

DRAFT
ENVIRONMENTAL ASSESSMENT
FOR
THE EAST ALAKA‘I PROTECTIVE FENCE
PROJECT

This document prepared pursuant to Chapter 343, HRS

Prepared by
The Nature Conservancy, acting by and through its Hawai‘i Chapter,
Kaua‘i Program, for the benefit of the Kaua‘i Watershed Alliance

October 6, 2008



East Alaka'i, Kaua'i Hawai'i

East Alaka‘i Protective Fence Project *Draft* Environmental Assessment

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DRAFT ENVIRONMENTAL ASSESSMENT
FOR
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PROJECT

I. INTRODUCTION: ENVIRONMENTAL ASSESSMENT

Project Name: East Alaka‘i Protective Fence Project

Proposing Agency: Kaua‘i Watershed Alliance c/o The Nature Conservancy in Hawai‘i,
Kaua‘i Program

Approving Agency: State Department of Land and Natural Resources (DLNR)

Project Location: Alaka‘i Wilderness Preserve

McBryde Sugar Co (A & B Hawai‘i Inc. land owner)
TMK: 4-5-8-001-001 (1,405 acres)

State of Hawai‘i
TMK: 4-1-4-001-003 (595 acres)

Property Owner(s): A & B Hawai‘i Inc. and
State of Hawai‘i

State Land Use Classification: Conservation District Subzone P (Protective)

Anticipated Determination of Environmental Assessment:

A Finding of No Significant Impact (FONSI) is expected for the project.

Agencies and parties consulted during Draft EA Preparation included:

Federal: U.S. Department of Interior
U.S. Fish & Wildlife Service

State: Department of Hawaiian Home Lands
Department of Health
Department of Land and Natural Resources
Division of Forestry and Wildlife
Division of Historic Preservation
Office of Hawaiian Affairs

Kaua'i County: Planning Department
Department of Water

Private: A & B Properties, Inc., Property Manager
McBryde Sugar Company, Ltd.
Gay and Robinson, Inc.
Grove Farm Company, Incorporated
Kamehameha Schools
Kaua'i Ranch, LLC
Lihu'e Land Company
Ben A. Dyre Family LP
National Tropical Botanical Gardens
Princeville Operating Company LLC

(See Exhibit L: Consulted Agencies & Parties Distribution List for a complete list)

DRAFT ENVIRONMENTAL ASSESSMENT
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II. SUMMARY OF PROPOSED ACTIONS

The Nature Conservancy (TNC), with the approval of the landowner(s), A & B Hawai‘i, Inc. and the State of Hawai‘i, proposes to construct a protective hog wire fence; to assemble weatherports and radio repeaters, monitor invasive species and maintain ungulate control, through the placement of traps, in an effort to safely support watershed management actions within a portion of the eastern Alaka‘i Plateau.

In April 2003, state and private landowners formed the Kaua‘i Watershed Alliance (KWA). The KWA members continue to recognize that cooperation is the key to a timely and successful watershed management program that will protect Kaua‘i’s watershed from invasive alien animals, plants, and other threats.

The objective of this project is to protect and preserve approximately 2,000 acres (ac) of irreplaceable watershed, unique native ecosystem, as well as the rare and endangered species it supports. The project will be located within a portion of the eastern Alaka‘i Plateau between Wainiha Valley and Mt. Wai‘ale‘ale, at the core of Kaua‘i’s watershed.

To obtain approval for such a project on conservation district land, a conservation district use permit application (CDUA) package will be developed which includes a CDUA application, draft environmental assessment, and a management plan. The package shall be submitted to the Board of Land and Natural Resources for determination and a permit approval.

The proposed protective fence will be approximately 7,208 meters (4.48 miles or 23,650 ft) in length and will enclose approximately 595 ac of the Alaka‘i Wilderness Preserve (State of Hawai‘i) and approximately 1,405 ac of McBryde Sugar Co. land, both in the Conservation District. Natural barriers and the steep cliffs will make up the balance of the enclosure (*See Exhibit A: Project Location map*).

The project will involve the clearing of vegetation, several inches above ground level, from up to a 10 ft wide corridor along the length of the proposed fence alignment using small power and hand operated machinery (i.e., handsaw, pick ax, weed eater, chainsaw). A 48 inch (in) high fence will be constructed using hog wire fence mesh supported by galvanized pipes and fence posts. The outside of the fence will be skirted along the base with a hog wire apron. (*See Exhibit(s) B: Fence Construction Examples*)

To improve worker safety and communications during natural resource management activities, 2 solar powered radio repeaters and other monitoring instruments will be strategically placed within and adjacent to the project area. One will be placed near the existing United States Geological Survey (USGS) weather station at the summit of Mt. Wai‘ale‘ale, and another will be placed on La‘au Ridge for the greatest range and coverage. The radio repeaters will be housed in weather protective cases, additional instrumentation may be added to repeater structure. *(See Exhibits A & C: Project Location map & Communication Diagram)*

To provide weather protection and safety for workers during natural resource management activities, 3 weatherports will be assembled. The weatherports will consist of a pre-fabricated weather shelter that is assembled on a pre-fabricated raised platform. The approximate size of the shelter will be 10 ft wide by 20 ft long and 8 ft high. *(See Exhibits A & D: Project Location map & Weatherport Diagram)* In order to prevent the breeding of mosquitoes, a hole 3 to 4 ft deep will be dug and human waste, enclosed in a compostable bag, will be covered in either agricultural lime or bacillus thuringiensis pellets before being filled in with dirt at the end of each field trip.

After construction, the project will consist of natural resource management activities such as feral pig and goat monitoring and removal, invasive weed control, fence maintenance, and monitoring to track the recovery of native plant populations.

The anticipated start date for this project is the first quarter of FY 10 (July – Sept 2009) and once initiated, all phases of the project will be completed within 12 months. Within this time period, radio repeater installation shall take approximately 2 months and weatherport assembly shall take approximately 3 months to complete.

Fundraising for the project will commence upon approval of the Conservation District Use Permit.

A. Project Purpose and Need

The proposed project area falls under the Hawaii Administrative Rules (HAR) Conservation District Protective (P) subzone. This HAR §13-5-11 designation is used “to protect valuable resources in designated areas such as restricted watershed, marine, plant, and wildlife sanctuaries, significant historical, archaeological, geological, and volcanological features and sites, and other designated unique areas.” Subzone P, as stated in the law, encompasses the protection of watersheds, water sources, and water supplies.

The Alaka‘i Protective Fence Project is a conservation project conceived and planned to protect and preserve the portion of the Alaka‘i which receives the greatest amount of rainfall, and is home to a rich diversity of unique Hawaiian

plants and animals that make up this watershed. Currently, 202 native plant taxa have been documented or observed within the estimated 2,000 ac of the proposed protective fence, which include 66 single island endemic taxa (*Wood, 2007*).

The forest in this area supports a diverse assemblage of native forest birds and ground-nesting seabirds. Some of these birds are federally listed as endangered species or candidates for listing as endangered species. Common forest bird species include Kaua'i 'Amakihi (*Hemignathus kauaiensis*), 'Anianiau (*Magumma parva*), 'Apapane (*Himatione sanguinea*), 'I'iwi (*Vestiaria coccinea*), and 'Elepaio (*Chasiempis sandwichensis*). The Puaiohi (*Myadestes palmeri*) is suspected to be in the area. (*See Exhibit E: Pauline Roberts Personal Communication*) The following species have not been detected on recent surveys: Kaua'i Ō'ō, 'Ō'ū, Kama'o, Kaua'i Akialoa and Kaua'i Nukupu'u. Additional surveys are needed to confirm their status. Sea birds include the endangered Hawaiian Petrel (*Pterodroma sandwichensis*) and the threatened Newell Shearwater (*Puffinus newelli*).

Research, within the Hawaiian Islands, has demonstrated that feral pigs, which damage native vegetation and expose soil to erosion, pose a significant threat to the native biodiversity and watershed integrity of Hawaiian forests. Decades of pig control in Hawai'i verify that the only successful method of completely protecting an area from feral pigs is to exclude the animals with wire mesh fence. Once pigs are removed, native vegetation has the ability to recover (*Jacobi, 1976*). A study looked into the effectiveness of the hunting methods from 1993 – 1998 in natural areas of Molokai. It was shown that in remote or difficult to access areas, community and volunteer hunters were not able to effectively control the populations (*Molokai Hunting Test Working Group, 1998*). In montane wet forests, it has been shown that there is a direct correlation between the increase of alien plants and pig-induced soil disturbance (*Aplet et al, 1991*).

Fences have proven that native vegetation is able to recover with time, after the removal of feral pigs from the area. An enclosure was erected in a montane rain forest on the Big Island and monitored for 5 years. The result was that the protected area had a dramatic increase in the native plant understory while there was no noted reestablishment of these plants where pig activity continued outside the enclosure (*Katahira, 1980*). A 13 year old pig enclosure in Hawaii Volcanoes National Park was monitored to assess the number of plant species inside and outside the fence. Within the fence the native species were able to increase whereas outside the fence the number and density of alien species became better established (*Higashino and Stone, 1982*).

It has been noted that pigs spread root-rot fungi which has contributed to the destruction of native trees and through their feeding, they have also added to the loss of native plant species. The feeding habits of pigs create muddy areas in which they roll around, thus contributing to the propagation and spread of disease carrying mosquitoes (*Baker, 1979*). Other authorities note that an analysis of the stomach content of killed pigs showed that

the majority (70-95%) of identifiable food was pieces of the Hawaiian tree fern Hapu‘u (*Cibotium glaucum*) (*Cooray and Mueller-Dombois, 1981*). Pigs can make trenches over a foot deep and 10 to 15 feet long destroying the ground cover and forest understory causing erosion. In this study the pigs were tested and found to carry parasites (fleas, lice, hookworms, tapeworms and trichinae [which is a source of trichinosis in humans]) as well as various diseases such as typhus, leptospirosis and brucellosis which are transmittable to humans (*Warner, 1959 – 1969*). A study on the stomach content analysis of Hawaiian pigs, showed that these pigs carried the following diseases which can easily infect man and dogs; leptospirosis, tuberculosis and possibly typhoid (*Giffin, 1978*).

Pigs are considered to be a bigger threat to watersheds than cattle or goats because of the disruption of the soil which leads to erosion (*McEldowney, 1930*).

B. Project Description and Location

The small headwater streamlets of the Alaka‘i meander and flow on to join larger boulder-strewn drainages. These drainages continue to flow and fall deeper into the eastern windward slopes, descending down to the navigable Wailua and Hanalei Rivers; or falling to the north and creating the great rivers of Wainiha and Lumaha‘i. The Alaka‘i Plateau also drains to the watersheds of western Kaua‘i. The rivers Olokele, Kahana, Mokuone, Mokiha, Nāwaimaka, Wai‘ala, Koai‘e, and Poomau, all have their origins within the Alaka‘i. These rivers eventually conjoin to form the great Makaweli and Waimea Rivers of west Kaua‘i. The Alaka‘i, being the heart of the island, is the greatest and most influential watershed on Kaua‘i, shedding waters throughout the northern, eastern, southern, and western valleys of the island.

The Montane Wet Forest of this area is characterized by an open canopy with gentle to moderately contoured wet slopes dominated by a mixed assemblage of native sedges, grasses, herbs, shrubs and ferns interspersed. Generally, lichens and mosses are prevalent where feral pig disturbance is minimal. The low stature (ca. < 1 m) of these open areas are interspersed with small islands of taller shrubs and trees (ca. 1–5 m) or dissected with headwater streams of riparian vegetation with bordering *Metrosideros* and *Cheirodendron* forest (*See Exhibit F: Critical & Rare Resources map*).

The project area will be located in the east Alaka‘i Plateau up to the Wai‘ale‘ale summit. It totals approximately 2,000 ac and includes approximately 595 ac of state land in the Alaka‘i Wilderness Preserve (TMK 4-1-4-001-003) and approximately 1,405 ac of private land owned by McBryde Sugar Co. (TMK 4-5-8-001-001). It borders private lands of the Gay and Robinson parcel (TMK 4-1-7-001-001) and other State of Hawai‘i parcels (TMK 4-4-2-001-002 and TMK 4-3-9-001-001). Its elevation ranges from 4,400 to 5,148 ft. (*See Exhibit G: Vicinity and Parcel map*)

The project will involve the clearing of vegetation, several inches above ground level, from up to a 10 ft wide corridor along the proposed fence alignment using small power and hand operated machinery (i.e., handsaw, pick ax, weed eater, chainsaw). A 48 in high fence will be constructed using hog wire fence fabric

supported by galvanized pipes and fence posts. As necessary, the outside of the fence will be skirted along the base with a hog wire apron (consisting of 48 inch wide hog wire staked to the ground). *(See Exhibit(s) B: Examples of Fence Construction & Fence Design Details)*

The protective fence shall be approximately 7,208 meters (4.48 miles or 23,650 ft) in length and shall be constructed of 48 in high bezinal coated hog wire fence mesh. The fence mesh will be supported by galvanized coated pipes and fence posts placed no more than 10 ft apart the entire length of the fence line. Shorter galvanized coated pins will be used as anchors within the 10 ft span. The fence will have an apron of hog wire laid horizontally along the ground outside the fence to prevent pigs from digging underneath. The fence alignment will be cleared by hand to a width of no more than 10 ft.

After construction, the project will consist of natural resource management activities such as feral pig and goat removal, invasive weed control, fence maintenance, and monitoring to track the recovery of the plant community.

Baiting and trapping using silo traps will be strategically deployed throughout the fenced preserve. The traps are circular and about 4.5 meters in diameter with approximately 1.5 meter high walls constructed of welded mesh. The door into the trap is a push through design. An internal mesh skirt attached at the base of the trap will prevent pigs from tunneling out of the trap. The open top and natural ground floor employed in this design will minimize stress on the animals. *(See Exhibits H & I: Pig Control map & Silo Trap and Feeder diagrams)*

Automated bait stations will be installed inside each of the traps, either suspended from a tree above the trap or mounted on a tripod inside. The feeders will be baited with a two week's supply of cracked corn, macadamia nuts or other baits as needed.

For the first 3 to 5 weeks of the project the traps will be kept open, in order to allow the resident pigs to grow accustomed to entering the traps and feeding. The traps will then be set and checked the following day to remove the captured pigs.

Due to the remote locations involved in the project, the traps will be positioned and baited by helicopter. Trap placement will take advantage of existing openings in the forest canopy and shrub layer. We do not anticipate altering vegetation for either helicopter access or trap placement. Wherever possible, areas previously disturbed by pigs will be used for trap placement. In previous uses this trap design has caused only minimal ground disturbance. At project end all trapping and baiting

materials will be removed. *(See Exhibit I: Silo Trap and Feeder diagrams)*

To improve worker safety and communications during natural resource management activities, 2 solar powered radio repeaters and other monitoring instruments will be strategically placed within or adjacent to the project area. One will be placed near the existing United States Geological Survey (USGS) weather station at the summit of Mt. Wai‘ale‘ale and another will be placed on La‘au Ridge. The radio repeaters will be housed in weather protective cases, additional instrumentation may be added to repeater structure. *(See Exhibits A & C: Project Location map & Communications Diagram)*

To provide weather protection and safety for workers during natural resource management activities, 3 weatherports will be assembled. The weatherports will consist of a pre-fabricated weather shelter that is assembled on a pre-fabricated raised platform. The approximate size of the shelter will be 10 ft wide by 20 ft long and 8 ft high. *(See Exhibits A & D: Project Location map & Weatherport Diagram)*

C. Schedule

A project goal would be to secure all necessary permits, including a conservation district use permit by the fourth quarter of FY 09 (April – June 2009). The anticipated construction start date for this project would then be the first quarter of FY 10 (July – Sept 2009) and all phases of the project will be completed within 12 months. Within this time period, the radio repeater installation shall take approximately 2 months and the weatherport(s) assembly shall take approximately 3 months to complete.

i. Fence Corridor Clearing

Clearing of vegetation along the fence corridor will be completed within a 12 month time period.

ii. Fence Installation

The fence installation process will occur simultaneously with corridor clearing. The entire process will be completed within 12 months. Fencing material will be transported to the site by helicopter and all construction (post installation, fence stretching, clipping, etc.) will be done by hand. The work will be weather dependent and activity may not be continuous within the 12 month period.

iii. Radio Repeater Installation

One repeater will be placed near the existing United States Geological Survey (USGS) weather station at the summit of Mt. Wai‘ale‘ale, and

another will be placed on La‘au Ridge for the greatest range and coverage. The radio repeaters will be erected and housed in weather protective cases and powered by solar panels.

iv. Weatherport Installation

The weatherport assembly will consist of a pre-fabricated weatherproof tent that is erected on a raised pre-fabricated platform. The approximate size of the shelter will be 10 ft wide by 20 ft long and 8 ft in height.

v. Inspections and Maintenance

The fence, radio repeaters, and weatherports will be inspected and maintained. The maintenance will be a part of the natural resource management actions carried out within the project area on a quarterly schedule.

vi. Ungulate Control

Once fence construction has been completed it will be necessary to visually monitor the area until ungulate activity is no longer present.

vii. Weed Control

Monitoring of invasive weeds will occur along the fence line during routine maintenance inspections to assess plant regeneration. Invasive weeds such as *Kāhili ginger (Hedychium gardnerianum)*, *Strawberry guava (Psidium cattleianum)* and *Australian tree fern (Sphaeropteris cooperi)* will be a top priority for management in the project area. Weed removal will be carried out using approved mechanical and chemical methods shown to be highly effective in other areas.

D. Funding Sources

Fundraising for this project will commence upon approval of the Conservation District Use Permit.

III. SUMMARY DESCRIPTION OF THE AFFECTED ENVIRONMENT

A. General

The state-owned portion of the project area is designated as a wilderness preserve. DOFAW’s Draft Management Guidelines (DMG) classify this area as “V-1: Highest Quality Native Ecosystems” containing greater than 90% native vegetation.

The project will take place within the eastern Alaka‘i Plateau and is directed at protecting this unique ecosystem and the rare and endangered species within it. The forest is comprised of mostly montane closed to open *Metrosideros* (‘Ōhi‘a) and *Cheirodendron* (‘Ōlapa) wet forest mixed with a rich diversity of understory trees, shrubs and ferns, many of which are restricted to only Kaua‘i. Currently, 202 native plant taxa have been documented or observed within the 1,405 ac Alaka‘i portion of the Preserve, which includes 66 single island endemic plant taxa (Wood, 2007).

Nearly the entire western half of the area contains soil described as “mucky peat” with 0 to 30 percent slope. The eastern half contains a more diverse array of soils, with those closer to the summit described as poorly drained “silty clay” with 8 to 30 percent slopes. The rugged terrain to the north of the summit area is classified in 2 major descriptions: “mucky silty clay loam” with 30 to 70 percent slope which then merges with the more rugged terrain described as “rough mountainous land” characterized by steep valley walls, narrow ridges, and thin soil 1 to 10 in deep (Foote, *et al.* 1972). The proposed protective fence will cross one stream, the Koai‘e Stream, which flows to the west. (See Exhibit J: Topography map)

Helicopters are the primary means of access, but strong winds and cloud cover over the Alaka‘i Plateau are major impediments to the predictability and consistency of this mode of travel. The closest road is the 4X4 dirt road leading to the Camp-10 picnic area nearly seven and a half miles to the northwest of the summit. No Na Ala Hele trails or any other official trails reach the area. The Waialae Trail comes to within a little under a mile of the fence alignment, with no discernable access route to the project area. (See Exhibit K: Access map)

B. Flora and Fauna

Many *threatened*, *endangered* and even *critically endangered* species have been documented either within the proposed fence area or in close proximity. Most surveys occur along established bird-transect lines. The eastern portion of the Alaka‘i might be considered relatively un-surveyed by botanists and ornithologists as compared to other more accessible regions.

- i. **Flora:** Contained within the project area are several vegetative classifications including Bog Vegetation, Native Wet Cliff Vegetation, Closed ‘Ōhi‘a Forest, Native Wet Forest and Shrubland, ‘Ōhi‘a-‘Ōlapa Forest, and Open ‘Ōhi‘a Forest according to the Hawai‘i GAP Landcover Analysis. Critical Habitat for 2 taxa of endangered plants also exists within the project area (USFWS, 2004) and two other endangered species have been documented within the project area during botanical surveys (See Table-1).

Table-1: Rare Plants Documented Within The Project Area & Vicinity.

Scientific Name	Common Name	Federal Status	Island Wide Pop. Estimate	Survey Info
<i>Acaena exigua</i>	liliwai	E	unknown	
<i>Alsinidendron lychnoides</i> (*)	kuawawaenohu	E	n/a	
<i>Astelia waialeale</i>	pa'iniu	PE	n/a	
<i>Cheirodendron dominii</i>	lapalapa	E	>2500	
<i>Dubautia waialealeae</i>	na'ena'e	PE	500 - 700	
<i>Eurya sandwicensis</i>	anini	SOC	n/a	
<i>Geranium kauaiense</i>		C	3	
<i>Lagenifera helenae</i> (**)		PE	300	2000, Wood
<i>Lysimachia daphnoides</i>	Lehua makanoe	PE	200 - 300	1995, Perlman
<i>Lysimachia venosa</i>		PE	Unknown	
<i>Melicope cruciata</i>	cross-bearing pelea	SOC	20 - 30	2000, Wood
<i>Melicope puberula</i>	Alani	PE	900	2000, Wood
<i>Melicope waialealae</i>	Alaniawai		n/a	
<i>Myrsine petiolata</i>			unknown	
<i>Phyllostegia helleri</i>		C	Previously considered extinct. About 100.	Rediscovered 2004, Wood
<i>Platanthera holochila</i>		E	>40	
<i>Sanicula kauaiensis</i>	Kaua'i Sanicle	SOC	One 1911 collection. Very rare or extinct	

(*) *Alsinidendron lychnoides* synonymous for *Schiedea lychnoides*.

(**) *Lagenifera helenae* synonymous for *Keysseria helenae*.

Bold font indicates federally listed endangered species.

PE = Proposed Endangered listed Oct 2008

C = Candidate for Listing

SOC = Species of Concern

- ii. **Fauna:** Common forest bird species include Kaua'i 'Amakihi (*Hemignathus kauaiensis*), 'Anianiau (*Magumma parva*), 'Apapane (*Himatione sanguinea*), 'I'iwi (*Vestiaria coccinea*), and 'Elepaio (*Chasiempis sandwichensis*). The Puaiohi (*Myadestes palmeri*) is suspected to be in the area. The following species have not been detected on recent surveys: Kaua'i Ō'ō, 'Ō'ū, Kama'o, Kaua'i Akialoa and Kaua'i Nukupu'u. Koloa ducks inhabit the area's streams and the Hawaiian Owl (*Asio flammeus sandwichensis*) hunt open areas such as grasslands, stream banks, and bogs.

A colony of Hawaiian Petrel (*Pterodroma sandwichensis*) was documented in 1990 in close proximity to the proposed fenceline at the edge of a Sincock Bog. At that

site, 12 separate individuals (*P. sandwichensis*) were heard over the course of 2 days (Hawai'i Biodiversity and Mapping Program, 2007). Refer to Table-2 for species.

Table-2: Native Flying Vertebrates Found Within The Alaka'i Protective Fence Vicinity.

Scientific Name	Common Name	Federal Status	Island-wide Pop. Est. (Survey Date)
<i>Lasiurus cinereus semotus</i>	‘Ōpe‘ape‘a (Hawaiian Hoary Bat)	E	?
<i>Loxops caeruleirostris</i>	‘Akeke‘e (Kaua‘i ‘Akepa)	PE	30,000 (2000)
<i>Magnumma parva</i>	‘Anianiau		35,000 (2000)
<i>Himatione sanguinea</i>	‘Apapane		64,972 ± 2,014 (2000)
<i>Vestiaria coccinea</i>	‘I‘iwi		5,400 ± 500 (1976-1981)
<i>Psittirostra psittacea</i>	‘Ō‘ū	E	0 (2000)
<i>Oreomystis bairdi</i>	‘Akikiki (Kauai Creeper)	PE	2,448 ± 1,200 (2000)
<i>Myadestes myadestinus</i>	Kama‘o (Large Kaua‘i Thrush)	E	0 (2000)
<i>Hemignathus kauaiensis</i>	Kaua‘i ‘Amakihi		>40,000 (2000)
<i>Chasiempis sandwichensis sclateri</i>	Kaua‘i ‘Elepaio		25,000 (2000)
<i>Moho braccatus</i>	Kaua‘i ‘Ō‘ō (‘Ō‘ō ‘ā‘ā)	E	0 (1989-2000)
<i>Hemignathus procerus</i>	Kaua‘i Akialoa	E	0 (1989-2000)
<i>Hemignathus lucidus hanapepe</i>	Kaua‘i nukupu‘u	E	Unknown (1989-2000)
<i>Myadestes palmeri</i>	Puaiohi (Small Kaua‘i Thrush)	E	300 - 500
<i>Anas wyvilliana</i>	Koloa (Hawaiian Duck)	E	2000
<i>Pterodroma sandwichensis</i>	Hawaiian Petrel (‘Ua‘u)	E	NA
<i>Puffinus newelli</i>	Newell Shearwater (‘A‘o)	T	N/A
<i>Asio flammeus sandwichensis</i>	Hawaiian Owl (Pueo)		N/A

Sources Include: Kauai Forest Bird Survey, CWCS (Mitchell, et al, 2005) and Revised Recovery Plan for Hawaii (USFWS 2006)

Bold font indicates federally listed endangered species.

PE = Proposed Endangered listed Oct 2008

T = Threatened

C = Candidate for Listing

SOC = Species of Concern

No surveys could be located for native terrestrial invertebrates or native aquatic invertebrates within the area; however anecdotal evidence suggests that the area contains diverse communities of native invertebrates, evidence of a healthy, functioning ecosystem.

C. Cultural Resources

The following steps have been taken to determine the cultural and historical significance of the project area:

i. Cultural Impact Assessment

A cultural impact assessment has been completed for the project. A copy is available at: www.hawp.org.

Selected excerpt from Cultural Impact Assessment for the Alaka'i Protective Fence Project; Waimea and Wainiha Ahupua'a, Waimea and Hanalei Districts, Island of Kaua'i, March 2008, pg 68, section 7.7.

According to researchers, Charles Burrows, President of 'Ahahui Mālama I Ka Lōkahi, Charles Isaacs Jr., Treasurer of 'Ahahui Mālama I Ka Lōkahi, and Kepā Maly, Cultural Historian & Resource Specialist, President of Kumu Pono Associates (2007), it is well documented that feral pigs ranging through Hawai'i's upland forests today bear little physical or cultural resemblance to the smaller, domesticated pigs brought to the islands by voyaging Polynesians. It remains a popular misconception that pigs are native to Hawaiian forests and that pig hunting was a common practice in ancient Hawai'i. The article completed by the researchers mentioned above titled, Pua'a (pigs) in Hawai'i, from Traditional to Modern compares the traditional role of pigs in Hawaiian culture.

Pigs are not native to Hawai'i. The first pigs were brought to the Hawaiian Islands by Polynesians as early as the fourth century A.D. Skeletal remains of pigs and recorded traditional knowledge sources indicate that pua'a (the Polynesian pig) was a much smaller animal than the feral pigs of today [ii].

Originally, pua'a enjoyed a close relationship with their human families and rarely strayed far from the kauhale (family compound) [iv].

Well developed taro and sweet potato agriculture in ancient Hawai'i was incompatible with uncontrolled pigs, and there is every indication that pigs were both highly valued and carefully managed sources of protein. Pua'a were an integrated part of Hawaiian households, and the common presence of pa pua'a (pig pens) reflects the controlled, physically compartmentalized nature of pig management in traditional Hawai'i [v].

In contrast, today's feral pigs are largely derived from animals introduced after western contact. Cook, for example, brought European pigs during his first voyage to Hawai'i, and many other introductions of European and Asian swine followed [vii].

Clearly, domesticated pua'a carried strong cultural value in traditional Hawai'i. Aside from being an important possession and source of food, oral tradition describes the adventures of Kamapua'a (the pig child), a powerful demi-god who ranged over the islands and into the sea [xiii].

However, pigs were never hunted game for ancient Hawaiians. The Polynesian interaction with these animals was one of near-complete domestication. Despite reference to hunting rats with bow and arrow, no historic or traditional knowledge sources describe ancient Hawaiians hunting pigs for either food or recreation [xvi]. [Burrows, Isacc, Maly 2007: 1-3]"

ii. Archaeological Assessment

An archaeological assessment has been completed for the project. A copy is available at: www.hawp.org.

Selected excerpts from Archaeological Assessment for the Alaka'i Protective Fence Project; Waimea and Wainiha Ahupua'a, Waimea and Hanalei Districts, Island of Kaua'i, March 2008, pg 27, section 7.1.

The Alaka'i, Kaua'i's watershed core, is an ecologically rich area containing over 95% native Hawaiian-dominated forests and a variety of native biodiversity. The Alaka'i serves as a primary source of the island's freshwater – the high elevation forests filtering rainwater into subterranean aquifers and dispensing surface waters into Kauai's seven main rivers. The presence of habitat-modifying weeds and feral ungulates such as pigs and goats threaten the health and integrity of this vital watershed forest habitat.

The entire length of the proposed fence line was traversed from the Wainiha Pali in the northwest to the summit bog fence and the Wailua Pali in the southeast. No archaeological sites were observed.

The proposed fence line lies in the exceedingly inaccessible east end of the Alaka'i Plateau. No maintained trails run anywhere nearby. While the Kilohana Overlook end of the maintained Alaka'i Swamp trail is only about 5 miles "as the crow flies" northwest of the northwest end of the proposed fence line this would be close to a day's journey of very rugged endeavor for most people. The isolation suggests that the level of use of the entire east end of the Alaka'i Plateau has always been exceedingly limited. Indeed it seems probable that in traditional Hawaiian times the vicinity was only frequented by the most hardy bird hunters and by people going to and from the Ka'awakō Shrine. Informant testimony and the earliest historic accounts of visits to the shrine suggest these trips were

typically via the steep ascent from the Wailua side which may not have brought pilgrims into the project area at all. The annual summit rainfall, estimated at 11,000 mm (433 inches), would not have encouraged many to linger for long.

A notable feature of the Alaka'i Plateau is the general absence of rocks for construction material. Perhaps 99% of the proposed fence line route is stone free with no raw material for construction that would endure.

Site density is anticipated to be very, very low away from the Alaka'i Plateau rim. (Hammatt and Shideler, 2008)

The pre-consultation and any continued correspondence include the following organizations: State Historic Preservation (SHP) Division; Department of Hawaiian Home Lands; and Office of Hawaiian Affairs (OHA). *(See Exhibit L: Consulted Agencies & Parties Distribution List for a complete list.)*

Note: Should any iwi or Native Hawaiian cultural or traditional deposits be found during fence construction, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

D. Sensitive Habitat

Many *threatened, endangered* and even *critically endangered* plant and animal species have been documented either within the proposed fence area or in close proximity. The project area also contains montane bog habitat, which is listed as rare by the Hawai'i Biodiversity and Mapping Program.

The forest and cliffs in and around this area support a diverse assemblage of native forest birds and 2 species of ground-nesting seabirds. No colonies of ground nesting seabirds have been located along the fence alignment. Some of these birds are federally listed as endangered species or candidates for listing as endangered species.

Land in the western half of the project area is designated critical habitat (CH) for *Platanthera holochila* and *Exocarpos luteolus* while lands in the northern portion contain designated CH for *Cyrtandra cyanoides*. CH for *Cyrtandra limahuliensis*, *Pteralyxia kauaiensis*, and *Plantago princeps* borders the eastern edge of the project area (USFWS, 2004, See Table-3). This implies that these endangered species are or were found in the project area or that the area provides suitable habitat which is essential for species recovery. Included on Table-1 are 4 federally listed endangered species of flora, 8 *candidates* for the endangered species list, and 3 more flora listed as *species of concern*. With the exception of *E. luteolus*, *C. cyanoides*, and *C. Limahuliensis*, all listed species of flora have been recorded in close proximity or within the project area. *(See Exhibit F: Critical & Rare Resources map)* Most surveys occur along established bird-transect lines. The eastern portion of the Alaka'i might be considered relatively

un-surveyed by botanists and ornithologists as compared to other more accessible regions.

Table- 3 Critical Habitat within the Alaka‘i Protective Fence Project Area

Scientific Name	Common Name
<i>Plantago princeps</i>	Laukahi kuahiwi
<i>Pteralyxia kauaiensis</i>	Kaulu
<i>Exocarpus luteolis</i>	Heae, au
<i>Platanthera holochila</i>	Fringed orchid
<i>Cyrtandra cyanoides</i>	
<i>Cyrtandra limahuliensis</i>	

Source: U.S. Fish and Wildlife Service. 2004. Endangered and Threatened Wildlife and Plants; Final Designation or Non-designation of Critical Habitat for 95 Plant Species from the Islands of Kaua‘i and Niihau, HI.

E. Other Uses

The state-owned portion of the project area is designated as a wilderness preserve. Hiking, hunting, camping, photography, and trout fishing activities occur within the overall Alaka‘i Wilderness Preserve, but are seldom conducted within this portion due to its extreme remoteness. (See Exhibit G: Vicinity & Parcel map)

Because of the high quality and fragile nature of the native ecosystems located within the project area, the area has been designated as “A-4: Game Control (supervised)” by DOFAW’s Draft Management Guidelines (DMG). The area is not utilized for timber production or for any other forestry products. DOFAW’s DMG prohibits the harvest/collection of forest products within the area unless there is “compelling public benefit”. HAR §13-3-2 places the following restrictions on the Alaka‘i wilderness preserve area, “the following restrictions shall also apply...the introduction of lantana (*Lantana camara*), black wattle (*Acacia decurrens*), firetree (*Myrica faya*), blackberry (*rubus penctrans*), or any plants or animals deemed objectionable by the board is prohibited...”.

Current hunting regulations (governing the state land portion) allow hunters to take 1 pig per licensed hunter per day, year round on Saturdays, Sundays, and state holidays with rifles, handguns, bow & arrows, or dogs and knives. Seasonal goat hunting occurs during eight consecutive weekends from mid-July through mid-September, on Saturdays and Sundays, with rifles, muzzleloaders, and bow and arrows; a bag limit of one goat per rifle/muzzleloader tag issued. Hunters must sign-in at a checking station prior to the hunt and sign-out at the end of the day. Hunters with a valid camping permit can access the Alaka‘i Wilderness Preserve via the Mokihana Ridge Game Management Area by means of the Waimea Valley Checking Station on Fridays only after 3:00 p.m. in preparation for Saturday’s hunt.

Natural water collection and storage is the most important resource attribute within the project area. The project area, being a part of the greater summit area, defines the upper

most boundaries for many of Kaua‘i’s major watersheds. Which, in turn, supply the island with abundant water resources. The McBryde Sugar, Co. portion of the project area provides water for a hydroelectric power plant in Wainiha Valley.

IV. SUMMARY OF MAJOR IMPACTS

A. Major Positive Impacts

The most positive impact of this project will be the long term protection of forested watershed and native Hawaiian bio-diversity in approximately 2,000 ac of the east Alaka‘i Plateau. Natural water collection is an essential function of the Alaka‘i and can be considered the most important resource of this ecosystem. The native forests in this region not only collect moisture from moisture laden clouds, but also act as a living sponge during times of heavy rain. All of this water is sequestered in diverse, dense layers of living and decaying organic material and drains gradually off the plateau. In this manner, the Alaka‘i mitigates the impacts of natural drought and flood cycles.

The proposed fence will protect a portion the existing native forest, therefore maintaining the ability of this section of the Alaka‘i Plateau to collect and retain rainfall as well as provide a consistent and stable water source to Kaua‘i’s lowlands. The exclusion of feral pigs from the plateau will allow native vegetation to regenerate in degraded areas. The protective fence will first stop the continued damage being caused by feral pigs. Damage such as: spreading of invasive species i.e. strawberry guava and aggressive grasses, harm done to Hawaiian forests and streams impairing the function of watersheds, contamination of the fresh water supply with disease-causing organisms, destruction of native species and their habitat, prevention of the recovery of rare and endangered species, increased rock falls, mudslides, and reef siltation by accelerated erosion. This will then facilitate a decrease in the amount of soil exposed to possible erosion in the future, thereby improving watershed function of this area.

Protecting, sustaining, and even improving water production is critical to Kaua‘i’s future. Abundant clean water is needed for a growing population, the agricultural and commercial activities that support it and hydro-electric power plants which are important in providing alternative energy sources. The project area provides runoff to 4 of the 6 largest watersheds on Kaua‘i. Historically, this reliable source of water has been crucial for agricultural endeavors such as taro production in valleys such as Hanalei, Hanapepe, and Waimea since the beginning of recorded history and more recently sugar plantations such as on the west side of the island.

This project will protect and allow for the recovery of natural communities and their constituent native species within the enclosure. The biological diversity and cultural integrity of this area, as it exists today, will be preserved within the fenced area. Contained within the project area are several montane vegetative classifications including Bog Vegetation, Native Wet Cliff Vegetation, Closed ‘Ōhi‘a Forest, Native Wet Forest and Shrubland, ‘Ōhi‘a-‘Ōlapa Forest, and Open ‘Ōhi‘a Forest according to the Hawai‘i

GAP Landcover Analysis. Critical Habitat for 6 taxa of endangered plants also exists within the project area (Critical Habitat, 2004) and two other endangered species have been documented within the project area during botanical surveys (See Table-1). The proposed fence area contains 202 native plant taxa, 66 of which are found only on Kauai (Wood, 2007). In addition the forest in this area supports a diverse assemblage of native forest birds and ground-nesting seabirds. Some of these birds are federally listed as endangered species or candidates for listing as endangered species. Common forest bird species include Kaua'i 'Amakihi (*Hemignathus kauaiensis*), 'Anianiau (*Magumma parva*), 'Apapane (*Himatione sanguinea*), 'I'iwi (*Vestiaria coccinea*), and 'Elepaio (*Chasiempis sandwichensis*). Seabirds include the endangered Hawaiian Petrel (*Pterodroma sandwichensis*) and the threatened Newell Shearwater (*Puffinus newelli*).

B. Major Negative Impacts

No specific major negative impacts have been identified. Discussed below are potential impacts of limited scope to the project area.

There will be some short-term negative impact on the environment associated with the fence construction. Disturbance of vegetation and soil will occur in the immediate vicinity of the planned fence line because the work entails clearing the corridor of vegetation. Plants will be pruned to several inches above ground or if necessary removed along the entire corridor up to a width of 10 ft. This will involve the removal of common native plants, but no rare or sensitive species (the fence alignment will avoid rare plant occurrences). The 3 weatherport and 2 radio repeater foot prints are very small and will not likely have a lasting impact. There will be some trampling of the vegetation during installation. Solar panels will be used to power the repeater stations (small wind turbines have been eliminated due to possible lasting negative impacts to birds and bats).

There will be a temporarily increased potential for accidental introduction of non-native plants along the fence corridor due to the possibility of seed transport on shoes, clothes, packs, and/or fencing material and equipment from off site. Disturbance of the ground surface along the fence line will also lead to conditions which might favor colonizing weed species that already exist within the project area. It should be noted that the impacts observed from the existing bog fences for over 10 years has been negligible. Incidental weed introductions along the fence corridor will be controlled during routine fence maintenance.

The proposed protective fence will enclose approximately 2,000 ac of the highest quality watershed and endemic forests on the island. Of this 2,000 ac, 595 ac lie within the Alaka'i Wilderness Preserve. The proposed feral pig and goat removal is consistent with the stated purpose of the Wilderness Preserve designation. This portion of the fenced area is also designated as Hunting Unit E and will remain as such. Therefore, there will be no reduction in public hunting area and gates will be provided for pig and goat hunters to access the fenced area. Although pig and goat populations will be intensively reduced from within the fenced area the impact on available public hunting area will be negligible. Furthermore, the project will have a negligible impact on existing pig

populations outside of the fenced area. Given the amount of existing pig habitat on the island, which likely includes a substantial portion of native and non-native forests, shrublands, and grasslands on both public and private lands (283,044 ac; source HIGAP land cover data), the removal of 2,000 ac of pig habitat would be insignificant.

The biological surveys found no nesting colonies for ground nesting sea birds along either side of the proposed protective fence alignment. Although no known flight ways intersect the fence alignment and the fence profile is only 48 inches in height there is still a possibility that the fence may in some way impact the sea birds and the Hawaiian hoary bat. (See Biological Survey, www.hawp.org.)

The fence will cross Koai'e Stream. This fence section is designed to prevent feral pig ingress while allowing stream flow and aquatic species to move freely in either direction. (*See Exhibit B: Fence Construction Samples, Stream Crossing Section*)

Although the project area is very remote there are significant cultural sites which will be enclosed within the fence in addition to culturally significant native plants and animals. These sites are Lake Wai'ale'ale and Ka'awakō Shrine. The construction of the protective fence will not significantly influence access to the area for cultural purposes. Within the surveyed fence alignment, several access gates will be located to accommodate access to the enclosed area. The protective fence will protect the site from degradation. Potential damage to the shrine and lake from hoofed animals such as goats and pigs will be reduced or eliminated. (*See Exhibits B & K: Examples of Fence Construction & Access map*)

V. PROPOSED MITIGATION MEASURES

A. Vegetation and Soil Disturbance

The fence and placement of weatherports and radio repeaters have been aligned and located to reduce the amount of native vegetation to be cut and to avoid harm to rare or endangered species. The weatherport and radio repeater designs have a small footprint, therefore keeping ground disturbance to a minimum.

Soil disturbance may be unavoidable, particularly during vegetation clearing, although clearing will not occur down to the soil level. Clearing at no wider than 10 ft would impact a maximum of 10 ac of the total 2,000 ac of the project area. After clearing, the fence material will be dropped by helicopter approximately every 300 ft along the corridor, and the fence mesh unrolled to lay flat on the ground. Workers will walk on the mesh as they install the fence, and then walk on the outside apron portion of the fence after it is erected. This will greatly reduce soil disturbance caused by the activity of fence construction. Water bars will be installed in areas with steep slopes. These bars will divert water from flowing directly down the fence line thus reducing erosion.

B. Weed Introductions

There will be a temporarily increased potential for accidental introduction of non-native plants along the fence corridor due to the possibility of seed transport on shoes, clothes, packs, and/or fencing material and equipment from off site.

Throughout the project and subsequent access, strict protocols will be used to: 1) clean and inspect all gear and supplies (fencing material, radio repeaters, weatherports, camp materials, and personnel gear) to prevent the introduction of alien species (seeds, plants, and insects). These protocols will be included in contracts with any contractors. 2) Monitor the fence and remove any weeds that become established or spread as a result of the disturbance during construction or maintenance of fence line. A schedule to monitor the fence and control incidental weed introduction will occur at regular intervals after construction and will be included in the management plan and implemented. Funding has been allocated for this action. 3) At the completion of construction and installation all rubbish and waste will be removed from work sites.

C. Reduction of Game Habitat

Because of the high quality and fragile nature of the native ecosystems located within the project area, the area has been designated as “A-4: Game Control (supervised)” by DOFAW’s DMG. Nearly 2,000 ac will be protected from feral pigs; approximately 595 ac lies on state land, representing just 2.75% of public hunting of unit-E and just 0.56% of total public hunting area on Kaua’i. The remaining 1,405 ac is located on A & B Hawai’i, Inc. private lands. The fenced area is not conducive to newborn piglets and therefore should not pose a threat to the reproduction cycle of the feral pigs. Farrowing nests are generally situated in open places and are therefore susceptible to flooding. Should a piglet be forced out of the nest early, direct exposure to the cold and rain would contribute to piglet mortality (Foley et al, 1971 cited from Diong, 1982). Piglets less than a month old are not able to thermoregulate and once in the open, would perish due to the cold, entrapment in mud and/or accidental abandonment (Myrcha & Jezierski, 1972 from Diong, 1982).

Gates are to be constructed along the protective fence to accommodate access to the area by hunters. As outlined and regulated by the State of Hawai’i as a Conservation District land area and Wilderness Preserve.

D. Ground Nesting Seabirds and Bats

The biological surveys found no nesting colonies for ground nesting sea birds along either side of the proposed protective fence alignment. Although no known flight ways intersect the fence alignment and the fence profile is only 48 inches in height there is still a possibility that the fence may in some way impact the sea birds and the Hawaiian hoary bat. There will be no barbed wire on any portion of the fence, thereby reducing any

possible impalement on the fence. In addition, we will use the most appropriate proven method to warn birds of the fence.

E. Streams

Mitigation measures are inherent to the stream crossing fence design. The mesh size of the fence will only restrict the movement of feral pigs and goats. Aquatic organisms may freely migrate in either direction within the stream.

F. Cultural Access

The project area is extremely remote. The construction of the protective fence will not impact access to the area for cultural purposes. Within the surveyed fence alignment, several access gates will be located to accommodate access to the enclosed area. These gates will be located to promote a more direct route to the project area and the cultural site, Lake Wa'iale'ale and Ka'awakō Shrine at Wai'ale'ale. Portions are regulated by the State of Hawai'i as a Conservation District land area and Wilderness Preserve. Most of the fenced area belongs to a private land owner, and is regulated by their right of entry protocols.

VI. ALTERNATIVES CONSIDERED

A. Alternative: No Action

This action effectively accepts the continued degradation of the Alaka‘i from existing threats of invasive weeds and feral pigs. This alternative is neither consistent with the landowners’ aim nor the objectives of the Kaua‘i Watershed Alliance members. No action is inconsistent with the sense of responsible stewardship for Kaua‘i’s natural resources. Conservation District Subzone P designation, as outlined in HAR §13-5-11 states, “The objective of this subzone is to protect valuable resources in designated areas”, therefore, the East Alaka‘i Protective Fence Project provides a means to carry out this directive. As intended in the purpose statement for the Alaka‘i Wilderness Preserve, HAR §13-1-3, “For the purposes of preserving, protecting, and conserving all manner of flora and fauna”, the no action alternative will result in far greater and more damaging (potentially irreversible) environmental impacts in this area. Therefore, this alternative of no action has not been selected.

VII. ANTICIPATED DETERMINATION

We conclude that the Alaka‘i Protective Fence Project, will not have any significant adverse impacts on the environment. Therefore, we anticipate a Finding of No Significant Impact (FONSI).

VIII. FINDINGS AND REASONS SUPPORTING THE DETERMINATION

The environmental impacts of the Alaka‘i Protective Fence Project have been evaluated in relation to the thirteen significance criteria listed in the Guidebook for the State Environmental Review Process. The criteria and the effects this project will have are listed:

1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.

The purpose of this project is to protect a portion of the Alaka‘i Plateau from damage by feral pigs. Rather than allowing potential destruction of natural and cultural resources, this project will enhance the protection of the project area.

2. Curtails the range of beneficial uses of the environment.

The East Alaka‘i Plateau contains intact montane wet forests, a diverse collection of endemic plants, and important habitat for native forest birds and ground nesting seabirds such as the Newell Shearwater and Hawaiian Petrel. The area functions as the primary watershed catchment and storage area for the island, supplying the headwaters to Wainiha, Lumaha‘i, Hanalei, Wailua, and Waimea Rivers. This project will strengthen

rather than curtail these functions. Possible educational, cultural, and scientific uses will be enhanced by the completion of the project.

3. Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revision thereof and amendments thereto, court decisions, or executive orders.

This project is consistent with Chapter 344 in that the aim is to preserve the natural resources "by safeguarding the State's unique natural environmental characteristics". Therefore, the protection of the watershed will, in effect, reduce the drain on nonrenewable resources as stated in the HRS and is in line with the state's long-term environmental policies.

4. Substantially affects the economic, social welfare, and cultural practices of the community or state.

The project will not impact either the economic or social welfare, or the cultural practices of the community or state due to the remoteness and rugged terrain of the project area.

5. Substantially affects public health.

The project will not affect public health. It is located in a remote portion of the Alaka'i Plateau. Any impacts to public health would likely be positive i.e., improved water quality, consistent supply of water quantity, reduced potential for destructive flooding during heavy rain events, reduced harmful bacteria levels, etc.

6. Involves substantial secondary impacts, such as population changes or effects on public facilities.

The remoteness and rugged terrain of the project area precludes any impact on population or public facilities.

7. Involves a substantial degradation of environmental quality.

The purpose of this project is to improve the quality of a unique Hawaiian ecosystem over time and protect its' inherent, high quality watershed. This project requires very limited cutting back of common native plants along the fence alignment and some short-term soil disturbance. However, this activity is necessary to protect the integrity of the ecosystem (approximately 2,000 acres) resulting in a net long-term benefit.

8. Is individually limited but has considerable effect upon environment or involves a commitment for larger actions.

The project supports ongoing and future management to benefit the project area but does not involve a commitment for larger actions. The protective fence project has a very small physical foot print of approximately 10 ac relative to the larger area of approximately 2,000 ac it is designed to protect. It will protect the watershed from

degradation by invasive feral pigs which numerous scientific studies have demonstrated to be destructive to native forests and watersheds. The exclusion of feral pigs from the project area will allow native vegetation to regenerate in degraded areas. This project, over time, may prevent a greater need for more expansive restorative actions in the future.

9. Substantially affects a rare, threatened, or endangered species or its habitat.

The project will have a beneficial effect on the rare, threatened and endangered species and the ecosystem that exist within the project area. A survey of the fence alignment by Ken Wood (biologist for the National Tropical Botanical Gardens) has determined the project will not adversely impact any rare, threatened or endangered species along the proposed fence. In addition, this project is consistent with the tasks outlined in the U.S. Fish and Wildlife Service's 2006 Revised Recovery Plan for Hawaiian Forest Birds; action number 2.2.101 (Reduce or eliminate the detrimental effects of feral pigs and goats on vegetation within Halehaha, Halepa'akai, and Koai'e drainages, Alaka'i Wilderness Preserve, Portions of TMK 4-1-4-001-003). It is consistent with the State of Hawai'i's Comprehensive Wildlife Conservation Strategy (CWCS). The intent of a CWCS is to create a dynamic vision for the future of wildlife conservation.

This project will also benefit the designated critical habitat for 6 listed plant species by enclosing them within the fence project area and managing threats to their habitat.

10. Detrimentially affect air or water quality or ambient noise levels.

Air or water quality will not be affected. Helicopters will transport construction materials to the project site. These flights will occur during normal work hours, in areas that already have sightseeing helicopter activity, and will not fly over residences. Thus, noise levels will be slightly elevated during the installation flights, but this impact will be minor and will occur only for a short time.

11. Affects or is likely to suffer damage by being located in an environmentally sensitive area such as flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, and estuary, freshwater, or coastal waters.

The project will not negatively affect an environmentally sensitive area nor suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, or geologically hazardous land. This project is located in the eastern Alaka'i Plateau in an environmentally sensitive area that includes freshwater streams, native montane wet forest, and rare bog ecosystems; however, the intent of the project is environmental protection of this habitat. The foot print of the protective fence, weatherports, and radio repeaters are very minimal, less than 10 acres. The best management practices are in place to prevent and minimize any anticipated short-term impacts and are not anticipated to result in long-term damage to any of the habitat.

12. Substantially affect scenic vistas and view planes in county or state plans or studies.

The project will not have any substantial effect on any scenic vistas or view planes. The project area is located in a remote portion of the eastern Alaka'i Plateau, the geography of which is only visible at great distances from a small number of lookouts in the Koke'e and Alaka'i region, weather permitting. From those vistas, a fence standing no more than 48 inches in height will not be seen.

13. Requires substantial energy consumption.

Energy consumption for this project will be of a short duration and not substantial. Direct energy requirements/consumption will be restricted to the fuel required for helicopter flights and fence construction.

IX. PERMITS REQUIRED

The project falls in a Conservation District Protective subzone P (Protective). Therefore the project requires a board permit from the Board of Land and Natural Resources, Department of Land and Natural Resources (Section 13-Conservation District).

X. EA PREPARATION

This draft Environmental Assessment is being prepared in consultation with the land owner(s) A & B Hawai'i, Inc. (McBryde Sugar Co.) and the State of Hawai'i. This document, and all supporting documents are available on the Hawai'i Association of Watershed Partnerships at www.hawp.org.

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Warner, Richard E., 1956 – 1969. *Ecological investigation on the Hawaiian pig* (1959); *Ecology of the Wild Pig* (1963, 1963); and *Feral Game Mammal Survey* (1969). State of Hawaii, Division of Fish and Game, Project # W-r-R10; Project # W-5-R13; Project # W-5-R14; and Project # W-5-R-20.

Wood, K. R., 2007. *Notes on the Flora of Wainiha and Alaka'i, Kaua'i, Hawai'i*, National Tropical Botanical Gardens, Kalaheo, HI, p 8, pp. 29-57. <http://hawp.org/file-list.php?SubSite=03>.

Alakai Protective Fence

Project Location



Examples of Fence Construction

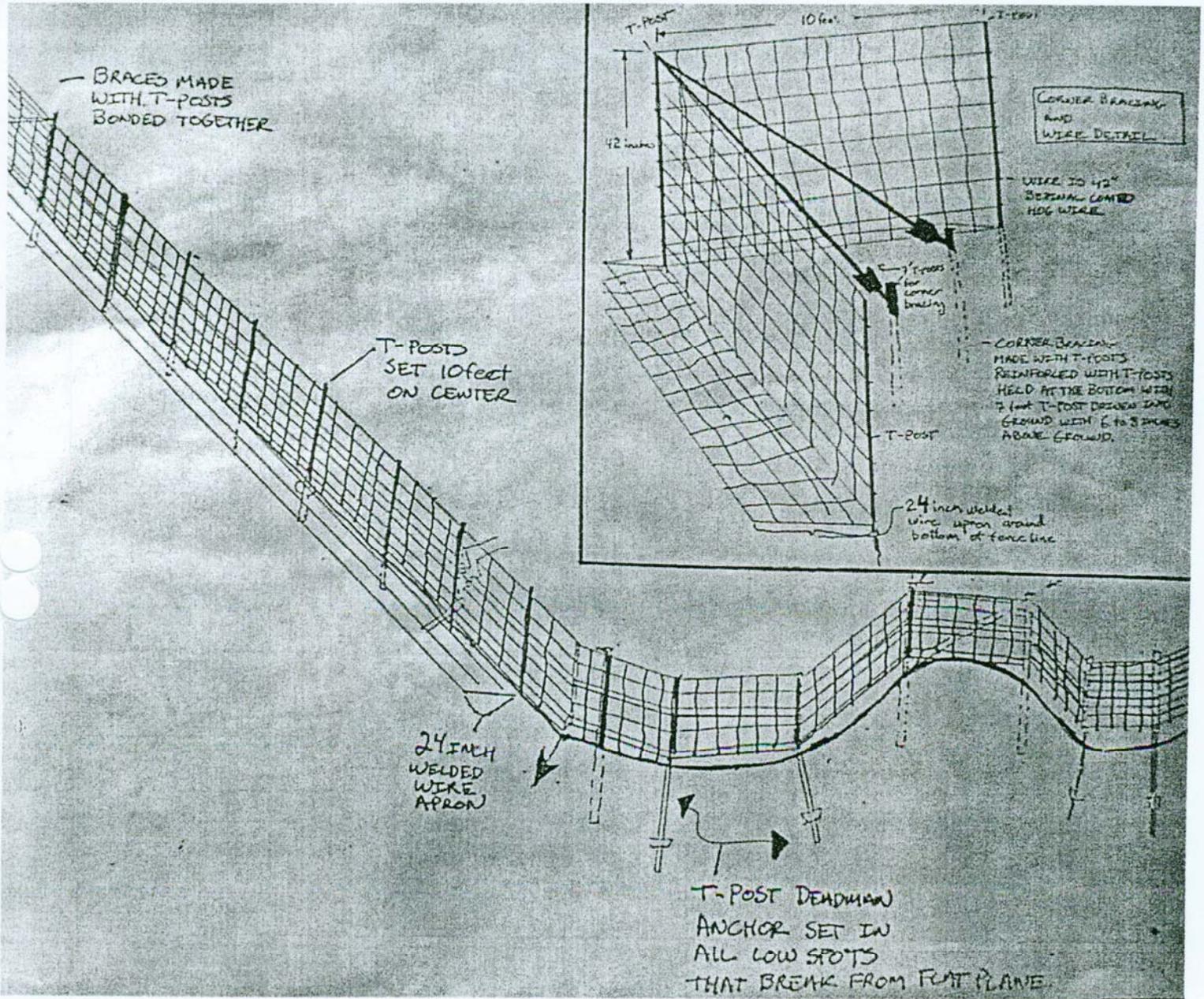


The fence line encloses Kanaele Bog & excludes feral pigs. Step-over gates provide foot access.

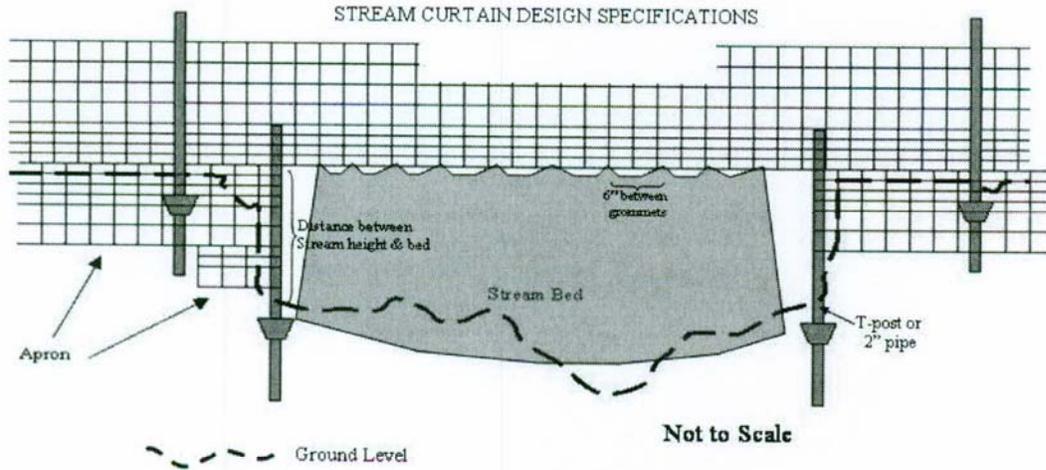


The mesh is secured tightly to the ground every four feet with t-posts and anchor pins. Pigs cannot squeeze underneath.

FENCE DESIGN DETAILS



Stream Crossing Section



Curtain Length = (Distance between streambed & stream height at each bank) + (width of the stream) + (24")

NOTE: 24" is added to allow for an addition foot above stream height on both sides of the stream to ensure that the top of the curtain will remain above the highest potential water flow.

Curtain Width = $\frac{\text{Distance between streambed \& stream height at each bank} + 24"}{2} \times 3$

Exhibit C

Communications Diagram
Radio Repeaters and Solar Panels



Radio Repeaters and Solar Panels

Weatherport Diagram



Weatherport Platform



Weatherport Tent

Melissa Fisher

From: Trae Menard
Sent: Monday, October 06, 2008 10:06 AM
To: Melissa Fisher
Subject: FW: Advanced Copy East Alaka'i Draft EA

From: Pauline Roberts [mailto:pauliner@hawaii.edu]
Sent: Monday, September 22, 2008 3:50 PM
To: Trae Menard
Cc: David.L.Leonard@hawaii.gov; Scott.Fretz@hawaii.gov
Subject: FW: Advanced Copy East Alaka'i Draft EA

Hi Trae,

Scott sent around a draft of the fence EA, congrats on the progress! I had a quick read of it, and one thing stuck out to me – Puaiohi of course, no big surprise there. Mostly it's that Puaiohi aren't mentioned as inhabiting the area within the fence, but I'd bet a decent sum of money that there are some in there.

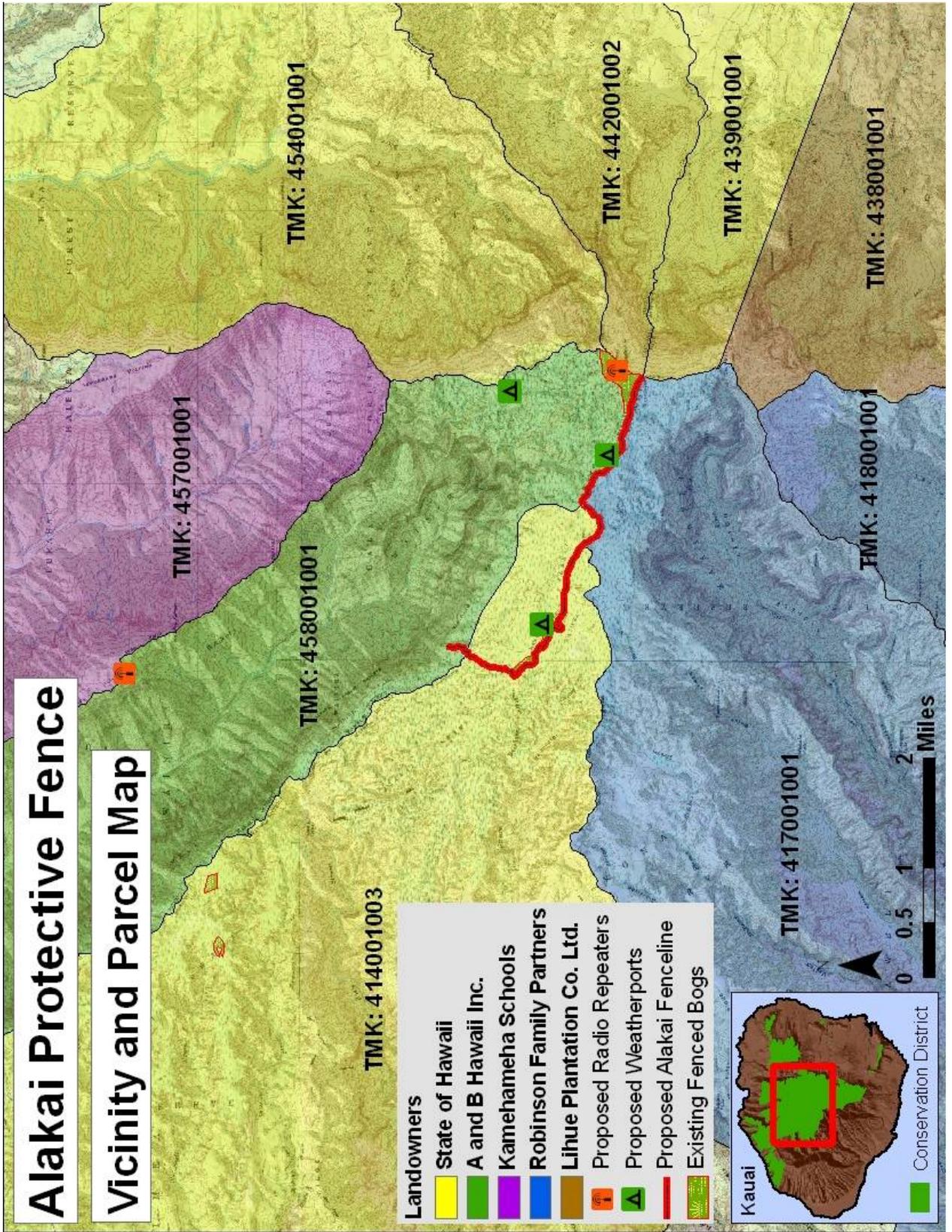
When you asked me about the forest birds likely within the fence long ago (at least a year ago), I didn't mention them, but I actually suspect there are at least a few, mostly along the tops of the pali edges. I now believe more strongly that they are probably present. No one that I know of has done surveys of that sort of area for Puaiohi (Tom Telfer and John Sincock are the most likely recent possibilities), but the more I learn about the species, the more it seems that pali edges have enough in common with steep stream corridors to be another part of their habitat. We know they are along some pali edges in other areas of the Alaka'i, away from streams. To be on the safe side, I would suggest adding Puaiohi to the forest bird species mentioned in the proposal. I see that Puaiohi is listed in the table, but not in the 3 text sections where the extant forest birds are listed. And, unlike the other forest birds, Puaiohi (*Myadestes palmeri*) is federally listed. I am all for the fence, and is mentioned in the text, a fence is part of the forest birds recovery plan.

The only other thing that I noticed was that there was no mention of building lua at the weatherport sites, and if they are built, or any sort of regular location used for human wastes, there should be a protocol in place to prevent mosquitoes from breeding in it or in any water that seeps out. The *Culex* mosquitoes that are the main vectors of malaria and pox up there specialize in breeding in nutrient-rich water, so it's important to use ag lime and/or layers of dirt and/or bacillus thuringiensis pellets to keep them from profiting off of human presence. I know the fence area is high, but we get mosquitoes at Halepa'akai sometimes, so they are definitely capable of living at elevations close to the fenceline.

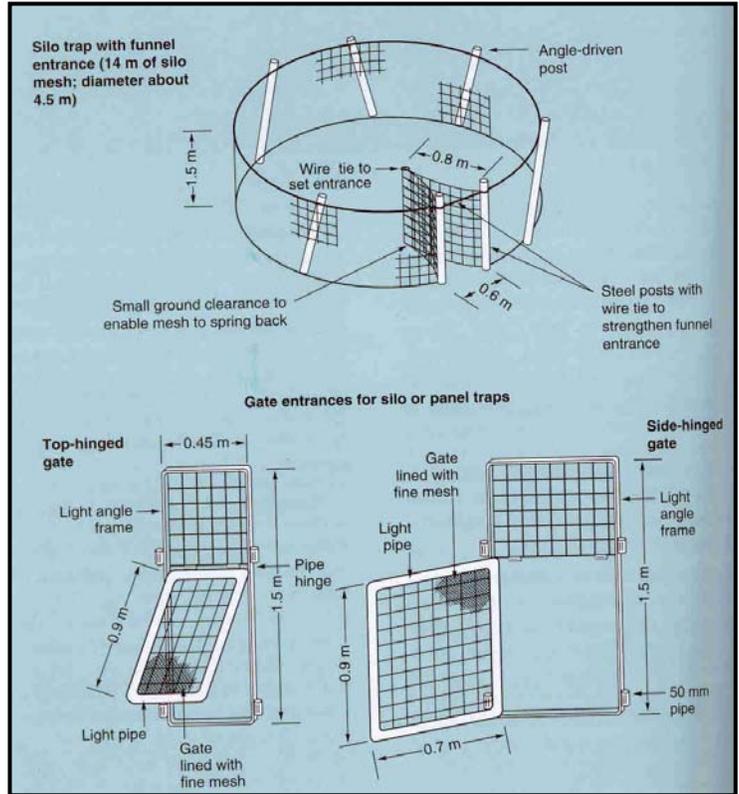
Hope all's well, and let me know if you want any more info.

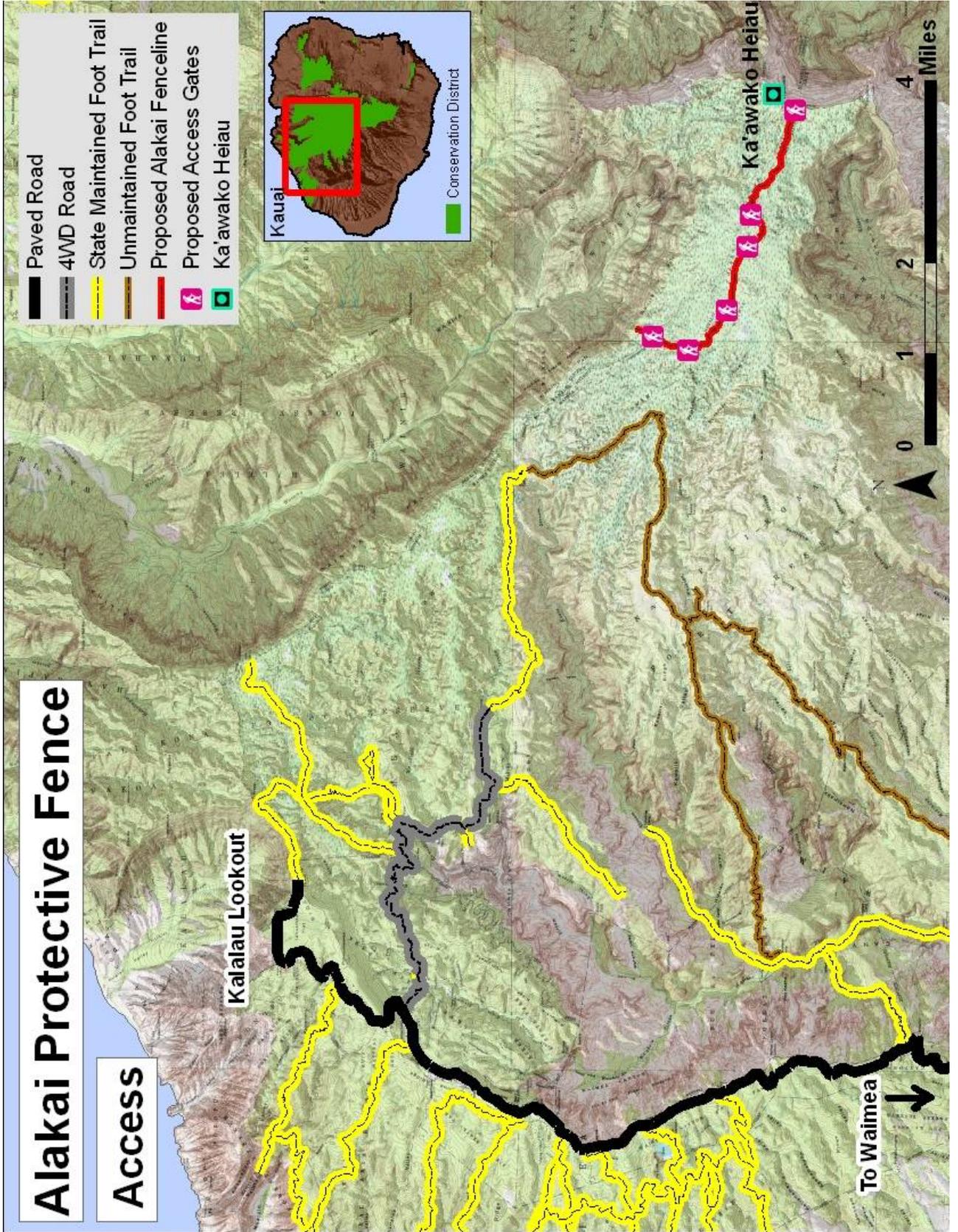
Best,
Pauline

10/6/2008



Silo Trap and Feeder





East Alakai Protective Fence
Agencies Parties Prescoping Distribution List

First Name	Last Name	Organization Address	Address	City	State	Zip	Relationship	Status	
Imai	Aiu	Planning Dept Kauai County	4444 Rice St	Lihue	HI	96766	County Agency	R	
Bill "Kaipo"	Asing	Kauai County Council	4396 Rice St. Suite 206	Lihue	HI	96766	Elected Official	R	
Roselle	Bailey		485 Liihua Place	Waiuku	HI	96793	Local Resident	R	
Bryan	Baptiste	County of Kauai	4444 Rice St.	Lihue	HI	96766	Elected Official	R	
Gary	Blaich	Kauai Public Land Trust	P.O. Box 1434	Kilauea	HI	96754	Local Business	R	
David	Burney	National Tropical Botanical Garden	3530 Papalina Rd.	Kalaheo	HI	96741	Recommended	R	
Katie	Cassel	Hui O Laka (KRCP)	P.O. Box 100	Kekaha	HI	96752	Local Business	R	
Margaret	Clark	Kauai Native Plant Society	P.O. Box 11	Lawai	HI	96765	Local Agency	R	
Michelle	Clark		5238 Haleiilo Rd.	Kapaa	HI	96746	Local Resident	R	
Paul	Conroy	DLNR - Division of Forestry & Wildlife	P.O. Box 621	Honolulu	HI	96809	State Agency	R	
Ian	Costa	County of Kaua'i Planning Dept.	4444 Rice St. Suite 473	Lihue	HI	96766	County Agency	M	
Ellen	Coulombe		3764 Kikee Road	Kalaheo	HI	96741	Local Resident	R	
Mike	DeMotta		P.O. Box 723	Hanapepe	HI	96716	Local Resident	R	
Larry	Dill	Princeville Corp.	P.O. Box 223040	Princeville	HI	96722	Local Agency	R	
Kaipo	Duncan	Department of Hawaiian Home Lands	P.O. Box 1879	Honolulu	HI	96805	State Agency	R	
Holly	Dyre	Namahana	200 Chambers St Apt 5N	New York	NY	10007	Local Resident	R	
Marsha	Erickson	Koikee Natural History Museum	P.O. Box 100	Kekaha	HI	96752	Local Business	R	
Linda	Faye-Collins	Kauai Island Utilities Cooperative	4463 Pahe'e St, Suite 1	Lihue	HI	96766	Local Business	R	
Kalani	Fronza	Kamehameha Schools	567 South King Street Suite 200	Honolulu	HI	96813	Educational Institution	R	
Max	Graham		4334 Rice Street	Lihue	HI	96766	Local Resident	R	
Howard	Greene	Gay & Robinson, Inc.	P.O. Box 156	Kaunakani	HI	96747	Local Land Owner	R	
Keren	Gundersen	Kauai Invasive Species Committee	P.O. Box 1998	Lihue	HI	96766	Local Agency	R	
Wayne	Harada Sr.		2358 Kamalii St.	Kilauea	HI	96754	Local Resident	R	
Laurie	Ho		3083 Akahi St #204	Lihue	HI	96766	Local Resident	R	
Gary	Hooser	State Senate	415 S. Beretania St. Rm #207	Honolulu	HI	96813	Elected Official	R	
Mark	Hubbard	Kauai Island Burial Council	2420 Kanio	Lihue	HI	96766	Local Agency	R	
Ted	Inouye	East Kaua'i Soil & Water Conservation	P.O. Box 278	Hanamaulu	HI	96715	Local Agency	R	
Wayne	Jacintho		4803 Puuwai Rd.	Kalaheo	HI	96741	Local Resident	R	
Kanani	Kagawa	Community Resource Coordinator	3100 Kuhio Hwy. Ste. C4	Lihue	HI	96766	Local Agency	R	
Janet	Kahalekomo		P.O. Box 652	Hanapepe	HI	96714	Local Resident	R	
Thomas	Kaiakapu	DLNR - Division of Forestry & Wildlife	3060 Eiwa St. Room 306	Lihue	HI	96766	State Agency	M	
Ezra	Kanoho		2755 Kepa	Lihue	HI	96766	Local Resident	R	
Aletha	Kaohi	West Kaua'i Visitor Center	P.O. Box 1000	Waimea	HI	96796	Local Business	R	
Wayne	Katayama	Kauai Coffee & Agri Business Dev Board	P.O. Box 530	Kalaheo	HI	96741	Local Agency	R	
Chris	Kaui		P.O. Box 413	Koloa	HI	96756	Local Resident	R	
Sabra	Kauka	Garden Isle RC & D	P.O. Box 3870	Lihue	HI	96766	Local Agency	R	
Kehaulani	Kekua	Kauai Heritage Center	4-941 Kuhio Hwy	Kapaa	HI	96746	Local Business	R	
Joseph	Kona		P.O. Box 1998	Lihue	HI	96766	Local Resident	R	
Alvin	Kyono	DLNR - Division of Forestry & Wildlife	3060 Eiwa Street	Lihue	HI	96766	State Agency	M	
Sam	Lemmo	DLNR - Office of Conservation & Coastal Land	P.O. Box 621	Honolulu	HI	96809	State Agency	M	
Roland	Licona	Department of Hawaiian Home Lands	3060 Eiwa St. #203	Lihue	HI	96766	State Agency	M	
Paul	Massey	Kauai Native Plant Society	P.O. Box 2078	Kapaa	HI	96746	Local Agency	R	

Exhibit L

Key

M = Mandatory

R = Recommended

O = Optional

East Alakai Protective Fence
Agencies Parties Prescoping Distribution List

First Name	Last Name	Organization Address	Address	City	State	Zip	Relationship	Status	
Christen	Mitchell	DLNR - Forestry & Wildlife	1151 Punchbowl St. Room 325	Honolulu	HI	96813	State Agency	M	
Aulii	Mitchell	Cultural Surveys Hawaii Inc.	P.O. Box 1114	Kailua	HI	96734	Local Business	M	
Hermia	Morita	State House of Representatives	415 S. Beretania St.	Honolulu	HI	96813	Elected Official	R	
Leland	Nishek	Kauai Landscaping, Inc.	3-1550 Kaumualii Hwy.	Lihue	HI	96766	Local Business	R	
Christine	Ogura	DLNR - Forestry & Wildlife	1151 Punchbowl St. Room 325	Honolulu	HI	96813	Accepting Authority	M	
Thomas	Oi	DLNR - Land Division	3060 Eiwa Street	Lihue	HI	96766	State Agency	M	
Jerry	Ornellas	East Kaua'i Water Users Cooperative	P.O. Box 800	Kapaa	HI	96746	Local Agency	R	
Roy	Oyama	Kaua'i Farm Bureau	P.O. Box 3895	Lihue	HI	96766	Local Agency	R	
Benton	Pang	US Fish & Wildlife	300 Ala Moana Blvd. Rm 3-122	Honolulu	HI	96850	Federal Agency	M	
John	Plews		3066 Wailani Road	Honolulu	HI	96813	Local Resident	R	
David	Pratt		2741 Nokekula Circle	Lihue	HI	96766	Local Resident	R	
Lex	Riggle	Natural Resource Conservation Service	4334 Rice Street Suite 103	Lihue	HI	96766	Federal Agency	O	
Jeff	Rivera	Kauai Ranch LLC	P.O. Box 510163	Kealia	HI	96751	Local Resident	R	
Roland	Sagum	State House of Representatives	415 S. Beretania St. Rm. #426	Honolulu	HI	96813	Elected Official	R	
Patsy	Sheehan	c/o Hanalei Land Company	P.O. Box 81	Hanalei	HI	96714	Local Business	R	
Tom	Shigemoto	A & B Properties Inc.	P.O. Box 430	Koloa	HI	96756	Land Manager	R	
Allan	Smith	Grove Farm Land Corp.	3-1850 Kaumualii Hwy.	Lihue	HI	96766	Local Land Owner	R	
Gary	Smith	Open Space Committee	P.O. Box 750	Lawai	HI	96765	Local Agency	R	
Steve	Smith		P.O. Box 351	Lawai	HI	96765	Local Resident	R	
Wayne	Souza	DLNR - State Parks Division	3060 Eiwa St. Room 306	Lihue	HI	96766	State Agency	R	
Linda	Sproat	c/o The Waipa Foundation	P.O. Box 1189	Hanalei	HI	96714	Local Agency	R	
Stacey	Sproat-Beck	Waipa Foundation	P.O. Box 1189	Hanalei	HI	96714	Local Agency	R	
Molly	Summers	Kauai Community College	3-1901 Kaumualii Hwy.	Lihue	HI	96766	Educational Institution	R	
Neil	Tagawa	Grove Farm Land Corp.	3-1850 Kaumualii Hwy.	Lihue	HI	96766	Local Land Owner	R	
Natalia	Tangalin	National Tropical Botanical Garden	3530 Papalina Rd.	Kalaheo	HI	96741	Local Agency	R	
Peter	Tausend	Pioneer Hi-Bred Research	P.O. Box 609	Waimea	HI	96796	Local Agency	R	
Jan	TenBruggencate	Honolulu Advertiser - Kauai Bureau	P.O. Box 524	Honolulu	HI	96802	Local News Media	R	
Laura	Thielen	DLNR Historic Preservation Division	601 Kamokila Blvd Room 555	Honolulu	HI	967070	State Agency	R	
Jeyan	Thirugnanam	DLNR - Office of Environmental Quality Control	P.O. Box 3378	Honolulu	HI	96801	State Agency	M	
Rick	Tsuchiya	Kauai Historic Preservation Review Commission	4444 Rice St.	Lihue	HI	96766	Local Agency	R	
Wynne	Ushibome	Department of Water	P.O. Box 1706	Lihue	HI	96766	Local Business	R	
Kawika	Viets	Kauai Native Plant Society	P.O. Box 907	Kapaa	HI	96746	Local Agency	R	
Presley	Wann		161 Lihau St	Kapaa	HI	96746	Local Resident	R	
Chipper	Wichman	National Tropical Botanical Garden	3530 Papalina Rd.	Kalaheo	HI	96714	Local Agency	R	
Gaylord	Wilcox		111 Royal Circle	Honolulu	HI	96816	Local Resident	R	
Ken	Wood		P.O. Box 745	Eleele	HI	96705	Local Resident	R	
Jesse	Yorck	Office of Hawaiian Affairs	711 Kapiolani Boulevard, Suite 1250	Honolulu	HI	96813	State Agency	R	
		Department of Health	3040 Umi Street	Lihue	HI	96766	State Agency	R	
		Hanapepe Public Library	P.O. Box B	Hanapepe	HI	96716	State Library	O	Exhibit L
		Kapaa Public Library	1464 Kuhio Hwy	Kapaa	HI	96746	State Library	O	
		Koloa Public Library	P.O. Box 9	Koloa	HI	96756	State Library	O	
		Lihue Public Library	4344 Hardy St.	Lihue	HI	96766	State Library - Nearest	M	
		McBryde Sugar Company, LTD	P.O. Box 8	Eleele	HI	96705	Land Owner	R	
		Office of Hawaiian Affairs	3-3100 Kuhio Hwy. C4	Lihue	HI	96766	Local Agency	R	
		Princeville Library	4343 Emmalani Dr.	Princeville	HI	96722	State Library	O	
		Waimea Public Library	P.O. Box 397	Waimea	HI	96796	State Library	O	

Key

M = Mandatory

R = Recommended

O = Optional

Key
M = Mandatory
R = Recommended
O = Optional



The Nature Conservancy
Kaua'i Program Office
4180 Rice Street, Suite
102B
Lihu'e, Hawai'i 96766

tel (808) 246-0543
fax (808) 245-1642

www.nature.org/Hawai'i

Exhibit M

April 1, 2008

TO: INTERESTED INDIVIDUALS, ORGANIZATIONS, AND AGENCIES

Re: Review of the DEA Proposed East Alaka'i Protective Fence Project, Kaua'i, Hawai'i

The Nature Conservancy (TNC), for the benefit of the Kaua'i Watershed Alliance, proposes to construct a protective hog wire fence, to assemble base camps, and install radio repeaters in a conservation district use area of the Alaka'i in Kaua'i, Hawai'i; and therefore will apply for a Conservation District Use Permit (CDUP). The purpose of this letter is to request your participation, by commenting on the project, and the Draft Environmental Assessment (DEA).

The objective of this project is to protect and preserve approximately 2,006 acres of the unique native ecosystem and watershed as well as the rare and endangered species it supports. The proposed protective fence will be approximately 7,208 meters (4.48 miles) in length and will enclose approximately 594 ac of the Alaka'i wilderness preserve (State of Hawai'i) and approximately 1,412 ac of McBryde Sugar, Co. (Alexander & Baldwin). A map of the proposed project area is enclosed.

In an effort to save paper, the DEA will be available on the internet at the Hawai'i Association of Watershed Partnerships webpage www.hawp.org. Hard copies are available at all Kaua'i Public Libraries and by request. The DEA also refers to a biological, archaeological, and cultural survey; management plan; maps; and photos.

Please provide your comments by **April 22, 2008**. Some comments may become part of the published DEA; and therefore could become public record. Comments must have a signature page that includes your company letterhead (if applicable) and contact information (name, address, and phone number). You may fax your comments to the (808) 245-1642 or mail to: The Nature Conservancy, Alaka'i Protective Fence Project, 4180 Rice Street, Suite 102 B, Lihu'e, HI 96766.

Should you have any questions, please contact me, Allan Rietow, at arietow@tnc.org or by phone at (808) 639-7544. Thank you very much for your cooperation and for sharing your knowledge.

Sincerely,

Allan Rietow
Kaua'i Program Field Representative

Enclosure(s): Map of Proposed Alakai Protective Fence Project Area

CC: Christine Ogura, DOFAW Watershed Partnership Planner
Thomas Shigemoto, Alexander & Baldwin Property Manager

Exhibit M

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF FORESTRY AND WILDLIFE
KAUAI DISTRICT
3060 EIWA STREET, ROOM 306
LIHUE, KAUAI, HAWAII 96766

May 21, 2008

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

Mr. Allan Rietow
Kauai Program Field Representative
TNC-Kauai Program
4180 Rice Street, Suite 102 B
Lihue, HI. 96766

Dear Mr. Allan Rietow,

We have reviewed the Draft Environment Assessment for the Proposed East Alaka'i Protective Fence Project on the island of Kauai, Hawaii and provide the following comments:

1. The use of 46 inch wind turbines installed on 15-20 feet poles and anchored with guide wires may pose a negative impact to listed seabirds such as the endangered Hawaiian petrel (*Pterodroma phaeopygia*) and the threatened Newell's shearwater (*Puffinus newelli*) that transit the area at night from their mountain nesting grounds to the sea. There is a probability that seabirds may collide into the wind turbines and guide wires. Therefore, we recommend that only solar panels be used.
2. The location(s) of the two base camps should be indicated on the proposed project map(s).

Thank you for the opportunity to comment on the draft EA. We look forward to working together on the project. Mahalo nui loa.

Sincerely,

Thomas Ka'iakapu
Kauai Wildlife Manager

Cc: Kauai DOFAW

June 24, 2008

Department of Land and Natural Resources
Division of Forestry and Wildlife
3060 Eiwa Street, Room 306
Lihue, Hawaii 96766

Aloha e Thomas Ka'iakapu,

RE: East Alaka'i Protective Fence Project, Island of Kauai
Response to the Division of Forestry and Wildlife letter dated: May 21, 2008

Thank you for your letter and your review of the proposed project.

Concerning your comments:

- As per your recommendation, we will not be using wind turbines. We will be using only solar panels to power the radio repeaters. We are also concerned about the listed seabirds welfare. Thank you.
- Once the base camps are precisely located their location will be placed on the proposed project map(s).

Please contact us if you have any additional questions or concerns. Mahalo for your support.

Sincerely,



Allan Rietow
Field Representative
The Nature Conservancy

Exhibit M



NATIONAL TROPICAL BOTANICAL GARDEN
Chartered by Congress to Create a National Resource in Conservation, Research, and Education

April 20, 2008

✓ Allan Rietow
The Nature Conservancy
Kauai Program Office
4180 Rice Street
Lihue, HI 96766

Aloha Allan,

Thank you for the giving me the opportunity to review The Nature Conservancy's draft Environmental Assessment for the Proposed Alakai Protective Fence Project. I have found it to be a well thought out document that details a project that is vitally important to the well-being of Kauai's watershed.

The document addresses nearly all concerns I have, particularly the accidental introduction of new weed and insect species. Mitigation for this is expressed on page 13, paragraph B. I think the document could be strengthened if more details were given on what the protocols for equipment and worker gear inspections will be. Then, simply mentioning regular post-installation inspections for possible weed introductions would acknowledge the organizations commitment for the long term.

The other concern I have is the fence height of 48 inches. The document does state that pig control is the primary reason for erecting this fence. Deer are becoming more widespread on Kauai and a fence that would prevent them from getting all the way to the summit is also worth considering.

It has been a pleasure reading through this document and if there is anything I can do to assist you further please do not hesitate to contact me.

Mahalo,

Michael J. De Motta
Assistant Director of Living Collections and Horticulture
mdemotta@ntbg.org

Exhibit M

June 24, 2008

National Tropical Botanical Garden
3530 Papalina Road
Kalaheo, HI 96741

Aloha e Michael,

RE: East Alaka'i Protective Fence Project, Island of Kauai
Response your letter dated: April 20, 2008

Thank you for your letter and your review of the proposed project. We are grateful for your support and believe that this project will have a positive impact on preserving our watershed, native plants, and cultural resources.

Thank you for your thoughtful suggestions.

We will strengthen the details of the protocols for equipment and worker gear inspections for what goes up into these remote areas. We have a very strict protocol in place for our own field staff and our fence contract for the contractor chosen to construct the fence includes a very detailed protocol to prevent possible new weed introductions.

Yes, the fence is primarily designed to keep pigs out and give us the opportunity to remove the pig and goat populations. Goats will be able to access the protected area from the natural barriers regardless. However, goat populations are easier to control. We are not considering a deer proof fence for this project because of the following reasons: the cost, the lack of deer sign observed, and the liability of the additional four feet of fence height on seabird flights in the area.

Please contact us if you have any additional questions or concerns. Mahalo for your support.

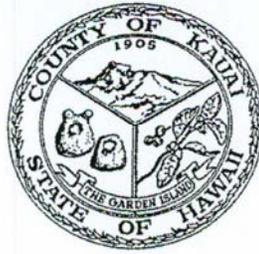
Sincerely,



Allan Rietow
Field Representative
The Nature Conservancy

Exhibit M

BRYAN J. BAPTISTE
MAYOR



IAN K. COSTA
DIRECTOR OF PLANNING

GARY K. HEU
ADMINISTRATIVE ASSISTANT

IMAIKALANI P. AIU
DEPUTY DIRECTOR OF PLANNING

COUNTY OF KAUA'I
PLANNING DEPARTMENT
4444 RICE STREET
KAPULE BUILDING, SUITE A473
LIHU'E, KAUA'I, HAWAII 96766-1326

TELEPHONE: (808) 241-6677 FAX: (808) 241-6699

✓
April 21, 2008

Nature Conservancy
Attn: Allen Reitow

SUBJECT: East Alaka'i Protective Fence Project

Dear Allen

The proposed fencing project falls outside of our area of jurisdiction and expertise as our planning, including conservation efforts, is generally for management and well being of inhabited areas. However many of our planning documents, including the CZO and General Plan, acknowledge the unique biological conditions of this island and the importance of protecting our ecological resources. As such, The County of Kauai Planning Department is supportive of conservation projects such as this that protect and improve the watershed, and protect the unique biology of these islands.

Mahalo

Ian K. Costa

Director, Planning Department

Exhibit M

June 24, 2008

County of Kaua'i
Planning Department
4444 Rice Street, Suite A473
Lihue, Hawaii 96766

Aloha e Ian Costa,

RE: East Alaka'i Protective Fence Project, Island of Kauai
Response to the Planning Department letter dated: April 21, 2008

Thank you for your letter and your review of the proposed project. We are grateful for your support and believe that this project will have a positive impact on preserving our watershed, native plants, and cultural resources. Similar projects have been completed on all of the other major Hawaiian islands to date.

Please contact us if you have any additional questions or concerns. Mahalo for your support.

Sincerely,



Allan Rietow
Field Representative
The Nature Conservancy



United States Department of the Interior



FISH AND WILDLIFE SERVICE
 Pacific Islands Fish and Wildlife Office
 300 Ala Moana Boulevard, Room 3-122, Box 50088
 Honolulu, Hawaii 96850

MAY 9 2008

In Reply Refer To:
 2008-TA-0178

Mr. Allan Rietow
 The Nature Conservancy
 Alakai Protective Fence Project
 4180 Rice Street, Suite 102 B
 Lihue, Hawaii 96766

RECEIVED MAY 12 2008

Subject: Comments on the Draft Environmental Assessment for the Proposed East Alakai Protective Fence Project, Kauai, Hawaii

Dear Mr. Rietow:

Thank you for the opportunity to comment on the draft Environmental Assessment (EA) for the East Alakai Protective Fence Project. The objective of the proposed 7.2-kilometer fence is to protect approximately 2,000 acres of native ecosystem and watershed. Only hand-operated tools will be used to clear vegetation for the construction of the fence with a maximum corridor width of 10 feet (ft). The fence will be constructed of 48-inch hog wire, with a hog wire apron and band of barbed wire at the base. In addition to the fence, solar and wind-powered radio repeaters will be placed throughout the project area. The wind towers will be approximately 15 ft in height. Weather port shelters will also be built in the project area.

We recommend the following information be incorporated into the final EA to minimize potential impacts to federally listed threatened and endangered species, and designated critical habitat.

- The EA references a biological survey report. However, the report addressed only plant species. We recommend a biological survey of the proposed fence line and right-of-way that includes efforts to locate nesting burrows of listed seabirds, the endangered Hawaiian petrel (*Pterodroma sandwichensis*) and the threatened Newell's shearwater (*Puffinus auricularis newelli*). Surveys for active burrows should be conducted between June and October by a biologist knowledgeable of seabird nesting ecology. If burrows are found, every effort should be made to assess the boundaries of the seabird colony and include it within the fenced area. If seabirds are found in the vicinity, then avoid fencing during the endangered seabird nesting season (May through November).

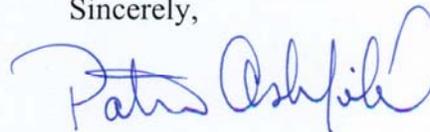
Mr. Alan Rietow

2

- To minimize potential collision impacts to listed seabirds, we recommend increasing the visibility of the fence by weaving one-inch electric fence polytape through the top row of wire areas where the fence is the tallest structure. This measure was utilized within a seabird colony on Lanai and to date has proven very successful.
- To avoid impacts to the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), no woody plants suitable for bat roosting should be removed or trimmed during the bat birthing and pup rearing season (April through August) and barbed wire should not be used in as a top strand in your final fence design. Dead Hawaiian hoary bats have been observed impaled on fences with strands of barbed wire. We concur barbed wire at the base of the fence will not harm foraging Hawaiian hoary bats.
- The proposed repeaters will utilize small (15-foot) wind towers as a source of power. The aforementioned listed seabirds are known to collide with objects protruding above the tree canopy. We recommend auditory and visual surveys for listed seabirds be conducted by a seabird biologist to ensure these towers are not sited near active burrows or a nesting colony. In order to increase the visibility of the towers at night, we recommend they be painted white.

We anticipate the fence will provide an overall benefit to native species and watershed protection, and we commend you for your efforts. The guidance above is to assist you in developing your project so that impacts to listed species are avoided and minimized. If, as project planning progresses, you determine the project may adversely impact federally listed species or critical habitats, please contact our office for further assistance. If you have questions regarding these comments, please contact Megan Laut, Fish and Wildlife Biologist, Consultation and Technical Assistance Program (phone: 808-792-9400, fax: 808-792-9581).

Sincerely,



for Patrick Leonard
Field Supervisor

June 19, 2008

U.S. Fish and Wildlife Office
300 Ala Moana Blvd., Room 3-122
Box 50088
Honolulu, Hawaii 96850

Aloha e Patrick Leonard,

RE: East Alakai Protective Fence Project, Island of Kauai
Response to the Fish and Wildlife Service letter dated: May 9, 2008

Thank you for your letter and your review of the proposed project. We also thank you for your support of this important project and for your suggestions.

In regards to your recommendations:

1. We will survey the proposed fence line which will include efforts to locate nesting burrows of these listed seabirds. The survey will be conducted between June and October as you request. If burrows or colonies are found we will attempt to include them within the fenced area.
2. As you recommend, we will increase the visibility of the fence.
3. There will be no barbed wire included in the construction of the protective fence, no top strand or bottom strand.
4. We have removed the use of wind turbines from our plans. There fore there will be no towers or support cables. We are concerned for the welfare of the listed seabirds. We are using only solar panels.

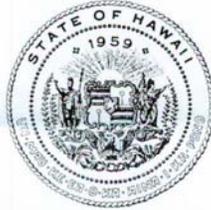
Please contact us if you have any additional questions or concerns. Mahalo for your support.

Sincerely,



Allan Rietow
Field Representative
The Nature Conservancy

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
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CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

REF:OCCL:DH

Correspondences: KA-08-223

Allan Rietow
Kauai Program Field Representative
The Nature Conservancy
Kauai Program Office
4180 Rice Street, Suite 102B
Lihue, Hawaii 96766

APR 21 2008

Dear Mr. Rietow,

SUBJECT: East Alaka'i Protective Fence Project, Alaka'i Swamp, Island of Kauai

The Department of Land and Natural Resources' (DLNR), Office of Conservation and Coastal Lands (OCCL) is in receipt of your letter, dated April 7, 2008, regarding the proposed East Alaka'i Protective Fence Project, Alaka'i Swamp, Island of Kauai.

The proposed project involves constructing a 7.208 meter fence (4.48 miles), assemble weather ports/shelters, install radio repeaters to protect 2,006 acres of rare and endangered native Hawaiian species and watershed area in a 594 acre area; participating partners are the State of Hawaii DLNR, Robinson Family, and the McBryde Sugar Company.

The OCCL notes the proposed use is an identified land use, pursuant to Hawaii Administrative Rules (HAR), Section 13-5-22, identified land uses in the Protective subzone, P-7, SANCTUARIES, plant and wildlife sanctuaries, natural area reserves (see Chapter 195, HRS) and wilderness and scenic areas, including habitat improvements under an approved Management Plan; this is a Board Permit. A Public Hearing will also be required, pursuant to HAR, Section 13-5-40(a), HEARINGS.

Thank you for the opportunity to comment on the proposed project. The following are comments regarding the proposed project's Draft Environmental Assessment:

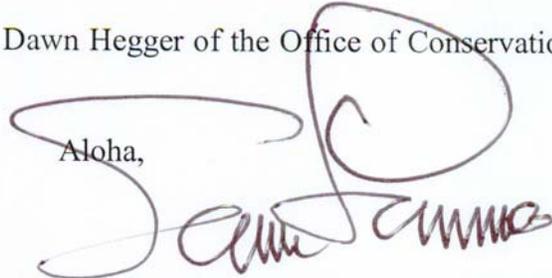
- Page 3 - please change the LU Classification and all references to the subzone P to Protective subzone;
- Page 3- the project location should include TMK: (4) 1-7-001:001 Robinson Family parcel;
- Page 3 - TMK: (4) 1-4-001:008 and 5-8-001:001 are located in the State Land Use (SLU) Conservation District – Protective and Resource subzones not subzone P;
- Page 6 - Tax Map Key: (4) 1-4-001:008 – should probably be TMK:003;

- Page 6 – the project location appears to be within the following TMK's: (4) 1-4-1:003 State of Hawaii, TMK: (4) 1-7-001:001 Robinson Family, and TMK: (4) 5-8-001:001 McBryde Sugar Company;
- TMK: (4) 1-7-001:001 Robinson Family parcel is also located in another State Land Use district; you should check with the Land Use Commission for the appropriate information;

Lastly, although maps and exhibits are referenced in the DEA under a Management Plan - there was no management plan attachment or website link. The OCCL notes the Management Plan should follow HAR, Section 13-5-39, MANAGEMENT PLAN APPROVALS, Exhibit 3.

Should you have any questions, please contact Dawn Hegger of the Office of Conservation and Coastal Lands at 587-0380.

Aloha,



Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

c: KDLO
County of Kauai
DOFAW – P. Conry/C. Ogura
OEQC

June 19, 2008

Department of Land and Natural Resources
Office of Conservation and Coastal Lands
P.O. Box 621
Honolulu, Hawaii 96707

Dear Dawn Hegger,

RE: East Alakai Protective Fence Project, Alakai Swamp, Island of Kauai
Response to DLNR letter dated: April 21, 2008

Thank you for your department's letter and your department's review of the proposed project. We have the following correction and comments to your letter.

The proposed protective fence will enclose approximately 594 ac of the Alaka'i wilderness preserve (State of Hawai'i) and approximately 1,412 ac of McBryde Sugar, Co. land in the conservation district (managed by Alexander & Baldwin) for a total of approximately 2006 acres. Gay & Robinson is not part of the project and their lands will not be included in the project.

We will make the applicable changes suggested on the appropriate pages. Also, please go to www.hawp.org to review the project. The draft EA, Cultural, Archeological, and Biological Surveys are all located there. The draft management plan is not on the site for review,

Best regards,



Allan Rietow
Field Representative
The Nature Conservancy

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
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CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

✓ April 18, 2008

Allan Rietow, Kauai Program Field Representative
The Nature Conservancy
4180 Rice Street, Suite 102B
Lihue, Hawaii 96766

LOG NO: 2008.1279
DOC NO: 0804NM20
Archaeology

Dear Mr. Rietow:

SUBJECT: **Chapter 6E-42 - Historic Preservation Review – Final Draft EA for Proposed East Alakai Protective Fence Project, Waimea and Wainiha Ahupua'a, Waimea and Hanalei Districts, Island of Kaua'i**
TMK: [4] 5-8-001:001 & 4-14-001:003

The aforementioned DEA is for proposed fencing etc. in the Alaka'i swamp.

We believe that **"no historic properties will be affected,"** because:

- Intensive cultivation has altered the land
- Residential development/urbanization has altered the land
- Previous grubbing/grading has altered the land
- An accepted archaeological assessment survey found no historic properties
- SHPD previously reviewed this project and mitigation has been completed
- Other: *There is a historic site, a shrine which over 500 m away from the fence line, but the contractor should be aware of this significant historic property.*

In the event that historic resources, including human skeletal remains, are identified during routine construction activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance, and the State Historic Preservation Division, Kauai Section, needs to be contacted immediately at (808) 241-3690.

Aloha,

Nancy McMahon, Acting Administrator
State Historic Preservation Division

NM:

June 19, 2008

Department of Land and Natural Resources
State Historic Preservation Division
Kakuhihewa Building
601 Kamokila Boulevard, Room 555
Kapolei, Hawaii 96707

Dear Nancy McMahan,

RE: Final Draft EA for Proposed East Alakai Protective Fence Project
Response to DLNR letter dated: April 18, 2008

Thank you for your letter and your review of the proposed project. We will alert the contractor of the historic site location and should we identify historic resources during routine construction activities all work will cease immediately in the vicinity of the find. The find will be protected from additional disturbance and the Kauai section of the State Historic Preservation Division will be contacted immediately.

Sincerely,



Allan Rietow
Field Representative
The Nature Conservancy

PHONE (808) 594-1888

FAX (808) 594-1865



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD08/3228B

✓
May 2, 2008

Allan Rietow
The Nature Conservancy
Kaua'i Program Office
4180 Rice Street, Suite 102B
Lihu'e, Hawai'i 96766

RE: Request for comments on the Draft Environmental Assessment for the East Alaka'i Protective Fence Project, TMKs: (4) 5-8-001: 001 and (4) 1-4-001: 003.

Aloha e Allan Rietow,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned request dated April 7, 2008. The Nature Conservancy is proposing the installation of 4.48 miles of protective hog wire fence to protect approximately 2,000 acres of critical watershed land in Alaka'i, Kaua'i. OHA has reviewed the project and offers the following comments.

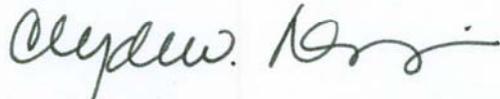
OHA supports the goal of the proposed fencing project, which will help protect the Alaka'i area from feral ungulates that threaten the health and integrity of this vital watershed forest habitat.

However, we ask for more information on how this project will affect constitutionally-protected Native Hawaiian traditional and customary access to the Alaka'i area. In addition, we will rely on the applicant's assurances that should iwi kūpuna or Native Hawaiian cultural or traditional deposits be found during the construction of the project, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Allan Rietow
May 2, 2008
Page 2

Thank you for the opportunity to comment. If you have further questions, please contact Sterling Wong (808) 594-0248 or e-mail him at sterlingw@oha.org.

‘O wau iho nō me ka ‘oia‘i‘o,

A handwritten signature in black ink, appearing to read "Clyde W. Nāmu'o". The signature is fluid and cursive, with a long horizontal stroke at the end.

Clyde W. Nāmu‘o
Administrator

C: OHA Kaua‘i CRC Office

Exhibit M

June 19, 2008

Office of Hawaiian Affairs
711 Kapiolani Blvd., Suite 500
Honolulu, Hawaii 96813

Aloha e Clyde Namu'o,

RE: East Alaka'i Protective Fence Project, Island of Kauai
Response to the Office of Hawaiian Affairs letter dated: May 2, 2008

Thank you for your letter and your review of the proposed project. We also thank you for your support of this important project!

The project location is in a very remote portion of the eastern Alaka'i Wilderness Preserve. Very few individuals hike, hunt or gather in this region. However, we will be placing a number of gates for access through the fence into the fenced area. We do not expect to significantly change traditional and customary access to this area as it exists prior to the construction of the protective fence. In addition, should iwi kupuna or Native Hawaiian cultural or traditional deposits be found during the construction of the project, work will cease, and the appropriate agencies will be contacted.

Please contact us if you have any additional questions or concerns. Mahalo for your support.

Sincerely,



Allan Rietow
Field Representative
The Nature Conservancy

no reply

RECEIVED MAY 02 2008

DAVID W. PRATT
P. O. Box 662096
Lihue, Hawaii 96766

Exhibit M

April 29, 2008

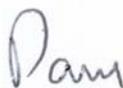
Mr. Allan Rietow
Kauai Program Field Representative
The Nature Conservancy
4180 Rice Street
Lihu'e, Hawaii 96766

Dear Allan,

Thank you for the information about the Proposed East Alaka'i Protective Fence Project on Kauai. As a frequent hiker on the Alaka'i Swamp trail, I am somewhat familiar with the environment around the proposed fence project. I have also noticed numerous incidences of damage caused by feral pigs along the Alaka'i Swamp trail.

I believe that the proposed protective fence project is a good idea. The area to be protected is remote enough that it will not significantly affect hunters or hikers from enjoying the Alaka'i region. Preserving the rare and endangered native Hawaiian species in the proposed preserve area is an important endeavor. Please call me at (808) 245-6245 if you have any questions.

Very truly,



David W. Pratt