traps can be spaced up to 150 feet apart).

<sup>10</sup> Assumes buffer of 75 feet around suitable habitat areas with kill traps and live traps spaced 10 feet apart and/or automatic multi-kill traps spaced 25 feet apart. Cost will vary depending on type of lethal traps (snap trap or automatic multi-kill trap) and fence used. Costs include labor cost associated with fence construction for 3,570 linear feet of fencing.

<sup>11</sup> Costs include labor cost associated with fence construction for 3,570 linear feet of fencing. Trapping will occur within the enclosure to remove predators.

<sup>12</sup> AIS projects are typically conducted by private consulting firms which can be expensive especially if the project area is significant. However, it is recommended that the processes of collecting and synthesizing archaeological data for an AIS at Kāwā be conducted by local communities and/or through education programs. Actual costs could be reduced if such an approach is taken.

<sup>13</sup> Assumes three full-time staff persons salaries and benefits only.

<sup>14</sup> Assumes two to four portable toilets.

<sup>15</sup> Assumes replacement of snap traps every 6 months.

<sup>16</sup> Assumes new bait will be applied twice a week. Actual cost will depend on the total number of traps used and how frequent the bait is replaced.

<sup>17</sup> May vary depending on cost of plants and need to outplant. Assumes mostly volunteer labor.

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# KĀWĀ RESOURCES MANAGEMENT PLAN

## APPENDIX A

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### Value of Kāwā

Consultations for this project revealed that Kāwā is a special place for the people of Ka‘ū but also for residents from other regions of Hawai‘i Island. For many, Kāwā connects the past to the present and evokes memories of Old Hawai‘i and what it means to be Hawaiian. In the past, it was one of the places people would access for fishing in Ka‘ū so it was important not only for survival but the practice often involved camping at the beach for several days which facilitated families spending time together. During this time, core Hawaiian values, such as mālama, kōkua, and aloha were learned and lived out through taking care of resources and of each other. “My grandparents used to take us down to Kāwā for gathering and fishing — our food,” said a kupuna from Pahala. Another kupuna from Nā‘ālehu shared similar memories:

Kāwā was a place where you can feed your family so we took care of it... the ones who’d go down there, we’d share whatever we do down there. People would share—kōkua. No such word today. You know, a person who does that, is humble... It was mostly a place to fish for subsistence. We wouldn’t take much. We’d only take a pot of rice down to the

beach. We’d [also] bring sugar, coffee, and tea..... From Friday to Sunday we’d be there, dry our fish down there. My job was to pick up wood, find wood that would float.

She explained that as young children, they were able to gather food and contribute to the livelihood of their family. “Nowadays, kids don’t know how ‘cause get at the store,” she said. “We’d plant too,” she remembered. She explained that while they were down at the ocean, they would also exchange potato and bananas with fishermen for fish. She also added:

Ka‘ū people, real rebellious people...[but] the Hawaiians, helped each other and we’d respect. After we leave [Kāwā], we’d clean up. That’s how it was and when you’d visit people, you’d take food. Everybody liked the dried fish. Those days, had chicken too.

For lineal descendants, Kāwā connects them to their families through their iwi kūpuna who are buried at Kāwā and the house sites they have left behind as memories of people who once lived at

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and called Kāwā their home. The granddaughter of one of the original inhabitants of Kāwā whose house site still remains, feels deeply about Kāwā as a place that is part of her identity. “They [her grandparents] were there. If it weren’t for them, I wouldn’t be here,” she said with tears in her eyes. “To feel it, and to inhale it, all I could see is love... I love it. It is part of who I am.” She spoke of Kāwā as being part of her DNA and recalled times when they would be at Kāwā and her mother would often say, “Papa, are you here with us today?” Since 2005, her family has gone down to Kāwā every month to restore her papa’s hale. She shared her sentiments and feelings evoked while at Kāwā:

I don’t wear shoes. I’m on the ground cleaning. I love to feel it. Feel the ‘āina... You literally feel it. Everything. You walk around, everything you look at, you just FEEL it. I’m happy. I’m in a new world when I’m there. I could leave this place and go live there.

Another lineal descendent of Kāwā who currently lives in Hilo, explained that he used to spend his summers in Kāwā. “I enjoyed growing up there. There, you had no worries,” he said. He fondly recalled childhood memories of fishing

and hunting in Ka’ū. “It was horrible but now I appreciate it,” he said laughingly. He was proud of his ability to carry out many Hawaiian cultural practices like fishing, hunting, and preparing food. He explained that his upbringing in Ka’ū was an education for him which he believes grounded him culturally so he is not worried if the barge stopped coming. He believed that the things he learned from Kāwā in his youth made him the person he is today, pointing out the value of Kāwā for Hawaiian children. “It’s not just about Ka’ū people but for all Hawaiian kids,” he said who understands the struggles of contemporary adolescents that he works with as a counselor and football coach.

The value of Kāwā as a place for education was reiterated by a kupuna who stated:

You can go to school and get educated but when you’re THERE [at Kāwā], and you feel it, and touch it, you learn more. I learn more about being there than going to school. You just gotta hold it and that’s what I feel when I’m there. I feel at home. I do. I feel at home. I feel it’s one of the homes. It’s part of our lives. It’s part of us.

Her two nephews who are in their early twenties and who consistently

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participate in restoring their great-grandfather's hale at Kāwā every month, shared how their relationship to Kāwā influenced their lives and the direction of their areas of focus as students at the University of Hawai'i (UH). One nephew is graduating in anthropology but started restoration work in Kāwā with his family when he just started college. "I was getting into college and I realized that we needed some kind of direction because going down and cleaning is awesome but we didn't know what would happen after that, like the continued protection of it and to learn what would benefit us in the long run—taking care of the area or trying to help take care of Papa's hale," he said. He also explained how his education allowed him to understand the structures at Kāwā better and how that knowledge influenced his life:

As I went through school I learned that these hale were a part of Post-Contact but in that transitional point from traditional hale to wooden structures but they didn't do it just as tradition. They incorporated a lot of what they learned from Western influence and incorporated that into this hale which to me is awesome because it shows that gap between tradition and western and it shows that transitioning

point. So, that's why I wanted to go into anthropology.

Kāwā also impacted his cousin's life in a similar way. He had spent high school in Alaska but returned to Hawai'i and is currently pursuing a degree in environmental science at the University of Hawai'i at Hilo. While in Alaska, he worked for the Fish and Wildlife Service with Alaskan native communities to preserve native sites similar to Kāwā. He explained the significance of Kāwā to his learning:

I started thinking about how we can implement that—the same thing down here and bring that education. So that's kind of why I started going into environmental science to preserve natural resources and at the same time minoring in Hawaiian studies to learn all the [cultural] aspects a little bit more. I guess in a way it's shaping my college career, and it's pushing me to learn more and more because every time you go down there, something new comes up. Whether we learn about the spring and the fishes and how everything interacts and

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the individual plants and what they offer the area as well as the invasive [plants], how they can acidify certain spots and take over and choke out the native plants.

He wanted to share that experience with other people and their children because of its impact on his own life. “I want them to have the same experience that I had and that I’m still having,” he said. Both cousins often use Kāwā in their presentations at school and share their experiences about the place. “Some of them know about it and most of them want to see it and wanna know more about it,” said one nephew. He explained that one of the main reasons students seek out counsellors at the university is associated with the lack of cultural identity. He felt that Kāwā would be a good venue to help Native Hawaiians feel more connected to their culture.

He also explained that many individuals and groups are interested in visiting and learning about Kāwā. “Just off the top of my head, I can think of five different groups totally about 200 students that wanna go right now and that’s without a lot of people knowing about it as a place

where you can do that,” he said. Two professors from the departments of Anthropology and Hawaiian Studies at University of Hawai‘i at Hilo were mentioned who were interested in taking students to Kāwā. The professor of Hawaiian Studies is also a lineal descendent of one of the hale at Kāwā. “She takes the Hawaiian students down to Ka‘ū,” he said. “Not quite Kāwā but a little bit past it and she’s wanting to start doing that over at Kāwā.”

Currently, Kāwā is accessed by various organizations who take students to Kāwā, such as the Hawai‘i Wildlife Fund (HWF), Three Mountain Alliance (TMA), and the UH at Hilo. “Kāwā is a place that allows students to connect to the ‘āina,” relayed a guide for the TMA, who believes the experience is important for teaching youth a sense of identity. In 2015, she took 18 students (6<sup>th</sup> to 12<sup>th</sup> graders) twice to Kāwā for service projects through TMA’s Imi Pono no ka ‘Āina program which exposes students, teachers, and community members to a variety of natural environments, their cultural significance, and the threats to native ecosystems. The excursion was in collaboration with the HWF where students assisted in the organization’s restoration work at Kāwā.

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The HWF is a non-profit that began restoration work around Kāwā Pond in 2015 and received a grant to conduct 24 work days at Kāwā over a span of two years. The organization is dedicated to the conservation of Hawai'i's wildlife through research, education and advocacy and often provides opportunities for other education programs to become involved in their work, such as the TMA, Youth Challenge, Hawai'i Pacific Academy, and students from local Ka'ū Schools particularly students from Ka'ū Middle School from high risk substance abuse families. "The HWF has done a really good job of bringing in the students," said a lineal descendent of Kāwā. "Sometimes it's just a few and sometimes it's bigger groups. Each time they [students] come, it's a good chance to talk with them and find out what they're passionate about. It's nice that she [Megan Lamson of HWF] does that and we continue to do that," he shared. In addition, students from UH Hilo conduct marine debris clean-ups bi-annually at Kāwā. Thus, Kāwā is a space and place that facilitates students learning about the natural environment and about Hawaiian cultural practices, knowledge, and resources.



*Restoration work by Hawai'i Wildlife Foundation and students from local Ka'ū schools*

### **Wahi Pana, Mo'olelo, and Sense of Place**

The value of Kāwā is also reflected through the mo'olelo that kama'āina and lineal descendants shared about Kāwā. These stories represent and highlight the resources and practices that characterize the people and land of Kāwā and Ka'ū that were not only important to its people but reflect the environmental conditions that create the sense of place that is unique to Kāwā and Ka'ū. Participants recounted mo'olelo telling of the rebellious nature of the Ka'ū people who often usurped chiefs who did not treat the people well. "Ka'ū people, real rebellious

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people...[but] the Hawaiians, helped each other and we'd respect," an 82-year-old kūpuna explained. Consultations for this project reflect the continuity of people who care deeply about place, understand the importance of maintaining the sense of place of their wahi pana, and are fiercely protective of special places like Kāwā, that perpetuate the Ka'ū way of life and the Native Hawaiian lifestyle.

Other important mo'olelo shared, included the surfing chief of Ka'ū who used to surf at Kāwā and defeated a Kohala chief. This mo'olelo highlights the prominence of Kāwā as a place for surfing historically which continues to be one of the most accessed places for surfing in the Ka'ū District today. Though historically Kāwā was a place for fishing, a kupuna explained that today, "only surfers go there [Kāwā]. They go there for a reason," she said. Consultations indicated that Kāwā is used most by surfers.

Several mo'olelo, such as Kū Mauna and Pu'u 'Enuhe or Caterpillar Hill, were shared that are connected to Kāwā and highlight the significance of fresh water at Kāwā. In relating the story of Pu'u 'Enuhe, one kupuna stated that, "caterpillars used to be plentiful at Kāwā particularly during the months of July to September when they would come down from the mountains to the ocean and eat everything." She explained that

during this time, there would be a shortage of water in the mountains so they were attracted to the coast because of the freshwater from the coastal springs. She recalled the roads being covered in caterpillars and they would be able to hear the loud sounds made when the cars would run over them. She also made references to the railroads being slippery from the trains riding over caterpillars on the tracks. Despite being once plentiful, she explained that they don't see many caterpillars like how it used to be.

Another kūpuna identified the caterpillars as those of monarch butterflies. "Once in a couple years, it rained monarch caterpillars," she said. She remembered how her whole school would be covered in caterpillars. She related that she has not seen the caterpillars anymore like it used to be previously. Perhaps the changes observed among informants about the reduced prevalence of monarch caterpillars reflect environmental changes in Ka'ū in the last century.

Hīlea Stream, a prominent wahi pana of Kāwā, also connects Kāwā to the mountain ranges of Ka'ū which carries water down to Kāwā from Pu'u 'Enuhe and Makanau. These mo'olelo and wahi pana reiterate the mauka-makai connections within the ahupua'a of Hīlea Iki and Hīlea Nui and the important role that Hīlea Stream plays in the estuary

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habitat and ecosystem surrounding Kāwā Beach.

### Vision

Consultations indicated a general consensus that Kāwā is a special place that should be protected and not be changed or developed in any way for future generations and that it should be used as a place for learning and education. “We need to preserve it for the future, for future generations,” explained a kupuna from Nā‘ālehu. A lineal descendent pointed to the rail being built on O‘ahu and lamented on its impact on iwi. “They’re taking history away from us,” she said fearing that the same might happen at Kāwā. South Point was also brought up by several Ka‘ū residents as an example of what they don’t want Kāwā to become. “They destroyed South Point,” said a lineal descendent of Kāwā. “We don’t want that to happen to Kāwā.” She felt that it was important for the County to support the protection of Kāwā to preserve it for the future and for successive generations. She also explained that Kāwā belongs to everyone so the place should be shared, therefore, she wanted to see it conserved, clean, and to keep it the way it was before. It was also important to her that people know and understand the resources present on the land. Another resident of Ka‘ū wanted the fishing village at Kāwā restored.

A group of young residents of Ka‘ū, who are eager to steward Kāwā, shared their 20-year vision of the place. They imagined that in 20 years, they could drive up to the front entrance and there would be trails where visitors could walk on that would lead them to different parts of Kāwā. The trails would be lined with native plants and also culturally-relevant plants like ‘ulu, papaya, and niu—possibly a botanical garden with interpretive signs. There would be no running water, no indoor plumbing, and no vehicular access down at the beach. They envisioned a traditional Hawaiian hale structure with a caretaker to steward the place who would be paid to be there eight hours a day. They also imagined a restored Hawaiian fishpond that could generate revenues from the sale of moi and ‘āholehole but sold cheaply to local people. They wanted an area with picnic tables, a composting toilet, an ‘imu, and two nurseries on-site—dryland and coastal. They felt that it was important to have a nursery to create an internal seedbank within Kāwā



*Ke‘ekū heiau*

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to reduce the spread of fire ants.

### **Cultural Resources**

Consultations indicated that Kāwā is rich in cultural resources including graves, heiau, house sites, and other archaeological features. Several participants described gravesites as being “plentiful” at Kāwā; that the access road known as the Napoleon Road, on the south side of the property, has “too much iwi;” that burials are located beside the coconut trees next to the freshwater spring where a garden was built by an individual claiming ownership of the land and living there; and that more than 300 iwi, petroglyphs, and kōnane have been found in Kāwā. A resident of Pahala pointed out there is not much soil at Kāwā so bones were set between cracks in the lava and then filled up with sand. “There were a lot of cultural things on the land,” she said. “Certain places, we couldn’t go to, get heiau, get grave. We had to respect the land.” She also pointed out that a kōnane board was taken from Kāwā.

A young man described Ke’ekū Heiau as the piko of Kāwā while another felt that it was the area between Kāwā Beach to Kāwā Pond as this is where people gather. A kupuna shared that the most important resource at Kāwā for her was Ke’ekū Heiau which she felt is an important part of the history of Ka’ū, therefore, wanted to see the heiau restored and preserved. Another kupuna explained that not many people,

including the people of Ka’ū, know about the history of Kāwā, such as the 300 iwi on the Ka’alāiki side of Kāwā, Kū’ula, the heiau, kōnane, and the petroglyphs. She referred to the work of Violet Hanson and several archaeological studies previously conducted at Kāwā.

Other significant cultural sites identified by informants included eight ancestral house sites that still remain at Kāwā today. A kupuna explained that Kāwā was settled by fourteen people of the same family and formed the fishing village that Kāwā became known for, therefore, the descendants of the families of each house site, are related. Consultations indicated that Basil ‘Āpiki had a kuleana parcel within the project area whose house site still stands at Kāwā. Since 2005, lineal descendants visit Kāwā regularly on a monthly basis to clean and restore the ‘Āpiki house site. Currently, it is the only house site out of the eight at Kāwā that is currently cleared and restored. The family shared that they are trying to figure out how they can be involved in taking care of Kāwā. “For us, it’s kind of like putting together our grandparents’ life,” a family member shared. “So, to understand it better instead of just being confined to certain areas, we would understand it a lot better if we were part of the whole so that we would know why certain things were done in this area as opposed to this area.”

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## Cultural Practices

Consultations indicated that Kāwā was and continues to be accessed by Native Hawaiians for various traditional cultural practices. These include fishing, surfing, salt gathering, and religious practices. A kupuna explained:

Families would “go down” to Kāwā for kids to surf and some would go fishing and gathering. Plantation workers who used to work further mauka, would also go down there.

Of these practices, salt gathering is no longer practiced though salt was once gathered at Kāwā. A kupauna who frequented Kāwā recalled gathering salt from Punalu‘u all the way down to South Point. “We’d scoop salt with the large ‘opihi shells and just go along the coast and scoop,” she reminisced as she identified salt pans along the pāhoehoe rocks of Kāwā that she gathered salt from as a child.

**Fishing:** Historically, fishing was an important activity at Kāwā and was accessed by residents of nearby towns and plantation villages for fish. “We Hawaiians, we went there to get food. We went there for a purpose,” a kupuna said who explained that the primary purpose of families going to Kāwā was for fish. Fishing involved families camping at the beach for several days where fish would be processed and

dried. She shared the following memories of fishing at Kāwā:

Kāwā was a small beach. Mostly, the Ka‘alāiki people [would] get good stuff from down there: the limu, pīpīpī, everything you can think of. Used to have ‘ōhua, wana, hā‘uke‘uke...The land was not like now. Was all rocks. Kāwā never had sand. The bay was all rocks all the way up and in the 1930s, the place had boulders.

Another kupuna recalled fishing from Kāwā Pond using cast nets drawn from one side of the pond to the other. A salt water pond was also identified more towards the South Point side of the property where she remembered fishing for ‘opihi, wana, crabs, and “all kinds of fish.” She also explained that eating turtle was normal back then but her grandfather stopped them from catching turtles. She fondly reminisced about those days they spent at the beach as a child and how her grandfather taught her and her siblings how to fish. “Gampa would say, “don’t be greedy. Just take what you need.”

Though fishing is not as prominent for survival today as in the past, people still access Kāwā for fish, particularly for net fishing. A lineal descendent of Kāwā remembered that the old Filipino men, who used to work in the sugar

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plantations nearby, were good fishermen who mostly threw net at Kāwā. “These guys were really good. They knew where to go get fish,” he said. He added that fishermen from Ka’ū preferred going to South Point where ocean conditions are more favorable particularly for line fishing. Nevertheless, he himself explained that he also learned to fish at Kāwā where he spent his summers away from his home in Hilo. Another participant explained that every one of her uncles was a fisherman who used to throw-net in Kāwā.

**Surfing:** Today, Kāwā was reported to be accessed most frequently by surfers as it has one of the few surfing breaks in the Ka’ū District which is generally referred to as Kāwā. “Only surfers go there [now], explained a kupuna. “They go there for a reason.” Several informants in their mid to late twenties who frequently surf at Kāwā explained that a second surf break called Windmills, breaks off of Kāwā Pond during large surf events. A young surfer shared that his wife and kids would swim at the springs while he surfs.

**Religious Practices:** Consultations did not collect much information pertaining to religious practices at Kāwā except to suggest that Native Hawaiian families still practice protocol of paying respects to their ancestors, as well as the significance of Ke’ekū Heiau.

## Natural Resources

### **Freshwater Resources**

Consultations indicated that freshwater resources are available at Kāwā that come from Hīlea Stream and freshwater springs around the area surrounding Kāwā Pond. Informants noted that there are many underwater freshwater springs all along the coastline of Ka’ū that includes Kāwā. Staff of the Division of Aquatic Resources (DAR) of the Department of Land and Natural Resources (DLNR) referred to the aquatic areas surrounding the mouth of Hīlea Stream and including the coastline of Kāwā Bay, as well as the areas surrounding Kāwā Pond, as estuarine environments because of the presence of freshwater. They indicated that estuaries provide important habitats for certain fauna and flora and they also serve as important breeding grounds for juvenile fish. The DAR initially considered Kāwā for an island-wide estuarine study for juvenile sport fish but excluded the site because Kāwā Bay and Kāwā Pond were too small for a cast-net methodology necessary for the study.

**Hīlea Stream:** A frequent surfer explained that Hīlea Gulch originates in the mountain regions at Pu’u One and carries water down into the ocean at Kāwā, therefore, Hīlea Stream changes depending on the rain and also on ocean swells. Consultations also indicated that Kāwā Bay is in a flood inundation zone and that Kāwā now

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floods but never used to in the past. It was observed that the water during flooding events at Kāwā, originate in Ka'alāiki mauka. 'O'opu, shrimp, and various species of fish, particularly juvenile fish, were reported to be found at and around the mouth of Hīlea Stream. A kupuna remembered that there used to be tilapia at Hīlea Gulch. Though studies have shown that the endangered orange-black damselfly have been found at Hīlea Stream, none of the informants for this project had ever noticed their existence at Kāwā.

**Kawa Pond:** Consultations indicated that Kāwā Pond is one of the most prominent and significant features at Kāwā. Historically, the freshwater springs surrounding the pond was a source of freshwater for nearby residents and visitors to Kāwā. A kupuna explained that when they would visit Kāwā, they only brought poi and chili pepper water with them to the beach. "We never had to bring our own water," she said. "My grandparents taught us how to gather." He also taught them how to gather freshwater for drinking from the brackish water ponds. She explained that in those days, there were many brackish water ponds so Kāwā was a beautiful place to be. She recalled that the existing pond was larger and it used to have islets where they could swim to from the banks as children. She also remembered a pond adjacent to the Kāwā Pond that had a coconut tree growing in it and it was

their "drinking" pond where her uncles would dive down to get freshwater.

As children, she and her siblings were not allowed to go in that pond. When they would visit Kāwā, their grandfather would always go in the water first. "He'd go down and get plenty fish," she remembered. However, she pointed out that some people were permanently camping at Kāwā and "destroyed stuff" and dug out the pond. She also made references to a tidal wave in the 1970's that covered up a freshwater pond they had used.

She explained that the native reeds that grow by the stream now used to grow further inland. 'O'opu is prevalent in Hīlea stream and also in the pond. The Ka'ū 'o'opu is said to be different from other 'o'opu in that regular 'o'opu swim upstream but the Ka'ū one swims through to the aquifer.

### Endangered Species

Consultations indicated that of the four endangered species known to inhabit Kāwā, only the green sea turtles and the hawksbill turtles were reported to be seen regularly at Kāwā. However, most participants did not differentiate between green and hawksbill turtles. One participant reported seeing turtles in Kāwā Pond but the general consensus was that turtles are seen mostly around Ka'ili'ili Beach. He mentioned that monk seals come to Kāwā every year. No one had ever seen the pinao (dragon fly) or

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the Hawaiian Coot though some felt that if Kāwā Pond is restored, the native birds will come to Kāwā.

### Plants

Consultations indicated that most of the vegetation at Kāwā is non-native with koa haole and Christmas berry dominating the kula regions of the property. Some native ‘a‘ali‘i are present and ‘uhaloa and ‘ilima were reported to be dispersed throughout the property. Two kūpuna from Nā‘ālehu explained that people don’t access Kāwā to gather native plants for lā‘au lapa‘au though patches of maiapilo grow along the rocky coastal area of Hīlea Iki. However, more native vegetation was reported along the coastline as dune plants near Kāwā Pond including ‘ākulikuli, naupaka,

A kupuna remembered that people planted watercress at the Kāwā Pond and her grandmother would make ‘opihi with watercress. Nānaku grass, a native reed, also grows around Kāwā Pond which pigs were reported to like eating. The nānaku also provide an ideal habitat for juvenile fish and oxygenate the water. Two main invasive grasses, seashore paspalum (golf course grass) and California grass (*Brachiaria mutica*) dominate Kāwā Pond and inhibit the flow of water to and from the ocean by holding sand and sediments.

### Threats/Concerns

Consultations identified various threats and concerns not only to environmental and cultural resources at Kāwā, but also to the proper function of programs at Kāwā and the safety of visitors. These included the following:

**Individual claiming ownership:** Majority of consultations raised the presence of an individual claiming ownership at Kāwā as a threat to the environmental integrity of Kāwā and to visitors, both residents of Ka‘ū and non-residents. Several informants referred to this individual as not taking care of Kāwā through their own actions, such as destroying house sites, building a garden over burial grounds, and through bringing others to Kāwā who did not act responsibly. Various accounts of negative interactions with this individual were shared. Most informants felt that it was unfair that this individual claiming ownership at Kāwā continues to stay at Kāwā while everyone else has to abide by the law.

**Sand Erosion:** Several informants identified sand erosion as a problem in two main areas: 1) surrounding Kāwā Pond; and 2) Kāwā Beach. Informants have observed that there is less sand near the Hīlea river mouth than before. They believed that sand erosion has been attributed to high spring tide and surf events which have caused the waves to push sand from Kāwā Beach across the pāhoehoe, to fill in Kāwā Pond and fresh water springs and the

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sand is not cycling back into the ocean. They believed that vegetation in the area between the beach and the pond used to stop the flow of the sand. However, they believe that the vegetation loss, and vehicular access in this area, has carved out a dirt road through the vegetation that has contributed to the erosion.

Recommendations to mitigate sand erosion included: 1) revegetating the area between the beach and the pond with native plants, such as naupaka, 'aki'aki, 'ākulikuli; 2) prohibiting vehicular access; 3) building a wall around the fresh water springs along the edges of the pāhoehoe; 4) removing the grasses that hold the soil at Kāwā Pond; 5) conducting student volunteer programs to assist and participate in restoration activities; and 6) conducting a baseline hydrology study at Kāwā.

**Invasive plants:** Consultations identified various invasive plant species at Kāwā. Two invasive grasses specifically surrounding Kāwā Pond included California grass and seashore paspalum or golf-course grass. These grasses hold sand and inhibit the flow of water into and out of the estuary. One informant predicted that removing invasive plants from the pond and replacing with native species would create a more ideal habitat for native birds. Vegetation with thick root systems, such as coconut trees, along the shoreline also prevent hawksbill turtles from being able to dig through the

sand for their egg chambers. Christmas berry and koa haole are two other common invasive plants prevalent throughout the project area. One informant complained that the Christmas berry make restoration work of cultural sites difficult because they grow on house sites and their root systems destroy the walls and are difficult to remove.

Recommendations to address these issues include: 1) prioritizing grass removal around estuary, and encouraging native reed as fish and bird habitat; 2) prioritizing California grass removal further mauka of estuary; 3) offering opportunities for visitors to Kāwā to plant a native plant there; 4) planting native plants along the shoreline such as naupaka rather than niu (coconut); and removing invasive plants like Christmas berry.

**Pests:** Though fire ants are absent at Kāwā despite an island-wide infestation, several pests were identified to be present in the project area. These included mongoose, pigs, feral cats, and a higher prevalence of centipedes compared to before. Mongoose and feral cats, encouraged by growth of California grasses around the estuary, are threats to turtles because they eat the eggs and small hatchlings. Pigs were identified as a pest that dig around and destroy the integrity of areas surrounding fresh water springs. One informant reported that mosquitoes and cockroaches are not problems at Kāwā.

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Recommendations for addressing pests at Kāwā included: 1) using kill traps (with sardines) for mongoose, feral cats, and rats; 2) working with local community group to monitor beach during hawksbill turtle nesting season; 3) removing invasive plants like California grass that encourage pest habitat; and 4) establishing an in-house seed/plant nurseries to prevent fire ant infestation.

**Turtles:** Kāwā is a habitat for green and hawksbill turtles though HIHTRP explained that Kāwā is not a particularly favorable habitat for hawksbill because of the abundance of cobblestones and little sand. However, turtles return to the same beach they were hatched to nest and some are known to also visit nearby beaches, therefore, beaches along entire coastlines like those of Ka‘ū, including Kāwā, are important to be protected for this reason. Informants reported seeing turtles at Kāwā Pond but mostly at Ka‘ili‘ili Beach where turtles are known to nest at and egg shells were apparent. However, most community participants did not differentiate between green and hawksbill turtles. Informants shared that in the past, eating turtle was normal but is no longer practiced. The HIHTRP identified several threats to turtles and their management at Kāwā:

- **Pests/Predation:** The main terrestrial pests/predators to turtles at Kāwā include mongoose, feral cats, and rats.
- **Marine Debris:** Currents bring marine debris to Kāwā. Debris along the shoreline may prevent turtles from accessing sanding areas mauka of the beach to nest, prevent new hatchlings from finding the ocean, and turtles may become tangled in nets.
- **Artificial Lighting:** Artificial light from nearby residence, vehicles, and camp fires may interrupt nesting patterns of turtles because they are attracted to light.
- **Negative Public Interactions:** A turtle monitoring program at Kāwā ceased due to negative public interactions.
- **Vehicles:** Vehicles are a threat to turtles because the vibrations from tires moving along the sand cause turtle eggs to hatch prematurely. Vehicles also compact the sand making it difficult for turtle to dig their nests. Vehicles might also denude shoreline vegetation, such as naupaka that play a critical role in the nesting habits of turtles. In addition, noise from vehicles at night may prevent turtles from coming onshore to nest and artificial lighting from headlights may also interfere with nesting habits.

**Vehicular Access:** Two access roads extend from the main highway (Highway 11) into Kāwā. One road, which is the

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access road intended for the Napoleon 'ohana's kuleana parcel and referred hereafter as the Napoleon road, enters Kāwā just immediately to the south of Kāwā Pond while the other road is the County shoreline access road that enters Kāwā north of the pond near Kāwā Beach. Both are narrow, rugged, dirt roads though the latter has a thin layer of gravel. While both roads are gated, the Napoleon road remains open during the day from 6 AM to 6 PM while the County road is permanently closed. A key for the County road is available at the Ka'ū Police Station and can be used, if authorized by the County, from 6 AM but must be returned by 4:30 PM.

As mentioned previously, the HIHTRP indicated that vibrations from tires on the sand cause turtle eggs to hatch prematurely and artificial light from vehicles interfere with turtles coming onto shore as they are attracted to light. A participant also pointed out that tires denude coastal vegetation and create dirt roads that add to sand erosion. Though one participant recommended paving the County road to provide better access for emergency services, several participants felt that the road should remain undeveloped and unchanged to maintain the sense of place of Kāwā. Several feared that paving the road would attract more people to Kāwā which would impact the natural and cultural resources of the place.

Lineal descendants felt that the gate for the County access road poses several problems which included the following:

- Acquiring the key is problematic because they have experienced long waits of up to four hours because the key was either not available or the keys were lost.
- They also felt that the limited hours to use the road from 6 AM until 4:30 PM limits their family's ability to conduct restoration work on their ancestral house site.

Several informants also pointed out that the parking situation along the main highway is dangerous and unsafe. Others reported that cars often get broken into.

Recommendations to mitigate vehicular access problems included: 1) limiting vehicular access from sunrise to sunset (6 AM to 6 PM); 2) no parking on the beach; 3) moving the gate for the County access road more seaward of the highway with a small parking area; 4) create a small parking area further away from the road for kūpuna and regular maintenance staff.

#### **Maintaining Sense of Place of Kāwā:**

The majority of people consulted for this project explained that Kāwā is currently undeveloped and felt that it should remain that way to maintain the sense of place of Kāwā. However, one kupuna felt that many changes have occurred at

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Kāwā, attributing to the influences of an individual claiming ownership of the place. “I don’t have that happy feeling anymore like how it used to be,” she said. “The changes down there wasn’t a good feeling. Different. When grandpa died, I was in eighth grade then (11 years old) and we stopped going...I see Kāwā as, I don’t want anything changed. South Point, gone already,” she said. Another kupuna also expressed that she did not want Kāwā to be like South Point or O’ahu.

Kāwā conjured up fond memories among most participants. Some shared memories of their childhood of camping at the beach, learning how to fish, surf, and spending time with their families. Some felt that the time they spent in Kāwā helped ground them culturally as Hawaiians and they appreciated the opportunity to have grown up that way. Lineal descendants, also saw Kāwā as part of their identity and where their iwi kupuna are buried. Therefore, it was important that the resources at Kāwā are protected. A participant feared the potential negative impact of a new mayor for Hawai’i Island who might not agree with or have the same value system of the current mayor in maintaining the sense of place of Kāwā. He was also apprehensive of not being able to access Kāwā as a lineal descendent like he always has should the County develop Kāwā.

Most consulted recommended that Kāwā remain undeveloped to maintain

its sense of place and to preserve Kāwā for future generations.

**Protection of Cultural Sites:** Currently, no signs exist to delineate boundaries around burial sites. A kupuna was worried about visitors’ lack of knowledge of iwi on the property. Since Native Hawaiians still visit Kāwā and ask for permission of ancestors to enter the place, she felt that iwi should be marked for educational purposes. Others reported that an individual destroyed part of the ‘Āpiki house site and built a garden over graveyards near the freshwater pond.

Lineal descendants of existing house sites expressed the need for more time for restoration work but the hours set forth by the County from 6 AM – 6 PM is limiting. “I had to sign one paper from the County about the key... it says on the paper that if I’m not out by 6 p.m. I’ll be arrested,” said a family member who was frustrated about the process.

All these years we’ve been doing exactly what the County has been asking us to do. We’ve been doing it [but] inside that PASH it says we have the right of way and yet...but it [the paper] says we cannot stay overnight because of the archaeological that’s there. But we’re working on it [to restore it]. We’re not doing anything to destroy it. I don’t

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understand it,” she exclaimed.

She believed that being able to camp at Kāwā, for example, over a weekend, would give them more time at Kāwā to accomplish more restoration work:

For my family. Let me tell you, we could do so much if we had the time. But we don't have the time. We have to be out of there. Every time we go down to clean, we have to be out of there. We never get to stay. We would LOVE to go holoholo. I'm mean, all of them. Go holoholo with my family. My son, my daughter, her boyfriend. All of us. After, we'd clean. I wish we could go holoholo, but we cannot. We gotta be outta there. But, if they're saying, if we're there for that, and we can, then why can't we stay. We even get portable toilets. We do!

She also explained that Kāwā is hot and having to rush to do their work during the day is difficult for kupuna like her mother who is in her 80s and herself in her 60s. She explained that having more time would allow them to be able to sit down and really enjoy being at Kawa. “I wish we can sleep over sometimes...would be nice to. Yeah we

can't [about camping]. That's the part that we cannot. That's why it's so hard,” she said. She continued:

It's hard because we're so limited. We only got this hour to go to this time. And by the time we're through cleaning we gotta pack up and go home already. Right now there's someone living there and you'll see it tomorrow when you go do down. I tell myself, he can stay there overnight and yet we cannot complete our cleaning as much as, that's why we're so limited and that's why we only stay in one area. I say, we gotta hurry up and go this way so we can get to the konane and protect that as well. Yeah, it's limited. It's been limited ever since 2008.

The family also explained that acquiring the key from the police station for the gate at Kāwā was problematic for them because they would have to wait for a long time. “Sometimes it would take 3 to 4 hours,” said a family member. Sometimes they'd never have the key but I guess they lost it. We'd call Karen [at the County] because we're coming all the way from this [Hilo] side and to go down there and not be able to do anything is a big waste,” he said.

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Other threats to the integrity of cultural resources at Kāwā included people who have taken cultural features from the place, and visitors to Kāwā who do not look after the place, such as those brought into Kāwā by an individual previously claiming ownership and living there. Invasive plants, such as Christmas berry, were also identified as threats to the existing house sites which grow and break up the walls of the house sites. The limited access hours of 6 AM to 6 PM at Kāwā also limited the ability of families like the ‘Āpiki ‘ohana to carry out restoration work on ancestral house sites.

Recommendations to protect the cultural resources at Kāwā included: 1) conducting a cultural and archaeological study at Kāwā preferably locally; 2) requiring the presence of an archaeological monitor for all future work or development at Kāwā; 3) iwi found in Kāwā should be buried in place and never removed from Kāwā; 4) identifying and fencing iwi so that people know where they are to prevent trampling; 5) forming a restoration hui of the lineal descendants connected to the house sites at Kāwā to encourage their participation in the restoration of house sites and stewardship of Kāwā; and 6) holding a lū‘au to bring together families and stakeholders interested in the stewardship of Kāwā. One kupuna offered to teach people and share her knowledge about Kāwā.

**Traditional Practices:** Consultations indicated that the rough waters and bathymetry of the shoreline makes Kāwā unfavorable for line fishing so most fishermen would go to South Point. Therefore, participants were generally not worried about fishing pressure and overfishing at Kāwā. However, several pointed out that while fishing may not be an issue currently, it could be in the future due to overfishing. A kupuna recommended setting a limit on the number of fishing poles each fisherman could have, for example, two poles rather than five. Three informants recommended creating a community-based subsistence fishing area to follow the model used by communities in Hā‘ena, Kaua‘i and Mo‘omomi in Molokai.

Surfers generally park along the highway and walk down to Kāwā Beach along the County access road. Though surfers are likely the most experienced and comfortable in the water conditions of Kāwā, some participants expressed concern about the response time of emergency services, such as police, ambulance, and fire engines should accidents happen at the beach. The isolation and the difficulty of driving on the access roads were identified as the threats to public safety at Kāwā, discussed in more detail below. However, others felt that people who visit and surf Kāwā are liable for themselves and should enter at their own risk.

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**Sanitary Conditions:** Several entities consulted were concerned about the sanitary conditions at Kāwā. Participants explained that two portable toilets are located by the gate near the highway which is a 10 to 15 minute walk from the beach. Several felt that the distance to walk to the toilets is inconvenient so people end up using the bushes by the beach and the back of the Napoleon shack which is unsanitary and promotes the spread of disease. “People used to shishi in the back of the shack. Choke toilet paper,” said one informant.

Several recommended relocating the toilets closer to the coast. Others felt that more portable toilets would also be needed for hosting student programs at Kāwā and recommended that PONC funds could be accessed for a composting toilet. Currently, the HWF brings a “toilet kit (wet bag)” with them during workdays for participants who do not want to walk to the porta-potties. One family also mentioned that they have their own personal porta-potty and could bring them during restoration work days.

The lack of trash bins at Kāwā was also raised. Currently, two trash bins are located near Kāwā Beach. The trash bins are maintained by the County but consultations indicated that often the bins are full and sometimes overflowing. Members of Na Mamo o Kāwā have voluntarily assisted in emptying the trash. A kupuna stressed the importance

of people taking responsibility and taking back any ‘ōpala (rubbish) they bring with them to Kāwā. Another recommendation was to have full-time caretaker on the property who would be responsible for maintaining the site.

**Drugs:** In the past, heroin use was reported to have been a problem at Kāwā. Though the problem no longer exists, one kupuna recommended that no drugs and alcohol should be allowed at Kāwā.

**Ocean Safety and Emergency Services:** Several informants raised safety concerns relating to ocean use at Kāwā. These include strong currents that pose threats to children and those who are not familiar with the area. Two kūpuna explained that the Hala‘ea current is a strong current that travels south past Kāwā towards South Point. Several informants also mentioned that Kāwā is infested with sharks and highlighted a recent shark bite incident.

Consultations highlighted the isolation of Kāwā and the distance from emergency services. The Ka‘ū Police Station is approximately five miles away, and nearest fire station is in Nā‘ālehu which also operates an ambulance. One informant felt that the County access road into Kāwā was inadequate and needed to be paved to allow for easier access of emergency services to the coast. However, most participants who were consulted felt that part of being in

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Kāwā and maintaining the sense of place of Kāwā is being isolated.

A lineal descendant of Kāwā recommended a volunteer lifeguard program and/or a lifeguard stand to store equipment at Kāwā. He discussed the idea of training the regular surfers and/or users at Kāwā so that they could serve as volunteer lifeguards for that area since it is located in such a remote area. “Right now, it’s a liability. If anything happens, the County will shut down the place,” he said. He also shared that he thinks the program would serve as a way to inspire and provide another career path for the youth.

# KĀWĀ RESOURCES MANAGEMENT PLAN

## APPENDIX B

THIRD CIRCUIT  
STATE OF HAWAII  
FILED

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Y. KITAHARA  
CLERK

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Attorneys for Plaintiffs

IN THE CIRCUIT COURT OF THE THIRD CIRCUIT  
STATE OF HAWAII

HENRY BARBA, BALBINO SALMASAN,	)	CIVIL NO. 4590
ERNEST BUYUAN, RALPH DEDMAN,	)	
BELE HANOA, and THE SPORTS-	)	JUDGMENT
MAN'S CLUB OF KAU, on behalf	)	
of themselves and all others	)	
similarly situated,	)	
	)	
Plaintiffs,	)	
	)	
vs.	)	
	)	
MATSUHEI OKUNA, also known as	)	
THOMAS OKUNA, and the STATE OF	)	
HAWAII,	)	
	)	
Defendants.	)	

JUDGMENT

Pursuant to the Findings of Fact, Conclusions  
of Law, and Order filed herewith in this cause,

IT IS HEREBY ORDERED, ADJUDGED AND DECREED that:

1) Pursuant to Rule 23(b)(2) of the Hawaii Rules  
of Civil Procedure, a class is certified and the class is  
defined as follows:

All residents of the State of Hawaii,  
who in the past have used and enjoyed  
reasonably, or who have been prevented or  
deterred by Defendants' actions and conduct  
from using and enjoying reasonably the  
trails and paths claimed in the Complaint  
filed in this cause to reach Kawa Bay and the  
adjacent tidelands, beaches and oceans.

2) The individual Plaintiffs, members of the

EXHIBIT B1

EXHIBIT AA-8

Sportsmans Club of Kau, persons similarly situated, and the general public are entitled to reasonable access to Kawa Bay and the adjacent shoreline in the following manner along the following rights-of-way more specifically described in the Findings of Fact and Conclusions of Law entered herewith:

a) A 3 foot wide pedestrian easement along the Ancient Walking Trail.

b) A 15 foot wide pedestrian, equestrian, and wagon easement along the portion of the Government Road which extends from the Honuapo boundary of the subject property to Hilea Stream.

c) A 15 foot wide pedestrian, equestrian and vehicular easement along that portion of the Government Road which extends from Hilea Stream to the Punalu'u boundary of the subject property.

d) A 3 foot wide pedestrian easement from the upper reach of the waves at the mouth of Hilea Stream to the intersection of Hilea Stream with the Government Road.

e) A 10 foot wide vehicular, equestrian and pedestrian easement along the Corral Gate Road as located in Plaintiffs' Exhibit 13(a).

f) A 3 foot wide pedestrian easement along the Hilea Trail as located in Plaintiffs' Exhibit 13(a).

3) Defendant MATSUHEI OKUNA and his agents, servants, employees, and all persons acting in active concert or participation with him who receive actual notice of this order are permanently enjoined from barring or preventing the Plaintiffs, members of the Sportsmans Club of Kau, persons similarly situated, and members of the public from using any

EXHIBIT B2

EXHIBIT AA-9

of the trails, roads and rights-of-way in the manner above-  
described to reach the shoreline of the subject property.

DATED: Hilo, Hawaii, OCT 14 1980

*James Kilby*  
JUDGE OF THE ABOVE-ENTITLED COURT

EXHIBIT A3

EXHIBIT AA-10



Third-Party Defendants. )  
)

PARTIAL STIPULATED FINAL JUDGMENT, DECREE AND ORDER OF CONVEYANCE  
IN TRUST BETWEEN THIRD-PARTY PLAINTIFFS MARY ANN OMEROD AND JOHN  
OMEROD ON BEHALF OF THE BASIL 'ĀPIKI PASH RIGHTS DESCENDANTS AND  
THIRD-PARTY DEFENDANT COUNTY OF HAWAII

PARTIAL STIPULATED FINAL JUDGMENT AND DECREE

Come now Third-Party Plaintiffs Mary Ann Omerod and John Omerod, by and through their attorney, Stanley H. Roehrig, on behalf of the Basil 'Āpiki PASH Rights descendants, and Third-Party Defendant County of Hawai'i and hereby enter into a Partial Stipulated Final Judgment and Decree as provided herein.

WHEREAS, archaeological digs during the 1950s and 1960s at ancient Hawai'ian house sites in Ka'ū by Dr. Mills of the Bishop Museum revealed that

Occupants of house sites at Kawa'a Bay were all from Hilea-iki.  
They were . . . Basil Apiki[.]

Basil Apiki's house (Feature #5 of Dr. Mills' survey) is nearest the sea between Manaopae and Paliiki.

And WHEREAS, a published history of the Kawa'a Bay area from the Bishop Museum further reflects that an ancient grass hut at Kawa'a Bay owned by the Basil 'Āpiki PASH rights descendants was still there in 1900 and was replaced by a lumber house built about 1910. That history also reflects that fresh water resources from Kawa'a Springs were utilized by these PASH rights holders.

And WHEREAS, the Decree Quietening Title in Third Circuit Civil 9073, Okuna, et al v. Francis Apiki, et al, filed July 8, 1988 provides in part at Paragraph 3(e) of the Decree for the:

Reservation of the rights of native tenants contained in . . . LCA 9971,  
Apana 11.

This includes the above house site at Kawa'a Bay that is located within LCA 9971, Apana 11. That same judgment at Paragraph 3(d) also preserves the rights of way for access to the premises described in the Findings of Fact, Conclusions of Law and Order dated October 14, 1980, in Barba v. Okuna, Third Circuit Civil 4590. The Government Access Road is identified at Paragraphs D53 *et seq.* The Corral Gate Road to the premises is described at Paragraphs E82, *et seq.* The Hilea Access Trail to the premises is described at Paragraphs F115 *et seq.*

And WHEREAS, seven years after the Judgment was entered in Okuna v. Apiki, the Supreme Court of the State of Hawai'i decided PASH v. County of Hawai'i Planning Commission, 79 Hawai'i 425 (1995). That case established that the rights of the natives preserved in the Judgment of Civil 9073 are henceforth categorized as Hawai'ian PASH rights. The nature of these rights are described in part at Findings [21] [22] [of the PASH decision] at pages 447, 448, where the Supreme Court of the State of Hawai'i held in part:

The issuance of a Hawai'ian land patent [such as LCA 9971:11] confirmed a limited property interest as compared with typical land patents governed by western concepts of property. *C.f. United States v. Wynans*, 198 U.S. 371. . . (1905) (observing that the United States Congress was competent to secure to the Indians such a remnant of the great rights they possessed).

The PASH court went on to hold as follows at 443, 447, 450:

Traditional and customary [Hawai'ian PASH] rights are properly examined against the law of property as it has developed in this state.

...  
A community development proposing to integrate [Hawai'ian] cultur[e] . . . with tourism and community living represents a promising opportunity to demonstrate the continued viability of Hawai'ian land tenure . . . in the modern world.

...  
[t]he State is obligated to protect the reasonable exercise of customarily and traditionally exercised rights of Hawai'ians to the extent feasible.

And WHEREAS, the County of Hawai'i is the successor in interest in this case to that portion of LCA 9971:11 which includes the above Basil 'Āpiki PASH rights resources at Kawa'a Bay;

And WHEREAS, Third-Party Defendant County of Hawai'i acknowledges that the Basil 'Āpiki descendants are owners of the above PASH rights;

And WHEREAS, Third-Party Plaintiffs John Omerod and Mary Ann Omerod on behalf of the Basil 'Āpiki descendants and Third-Party Defendants County of Hawai'i agree that for the efficient management of these PASH rights and the facilitation of joint management of the Kawa'a area, a PASH rights trust order will assist the parties and the judicial system in the above management and facilitation;

NOW, THEREFORE, be it resolved that Third-Party Plaintiffs Mary Ann Omerod and John Omerod on behalf of the Basil 'Āpiki PASH rights descendants and Third-Party Defendant County of Hawai'i agree to the following Partial Stipulated Judgment, Decree and Order of Conveyance in Trust, which is approved and so ordered by the court:

- (a) The Basil 'Āpiki descendants' PASH rights in Kawa'a Bay are recognized by Third-Party Defendant County of Hawai'i. They are hereby ordered by the court to be conveyed in trust in perpetuity by this Stipulated Judgment, Decree and Order of Conveyance of Trust pursuant to Rule 70 HRCPP, to be recorded at the Bureau of Conveyances. The initial trustee of the Basil 'Āpiki PASH Rights Trust is John P. Omerod, 2226 Tantalus Drive, Honolulu, Hawai'i 96813. The descendants of Basil 'Āpiki who are beneficial interest holders in the trust are as follows:

Clara 'Āpiki Omerod 147 Desha Street Hilo, Hawai'i 96720	25%
Marvaleen Adams 89-312 Mokiawe Street Waianae, Hawai'i 96792	12.5%
Basil Apiki 89-247 Kauwahi Avenue Waianae, Hawai'i 96792	12.5%

Rowena Kaleimomi Kaulia  
1240 Ala Kapuna Street, #303  
Honolulu, Hawai'i 96819 25%

Mary Lei Paris  
1031 Ho'okanahe Street  
Mililani, Hawai'i 96789 12.5%

Bernadette Shipley  
2055 Sierra Road, #48  
Concord, California 94518 12.5%

- (b) The PASH rights ordered conveyed by the court in trust include a right of entry, possession, repair, and reconstruction of the houses and other appurtenant sites according to traditional Hawai'ian culture, in perpetuity, according to law.
- (c) The Basil 'Āpiki PASH Rights trustee and beneficial interest holders have rights of reasonable ingress and egress to the premises and appropriate rights to the spring water at Kawa'a Springs for traditional and customary use as described in the Barba and Okuna judgments and as protected by the PASH decision, supra.
- (d) A metes and bounds of the Basil 'Āpiki PASH rights resources, including the house site, burial and other appurtenant sites, will be prepared by the above trustee within a reasonable time for inclusion as an amendment to the Order of Conveyance in Trust to be filed with the court and also recorded at the Bureau of Conveyances.
- (e) The Basil 'Āpiki PASH Rights trustee and beneficial interest holders will be responsible for reasonable maintenance and sanitation of the above PASH rights resources.
- (f) The Basil 'Āpiki PASH Rights trustee and beneficial interest holders shall be responsible from time to time to update the identity of beneficial interest holders.
- (g) The Basil 'Āpiki PASH Rights trustee shall work with the State of Hawai'i and the County of Hawai'i to reasonably address plans and policies relating to the future utilization of the area as required by law.
- (h) Any dispute between the trustee and/or the beneficial interest holders and/or Third-Party Defendant County of Hawai'i shall be resolved by mediation (ho'oponopono) and, failing that, by arbitration.

ORDER OF CONVEYANCE OF BASIL 'ĀPIKI PASH RIGHTS IN TRUST

NOW, THEREFORE, pursuant to the authority as provided to the Court pursuant to §668-1 HRS, §668-7 (5) HRS, Rule 70 HRCP, and Campbell v. DePonte, 57 Haw. 510, 514-515 (1977), the Court does hereby order and set apart in trust the Basil 'Āpiki PASH rights at Kawa'a Bay to John P. Omerod, 2226 Tantalus Drive, Honolulu, Hawai'i 96813, Trustee of the Basil 'Āpiki descendants' PASH Rights in Trust.

1. The descendants of Basil 'Āpiki 'ohana are beneficial interest holders in the Trust. The names of the beneficial interest holders and their percentage beneficial interest in the Basil 'Āpiki Descendants' PASH Rights Trust are as follows:

Clara 'Āpiki Omerod 147 Desha Street Hilo, Hawai'i 96720	25%
Marvaleen Adams 89-312 Mokiawe Street Waianae, Hawai'i 96792	12.5%
Basil Apiki 89-247 Kauwahi Avenue Waianae, Hawai'i	12.5%
Rowena Kaleimomi Kaulia 1240 Ala Kapuna Street, #303 Honolulu, Hawai'i 96819	25%
Mary Lei Paris 1031 Ho'okanahe Street Mililani, Hawai'i 96789	12.5%
Bernadette Shipley 2055 Sierra Road, #48 Concord, California 94518	12.5%

2. The PASH rights hereby ordered conveyed by the court in trust include a right of entry, possession, repair, and reconstruction of the houses and other appurtenant sites according to traditional Hawai'ian culture, in perpetuity, according to law.

3. The Basil 'Āpiki PASH Rights trustee and beneficial interest holders have rights of reasonable ingress and egress to the premises and appropriate rights to the spring water at Kawa'a Springs for traditional and customary use as described in the Barba and Okuna judgments and as protected by the PASH decision, supra, according to law.

4. A metes and bounds of the Basil 'Āpiki PASH rights resources, including the house site, burial and other appurtenant sites, will be prepared by the above trustee within a reasonable time for inclusion in an amendment to the Trust Order to be filed with the court and also recorded at the Bureau of Conveyances.

5. The Basil 'Āpiki PASH Rights trustee and beneficial interest holders shall be responsible for reasonable maintenance and sanitation of the above PASH rights resources.

6. The Basil 'Āpiki PASH Rights trustee and beneficial interest holders shall be responsible from time to time to update the identity of beneficial interest holders from generation to generation and to notify the County of the same.

7. The Basil 'Āpiki PASH Rights trustee shall work with the State and County of Hawai'i to reasonably address state and county plans and policies relating to the future utilization and management of the surrounding area according to law.

8. Any dispute between the State and/or County of Hawai'i and the trustee and/or beneficial interest holders shall be resolved by mediation (ho'oponopono) and, failing that, by arbitration.

9. If at any time during the existence of this Trust the trustee shall resign or shall for other reasons cease or become unable to act as trustee, the person nominated by the trustee herein shall become the successor trustee. If the original trustee shall fail to nominate a

successor trustee, the person who is selected by a majority interest of the beneficial interest holders under the Basil 'Āpiki Descendants' PASH Rights Trust shall become the successor trustee.

10. The trustee of this Trust shall be entitled to receive reasonable compensation and reimbursement for reasonable and necessary expenses to preserve the PASH rights resources as the beneficial interest holders shall determine from time to time.

11. The trustee may appoint one or more advisory committees to assist in the management of the PASH rights resources.

This PARTIAL STIPULATED FINAL JUDGMENT, DECREE and ORDER OF CONVEYANCE OF BASIL 'ĀPIKI PASH RIGHTS IN TRUST (hereafter "ORDER OF CONVEYANCE IN TRUST") finally adjudicates all claims rights, liabilities and defenses in this case by John Omerod and Mary Ann Omerod on behalf of the Basil 'Āpiki PASH Rights descendants in the Kawa'a Bay area and by this PARTIAL STIPULATED FINAL JUDGMENT, DECREE and ORDER OF CONVEYANCE IN TRUST, all claims, rights, liabilities and defenses not adjudicated are hereby dismissed with prejudice and none are remaining as to John Omerod and Mary Ann Omerod on behalf of the Basil 'Āpiki PASH Rights descendants in this area. This PARTIAL STIPULATED FINAL JUDGMENT, DECREE, and ORDER OF CONVEYANCE IN TRUST is entered pursuant to HRCP Rule 58 and Rule 70, Jenkins v. Cades Schutte Fleming & Wright, 76 Haw. 115, 119, 869 P.2d 1334, 1338 (1994), and Campbell v. DePonte, 57 Haw. 510, 514-515 (1977). This PARTIAL STIPULATED FINAL JUDGMENT, DECREE and ORDER OF CONVEYANCE IN TRUST specifically identifies the claims for which it is entered, and this PARTIAL STIPULATED FINAL JUDGMENT, DECREE and ORDER OF CONVEYANCE IN TRUST dismisses with prejudice any other claims of John Omerod and Mary Ann Omerod on behalf of the Basil 'Āpiki PASH Rights descendants not specifically identified. This PARTIAL STIPULATED FINAL JUDGMENT, DECREE and ORDER OF CONVEYANCE IN TRUST



# KĀWĀ RESOURCES MANAGEMENT PLAN

## APPENDIX C

KĀWĀ RESOURCES MANAGEMENT PLAN – APPENDICES

FEBRUARY 2017

	Taxon Description	Species Name	Scientific Name	Federal Status	Confirmed at Kāwā?	Notes/Description of Critical Habitat at Kāwā
Priority Species in RMP	Sea turtle	Hawksbill sea turtles (honu'ea)	<i>Eretmochelys imbricata</i>	Endangered	YES	Nesting habitat on Ka'ili'ili and Kāwā Beaches; Well-documented but rarely observed
	Sea turtle	Green sea turtle (honu)	<i>Chelonia mydas</i>	Threatened	YES	Nearshore waters around the project area as well as resting on the beach at Kāwā or Ka'ili'ili; frequently observed
	Bird - Waterbird	Hawaiian coot ('alae ke'oke'o)	<i>Fulica alai</i>	Endangered	No	Habitat in pond and stream estuaries; known in area (Punalu'u)
	Invertebrate	Orange-black Hawaiian damselfly (pinao'ula)	<i>Megalagrion xanthomelas</i>	Endangered	YES	Fresh/brakish streams (found at mouth of Hīlea Stream)
Other Species Protected by RMP	Invertebrate	Yellow-faced bee	<i>Hylaeus flavipes</i>	Not listed	YES	Confirmed at Kāwā (Terry et al. 2014)
	Invertebrate	Yellow-faced bee	<i>Hylaeus anthracinus</i>	Endangered	No	Another species present ( <i>H. flavipes</i> ); known in Ka'ū (South Point); host plants present
	Mammal - Bat	Hawaiian hoary bat ('ōpe'ape'a)	<i>Lasiurus cinereus semotus</i>	Endangered	No	Known in area (Punalu'u)
	Mammal - Marine	Hawaiian monk seal ('īlio holo i ka uaua)	<i>Neomonachus schauinslandi</i>	Endangered	YES	Nearshore waters around the project area as well as resting on the beach at Kāwā or Ka'ili'ili
	Invertebrate	Blackburn's sphinx moth	<i>Manduca blackburni</i>	Endangered	No	Known in W. Hawaii; tentatively seen at Kāwā; some host plants present
	Bird - Waterbird	Hawaiian goose (nēnē)	<i>Branta sandvicensis</i>	Endangered	No	Known to be nearby at Punalu'u
	Plant	Maiapilo	<i>Capparis sandwichiana</i>	Not listed	YES	Found on lava flows in northern two parcels (Terry et al. 2014); rare in general, especial in Ka'ū
	Bird - Bird of Prey	Hawaiian hawk ('io)	<i>Buteo solitaries</i>	Endangered	No	Known in area; no ideal habitat at Kāwā but may hunt on Property
	Bird - Bird of Prey	Hawaiian short-eared owl (pueo)	<i>Asio flammeus sandwichensis</i>	Threatened	No	Known in area; no ideal habitat at Kāwā but may hunt on Property
	Bird - Seabird	Newell's shearwater ('a'o)	<i>Puffinus newelli</i>	Threatened	No	Likely fly over Kāwā
	Bird - Seabird	Band-rumped storm-petrel ('akē'akē)	<i>Oceanodroma castro</i>	Candidate	No	Possibly fly over Kāwā
	Bird - Seabird	Hawaiian petrel ('ua'u)	<i>Pterodroma sandwichensis</i>	Endangered	No	Likely fly over Kāwā
	Bird - Waterbird	Black-necked stilt (ae'o)	<i>Himantopus mexicanus knudseni</i>	Endangered	No	Marsh/estuary areas; not confirmed at Kāwā
	Plant	'Ohai	<i>Sesbania tomentosa</i>	Endangered	No	Historically present; suitable coastal habitat at Kāwā
	Bird - Seabird	Black noddies (noio)	<i>Anous minutus melanogenys</i>	Not listed	YES	Observed by Terry et al. (2014)
	Bird - Shorebird	Pacific golden-plovers (kōlea)	<i>Pluvialis fulva</i>	Not listed	YES	Migratory; present in Hawai'i from August to April
	Bird - Waterbird	Black-crowned Night-heron ('Auku'u)	<i>Nycticorax nycticorax hoactli</i>	Not listed	YES	Wetland habitat such as at Hīlea Stream and Kāwā Pond; observed by Terry et al. (2014)
	Bird - Seabird	Boobies	<i>Sula spp.</i>	Not listed	No	Likely present at Kāwā
	Bird - Seabird	Great frigatebirds ('iwa)	<i>Fregata minor palmerstoni</i>	Not listed	No	Likely present at Kāwā
	Bird - Seabird	White-tailed tropicbirds (koa'e kea)	<i>Phaethon lepturus dorotheae</i>	Not listed	No	Likely present at Kāwā
	Bird - Shorebird	Bristle-thighed curlew	<i>Numenius tahitiensis</i>	Not listed	No	Likely present at Kāwā
	Bird - Shorebird	Ruddy turnstone	<i>Arenaria interpres</i>	Not listed	No	Likely present at Kāwā
	Bird - Shorebird	Sanderling	<i>Calidris alba</i>	Not listed	No	Likely present at Kāwā
	Bird - Shorebird	Wandering tattler	<i>Heteroscelus incanus</i>	Not listed	No	Likely present at Kāwā
	Bird - Shorebird	Various other sandpipers	N/A	Not listed	No	Likely present at Kāwā
	Bird - Waterbird	Northern pintails	<i>Anas acuta</i>	Not listed	No	Migratory; possibly present at Kāwā
Bird - Waterbird	Northern shovelers	<i>Anas americana</i>	Not listed	No	Migratory; possibly present at Kāwā	

# KĀWĀ RESOURCES MANAGEMENT PLAN

## APPENDIX D

FEBRUARY 2017

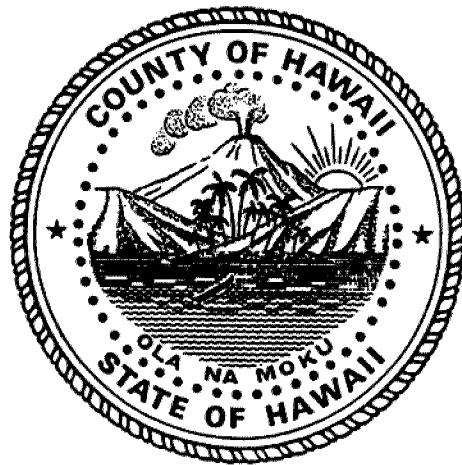
The process of CBSFA designation is lengthy and takes years to complete but the following general steps are recommended:

1. **Community Self-Evaluation:** As the initial step in the process, this stage assesses whether a CBSFA is appropriate for Kāwā. This involves identifying marine resource concerns and building support for management amongst traditional subsistence fishing practitioners. A letter of inquiry is sent to DLNR's Department of Aquatic Resources (DAR) outlining the group's interest in CBSFA designation. In turn, DLNR provides information to assist communities in evaluating the appropriateness of a CBSFA and responds to the group's letter of inquiry. The timeframe of this step is dependent on the community.
2. **Pre-Proposal:** Communities can begin collecting information to support a CBSFA proposal and prepare a pre-proposal outlining their justification for CBSFA designation. Once submitted, a site visit is held with the DLNR. DAR reviews the pre-proposal to determine the appropriateness of a CBSFA designation and whether to support CBSFA management planning. The timeframe of this step is community dependent but allows for a 3-month review period of the pre-proposal by DAR.
3. **Management Planning:** At this stage, a stakeholder analysis is conducted and a community engagement plan is discussed with DAR. This involves consulting with community stakeholders, building support for regulatory recommendations as needed, and documenting engagement efforts. The community group continues to collect information to support the CBSFA proposal and develops a management plan in consultation with DLNR that is submitted to DAR. Stakeholder analysis and review of community engagement plans is facilitated by DAR who coordinates the DLNR's input on the community engagement plan and regulatory recommendations. DAR monitors the group's community engagement efforts and participates in meetings with stakeholders. The timeframe for this step is also community dependent but requires about 6 months of DLNR input.
4. **Proposal Review and Rule Package Development:** At this stage, the group continues community consultations to build support for rules and to attend information meetings held by DAR. The group's full proposal is reviewed by DAR who decides how to adapt community regulatory recommendations into a Ramseyer format rule package. DAR hosts informational workshops at the community location. DAR may revise rules as necessary and will coordinate review of final rule package by Division Administrators, the DLNR Chair, and the Attorney General. This process takes approximately 6 months.
5. **Administrative Rule Making (Chapter 91):** As the final step in the designation process, the DAR prepares a small business impact statement and facilitates rule package progress through the Chapter 91 administrative rule making process. The group provides input on the small business impact statement as needed and testimony at public hearings. This step may take approximately 1 to 1.5 years.

# KĀWĀ RESOURCES MANAGEMENT PLAN

## APPENDIX E

# COUNTY CHARTER



COUNTY OF HAWAI'I  
2016

**Section 10-14. Centralized Purchasing.**

- (a) The department of finance shall be responsible for the procurement of all materials, supplies, equipment and services required by any agency of the county, except as otherwise provided by this charter or any law.
- (b) There shall be a standardization committee composed of five members. The mayor shall appoint four members without necessity of council confirmation, each of whom shall be from a separate department. The fifth member shall be a representative of the department of finance who shall serve as chairperson of the committee. The committee shall classify all materials, supplies and equipment commonly used by the various agencies of the county and shall prepare and adopt standards and specifications for such material, supplies and equipment.
- (c) All purchases and contracts for materials, supplies, equipment and services shall be made in accordance with Hawai'i Revised Statutes and rules and regulations established by the state procurement policy office thereto. Any such rule or regulation may be modified by the director of finance, in accordance with Chapter 91, Hawai'i Revised Statutes, provided that such modifications shall be consistent with the requirements of state law.
- (d) The director of finance shall, from time to time, secure from all agencies estimates of their needs for articles of common use and shall, when practicable, consolidate requisitions in order to secure the benefits of quantity purchases, and may enter into cooperative buying arrangements with other public agencies.
- (e) The director of finance may by rules and regulations, not inconsistent with state law, provide for:
  - (1) Emergency purchases which might be required.
  - (2) Petty cash funds or blanket purchase orders or both.
  - (3) Non-competitive purchases and contracts.
  - (4) Approval and signing procedures related to the issuance of purchase orders.
  - (5) Negotiated sales of county property found unusable for public purposes and valued below \$250.00 without public auction.
- (f) All county storerooms (other than departmental) shall be supervised and operated by the director of finance.
- (g) The director of finance shall require such guarantees of performance by vendors as in the director of finance's opinion may be necessary or may be prescribed by ordinance.

(1979, Prop. 8; 1990, Prop. 14, sec. 1 and Prop. 16, sec. 3; 1994, Ord. No. 94-50, sec. 2; 2010, Prop. 7, sec. 43.)

**Section 10-15. Public Access, Open Space, and Natural Resources Preservation Fund.**

- (a) In adopting each fiscal year's operating budget, the council shall appropriate a minimum of two percent of the certified real property tax revenues, including penalty and interest, to a fund known as the public access, open space, and natural resources preservation fund. Deposits to the fund shall occur at a minimum, on a quarterly basis.
- (b) Funding shall consist of a minimum of two percent of actual revenue received in the fiscal year. Additional revenue may consist of grants and private contributions intended for the purpose of this section, voluntary contributions of any amount as specified on the real property tax bill, proceeds from the sale of general obligation bonds authorized and issued for the purpose of this section, council appropriations for the purpose of this section, and any other source of revenue.

- (c) Monies in this fund shall be used solely to:
    - (1) Purchase or otherwise acquire lands and easements in the County of Hawai'i for public outdoor recreation and education, including:
      - (A) Access to beaches and mountains;
      - (B) Preservation of historic or culturally important land areas and sites;
      - (C) Protection of natural resources, significant habitat or eco-systems, including buffer zones;
      - (D) Preservation of forests, beaches, coastal areas, natural beauty and agricultural lands; and
      - (E) Protection of watershed lands to preserve water quality and water supply.
    - (2) Pay the principal, interest and premium, if any, due with respect to bonds issued in whole for the purpose of this fund.
  - (d) Any balance remaining in the fund at the end of any fiscal year shall not lapse, but shall remain in the fund accumulating interest from year to year. The moneys in this fund shall not be used for any purpose except those listed in this section.
  - (e) The council shall by ordinance establish procedures for the administration and expenditure of moneys in this fund.
  - (f) This fund shall be used for acquisition of land and easements and shall not be used for development, maintenance or for any purpose other than as provided in this section.
  - (g) The highest and best use of this fund is to leverage the money in the fund by attracting matching funds, although, matching funds are not required in every purchase.
  - (h) Any land acquired with this fund shall contain the following restrictive covenant in its recorded deed of conveyance: "This land was acquired with moneys from the Public Access, Open Space, and Natural Resources Preservation Fund. It shall be held in perpetuity for the use and enjoyment of the people of Hawai'i County and may not be sold, mortgaged, traded or transferred in any way."
  - (i) Any easement acquired with this fund shall contain the following restrictive covenant in its recorded deed of conveyance: "This easement was acquired with moneys from the Public Access, Open Space, and Natural Resources Preservation Fund. It shall be held in perpetuity for the use and enjoyment of the people of Hawai'i County and may not be sold, mortgaged, traded or transferred in any way."
- (2010, Prop. 1, sec. 1; 2012, Ord. No. 11-94, sec. 1.)

**Section 10-16. Public Access, Open Space, and Natural Resources Preservation Maintenance Fund.**

- (a) The purpose of the public access, open space, and natural resources preservation maintenance fund is to accrue and use moneys for maintenance of lands and easements acquired by the public access, open space, and natural resources preservation fund. The maintenance fund will ensure that money is dedicated to preserve the land, promote public safety, and maintain a healthy stewardship.

- (c) Monies in this fund shall be used solely to:
    - (1) Purchase or otherwise acquire lands and easements in the County of Hawai‘i for public outdoor recreation and education, including:
      - (A) Access to beaches and mountains;
      - (B) Preservation of historic or culturally important land areas and sites;
      - (C) Protection of natural resources, significant habitat or eco-systems, including buffer zones;
      - (D) Preservation of forests, beaches, coastal areas, natural beauty and agricultural lands; and
      - (E) Protection of watershed lands to preserve water quality and water supply.
    - (2) Pay the principal, interest and premium, if any, due with respect to bonds issued in whole for the purpose of this fund.
  - (d) Any balance remaining in the fund at the end of any fiscal year shall not lapse, but shall remain in the fund accumulating interest from year to year. The moneys in this fund shall not be used for any purpose except those listed in this section.
  - (e) The council shall by ordinance establish procedures for the administration and expenditure of moneys in this fund.
  - (f) This fund shall be used for acquisition of land and easements and shall not be used for development, maintenance or for any purpose other than as provided in this section.
  - (g) The highest and best use of this fund is to leverage the money in the fund by attracting matching funds, although, matching funds are not required in every purchase.
  - (h) Any land acquired with this fund shall contain the following restrictive covenant in its recorded deed of conveyance: “This land was acquired with moneys from the Public Access, Open Space, and Natural Resources Preservation Fund. It shall be held in perpetuity for the use and enjoyment of the people of Hawai‘i County and may not be sold, mortgaged, traded or transferred in any way.”
  - (i) Any easement acquired with this fund shall contain the following restrictive covenant in its recorded deed of conveyance: “This easement was acquired with moneys from the Public Access, Open Space, and Natural Resources Preservation Fund. It shall be held in perpetuity for the use and enjoyment of the people of Hawai‘i County and may not be sold, mortgaged, traded or transferred in any way.”
- (2010, Prop. 1, sec. 1; 2012, Ord. No. 11-94, sec. 1.)

**Section 10-16. Public Access, Open Space, and Natural Resources Preservation Maintenance Fund.**

- (a) The purpose of the public access, open space, and natural resources preservation maintenance fund is to accrue and use moneys for maintenance of lands and easements acquired by the public access, open space, and natural resources preservation fund. The maintenance fund will ensure that money is dedicated to preserve the land, promote public safety, and maintain a healthy stewardship.

- (b) Definitions. For the purpose of this section, the following definitions apply:
- “Maintenance” means to preserve and conserve lands and easements acquired by the public access, open space, and natural resources preservation fund and keep them in good repair for public safety.
- “Maintenance fund” means a separate fund that holds moneys directed from: 1) the general fund and property tax revenues; or 2) designated grants, private contributions, proceeds from the sale of general obligation bonds, council appropriations, and any other source of revenue.
- (c) There is established a public access, open space, and natural resources preservation maintenance fund (hereinafter “maintenance fund”). The maintenance fund shall be administered and managed by the department of parks and recreation. The financial aspects of the maintenance fund shall be handled by the department of finance.
- (d) Deposits due to the maintenance fund.
- (1) In adopting each fiscal year’s operating budget, the council shall appropriate one-quarter of one per cent of all real property tax revenue (including interest and penalties) to the maintenance fund. Deposits to the maintenance fund shall occur on a quarterly basis at a minimum.
  - (2) Additional revenue deposited in the maintenance fund may consist of grants and private contributions intended for the purpose of this section, proceeds from the sale of general obligation bonds authorized and issued for the purpose of this section, council appropriations for the purpose of this section, and any other source of revenue.
- (e) Accounting for the maintenance fund; interest bearing accounts; reporting by the department of finance.
- (1) All moneys in the maintenance fund shall be deposited in interest bearing accounts until needed. Any interest shall accrue to the maintenance fund.
  - (2) Moneys in the maintenance fund shall be identified separately for:
    - (A) Funding received from the real property tax revenue including interest and penalties; and
    - (B) Funding received from grants and private contributions, and any other source of revenue, and its interest earned, which:
      - i. Shall be itemized and earmarked for specific projects for the lands or easements.
      - ii. Shall not be subjected to the maximum accrual of funds limit provided in subsection (f).
  - (3) Financial statements shall be posted each month on the public access, open space, and natural resources preservation fund web site.
- (f) Maximum accrual limit in maintenance fund; exemption to funding.
- (1) Only moneys derived from real property tax revenue, its interest, and its penalties shall be included in the computation of the maximum accrual limit for the maintenance fund. All other moneys specifically directed to the maintenance fund shall be held separately from those moneys in the maintenance fund that originated from real property tax revenues (including interest and penalties), and shall not be subjected to the maximum accrual limit.
  - (2) The maximum accrual limit shall not exceed \$3,000,000.

- (3) At the end of any fiscal year in which the maintenance fund holds unencumbered funds derived from real property tax revenue (including interest and penalties) of at least \$3,000,000, any unencumbered amount in excess of that \$3,000,000 shall be permanently transferred to the general fund balance.
  - (4) Exemption to funding. If the maintenance fund holds \$3,000,000 in unencumbered funds derived from real property tax revenue (including interest and penalties), then the council and the executive branch do not need to add more money to the maintenance fund until the next budget cycle. This exemption shall not release the administration from its mandatory duty to maintain and preserve lands and easements acquired by the public access, open space, and natural resources preservation fund in good repair for public safety each fiscal year.
- (g) The maintenance fund shall be used solely for public safety maintenance and preservation of those lands and easements acquired by the public access, open space, and natural resources preservation fund, and may be used only for expenditures directly related to its purpose. Expenditures by the administration or stewardship grants presumed to be directly related are as follows:
- (1) Reparation (fixing, mending, repair work, and servicing);
  - (2) Preservation (damage control, salvaging, safekeeping, and safeguarding);
  - (3) Conservation of soil, forests, shorelines, native wildlife, streams, wetlands, watershed, and floodways;
  - (4) Restoration (replacement, reclamation, reconditioning, and remediation);
  - (5) Wildfire and fire prevention;
  - (6) Repair of existing buildings to meet the current code requirements, if the building is deemed reasonable to save;
  - (7) Replacing signs to meet the current code requirements;
  - (8) Installation, repair, or replacement fencing and gate or access mechanisms;
  - (9) Installation or repair of cattle guards;
  - (10) Mitigation of flooding problems including repair or restoration of existing culverts, drainage features, or other similar flood control mitigation;
  - (11) Archeological survey and buffering of Native Hawaiian historical or cultural sites after appropriate consultation with Native Hawaiian descendants and cultural practitioners;
  - (12) Biological studies for the protection of Native Hawaiian species of plants and animals; or
  - (13) Mitigation of Americans with Disabilities Act compliance issues that may arise during the course of public safety maintenance and preservation.

Moneys in the maintenance fund shall not be used for planning, design, development, or construction of new buildings, facilities, or infrastructure including roads, paths, bridges, culverts, ramps, or drainage features. Money in the maintenance fund shall also not be used for mitigation of Americans with Disabilities Act compliance issues for any new buildings, facilities, or infrastructure. Payment to resolve these aforementioned issues shall be from the capital improvement projects budget or allotments derived from the general fund.

- (h) Stewardship Grants. Moneys may also be used to provide grants-in-aid for projects, which uses are reflected in subsection (g).
- (1) An award of a stewardship grant shall be by council resolution. Stewardship grants may be awarded only until moneys in the maintenance fund are extinguished. Grants shall be awarded on the basis of ability of the stewardship organization to complete the project on time and within cost estimates.
  - (2) Only 501(c)3 nonprofits or an organization that operates under the umbrella of a 501(c)3 nonprofit, and that can complete a project for the good of the community, shall be considered for a stewardship grant.
  - (3) Public notice by the department of finance of the availability of the stewardship grants shall be placed in two newspapers of general circulation, as well as electronic media accessible by internet, by August 1 of each fiscal year provided money is available. These advertisements shall be paid for from the maintenance fund.
  - (4) To apply for a stewardship grant, a stewardship organization shall provide to the department of parks and recreation the following:
    - (A) An application form obtained from department of parks and recreation which is completed for each specific purpose or project;
    - (B) A detailed business plan for the project that includes the name of the 501(c)3 nonprofit organization, the organization that operates under the umbrella of a 501(c)3 nonprofit organization, if any, a copy of its letter of determination from the Internal Revenue Service, a copy of its bylaws and mission statement, a description of the specific project, time frames for project goals, costs, and activities to accomplish the stated purpose, and any other information requested by the department of parks and recreation; and
    - (C) A signed agreement to file a written report one year or less after receipt of funds that includes details as to what has been accomplished on the project, costs, and how the money was spent.
  - (5) No officer, board member, or employee of the 501(c)3 nonprofit organization or the organization that operates under the umbrella of a 501(c)3 nonprofit organization shall receive a salary or payment for labor or receive any reimbursement for the stewardship work on the project. The 501(c)3 nonprofit shall sign an agreement so stating these conditions and submit it with the application.
  - (6) Mismanagement of moneys awarded for a stewardship grant shall bar the 501(c)3 nonprofit organization and the organization that operates under the umbrella of a 501(c)3 nonprofit organization from receiving future grants from the maintenance fund.
  - (7) The director of the department of parks and recreation shall provide a short written evaluation of the proposed project to the council and include a recommendation about the applicant's ability to complete the project according to the project plan.

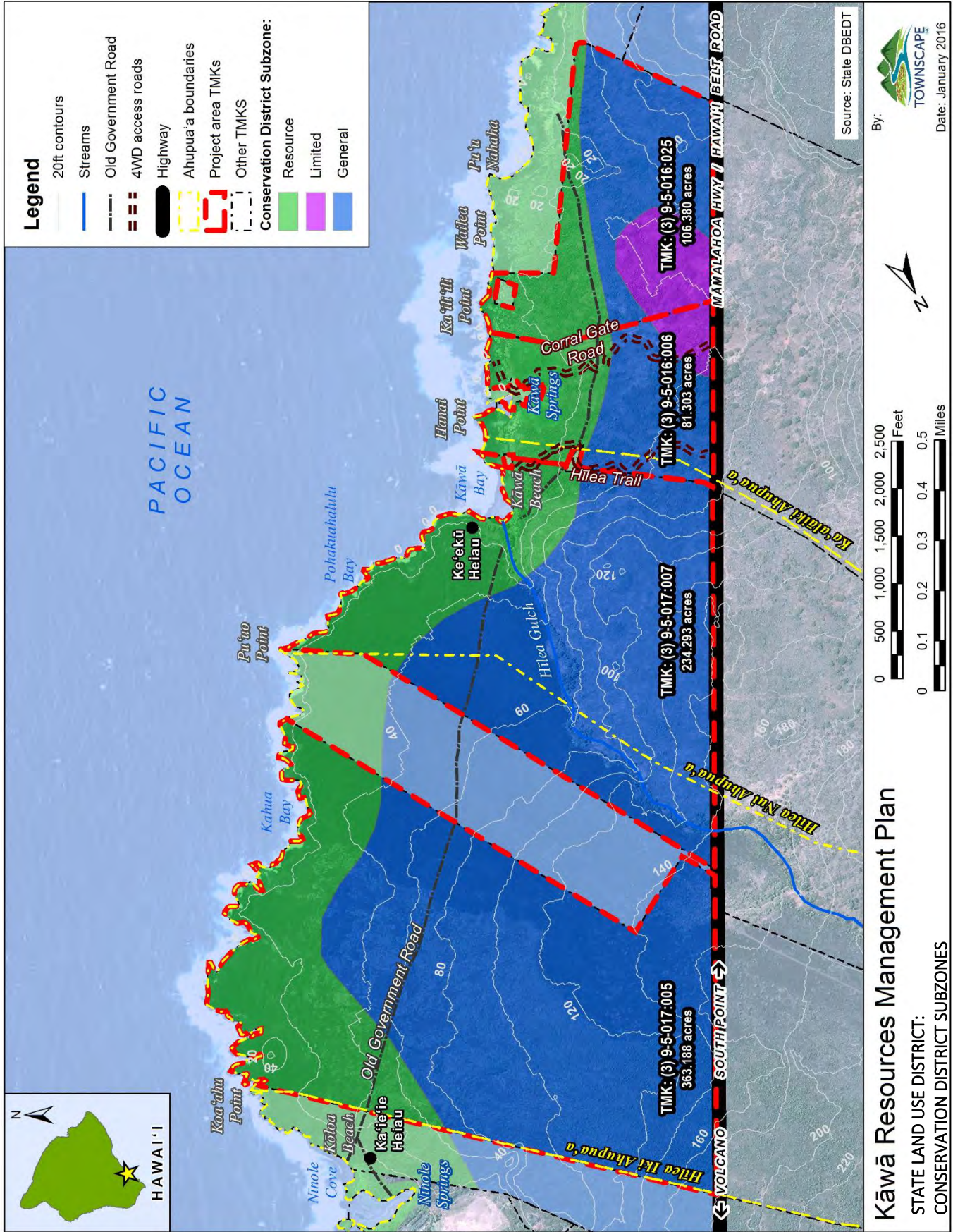
(2012, Ord. No. 12-16, sec. 1.)

# KĀWĀ RESOURCES MANAGEMENT PLAN

## APPENDIX F

KĀWĀ RESOURCES MANAGEMENT PLAN – APPENDICES

FEBRUARY 2017



# KĀWĀ RESOURCES MANAGEMENT PLAN

## APPENDIX G

FEBRUARY 2017

**Division of Forestry and Wildlife**

**Standard Operating Procedures for Wetland Habitat Restoration on O‘ahu<sup>1</sup>**

**Waterbird Surveying:**

1. Waterbird surveys shall commence 6 months before any site work is to begin. Surveys shall be conducted by a qualified biologist and shall:
  - a. Inventory shall include waterbirds, shorebirds, and other notable wetland species on site. The surveys should occur two times per month
  - b. When coot, moorhen and stilt nesting/mating activities begin, surveys shall be done once per week. Observers should note and inventory territories, observed nests, chicks, and predators present. Observers should keep track of all observed chick and not whether they fledge or not.
  - c. Habitat (veg cover, type, water level, etc.) type should be noted in conjunction with nesting areas
  - d. Observers should not approach nests or broods.
2. All observations should be kept to ensure a record of:
  - a. Overall birds observed
  - b. Territories established per species
  - c. Habitat usage
  - d. Nesting season
  - e. Observed nesting success
  - f. Weather Conditions/Rainfall
3. Site work should be noted when started. All site work should avoid sensitive habitat and nesting areas.
4. A licensed vet shall be kept on retainer, should an injured native bird be observed. In the event a coot, moorhen, or stilt is observed injured, the observer shall notify the vet, DOFAW and USFWS local representatives.
5. If any listed species is observed dead, a qualified individual shall collect it immediately. DOFAW and USFWS representatives shall be contacted immediately to make the determination on what to do with the carcass.

**Habitat/Site Restoration:**

1. Vegetation removal and control should be limited to non-native species which:
  - a. Directly impact nesting waterbirds by reducing habitat
  - b. Obstruct water ways
  - c. Provide cover and ambush points for predators, etc.
2. No activity is to take place during the nesting season. Nesting seasons shall be established during pre-sitework observation.
3. Woody vegetation should be removed from wetland or nesting areas
4. Waterbird surveys should also indicate what non-native plants are used for foraging, nesting and cover. Those identified species shall be controlled, not eradicated.
5. IF possible, tilling should be included in operations to:
  - a. Condition soil and create aerated pond bottoms
  - b. Reduce or eliminate algal buildup
  - c. Expose seed bank to provide long term weed control
  - d. Minimize the use of herbicides

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<sup>1</sup> All activities described must accompany proper permits and authorizations before initiating work

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6. Use of herbicides, pesticides must be in compliance with labels.
7. No soils are to be removed, excavated, or stockpiled on site
8. Predator control should occur, minimally during nesting season. Year-round if possible. See attached predator control guidelines for DOFAW-Oahu operations.
9. A 48 hour trap check policy must be in place if there are endangered species present.
10. IF an endangered species is captured, DOFAW and USFWS local representatives shall be informed immediately
11. Tracking tunnels should be deployed in a grid formation to inventory predators present.

**General:**

1. Signs should be placed on site informing visitors about the resources in the areas'
2. Fences should be erected to identify sensitive areas.
3. All personnel shall be trained to identify protected and endangered spp.
4. Before any site work is done, the qualified observer shall be consulted