DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife
1151 Punchbowl Street Room 325, Honolulu, HI 96813 587-0166 Fax 587-0160

TO: Sam Lemmo, Administrator

FROM: Paul J. Conry, Administrator

SUBJECT: CDUA File No. HA-06-29

DATE: February 6, 2007

Enclosed please find a copy of the approved CDUA for the Ka'ū Natural Area Partnership project for your files, administered by DOFAW with your approval per your letter of August 18, 2005. The CDUA process was administered concurrently with the HRS chapter 343 environmental review process and the HAR § 13-210 Natural Area Partnership Program (NAPP) process. Because the proposed use involved use of the Protective Subzone of the Conservation District, a public hearing was held on June 15, 2006 on the island of Hawai'i.

At its meeting of November 17, 2006, the Board approved the enrollment of the Ka'ū Preserve into the NAPP program and at the same time, approved the activities identified in the Ka'ū Preserve Long-Range Management Plan for Fiscal Years 2007-2012 as permitted uses within the Conservation District.

DOFAW will retain the relevant associated files for this project (including the tape of the public hearing, copies of the Draft and Final EA, etc.), however, please contact Christen Mitchell, DOFAW/NARS Planner, at 587-0051 if you would like copies of any supporting information for your files or if you have any questions. Thank you for your assistance in this matter.

ENCL

Conservation District Use Application (CDUA)

For DLNR Use	
File #	HA-06-29
Reviewed by	Christen Mitchell
Date	5-23-06
Accepted by	Christen Mitchell
Date	5-23-06
180-Day Exp.	11-23-06
EA/EIS Required	Yes-EA
PH Required	Yes
Decision	Approved
Date	11-17-06

Project Location/Address____Ka'ū Preserve Natural Area Partnership_____

District: _ Ka'ū _____Island/County: ___Hawai'i Island / Hawai'i County_____

Subzone:___Protective and Resource__Tax Map Key(s)_ 3-9-7-001-002, -003, -004, -007

Total Area of Parcel in sq. ft or acres_3,548 acres_____

Area of Proposed Use in sq. ft. or acres__ 3,548 acres __

Commencement Date: __July 2006____ Completion Date:____June 2012_____

Indicate which of the following approvals are being sought, as specified in the Hawaii Administrative Rules (HAR), Chapter 13-5.

X **Board Permit** CM 5-23-06

X **Departmental Permit**

___ **Emergency Permit**

___ **Temporary Permit**

___ **Site Plan Approval**

APPLICANT
Legal Name: The Nature Conservancy
Street Address: 923 Nuuanu Avenue
City, State and Zip+4 Code: Honolulu, HI 96817
Mailing Address: same as above
City, State and Zip+4 Code:
Contact Person & Title: Laura Nelson
Phone No.: (808) 885-1786 Fax No.: (808) 885-4219
Email: laura_nelson@tnc.org
Interest in Property: fee title

***Signature** Laura Nelson **Date** 5-22-06
*If for a Corporation, Partnership, Agency or Organization, must be signed by an authorized officer.

AGENT
Name: N/A
Mailing Address:
City, State and Zip+4 Code:
Contact Person & Position:
Phone No.: ( ) Fax No.: ( )
Email:

Signature **Date**

PROPERTY OWNER(S) *(If other than the applicant)*
Legal Name:
Street Address:
City, State and Zip+4 Code:
Mailing Address:
City, State and Zip+4 Code:
Contact Person & Title:
Phone No.: ( ) Fax No.: ( )
Email:
Relationship to applicant:

Signature **Date**

CONTRACTOR
Name: N/A Contractor I.D. #
Scope of Work:
Mailing Address:
Contact Person & Position Title:
Phone No.: ( ) Fax No.: ( )
Email:

Emergency Contact Information
Company/OrganizationName: The Nature Conservancy
Contact Person and Title Stephanie Lu, Conservation Programs Coordinator
Phone No.: (808) 587-6238 Phone No.: (808) 341-6332

PRIOR CONSERVATION DISTRICT USE PERMITS (CDUP)
Please specify all prior CDUP received for the subject parcel.
__None_____

PROPOSED USE
Total Area of Proposed Use: (indicate in acres or sq. ft)__ 3,548 acres_____

Describe the proposed use in detail. Include secondary improvements such as grading, septic tank placement, utilities, roads, driveways, fences, landscaping, etc. Illustrate general location of improvements on a TMK map; include preliminary architectural renderings with elevations and building footprints with application. Include existing (before) and proposed (after) graphics. If the parcel is or has been the subject of a violation, please include the violation number.

The management programs for 2007 – 2012 are: 1) Ungulate Control, 2) Invasive Plant Control, 3) Resource Monitoring, 4) Rare Species Protection and Enhancement, 5) Community Outreach, and 6) Watershed Partnership.

Program 1: Ungulate Control

Program Goal: To eliminate ungulates (cattle, pigs, sheep, and goats) from the Kaiholena Unit by 2012 and to reduce ungulate damage in the Kahilipali, Ki'oloku, and Keaiwa Units.

Preliminary measurements on survey transects show extremely high levels of ground disturbance by pigs: 100% of 30 stations in the Kaiholena Unit showed pig activity. There is also a very high liklihood of wild cattle, Mouflon sheep and feral goats in the vicinity. The most significant biological resources occur in the roughly 2600-acre Kaiholena Unit. Therefore the best and most cost-effective alternative is to enclose this unit by incrementally building fences and utilize various game control methods to bring the number of feral ungulates in the enclosures to zero as quickly as possible and to decrease ungulate levels in the other units.

Constructing fences that enclose all four Ka'u Preserve units is not cost-effective or feasible at the present time. The Kahilipali and Ki'oloku units are isolated, small (169 and 211 acres, respectively), and somewhat degraded by invasive plants. Therefore fencing these units would not result in a significant enough contribution to resource protection from ungulates to justify the expenditure of funds that fencing would require. The Keaiwa unit (511 acres) is a "spaghetti" parcel with elongated dimensions: 6 km long by 500 m wide. Although significant biological resources are present, particularly in the upper elevation, we are not proposing to construct fences in this unit at the present time. However, the acceptance of this 6-year plan does not preclude the re-consideration of this possibility in the future.

Relying on public hunting, aerial shooting, staff hunts, and other means to reduce feral etc. as the means of reducing feral animal populations instead of fenced enclosures is not a feasible alternative because as long as the Kaiholena Unit remains unfenced, feral animals will continue to enter the area from adjacent lands. Animal removal would have to continue indefinitely. This long-term control program would be expensive and unpopular, and make the goal of natural resource protection and rare plant reintroduction impossible. The best long-term solution is therefore to enclose the Kaiholena Unit, and remove all feral ungulates as quickly as possible.

Additionally, in cooperation with the NPS, the State and Kamehameha Schools, a site survey for optimum large-scale ungulate fencing will be conducted. Strategies to remove ungulates from remote areas and to enhance ungulate hunter access will be identified and implemented.

Ungulate Control Program Activities

Year 1 (FY2007)

- Construct fence
- Make existing cattle fence ungulate-proof
- Construct back-country camp (tent cabins, water catchment) and LZ's
- Begin ungulate removal
- Identify/implement strategies to enhance ungulate hunter access

Year 2 (FY2008)

- Continue ungulate removal
- Maintain fences and signs
- Assist NPS/State in site survey for optimum ungulate fencing

Years 3-6 (FY2007-FY2012)

- Continue ungulate removal
- Maintain fences and signs
- Survey for optimum placement of additional fences in Kaiholena unit

Fence specifications: The ungulate control fence will be 30,900 linear feet in length (elevation 2,000 to 3,400 ft) and will enclose 980 acres, utilizing the extremely steep terrain of Hilea Gulch (which are impassible by ungulates) as tie-off points. The fence alignment may change slightly, depending on the terrain. Where the fence crosses the road a gate will be installed for vehicle access. Three additional gates will be available for preserve access on the Kaiholena side and fence stepovers will be installed if needed, with locations to be determined in consultation with the community. Roughly 30% of the proposed fence alignment follows the edge of a pasture (10,250 ft), another 50% follows an existing 4WD road (15,105 ft) so minimal disturbance to vegetation will be required to install and maintain these sections. For the more remote sections, a corridor 4 ft. wide will be brushed to install the fence for a distance of 5,545 ft.

The ungulate fence will be constructed using 4 ft high tensile Bezinol-treated hogwire (1047-6-12-1/2) with one strand of high tensile barbed wire at the top. 6.5 ft tall galvanize-dipped T-posts will be installed 10-12 ft apart and driven to a uniform depth (5 ft remaining above ground) that will allow one strand barbed wire above the hogwire. Hogwire will be installed as close to the ground surface as possible (less than 2 inches) and deadmen will be used when necessary to anchor the wire to the ground.

Sign specifications: Approximately 20 signs will be installed throughout the preserve along commonly used trails. These signs will detail preserves rules, give safety precautions, promote wildfire awareness, and identify restoration sites and management activities. They will mention that funding for this project comes through the State's Natural Area Partnership Program. Sign materials may vary from metal, wood, or plastic. Pursuant to Hawai'i Administrative Rule 13-5-22, no sign shall exceed 12 square feet in area and shall be non-illuminated. All signs will be self-supporting and less than or equal to 8 feet above finished grade.

Back-country camp specifications: Two 10 x 12' canvas tent cabins will be erected upon wood-framed platforms in a remote area of the Kaiholena Unit (in the vicinity of Nanuamaia) to facilitate fence construction and hunting. A small (less than 150 sq. ft.) corrugated fiberglass or tin water catchment roof will be constructed in the vicinity of the cabins and a 50-250 gallon UV resistant plastic tank will be set below the catchment surface. All materials for the catchment system as well as the fences will be flown in by helicopter due to the elevation (4,000 ft) and steep terrain.

Landing zone specifications: Five to ten landing zones will be established in the upper reaches of the forest to assist conservation actions and for fire control and rescue. No single landing zone will exceed 100 sq ft. Landing zones will primarily be located in open and/or grassy locations. If vegetation clearing is required, it will be done with small motorized or hand tools and will not involve bulldozing, grading/grubbing, or ground disturbance. In some instances, it may be necessary to lay wood boards on the LZ for the helicopter skids. All landing zones on State land will be selected after consultation with DOFAW.

Program 2: Invasive Plant Control

Program Goal: To control high priority invasive plants in the preserve, and prevent the introduction and spread of problem weeds to core areas of native habitat where they are not currently established.

Habitat-modifying weeds are non-native plants that have demonstrated the ability to suppress regeneration of and/or displace native vegetation. Many weeds become established when an area is disturbed by ungulates, which may also carry and spread seeds. Elimination of ungulates, therefore, may be one of the most effective means of controlling the introduction and spread of many habitat-modifying weeds in the preserve. To complement these efforts, our invasive plant control program focuses on removing habitat-modifying weeds that are already established in the preserve. The presence of several serious invasive plant species both on and in the vicinity of the preserve has been identified. We will continue to identify the most serious invasive weed sites and initiate thorough survey and control work. In addition, priority weeds will be noted along the ungulate monitoring transects during ungulate control activities. Management efforts will be prioritized according to controllability, proximity to sensitive core areas of the preserve, and along corridors leading into the preserve.

Where possible, we will use an Integrated Pest Management (IPM) approach to weed control. This will include manual methods, mechanical methods (including small motorized tools like chainsaws and weed-eaters) and/or herbicide use, and perhaps assisting with biological control initiatives. Cultural control aspects (minimizing soil disturbance and new pest plant introductions) will be incorporated into routine field operations. Herbicides will be used when they are the most effective method for achieving our long-term goals.

Staff and visitors will follow strict procedures to prevent the inadvertent introduction of invasive plants while working or hiking in the preserve. Our invasive species prevention protocol calls for inspecting all clothing and equipment for seeds before entering the preserve. We will remain vigilant in our search for incipient populations of invasive plants. Species such as fireweed (*Senecio madagascariensis*), Himalayan raspberry (*Rubus ellipticus*), cat's claw (*Caesalpinia*

decapetala), kahili ginger (*Hedychium gardnerianum*), and plume poppy (*Bocconia frutescens*) are found nearby but do not occur on the preserve. *Miconia calvescens,* which has extensively invaded Hilo and Puna up to 3,500 ft elevation, has not been reported in Ka'u.

Invasive Plant Control Program Activities

Year 1 (FY2007)

- Create priority weed maps
- Prioritize the most serious invasive weeds and geographic areas
- Develop species- and unit-specific management goals and begin adaptive management of highest priority species
- Participate as a member of the Big Island Invasive Species Committee (BIISC)
- Continue strict inspection and cleaning procedures to prevent introduction of weed species not currently in the preserve

Years 2-6 (FY2008-FY2012)

- Maintain priority weed maps
- Monitor effectiveness of treatments
- Continue adaptive management of weeds and adjust strategies as needed based on monitoring results
- Continue to participate as a member of BIISC
- Continue strict inspection and cleaning procedures to prevent introduction of weed species not currently in the preserve

Program 3: Resource Monitoring

Program Goal: To monitor changes in the integrity of the ecosystems in and around the preserve; to determine whether critical threats to those ecosystems are increasing or decreasing; and ultimately to gauge the effectiveness of our conservation strategies.

As an organization, The Nature Conservancy is trying to develop a more consistent and rigorous approach to evaluating the success or failure of our conservation actions. We have established a preliminary framework for assessing the effectiveness of our conservation actions based on the level of critical threats and on several key characteristics of the native ecosystems most greatly affected by them.

At Ka'ū Preserve and vicinity, we plan to monitor critical threats as above by tracking changes in: (1) ungulate activity and (2) the extent of habitat-modifying weeds. In addition to threat monitoring, we propose to track changes in five attributes of the native vegetation: (1) extent of ecosystem or community type; (2) adjacent land use patterns to native communities; (3) canopy condition; (4) understory condition; and (5) diversity of indicator plant species. In particular, we propose to measure the indicators.

Ungulate activity levels will be measured annually on transects as discussed previously. The number, location, and sampling scheme for these transects will be determined in Year 1. Data collected on these transects provide an index of ungulate activity and should indicate the level of success of ungulate removal efforts. In addition, field staff will also create activity maps from field observations showing the presence of ungulate sign whenever it is detected. This information will direct our ungulate removal efforts where they are needed most.

High priority invasive plant species will be mapped opportunistically during all field operations and systematically when needed. Treated populations will be monitored to determine effectiveness of treatments.

Ecosystem extent, adjacent land use patterns, and canopy condition will be assessed through analysis of aerial imagery and/or maps produced. Some of these data will be available through the Hawai'i GAP project and some will be interpreted separately because of the coarse resolution in that effort. The frequency and precise methodology will be determined during first several years of the implementation of the management plan.

Vegetation understory and diversity will be assessed using ground-based methods. This monitoring may coincide with ungulate monitoring across landscape transects, or may entail other sampling methods. Specific sampling schemes, frequency of monitoring, and data collection methods will be determined during the first several years of the implementation of the management plan. Pilot studies at other Conservancy sites (*e.g.*, East Moloka'i) will help to inform the development of this monitoring component.

In addition, we will continue to work with the Division of Forestry and Wildlife (DOFAW) to monitor forest birds according to the agency's statewide schedule (i.e. every 5 years or so). The last Ka'ū bird census was in FY2002. The bird data are maintained and analyzed by the USGS Biological Resources Division. Conservancy staff and cooperators will also document incidental observations of rare birds observed while in the preserve.

Resource Monitoring Program Activities

Year 1 (FY2007)

- Establish ungulate monitoring transects in all four management units and establish baseline conditions
- Initiate weed mapping and establish baseline conditions of highest priority weeds
- Determine methods for monitoring efficacy of weed treatments
- Determine vegetation monitoring methodology

Year 2 (FY2008)

- Continue ungulate and weed monitoring
- Analyze threat data and adjust management actions as needed
- Implement vegetation monitoring as necessary

Year 3 (FY2009)

- Continue ungulate and weed monitoring
- Analyze threat data and adjust management actions as needed
- Continue vegetation monitoring as necessary
- Develop and implement a research strategy in concert with the US Geological Survey (USGS) and the University of Hawai'i (UH)

Years 4-6 (FY2010-FY2012)

- Continue ungulate and weed monitoring
- Analyze threat data and adjust management actions as needed
- Continue vegetation monitoring as necessary
- Continue implementing a research strategy in concert with USGS and UH

- Facilitate Forest Bird Surveys, following DOFAW's schedule

Program 4: Rare Species Protection and Enhancement

Program Goal: To prevent the extirpation of rare species in the preserve, and to encourage research, predator control, and captive propagation of rare plant and bird species.

To date, three rare plant species and two rare bird species have been observed in Ka'ū Preserve. The Nature Conservancy uses data compiled by the Hawai'i Natural Heritage Program to identify rare taxa and uses its definition of rare: "species that exist in fewer than 20 populations worldwide." Additional rare species reported from adjacent lands and similar habitats are likely to be found in Ka'ū Preserve with future surveys.

Protecting ecosystems essential to the majority of the preserve's native plants and animals will be our primary management strategy. Our ungulate and weed control programs are integral to the protection of these ecosystems and rare species. In addition, we will supplement our understanding of the types and ranges of rare plants and animals with surveys to locate other rare species and assess their status, and to document all incidental observations of rare plants, birds, bats, and invertebrates while in the preserve. We will encourage research and provide logistical support to partners interested in specific rare species research and protection efforts and, for extremely rare and threatened species, we will write and implement specific rare species protection plans.

Rare Species Program Activities

Year 1 (FY2007)

- Conduct rare plant surveys in Kaiholena and Kahilipali units

Year 2 (FY2008)

- Conduct rare plant surveys in Keaiwa and Ki'oloku units

Years 3-6 (FY2009-FY2012)

- Protect and monitor rare plant populations
- Write and implement species-specific enhancement plans
- Rare plant enhancement plans may include small exclosure fences of less than 10 acres around endangered species (see Ungulate Program for fence specifications)

Program 5: Community Outreach

Program Goal: To build Ka'ū community understanding and support for the preservation of Ka'ū 's native forests, and enlist volunteer assistance for preserve management.

The main objective of our outreach program is to increase awareness of Ka'ū Preserve, the Ka'ū watershed and native ecosystems, their importance, threats, and efforts to protect them. More specifically, we seek to encourage and facilitate active participation and community pride among the residents of the Ka'ū District in the effective conservation of this special resource. The key strategies for our public outreach work include a wide variety of programs, including: environmental education, summer intern and youth employment, volunteer, guided trips, community meetings, and hiking and hunting programs, and we will explore the possibilities of campsites.

An important focus will be on the children of Ka'ū (elementary and high school), the adults of the community, and community leaders. Preliminary discussions with principals and teachers at Pahala and Na'alehu schools have occurred and strategies to implement on-site educational programs are being explored. An interpretive nature trail has been created in the Kaiholena unit. Field activities will combine a mix of conservation projects and educational opportunities. Conservation projects will include trail construction and maintenance, invasive plant control, fencing, creation of demonstration plots, and biological monitoring. Educational activities will address a wide variety of land management, cultural history, and natural history topics.

Community Outreach Program Activities
Year 1 (FY2007)
- Initiate a community outreach and volunteer program

Year 2 (FY2008)
- Continue community outreach and volunteer program
- Implement community-based environmental education program at Kaiholena

Years 3-6 (FY2009-FY2012)
- Continue community outreach and volunteer program
- Continue community-based environmental education program at Kaiholena
- Expand the environmental education program to other Conservancy parcels and to other landowners in the region

Program 6: Watershed Partnership

Program Goal: To assist the long-term effective management of the native ecosystems of the Ka'ū region by a coordinated partnership of landowners, the State of Hawai'i, and other partners.

With the recent acquisition of the Kahuku Ranch by the National Park Service (NPS), four landowners are responsible for managing nearly 250,000 acres of contiguous lands in the Ka'ū region of Hawai'i Island (NPS, the State of Hawai'i, TNC, and Kamehameha Schools). With a strong desire to work cooperatively, with the State of Hawai'i in particular, the Conservancy has initiated discussions with these landowners and additional partners (*e.g.*, U.S. Geological Survey, U.S. Forest Service, U.S. Fish and Wildlife Service, 'Ola'a-Kilauea Conservation Partnership), about the need for a coordinated and cooperative approach to information gathering, management planning, and community outreach. By participating in a watershed partnership, the Conservancy is reducing the threats to Ka'ū Preserve while leveraging funding by having partners.

Some of the coordinated activities now being proposed for a watershed partnership are to:
- Define a planning boundary for the watershed partnership,
- Map the physical features and land ownership in the region,
- Determine the need/opportunity for additional partners,
- Develop and sign a Conservation Partnership Agreement,
- Develop a conservation or watershed management plan,
- Identify and assess primary threats to biological and cultural resources, and

- Initiate a coordinated community outreach program to identify issues and concerns relating to resource management and public use opportunities within the project area.

Watershed Partnership Program Activities
Year 1 (FY2007)
- Facilitate development of a watershed partnership that will address top watershed, forest, and biodiversity threats at a landscape scale

Year 2 (FY2008)
- Facilitate implementation of the watershed partnership
- Facilitate and promote the development of a watershed management plan
- Encourage the hiring of a watershed partnership coordinator

Year 3 (FY2009)
- Support the partnership with cooperative ungulate and weed management strategy
- Develop and implement fire prevention and suppression plan with watershed partners
- Expand the environmental education program to other Conservancy parcels and to other landowners in the partnership

Years 4 – 6 (FY2010-FY2012)
- Continue to support and, where feasible, participate in the implementation of the watershed management plan

CONSERVATION DISTRICT REQUIREMENTS

Demonstrate that the proposed use is consistent with the following criteria. Refer to HAR, Section 13-5-30, to review criteria. Attach additional sheets if necessary.

Is the proposed land use consistent with the purpose of the Conservation District?

Yes, the purpose of Ka'ū Preserve Natural Area Partnership is directly consistent with the purpose of the Conservation District. The project will conserve, protect, and preserve the important natural resources of Ka'ū Preserve through appropriate management as outlined in the Ka'ū Preserve Long-Range Management Plan for FY07-012. The project seeks to maintain the preserve's native ecosystems and protect the area's rare plants and animals. These actions will also contribute to the protection of the watershed.

Is the proposed use consistent with the objectives of the subzone of the land in which the use will occur?

Yes, the proposed used is directly consistent with the objectives of the Protective and Resource subzones. The actions proposed here will protect valuable resources within Ka'ū Preserve. The project seeks to maintain the preserve's native ecosystems and protect the area's rare plants and animals. These actions will also contribute to the protection of the watershed.

Does the proposed land use comply with provisions and guidelines contained in Chapter 205A, Hawaii Revised Statutes (HRS), entitled "Coastal Zone Management," where applicable?
_N/A_____

Describe how the proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region.

The proposed land use will actually maintain or have a positive effect on the existing natural resources within the Ka'ū region. The Nature Conservancy's Ka'ū Preserve is positioned within one of the largest areas of intact forest land in the State, totaling 68,500 acres. The preserve's four units are embedded within the State's Ka'ū Forest Reserve. This Reserve is described in the Division of Forestry and Wildlife's draft management guidelines as V-1: the highest quality native ecosystems and communities, with low levels (less than 10%) of non-native plants in any vegetative layer. By taking management actions in Ka'ū Preserve, the surrounding Ka'ū Forest Reserve will benefit also.

Describe how the proposed land use, including buildings, structures and facilities, will be compatible with the locality and surrounding areas, and to the physical conditions and capabilities of the specific parcel or parcels.

The Nature Conservancy's Ka'ū Preserve is positioned within one of the largest areas of intact forest land in the State, totaling 68,500 acres. By taking management actions in Ka'ū Preserve, the entire forested area will benefit due to increased protection of the natural resources. The only structures that will be erected for this proposed action are fences to minimized non-native species impacts on the Preserve.

Describe how the existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved or improved upon.

The project seeks to maintain the preserve's native ecosystems and protect the area's rare plants and animals. These actions will also contribute to the protection of the watershed.

If applicable, describe how subdivision of land will not be utilized to increase the intensity of land uses in the Conservation District.

N/A, no subdivision of land is anticipated.

Describe how the proposed land use will not be materially detrimental to the public health, safety and welfare.

The project will contribute to the protection of the watershed. Control of invasive animals may reduce erosion, and thus lead to increased water quality.

ADDITIONAL INFORMATION

Articles IX and XII of the State Constitution, other state laws, and the courts of the State require government agencies to promote and preserve cultural beliefs, practices, and resources of native Hawaiians and other ethnic groups. The Department of Health (DOH), Chapter 343, also requires an Environmental Assessment (EA) of cultural resources in determining the significance of a proposed project.

If applicable, please provide the identity and scope of "valued cultural, historical and natural resources" in which traditional and customary native Hawaiian rights are exercised in the area.

Land management to protect native species and ecosystems can serve as a first step in the protection of archaeological sites in the higher elevation areas, if sites exist there. Ungulates,

particularly feral pigs, cattle and goats, are known to disturb archaeological sites because they knock over stone walls, turn over soil, spread noxious weeds, and initiate accelerated erosion and landslides. As native ecosystems degrade in culturally important regions, the original native context for the site may be lost, and elements of the natural world that traditionally characterized a built site or a wahi pana (reknowned place) may be damaged. Therefore, the long-term goals of land management of controlling and removing feral animals, stopping the spread of invasive weeds, and restoring native vegetation, are crucial to protect archaeological sites.

In higher elevation lands that come under management of native ecosystems, there are typically few, if any archeological sites (such as walled structures, terraces, etc.), because these areas typically fell within the wao akua (realm of the gods), a zone lying typically higher in elevation above the wao kanaka (realm of people – where habitation, agriculture, and the majority of human activities took place). Although exceptions are rare, in the rich cultural setting of Ka'ū a few significant sites such as the heiau atop Makanau near the Kaiholena Unit boundary, suggest that appropriate care be taken when implementing management actions. The land management activities proposed in this plan are meant to restore and protect the native ecosystems which lie within the wao akua, thereby protecting the living context of the cultural landscape and the natural resources traditionally gathered in the area.

Identify the extent to which those resources, including traditional and customary native Hawaiian rights, will be affected or impaired by the proposed action.

Conservation of the natural resources will help aid maintenance of any traditional and customary rights that may exist in the area, by protecting the native plants and animals. Dr. Tangaro mentioned that there may be psychological impacts to members of the Ka'ū community, via perception of loss of access implied by a fenceline. However, we believe that installing strategic fence stepovers with consultation with the impacted community will help mitigate this loss of access.

What feasible action, if any, could be taken by the Board of Land and Natural Resources in regards to your application to reasonably protect native Hawaiian rights?

None needed. The fence stepover mitigation measure, if needed, should counteract perceived loss of access to the forest.

Does the proposed land use have an effect (positive/negative) on public access to and along the shoreline or along any public trail?

No roads or public trails are in the Preserve. As a result of sharing the southern (lowland) boundary with private agricultural lands, private access via unimproved roads is established through access easement agreements.

Public roads that are currently used to access the broader Ka'ū watershed lands include: Ha'ao Springs Road, Mountain House Road and Lorenzo Road. Access into the upper areas of the preserve is limited by difficult terrain and a lack of roads and trails. Access into upper areas of the Ka'u Forest Reserve is anticipated to improve with the acquisition of Kahuku Ranch by the National Park Service. Most access roads along their lower boundaries are not open to the public at this time.

Does the proposed use have an effect (positive/negative) on beach processes?

N/A since the site is located in the mountains.

Will the proposed use cause increased runoff or sedimentation?

No, the project will contribute to the protection of the watershed. Control of invasive animals may reduce erosion, and thus lead to decreased runoff and sedimentation.

Will the proposed use cause any visual impact on any individual or community?

The project will not substantially affect scenic vistas or view planes of the area. The only structures that could potentially be seen in the preserve will be fences and tent cabins. All of these structures will be well below the canopy of the forest, and will be so far from the public view as to be indiscernible.

Existing Site Information

Are there existing structures on the parcel? _X_Yes ___No
If yes, please describe below and include/illustrate on a map entitled *existing structures.*

Existing small shed on Kaiholena unit.

Will any existing structures be demolished or removed? ___Yes _X_No
If yes, describe how below. Please indicate/illustrate demolished structure on a map entitled *structures to be demolished/removed.*

Has the parcel been graded or landscaped? ___Yes _X_No
If yes, describe below. Please describe cubic yards affected and/or area of landscaping on a map entitled *areas previously graded or landscaped.*

Describe existing utilities. Include electricity, water, telephone, drainage, and sewerage. Please illustrate on a map entitled *existing utilities.*

No existing utilities exist on any of the parcels.

Describe existing access. Illustrate and include roadways and public trails on a map entitled *existing access.* Give major street names if available.

No roads or public trails are in the Preserve. As a result of sharing the southern (lowland) boundary with private agricultural lands, access via unimproved roads is established through access easement agreements and are private. Public roads that are currently used to access Ka'ū watershed lands include: Ha'ao Springs Road, Mountain House Road and Lorenzo Road. Access into the upper areas of the preserve is limited by difficult terrain and a lack of roads and trails. Access into upper areas of the Ka'ū Forest Reserve is anticipated to improve with the acquisition of Kahuku Ranch by the National Park Service. Most access roads along their lower boundaries are not open to the public at this time.

Describe Flora and Fauna. Illustrate general location and types of flora and fauna on a map entitled *resources.* Indicate if rare or endangered native plants and/or animals are present.

Native Natural Communities

Ka'ū Preserve contains four natural community types, ranging from lowland wet forests to montane mesic (moist) forests. There is one rare natural community: the Koa/'Ohi'a Montane Mesic Forest.

Table 1. Natural Communities of Ka'u Preserve

Natural Community (common and scientific names)	Heritage Global Rank*
Koa/'Ohi'a Montane Mesic Forest *Acacia koa/Metrosideros polymorpha* Montane Mesic Forest	G1
Koa/'Ohi'a Montane Wet Forest *Acacia koa/Metrosideros polymorpha* Montane Wet Forest	G3
'Ohi'a Montane Wet Forest *Metrosideros polymorpha* Montane Wet Forest	G3
'Ohi'a Lowland Wet Forest *Metrosideros polymorpha* Lowland Wet Forest	G3

* Key to Heritage Global Ranks:
G1 = Critically imperiled globally (typically 1-5 current occurrences).
G3 = Moderately imperiled globally or restricted in range (typically 21-100 current occurrences).

Native Flora

The mesic and wet forests of the Ka'ū region are home to at least 12 known species of rare plants. Six of these are endangered, two are candidates for listing as endangered, three are species of concern, and one has a restricted range.

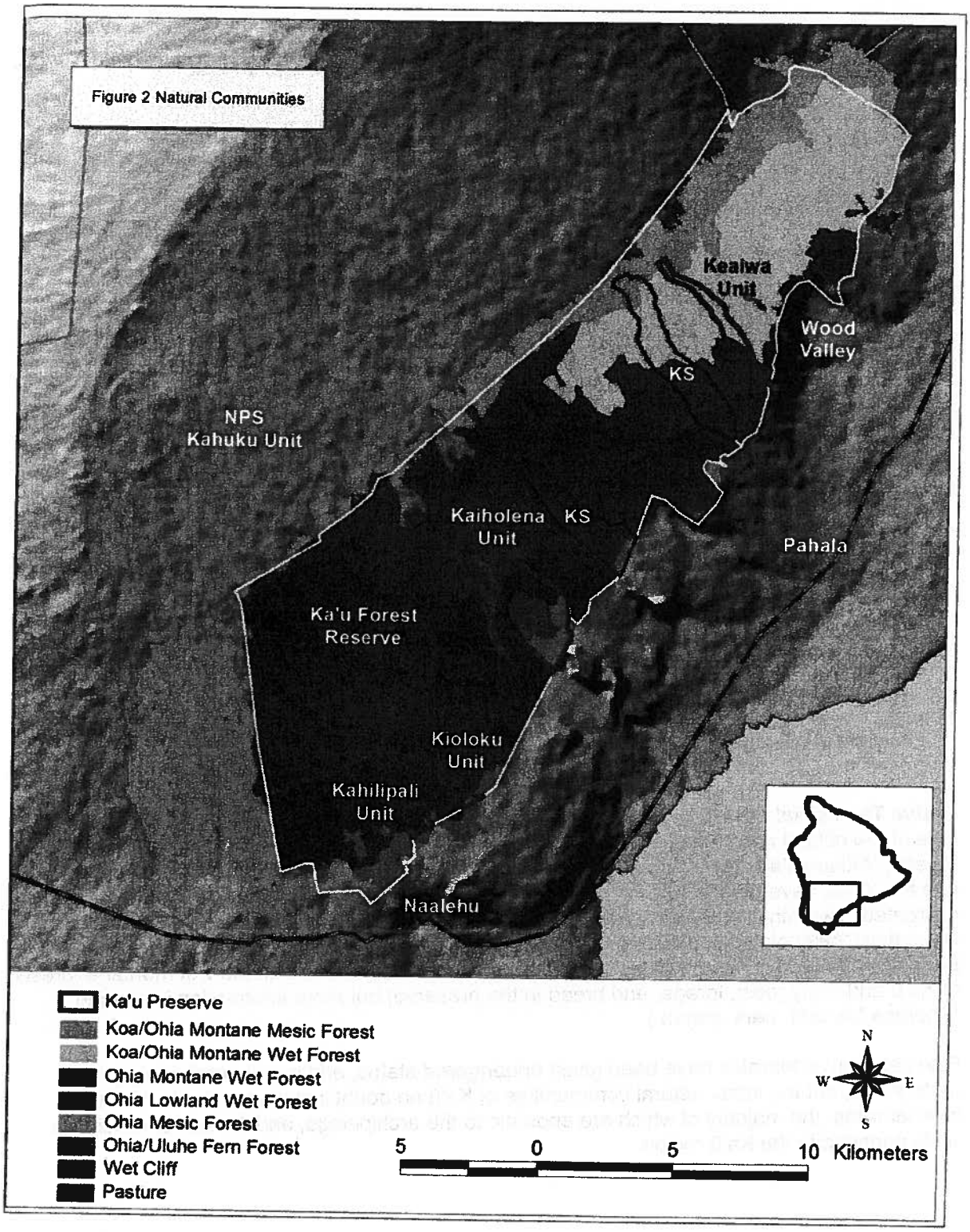
Figure 2 Natural Communities
Kealwa Unit
Wood Valley
KS
NPS Kahuku Unit
Kaiholena KS Unit
Pahala
Ka'u Forest Reserve
Kioloku Unit
Kahilipali Unit
Naalehu
Ka'u Preserve
Koa/Ohia Montane Mesic Forest
Koa/Ohia Montane Wet Forest
Ohia Montane Wet Forest
Ohia Lowland Wet Forest
Ohia Mesic Forest
Ohia/Uluhe Fern Forest
Wet Cliff
Pasture
N
W
E
S
5 0 5 10 Kilometers

Table 2. Rare Plants of Ka'u Preserve (or vicinity)

Species	Federal Status*	Heritage Global Rank**
Asplenium fragile var *insulare*	LE	G5T1
Clermontia lindseyana	LE	G1
Cyanea stictophylla	LE	G1
Cyanea tritomantha	C	G1
Lobelia hypoleuca	-	G3
Melicope zahlbruckneri	LE	G1
Nothocestrum breviflorum	LE	G1
Phyllostegia floribunda	C	G1
Phyllostegia velutina	LE	G1
Phyllostegia vestita	SOC	G2
Pritchardia lanigera	SOC	G1
Trematolobelia grandifolia	SOC	G2

* Key to Federal Status:
Listed Endangered (LE) = Taxa listed as endangered.
Candidate (C) = Taxa for which substantial information on biological vulnerability and threat(s) support proposals to list them as threatened or endangered.
Species of Concern (SOC) = Taxa for which available information meets the criteria for concern and the possibility to recommend as candidate.

** Key to Heritage Global Ranks:
G1 = Critically imperiled globally (typically 1-5 current occurrences).
G2 = Imperiled globally (typically 6-20 current occurrences).
G3 = Moderately imperiled globally or restricted in range (21-100 current occurrences).
G5 = Demonstrably widespread, abundant, and secure.
T1 = Subspecific taxa critically imperiled globally. 1-5 occurrences and/or fewer than 1,000 individuals remaining; or more abundant but facing extremely serious threats range-wide.

Native Terrestrial Fauna

One of the richest assemblages of endangered forest birds (*e.g.*, Hawai'i Creeper, Hawai'i 'Akepa, 'Akiapola'au, 'Io) inhabit the largely intact forests of Ka'ū. The 'Io, the Hawai'i 'Akepa, and the 'Alala have been historically found within Ka'ū Preserve but now are probably extirpated. Two other rare bird species are likely to occur in the preserve, but more information is needed: 'Akiapola'au and the Hawai'i Creeper.

Endangered Hawaiian hoary bats, 'ope'ape'a, are also known to inhabit the wet montane forests of Ka'ū and likely roost, forage, and breed in the preserve, but more information is needed (Theresa Menard, pers. comm.).

Few native invertebrates have been given endangered status, and are generally very poorly understood, but the intact natural communities of Ka'ū no doubt include hundreds of native invertebrates, the majority of which are endemic to the archipelago, and several of which are likely endemic to the Ka'ū region.

Table 3. Rare Vertebrates of Ka'ū Preserve (or vicinity)

Species	Federal Status*	Heritage Global Rank**
Buteo solitarius (Hawaiian Hawk, 'Io)	LE	G2
Corvus hawaiiensis (Hawaiian Crow, 'Alala)	LE	G1
Hemignathus munroi ('Akiapola'au)	LE G1	
Lasiuris cinereus semotus (Hawaiian hoary bat, 'ope'ape'a)	LE	G5T2
Loxops coccineus coccineus (Hawai'i 'Akepa)	LE	G2
Oreomystis mana (Hawai'i Creeper)	LE	G2

* Key to Federal Status:
Listed Endangered (LE) = Taxa listed as endangered.
** Key to Heritage Global Ranks:
G1 = Critically imperiled globally (typically 1-5 current occurrences).
G2 = Species imperiled globally (typically 6-10 current occurrences).
G5 = Demonstrably widespread, abundant, and secure.
T2 = Subspecific taxa imperiled globally. 6-20 occurrences and/or 1,000-3,000 individuals remaining; or more abundant but facing serious threats range-wide.

Describe topography and submit a map entitled *topography*. If ocean area, give depths. Submit detailed contour maps for ocean area and areas where slopes are 20% or more. Contour maps will also be required for uses involving tall structures, gravity flow and other special cases.

The 3,548-acre preserve is located on the island of Hawai'i on the southeast flank of Mauna Loa volcano. This preserve includes four separate units (Kahilipali , Ki'oloku, Kaiholena, and Keaiwa) spanning 12 miles and ranging from 2,000-5,700 feet in elevation. It is adjacent to the State's Ka'ū Forest Reserve and is positioned within one of the largest areas of intact forest land in the State, totaling 68,500 acres. The preserve itself lies up slope from the coastal agricultural area between Wai'ohinu and Pahala in the Ka'ū District.

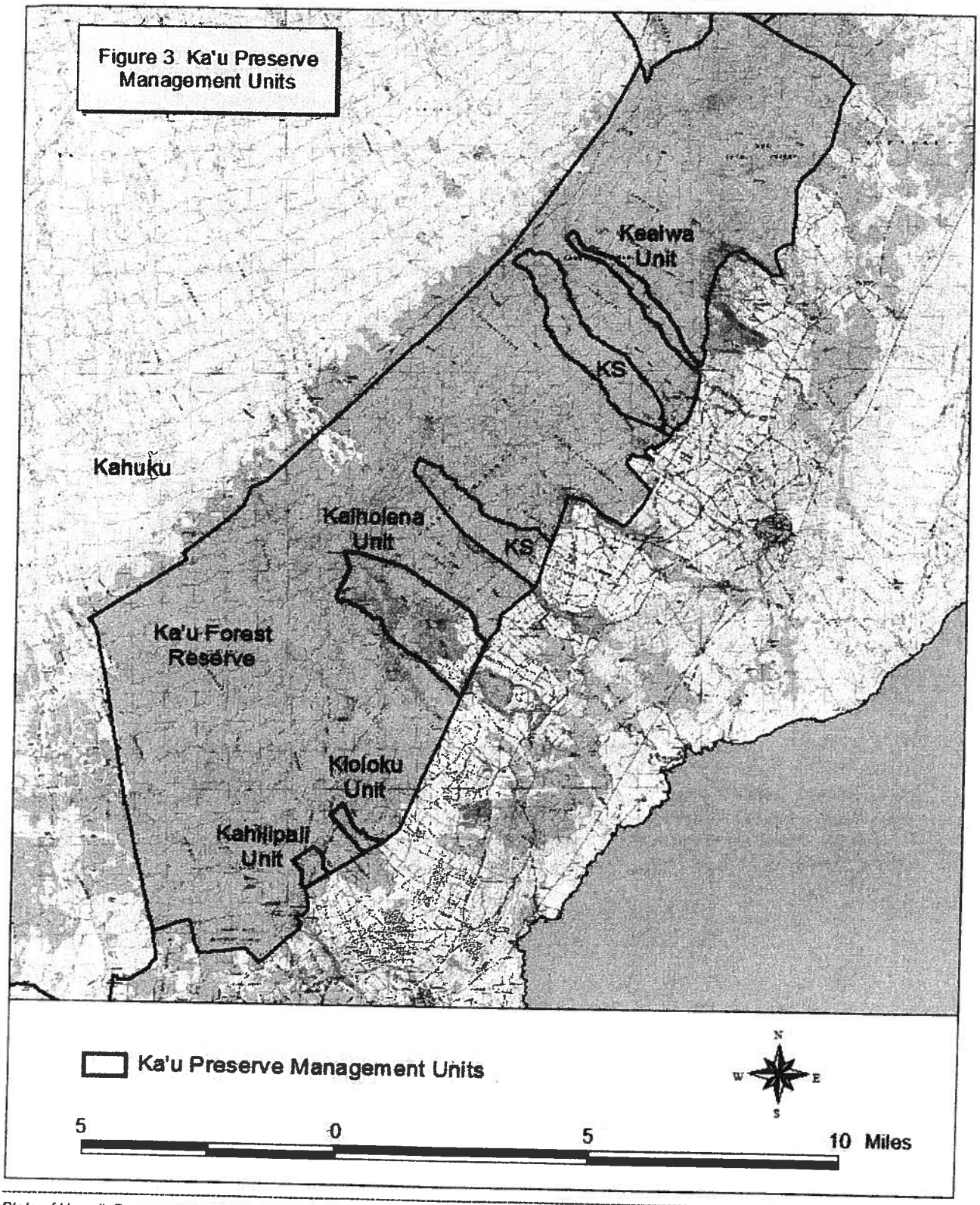
Figure 3. Ka'u Preserve Management Units
Keaiwa Unit
KS
Kahuku
Kaiholena Unit
KS
Ka'u Forest Reserve
Kioloku Unit
Kahilipali Unit
Ka'u Preserve Management Units
N
W
E
S
5
0
5
10 Miles

If shoreline area, describe shoreline and surrounding area. Indicate and illustrate if shoreline is sandy, muddy, rocky, cliffs, reefs, or other features (such as access to shoreline) on a map entitled *coastal resources*. A current shoreline certification is required for uses that may affect shoreline resources.

__N/A_____

If shoreline area, describe and illustrate any coastal hazards such as erosion, flooding, tsunami, etc. Attach any relevant maps delineating the hazard zone (FEMA, FIRM maps).

__N/A_____

Describe existing covenants, easements, and restrictions. If State owned land, indicate present encumbrances.

Ka'ū Preserve was established in 2002 to protect biologically rich and intact forest. It was purchased from a subsidiary of C. Brewer & Co. Ltd. who had owned the lands for over 100 years. Some minor water rights still lie with the former owner.

Identify any historic, archeological or cultural sites within or near the parcel. Please submit or include any current management plan. If applicable, indicate location(s) on a map entitled historical, archaeological, and cultural resources and describe below.

Historical/Archaeological and Cultural Sites

The following steps were taken to determine the cultural and historical significance of the project area. First, a general literature review was conducted to determine if there were any studies of the area or any myths or legends specific to the area. Consistent with field reconnaissance and local traditional sources, there are no documented man-made sites in the forested lands within the preserve. The vast majority of such sites are located in the coastal and lowland zones of Ka'ū. Second, a ground survey of the Hilo side of proposed Fence A by a local cultural practitioner, Dr. Taupouri Tangaro, was conducted on May 20, 2005. Dr. Tangaro is a professor in the Hawaiian Lifestyles Program at Hilo Community College and a hula practitioner and member of the Halau O Kekuhi school of traditional hula. Dr. Tangaro did not observe any cultural sites along the surveyed fence route, although he acknowledges the rich assemblage of cultural sites in Ka'ū District in general. He feels that the physical contribution of the proposed project will be positive, though he states in his Cultural Impact Assessment that some psychological issues may result.

A site visit and archeological survey of the proposed fence site by NPS archaeologist Jen Waipa took place on February 23, 2006. The entire proposed fence alignment was inspected. No archeological resources were identified, however, at the base and on the slopes of Kaiholena can be found a stand of bananas, wild taro and extensive ti leaf plantings, indicating human presence. The valley area between the many pu'u adjacent to Kaiholena, (including the area where the majority of the fence is being proposed) was bulldozed by the plantation several decades ago to grow sugar cane. Any structures or modifications that might have existed would have been destroyed during bulldozing, but artefacts may still remain. All project fences will be

placed to avoid historic sites that may be found. Our intent is to give protection of such sites appropriate priority.

Contemporary cultural practices occurring on the preserve include recreational pig hunting. The 62,000-acre Ka'ū Forest Reserve surrounding the preserve, and the nearby 36,000-acre Kapapala Forest Reserve are designated DOFAW hunting areas.

Adjacent Property Owners
Please list all adjacent property owners. If no address is available indicate north, south, east and west or mauka, makai or other common county directionals.

TMK:_____
Legal Name:_____
Street Address: _____
City, State and Zip code: _____
Mailing Address: _____
City, State and Zip: _____Phone No.:_____
Location to TMK:_____

1. State of Hawaii

   TMK 3-9-7-001-001
   Kahilipali Unit, west and north sides
   Kaiholena Unit, west, north & east sides
   Keaiwa Unit, west, north & east sides

   TMK 3-9-7-001-017
   Kahilipali Unit, east side
   Kioloku Unit, west side

   TMK 3-9-7-001-015
   Kioloku Unit, east & north sides

   TMK 3-9-7-001-016
   Kaiholena Unit, west side

   TMK 3-9-7-001-014
   Kaiholena Unit, east side

2. Edmond Olson
   Trust #1
   P.O. Box 280
   Pahala HI 96777

   TMK 3-9-5-015-001
   Kioloku Unit, south side

   TMK 3-9-6-007-001
   Keaiwa Unit, south side

3. Moody
   95-1178 Kaalualu Rd
   Naalehu, HI 96772
   EWM Investments
   2116 Redbird Dr.
   Las Vegas, NV 89134

   TMK 3-9-5-008-001
   Kahilipali Unit, south side

PROPOSED SINGLE FAMILY RESIDENTIAL (SFR) PROJECT

Consult HAR, Chapter 13-5, Exhibit 4 entitled "Single Family Residential Standards"

Estimated cost of development (not including cost of land) $_____

Maximum Height of proposed residence from base level _____ feet

Building Setbacks Front_____ feet Back_____ feet

Side_____ feet Side_____ feet

If shoreline parcel or area, indicate the setback from the certified shoreline_____ feet

Total number of floors in structure, including subterranean floors, lofts, porte cochere, mezzanines and garages _____

Total Floor Area (include second story area, garage, decks) _____sq. ft.

Total Floor Area **excluded** from the Maximum Developable Area (MDA)_____sq. ft.
(Floor areas excluded from the MDA must be highlighted on preliminary construction plans.)

	Existing (sq. ft.)	New proposed (sq. ft.)	Total (sq. ft.)
TMK Area		N/A	
Building(s)			
Paved area(s)			
Landscaped area(s)			
Unimproved area(s)			
	Grand Total (should equal TMK area)		

Is any grading proposed? ___Yes ___No

If yes, complete the following			
Amount of cut	Cu. yds.	Maximum height of cut slope	ft.
Amount of fill	Cu. yds.	Maximum height of fill slope	ft.
Amount of **import** or **export** soil	Cu. yds.	Location of disposal site	

Are utility extensions for the following needed to serve the project?

Water ___Yes ___No Electric ___Yes ___No

Sewer ___Yes ___No Telephone ___Yes ___No

Does the project include removal of trees or other vegetation? ___Yes ___No
If yes, indicate the number, type and size._____

_____

_____

CERTIFICATION

I HEREBY CERTIFY THAT I HAVE READ THIS COMPLETED APPLICATION AND THAT, TO THE BEST OF MY KNOWLEDGE, THE INFORMATION IN THIS APPLICATION AND ALL ATTACHMENTS AND EXHIBITS IS COMPLETE AND CORRECT. I UNDERSTAND THAT THE FAILURE TO PROVIDE ANY REQUESTED INFORMATION OR MISSTATEMENTS SUBMITTED IN SUPPORT OF THE APPLICATION SHALL BE GROUNDS FOR EITHER REFUSING TO ACCEPT THIS APPLICATION, FOR DENYING THE PERMIT, FOR SUSPENDING OR REVOKING A PERMIT ISSUED ON THE BASIS OF SUCH MISREPRESENTATIONS, OR FOR SEEKING OF SUCH FURTHER RELIEF AS MAY SEEM PROPER TO THE LAND BOARD.

I HEREBY AUTHORIZE REPRESENTATIVES OF THE DEPARTMENT OF LAND AND NATURAL RESOURCES TO CONDUCT SITE INSPECTIONS ON MY OR MY CLIENT'S PROPERTY. UNLESS ARRANGED OTHERWISE, THESE SITE INSPECTIONS SHALL TAKE PLACE BETWEEN THE HOURS OF 8:00 A.M. AND 4:30 P.M.

Laura Nelson

LAURA NELSON 5-22-06

Signature of Authorized Agent(s) or if no agent, signature of ***Applicant***

AUTHORIZATION OF AGENT

I HEREBY AUTHORIZE _____ TO ACT AS MY REPRESENTATIVE AND TO BIND ME IN ALL MATTERS CONCERNING THIS APPLICATION.

_____

_____

Signature of Applicant(s)