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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

September 12, 2007

Mr. Laurence Lau, Acting Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

RE: Final Environmental Assessment (FEA) and Finding of No Significant Impact (FONSI) for the North Kona Protective Fencing project, TMK (3) 7-8-001-003, Island of Hawai'i

Dear Mr. Lau:

The Draft Environmental Assessment for the North Kona Protective Fencing project on the island of Hawai'i was published in the OEQC Bulletin of June 23, 2007. During the public comment period, four written comments were received. After review of the public comments and of the Final Environmental Assessment, the Division of Forestry and Wildlife has determined that this project will not have significant negative effect on the environment. Thus, we have issued a Finding of No Significant Impact (FONSI). Please publish this notice in the next OEQC Environmental Notice (September 23, 2007).

Enclosed are two copies of the FEA, a CD containing the FEA in pdf format, and a completed OEQC publication form. Please call me or Christen Mitchell, DOFAW planner, at 587-0051 if you have any questions.

Sincerely,

Paul J. Conry

PAUL J. CONRY
DOFAW Administrator

Enclosures

FINAL ENVIRONMENTAL ASSESSMENT

NORTH KONA PROTECTIVE FENCING PROJECT

North Kona District
Island of Hawai‘i

In accordance with
Chapter 343, Hawai‘i Revised Statutes

Proposed by:

‘Ōla‘a-Kīlauea Partnership
P.O. Box 52
Hawai‘i National Park, Hawai‘i 96718

September 2007

Table of Contents

I. SUMMARY

Project Name	North Kona Protective Fencing Project
Project Location	Ahupua‘a of Keauhou 2 North Kona District Island of Hawai‘i TMK (3) 7-8-001-003 (Kamehameha Schools)
Land Use	Conservation District, Resource Subzone Agricultural District
Applicant	‘Ōla‘a-Kīlauea Partnership
Landowner	Kamehameha Schools
Licensee	Hawaiian Silversword Foundation
Approving Agency	State of Hawai‘i Department of Land and Natural Resources
Anticipated Determination	Finding of No Significant Impact
Agencies & Organizations Consulted	
Federal:	US Army Garrison Hawai‘i, Pōhakuloa Training Area USDA Forest Service USDA Natural Resources Conservation Service US Fish and Wildlife Service, Pacific Islands Field Office US Fish and Wildlife Service, Hakalau Wildlife Refuge US Geological Survey, Biological Resources Division US National Park Service, Hawai‘i Volcanoes National Park US Senator Daniel Inouye US Senator Daniel Akaka US Representative Ed Case
State:	Department of Hawaiian Home Lands Department of Health Department of Land and Natural Resources

Division of Conservation and Resources Enforcement
Division of Forestry and Wildlife
Division of Historic Preservation
Division of Historic Preservation, Hawai‘i Island Office
Land Division
Office of Conservation and Coastal Lands
State Parks
Department of Public Safety, Kūlani Correctional Facility
Hawai‘i Island Burial Council
Natural Area Reserves Commission
Office of Environmental Quality Control
Office of Hawaiian Affairs
Office of Mauna Kea Management, University of Hawai‘i-Hilo
Office of Planning
University of Hawai‘i, Environmental Center
University of Hawai‘i, Institute for Astronomy

County of Hawai‘i:
Office of the Mayor
Department of Public Works
Department of Water Supply
Planning Department

Other Organizations:
‘Ahahui Mālama I Ka Lōkahi
Amy Greenwell Ethnobotanical Garden
Big Island Bird Hunters
Big Island Bow Hunters
Big Island Field Trial Association
Big Island Gun Club
Big Island Gun Dogs
Big Island Trap Club
Bishop Museum, Hawai‘i Biological Survey
Conservation Council for Hawai‘i
Earthjustice
Forest Solutions, Inc.
Hawai‘i Audubon Society
Hawaii Forest and Trail
Hawai‘i Hunting Advisory Council
Hawaii Hunting Tours
Hawai‘i Island Archery Club
Hawaiian Silversword Foundation
Hokukano Ranch

Hualālai Archery Club
ʻĪlioʻulaokalani Coalition
Ka ʻAhahui ʻO Ka Nāhelehele
Kahea – the Hawaiian-Environmental Alliance
Kahu Ku Mauna Council
Kamehameha Schools
Kealia Ranch
Kilauea Sporting Skeet Club
Kona Hawaiian Civic Club
Kona Historical Society
Kona Outdoor Circle
Mahealani Ranch
Maunaloa Outfitters
National Wild Turkey Federation – Volcano Chapter
Native Hawaiian Legal Corporation
North Kohala Gun Club
ʻŌlaʻa-Kīlauea Partnership
Palika Ranch
Palani Ranch
Pig Hunters of Hawaiʻi
Queen Liliuokalani Trust
San Diego Zoo
Sierra Club, Moku Loa Group
TREE Center Hawaii
The Nature Conservancy of Hawaiʻi
Wildlife Conservation Association of Hawaiʻi
Alan Wall

Summary of Action

The ʻŌlaʻa-Kīlauea Partnership proposes the construction of up to 22 miles of ungulate-proof fencing, enclosing approximately 13,000 acres on the slopes of Mauna Loa in North Kona. The proposed fencing will protect a substantial portion of the second largest native māmane (*Sophora chrysophylla*) forest on the island and facilitate restoration of degraded māmane forest, habitat for the endangered palila (*Loxioides bailleui*) and for multiple endangered plant species. The construction of animal-proof fencing, followed by feral animal control, are the critical first steps to protect, and then to restore, this area. The fenced area would be suitable habitat for the reintroduction of at least seventeen rare native plant species, and should restoration of the māmane forest be successful, this area could become a site for the reintroduction of the palila, establishing a second, independent population from the current population on Mauna Kea.

Introduced ungulates (hooved animals), including cattle, feral goats, feral sheep, mouflon sheep and feral pigs, are a significant threat to native species and habitat at North Kona. Māmane is a preferred food of ungulates in Hawai‘i, and ungulates profoundly impact the survival of seedlings and trees. Ungulates also consume and trample other native plants, create conditions favorable for invasive weed infestation and establishment, prevent the establishment of native plants, serve as vectors for the dispersal of non-native plants, and disrupt soil nutrient cycling. The cumulative impact of ungulates is the decline of intact native ecosystems, including the decline of suitable habitat for threatened and endangered forest birds, plants, and invertebrates. In the absence of ungulates, plant communities often experience dramatically enhanced recruitment of juveniles and increased survivorship of both adults and juveniles, which in turn improves habitat for native wildlife.

The proposed fencing is part of the ongoing conservation efforts of the ‘Ōla‘a-Kīlauea Partnership, members of which include Kamehameha Schools, the Division of Forestry and Wildlife of the Department of Land and Natural Resources, Hawai‘i Volcanoes National Park, Kūlani Correctional Facility (State Department of Public Safety), USGS Biological Resource Division, the US Fish and Wildlife Service, the USDA Forest Service, and The Nature Conservancy of Hawai‘i. The Partnership currently includes over 400,000 acres and is in the process of expanding to become the Three Mountain Alliance, covering lands of Kīlauea, Mauna Loa, and Hualālai. The long-term protection planned for the māmane forest of North Kona builds upon the Partnership’s prior actions and will significantly contribute towards the protection and restoration of important native forest on Mauna Loa.

II. PROJECT PURPOSE AND NEED

Native ecosystems of the Hawaiian Islands provide among the world’s most spectacular examples of the ecological and evolutionary processes of speciation and adaptation. Millions of years of isolation from continental land masses have resulted in outstanding adaptive radiations of native forest birds, plants, and insects from relatively few colonizing events. Notable examples are the endemic Hawaiian honeycreepers (*Drepanididae*), lobeliads (*Campanulaceae: Lobelioideae*), and pomace flies (*Drosophilidae*), each of which are represented by dozens of species exhibiting a variety of forms and habits, and each having evolved from perhaps a single colonizing species. These biological resources are integral elements of the natural and cultural heritage of the Hawaiian Islands and their people.

The flora of the Hawaiian Islands is unique, and historically quite diverse – with over 1,817 native plant species adapting and diversifying from 272 original colonists. Today, 273 plants are listed as threatened or endangered, another 84 are candidates for listing, and another 97 are either extinct or possibly extinct. The protection of suitable habitat from destruction by feral animals and the reintroduction of endangered plants historically found in the area will implement the Recovery Plan for the Multi-Island Plants and the Recovery Plan for the Big Island Plant Cluster. Ultimately, the fencing project will prevent the decline of intact native forest and contribute towards the recovery of threatened and endangered plant and animal species.

Introduced ungulates (hooved animals), including cattle, feral goats, feral sheep, mouflon sheep, and feral pigs, are a significant threat to native plants and animals in North Kona. Māmane is a preferred food of ungulates in Hawai‘i, and ungulates profoundly impact the survival of seedlings and trees. Ungulates also consume and trample other native plants, create conditions favorable for invasive weed infestation and establishment, prevent the establishment of native plants, serve as vectors for the dispersal of non-native plants, and disrupt soil nutrient cycling. The cumulative impact of ungulates is the decline of intact native ecosystems, including the decline of suitable habitat for threatened and endangered forest birds, plants, and invertebrates. In the absence of ungulates, plant communities often experience dramatically enhanced recruitment of juveniles and increased survivorship of both adults and juveniles, which in turn improves habitat for native wildlife

The proposed action is to fence and remove animals from approximately 13,000 acres in North Kona to protect the second largest māmane forest on the island, an area of particular importance as potential habitat for the endangered palila and for multiple endangered plant species. The area could also serve as seasonal habitat for the ‘alalā, should it ever be reintroduced to areas nearby.

Historically, palila existed over a wider range that includes the project area, but currently palila are found only on the slopes of Mauna Kea, where 95 percent of the total population is concentrated in approximately 7,400 acres. With a diminished range and a dependence on māmane for survival, the palila is particularly vulnerable to extinction due to catastrophic events. The protection and restoration of habitat in a second, independent location will implement the Hawai‘i Forest Bird Recovery Plan and the State Comprehensive Wildlife Conservation Strategy.

Because of the anticipated benefits to native species and habitat, fencing this area is one of the highest priority projects in the regional

cooperative conservation effort managed by the ʻŌlaʻa-Kīlauea Partnership. The project area is partially located within the Conservation District. As such, the project requires that an Environmental Assessment to be prepared in accordance with Chapter 343 of the Hawaiʻi Revised Statutes.

III. PROJECT DESCRIPTION

The ʻŌlaʻa-Kīlauea Partnership proposes to construct up to 22 miles of ungulate-proof conservation fencing to facilitate protection of the best remaining māmane forest and restoration of degraded māmane forest covering approximately 13,000 acres in the project area. Maps of the project area are included in Appendix A. Fence construction and long-term conservation management will be coordinated by the Hawaiian Silversword Foundation, a 501(c)(3) non-profit organization, through a conservation license to manage the project area from Kamehameha Schools. After the construction of ungulate-proof fencing, conservation management activities including animal removal, weed control, outplanting, fire management, and educational outreach will take place.

Fence construction

Maps A and B illustrate the project area under consideration for long-term conservation management. The first step is the construction of ungulate-proof conservation fencing. Without fencing, it will be difficult to effectively reduce animal populations within the project area and protection of remnant forest and rare plants from damage by animal browsing and trampling is not possible. Fencing will be constructed in sections, and the final fencing alignments will be selected based upon several factors, including the total amount of funding available, terrain considerations, the presence of existing roadways, the cost of fencing, and the biological value and restoration potential of sections within the project area.

The western section (from point A to C) is planned for initial construction (see Map B). This section of fencing is critical to prevent cattle from straying from the lower pasture areas into the upper mauka areas. Much of this alignment follows existing four-wheel drive access roads, reducing the cost associated with fence construction and minimizing the clearance of vegetation within the fence corridor. This section is located entirely within the State Agricultural District. A portion of this section follows the boundary with Hokukano Ranch, the adjacent property owner. Hokukano Ranch is considering fencing along the boundary themselves, and the Partnership is exploring the possibility of cooperating with the Ranch, to reduce the need to build two separate fences along the boundary.

The precise alignment for the remaining sections of fencing has not yet been determined. Because of uncertainty regarding costs, sufficiency of existing funding, and availability of additional funding, two fencing options are under consideration. Under the first option, fencing would be constructed in one phase, creating one fenced unit around the entire project area (Option 1). However, if sufficient funding is not available at the time of construction, fencing may be constructed in phases over a longer time period (Option 2). Under this option, the initial goal would be to enclose as large an area as possible with the funding available, and then construct additional fencing as needed to protect more of the project area. Ultimately, this option would result in a series of two or more fenced units (Option 2). The number of internal fences and the precise alignment of these fences will be selected after consideration of cost, terrain, the importance of the habitat, and effectiveness of future animal removal and management. The total length of fencing constructed will depend on whether Option 1 or Option 2 is implemented. Both Option 1 and Option 2 involve fencing within the State Agricultural District and within the Resource Subzone of the State Conservation District.

Hogwire fences will be constructed to prevent entry by feral and mouflon sheep as well as pigs and cattle. The fencing is anticipated to be approximately seven feet tall, made of steel posts and steel wire. Barbed wire or electric fencing may be attached to the fencing in areas where cattle are present. To construct the fencing, a corridor no wider than six to ten feet will be cleared of vegetation if necessary. Where the fencing follows existing four-wheel drive roads, minimal clearing of vegetation is anticipated. Fence construction will involve driving posts into the ground no more than ten feet apart along the fence route. High tensile galvanized or Bezinol-coated steel woven wire mesh will be attached to the outside of the posts. Where needed, an apron of hog wire will be laid horizontally on the ground and attached to the outside of the standing fence to prevent entry by feral animals. The fencing crew will transport themselves, materials, supplies, and equipment to the project area along existing four-wheel drive roads. However, helicopters may be used to transport the fencing materials and supplies to the more remote sections of the project area.

Rare plant surveys and archaeological surveys will take place along the final fence corridor before any construction activities commence. During all construction activities, if any archaeological sites, artifacts, or burials are encountered, fencing construction will halt and the appropriate agencies notified to discuss further action, including re-routing the fence line to avoid these elements.

Animal control

Feral ungulates are a significant threat to the biological resources of the project area. These animals consume and trample native plants, create conditions for non-native plant infestation and establishment, serve as vectors for the dispersal of non-native plants, and disrupt soil nutrient cycling. The spread of most other non-native species is enhanced by the disturbance of soil, surface litter, and vegetation cover. The cumulative effect of ungulates is the decline of intact native ecosystems, including the decline of suitable habitat for threatened and endangered forest birds, plants, and invertebrates.

Initial feral animal control measures, such as driving animals out of the project area and ground-based shooting or trapping, may occur before and during fence construction to reduce animal populations in the project area. After fence construction, animals will be removed from fenced units through a combination of animal removal methods, with the aim for complete removal of ungulates within the enclosed fenced unit. The fenced area will be monitored afterwards periodically for ungulate ingress, and the fencing will be inspected and maintained on a regular basis.

Weed Control

Weed control efforts after fence construction will be concentrated to protect the most intact native areas from disruptive plant species and begin control efforts while populations are still localized. Efforts will include distribution mapping of priority weeds, control using herbicide or manual methods, follow-up monitoring to evaluate effectiveness of control, and annual weed monitoring.

Upper elevations of the project area remain fairly intact, but lower elevations have some severe infestations requiring control to prevent or slow their spread. The initial focus of mapping and control efforts will be fountain grass (*Pennisetum setaceum*), Cape ivy (*Delairea mikanioides*), Mysore raspberry (*Rubus niveus*), and banana poka (*Passiflora mollisima*). Non-native pasture grasses such as kikuyu grass (*Pennisetum clandestinum)* will need to be targeted for control in certain areas to enhance natural regeneration of native trees and shrubs. Additional species may also be controlled if they become a problem. Monitoring and control efforts will include annual inspection of roadways for new species and regular vehicle inspections.

Reforestation and outplanting

After fence construction is complete and initial animal and weed control efforts are underway, reforestation and outplanting of both common and rare native plants is planned. Selection of the appropriate species and planting sites will be conducted only after consultation with experienced botanists. Some portions of the project area already have relatively intact forest canopy and will not require intensive reforestation

efforts. Other areas more heavily impacted by ungulates will require reforestation of the common, native tree and shrub species. Outplanting of rare plant species will be concentrated in the more intact forest areas and may expand to other locations as the forest recovers.

Propagation materials from local sources will be used. Seedlings for outplanting may be grown at the Kūlani Correctional Facility native plant greenhouse and/or the State tree nursery or other private nurseries. Volcano Rare Plant Facility will propagate listed endangered plant species for outplanting. Various groups such as students and volunteers, will be involved in seed collection, site planning, site preparation, planting, and follow-up care including watering, fertilization, control of weeds, and monitoring of survival and growth.

Kamehameha Schools has initiated discussions with the State on the development of a Safe Harbor Agreement to cover any listed species which may benefit from this project, such as any threatened or endangered plants outplanted or that naturally recruit after fencing is complete. Safe Harbor Agreements benefit listed species by encouraging landowners to voluntarily participate in conservation management by giving assurances that no additional future regulatory restrictions will be imposed on their land as a result of the beneficial management.

Fire management

Fire management is incorporated as part of the proposed conservation action. It is recognized that fire is a high risk in the project area and that in the short-term after fence construction and animal removal, the volume of pasture grasses is likely to increase. Thus, strategies to prevent and minimize the impacts of fire will be incorporated into the project.

KS has a draft fire plan for the area that outlines the strategy for fire response. The plan includes increased coordination with fire response agencies and neighboring landowners. KS is also planning to maintain existing roads to ensure access and to increase water storage capacity by adding additional water catchment tanks.

Many fires are caused by humans, so fire prevention measures will include increased educational efforts for those accessing the property and possible road or area closures in the event of extreme fire danger. KS is also planning on continuing the agreement for pasture use (cattle grazing) on the portion of the property below the proposed project area to reduce the risk of fires spreading into the area.

Other means of fire management involve a combination of reduction in fuel-loading capacity through alien pasture grass control in strategic

locations, invasive plant control (particularly cape ivy and fountain grass), vegetation management to create fuel breaks, and reforestation. These activities would be incorporated into the proposed conservation management to prevent fuel build-up in the project area.

Removing or reducing alien pasture grasses will be a primary means to reduce fire frequency, size, and impacts on native ecosystems. Active restoration will include herbicidal removal of alien pasture grasses to allow native woody plants to become established, supplemented by planting and sowing seeds of native plants in selected areas.

Strategic reforestation will reduce areas with high levels of fire prone alien pasture grasses. Breaking up large areas of tall pasture grasses would be a strategy to reduce contiguous high-fuel areas. Planting and broadcast-seeding would create vegetated fuel breaks, and a dense understory will increase moisture and reduce the intensity of fires moving across this barrier. Among native plants, māmane, koa, `a`ali`i, and `iliahi are relatively fire-tolerant woody species, and these species will be used in reforestation efforts. Natural barriers such as sparsely vegetated lava flows can also be strategically used as firebreaks in conjunction with existing roads and reforestation areas.

In addition to non-native pasture grasses, two invasive plant species, cape ivy and fountain grass, contribute to fire risk in the project area. Cape ivy is a robust vine which covers and suppresses the growth of trees and shrubs. It may be a ladder fuel in the case of a fire, and can increase the amount of dead wood in the region through smothering already stressed trees. Cape ivy is a significant plant pest in the project area and will be targeted for control. Fountain grass is of particular concern because it is just beginning to invade the project area and is quite good at promoting wildfire. Animal control is not expected to cause an increase in fountain grass because this species is not generally grazed by ungulates. Invasion of this species will be mapped and monitored. Elimination of fountain grass is not possible, but control and containment of fountain grass is possible in strategic areas.

Over the long-term, it is anticipated that the project will reduce the threat of fire to the area by promoting native tree and shrub cover. Woody vegetation will likely reduce non-native pasture grass cover (the primary source of fine fuel that promote intense fires), increase moisture at ground level (through increased fog interception), and reduce wind velocity near ground level. Although fires will not be prevented by increasing the cover of woody species, fire behavior and the probability of intense and frequent burning will likely decline over the long-term as a result of this project.

Education

Kamehameha Schools is committed to developing and incorporating educational programs and curricula into resource stewardship programs. For example, the ʻĀina Ulu program aims at establishing eco-cultural and stewardship initiatives with community-based organizations, providing opportunities for hands-on learning experiences. Education will be a key component of the proposed project and students and the community can play vital roles in research, nursery experiments, and on-site projects such as tree-planting and weeding.

Timing & Costs

Fence construction is planned to occur once all permissions and approvals have been received. Fencing may be constructed in phases, as discussed above, based on availability of funding. Related conservation actions, such as animal control, weed control, and outplanting, may occur concurrently with each other after fence construction is complete.

The cost estimates for the project are as follows:

Item	**Cost**
Planning (includes surveys and preparation of EA)	$ 30,000
Fence Construction	$1,260,000 - $1,750,000
Ungulate removal	$180,000
Weed control	$75,000/year
Fence maintenance/monitoring	$10,000/year
Reforestation/outplanting	$30,000/year
Fire management	$15,000/year

The rough lava flows, remote location, rough roads, lack of water, and lack of existing on-site infrastructure in this area greatly increase the costs of this large landscape-scale project. The cost of materials and construction of a mouflon-proof fence is also very high. This is the most critical aspect of the project as well as the highest cost management activity.

Funding for this project includes $176,925 from the U.S. Fish and Wildlife Service as part of the Landowner Incentive Program administered by the Division of Forestry and Wildlife, $505,700 from the U.S. Fish and Wildlife Service through the Conservation Partnerships program, and $100,000 matching funds and in-kind support from Kamehameha Schools. Funding has been requested from the Division of Forestry and Wildlife through the Forest Stewardship Program, Watershed Management Grants, and Landowner Incentive Program, and additional funds will be sought as

needed to complete the fence construction, remove animals, and restore the project area.

IV. SUMMARY DESCRIPTION OF AFFECTED ENVIRONMENT

Location and Physical Characteristics of the General Area

The North Kona Protective Fencing Project area is on land owned by Kamehameha Schools near Pu‘u Lehua in the ahupua‘a of Keauhou 2 in the North Kona District (TMK (3)-7-8-001-003). The TMK covers approximately 62,700 acres, while the project area is composed of approximately 13,000 acres. The elevation ranges from approximately 5,000-7,000 feet. A map illustrating the location of the project area is included in Appendix A. A number of four-wheel drive roads of varying quality currently exist in the TMK and provide access to and within the project area. Adjacent landowners include Hokukano Ranch, Wall Ranch, and Kealakekua Ranch.

The project is located on the plateau formed by the gradual burying of the Hualālai southeast rift zone by the northwest slope of Mauna Loa, the more active of the two volcanoes. Located on the portion of Mauna Loa that is away from the rapidly covered regions of the two rift zones, the project area is composed of older summit overflows that are interspersed with more recently erupted flows from “radial vents” such as “Honey Bee.” Ash ejected from some of these scattered vents has contributed to soil development in the area.

The project area is predominantly pāhoehoe lava flows with a relatively smooth, ropy surface. In some areas, however, the surface is rough and broken, and there are hummocks and pressure domes. Soils in the project area are primarily characterized as rLW (lava flows, pāhoehoe) and rKHD (Kekake extremely rocky muck, 6 to 20 percent slopes). Pāhoehoe lava has little soil covering and is typically bare of soil and/or vegetation except for mosses and lichens with scattered trees and shrubs in cracks and crevices. Kekake series soils consist of well-drained, thin organic soils over pāhoehoe lava bedrock and are used mainly for watershed and wildlife. Runoff is medium and the erosion hazard is slight. Small portions of the project area contains soils characterized as HDD (Hanipoe silt loam, 12 to 20 percent slopes), rMWD (Mawae extremely stony muck, 6 to 20 percent slopes), rLV (lava flows, ‘a‘ā), and rRO (rock land).

The project area is located in Volcanic Hazard Zone 3, areas gradually less hazardous than Zone 2 because of greater distance from recently active vents and/or because the topography makes it less likely that flows will cover the area. One to five percent of the land in Hazard

Zone 3 has been covered by lava since 1800, and 15 to 75 percent within the last 750 years. Lava flows in the project are range from 200-750 years old to 5,000 to 10,000 years old.

The project area is relatively dry; rainfall ranges on average between 30 inches per year at the lower elevation to 20 inches per year at the higher elevation.

Current Land Use

TMK (3)-7-8-001-003 contains both land in the Agricultural District and land in three different subzones of the Conservation District (Protective, Resource, Limited), but the project area itself is located partially in the State Agricultural District and partially in the Resource Subzone of the State Conservation District. The project area is zoned A-20a (Agricultural District, with a minimum building site of 20 acres) and Open by the County. The County General Plan Designation is Extensive Agriculture in the lower portion of the project area and Conservation in the upper portion. The project area is not located in the County of Hawai‘i’s Special Management Area.

The project area is located on land owned by Kamehameha Schools, with limited access by the public. The Hawaiian Silversword Foundation is negotiating a long-term license with Kamehameha Schools to implement and maintain the proposed conservation project. Other portions of the TMK are licensed for a variety of uses: the Kona Historical Society has a Right of Entry agreement for educational purposes for the area around the Pu‘u Lehua Homestead; the lower portion of the property below the project area is used for pasture use through a month-to-month agreement, though because of the lack of fencing, cows have on occasion strayed up into the project area; and there is a license agreement currently with an enterprise offering guided private hunting. Land uses adjacent to TMK (3)-7-8-001-003 are primarily composed of pasture use and private guided hunting operations.

Flora

Influenced by the geologic characteristics, the project area contains broad, well-developed vegetation zones. Looking south from the plateau, the māmane belt abruptly narrows in width as the slopes of the west flank become steeper, and the māmane forest nearly disappears altogether soon after entering South Kona district. Similarly, zones of koa and other forest types are also narrower to the south.

The project area is characterized by several vegetation types including montane dry and mesic forests and woodlands, subalpine forests, woodlands and shrublands, and grasslands. Major plant communities found within the project area include:

- ʻŌhiʻa dominated forest or woodland on ʻaʻā lava or at upper elevations
- Mixed koa forest with native shrubs, sedges, and/or grasses
- Pūkiawe-ʻaʻaliʻi shrubland
- Grassland communities with very few trees.

At least 65 native plants have been observed in the project area. These include trees such as māmane, ʻōhiʻa (*Metrosideros polymorpha*), koa (*Acacia koa*), and ʻiliahi (sandalwood [*Santalum paniculatum* var. *pilgeri*]), shrubs such as ʻaʻaliʻi (*Dodonea viscosa*) and pūkiawe (*Styphelia tameiameiae*), grasses such as *Carex wahuensis* and mountain pili (*Panicum tenuifolium*), and ferns such as ʻoāliʻi (*Asplenium trichomanes* var*. densum*) and ʻae (*Polypodium pellucidum*). Appendix B contains a list of native plants observed in the project area. The endangered plant *Asplenium peruvianum* var*. insulare* occurs just inside the project area.

The project area also supports several unique plant communities, including the largest and most intact stand of ʻiliahi (sandalwood) remaining on the island of Hawaiʻi. In addition, the project area supports the largest area of diverse native grasslands in Hawaiʻi. Seven species of native grass are found in sizeable quantities in several communities, including under māmane forest and in native shrublands. Finally, the region including and surrounding the project area also harbors the second largest area of māmane forest on the island. Although Mauna Kea supports a larger area of māmane, the forest there lacks the species diversity found in the project area.

The project area is dominated by native vegetation, although large portions of the plant communities have been highly altered by logging, cattle grazing, feral ungulates, fire, and alien plant invasion over the past 200 years. There is evidence of logging up to approximately the 6,000 foot elevation. Cattle are present in the lower portions of the project area because no fence separates this area from the lower pasture. Feral ungulates (primarily sheep) are present in large numbers throughout the entire project area. There are currently few records of wild mouflon sheep, but their populations are increasing and their range is expanding.

As a result, currently, the most intact plant communities are the subalpine forest/shrub/grassland units above the 6,000 foot elevation. These include mixed tree communities and associated shrub and grassland habitats, as well as the subalpine ʻōhiʻa forest on both ʻaʻā and pāhoehoe lava. These areas are above the current and probably historic distribution of cattle. At lower elevations, particularly in areas previously used for grazing, non-native pasture grasses constitute part of the plant community, either as understory in closed/open koa-māmane-ʻiliahi-ʻaʻaliʻi forest or as part of pasture grasslands dominated by alien species.

Highly invasive fountain grass (*Pennisetum setaceum*) is found in portions of the project area and has the potential, if not addressed, to aggressively spread widely.

The proposed fencing will also provide protection or allow for restoration of the following threatened (t) or endangered (e) species historically known from the area: *Asplenium peruvianum* var*. insulare* (e), *Cyperus fauriei* (e), *Delissea undulata* ssp. *undulata* (e), *Neraudia ovata* (e), *Portulaca sclerocarpa* (e), *Silene hawaiiensis* (t), *Solanum incompletum* (e), and *Stenogyne angustifolia* (e). Appendix C contains a list of rare plant species, including these species as well as other rare plants, that could benefit from the proposed action.

Fauna

Native birds observed in the project area include the ʻamakihi (*Hemignathus virens*), ʻapapane (*Himatione sanguinea*), ʻelepaio (*Chasiempis sandwichensis*), the endangered Hawaiʻi creeper (*Oreomystis mana*), ʻiʻiwi (*Vestiaria coccinea*), kōlea (*Pluvialis fulva*), pueo (*Asio flammeus sandwichensis*), and the endangered ʻio (Hawaiian hawk [*Buteo solitarius*]). The endangered ʻōpeʻapeʻa, or the Hawaiian Hoary Bat (*Lasiurus cinereus semotus*), has also been observed in the project area. A species list of native fauna thought to be located in the project area is included in Appendix D.

In addition, the project area is within the historic range of several endangered native birds, including the palila (currently restricted to Mauna Kea), the ʻalalā (Hawaiian crow [*Corvus hawaiiensis*])(now extinct in the wild),and the ʻuaʻu (Hawaiian petrel [*Pterodroma sandwichensis*]). Historically, the project area supported a unique community of native birds, including four finch-billed honeycreepers, of which only the palila has survived (but no longer in the project area). The area also historically hosted a much larger nēnē (*Branta sandvicensis*) population, but only eight to ten nēnē still appear regularly, with others flying over on their way to Puʻu Waʻawaʻa.

Preliminary invertebrate studies with a focus on moths have recently been done in the project area by USGS-BRD. These surveys identified 70 species and morphospecies from 13 families of moths, of which 46 are endemic to the Hawaiian Islands. Of the endemic species collected, two *Argotis* (Noctuidae) species and one *Scotorythra* (Geometridae) species appear to be new to science, and three species were previously considered to be extinct. Also of note was the collection of only one morphospecies of the seven species of *Cydia* potentially found feeding on māmane seeds. *Cydia* moths were fairly common but their caterpillars, which are important foods of palila, were rarely found inside māmane pods.

As noted earlier, the project area supports the largest and most intact stand of sandalwood or ʻiliahi remaining on the island of Hawaiʻi. Several rare insects are known from this forest type. Some are obligate specialists on sandalwood trees and may face extinction due to the loss of their host plants.

Four invertebrate species of concern have been observed within the project area: *Agrotis melanoneura* (moth), *Omiodes monogona* (moth), *Omiodes anastrepta* (moth), and *Plagithmysus greenwelli* (beetle). Given the relatively intact condition of the native vegetation in the project area, it is likely that additional studies would discover additional native invertebrates, both rare and common.

Two species of non-native ants were collected in the lower portion of the survey area, including the big-headed ant (*Pheidole megacephala*) (Fabricius), a worrisome pest due to its large population size and its aggressive tendencies to attack arthropod and vertebrate species (the other ant species found is *Cardiocondyla venestula*).

Many species of introduced gamebirds and alien songbirds are found in the project area, including the red-billed leiothrix (*Leiothrix lutea*), Northern cardinal (*Cardinalis cardinalis*), Japanese White-eye (*Zosterops japonica*), mynah (*Acridotheres tristis*), spotted dove (*Streptopelia chinensis*), house finch (*Carpodacus mexicanus*), Northern mockingbird (*Mimus polyglottos*), California quail (*Callipepla californica*), Erckel's francolin (*Francolinus ercelli*), and turkey (*Meleagris gallopavo*).

Non-native animals observed or thought to occur in the project area include mouflon sheep (*Ovis musimon*), feral sheep (*Ovis aries*), cattle (*Bos taurus*), and feral pigs (*Sus scrofa*). Small-animal predators include rats (*Rattus spp.*), mice (*Mus musculus*), feral cats (*Felis silvestris*), feral dogs (*Canis familiaris*), and mongoose (*Herpestes auropunctatus*).

Significant and Sensitive Habitats

The region including and surrounding the project area harbors the second largest area of māmane-containing forest on the island. These forests originally were more spatially variable and diverse in plant species and supported a unique community of animals. Only Mauna Kea supports a larger area of māmane, but the Mauna Kea māmane forest lacks the species diversity of the project area. Other māmane forest areas on the island (north and southwest Hualālai, PTA, east Kapāpala-Keauhou) are much smaller and in much poorer condition than large portions of the project area and surrounding region. The diverse native grassland areas found over much of the project area are a special remnant component of the native vegetation that is particularly vulnerable to ungulate impacts.

The proposed fencing is anticipated to protect recovery habitat for the following endangered birds: ʻakiapōlāʻau (*Hemignathus munroi*), Hawaiʻi creeper (*Oreomystis mana*), and palila, implementing recovery actions identified in the Revised Draft Recovery Plan for Hawaiian Forest Birds, and would manage threats in potentially suitable habitat for the ʻalalā, implementing recovery actions identified in the Revised Draft Recovery Plan for the ʻAlalā.

Archaeological Sites and Cultural Practices

The following steps were taken to determine the cultural and historical significance of the project area: (1) general literature review to determine if there were any reports or studies with relevant information regarding the project area; (2) discussions with Kamehameha Schools personnel about the history of the project area; (3) the sending of pre-consultation letters to a wide variety of agencies and organizations that might be interested in the project or have relevant information, including: State Historic Preservation Division, Office of Hawaiian Affairs, Department of Hawaiian Home Lands, Hawaiʻi Island Burial Council, Kona Historical Society, Kahu Ku Mauna Council, ʻAhahui Mālama I Ka Lōkahi, ʻĪlioʻulaokalani Coalition, Kahea – the Hawaiian-Environmental Coalition, Native Hawaiian Legal Corporation, and the owners of adjacent ranches; and (4) preparation of a Cultural Resource Overview report for the project area by a Hawaiʻi Volcanoes National Park Service archaeologist, which included review of cultural and historical activities in the project area, review of existing information on archaeological resources and historic features in the area, field survey for archaeological features, such as rock walls, or any features potentially used for cultural reasons, such as lava tubes or caves, and recommendations of steps to avoid or minimize impacts to archaeological or cultural features or cultural practices. A summary of the information found is presented below.

The cultural resources of the upland region of Keauhou 2 can be classified into three general categories: traditional Native Hawaiʻi or early post contact remains primarily associated with specialized resource procurement activities; named natural features with associated cultural affiliations; and historic period modifications reflecting the transition to upland ranching/grazing pursuits, including historic buildings and features.

During pre-contact, it is likely that the project area, located within the ahupuaʻa of Keauhou 2, provided important forest resources for generations of Native Hawaiians. Based on the oral traditions of Keauhou 2, the number of locations given names, and the Boundary Commission testimonies, the upland forests of Mauna Loa were likely an important

source for a number of edible and medicinal plants and for the collection of birds and bird feathers.

Boundary Commission testimonies reveal an intimate knowledge of the region, place names, and their association with oral histories and traditional cultural practices. In general, testimonies include reports of trail usage and historic road development, ritual and ceremonial sites, resource collection that includes koa, sandalwood, and māmane harvesting, collecting and hunting of both nēnē and ʻuaʻu (Hawaiian petrel), and knowledge of shelter caves and water holes and known residences in this upland setting. For Keauhou 2, testimonies included references to bird catching, caves, water holes, sandalwood harvesting, māmake harvesting, and canoe construction. Based on these testimonies, it is likely that features such as *kauhale manu* (bird-catcher's shelters), *kahua kālaiwaʻa* (canoe-makers clearings), *oʻioʻina* (trailside resting places and shelters), the *ala hele* (trails), and other features associated with traditional and customary accesses were present in the area. These features would leave little evidence in the present-day, as they generally had minimal impact on the natural landscape. Those things left behind, not cared for or maintained, were simply reabsorbed into the landscape.

The ahupuaʻa of Keauhou 2 encompasses roughly 113,000 acres and extends across the broad upland plateau stretching from the western summit of Mauna Loa to the summit of Hualālai. Prominent landscape features provided cultural affiliations for Native Hawaiians and served as ceremonial cores, as land divisions, and as resource procurement sites. A number of named locations in Keauhou 2 identify cultural specific areas and impart the cultural importance of place. The following are examples of named places within Keauhou 2:

- **Hōʻike Kanaka/Kahua Hōʻike Kanaka o ʻUmi** (the presenter/the foundation for presenters) – a place on the Keauhou 2 ahupuaʻa boundary between Judd Road and ʻUmiahu
- **Wai Kulukulu** (dripping water) – a water cave north of Judd trail, elevation 5480'
- **Wai a Palai** (water of palai) – a water hole off of ʻUmi's road near Kīkīʻaeʻae
- **Puʻu Lepo** (earth mound) – another name for Kīkīʻaeʻae Hill
- **Kīkīʻaeʻae/Kīkīkīʻaeʻae** (fine basket) – a boundary point for Keauhou 2 ahupuaʻa, cinder cone in Kaʻū volcanic series, elevation 5550', canoe makers from Hokukano ahupuaʻa lived in this area.
- **Ka ʻŌnohi** (the eyeball) – cave between Makaʻulaʻula and ʻAʻahuwela and paddock on old Greenwell Ranch
- **Makaʻulaʻula/Ka Makaʻulaʻula** (the red eye) – a boundary point for Keauhou 2 ahupuaʻa and pāhoehoe kīpuka; was noted for having māmane trees growing around the kīpuka

- **‘A‘ahuwela/‘Ahuwela** (hot clothing/garment producing heat) – a cave at the corner of Kealakekua and Hokukano ahupua‘a; was known to have water in it at one point, elevation 5580’
- **Kīpuka Lupea** (attractive kīpuka) – kīpuka and paddock on old Greenwell Ranch, elevation 5600’
- **Pu‘u Lehua** (lehua flower hill) – cinder cone in Ka‘ū volcanic series, elevation 5187’. Another name suggested is Pulehua, which means to gum the lehua flowers to catch birds. Also the site of ranch.
- **Kīpuka Mamani** (obsolete spelling of māmane tree – māmane tree kīpuka) – a kīpuka known for its abundance of māmane trees, elevation 5600 feet.

The oral traditions of Keauhou 2 focus primarily upon ‘Umialīloa (‘Umi), the son of Liloa, the great ali‘i nui of Hawai‘i. The story of ‘Umi has been documented through primary accounts by Native Hawaiians, western European historians, explorers, missionaries, and contemporary journalists. During his reign, ‘Umi moved the permanent residences of Hawaiian sovereigns from Waipi‘o Valley to the broad plain between Hualālai and Mauna Loa and oversaw the construction of several heiau, including Ahua a ‘Umi Heiau located in the region, approximately two miles from the immediate project area. ‘Umi was also reported for his use of inland trails to cross the island undetected. It can be presumed from known remnants of some of these trails that his routes included the upper Keauhou landscape. According to some sources, a battle occurred near the heiau to determine land divisions after ‘Umi died. Ahua a ‘Umi Heiau was also the place where the great chief Keawe Nui a ‘Umi (the son of ‘Umi) hid to escape death from a strong ali‘i, Kalepuni, who attempted to take over Keawe Nui a ‘Umi’s rule.

For much of the post-contact period to the mid-1800s, the land use of the general project area would not have changed significantly, but indirect impacts to the forest would have begun as cattle and goats introduced by George Vancouver in the late 1700s spread across the island of Hawai‘i.

The entire Keauhou 2 ahupua‘a was awarded to Lot (Kamehameha V) during the Great Mahele on March 19, 1855 under Land Commission award 7715 Apana 12, and following a survey and subsequent Boundary Commission hearings, Royal Patent 7844 was issued dated June 2, 1887. Over 50 residents made claims for land within the ahupua‘a before the Land Commission, with the majority of the claimants successful. However, changes on the landscape continued following the Mahele, and traditionally utilized landscapes were transformed into pasturelands.

The general area was used for ranching (of sheep, goats, and cattle) from the mid-1800s to the present. Charles Wall leased a portion

of the ahupua‘a in 1873 and established a sheep station at Kanahaha in Keauhou 2. In 1875, he sold his interest to Dr. Georges Phillippe Trousseau. Trousseau continued to make improvements at the station and increased his livestock numbers. He sold all the animals plus the numerous buildings and crops to Henry N. Greenwell in 1879, and the Greenwell family continued to actively ranch in the area for the next century. Over this period, Bernice Pauahi Bishop had inherited the land, and upon her death in 1884, the ahupua‘a became part of Kamehameha Schools/Bishop Estate trust.

Currently, Kamehameha Schools leases the lower portion of the TMK for cattle grazing. In addition, Kamehameha Schools has an agreement with a company offering private hunting opportunities within the project area. The current agreement notes that the license is non-exclusive and includes a reduction in the area covered by the license, to reflect the planned conservation project.

Few archaeological investigations have been conducted in the uplands of Keauhou 2 due to the long-time practice of ranching and grazing, activities that do not usually involve intensive archaeological study, and the remote setting, away from development (that often triggers archaeological investigations). As a result, the Cultural Resource Overview prepared by the NPS archaeologist outlines a set of expectations concerning the types of cultural resources likely present and their distribution, based on existing archival material and studies conducted in similar environments.

Archival information indicates that the forested uplands of Keauhou 2 were likely most commonly used by Native Hawaiians for specialized resource procurement activities, such as bird catching/collecting and plant/hardwood harvesting. As noted above, many of the sites associated with these activities, such as shelters, were likely temporary in nature and reabsorbed into the landscape. An exception is excavated pits, which appear well preserved in the archaeological record. Excavated pit site areas have been well documented, and appear to be predominantly located on Mauna Loa flow types classified as k2 in an elevation range between 6,000 and 8,000 feet. As these same conditions are present within the upper eastern portion of the project area, it is possible that similar sites may be discovered during surveys of the final fence alignment.

A previous archaeological study conducted during consideration of expansion of Pōhakuloa Training Area included review of the entire TMK (3) 7-8-001-003, as well as surrounding areas, through aerial survey methods followed by ground survey of identified sites. During this survey, multiple site locations were found north of the proposed project area,

including a site complex known as the Waikulukulu shelter cave, consisting of a series of sinkhole formations and human modifications (fireplace, terraces); two lava dome shelters adjacent to the Judd Trail; Ahua a ‘Umi Heiau and associated features; and stone walls defining paddock areas.

Of these, Ahua a ‘Umi Heiau (located approximately two miles from the project area) is listed on the National Register. Said to have been built by ‘Umi, when he was king of the island of Hawai‘i, the site was composed of an enclosure surrounded by a number of stone cairns, up to four meters in height and seven meters in diameter. Unfortunately, the site was modified into a corral, likely in the mid-1800s, but the basic formation of the heiau remains visible. It is considered significant from its association with ‘Umi, but also due to its unusual structure (incorporating peripheral cairns) and geographic location (at such an elevation and so far inland). The heiau is also thought to illustrate the central role of religion in ancient Hawaiian culture and the complexity of the Hawaiian social and political organization, for it took a strong central government to organize and implement its construction.

A few trail routes are found within the saddle region of Mauna Loa and Hualālai. However, several sources from the time period post-contact (e.g., William Ellis) indicate the absence of trails across the plateau between Hualālai, Mauna Loa, and Mauna Kea. Construction of the Judd Trail, located to the north of the project area, began in 1849 to create a direct route between Kailua and Hilo, but trail completion was abandoned after the Mauna Loa eruption of 1859 crossed the planned trail route. Boundary Commission testimony references the Judd trail, but no reservation was made for its public use, and the trail was never completed.

The extensive history of ranching in the uplands of Mauna Loa and Hualālai is evident on the landscape, including walls, roads and trails, paddocks, pastures, water tanks, and irrigation systems. Most of these features have not been formally recorded. The Kona Historical Society and the Kona Heritage Ranch Advisory Committee has been involved in preserving, protecting, and interpreting this heritage, including the protection and development of interpretive tours at Pulehua, a ranching camp located to the west of the project area.

From the archival information and these surveys, a list of archaeological sites potentially located in the project area can be generated, including temporary habitation sites, caves, ponds/water holds, ahu, trails, excavated pits, shrines/heiau, ranch structures, walls, paddocks, enclosures, temporary camps, water tanks, irrigation systems, logging/milling stations, and roads/trails.

Preliminary surveys of the general project area were conducted in March 2006, and surveys of the final fence alignment will be conducted before construction.

V. ALTERNATIVES CONSIDERED

Two project alternatives are described: the proposed fencing (preferred alternative) and a no-action alternative.

Alternative #1: Construct ungulate-proof conservation fencing, followed by conservation management to restore the māmane forest within the project area (preferred alternative)

The preferred alternative is to construct up to 22 miles of ungulate-proof conservation fencing, followed by conservation actions such as animal removal, weed control, reforestation and outplanting, and fire management, to facilitate protection and restoration of the second largest māmane forest and the best remnants of ʻiliahi forest and native grasslands on the island, covering approximately 13,000 acres in the project area. The proposed fencing will protect this area from damage and browsing by introduced animals, including cattle, feral sheep, mouflon sheep, feral goats, and feral pigs. Without fencing, animal populations cannot be effectively reduced within the project area and protection of remnant forest and rare plants from damage by animal browsing and trampling is not possible. The exclusion of ungulates from māmane forest has been demonstrated to significantly contribute to improved health of māmane forest and understory species, and increased recruitment of māmane seedlings. By protecting tracts of the remnant forest and former forested areas, the preferred alternative will allow for the restoration of māmane forest, potentially providing alternative habitat for the endangered palila bird. In addition, the preferred alternative will protect well-preserved sub-alpine grasslands and will provide an appropriate area for outplanting rare plant species historically known from this area. And, should the ʻalalā ever be reintroduced, the project area could provide possible seasonal habitat for the crow. Ultimately, the preferred alternative is expected to prevent further decline of native forest, protect watershed, support restoration, increase available habitat for forest birds, and contribute to the recovery of several rare plant and animal species.

Under the preferred alternative, a few different fence alignments are under consideration, as discussed in more detail in the Project Description (as Option 1 and Option 2) and illustrated by the maps in Appendix A. The final alignment will be selected based on available funding, the actual cost of fencing, terrain considerations, the presence of

existing roadways, and the biological value and restoration potential of sections within the project area.

Alternative #2: No action.

The no-action alternative fails to take advantage of existing funding opportunities to protect and restore remnant native forest on private lands. The no-action alternative also fails to protect approximately 13,000 acres from the damaging impact of cattle, feral sheep, mouflon sheep, and pigs. With no action, the remnant māmane forest may eventually disappear, further reducing habitat for endangered plant and animal species and depriving future generations of the opportunity to appreciate these resources. Finally, the no-action alternative reduces the potential for success of affirmative conservation measures, such as outplanting, that are necessary for the long-term recovery of many species.

VI. GENERAL DESCRIPTION OF THE ACTION INCLUDING ENVIRONMENTAL AND SOCIOECONOMIC CHARACTERISTICS

Environmental Impacts

Native birds: Noise associated with the construction of fencing may temporarily disrupt the activities of native birds frequenting the project area. Based on observations during fence construction in other native forests, the impact of construction noise on native birds is expected to be minimal. The final fence alignment will be selected to go around large trees; thus, no impact to nesting habitat is anticipated.

Native bats: The use of barbed wire raises the possibility that the ʻōpeʻapeʻa (Hawaiian hoary bat) could fly into the fencing and become entangled, leading to injury or possibly death. Because barbed wire will only be utilized in sections where necessary to prevent cattle intrusion and not along the entire fenceline, the overall impact on native bats is not anticipated to be significant.

Native vegetation: Construction of fencing would result in the disturbance and destruction of limited amounts of vegetation within a fencing corridor up to ten feet wide as a result of the clearing needed to remove potential hazards to crew and to facilitate construction. While areas of botanically sensitive resources would be avoided, the removal of some common native plants may be unavoidable. Although most of the vegetation could be expected to grow back over time, ongoing fence inspection and maintenance would require that a portion of the fence corridor be kept cleared of vegetation, resulting in a permanent alteration of some habitat. Where the fence followed existing four-wheel drive

roads, very little, if any, native vegetation is anticipated to be impacted by fence construction. Other sections of the fence alignment were chosen to pass through more open native vegetation and sparsely vegetated younger lava to minimize impacts.

Water impacts: Due to the method of fence construction, the limited corridor to be disturbed, and the lack of streams in the project area, no significant changes in the normal runoff or percolation patterns is anticipated as a result of this project.

Alien species: Disturbance along the fencing corridor, as well as the transport of fence materials, equipment, and crew, could increase the potential accidental introduction or spread of non-native plants and invertebrates (including ants) to and within the project site.

Air pollution: Limited air pollution from helicopter sling loads and the use of small power tools will be unavoidable during fence construction. Use of this equipment is temporary and is not anticipated to significantly contribute to the overall air quality in the region.

Environmental benefits: Environmental benefits associated with the project include the benefits associated with the exclusion of feral animals, which represent one of the most significant threats to the long-term health of native forest and watershed. Rooting and browsing of native vegetation, compaction of soils, and spread of nonnative weed species by cattle, feral sheep, mouflon sheep, and pigs, disturb the native ecosystem, harming native vegetation, native invertebrates, and native birds. Ample evidence exists to show that damage caused by feral sheep, for example, can lead to the eventual destruction of Hawaiian forest and the replacement of native vegetation by introduced weeds. If feral animals are removed before disturbance becomes too severe, native vegetation is able to recover naturally and the spread of weeds is slowed or even reversed. Fencing and removing these feral animals provides long-term protection for the native ecosystem and secures a protected area for future research and restoration efforts related to threatened and endangered species.

Social Impacts

Periodic noise from helicopter flights, power tools, and other activity associated with fence building will be unavoidable during the construction period. In addition, the property is currently licensed to an enterprise offering private hunting opportunities; the proposed action will remove approximately 13,000 acres from this activity.

Due to the remote nature of the project area, the availability of other land in the area for hunting, and the broad distribution of game animals

across the landscape of Hualālai and Mauna Loa, social impacts resulting from noise or a reduction in the acreage available for private hunting are not anticipated to be significant. In addition, the protection of Hawai'i's native forest will enhance opportunities for stewardship, education, cultural enrichment, and research. As a result, overall social impacts of this project are expected to be positive.

Economic Impacts

The proposed action involves the expenditures of funds necessary to construct the fencing, including the purchase of fencing materials, the hiring or contracting of crews, and the purchase or rental of equipment including helicopters, and after fence construction, to remove animals and to restore the project area. The estimated total cost of the conservation project is over $1 million dollars. Current funding for the project includes funds provided by the U.S. Fish and Wildlife Service and Kamehameha Schools.

The project is not expected to have any major negative economic impacts, though minor impacts to the displaced and adjacent private guided hunting operations may occur. Positive economic impacts will result from the release of project funds into the State economy through the purchase of goods and services from local vendors, as well as employment for fence building and conservation workers. The proposed action may attract additional funding for restoration or research activities after the fencing is complete.

Impacts to Archaeological Sites or Cultural Resources

In general, the proposed fencing and conservation management poses a minimal threat to archaeological resources in the project area. The minor ground disturbances that results from fence construction include clearing the corridor of vegetation and embedding metal T-stakes at intervals, activities which have relatively low potential for ground disturbance. The final fence alignment will be surveyed (and any sites identified recorded) prior to construction to avoid potential adverse effects to archaeological sites and cultural resources. Impacts to any identified sites will be avoided primarily through avoidance – by re-routing the fence alignment as necessary to protect the identified site. Where avoidance is not possible, appropriate mitigation and site treatments will be developed in consultation with appropriate parties, such as the State Historic Preservation Division and Kamehameha Schools Land Assets Division. Because the fencing will be aligned, where possible, adjacent to existing four-wheel drive roads, it is anticipated that construction of fencing will pose little risk to any sites unidentified during surveys. As presently designed, the fencing is not anticipated to pose long-term impacts to archaeological sites. Over the long-term, the fencing project would help

preserve any unknown archaeological resources within the project area, by preventing soil disturbance and trampling of sites by hooved animals.

The proposed action is also not expected to significantly impact Native Hawaiian traditional and cultural practices. Based on the remoteness of the project area, the limited access due to its location on private land, the conservation purpose of the fencing, and the incorporation of gates or cross-overs where fencing crosses existing trails or roads, it is anticipated that fencing would have little to no impact on Native Hawaiian practices. The fencing is not designed to block access by people, but to limit animal movement.

VII. MITIGATION MEASURES

While this project is not expected to have any significant negative impacts on the environment, the following items have been identified as possible areas of concern. Planned actions to mitigate possible negative effects are described below.

Native bats

As discussed above, there is the concern that the ʻōpeʻapeʻa (Hawaiian hoary bat) could be impacted by ungulate-proof fencing if they fly into the fence in sections where barbed wire is present and become entangled, injured, or killed. While there is no way to completely prevent this occurrence, the following steps will be taken to reduce the risk of harm to the endangered hoary bat. The fence will be routed to avoid areas of high transitory use by bats. Barbed wire will not be used along the entire fenceline, but only in those sections adjacent to locations where cattle are present. An alternative to barbed wire, electric fencing, will be explored, to determine the feasibility of installation and whether this method can be anticipated to reduce bat strikes. Finally, maintenance of the fence line will include monitoring for the presence of injured animals. If it appears that bats are being injured or killed through contact with the fence, additional mitigation measures will be developed and implemented.

Native vegetation

Under the preferred alignment, very little native vegetation is anticipated to be impacted by fence construction, as the route is primarily located adjacent to existing four-wheel drive roads. If the alignment changes and construction of the fencing requires the removal and/or pruning of some common native plants, in order to minimize overall damage to native vegetation, the following guidelines will be followed. Where possible, the fence will be aligned so that it passes through open or sparsely vegetated areas. During construction of the fence, common species of native plants will be removed only when necessary, and removal of native plants greater than 6 inches in diameter will be avoided

as much as possible. Areas with sensitive biological resources will be avoided. It is anticipated that the natural recovery of plants protected by the fencing will compensate for any damage to common species incurred during construction.

Alien species

The disturbance to the ground surface and vegetation involved with building a fence may create conditions suitable for the establishment of weedy plants. The following practices will be implemented to minimize the introduction of alien plants and insects and to reduce the possibility of establishment. First, boots, equipment and materials will be inspected for seeds, eggs, larvae, etc., prior to delivery and/or entry into the project area, and cleaned as necessary. Any bulldozer or large truck used during construction will be inspected and cleaned as needed, following appropriate alien species prevention protocol. All construction workers will be instructed on specific procedures to prevent the spread or introduction of noxious alien plants in the project area. In addition, precautions will be taken to prevent spreading alien plants already found in the project area, and all food, refuse, tools, gear, and construction scrap will be removed upon completion of work.

Archaeological or culturally significant sites

While archaeological or cultural sites are not anticipated to be affected by the proposed action, should evidence of any archaeological or culturally significant sites be encountered during construction, vegetation clearing and fence construction would immediately cease and the appropriate parties, including the State Division of Historic Preservation and the Kamehameha Schools Land Assets Division, would be consulted immediately. If necessary, the fence alignment will be adjusted to reduce or eliminate impact to any features located during construction.

VIII. ANTICIPATED DETERMINATION

It is not expected that this project will have a significant negative impact on the environment, and a Finding of No Significant Impact is anticipated.

IX. FINDINGS AND REASONS SUPPORTING EXPECTED DETERMINATION

The goal of the proposed action is to provide long-term protection for approximately 13,000 acres of private land containing some of the last remaining intact māmane forest on Mauna Loa through the construction of ungulate-proof fencing. Without fencing, sheep, cattle, and pigs would be

expected to continue to damage this declining forest type, impair important watershed, and degrade rare native ecosystems.

Fencing and animal removal from the project area are anticipated to facilitate natural forest recovery, allow for successful reforestation and outplanting efforts, support effective alien species control and removal, protect important watershed, and possibly improve habitat sufficient to support future reintroduction of the endangered palila.

The anticipated Finding of No Significant Impact is based on the evaluation of the project in relation to the following criteria identified in the Hawai‘i Administrative Rules § 11-200-12:

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

The proposed action does not involve an irrevocable commitment to loss or destruction of any natural or cultural resource. Instead, the goal of the proposed action is to benefit the natural environment by protecting existing native forest, watershed and habitat for native plants and animals from feral ungulates and allowing for future forest restoration projects.

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

The proposed action will not curtail beneficial uses of the environment. Instead, the project will protect an important piece of land that may provide habitat for a range of endangered plant and animal species. The project will also facilitate future conservation activities by providing an extensive ungulate-free area that can be used for forest restoration, outplanting, and educational activities. Fencing and actively managing the project area will increase the beneficial uses of the environment.

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

The proposed action is consistent with the environmental policies established in Chapter 344, Hawai‘i Revised Statutes (HRS) and contributes to the conservation of threatened and endangered species, as covered by Chapter 195D, HRS. It is also consistent with Section 4 of the County of Hawai‘i General Plan (2005), which sets goals and policies for maintaining environmental quality. The action is consistent with goals and objectives of the ‘Ōla‘a-Kīlauea Partnership and with the policies outlined in the Memorandum of Understanding of the Hawai‘i Association

of Watershed Partnerships. Finally, protection and restoration of the native māmane forest at North Kona implements the Hawai‘i Comprehensive Wildlife Conservation Strategy (2005), the Recovery Plan for the Big Island Plant Cluster (1996), and the Draft Revised Recovery Plan for Hawaiian Forest Birds (2003).

4) Substantially affects the economic or social welfare of the community or state.

The proposed action will not adversely affect the economic or social welfare of the community or state. The ecosystem-related goals of the project will directly benefit the economic, cultural, educational, and social interests of the community and the State.

5) Substantially affects public health.

The proposed action is not anticipated to substantially affect public health. The proposed action may have a positive impact on public health by protecting native forest.

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

The proposed action is not anticipated to result in any substantial secondary impacts, such as population changes or effects on public facilities.

7) Involves a substantial degradation of environmental quality.

The proposed action does not involve a substantial degradation of environmental quality. Instead, environmental quality is anticipated to improve with the implementation of the proposed action. Fencing, followed by conservation management, will enhance environmental quality of the project area by providing long-term protection for watershed, native forest, and habitat for rare plants and animals from the destructive impact of cattle, sheep, and pigs.

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

The proposed action involves fencing approximately 13,000 acres in North Kona, the removal of ungulates from within the fenced area, followed by conservation management activities, such as replanting native species, outplanting rare species, and removal of alien plants. While the ungulate-proof fencing is needed for the long-term success of any restoration or outplanting, the cumulative effect on the environment is positive. Moreover, the fencing does not necessarily require the

commitment for ongoing management action as fencing and ungulate removal alone have value by protecting existing native forest and allowing for its natural recovery.

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

There are no known rare, threatened, or endangered plants within the planned fencing corridor; however, several species of rare plants, including some threatened and endangered plants, will benefit from the protection this fencing will provide. Exclusion of cattle, sheep, and pigs by fencing has been shown repeatedly to be one of the most important actions that can be taken to protect rare plant species in Hawai‘i. Construction of fencing would provide protection for habitat that is in decline statewide – relatively intact natural communities in good condition and suitable to support the reintroduction of rare and endangered plants. Failure to implement the proposed action would preclude the opportunity to reintroduce new plant populations into the project area.

There are threatened, endangered, and rare birds found within or near the project area, and restoration of the māmane forest on Mauna Loa would make it possible to consider future reintroduction of the endangered palila to a second location distinct from the remaining Mauna Kea population. The fencing will provide a benefit to other native forest birds by protecting potential habitat, and protection of the māmane forest on Mauna Loa is a recommended action of Draft Revised Recovery Plan for Hawaiian Forest Birds (2003).

Endangered bats have been observed sporadically in the project area. Because the project is designed to restore native habitat through reforestation, the impacts on the bat are anticipated to be positive. Thus, it is not anticipated that the project will negatively affect a rare, threatened or endangered species.

10) Detrimentally affects air or water quality or ambient noise levels.

The proposed action will have no detrimental effects on air quality, water quality, or noise levels. The area is remote, and construction noise will be localized and temporary.

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

The project area is located on the slope of Mauna Loa and is classified in Volcanic Hazard Zone 3. There is a remote possibility that the fencing could be damaged by a lava flow, if Mauna Loa were to erupt again. However, the value of protective fencing that excludes feral ungulates from approximately 13,000 acres, protecting native forest and watershed and providing opportunities for forest restoration and outplanting, outweighs the potential costs associated with loss of fencing due to damage from a lava flow. The planned fencing has a lifespan of approximately 10 years, and it is hoped that the benefits of the fencing and ungulate removal will be visible before the next lava flow. The proposed action will not damage or adversely affect any environmentally sensitive areas.

12) Substantially affects scenic vistas and view planes identified in county or state plans or studies.

The proposed action is not anticipated to affect any vistas or view planes identified in county or state plans or studies. For the most part, the fence is not anticipated to be visible to most residents due to the remote location of the fencing. Based on experience with fences in similar terrain and elevations, the fencing is not expected to be noticeable from a distance.

13) Requires substantial energy consumption.

The proposed action does not require substantial energy consumption, but instead will consume small amounts of energy during fence construction through the use of small power tools and transportation of materials and crews.

X. LIST OF PERMITS REQUIRED FOR PROJECT

Construction of the project is anticipated to require the following permits:

Permit	Issuing Agency	Comment
Conservation District Use Permit	State Board of Land and Natural Resources	A portion of the project is to be constructed in the Resource Subzone of the Conservation District.
Building Permit	County of Hawai‘i Department of Public Works	Building permit required for any structure over six feet in height.

XI. ENVIRONMENTAL ASSESSMENT PREPARATION INFORMATION

This Environmental Assessment was prepared by:

Christen Mitchell
Planner, Division of Forestry & Wildlife
Department of Land and Natural Resources
in cooperation with staff and members of the
ʻŌlaʻa-Kīlauea Partnership

XII. REFERENCES

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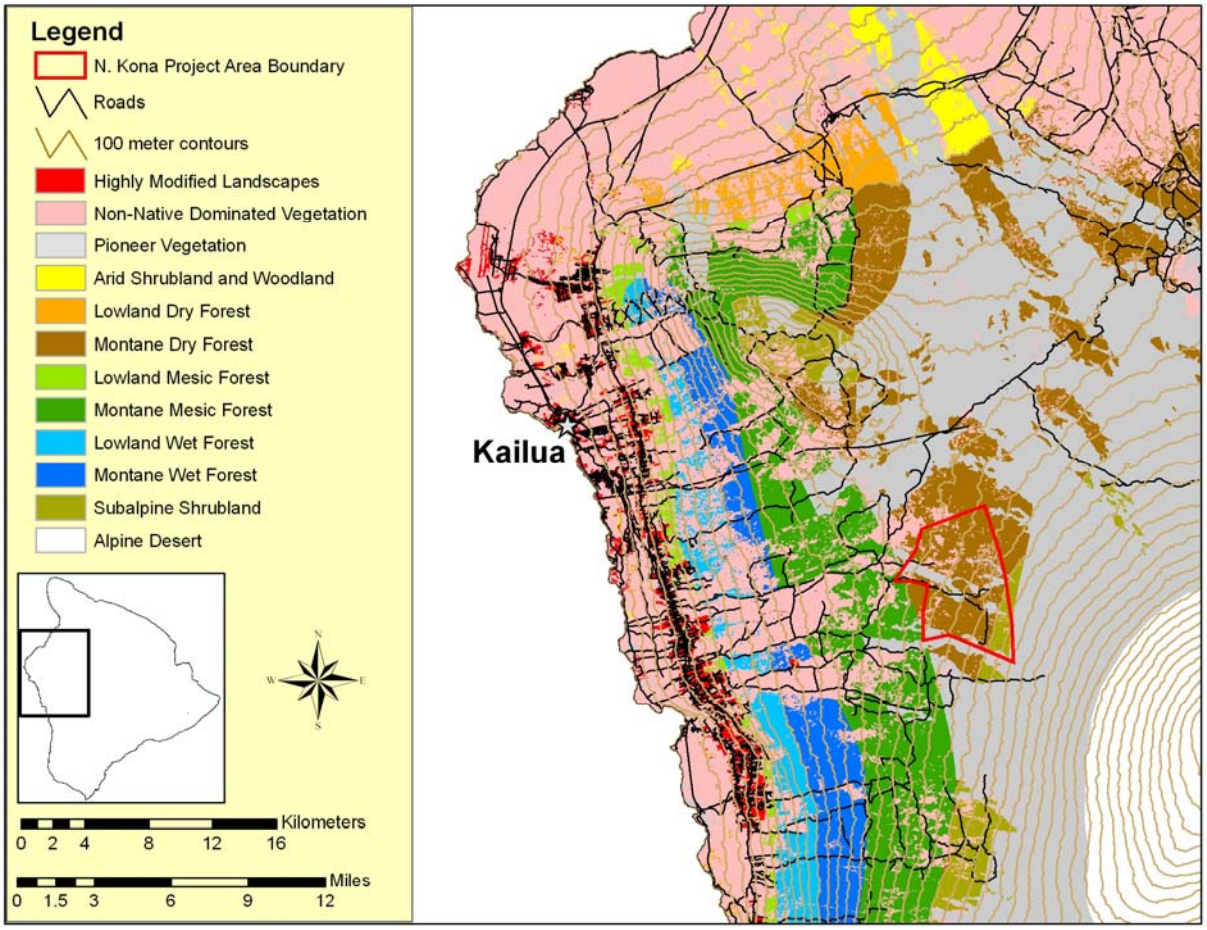
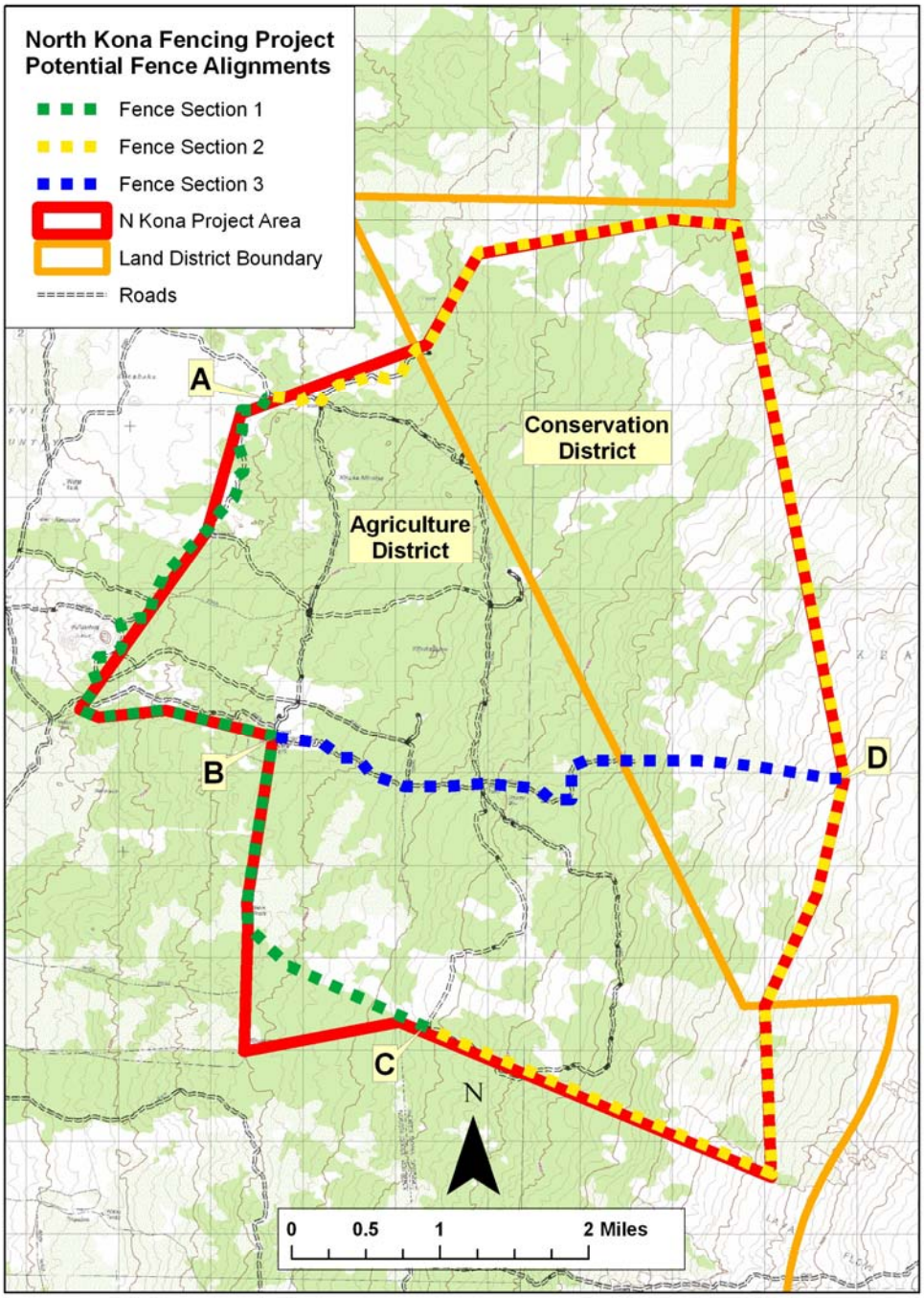
APPENDIX A

Maps of the Project Area



Map A. North Kona Fencing and Habitat Restoration Project Area.



Map B. Potential fencing alignments

APPENDIX B

Native Flora Observed Within or Adjacent to the Project Area

Family	Species	Common or Hawaiian name	Endemic (E); Indigenous (I)
Fabaceae	*Acacia koa*	Koa	E
Poaceae	*Agrostis avenacea*	He‘upueo	I
Poaceae	*Agrostis sandwicensis*		E
Apocynaceae	*Alyxia oliviformis*	Maile	E
Papaveraceae	*Argemone glauca*	Pua kala	E
Aspleniaceae	*Asplenium adiantum-nigrum*	‘Iwa‘iwa	I
Aspleniaceae	*Asplenium aethiopicum*	‘Iwa‘iwa a Kāne	I
Aspleniaceae	*Asplenium cookie*	Pūnana manu	I
Aspleniaceae	*Asplenium peruvianum* var. *insulare*		E
Aspleniaceae	*Asplenium polyodon*	Pūnana manu	I
Aspleniaceae	*Asplenium trichomanes* var. *densum*	‘Ōāli‘i	E
Asteraceae	*Bidens menziesii* ssp. *filiformis*	Ko‘oko‘olau	E
Cyperaceae	*Carex wahuensis* ssp. *rubiginosa*		E
Euphorbiaceae	*Chamaesyce olowaluana*	‘Akoko	E
Chenopodiaceae	*Chenopodium oahuense*	‘Aheahea	E
Menispermaceae	*Cocculus orbiculatus*		I
Rubiaceae	*Coprosma ernodeoides*	‘Aiakanēnē	E
Rubiaceae	*Coprosma menziesii*	Pilo	E
Rubiaceae	*Coprosma Montana*	Pilo	E
Cyperaceae	*Cyperus hillebrandii* ssp. *hillebrandii*		E
Aspidiaceae	*Cyrtomium caryotideum*	Kā‘ape‘ape	I
Poaceae	*Deschampsia nubigena*	Hairgrass	E
Liliaceae	*Dianella sandwicensis*	‘Uki‘uki	E
Sapindaceae	*Dodonaea viscosa*	‘A‘ali‘i	I
Dryopteridaceae	*Dryopteris wallichiana*	‘I‘o nui; laukahi	I
Asteraceae	*Dubautia ciliolata* ssp. *ciliolata*	Na‘ena‘e	E
Poaceae	*Eragrostis deflexa*	Lovegrass	E
Poaceae	*Eragrostis leptophylla*	Lovegrass	E
Cyperaceae	*Fimbristylis dichotoma*		I
Geraniaceae	*Geranium cuneatum* ssp. *cuneatum*	Nohoanu; Hinahina	E
Polypodiaceae	*Lepisorus thunbergianus*	Pākahakaha	I
Juncaceae	*Luzula hawaiiensis*	Woodrush	E
Myrtaceae	*Metrosideros polymorpha*	‘Ōhi‘a	E
Cyperaceae	*Morelotia gahniiformis*		E
Myoporaceae	*Myoporum sandwicense*	Naio	I
Myrsinaceae	*Myrsine lanaiensis*	Kōlea	E
Myrsinaceae	*Myrsine lessertiana*	Kōlea lau nui	E
Rosaceae	*Osteomeles anthyllidifolia*	‘Ūlei	I
Oxalidaceae	*Oxalis corniculata*	Yellow wood sorrel	I
Poaceae	*Panicum tenuifolium*	Mountain pili	E
Sinopteridaceae	*Pellaea ternifolia*	Kalamoho lau li‘i	I

Piperaceae	*Peperomia cookiana*	ʻAlaʻala wai nui	E
Pittosporaceae	*Pittosporum hosmeri*	Hōʻawa	E
Pittosporaceae	*Pittosporum terminalioides*	Hōʻawa	E
Lamiaceae	*Plectranthus parviflorus*	ʻAlaʻala wai nui	I
Dryopteridaceae	*Polystichum hillebrandii*	Kaʻupu	E
Polypodiaceae	*Polypodium pellucidum*	ʻAe	E
Asteraceae	*Pseudognaphalium sandwicensium* var. *kilaueanum*	ʻEnaʻena	E
Pteridaceae	*Pteris cretica*	ʻŌali	I
Hypolepidaceae	*Pteridium decompositum*	Kīlau	E
Rosaceae	*Rubus hawaiensis*	ʻĀkala	E
Polygonaceae	*Rumex giganteus*	Pāwale	E
Santalaceae	*Santalum paniculatum* var. *pilgeri*	ʻIliahi	E
Cucurbitaceae	*Sicyos* cf. *macrophyllus*		E
Malvaceae	*Sida fallax*	ʻIlima	I
Iridaceae	*Sisyrinchium acre*	Mauʻu lāʻili	E
Solanaceae	*Solanum americanum*	Glossy nightshade; pōpolo	I
Fabaceae	*Sophora chrysophylla*	Māmane	E
Lamiaceae	*Stenogyne microphylla*		E
Lamiaceae	*Stenogyne rugosa* var. *mollis*	Māʻohiʻohi	E
Epacridaceae	*Styphelia tameiameiae*	Pūkiawe	I
Asteraceae	*Tetramolopium consanguineum* ssp. *leptophyllum*		E
Asteraceae	*Tetramolopium humile*		E
Poaceae	*Trisetum glomeratum*	Pili uka	E
Ericaceae	*Vaccinium reticulatum*	ʻŌhelo	E
Thymelaeaceae	*Wikstroemia phillyreifolia*	ʻĀkia	E

APPENDIX C

Rare Species of Flora Historically Known from the Project Area: Potential Species for Reintroduction

Family	Species	Common or Hawaiian name	Threatened (T); Endangered (E); Rare, as identified as a Candidate species or Plant Species of Concern (R)
Aspleniaceae	*Asplenium peruvianum*		E
Asteraceae	*Bidens campylotheca*	Koʻokoʻolau	R
Asteraceae	*Bidens micrantha*	Koʻokoʻolau	R
Euphorbiaceae	*Chamaesyce olowaluana*	ʻAkoko	R
Cyperaceae	*Cyperus fauriei*		E
Campanulaceae	*Delissea undulata*		E
Poaceae	*Eragrostis deflexa*	Lovegrass	R
Santalaceae	*Exocarpos gaudichaudii*	Hulumoa	R
Rutaceae	*Melicope hawaiensis*	Mokihana kūkae moa; manena	R
Urticaceae	*Neraudia ovata*		E
Portulacaceae	*Portulaca sclerocarpa*	Poʻe; ʻihi; ʻihi mākole	E
Ranunculaceae	*Ranunculus hawaiensis*	Makou, ʻawa Kanaloa	R
Cucurbitaceae	*Sicyos macrophyllus*	ʻĀnunu	R
Caryophyllaceae	*Silene hawaiiensis*	Catchfly	T
Solanaceae	*Solanum incompletum*	Pōpolo kū mai	E
Lamiaceae	*Stenogyne angustifolia*		E
Asteraceae	*Tetramolopium consanguineum* ssp. *leptophyllum*		R

APPENDIX D

Native Fauna Thought to Occur In or Near the Project Area or Potentially Affected by the Proposed Conservation Management

Scientific Name	Common Name	Federal Status
Native Birds		
Asio flammeus sandwichensis	Pueo	Species of Concern
Branta sanvicensis	Nēnē	Endangered
Buteo solitarus	Hawaiian hawk, ʻIo	Endangered
Chasiempis sandwichensis sandwichensis	ʻElepaio	
Corvus hawaiiensis	Hawaiian crow, ʻAlalā	Endangered
Hemignathus virens virens	Hawaiʻi ʻamakihi	
Himatione sanguinea sanguinea	ʻApapane	
Loxioides bailleui	Palila	Endangered
Oreomystis mana	Hawaiʻi creeper	Endangered
Pluvialis fulva	Kōlea	
Pterodroma sandwichensis	Hawaiian petrel, ʻuaʻu (formerly known as dark-rumped petrel)	Endangered
Vestiaria coccinea	ʻIʻiwi	
Native Mammals		
Lasiurus cinerus semotus	Hawaiian Hoary Bat (ʻōpeʻapeʻa)	Endangered
Native Invertebrates		
Agrotis melanoneura	Moth	Species of Concern
Omiodes monogona	Moth	Species of Concern
Omiodes anastrepta	Moth	Species of Concern
Plagithmysus greenwelli	Beetle	Species of Concern

APPENDIX E

Comments Received During Pre-Consultation

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

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR

DEAN A. NAKANO
ACTING 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

FEB - 2 2006

Ref.:OCCL:MC

File Number: HA-06-169

MEMORANDUM

TO: Christen Mitchell, Planner
DLNR – Division of Forestry and Wildlife

FROM: Sam Lemmo, Administrator
Office of Conservation and Coastal Lands

SUBJECT: PRECONSULTATION ON ENVIRONMENTAL ASSESSMENT
`Ōla`a-Kīlauea Partnership Conservation Fencing

LOCATION: Keauhou, North Kona, Hawai`i
TMK (3) 7-8-001:003

The Office of Conservation and Coastal Lands [OCCL] has received your request for comments on the upcoming Environmental Assessment [EA] for Conservation Fencing in North Kona by the `Ōlala-Kīlauea Partnership. The Partnership is preparing the EA for conservation fencing to protect 11,000 acres owned by Kamehameha Schools. This area contains remnant māmane forest [*Sophora chrysophylla*]. After fencing, the Partnership plans to remove feral animals, control weeds, and replant native flora. If the restoration efforts are successful the Partnership will examine reintroducing the endangered *palila* bird.

OCCL notes that much of the parcel lies within the Conservation District, spanning the Limited, Protective, and Resource Subzones. The proposal is an identified use in the Conservation District pursuant to Hawai`i Administrative Rules §13-5-22 *Identified land uses in the protective subzone,* P-7 *Sanctuaries,* (D-1) *Plant and wildlife sanctuaries, natural area reserves and wilderness scenic areas, including habitat improvements under an improved management plan.* This use requires a permit from the Board of Land and Natural Resources.

Should you require additional information, please call Michael Cain of our Planning Branch at 587-0048. If no response is received by the suspense date, we will assume there are no comments.

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

Christen Mitchell
Department of Land & Natural Resources
Division of Forestry and Wildlife
1151 Punchbowl Street, Rm 325
Honolulu, HI 96813

Subject: Pre-consultation on Environmental Assessment for Conservation Fencing in North Kona by the Olaa-Kilauea Partnership

Dear Ms. Christen,

We have received your letter dated January 20, 2006 on the conservation fencing in North Kona.

The office supports any project that protects our native forest as well as endangered species. We recommend that you make every effort to contact the Hawaiian clubs for cultural knowledge and gathering rights. The hunting clubs should also be consulted.

We have no further comments to offer at this time, but will reserve comments when the documents are submitted. Thank you for the opportunity to review your request and should you have any questions, please feel free to contact our office at 586-4185.

Sincerely,

Genevieve Salmonson

Genevieve Salmonson
Director

PHONE (808) 594-1888

FAX (808) 594-1865

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

HRD05/2220

February 27, 2006

Tanya Rubenstein
ʻŌiaʻa-Kīlauea Partnership
P.O. Box 52
Hawaii National Park, HI 96718

RE: Pre-Consultation for an Environmental Assessment for Conservation Fencing, North Kona, Hawaiʻi Island, TMK 3-78-001-003

Dear Tanya Rubenstein,

The Office of Hawaiian Affairs (OHA) is in receipt of your January 20, 2006 request for comment on the above listed proposed project. OHA offers the following comments:

Our staff has no comment specific to the proposed project at this time, but we look forward to reviewing the Environmental Assessment. Thank you for your correspondence.

OHA asks that, In accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) shall be contacted.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck, Native Rights Policy Advocate, at (808) 594-0239 or jessey@oha.org.

ʻO wau iho nō,

Clyde W. Nāmuʻo
Administrator

CC: Lukela Ruddle
OHA Community Affairs Coordinator (Hilo)
162 A Baker Avenue
Hilo, HI 96720-4869

Harry Kim
Mayor

Christopher J. Yuen
Director

Brad Kurokawa, ASLA
LEED™ AP
Deputy Director

County of Hawaii
PLANNING DEPARTMENT
101 Aupuni Street, Suite 3 • Hilo, Hawaii 96720-3043
(808) 961-8288 • FAX (808) 961-8742

February 1, 2006

Ms. Tanya Rubenstein
Coordinator, Olaa Kilauea Partnership
P.O. Box 52
Hawaii National Park HI 96718

Dear Ms. Rubenstein:

Subject: Pre-Consultation on Environmental Assessment
Applicant: Olaa-Kilauea Partnership
Project: Fencing to Protect and Restore the Mamane Forest
Tax Map Key: 7-8-1:Portion of 3, North Kona, Hawaii

This is in response to your January 20, 2006 letter concerning Olaa-Kilauea Partnership's proposal to fence approximately 11,000 acres of the subject parcel. After fencing, planned restoration activities include animal removal, weed control and the planting of native plants.

We have the following to offer:

1. This 62,700 acre parcel is zoned Open (O) and Agricultural (A-20a) by the County. Forestry is a permitted use within both zoned areas.

2. It is designated Conservation and Agricultural by the State Land Use Commission. Within the Conservation area, there is no County zoning per se. The Department of Land and Natural Resources has jurisdiction over the Conservation area.

3. The General Plan designation is Conservation and Extensive Agriculture.

4. Based on the information provided, no Planning Department permits are required.

5. The subject parcel is not located within the County's Special Management Area.

Should you have questions or require further information, please feel free to contact Esther Imamura or Larry Brown of our Department at 961-8288, extension 257 or 258, respectively.

Sincerely,

CHRISTOPHER J. YUEN
Planning Director

ETI:cd
P:\WPWIN60\ETI\EAdraftPre-consul\Rubenstein Olaa-Kilauea Partnership78001003.doc

xc: Planning Department - Kona

FAX COVER SHEET

From: Mauna Loa Outfitters LLC
Colin Onaka
PO Box 856
Holualoa, HI 96725
Office: 808-322-4792
Cell: 808-960-7373
Email: MaunaLoaOutfit@aol.com
Website: www.MLOutfitters.com

To: Ms. Tanya Rubenstein
Of: Ola'a – Kilauea Partnership
PO Box 52
Hawai'i National Park, HI
967118
Phone: 985-6197
Fax: 985-6029

Date: February 11, 2006 Saturday. Pages: 04 Time sent: 4:38pm
Re: Letter dated January 20, 2006

Ms. Rubenstein,

Please find the following page in response to your letter dated January 20, 2006.

I would appreciate your comments and feedback. I would also welcome to set a time that we could sit and discuss this matter in further detail.

Sincerely,

Colin Onaka
Mauna Loa Outfitters LLC

Subj: **Conservation Fencing**
Date: 2/11/2006 4:27:12 PM Hawaiian Standard Time
From: Maunaloaoutfit
To: Tanya.rubenstein@contractor.nps.gov

Aloha Ms. Rubenstein,

My name is Colin Onaka. Owner and operator of Mauna Loa Outfitters. I operate guided hunts as well as provide access to youth groups on the property I lease from KS. I just got a copy of your letter dated January 20, 2006, in regard to feedback on your proposed intent to fence some 11,000 acres on KS lands.

Please allow me to go through your letter and question and comment to simplify things.
In your letter it states the Ola'a-Kilauea Partnership has prepared and EA for conservation fencing on some of the last remaining Mamane forest on Mauna Loa.
- Is it not true that there is Mamane stands throughout Mauna Loa and Hualalai and the area in discussion not an area where Mamane is surviving exclusively or anything different from other stands?

Your next sentence is asking to protect some 11,000 acres.
- Why such a huge area?

- Is there a budget to support and maintain 11,000 acres for 20, 50, 100 years?

- How will maintenance be executed?
Herbiciding, Fenceline maintenance, Maintenance of existing native plants.

- Will fencing be done without disrupting the existing ground? Meaning will bulldozers be used to push fencelines?
If no fencelines will be pushed, has anyone gotten current prices to construct such a fence in such rough terrain?
If fencelines will be pushed does that not remove hundreds of acres of Mamane, Iliahi, Naio etc to complete this task?

- What do you see happening to the ungulates that inhabit this 11,000 acres?

And lastly and most importantly. The palila project in my eyes holds a consistent grade of "F" on Mauna Kea. It has not been able to allow birds to live in the wild on there own. It has not seen the expected increase in numbers. It has all but closed off the mountain to the public that pays taxes for the freedom and right to be on tax funded lands.

Is this project being funded by tax dollars? Partial or Exclusively.

I am more then willing to sit and talk to discuss this project with you more in detail. The reason I am so concerned about this project is not because I am totally opposed to it. I think taking 11,000 acres to do anything without test plots is very irresponsible. I would hope and think that we could perhaps instead of going for a home run, perhaps just look at getting to first base.

My suggestion would be to fence off 100 acre plots and no more then 4 in the initial stage. Monitor and maintain them with 4 different methods to see what are cost factors. If you cannot get good solid results in 100 acre plots, what makes anyone think you can achieve anything in 11,000 acres? We need to be conservative when dealing with these lands.

I would really like to meet you if you feel that is something that is possible in the near future and not to argue on our ideas but perhaps work together since we will be neighbors. I welcome your comments and suggestions. I look forward to your response.

Sincerely,

Colin Onaka
Mauna Loa Outfitters LLC

"Alan Lieberman"
<alanlieberman@earthlink.net>
02/10/2006 06:51 AM

To <tanya.rubenstein@contractor.nps.gov>
cc <christen.w.mitchell@hawaii.gov>
bcc
Subject OKP EA for North Kona

Hi Tanya,

Just received the letter announcing the EA for fencing 11,000 acres of N. Kona.

Looking forward to project. Anything I can do to help? This will be a wonderful opportunity to reintroduce Palila someday. The released birds on N. Mauna Kea just bred successfully for the first time at Puu Mali, so it looks like the baby-steps to establish a new population may be starting.

We'd love to do the same in N. Kona.

Let me know if there is anything I can provide in terms of background for the Palila angle of the EA.

Good luck.

Alan Lieberman, Conservation Program Manager
San Diego Zoo, Conservation and Research for Endangered Species Applied Conservation Division
15600 San Pasqual Valley Road
Escondido, CA 92027-7000
Tel: 760-291-5471
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808-989-7251 Cell
alanlieberman@earthlink.net
http://cres.sandiegozoo.org/
http://www.sandiegozoo.org/wordpress/index.php?cat=3

APPENDIX F

Answers to Questions Raised during Pre-Consultation

1) The project is too big. Why does the project have to be so big?

The goal of the ʻŌlaʻa-Kīlauea Partnership in developing the proposed conservation action is large-scale ecosystem protection and restoration. Native plants and animals require a large area for their long-term survival. This large area contains the best remaining native forest in the area and the goal is to protect as much of the remnant forest as possible. Without fencing and feral animal removal, the forest will eventually disappear altogether.

2) Why can't you build small exclosures to make sure you can deal with follow-up management adequately?

- The goal of the project is not protection of small areas, containing representative samples of native plants and animals. A small exclosure will not adequately protect and restore a functioning ecosystem.
- The greatest threat to the area is feral sheep, mouflon sheep and cattle. Once these threats are removed, a large portion of the forest will be able to recover without intensive management.
- We want to protect as large an area as possible with the current funding available. Numerous, smaller fences will ultimately cost more money, both to construct and to maintain.
- Feral animal control experts have stated that feral animal control is feasible within a large fenced area through the use of different animal control methods, because of the open terrain and the herding instincts of feral sheep (the most common ungulate in the area).

3) How will we prevent grass buildup without the sheep? Grass building will increase the fire risk.

Fire management is incorporated as part of the proposed conservation action. It is recognized that fire is a high risk in the project area and that in the short-term after fence construction and animal removal, the volume of pasture grasses is likely to increase. Thus, strategic grass control and reforestation is planned as part of the proposed conservation management to prevent grass build-up in some portions of the project area. In addition, increased capacity of fire detection, prevention and suppression and installation of water catchment tanks is proposed to address increased fire risk. Over the long-term, it is anticipated that the

project will reduce the threat of fire to the area by promoting native tree and shrub cover. Woody vegetation will likely reduce grass cover (the primary source of fine fuel that promote intense fires), increase moisture at ground level (through increased fog interception), and reduce wind velocity near ground level. Although fires will not be prevented by increasing the cover of woody species, fire behavior and the probability of intense and frequent burning will likely decline over the long-term as a result of this project.

4) Fountain grass is invading. How will we control fountain grass?

Fountain grass invasion will be mapped and monitored. Elimination of fountain grass is not possible, but control and containment of fountain grass is possible in strategic areas. Forest recovery as a result of animal control will also help contain the spread of fountain grass.

5) How will the fences be adequately maintained over the long term?

Fences will be inspected and maintained regularly. The planned license agreement between Hawaiian Silversword Foundation and Kamehameha Schools identifies a responsible non-profit organization to oversee long-term conservation management of this area, and the ʻŌlaʻa-Kīlauea Partnership will conduct the needed conservation management, including fence inspection, in collaboration with the Hawaiian Silversword Foundation.

6) The proposal removes sheep habitat/breeding areas, so adjacent hunting areas will be negatively affected.

The importance of the project area as a breeding ground is not known or documented, but the proposed conservation action does remove land from use by sheep. With this project, the goal is to protect and restore a unique Hawaiian ecosystem, a goal that is not compatible with continued sheep presence. Sheep are not native and can persist elsewhere and in different habitats. In contrast, māmane forest is in decline across the island and needs to be protected to prevent its permanent loss. Based on observations of impact on sheep after fencing in other areas on the island of Hawaiʻi, it is anticipated that sheep populations in adjacent areas will not be noticeably affected. Finally, adjacent hunting areas may need to be more intensively managed to maintain sheep populations.

7) How will animal removal be accomplished?

As the fencing nears completion, initial feral animal control measures will consist of driving animals out of the fenced unit into adjacent hunting areas. After the fencing is in place, animal control measures following

driving will include a combination of animal removal methods, which may include ground-based shooting, trapping, snaring, and aerial shooting, with the aim to completely remove animals from the fenced unit.

8) Why is this area considered appropriate for palila since they died off here previously?

The initial goal of this conservation project is to protect and restore degraded māmane forest. If restoration is successful, the forest could potentially support the re-introduction of palila, contributing to their potential recovery. However, many factors would need to be evaluated before palila reintroduction could occur – such as size and quality of protected habitat, the availability of food sources, the presence of predators – and a separate environmental assessment reviewing the alternatives would likely be prepared. Without protection of this area, which is the largest portion of māmane habitat available on Mauna Loa, the establishment of a population of palila independent from the Mauna Kea population would likely not be possible.

It is unknown why palila died off in the project area (in the early 20th century). But again, the native forest in the project area will require recovery and active restoration before it is suitable for palila reintroduction. As part of the planned conservation actions, monitoring of the recovery of other native birds and their response to forest recovery will occur, which give an indication if the site is suitable for palila.

It should be pointed out that the goal of protecting this area is not solely for the benefit of the palila. Protection and restoration of the degraded māmane forest provides benefits to other rare native species, including plants, insects, and forest birds such as the Hawai‘i creeper. Some of these species are currently present in the project area, but are likely to disappear if the forest continues to decline. And some plant species limited in population are historically known from the project area and could be outplanted, providing additional wild populations of these species in protected areas.

APPENDIX F

Comments Received During Public Comment and Response to Comments

The following comment letters were received from the following organizations during the public comment period on the Draft Environmental Assessment:

- Office of Hawaiian Affairs
- County of Hawaii Planning Department
- Tropical Reforestation & Ecosystems Education Center Hawai‘i (TREE Center Hawai‘i)
- Ka ‘Ahahui ‘O Ka Nāhelehele

JUL 31 2007

→ CO

PHONE (808) 594-1888

FAX (808) 594-1865

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

HRD07/3099

July 26, 2007

Tanya Rubenstein
'Ōla'a – Kīlauea Partnership
P.O. Box 52
Hawaii National Park, HI 96718

RE: North Kona Protective Fencing Project, Ahupua'a of Keauhou 2, North Kona, Hawai'i

Dear Tanya Rubenstein,

The Office of Hawaiian Affairs (OHA) is in receipt of your June 19, 2007 submission of the Draft Environmental Assessment (DEA) for the North Kona Protective Fencing project and offers the following comments:

According to the DEA, an archeological survey will be performed along the proposed fence line. OHA requests a copy of the surveys for review upon completion.

OHA asks that, in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) shall be contacted.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jason Jeremiah, Policy Advocate-Preservation, Native Rights, Land and Culture, at (808) 594-1816 or jasonj@oha.org.

Aloha,

Clyde W. Nāmu'o
Administrator

RECEIVED
'07 JUL 31 P2:38
FORESTRY & WILDLIFE
STATE OF HAWAII

C: Ruby McDonald
75-5706 Hanama Pl., Suite 107
Kailua-Kona, HI 96740

✓ Paul Conry
Division of Forestry and Wildlife
Department of Land and Natural Resources
1151 Punchbowl St., Rm. 325
Honolulu, HI 96813

Genevieve Salmonson
Office of Environmental Quality Control
Department of Health
235 S. Beretania St., Suite 702
Honolulu, HI 96813

'Ōla'a-Kīlauea Partnership

'Ōla'a - Kīlauea Partnership

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OKP Partners
Hawai'i Dept. of Land & Natural Resources
U.S.G.S. Biological Resources Division
Kamehameha Schools
U.S.D.A. Forest Service
Hawai'i Dept. of Public Safety
Hawai'i Volcanoes National Park
U.S. Fish and Wildlife Service
The Nature Conservancy of Hawai'i

September 12, 2007

Mr. Clyde Nāmu'o
Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, HI 96813

Subject: Comment Letter on Draft Environmental Assessment
North Kona Protective Fencing Project
TMK 7-8-1: portion of 3, North Kona, Hawaii

Dear Mr. Nāmu'o:

Thank you and your staff for your comments, dated July 26, 2007, on the Draft Environmental Assessment on the North Kona Protective Fencing Project. We acknowledge your request to review the results of the archaeological surveys to be performed, once complete. In addition, we confirm that as the project moves forward, if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division will be contacted, in accordance with Section 6E-46.6, Hawaii Revised Statutes, and Chapter 13-300, Hawaii Administrative Rules. Thank you again for your participation in the environmental review process. Should you have any future questions or concerns about this project, please feel free to contact me at 985-6197 or by email at Tanya.Rubenstein@contractor.nps.gov.

Sincerely,

Tanya Rubenstein,
Coordinator, 'Ōla'a-Kīlauea Partnership

Harry Kim
Mayor

Christopher J. Yuen
Director

Brad Kurokawa, ASLA
LEED® AP
Deputy Director

County of Hawaii
PLANNING DEPARTMENT
101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-3043
(808) 961-8288 • FAX (808) 961-8742

July 19, 2007

Ms. Tanya Rubenstein
Olaa-Kilauea Partnership
P.O. Box 52
Hawaii National Park HI 96718

Dear Ms. Rubenstein:

Subject: Draft Environmental Assessment
Applicant: Olaa-Kilauea Partnership
Project: North Kona Protective Fencing Project
Tax Map Key: 7-8-1:Portion of 3, North Kona, Hawaii

This is in response to your June 19, 2007 letter regarding Olaa-Kilauea Partnership's proposal to construct up to 22 miles of ungulate-proof fencing to protect a substantial portion of the second largest native mamane forest on the island and facilitate restoration of degraded mamane forest, habitat for the endangered palila and for multiple endangered plant species.

In addition to our February 1, 2006 comments, we recommend that any rare plants or trees located within the proposed six to ten feet wide fencing corridor be removed and replanted rather than simply cleared from the area.

Should you have questions or require further information, please feel free to contact Esther Imamura of this office at 961-8288, extension 257.

Sincerely,

CHRISTOPHER J. YUEN
Planning Director

ETI:cd
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xc: Planning Department - Kona

'Ōla'a-Kīlauea Partnership

'Ōla'a - Kīlauea Partnership

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OKP Partners
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U.S.G.S. Biological Resources Division
Kamehameha Schools
U.S.D.A. Forest Service
Hawai'i Dept. of Public Safety
Hawai'i Volcanoes National Park
U.S. Fish and Wildlife Service
The Nature Conservancy of Hawai'i

September 12, 2007

Mr. Christopher Yuen
Planning Director
County of Hawaii Planning Department
101 Pauahi Street, Suite 3
Hilo, HI 96720

Subject: Comment Letter on Draft Environmental Assessment
North Kona Protective Fencing Project
TMK 7-8-1: portion of 3, North Kona, Hawaii

Dear Mr. Yuen:

Thank you and your staff for your comments, dated July 19, 2007, on the Draft Environmental Assessment for the North Kona Protective Fencing Project. We acknowledge your recommendation to remove and replant, rather than clear, any rare plants or trees located within the fencing corridor. We intend to avoid rare plants where possible by locating the fencing corridor along existing four-wheel drive roads and by selecting final alignments that pass through areas of open or sparse vegetation to avoid sensitive botanical resources. Where avoidance is not possible, we will attempt to relocate any rare plants or trees that remain within the fencing corridor. Thank you again for your participation in the environmental review process. Should you have any future questions or concerns about this project, please feel free to contact me at 985-6197 or by email at Tanya.Rubenstein@contractor.nps.gov.

Sincerely,

Tanya Rubenstein

Tanya Rubenstein,
Coordinator, 'Ōla'a-Kīlauea Partnership

Tropical Reforestation & Ecosystems Education Center Hawai`i

Ola ka 'āina, Ola nā kānaka
Healthy land, Healthy people

From the Office of the Executive Director

CONTACT:
P.O. Box 411
Kealakekua, Hawai`i
96750

Telephone
808 333-0330

Website
www.treehawaii.org

Email
Christy@treehawaii.org

July 19, 2007

Ms. Tanya Rubenstein, Coordinator
Olaa Kiluea Partnership aka Tri Mountain Partnership
P.O. Box 52
Hawaii National Park, HI 96718

Dear Ms. Rubenstein,

I am writing to you on behalf of TREE Center Hawai`i and in response to the Olaa Kiluea Partnership (aka Tri Mountain Partnership) Project outlined in the draft EA (DEA) for fencing on Kamehameha Schools Bishop Estate lands in North Kona at Puu Lehua. We understand the DEA is open for public comment beginning June 23rd and ending July 23rd.

Please consider this letter as TREE Center Hawai`i's support of this project.

For over a decade TREE's mission centered programs have been involved in restoring native forests and habitats in cooperation with Federal and State Land Managers and Private Land Owners. In our experiences fencing is a required first step to any restoration effort. A large scale restoration effort such as this requires public and private support and partnerships. TREE's mission centered programs connect people to forests through ongoing restoration, reforestation, and education programs. We fully support this project as outlined and to further demonstrate our commitment we offer to explore ways in which our organization might participate and partner with you to help you achieve your projects short and long term objectives.

Thank you for your efforts to protect and restore this mauka site for future generations. Please keep us informed of ways in which we can continue to provide our support. Feel free to contact me at (808) 333-0330 or by email Christy@treehawaii.org.

Sincerely,

Christy A. Schumann
Executive Director

'Ōla'a-Kīlauea Partnership

'Ōla'a - Kīlauea Partnership

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Kamehameha Schools
U.S.D.A. Forest Service
Hawai'i Dept. of Public Safety
Hawai'i Volcanoes National Park
U.S. Fish and Wildlife Service
The Nature Conservancy of Hawai'i

September 12, 2007

Ms. Christy Schumann
TREE Center Hawaii
PO Box 411
Kealakekua, HI 96750

Subject: Comment Letter on Draft Environmental Assessment
North Kona Protective Fencing Project
TMK 7-8-1: portion of 3, North Kona, Hawaii

Dear Ms. Schumann:

Thank you for the comments on behalf of TREE Center Hawaii, dated July 19, 2007, on the Draft Environmental Assessment for the North Kona Protective Fencing Project. We appreciate your support of this important conservation project to protect māmane forest on the island of Hawaii and your offer to partner with TMA to achieve the anticipated conservation objectives. I will be in touch to discuss opportunities to work together on restoration as the fencing nears completion. Thank you again for your participation in the environmental review process. Should you have any future questions or concerns about this project, please feel free to contact me at 985-6197 or by email at Tanya.Rubenstein@contractor.nps.gov.

Sincerely,

Tanya Rubenstein,
Coordinator, 'Ōla'a-Kīlauea Partnership

KA'AHAHUI 'O KA NĀHELEHELE
a non-profit affiliate of the Dryland Forest Working Group

Sally H.Rice, President
Kathy Frost, Vice-President
Willie Rice, Treasurer
Peter Van Dyke, Secretary

71-1361 Hawaii Belt Road
Kailua—Kona, HI 96740-8308
(808)325-1070
pililaau@hawaiiantel.net
501c3 non-profit status

July 19, 2007

Ms. Tanya Rubenstein
Tri Mountain Partnership Coordinator
P.O. Box 52
Hawaii National Park, HI 96718

Dear Ms. Rubenstein:

On behalf of the Board of Directors of Ka 'Ahahui 'O Ka Nahelehele I would like to express our very strong support of the Ola'a Kilauea Watershed Partnership's proposal to construct fencing on Kamehameha Schools lands in North Kona at Pu'u Lehua. In our native forest restoration work at Kaupulehu we have found that the fencing of a proposed native restoration area is critical to the success of the project. Without a fence the natural regeneration of seedlings does not occur as the exotic mammals either eat or trample the emerging seedlings. Out planted seedlings cannot survive grazing or trampling either.

The area where the fence is proposed is of limited present economic value and would be a great asset to the native ecosystem restoration there. With the elimination of mammalian plant predators the return of the trees and shrubs would bring with it the return of the native birds, insects, fungi and many other benefits to the system. The water cycle would be enhanced as the native trees and shrubs collect moisture from the fog that is frequent in this area and return it to the soil through fog drip from their leaves.

Ka 'Ahahui 'O Ka Nahelehele considers this fencing project to be a vital step in salvaging our native Big Island ecosystems and continuing the restoration of large landscape areas that support endemic birds and other fauna.

Sincerely yours,
Sally Rice
Sally H. Rice
President

'Ōla'a-Kīlauea Partnership

'Ōla'a - Kīlauea Partnership

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U.S. Fish and Wildlife Service
The Nature Conservancy of Hawai'i

September 12, 2007

Ms. Sally Rice
President
Ka 'Ahahui 'O Ka Nāhelehele
71-1361 Hawaii Belt Road
Kailua-Kona, HI 96740

Subject: Comment Letter on Draft Environmental Assessment
North Kona Protective Fencing Project
TMK 7-8-1: portion of 3, North Kona, Hawaii

Dear Ms. Rice:

Thank you for the comments on behalf of Ka 'Ahahui 'O Ka Nāhelehele, dated July 19, 2007, on the Draft Environmental Assessment for the North Kona Protective Fencing Project. We appreciate your strong support of this important conservation project to protect māmane forest on the island of Hawai'i and agree that it is a vital step in salvaging the remaining native ecosystem. Thank you again for your participation in the environmental review process. Should you have any future questions or concerns about this project, please feel free to contact me at 985-6197 or by email at Tanya.Rubenstein@contractor.nps.gov.

Sincerely,

Tanya Rubenstein

Tanya Rubenstein,
Coordinator, 'Ōla'a-Kīlauea Partnership