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FINAL ENVIRONMENTAL ASSESSMENT

KIPUKA 21 FENCING AND INTERPRETIVE TRAIL CONSTRUCTION

South Hilo District
Island of Hawai'i

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OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

In accordance with
Chapter 343, Hawai'i Revised Statutes

Proposed by:

State of Hawai'i
Department of Land and Natural Resources
Division of Forestry and Wildlife

1151 Punchbowl Street, Room 325
Honolulu, Hawai'i 96813

January 2004

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I. SUMMARY

<u>Project Name</u>	Kipuka 21 Fencing and Interpretive Trail Construction
<u>Project Location</u>	Kipuka Adjacent to Milepost 21, Saddle Road Upper Waiakea Forest Reserve South Hilo District Island of Hawai'i TMK 2-4-008-008 (State of Hawai'i)
<u>Land Use</u>	Conservation District, Protective Subzone
<u>Proposing Agency</u>	State of Hawai'i Department of Land and Natural Resources Division of Forestry and Wildlife
<u>Approving Agency</u>	State of Hawai'i Department of Land and Natural Resources
<u>Anticipated Determination</u>	Finding of No Significant Impact
<u>Agencies & Organizations Consulted</u>	
Federal:	Natural Resources Conservation Service US Army Garrison Hawai'i, Pohakuloa Training Area US Army Garrison Hawai'i, Schofield Barracks 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 Department of Transportation, Federal Highways Administration US Senator Daniel Inouye US Senator Daniel Akaka US Representative Ed Case
State:	Department of Agriculture Department of Defense Department of Education, Hilo District

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
 Natural Area Reserves Commission

Department of Transportation
Department of Transportation, Highways
Division, Hawai'i District Office
Hawai'i Island Burial Council
Land Use 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 Malama I Ka Lokahi
Big Island Bird Hunters
Big Island Bow Hunters
Big Island Field Trial Association
Big Island Gun Club
Big Island Gun Dogs
Big Island Invasive Species Committee
Big Island Trap Club
Bishop Museum, Hawai'i Biological Survey
Conservation Council of Hawai'i
Earthjustice Legal Defense Fund
Hawai'i Audubon Society
Hawai'i County Native Hawaiian Chamber of
Commerce

Hawaiian Civic Club of Hilo
Prince David Kawanānakoā Hawaiian Civic
Club
Hawaiian Ecosystems at Risk (HEAR)
Hawai'i Electric Light Company (HELCO)
Hawai'i Island Economic Development Board
Hawai'i Island Archery Club
Hawai'i Volcanoes National Park Kupuna
Committee
Hilo Outdoor Circle
Historic Hawai'i Foundation
Hualalai Archery Club
Hui Malama I Na Kupuna o Hawai'i Nei
Ilio'ulaokalani Coalition
Kahea – the Hawaiian-Environmental Alliance
Kahu Ku Mauna Council
Kilauea Sporting Skeet Club
Kumu Hulu Ray Fonseca, Halau Hula O
Kahikilaulani
National Wild Turkey Federation – Volcano
Chapter
North Kohala Gun Club
Okahara & Associates
Olaa-Kilauea Partnership
Pig Hunters of Hawai'i
Sierra Club, Moku Loa Chapter
The Nature Conservancy of Hawai'i
Waimea Outdoor Circle
Wildlife Conservation Association of Hawai'i

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John Cusick
Reggie David
David Duffy
Emily Fielding
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Lenny Freed
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Jack Jeffrey
Wendy Ann Kuntz
Alan Lieberman
Peter Luscomb
Art Medeiros
Theresa Menard
Steve Montgomery
Miles Nakahara
Bob Peck
Liba Pejchar
Lyman Perry
Thane Pratt
Tanya Rubenstein
Caleb Spiegel
Orlo Steele
Valerie Stein
Pat Tummons
Eric Vanderwerf
Debbie Ward

Summary of Action

The Division of Forestry and Wildlife (DOFAW) plans to construct perimeter fencing and an interpretive trail within the Upper Waiakea Forest Reserve, at the kipuka located just after Milepost 21 ("Kipuka 21") on Saddle Road on the Big Island of Hawai'i. The project area is owned by the State of Hawai'i and lies within the Protective Subzone of the Conservation District.

The goals of this project are to: (1) provide long-term protection to the natural resources within a kipuka situated near Milepost 21 on Saddle Road, through perimeter fencing of approximately 15 acres, and (2) provide safe and convenient public access to a relatively unspoiled kipuka rainforest habitat, through the development of an interpretive trail.

Fence construction will involve hand clearing of a corridor no more than 10 feet wide and erecting a fence line. The planned fence will be approximately four feet tall, made of hogwire. Trail construction will involve clearing of vegetation, constructing one or more small viewing platforms, and establishing a trail bed for a trail of approximately $\frac{3}{4}$ mile in length. Interpretive signage will be placed at strategic locations along

the trail, sharing cultural, botanical and biological information about the kipuka, the Hawaiian forest, and the native plants and wildlife.

Potential impacts include disturbance and damage to common native plants and short-term disturbance to native birds. Impact mitigation measures include conducting surveys and route design of the fence and trail corridors to ensure no botanical or cultural resources are within the construction corridor, constructing most of the fence outside of the kipuka on the 1855 lava flow where vegetation is sparse to minimize disturbance to vegetation, implementing measures to decrease the potential for accidental introduction of non-native species, and avoiding loud construction during periods of nesting.

II. PROJECT PURPOSE AND NEED

Forest 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 has resulted in outstanding adaptive radiations of native forest birds, plants, and insects from relatively few colonizing events. Notable examples are the endemic Hawaiian honeycreepers (*Drepanidinae*), lobeliads (*Lobeliaceae*), and pomace flies (*Drosophilade*), 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.

Unfortunately, many of the natural forest ecosystems of Hawai'i have been destroyed or degraded. Many forest habitats that do remain intact are relatively inaccessible. While this is in many ways an aid to the prevention of human destruction of these areas, it also prevents many residents and visitors from enjoying these unique and spectacular biological and cultural natural resources. The ability to directly experience natural environments and gain access to educational information about those resources would foster greater awareness and responsible stewardship of Hawai'i's cherished island ecosystems. In addition, these encounters with the natural world provide fulfilling and rewarding recreational opportunities in the form of conservation education and forest and wildlife viewing.

"Kipuka 21," a kipuka situated near Milepost 21 on Saddle Road, is home to many native plants and birds and provides a relatively unspoiled example of native rainforest habitat. However, there is some evidence of limited ungulate damage to vegetation within the kipuka, and without

fencing, the kipuka remains exposed to future damage and degradation. Therefore, one goal of the proposed action is to construct fencing to ensure long-term protection of the native resources contained within the kipuka.

The second goal of the proposed action is to construct an interpretive trail to provide safe and convenient public access into the kipuka. The planned trail is anticipated to be used by residents, visitors, and schoolchildren and will provide a unique, accessible, educational and recreational opportunity. Construction of the trail is expected to improve public bird-watching opportunities and provide access to a native forest.

Once complete, the interpretive trail will offer visitors a rare opportunity to experience and learn about the unique ecosystem of a kipuka. *Kipuka* are pockets of forest that have been surrounded by lava flows but left intact and unharmed, and the kipuka of the Saddle Road area provide an ideal setting for this project. Their relatively pristine vegetation is characterized by a closed canopy koa/ohia-lehua (*Acacia koa*/*Metrosideros*) forest, with heights of 50-60 feet, an intact understory of native and endangered plants and birds, and unique opportunities for canopy-level viewing from the surrounding lava flow outside of the kipuka. Moreover, the Saddle Road kipuka, especially Kipuka 21, are relatively accessible to the general public because they are located relatively close to Hilo in close proximity to the roadway. Finally, the topography of the Saddle Road kipuka is relatively level, reducing construction and maintenance costs for protective fencing.

The project area, a small kipuka located within the Upper Waiakea Forest Reserve, is State-owned land within the Conservation District, and therefore requires that an Environmental Assessment to be written in accordance with Chapter 343 of the Hawai'i Revised Statutes.

III. PROJECT DESCRIPTION

General

The Division of Forestry and Wildlife (DOFAW) plans to construct perimeter fencing and an interpretive trail within the Upper Waiakea Forest Reserve, at the kipuka located just after Milepost 21 ("Kipuka 21") on Saddle Road on the Big Island of Hawai'i. The project area is owned by the State of Hawai'i and lies within the Protective Subzone of the Conservation District. Maps of the project area and of the trail route are included in Appendix A.

The goals of this project are to: (1) provide long-term protection to the natural resources within a kipuka situated near Milepost 21 on Saddle Road, through perimeter fencing, and (2) provide safe and convenient public access to a relatively unspoiled kipuka rainforest habitat, through the development of an interpretive trail.

Fencing

Fencing the perimeter of the kipuka is planned to protect the biological resources within the kipuka from feral animals. The total area enclosed is approximately 15 acres. The ungulate-proof fences will be approximately four feet high with a combined length of approximately 3,700 feet.

The proposed fence line alignment was selected based on the need to maximize protection of native forest, to minimize costs of construction and long-term maintenance, to reduce the visual impact from Saddle Road, and to avoid disturbance of native vegetation. The fence will be constructed on lava flows on which vegetation is relatively sparse to avoid disturbing sensitive species.

Before construction, the fence route will be delineated with flagging tape by staff from DLNR. During this process, the route corridor area will be re-surveyed for identification of sensitive vegetation. The flagging will be removed after construction.

It is anticipated that a corridor no wider than 10 feet along the proposed fence line will be cleared by hand and with small power tools as necessary for fence construction. In the event that any federally listed threatened or endangered species, archaeological sites or artifacts are encountered, fencing construction will halt and efforts to re-route the fence line to avoid these elements will be made.

The fences will be made of steel posts, steel wire, and barbed wire. Fence construction will involve driving posts into the ground no more than 10 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. One strand of barbed wire will be installed along the bottom of the fence to prevent feral animals from entering the fenced area. In addition, where needed, an apron of hog wire will be laid horizontally on the ground and attached to the outside of the standing fence to curtail grubbing by feral animals such as pigs along the fence.

Existing roads will be the primary method used to transport fence materials and crews; however, helicopters may be utilized to transport some of the fencing material and supplies to the site.

When fencing is nearly complete, feral ungulates such as pigs, goat or sheep remaining within the enclosure will be driven out by DOFAW staff. Monitoring after completion of the fence will occur to ensure that no feral pigs, goats and sheep are penned in the enclosure.

Trail

The second phase of the proposed action involves developing an approximately $\frac{3}{4}$ mile interpretive trail to provide safe and convenient public access into the kipuka for plant and wildlife viewing.

The trail will begin at the lava flow on the edge of the kipuka. At least one viewing platform is planned at the trailhead, on the existing a'a flow, for use by those with limited physical mobility and those who do not wish to walk the entire trail. The viewing platform(s) will be constructed of materials that blend in with the natural environment. The location(s) will be selected as appropriate based on the topography and the natural resources and will allow viewers on the platform to look straight into the upper canopy of the kipuka at several species of the native birds present in the kipuka.

The floor of the kipuka is approximately 20 to 30 feet below the edge of the a'a. Currently, the pathway down is unimproved, over a'a and vegetation such as roots and vines. The planned trail will descend into the kipuka by switchbacks to reduce the grade of the descent. If necessary, a few stairs may be constructed to facilitate the descent. Approximately halfway down into the kipuka, there exists a natural flat clearing. This area will be enlarged by the removal of some vegetation to permit individuals to sit and watch native birds from the mid-canopy level or to permit small groups (such as of schoolchildren) to meet here for orientation before fully entering the kipuka. From this point, the trail will continue to descend to the floor of the kipuka by switchbacks.

Within the kipuka, the proposed trail is approximately $\frac{1}{4}$ mile in length and takes a meandering circular route through the kipuka, with a short spur trail that leads to an adjacent, younger kipuka. The view from the end of the spur trail is of the landscape surrounding Kipuka 21. From an educational standpoint, this provides a demonstration of the biological implications of the geological processes that create kipuka, including ecological succession, population fragmentation, evolution, and adaptive radiation.

The trail route was selected to minimize grade changes and to minimize impact on native vegetation. The selected route utilizes the existing topography and vegetation as a means to encourage users to

remain on the path by limiting their visibility of other parts of the trail. It also exposes trail users to the diverse vegetation contained within the kipuka and is anticipated that the planned route will enhance the natural experience.

Trail construction will be completed over four stages. The first stage involves a reconnaissance survey of the trail corridor area (already completed) and flagging of the potential trail course by staff of the Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW). This stage involved a survey of the vegetation in the trail corridor by a DOFAW botanist to ensure that no rare, threatened or endangered plant species would be affected by construction. The flagging will be removed after construction.

The second stage includes preliminary removal of vegetation and debris (brushing) from the planned trail course. This action will reveal and define the extent and condition of the trail bed and uncover any previously hidden sensitive plants or historical materials. In the event that any federally listed threatened or endangered species, archaeological sites or artifacts are encountered, trail work will halt and efforts to re-route the trail course to avoid these elements will be made.

The third stage will involve construction of the trail bed and careful removal of fallen trees and hazardous tree-snags from portions of the trail. The planned trail will be of raised bed construction, with the trail bed most likely constructed of gravel or cinder. In some locations, a boardwalk, made of wood or recycled plastic, may be constructed to protect the surrounding vegetation or resources or to maintain a level path.

Where possible, the trail will be cut to a grade ranging between 5 and 10 percent. While not a Na Ala Hele (NAH) program trail, the trail will be constructed consistent with established NAH specifications for a Sensitive Trail outlined in the NAH Program Plan and included in Appendix B. The width of the trail (tread corridor) will vary from approximately two to three feet. It is anticipated that trees will be cleared from the tread corridor only, and brush and logs will be cleared two feet to each side of the tread corridor. In total, a corridor no wider than six feet wide and no higher than seven to eight feet will be disturbed. Vegetation clearance will occur by hand and with small power tools as necessary. Removal of woody roots and stumps will be done only where necessary and where doing so will not de-stabilize the trail bed. Existing roads will be used to transport construction materials and crews.

The final stage of trail construction will be to place interpretive signs at strategic locations along the trail and at the viewing platform(s). These

signs will be developed in coordination with the Division of State Parks, local experts and interested community members and will provide information about the kipuka, the Hawaiian forest, native plants and wildlife, and the cultural significance of the forest and kipuka. In addition, signs will be placed at the trailhead defining certain rules of conduct and warning of possible hazards.

Maintenance of the trail will involve installation of boot-brushing devices to prevent weed introductions by visitors, monitoring for weeds in the trail bed, periodic brushing of vegetation, clearing of debris, removal of trash, spot-restoration of trail structures, and maintenance of trail signs and will be routinely conducted by DLNR.

Future Related Improvements

Parking for the planned trail is currently limited to space available on the side of Saddle Road and plans to construct an improved parking area are underway in connection with the Saddle Road re-alignment project. This re-alignment could allow the existing roadway to be converted into a turn-off and parking area and discussions are currently underway between the Division of Forestry and Wildlife and the State Department of Transportation, Highways Division, Hawai'i District Office, to develop this long-term parking solution, including location and design of highway access for the trail.

Outplanting of rare and endangered native plants in the kipuka may also occur in the future. Feral ungulates have damaged or destroyed many of the native species that were once common in kipuka, and fencing Kipuka 21 may provide protected habitat suitable for outplanting many of these species as part of recovery efforts. Selection of the appropriate species and planting sites will be conducted only after consultation with experienced botanists and sufficient funding.

The interpretive trail planned in this kipuka may be the first of many such trails along the Saddle Road. The Hawai'i Island Economic Development Board and other partners have developed the concept of a "Saddle Road Eco-Highway" that would provide access where appropriate to specific points along the Saddle Road re-alignment. These spots would provide educational information on the natural resources, cultural history, and flora and fauna of the area. The Federal Highways Administration and the State Department of Transportation have approved the Eco-Highway concept, and efforts are underway to secure funding for implementation. The interpretive trail at Kipuka 21, planned independently and concurrently with the Eco-Highway concept, would be consistent with, and considered part of, the Eco-Highway once complete.

Timing & Costs

Fence construction is planned to occur once all permissions and approvals have been received. Fencing is anticipated to take approximately two months.

Trail construction is planned after fencing is complete and will take approximately three to six months.

The cost estimates for the project are as follows:

Item	Cost
Fence materials	\$15,000
Fence Construction	\$20,000
<i>Subtotal Fencing:</i>	<i>\$35,000</i>
Trail materials	\$10,000
Trail Construction	\$35,000
<i>Subtotal Trail:</i>	<i>\$45,000</i>
Interpretive signage	\$10,000
Total	\$90,000

Funding for this project includes \$45,000 from the U.S. Fish and Wildlife Service and \$20,000 in State funds. Additional funding and the use of volunteers will be sought as needed to complete the project.

IV. SUMMARY DESCRIPTION OF AFFECTED ENVIRONMENT

Location and Physical Characteristics of the General Area

The project area is a kipuka situated in the northwest corner of the Upper Waiakea Forest Reserve on the saddle formed by lava flows from both Mauna Kea and Mauna Loa on the island of Hawai'i. Kipuka, isolated pockets of late successional forest located on old lava flows, are interspersed throughout the general area. The project area, currently called "Kipuka 21" because of its location just past Milepost 21 on Saddle Road, is surrounded by several flows of Mauna Loa, including Flows of 1855, 1881, and 1935.

Kipuka 21 is situated at approximately 5,600 feet in elevation. It is located approximately two miles from the Kipuka Ainahou Nene Sanctuary and approximately one mile from the southwest corner of the Hilo

Watershed Forest Reserve. The Pu'u O'o Trail crosses Saddle Road approximately one mile from the project area.

Kipuka 21 occupies a portion of the traditional Hawaiian land division (ahupua'a) of Waiakea, close to the boundary with the ahupua'a of Piihonua. Land surrounding the project area is owned by the State of Hawai'i and is largely uninhabited. The primary use of the surrounding land is Forest Reserve, and the project area is within State Hunting Unit B, which allows the public hunting of wild sheep, goat and pig and game birds.

Annual median rainfall is approximately 79 to 118 inches, though condensation from ground-level clouds (fog drip) contributes additional moisture. The geologic substrate in the general vicinity surrounding the project area is predominantly a'a, and soils in the project area are characterized as rLV (Lava Flows, a'a). The overall topography is gently sloping (<10%).

The project area is located entirely within the Protective Subzone of the State Conservation District. It is also designated Conservation by the Land Use Pattern Allocation Guide Map of the County of Hawai'i General Plan. It is not located in the County of Hawai'i's Special Management Area.

Flora

Kipuka are pockets of ancient forest that have been surrounded by relatively recent lava flows, but left intact and unharmed. Kipuka 21 is best characterized as old montane mesic forest. Like other kipuka in the Saddle Road area, Kipuka 21 exhibits unique biological character and illustrates the complex structure of the native Hawaiian rainforest. There is an overstory dominated by 'ohi'a-lehua (*Metrosideros polymorpha*) and koa (*Acacia koa*), a middle canopy layer of trees and shrubs, including olapa (*Cheirodendron trigynum*), pilo (*Coprosma montana*), ohelo (*Vaccinium calycinum*), akala (*Rubus hawaiiensis*), pukiawe (*Styphelia tameiameiae*), kawau (*Ilex anomala*), and kolea (*Myrsine lessertiana*), and a lower canopy dominated by ferns, such as hapu'u (*Cibotium chamissoi*). Under the canopy, the forest is open with a well-developed herb layer dominated by ferns (e.g. *Sadleria*, *Dryopteris*, and *Pteridium*). A high diversity of bryophytes (mosses and liverworts) is present.

This habitat supports numerous endemic plant species (unique to the Hawaiian Archipelago) and are highly susceptible to invasion by alien species when disturbed. Over 70 native plants have been observed in the project area, including koa, maile, hapu'u, 'ohi'a, 'ohelo, uluhe, pa'iniu,

kanawao, ha'iwale, laukahi, na'ena'e, manono, kawa'u, 'uki, kolea, ala'ala wai nui, ho'awa, 'ae, kopiko, 'akala, and 'ama'u.

At least 20 species of non-native plants have been observed in the project area, including grasses, thimbleberry, and St. John's wort. A list of plant species known from the project area is included in Appendix C.

Fauna

Six honeycreepers endemic to the Hawaiian Islands have been observed in Kipuka 21. These include three endangered species, the Hawai'i creeper (*Oreomystis mana*), the akiapola'au (*Hemignathus munroi*), and the 'akepa (*Loxops coccineus*). Non-endangered honeycreepers found in the project area include the 'i'iwi (*Vestiaria coccinea*), 'apapane (*Himatione sanguinea*), and 'amakihi (*Hemignathus virens*). The 'o'u (*Psittirostra psittacea*), an endangered honeycreeper, is thought to have occurred historically in the project area, but there has been no substantiated sighting of 'o'u on the Big Island since the 1980's.

Other native birds in the project area include the endangered 'io (Hawaiian hawk) (*Buteo solitarius*), the oma'o (*Myadestes obscurus*), and 'elepaio (*Chasiempis sandwichensis sandwichensis*). Additionally, the 'a'o (Newell's shearwater) (*Puffinus auricularis newelli*) and the 'ua'u (Hawaiian petrel) (*Pterodroma sandwichensis*) may overfly the project area to and from nesting areas on the upper eastern slopes of Mauna Loa.

Non-native birds include the House Finch (*Carpodacus mexicanus*), Japanese White-eye (*Zosterops japonica*), and the Red-billed Leiothrix (*Leiothrix lutea*). Game birds in the project area include Ring-necked pheasant (*Phasianus colchicus*) and Kalij pheasant (*Lophura leucomelana*).

No specific studies of the invertebrate community have been done within Kipuka 21 but given the relatively intact condition of the native forest within the kipuka, and studies in similar and nearby forests, it is suspected this site supports high densities of native arthropods and other native invertebrates that comprise significant components of the ecosystem. Information received from the U.S. Fish and Wildlife Service during pre-consultation indicates that the kipuka could be habitat to two *Drosophila* species proposed for listing, *Drosophila heteroneura* and *Drosophila ochrobasis*, as well as other candidate *Drosophila* species.

Non-native animals observed or thought to occur in the project area include feral pigs (*Sus scrofa*), rats (*Rattus spp.*), mongoose (*Herpestes auropunctatus*), and hybrid feral sheep (*Ovis musimon x Ovis aries*). A

species list of fauna known from the project area is included in Appendix E.

Significant and Sensitive Habitats

Kipuka, as pockets of forest surrounded by relatively recent lava flows, nature constitute sensitive habitat by their very nature.

The project area is at the boundary of the reported breeding range for the endangered 'io (Hawaiian hawk)(*Buteo solitarius*), which nest between May and October. The Saddle Road Draft EIS noted that it is probable that this species nests in low numbers in a few of the kipuka located along the proposed route of Saddle Road, potentially including Kipuka 21.

The project area is habitat for three species of endangered honeycreepers: Hawai'i creeper (*Oreomystis mana*), the akiapola'au (*Hemignathus munroi*), and the 'akepa (*Loxops coccineus*).

Finally, while the project area is outside of federally designated critical habitat, it is located close to the boundary of critical habitat for one bird and several plants: approximately six miles from Palila (*Loxiodes bailleui*) critical habitat (endangered bird); approximately two miles from *Argyroxiphium kauense* (Ka'u Silversword) critical habitat (endangered plant); approximately three miles from *Cyanea shipmanii* (haha) critical habitat (endangered plant); and approximately five miles *Clermontia peleana* ('oha wai) critical habitat (endangered plant). In addition, the project area is in habitat identified as suitable for the endangered plant *Asplenium fragile*.

Archaeological Sites and Cultural Practices

The following steps were taken to determine the cultural and historical significance of the project area: (1) a general literature review was conducted to determine if there were any studies of the area or any myths or legends specific to the area; (2) the Draft Environmental Impact Statement for the Saddle Road project was reviewed, particularly the Archaeological Inventory Survey and Historic and Traditional Cultural Assessment conducted by PHRI and the Social Impact Assessment: Indigenous Hawaiian Cultural Values of the Proposed Saddle Road Realignment, conducted by Pualani Kanahale and Edward Kanahale; (3) pre-consultation letters were sent to the following organizations: State Historic Preservation Division, Office of Hawaiian Affairs, Department of Hawaiian Home Lands, Hawai'i Island Burial Council, Kahu Ku Mauna Council, Ahahui Malama I Ka Lokahi, Hawai'i County Native Hawaiian Chamber of Commerce, Hawaiian Civic Club of Hilo, Prince David

Kawananakoa Hawaiian Civic Club, Hui Malama I Na Kupuna o Hawai'i Nei, Ilio'ulaokalani Coalition, Kahea – the Hawaiian-Environmental Coalition, Halau Hula O Kahikilaulani (c/o Kumu Hulu Ray Fonseca), Hawaii Volcanoes National Park Kupuna Committee, and the Historic Hawai'i Foundation; and (4) DOFAW staff walked the corridors for the planned fencing and interpretive trail to determine if there were any obvious archaeological features, such as rock walls, or any features potentially used for cultural reasons, such as lava tubes or caves.

The history of Kipuka 21 and use by Hawaiians is not well documented. There is no known Hawaiian name for this kipuka, and it was not identified in the Saddle Road Draft EIS as one of particular importance. Pre-consultation did not reveal any specific traditional or cultural use of this kipuka.

However, Kipuka 21 has cultural significance by virtue of being a kipuka. And, while few features are known to exist in the project area, burial caves, lava tube shelters, trails, and small forest shrines are the types of features that might be revealed by intensive surveys. There are no known caves or lava tubes in the immediate project area, but there are two known caves within five miles of Kipuka 21, Strawberry Cave and Don's Cave.

Kipuka 21 is situated in an area used by Hawaiians long before Western contact. Prehistoric trails, such as the nearby Pu'u O'o Trail, crossed the general area, enabling travel between districts and access to interior resources. The area was likely used historically by Native Hawaiians for activities such as bird catching, canoe making, and gathering forest plants for medicinal and ethnobotanical use.

Many endemic forest birds were pursued for their feathers, which were used to make lei, capes and cloaks, helmets and god images, all symbolic of the chiefly rank of the wearer and/or owner. Several birds known to be present in Kipuka 21 possess feathers prized for these purposes: 'i'iwi red feathers; 'apapane red feathers; 'amakihi greenish-yellow feathers. Other forest birds, now extinct or near extinction, may have been present historically, including the 'o'u green feathers; mamo (*Drepanis pacifica*) yellow feathers; and o'o (*Moho nobilis*); yellow feathers. The traditional method used for capturing these birds was to employ a bird-catchers' pole (kia-manu) covered with bird lime, a sticky gum or glue of various preparations. The pole was camouflaged with nectar flowers and placed in a tree until it attracted a bird. Kahili (royal feather standards) were also made with feathers, primarily of sea birds, but occasionally with feathers from the 'io (Hawaiian hawk), also observed within Kipuka 21.

Kipuka 21 contains many native plants historically used by Native Hawaiians for ethnobotanical or medicinal purposes. For example, koa was the best wood for canoe-making, and Native Hawaiians also used the wood for surfboards, non-food containers, weapons and tools, and house posts. Hapu'u (*Cibotium sp.*) was used for dressing wounds and embalming in ancient times, and more recently for pillow and mattress stuffing. 'A'ali'i (*Dodonaea viscosa*) wood was used for spears and house posts and the leaves for medicine. Naio (*Myoporum sandwicense*) was used for house frames. Maile (*Alyxia oliviformis*) was used to perfume kapa, in lei-making, and represents Laka, the goddess of hula. Appendix D contains a list of traditional uses for many of the native plants found within Kipuka 21.

Contemporary use of the kipuka is likely limited to some gathering and bird-watching. Evidence of maile gathering was visible during preliminary surveys, and the gathering of other vegetation, such as palapalai (*Microlepia strigosa*) and the reddish leaf buds of 'ohi'a (*Metrosideros polymorpha*) is possible. Other visitors to the kipuka come to experience the unique bird-watching opportunities. Several websites and field guides identify Kipuka 21 as a good location for bird and wildlife viewing; the following passage is an example:

This small, beautiful island of rain forest vegetation amid lava flows is easily accessible along the Saddle Road (Highway 200). Pull off the north side of the roadway between mile posts 21 and 22. Walk across the lava flow to the edge of the forest and search the mid canopy for *omao* and *elepaio*. Look for red blossoms in the *ohia* trees and watch carefully for nectar feeding birds such as *apapane*, *iiwi*, and *amakihi*. The *akepa* and Hawaii creeper are also occasionally seen here.

(Alternative Hawaii, 2003; USGS, 2003).

Public Utilities

Hawai'i Electric Light Company (HELCO) has two 69 kV electric transmission lines generally following Saddle Road. A power line easement is immediately adjacent to the project area, on the east side of the kipuka. Construction of fencing and the interpretive trail will not cross this easement or otherwise impair access to the transmission line.

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

Environmental Impacts

The most obvious environmental impacts of the proposed action are associated with fence and trail construction. Disturbance of vegetation and soil will occur in the immediate vicinity of the planned fence line and trail corridor. Fence and trail construction entails clearing the planned route to remove potential hazards to crews and to facilitate construction. Plants will be pruned or removed along the entire path, and the width of this corridor could range from ten feet for the fencing and six feet for the trail. This may involve the removal of common native plants, but areas of sensitive botanical resources will be avoided. Ongoing use and maintenance of the trail and ongoing maintenance of the fence will require that the corridors be kept cleared of vegetation, resulting in a permanent alteration of some acreage.

While soil will be disturbed along the proposed fence line and trail corridor, soil disturbance will be short-term and no changes in the normal runoff or percolation patterns are expected. Disturbance of the ground surface along the proposed fence line and trail corridor and transport of material and equipment from off-site may increase the potential accidental introduction of non-native plants to the project site.

Native birds may be impacted to some degree by the installation of this fence and the construction of an interpretive trail. One concern expressed is the potential for birds to be injured after flying into fences. However, the native birds that overfly the project area are thought to be traveling at heights greater than eight feet and should be above the planned fence line.

Native birds may also be impacted by the increased human activity in the project area – both during construction and after construction as a result of increased public use of the area due to the interpretive trail. Because there are no known cases where normal trail use caused native birds to leave an area, impacts on native birds are not expected to be significant.

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

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 the native forest. Rooting and browsing of the native vegetation, compaction of soils, and spread of nonnative weed species by pigs, goats and sheep disturbs the natural habitat of the kipuka, harming native vegetation, native invertebrates, and native birds. Fencing the natural resources of the kipuka and excluding these feral animals provides long-term protection for the native ecosystem and secures a protected area for future research and/or restoration efforts related to threatened and endangered species. The construction of an interpretive trail will also improve accessibility into the kipuka for anyone interested in conducting research on native species.

Another expected long-term environmental benefit of the proposed action derives from the opportunity to easily wander through a kipuka in the midst of a lava flow on the saddle formed by two volcanoes, viewing native birds, identifying native plants, and learning about the cultural aspects of the natural environment. A primary goal of the project is to ensure that this educational and recreational experience instills an appreciation and respect for the natural biological and cultural heritage of the Hawaiian Islands. It is hoped that the experience, supplemented by appropriate interpretive information about the natural and cultural resources, will foster greater awareness and responsible stewardship of Hawaii's cherished island ecosystems.

Social Impacts

Periodic noise from helicopter flights, power tools, and other activity associated with fence or trail building will be unavoidable during the construction period. While the part of Saddle Road adjacent to the project area has minimal shoulders and poor sight lines, it is not anticipated that construction will require closure of the road or any lanes due to the distance between Saddle Road and the project area. As the project will take place in a sparsely populated area, with limited vehicle traffic, construction-related impacts on residents of the Big Island are not expected to be significant.

Public access to, and use of, the area will be improved by the project. There is presently no developed trail or other amenities to encourage public use of Kipuka 21. Despite this, casual use of the kipuka already has been observed, with tourists and residents pulling off the side of Saddle Road near Kipuka 21 to bird-watch or hike. These activities, as well as photography, nature study, research, and cultural practices will still be allowed within the kipuka.

The proposed trail development will provide an excellent opportunity to expand the recreational opportunities in the area, matching a growing

demand for family-oriented outdoor activities. However, it is not known how many people may take advantage of the recreational and educational opportunities offered by the construction of the interpretive trail. Large numbers of trail users represent a potential source of impacts to the trail corridor area through overuse or abuse of the area. Excess trash and vandalism are possible consequences of increased public use. Hikers wandering off the trail could significantly damage vegetation. However, construction of a marked trail should limit the amount of trampling off the trail, provide additional protection of the natural resources within the kipuka, increase safety for visitors, and improve the overall experience by providing information about the resources viewed.

For the most part, the perimeter fencing will not be visible from the trail or from the roadway and is not anticipated to impact any viewplanes. The interpretive trail is located below the elevation of the Saddle Road. Due to the topography and vegetation cover, the trail corridor is not anticipated to be visible from the roadway either.

The project area is located near the boundary of State Hunting Unit B, and hunting for wild pigs, sheep and goats is allowed daily year-round. The immediate area surrounding the planned trail is not known to be highly valued as a hunting area by local hunters. The reduction in hunting acreage by the area to be fenced (approximately 15 acres) represents a very small portion of the total hunting area available in the immediate vicinity, most of which will remain open for public hunting for the foreseeable future. As a result, this project is anticipated to have a minimal effect on game animal populations in the larger area or on public hunting opportunities.

The project area is located adjacent to an existing electric transmission line easement. Construction of fencing and the interpretive trail will not cross this easement or otherwise impair access to the transmission line. As a result, this project is not anticipated to impact HELCO's ability to operate and maintain its transmission line system.

Overall, social impacts of this project are expected to be positive. The protection of a unique element of Hawai'i's natural heritage will enhance opportunities for nature appreciation, education, and research.

Economic Impacts

The proposed action involves the expenditures of funds necessary to complete the project, including the purchase of fencing materials, trailbed materials, the contracting of crews, and the purchase or rental of equipment including helicopters. The estimated total cost of the fence

and trail construction is approximately \$90,000. Current funding for the project includes funds provided by the U.S. Fish and Wildlife Service and the State.

The project is not expected to have any major negative economic impacts. 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 short-term employment for fence or trail workers. The proposed action may attract additional funding for restoration activities funded after the fencing and trail is complete.

Indirect economic impacts may result from a change in public perception due to increased recognition of the area as a unique and valuable natural and educational resource. Because Kipuka 21 is easily accessed from the highway, it has great potential for use as an outdoor classroom and will likely see increased use by Hawaii's growing eco-tour industry.

Cultural Impacts

The proposed action is not expected to significantly affect archaeological sites, primarily because there are no known archaeological sites within the project area. Moreover, proposed fencing which might be considered a source of disturbance will be of short length, require minimal line cutting and will be constructed with metal stakes that will pose little risk to potential sites. Similarly, the interpretive trail is of short length, requires minimal clearing, and will have limited impact on the surrounding environment. As presently designed, the fencing and trail are not anticipated to pose long-term impacts to historic sites. Over the long-term, the fencing project would help preserve any unknown archaeological resources found within the kipuka, by preventing soil disturbance and trampling of sites by hooved animals.

The proposed action is not expected to significantly impact traditional and cultural practices. There is currently limited public use of the kipuka for gathering of native plants. Construction of fencing and the interpretive trail will have no effect on existing regulations relating to the Conservation District or the Forest Reserve. The perimeter fencing will protect and maintain populations of native and Polynesian introduced plants important to Native Hawaiian cultural practices, which would have a positive impact on gathering rights by ensuring the availability of these plants into the future. At the same time, the existence of perimeter fencing is likely to discourage entry into portions of the kipuka and could limit public access for traditional gathering activities.

Finally, the development of the interpretive trail is anticipated to have a positive impact by educating residents and visitors about the cultural significance of Kipuka and the natural resources found within. The incorporation of interpretive information at the trail is expected to encourage the preservation of culturally appropriate Native Hawaiian practices and uses and discourage indiscriminate public overuse and abuse of nearby forest and natural areas that are not now affected due to isolation. Overall, it is anticipated that trail users will be instilled with a greater appreciation for the surrounding natural and cultural environment.

VI. 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.

Rare, endangered, and threatened plant species

Although no rare, threatened or endangered species were found during botanical surveys of the fence and trail corridors, DOFAW staff will re-survey the final fence and trail corridor to ensure no rare, endangered, or threatened plants will be disturbed. If any are found, they will be identified and flagged to prevent disturbance by crews. When necessary, minor changes in fence and trail alignment will be made to avoid sensitive sites by a greater distance to avoid disturbance by future maintenance activities or by public use.

Native vegetation

As discussed above, construction of the fence line and of the interpretive trail will require the removal and/or pruning of some common native plants. In order to minimize overall damage, the following guidelines will be followed. Where possible, the fence will be aligned so that it passes through barren or sparsely vegetated areas. During construction of the fence and the trail, 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. Cut vegetation will be left to decompose within the kipuka. To minimize impacts to *Drosophila*, the following native plant species will be avoided if observed within the fence or trail corridor: *Clermontia* spp., *Lobelia* spp., *Delissea* spp., *Urera* spp., and *Marratia* spp. 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 and clearing a trail 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. All construction workers will be instructed on specific procedures to prevent the spread or introduction of noxious 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.

To prevent the introduction of alien plants and insects during public use of the trail, interpretive information will be posted at the trailhead discussing the threats caused by alien species and encouraging users to remain on the trail. In addition, shoe brushes may be installed at the trail head so that those using the trail can brush off their shoes before entering the kipuka. Finally, follow-up monitoring and weed control will be implemented as necessary to prevent the establishment of alien species.

Native Wildlife

There is also the concern that native birds may be impacted by the fence construction arising from the possibility that they may occasionally fly into the fence. While there is no way to completely prevent this occurrence, the planned fence height of four feet is thought to be below most native bird flight paths. After installation, maintenance of the fence line will include monitoring for the presence of injured animals. If it appears that birds are being injured through contact with the fence, additional mitigation measures will be evaluated, including the possibility of adding a band of opaque material to the upper one to two feet of fencing to make it more visible.

Native birds may be impacted by the increased human activity in the project area, both during construction and after construction as a result of increased public use of the area due to the interpretive trail. Based on observations of native birds and the lack of evidence to the contrary, it is believed that any disturbance caused by construction will not have any long-term negative impacts on the bird populations and that bird populations will adjust to noise caused by increased human activity in the area by use of the interpretive trail. Interpretive information provided along the trail will discourage users from disturbing the native wildlife. Finally, the interpretive trail is designed to utilize only a portion of the total kipuka, leaving a protected area in which native birds can avoid interaction with people.

Public Overuse/Abuse

Impacts to the kipuka and the trail area will result from regular public use over time. Constructing the trail to avoid sensitive native elements, remaining within trail grade specifications, constructing adequate trail slope and drainage structures will limit impacts to the natural environment. Interpretive information provided along the trail will explain the sensitive nature of the resources within the kipuka to users and information at the trailhead will convey to the public appropriate trail use etiquette guidelines, including a reminder to stay on the trail path. Appropriate signage may be sufficient to address problems of vandalism and excess trash. The State will also encourage the development of a volunteer friends group to assist in monitoring use and conditions of the trail and the resources within the kipuka.

View plane and aesthetic considerations

For the most part, perimeter fencing will not be visible. However, where seen, it might be considered to alter the character of the area as viewed from Saddle Road or to be unsightly. While it is not possible to completely avoid these impacts, the visual impact of the proposed fencing will be mitigated by utilizing the topography where appropriate to hide the fencing and possibly by painting sections of fence visible from the roadway a dark color to make it less visible.

Public Utilities

While construction of the fencing and interpretive trail are not anticipated to impact HELCO's ability to operate and maintain its transmission line system, DOFAW will consult with HELCO as needed before initiating construction to ensure that access to the easement is available.

Archaeological or culturally significant sites

While there are no known archaeological or cultural sites affected by the proposed action, should evidence of any archaeological or culturally significant sites be encountered during construction, vegetation clearing and trail or fence construction will immediately cease and the appropriate agencies, including the State Division of Historic Preservation, will be consulted immediately. If necessary, the fence and/or trail alignment will be adjusted to reduce or eliminate impact to any features located during construction.

Public Access

The planned project is not anticipated to affect traditional and cultural practices, including gathering. However, there may be the concern that enhanced access into one portion of the kipuka will result in restricted access into other parts of the kipuka. As a practical matter, the

perimeter fencing will limit points of entry into the kipuka and the interpretive information provided along the trail will discourage exploration in the kipuka off the trail path. While providing increased protection of natural resources, these elements will necessarily limit public access. DOFAW will continue discussions with appropriate organizations, such as the Office of Hawaiian Affairs and the Kahu Ku Mauna Council, to ensure that the exercise of traditional gathering rights are not unduly impacted by the perimeter fencing. As necessary, DOFAW will work with the Native Hawaiian community to identify locations for additional gates or other means of access into the kipuka.

VII. ALTERNATIVES CONSIDERED

Two project alternatives are described here.

Alternative #1: Fence Kipuka 21 and construct approximately ¾ mile of trail within Kipuka 21 (preferred alternative).

This alternative is the preferred alternative because the kipuka of the Saddle Road area on the island of Hawai'i, especially Kipuka 21, are an ideal setting for an interpretive trail showcasing some of Hawai'i's most unique natural resources. The proposed trail would provide safe and convenient public access to a kipuka and at the same time educate the public on the natural and cultural resources found within Hawaiian kipuka. The proposed fencing would provide long-term protection of these resources from wild pigs, sheep and goats. The project is anticipated to benefit native plants and rare and endangered birds over the long term by increasing appreciation of the natural environment.

Alternative #2. No action.

The no-action alternative fails to take advantage of an opportunity to provide a unique educational experience and access to excellent bird watching opportunities and the unique biological resources of Kipuka 21 and to educate the public about Hawai'i's natural resources. The no-action alternative also fails to protect the delicate resources of the kipuka, leaving them vulnerable to pig, goat and sheep damage. With no action, the valuable natural resources may eventually degraded and destroyed, depriving future generations of the opportunity to enjoy these areas.

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 to the native forest within Kipuka 21 through fencing and through the development of an interpretive trail. The perimeter fencing will exclude one of the primary threats to the kipuka ecosystem: feral pigs, goats and sheep. The interpretive trail will guide public access into the sensitive environment, discouraging visitors from wandering into areas where their footsteps may unknowingly cause harm to the native vegetation. The information provided along the trail will give visitors to the kipuka greater appreciation for the natural resources, which could lead to subsequent stewardship actions that improve environmental quality.

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 native ecosystem of Kipuka 21 and increase public appreciation for the unique natural and cultural resources contained in the kipuka of the Big Island.

- 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 improve recreational and educational opportunities for residents and visitors, while protecting the natural resources of the kipuka. The end result 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 with the State's mandate to conserve threatened and endangered species, as required by Chapter 195D, HRS.

- 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 project is anticipated to enhance environmental awareness by the public, provide additional family-oriented recreational activities for residents and visitors, and create short-term jobs for fence and trail construction.

- 5) *Substantially affects public health.*

Public health will not be harmed by the proposed action. The proposed action will have a positive impact on public health by increasing opportunities for family-oriented recreation.

- 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 will provide long-term protection from the destructive impact of feral pigs, goats, and sheep for the native vegetation and native birds. Construction of an interpretive trail will encourage people to remain on the trail rather than wandering into areas where their footsteps may unknowingly cause harm to the native vegetation. In addition, the development of an interpretive trail will give visitors to Kipuka 21 greater appreciation for the natural resources of Hawai'i, which could lead to subsequent stewardship actions that improve environmental quality.

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

The proposed action involves fencing, trail construction and placement of interpretive signage at Kipuka 21. Potential future related projects include the development of a parking area for visitors to the trail, future outplanting of threatened and endangered plants, and the development of new interpretive trails along Saddle Road. A future parking area would be anticipated to cover a small footprint in an area outside the kipuka with few, if any, natural and cultural resources. Its addition would improve safety for visitors to the area. Outplanting would benefit native threatened and endangered plant species. Additional trails developed as part of the Saddle Road Eco-Highway would provide enhanced recreational and educational opportunities. Cumulatively, these related projects would be considered to have an overall positive effect on the environment. And, while related to these other actions, the proposed action does not involve a commitment for these additional actions.

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

The proposed action is not anticipated to negatively affect any rare, threatened or endangered species or its habitat. There are no known rare, threatened or endangered plants within the planned fencing or trail corridor. There are threatened and endangered birds within the project area. While these birds may be temporarily disturbed by the noise associated with construction, the long-term impact of the proposed action on native birds is anticipated to be positive. Fencing will provide long-term protection of the native forest habitat of these birds. The trail will provide access for visitors to view these birds in their natural setting, engendering appreciation that could lead to long-term stewardship actions. Finally, all final fence and trail alignments will be selected to minimize impacts on native birds.

- 10) *Detrimentially 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. 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 is proposed just past Milepost 21 on Saddle Road. There is a possibility that the trail could be damaged by a lava flow, if Mauna Loa were to erupt again. The probability of this occurrence is not

known. 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 will not affect any vistas or view planes identified in county or state plans or studies. The final fencing route will be selected to minimize the visibility of the fence from the existing Saddle Road, from the planned realignment, and from the trail.

- 13) *Requires substantial energy consumption.*

The proposed action does not require substantial energy consumption, but instead will consume small amounts of energy during fence and trail 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 requires approval by the Department of Land and Natural Resources. No other permits are anticipated at this time.

XI. ENVIRONMENTAL ASSESSMENT PREPARATION INFORMATION

This Environmental Assessment was prepared by:

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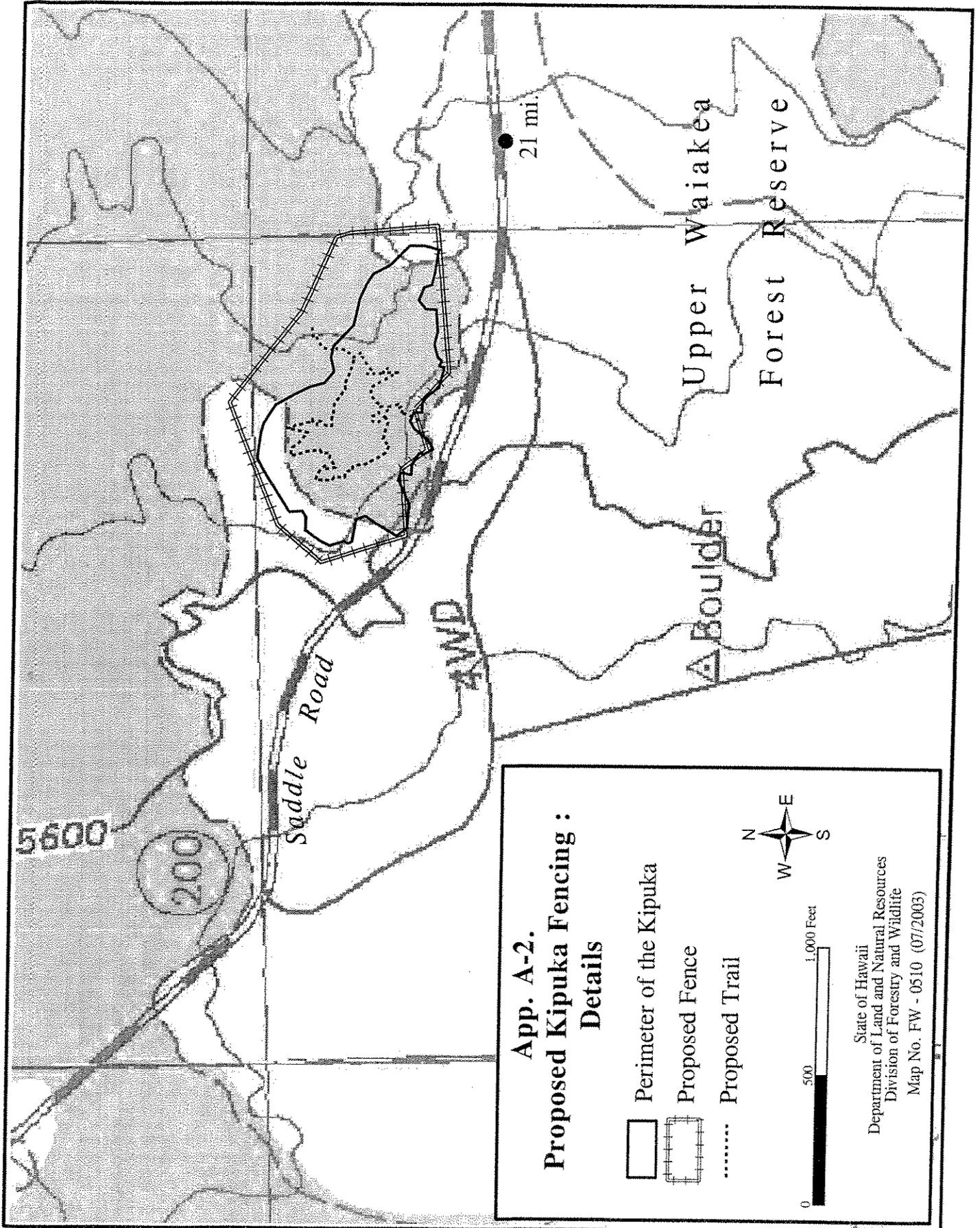
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XIII. LIST OF APPENDICES

Appendix A	Maps of Project Area and Proposed Trail Routing
Appendix B	Trail Specifications
Appendix C	Plant Species Known from the Project Area
Appendix D	Examples of Cultural Use of Native Plants Found Within the Project Area
Appendix E	Animal Species Observed or Believed to Occur Within or Near the Project Area
Appendix F	Letters Received During Pre-Consultation
Appendix G	Public Comment Received on Draft EA and Responses

Appendix A

Maps of Project Area and Proposed Trail Routing



**App. A-2.
Proposed Kipuka Fencing :
Details**

- Perimeter of the Kipuka
- - - Proposed Fence
- Proposed Trail

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State of Hawaii
Department of Land and Natural Resources
Division of Forestry and Wildlife
Map No. FW - 0510 (07/2003)

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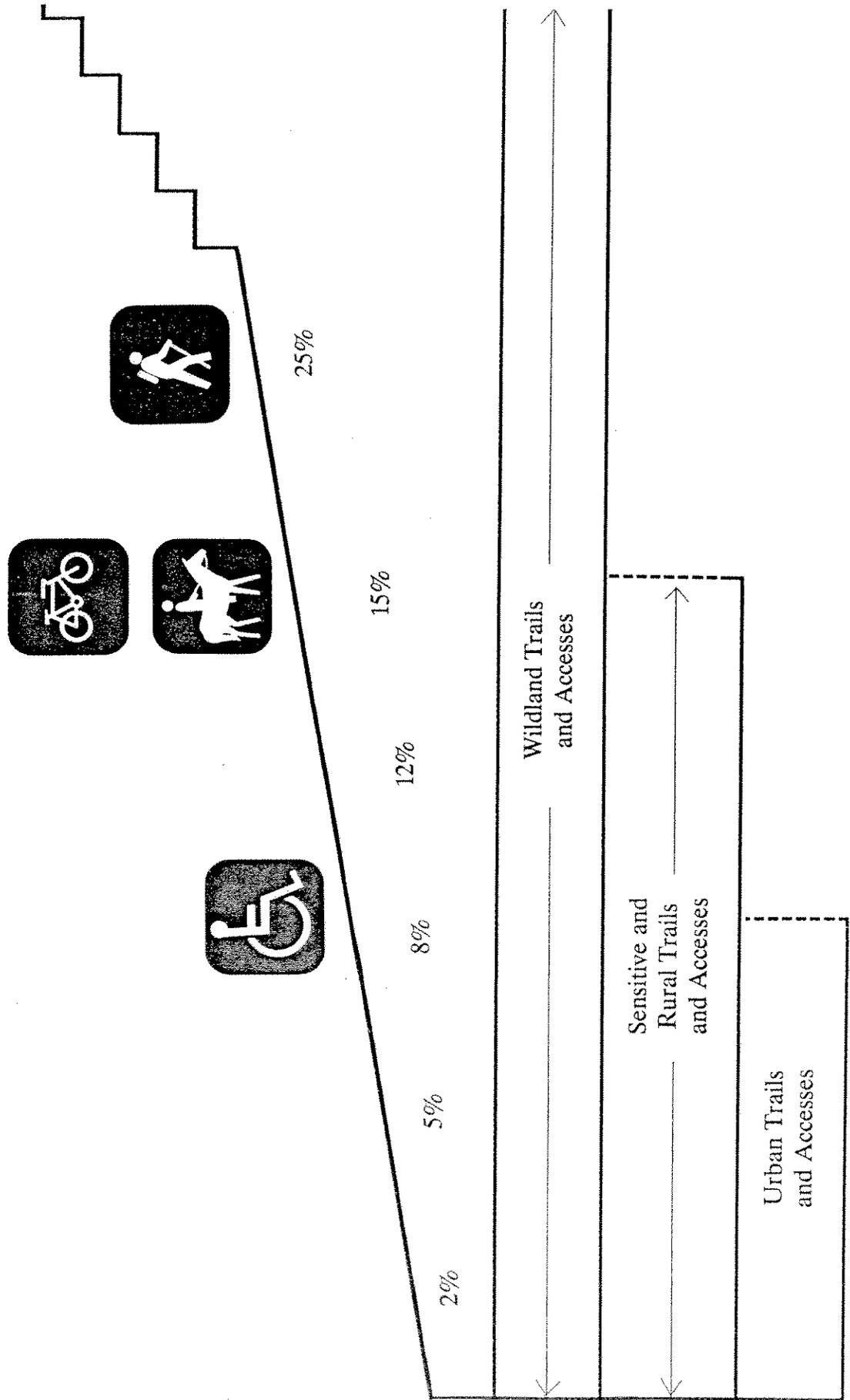
Appendix B
Trail Specifications

Figure V - 4. Trail Guidelines

Icon	Clearing Width				Tread Material	Maintenance Comments			
	Urban	Rural	Wildland	Sensitive		Trees/Logs	Brush/Logs	Vertical Clearing	Maintenance Comments
	Urban	6 Ft. Min.	Concrete or Asphalt	1 Ft. to each side of tread	2 Ft. to each side of tread	7 - 8 Ft.	Trails/accesses should be cleared four times a year in wet climates where vegetation grows rapidly. Once a year clearing is sufficient for certain trails/accesses.		
	Rural	4 - 6 Ft.	Asphalt or Packed Dirt	Tread only	2 Ft. to each side of tread	7 - 8 Ft.	Trails/accesses should be cleared at a frequency that maintains safe conditions. Maintenance frequency is affected by climate, intensity and types of public use, as well as the availability of a labor force to do the work.		
	Wildland	3 - 4 Ft.	Packed Dirt or Woodchips						
	Sensitive	3 - 4 Ft.	Boardwalk						
	Urban	3 - 6 Ft.	Asphalt/Packed Dirt	1 Ft. to each side of tread	3 Ft. to each side of tread	9 - 10 Ft.	TRAIL TREAD WIDTH is generally determined by the trail type and intended use (foot, bike, etc.), but adjustments for the side slope and gradient may be necessary. On steeper slopes, using the minimum tread width will reduce the environmental impact and lower construction costs associated with trail cuts and fills. However, in areas with dangerously steep slopes or cliffs, the trail should include sections which are wide enough to allow two parties (which may include horses or mountain bikes) to pass safely. Interpretive trails should also be wider than normal to accommodate large groups and facilitate interaction between trail users.		
	Rural	2 - 4 Ft.	Natural/Woodchips						
	Wildland	2 - 3 Ft.	Natural						
	Sensitive	2 - 3 Ft.	Natural/Woodchips/Boardwalk as nec.						
	Urban	3 - 6 Ft.	Dir/Asphalt for short dist.	2 Ft. to each side of tread	2 Ft. to each side of tread	9 - 10 Ft.			
	Rural	2 - 4 Ft.	Natural						
	Wildland	2 - 3 Ft.	Natural						
	Sensitive	---	----						
	Urban	3 - 6 Ft.	Concrete/Asphalt	2 Ft. to each side of tread	2 Ft. to each side of tread	9 - 10 Ft.			
	Rural	3 - 4 Ft.	Packed Dirt						
	Wildland	3 - 4 Ft.	Packed Dirt						
	Sensitive	---	----						
	Urban	10 Ft. Min.	Asphalt	2 Ft. to each side of tread	2 Ft. to each side of tread	9 - 10 Ft.			
	Rural	10 Ft. Min.	Natural						
	Wildland	---	----						
	Sensitive	---	----						

Figure V - 5. Trail Gradients

Maximum Gradients For Various Uses



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Appendix C
Plant Species Known from the Project Area

Scientific Name	Common Name	Endemic (E); Indigenous (I)
Native Plants		
<i>Acacia koa</i>	koa	E
<i>Adenophorus tripinnatifidus</i>		E
<i>Alyxia oliviformis</i>	maile	E
<i>Asplenium adiatumnigrum</i>		E
<i>Asplenium contiguum</i>		E
<i>Asplenium trichomanes</i>	'oali'i	E
<i>Astelia menziesiana</i>	pa'iniu, kaluaha	E
<i>Athyrium microphyllum</i>	'akolea	E
<i>Athyrium sandwichianum</i>		I
<i>Broussaisia arguta</i>	kanawao, pu'ahanui	E
<i>Carex alligata</i>		E
<i>Carex meyenii</i>	sedge	E
<i>Cheirodendron trigynum</i>	'olapa, lapalapa	E
<i>Cibotium chamissoi</i>	hapu'u, hapu'u pulu	E
<i>Cibotium glaucum</i>	hapu'u pulu, meu	E
<i>Coprosma ernodeoides</i>	'aiakanene, kukaenene, leponene, nene, punene, pilo, hupilo	E
<i>Coprosma montana</i>	pilo, hupilo	E
<i>Coprosma ochracea</i>	pilo, hupilo	E
<i>Coprosma pubens</i>		E
<i>Cyrtandra sp.</i>	ha'iwale	E
<i>Deschampsia nubigena</i>	hairgrass	E
<i>Dicranopteris linearis</i>	uluhe	I
<i>Diplazium sandwicianum</i>	ho'i'o, pahole	E
<i>Dodonaea viscosa</i>	'a'ali'i, 'a'ali'i ku makani, 'a'ali'i ku ma kua, kumakani	E
<i>Dryopteris acutidens</i>		E
<i>Dryopteris fuscoatra</i>		E
<i>Dryopteris glabra</i>		E
<i>Dryopteris hawaiiensis</i>		E
<i>Dryopteris wallichiana</i>	'i'o nui, laukahi	I
<i>Dubautia ciliolate</i>	na'ena'e, na'ena'e 'ula, na'ena'e pua nelenele, kupaoa, koholapehu	E
<i>Dubautia scabra</i>	na'ena'e, na'ena'e 'ula, na'ena'e pua nelenele, kupaoa, koholapehu	E
<i>Elaphoglossum wawrae</i>	'ekaha	E
<i>Elaphoglossum hirtum</i>	'ekaha	E
<i>Gahnia gahniiformis</i>		E
<i>Hedyotis terminalis</i>	manono	E
<i>Ilex anomala</i>	'aiea, kawa'u	E
<i>Isachne distichophylla</i>	'ohe	I

Plant Species Known from the Project Area (cont'd)

Scientific Name	Common Name	Endemic (E); Indigenous (I)
Native Plants		
<i>Luzula hawaiiensis</i> var. <i>hawaiiensis</i>	wood rush	E
<i>Lycopodium cernuum</i>	wawae'iole	I
<i>Machaerina angustifolia</i>	'uki	E
<i>Metrosideros polymorpha</i> var. <i>polymorpha</i>	'ohia, lehua, 'ohia	E
<i>Microlepia strigosa</i>	palapalai	I
<i>Myoporum sandwicense</i>	naio	I
<i>Myrsine lessertiana</i>	kolea lau nui	E
<i>Myrsine sandwicensis</i>	kolea lau li'i	E
<i>Nephrolepis cordifolia</i>		I
<i>Nothoparanema rubiginosa</i>		E
<i>Odontosoria chinensis</i>		E
<i>Oreobolus furcatus</i>		E
<i>Pelea clusiifolia</i>		E
<i>Peperomia</i> spp.	'ala'ala wai nui	E
<i>Perrottetia sandwicensis</i>	olomea, pua'a olomea	E
<i>Pipturus albidus</i>	mamaki, mamake	E
<i>Pittosporum</i> sp.	ho'awa	E
<i>Plectranthus parviflorus</i>	spurflower, 'ala'ala wai nui	I
<i>Pleopeltis thunbergiana</i>		I
<i>Polypodium pellucidum</i>	'ae	E
<i>Psychotria hawaiiensis</i>	kopiko	E
<i>Pteridium decompositum</i>	kilau, kilau pueo, paia, kilauapueao	E
<i>Pteris aquilinum</i>		E
<i>Pteris cretica</i>		E
<i>Pteris excelsa</i>	waimakanui, 'iwa	E
<i>Pycreus polystachyos</i>		I
<i>Rubus hawaiiensis</i>	'akala	E
<i>Sadleria cyatheoides</i>	'ama'u, pu'a'a, 'ehu'ehu	E
<i>Santalum paniculatum</i> var. <i>paniculatum</i>	'iliahi	E
<i>Stenogyne sessilis</i>		E
<i>Styphelia tameiameia</i>	pukiawe	I
<i>Thelypteris sandwicensis</i>		E
<i>Uncinia uninata</i>		E
<i>Vaccinium calycinum</i>	'ohelo, 'ohelo kau la'au, blueberry	E
<i>Vaccinium reticulatum</i>	'ohelo, 'ohelo kau la'au, blueberry	E

Plant Species Known from the Project Area (cont'd)

Scientific Name	Common Name
Non-Native Plants	
<i>Ageratina riparia</i>	mist flower
<i>Ageratum conyzoides</i>	goat weed
<i>Andropogon virginicus</i>	broomsedge
<i>Anthozanthum odoratum</i>	vernal grass
<i>Axonopus fissifolius</i>	carpetgrass
<i>Digitaria ciliaris</i>	crabgrass
<i>Drymaria cordata</i>	tropical chickweed
<i>Ehrharta stipoides</i>	weeping grass
<i>Geranium homeanum</i>	cranesbill
<i>Holcus lanatus</i>	velvet grass
<i>Hypericum mutilum</i>	St. John's wort
<i>Hypochaeris radicata</i>	spotted cat's-ear
<i>Oxalis corniculata</i>	wood sorrel
<i>Polygonum capitatum</i>	knotweed
<i>Prunella vulgaris</i>	selfheal
<i>Rubus rosifolius</i>	thimbleberry
<i>Rumex acetosella</i>	red sorrel
<i>Schizachyrium condensatum</i>	tufted beardgrass
<i>Setaria gracilis</i>	yellow foxtail
<i>Sporobolus africanus</i>	parramatta grass
<i>Veronica serpythifolia</i>	
<i>Youngia japonica</i>	oriental hawksbeard

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Appendix D
 Examples of Cultural Use of Native Plants
 Found Within the Project Area

Species	Common Name	Cultural Use
<i>Acacia koa</i>	Koa	Canoe making; Medicine
<i>Alyxia oliviformis</i>	Maile	Lei-making; Medicine
<i>Athyrium microphyllum</i>	'Akolea	Food; Medicine
<i>Astelia menziesiana</i>	Pa'iniu	Lei-making
<i>Broussaisia arguta</i>	Kanawao, Pu'ahanui	Food; Medicine
<i>Cheirodendron trigynum</i>	'Olapa	Medicine; Fuel
<i>Cibotium chamissoi</i>	Hapu'u	Medicine; Stuffing
<i>Cibotium glaucum</i>	Hapu'u	Medicine; Stuffing
<i>Dicranopteris linearis</i>	Uluhe	Medicine
<i>Diplazium sandwicianum</i>	Ho'i'o	Food; Medicine
<i>Dodonaea viscosa</i>	A'ali'i	Medicine; Dye; Weapons
<i>Ilex anomala</i>	Kawa'u	Tools
<i>Lycopodium cernuum</i>	Wawae'iole	Medicine
<i>Machaerina angustifolia</i>	'Uki	Shelter; Lei-making
<i>Metrosideros polymorpha</i> var. <i>polymorpha</i>	'Ohi'a	Medicine; Lei-making; Tools
<i>Microlepia strigosa</i>	Palapalai	Medicine
<i>Myoporum sandwicense</i>	Naio	Tools; Shelter
<i>Myrsine lessertiana</i>	Kolea lau nui	Tools; Dye
<i>Peperomia</i> spp.	'Ala'ala wai nui	Medicine
<i>Pipturus albidus</i>	Mamaki	Medicine; Cordage; Cloth; Tools
<i>Pittosporum</i> sp.	Ho'awa	Medicine
<i>Pteris excelsa</i>	Iwa	Cordage; Medicine
<i>Rubus hawaiensis</i>	Akala	Medicine
<i>Sadleria cyatheoides</i>	'Ama'u	Medicine; Stuffing; Decoration; Dye; Food
<i>Santalum paniculatum</i> var. <i>paniculatum</i>	'Iliahi	Medicine
<i>Styphelia tameiameia</i>	Pukiawe	Medicine; Tools
<i>Vaccinium calycinum</i>	'Ohelo	Medicine; Food

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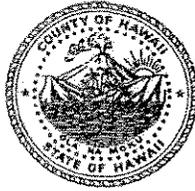
Appendix E
 Animal Species Observed or Believed to Occur
 Within or Near the Project Area

Scientific Name	Common Name	Native/ Non-native	Federal Status
Birds			
<i>Buteo solitarius</i>	ʻIo, Hawaiian Hawk	Native	Endangered
<i>Chasiempis sandwichensis sandwichensis</i>	ʻElepaio	Native	
<i>Hemignathus munroi</i>	Akiapolaʻau	Native	Endangered
<i>Hemignathus virens virens</i>	Hawaii ʻAmakihi	Native	
<i>Himatione sanguinea sanguinea</i>	ʻApapane	Native	Endangered
<i>Loxops coccineus</i>	ʻAkepa	Native	
<i>Oreomystis mana</i>	Hawaii Creeper	Native	Endangered
<i>Vestiaria coccines</i>	ʻIiwi	Native	
<i>Cardinalis cardinalis</i>	Northern Cardinal	Non-native	
<i>Carpodacus mexicanus</i>	House Finch	Non-native	
<i>Francolinus erckelii</i>	Erckel's Francolin	Non-native	
<i>Leiothrix lutea</i>	Red-billed Leiothrix	Non-native	
<i>Lophura leucomelana</i>	Kalij Pheasant	Non-native	
<i>Phasianus colchicus</i>	Ring-necked Pheasant	Non-native	
<i>Zosterops japonicus</i>	Japanese White-eye	Non-native	
Mammals			
<i>Sus scrofa</i>	Feral pig	Non-native	
<i>Ovis musimon X Ovis aries</i>	Hybrid feral sheep	Non-native	
<i>Rattus spp.</i>	Rats	Non-native	
<i>Herpestes auropunctatus</i>	Mongoose	Non-native	
<i>Felis catus</i>	Feral cat	Non-native	

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Appendix F
Letters Received During Pre-Consultation

Harry Kim
Mayor



Christopher J. Yuen
Director

Roy R. Takemoto
Deputy Director

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

September 5, 2003

Ms. Christen Mitchell
Department of Land & Natural Resources
Division of Forestry & Wildlife
1151 Punchbowl Street, Room 325
Honolulu HI 96813

Dear Ms. Mitchell:

Pre-Consultation on Environmental Assessment
Subject: Construction of an interpretive trail and perimeter fencing
protecting approximately 10 acres around a kipuka
TMK: 2-4-8:Portion of 8, at approximately Mile Post 21 on Saddle Road

This is to acknowledge receipt of your August 28, 2003 letter requesting our comments on the proposed construction of an interpretive trail and perimeter fencing to protect approximately 10 acres around a kipuka located on the subject parcel.

Construction of the fencing would provide long-term protection from feral animals such as pigs, goats, and sheep. In addition, the interpretive trail would offer the public a chance to experience and learn more about Hawaii's natural environment.

We have the following to offer regarding the proposed uses:

1. This 367 acre parcel is designated Conservation by both the State Land Use Commission and the Land Use Pattern Allocation Guide Map of the General Plan.
2. The subject parcel is not located in the County's Special Management Area. Therefore, Special Management Area rules and regulations are not applicable.

Ms. Christen Mitchell
Department of Land & Natural Resources
Division of Forestry & Wildlife
Page 2
September 5, 2003

If you have questions, please feel free to contact Esther Imamura or Larry Brown of our office at 961-8288.

Sincerely,



CHRISTOPHER J. YUEN
Planning Director

ETI:pak

\\COH02\public\WPWIN60\ETNEAdraftPre-consul\Mitchell\DFWdlr24008008.doc

xc: Planning Department – Kona



September 15, 2003

Department of Land and Natural Resources
Attn: Ms. Christen Mitchell
Planner, Division of Forestry & Wildlife
1151 Punchbowl Street, Room 325
Honolulu, Hawaii 96813

Dear Ms. Mitchell:

Subject: Pre-Consultation on Environmental Assessment for Protective Fencing
and Development of Interpretive Trail, Island of Hawaii

Thank you for submitting the letter of August 28, 2003 and information for comments.

We have reviewed the documents and understand that the State desires to fence in about 10 acres by the 21-mile marker. We would like to note that HELCO has two critical transmission lines generally following the Saddle Road. One line is constructed for 69KV and the other constructed for 138KV but energized at 69KV at this time.

Please confirm that the proposed project will not impact our ability to operate and maintain these two critical transmission lines and access to the easements will still be available.

Sincerely,

Clyde H. Nagata, P.E.
Manager, Engineering Department

CHN:ln

LINDA LINGLE
GOVERNOR



RODNEY K. HARAGA
DIRECTOR

Deputy Director
BRUCE Y. MATSUI

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

HWY-PS
2.1814

SEP 26 2003

TO: CHRISTEN MITCHELL, PLANNER
DIVISION OF FORESTRY
DEPARTMENT OF LAND AND NATURAL
RESOURCES

FROM: *for* RODNEY K. HARAGA *Rodney K. Haraga*
DIRECTOR OF TRANSPORTATION

SUBJECT: PRE-CONSULTATION ON ENVIRONMENTAL ASSESSMENT (EA) FOR
PROTECTIVE FENCING AND DEVELOPMENT OF INTERPRETIVE
TRAIL, SADDLE ROAD MILE POST 21, TMK: 2-4-008: 008

Thank you for consulting us.

We have an agreement with the County of Hawaii to assume jurisdiction for the Saddle Road after it is improved to State standards. For that reason, we request that you consult our Highways Division, Hawaii District Office about the location and design of highway access for the proposed interpretive trail. Please also provide them with a copy of the Draft EA for review and comment.

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Appendix G

Public Comment Received on Draft EA and Responses

Written comments were received from the following agencies and organizations during the public comment period:

- United States Senator Daniel Akaka;
- State of Hawaii, Department of Land and Natural Resources, Land Division;
- State of Hawaii, Department of Transportation; and
- County of Hawai'i Planning Department.

Verbal comments were received from the following agency during the public comment period:

- State of Hawai'i, Department of Business, Economic Development, and Tourism, Office of Planning, Coastal Zone Management Program.

DANIEL K. AKAKA
HAWAII

WASHINGTON OFFICE:
141 HART SENATE OFFICE BUILDING
WASHINGTON, DC 20510
TELEPHONE: (202) 224-6361

HONOLULU OFFICE:
3106 PRINCE JONAH KUHIO
KALANIANAKOLE FEDERAL BUILDING
P.O. BOX 50144
HONOLULU, HI 96850
TELEPHONE: (808) 522-8970

United States Senate

WASHINGTON, DC 20510-1103

December 12, 2003

COMMITTEES:
ARMED SERVICES
ENERGY AND NATURAL RESOURCES
GOVERNMENTAL AFFAIRS
INDIAN AFFAIRS
VETERANS' AFFAIRS
SELECT COMMITTEE ON ETHICS

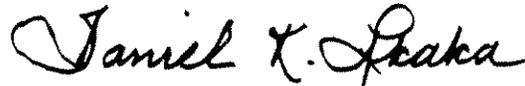
Ms. Christen Mitchell
Planner, Division of Forestry & Wildlife
Department of Land and Natural Resources
1151 Punchbowl Street
Honolulu, HI 96813

Dear Ms. Mitchell:

Thank you for notifying me about the Draft Environmental Assessment (DEA) for the "Kipuka 21 Fencing and Interpretive Trail Construction" project for the Upper Waiakea Forest Reserve.

I appreciate your apprising me of publication of the DEA and its comment period. Once again, mahalo for contacting me.

Aloha pumehana,



DANIEL K. AKAKA
U.S. Senator

LINDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DAN DAVIDSON
DEPUTY DIRECTOR FOR LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR FOR
THE COMMISSION ON
WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

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

The Honorable Daniel K. Akaka
U.S. Senator
3106 Prince Jonah Kuhio Kalaniana'ole Federal Bulding
PO Box 50144
Honolulu, HI 96850

JUL 12 2004

Re: Draft Environmental Assessment, Kipuka 21 Fencing and Interpretive Trail Construction

Dear Senator Akaka:

Thank you and your staff for taking the time to comment on the Draft Environmental Assessment for the Kipuka 21 Fencing and Interpretive Trail Construction project on the Big Island. If you have any future questions or concerns about this project, please feel free to contact me at 587-4187.

Sincerely,

Scott Fretz
Wildlife Biologist, Division of Forestry and Wildlife

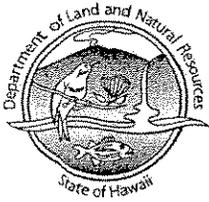
LINDA LINGLE
GOVERNOR OF HAWAII



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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

December 17, 2003

KIPUKA21DLNRDOFAW.RCM
LD-NAV

Christen Mitchell
Department of Land and Natural Resources
Division of Forestry and Wildlife
1151 Punchbowl Street
Honolulu, Hawaii 96813

Dear Ms. Mitchell:

SUBJECT: Draft Environmental Assessment (DEA)
Applicant: Division of Forestry and Wildlife Hawaii Branch
Authority: Department of Land and Natural Resources
Proposed: Fencing and Interpretive Trail Construction
Location: South Hilo, Hawaii - TMK: (3) 2-4-008: 008

Thank you for the opportunity to review and comment on the subject matter.

A copy of DEA covering the subject matter was distributed to the following Land Division Branches for their review and comment:

- Planning and Development
- Hawaii District Land Office

Based on the attached responses the Land Division has no comment to offer on the subject matter.

Should you have any questions, please contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 587-0384.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Dierdre S. Mamiya".

DIERDRE S. MAMIYA
Administrator

C: HDLO

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION



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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER



2003 NOV 24 A 9:48

DEPT. OF DEPARTMENT OF LAND AND NATURAL RESOURCES
NATURAL RESOURCES LAND DIVISION
STATE OF HAWAII

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

November 18, 2003

LD/NAV

Ref.: KIPUKA21DLNRDOFAW

Suspense Date: 12/12/03

MEMORANDUM:

TO: Division of Aquatic Resources
APP Division of Forestry & Wildlife
Na Ala Hele Trails
Division of State Parks
Engineering Division
Division of Boating and Ocean Recreation
Commission on Water Resource Management
Office of Conservation and Coastal Lands
XXX Land-Hawaii District Land Office
XXX Keith Chun Planning and Development Manager

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Kipuka 21 Fencing and Interpretive Trail Construction
South Hilo, Hawaii - TMK: (3) 2-4-008: 008

RECEIVED
LAND DIVISION
HILO, HAWAII
2003 NOV 19 P 12:09

Please review the attached document pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the document, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached.

Division LAND

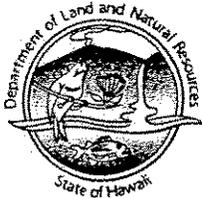
Signed:

Date: 11/21/03

Name:

Harry Yada
Harry Yada

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 18, 2003

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

LD/NAV
Ref.: KIPUKA21DLNRDOFAW

Suspense Date: 12/12/03

MEMORANDUM:

TO: Division of Aquatic Resources
APP Division of Forestry & Wildlife
Na Ala Hele Trails
Division of State Parks
Engineering Division
Division of Boating and Ocean Recreation
Commission on Water Resource Management
Office of Conservation and Coastal Lands
XXX Land-Hawaii District Land Office
XXX Keith Chun Planning and Development Manager

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Kipuka 2L Fencing and Interpretive Trail Construction
South Hilo, Hawaii - TMK: (3) 2-4-008: 008

Please review the attached document pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the document, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached.

Division LAND DIV

Signed: KCR

Date: 11-18-03

Name: KEITH CHUN

LINDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCE

DAN DAVIDSON
DEPUTY DIRECTOR FOR LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR FOR
THE COMMISSION ON
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

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CORRYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE
COMMISSION
LAND MANAGEMENT
STATE PARKS

Ms. Dierdre S. Mamiya
Administrator
Department of Land and Natural Resources
Land Division
1151 Punchbowl Street
Honolulu, HI 96813

JAN 12 2004

Re: Draft Environmental Assessment, Kipuka 21 Fencing and Interpretive Trail Construction

Dear Ms. Mamiya:

Thank you and your staff for taking the time to review the Draft Environmental Assessment for the Kipuka 21 Fencing and Interpretive Trail Construction project on the Big Island. We understand that a copy of the Draft EA was distributed to the Planning and Development and Branch and the Hawaii District Land Office for review, and that Land Division has no comments at this time. If you have any future questions or concerns about this project, please feel free to contact me at 587-4187.

Sincerely,

Scott Fretz
Wildlife Biologist, Division of Forestry and Wildlife

cc: Harry Yada, Hawaii District Land Office

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

DEC 26 2003

470
RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

HWY-PS
2.2747

TO: PETER YOUNG, DIRECTOR
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE

ATTN: CHRISTEN MITCHELL

FROM: *Rodney K. Haraga*
RODNEY K. HARAGA
DIRECTOR OF TRANSPORTATION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR KIPUKA 21
FENCING AND INTERPRETIVE TRAIL CONSTRUCTION

Thank you for requesting our comments. Your Draft EA should acknowledge that the Department of Land and Natural Resources would maintain proposed fencing. Please continue to coordinate the location and design of highway access and parking with our Highways Division, Hawaii District Office.

According to your Draft EA,

The Hawaii Island Economic Development Board and other partners have developed the concept of a "Saddle Road Eco-Highway" that would provide access where appropriate to specific points along the Saddle Road re-alignment. These spots would provide educational information on the natural resources, cultural history, and flora and fauna of the area. The Federal Highway Administration and the State Department of Transportation have approved the Eco-Hawaii concept, and efforts are underway to secure funding for implementation.

The parties interested in the "Eco-Highway concept" had their first organizational meeting last month. We support the development of safe access to natural and cultural amenities from the Saddle-Road realignment. The Department of Transportation and the Federal Highway Administration must review, approve, and agree to fund a specific proposal.

If you have any questions, please contact Ronald F. Tsuzuki, Head Planning Engineer, Highways Division, at 587-1830.

c: OEQC

LINDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RE

DAN DAVIDSON
DEPUTY DIRECTOR FOR LA

ERNEST Y.W. LAU
DEPUTY DIRECTOR FOR
THE COMMISSION ON
WATER RESOURCE MANAGE

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF FORESTRY AND WILDLIFE

1151 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

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RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAOIOLAWE ISLAND RESERVE
COMMISSION
LAND MANAGEMENT
STATE PARKS

Mr. Rodney Haraga
Director
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

JAN 12 2004

Re: Draft Environmental Assessment, Kipuka 21 Fencing and Interpretive Trail Construction

Dear Mr. Haraga:

Thank you and your staff for taking the time to review the Draft Environmental Assessment (EA) for the Kipuka 21 Fencing and Interpretive Trail Construction project on the Big Island. In response to your request, we have made changes in the Final EA to clarify that DLNR will maintain the proposed fencing.

As you suggest, we will continue to coordinate the location and design of highway access and parking with the Hawai'i District Office of the Department of Transportation Highways Division.

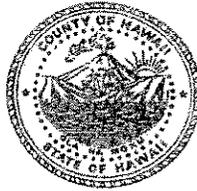
Finally, in regards to the "Saddle Road Eco-Highway," we appreciate your support of the development of safe access to natural and cultural amenities from the Saddle Road realignment and acknowledge the necessity of Department of Transportation involvement in review, approval, and potential funding of future proposals.

If you have any future questions or concerns about this project, please feel free to contact me at 587-4187.

Sincerely,

Scott Fretz
Wildlife Biologist, Division of Forestry and Wildlife

Harry Kim
Mayor



Christopher J. Yuen
Director

Roy R. Takemoto
Deputy Director

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

December 16, 2003

Ms. Christen Mitchell
Department of Land & Natural Resources
Division of Forestry & Wildlife
1151 Punchbowl Street, Room 224
Honolulu HI 96813

Dear Ms. Mitchell:

Draft Environmental Assessment (DEA)
Subject: Kipuka 21 Fencing and Interpretive Trail Construction
TMK: 2-4-8:Portion of 8, at approximately Mile Post 21 on Saddle Road

This is to acknowledge receipt of your November 14, 2003 letter requesting our comments on the proposed Kipuka 21 Fencing and Interpretive Trail Construction on the subject parcel.

The project will involve perimeter fencing of approximately 15 acres in the Upper Waiakea Forest Reserve, followed by the construction of an approximately $\frac{3}{4}$ mile interpretive trail.

In addition to our letter dated September 5, 2003, we have the following to offer:

1. We note that the area of the proposed project site has increased from 10 to 15 acres. However, we have no additional concerns.
2. Since it is acknowledged that there are valued native resources and traditional and customary native Hawaiian rights being practiced in this area, the DES should address mitigation efforts to ensure preservation of these rights.

Ms. Christen Mitchell
Department of Land & Natural Resources
Division of Forestry & Wildlife
Page 2
December 16, 2003

If you have questions, please feel free to contact Esther Imamura or Larry Brown of our office at (808) 961-8288.

Sincerely,



CHRISTOPHER J. YUEN
Planning Director

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xc: OEQC
235 S. Beretania St., Ste. 702
Honolulu HI 96813

LINDA UNGLE
GOVERNOR OF HAWAII



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DAN DAVIDSON
DEPUTY DIRECTOR FOR LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR FOR
THE COMMISSION ON
WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
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LAND MANAGEMENT
STATE PARKS

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

JAN 12 2004

Re: Draft Environmental Assessment, Kipuka 21 Fencing and Interpretive Trail Construction

Dear Mr. Yuen:

Thank you and your staff for taking the time to review the Draft Environmental Assessment (EA) for the Kipuka 21 Fencing and Interpretive Trail Construction project on the Big Island. We acknowledge your comment that you have no additional concerns based on the increase in the size of the project area from approximately 10 to 15 acres. The estimated project size increased after our pre-consultation to allow for greater flexibility in routing the protective fencing around the kipuka to avoid pockets of native vegetation.

We appreciate your request for mitigation efforts in the Final EA to ensure the preservation of traditional and customary Native Hawaiian rights being practiced in the area. The Draft EA was distributed to the following groups and organizations to ensure that they were informed of the project and had the opportunity to raise potential concerns: the Department of Hawaiian Home Lands, Historic Preservation Division of the Department of Land and Natural Resources, the Hawai'i Island Burial Council, the Office of Hawaiian Affairs, the Office of Mauna Kea Management, Ahahui Malama I Ka Lokahi, the Hawai'i County Native Hawaiian Chamber of Commerce, the Hawaiian Civic Club of Hilo, the Prince David Kawanakoa Hawaiian Civic Club, the Hawai'i Volcanoes National Park Kupuna Committee, the Historic Hawai'i Foundation, Hui Malama I Na Kupuna o Hawai'i Nei, the Ilio'ulaokalani Coalition, Kahea – the Hawaiian-Environmental Alliance, Kahu Ku Mauna Council, and Halau Hula O Kahikilaulani. No specific concerns about existing traditional or cultural practices or about potential impacts to existing practices were raised during pre-consultation or during the Draft EA comment period.

The fencing and interpretive trail project will not affect or change existing Forest Reserve rules or policy relating to Native Hawaiian rights. In addition, the Division will work with interested Native Hawaiian groups, such as Kahu Ku Mauna Council, to identify the location for gates or other means of access into the kipuka, if needed to preserve traditional paths of access. We believe that these actions, combined with the use of interpretive signage encouraging members of the general public to stay on the trail, will be sufficient to ensure that existing Native Hawaiian rights are preserved.

If you have any future questions or concerns about this project, please feel free to contact me at 587-4187.

Sincerely,



Scott Fretz

Wildlife Biologist, Division of Forestry and Wildlife

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET
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PETER T. YOUNG
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COMMISSION
LAND MANAGEMENT
STATE PARKS

Department of Business, Economic Development, and Tourism
Office of Planning
Coastal Zone Management Program
P.O. Box 2359
Honolulu, HI 96804

JAN 12 1999

Re: Draft Environmental Assessment, Kipuka 21 Fencing and Interpretive Trail Construction

Thank you for your verbal comments on the Draft Environmental Assessment for the Kipuka 21 Fencing and Interpretive Trail Construction project on the Big Island.

We understand that the Coastal Zone Management Program had the following questions:

1) will the proposed project involve applying for Federal funds that trigger a CZM Federal Consistency review and 2) will the proposed project involve any Federal permits that trigger a CZM Federal Consistency review?

Federal funding to implement this project has already been secured from the U.S. Fish and Wildlife Service. If additional Federal funding that triggers CZM Federal Consistency review is sought in the future, the Division will follow the appropriate consistency procedure in consultation with the Coastal Zone Management Program. No Federal permits are anticipated for this project.

If you have any future questions or concerns about this project, please feel free to contact me at 587-4187.

Sincerely,

Scott Fretz
Wildlife Biologist, Division of Forestry and Wildlife