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GOVERNOR OF HAWAII



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AQUACULTURE DEVELOPMENT  
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WATER AND LAND DEVELOPMENT

OCT 13 1993

MEMORANDUM

TO: Mr. Brian J. J. Choy, Director  
Office of Environmental Quality Control

FROM: Keith W. Ahue, Chairperson *KA*  
Board of Land and Natural Resources

SUBJECT: Negative Declaration for the Consolidation/Resubdivision of  
Three Parcels Within the Hakalau Forest National Wildlife  
Refuge, at South Hilo, Hawaii, TMK(s): 2-7-01: 1, 2-8-01:  
2, 2-9-05: 02

The Department of Land and Natural Resources has reviewed the comments received during the 30-day public review period which began on August 23, 1993. The Department has determined that the project will not have significant environmental effect and has issued a negative declaration.

Please publish this notice in the next OEQC Bulletin.

We have enclosed a completed OEQC Bulletin Publication Form and four copies of the EA. Please contact Sam Lemmo of our Office of Conservation and Environmental Affairs at 587-0377, should you have any questions.

Enclosure

Attachment A

NOV 8 1993

1993-11-08-HI-PEA-Hakalau Forest National Wildlife Refuge  
Consolidation / Re-subdivision

**ENVIRONMENTAL ASSESSMENT**

**PROPOSAL TO ESTABLISH**

311

**UPPER HAKALAU NATIONAL WILDLIFE REFUGE  
HAWAII COUNTY, HAWAII**

**DEPARTMENT OF THE INTERIOR  
U.S. FISH AND WILDLIFE SERVICE  
HONOLULU, HAWAII**

Prepared: May, 1985

by: Peter Stine

DEPARTMENT OF THE INTERIOR  
U.S. FISH AND WILDLIFE SERVICE  
Region I, Portland, Oregon

FINDING OF NO SIGNIFICANT IMPACT

PROPOSED ACQUISITION TO ESTABLISH THE UPPER HAKALAU  
NATIONAL WILDLIFE REFUGE  
Hawaii County, Hawaii

The Fish and Wildlife Service (FWS) has prepared an Environmental Assessment (EA) to evaluate the effects associated with maintaining, and where necessary, restoring a portion of the Upper Hakalau forest system for endangered forest birds and associated components of the koa-ohia and ohia forests of the area.

Proposed Action:

To assure the perpetuation of native forest habitats of the Upper Hakalau Forest for the protection of a number of endangered animals and plants endemic to the area, the Fish and Wildlife Service proposes to acquire approximately 33,500 acres of privately owned lands and establish the Upper Hakalau National Wildlife Refuge. Authority to undertake such an action is provided the FWS by the Endangered Species Act of 1973 (16 U.S.C. 1531-1543; 87 Stat. 884) as amended, using funds to be made available through the Land and Water Conservation Fund Act of 1965 (16 U.S.C. 4601-4-4601-11; 78 Stat. 897).

Alternatives to the proposed action that were considered in the EA and dismissed are: (1) Regulatory or Restrictive Zoning; (2) Acquisition/Management by Others; (3) Exchange for Public Land; (4) Acquisition of Partial Interest; and (5) a no-action alternative (see pages 10-16 of the EA). For further discussion of the purpose and need for the project, see pages 1-5 of the EA.

The following describes why the proposed action will not have a significant effect on the human environment:

1. The natural process under which most of the area has currently evolved will, with the exception of efforts intended to control exotic species, be permitted to continue. The influence of domestic cattle within the upper elevations of the area will be curtailed and those areas will be permitted to regenerate into natural habitat.
2. The proposal is consistent with the existing Conservation District zoning on approximately three-fourths of the area. A major human benefit derived from such zoning, i.e. the absorption and slow release of water from the watershed for utilization at lower elevations, will continue. The remainder of the project site, zoned as agricultural (Ag-40), will remain undeveloped, and as

habitat regeneration occurs it is not expected to detract from the water retention capabilities of the area.

3. Mitigation for removing the lands from private and placing them into public ownership will be accomplished by compensating current owners the appraised market value for their property; and qualifying occupants would be eligible for benefits under the Relocation Assistance and Land Acquisition Policies Act of 1970.
4. A Section 7 Internal Consultation concerning the five endangered birds, one endangered mammal and a number of endangered plants now known to occur in the area, indicates the action would be beneficial to those species.
5. Consultation with the Hawaii State Historical Preservation Office (SHPO) within the Department of Land and Natural Resources (DLNR) indicates that no archaeological surveys have taken place within the project boundaries. At this time there are no known properties listed on or eligible for the National Register of Historic Places, or the National Register of Historic Landmarks within the area proposed for acquisition.

Should any future development that might impact the area be contemplated, an intensive cultural survey of the development site would be undertaken beforehand and if the survey identifies any cultural or historic activity which may qualify for inclusion in the National Register, documentation regarding such activity would be forwarded to the DLNR for a determination of eligibility.

6. The FWS has evaluated the proposal with respect to various rules, regulation and legislation and has found it to be consistent with and in conformance to: Executive Orders 12372 (Intergovernmental Review of Federal Programs), 11990 (Protection of Wetlands), 11988 (Floodplain Management), 11593 (Protection of Historical, Archaeological and Scientific Properties); The Endangered Species Act of 1973; The Land and Water Conservation Fund Act of 1965; The National Wildlife Refuge Administration Act of 1966; and other public laws relative to this action.
7. This proposal is comparable to and has been preceded by similar actions within the FWS whereby lands are acquired for and made a part of the National Wildlife Refuge System.

Related Documents:

A Hawaiian Forest Birds Recovery Plan for the Akiapolaau, the Hawaii akepa, the Hawaii creeper, and the Ou, all found within the Upper Hakalau Forest, was prepared by an inter-entity

Hawaiian Forest Birds Recovery Team and approved by the Director of the FWS on February 3, 1983. A programmatic Environmental Impact Statement concerning Operation and Management of the National Wildlife Refuge System under which the Upper Hakalau National Wildlife Refuge would be managed, was completed in 1976 (FES 76-59). The FWS Regional Resource Plan of 1984 outlines Region I priorities, including goals relative to the recovery of endangered Hawaiian forest birds.

Public Availability:

The EA was distributed for a 35-day public review period to landowners of the project site, other interested entities, and to local governments via the Hawaii State Clearinghouse. Copies of this finding will also be distributed to those landowners, entities and governmental agencies which received the EA. In addition, copies are available upon request from the Chief, Office of Acquisition, USFWS, 500 N.E. Multnomah Street, Portland, OR, 97232; phone (503) 231-6209; or from the Pacific Islands Administrator, USFWS, 300 Ala Moana Blvd., Room 5302, Honolulu, HI, 96850; phone (808) 546-5608.

Determination:

Based upon information in the EA, the Fish and Wildlife Service has determined that this activity would not constitute a major federal action significantly affecting the quality of the human environment. Therefore, an environmental impact statement will not be prepared. This Finding of No Significant Impact will not be final nor will any acquisitions be undertaken pending a 30-day period for public review.

Issued in Portland, Oregon, 7/2/85.

  
Richard J. Myshak  
Regional Director

References:

Environmental Assessment: Proposal to Establish an Upper Hakalau National Wildlife Refuge, Hawaii County, Hawaii

Hawaiian Forest Bird Recovery Plan

Region I, USFWS, Regional Resource Plan

Operation and Management of the National Wildlife Refuge System, FEIS 76-59

--ADDENDUM--

Upper Hakalau Forest  
Environmental Assessment

June 20, 1985

The project boundary of the proposed Upper Hakalau National Wildlife Refuge has been modified to reflect changes based on recent discussions with landowners, reviewer comments to the environmental assessment, and other information received pertaining to this proposal. The new boundaries (see attached map) include an additional approximately 2,500 acres of lands adjacent to and uphill from the project as identified in the May, 1985, environmental assessment.

The additions are parts of the W. H. Shipman Estate, and Liliuokalani Trust ownerships. Inclusion of these lands encompass the entire holdings of the Shipman Estate in the Tax Map Key 2-8-01-parcel 1, and 2-9-05-parcel 3, and all but 500 acres of 2-7-01-parcel 4. It also includes the entire holdings of the Liliuokalani Trust in Tax Map Key 3-3-01-parcel 7.

Shipman Estate representatives have expressed the desire to retain 500 acres around the original W. H. Shipman Ranch at Pua Akala. They also want to sell the balance of their lands in this area as one unit, thus purchasing the property will include both the forest and adjoining pasture lands. This adds approximately 1,500 acres to the project.

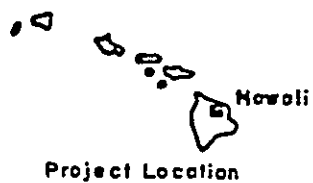
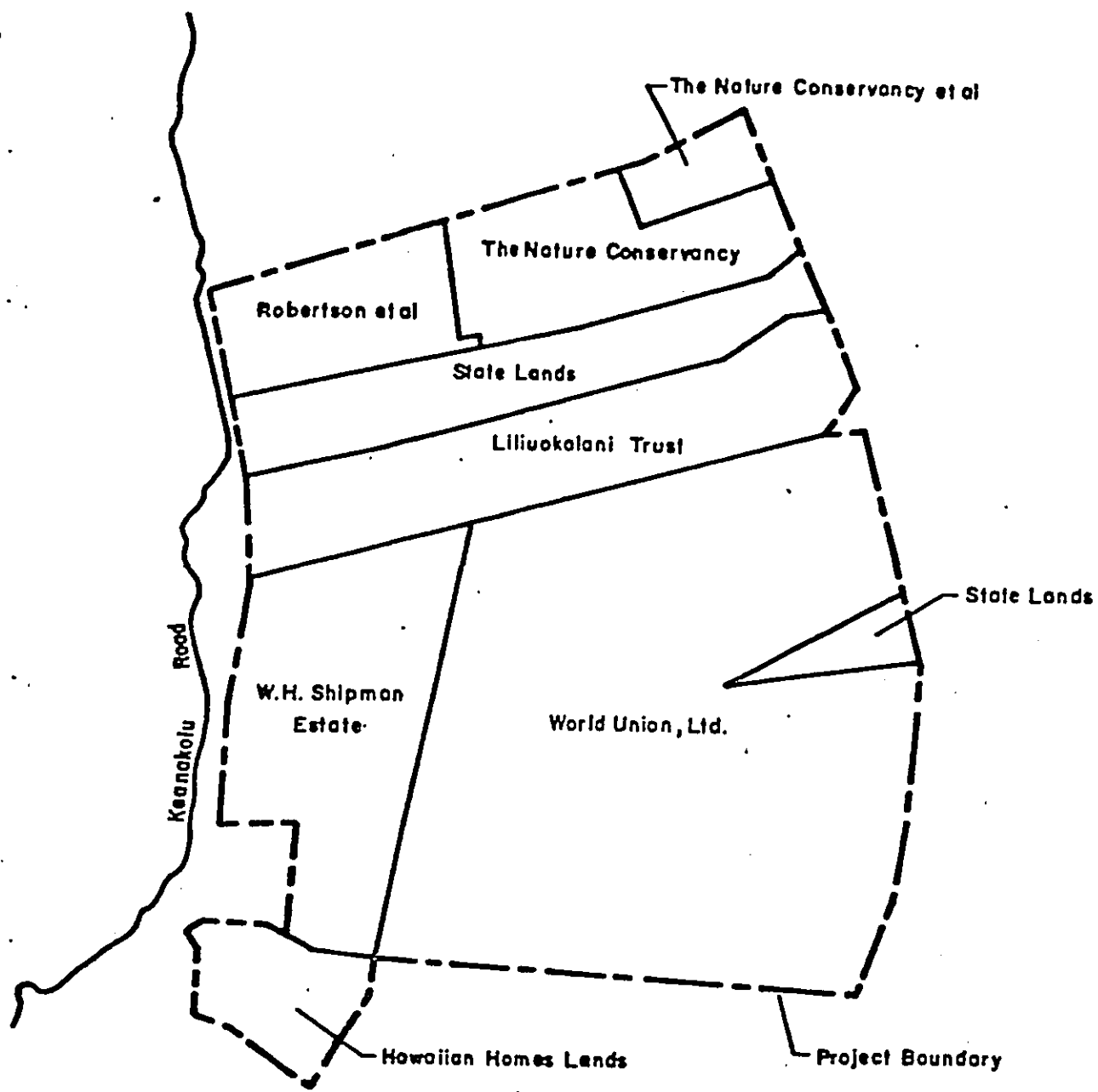
An additional 1,000± acres of Liliuokalani Trust lands have also been included within the new project boundary in the event that, as with the Shipman Estate, the board of directors for the Trust seek to divest the entire parcel rather than retain a fraction of it.

The preferred of two options being considered by the FWS in utilizing this additional acreage is to seek an owner who has forest lands that are either within or adjacent to the project boundary and see if an exchange for either all or a portion of the 2,500 acres can be arranged at the time of acquisition.

The second option would be for the FWS to retain the lands since they currently provide habitat values for the endangered nene goose and koloa duck. Within this option, the FWS would incorporate reforestation of the area in its long-range refuge plans. These sites historically supported the mesic koa-ohia forest habitat type, a rare and valuable habitat type represented by remnant stands immediately downslope. Forest rehabilitation/regeneration would be a long-term project for which there is no guarantee of success, and it could be several decades before any notable results would be realized.

Based on the circumstances outlined above, the 2,500 acres described will be included in the project boundaries and the options outlined will be pursued.

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PROPOSED UPPER HAKALAU NWR - REVISED BOUNDARY

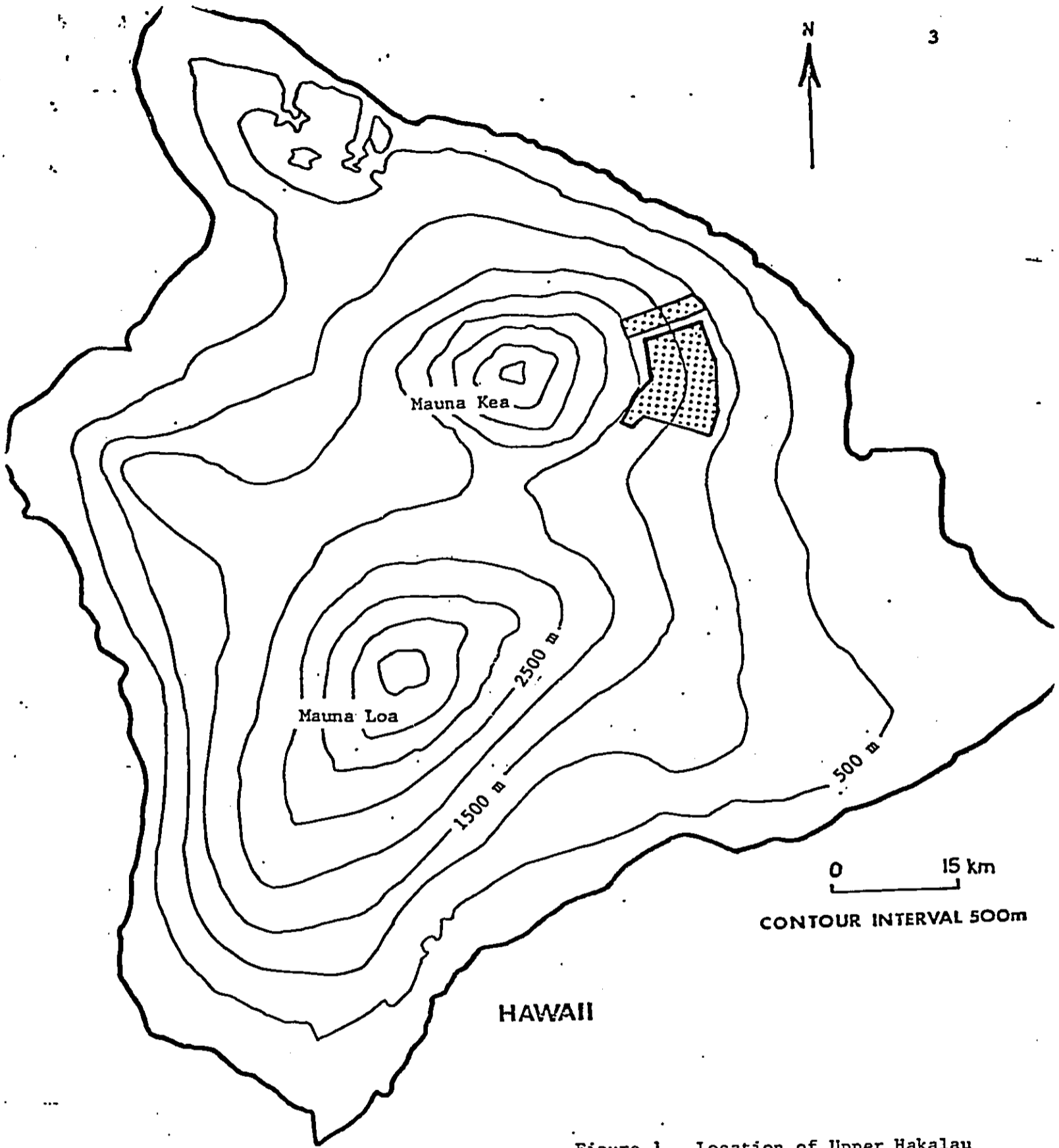
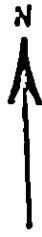
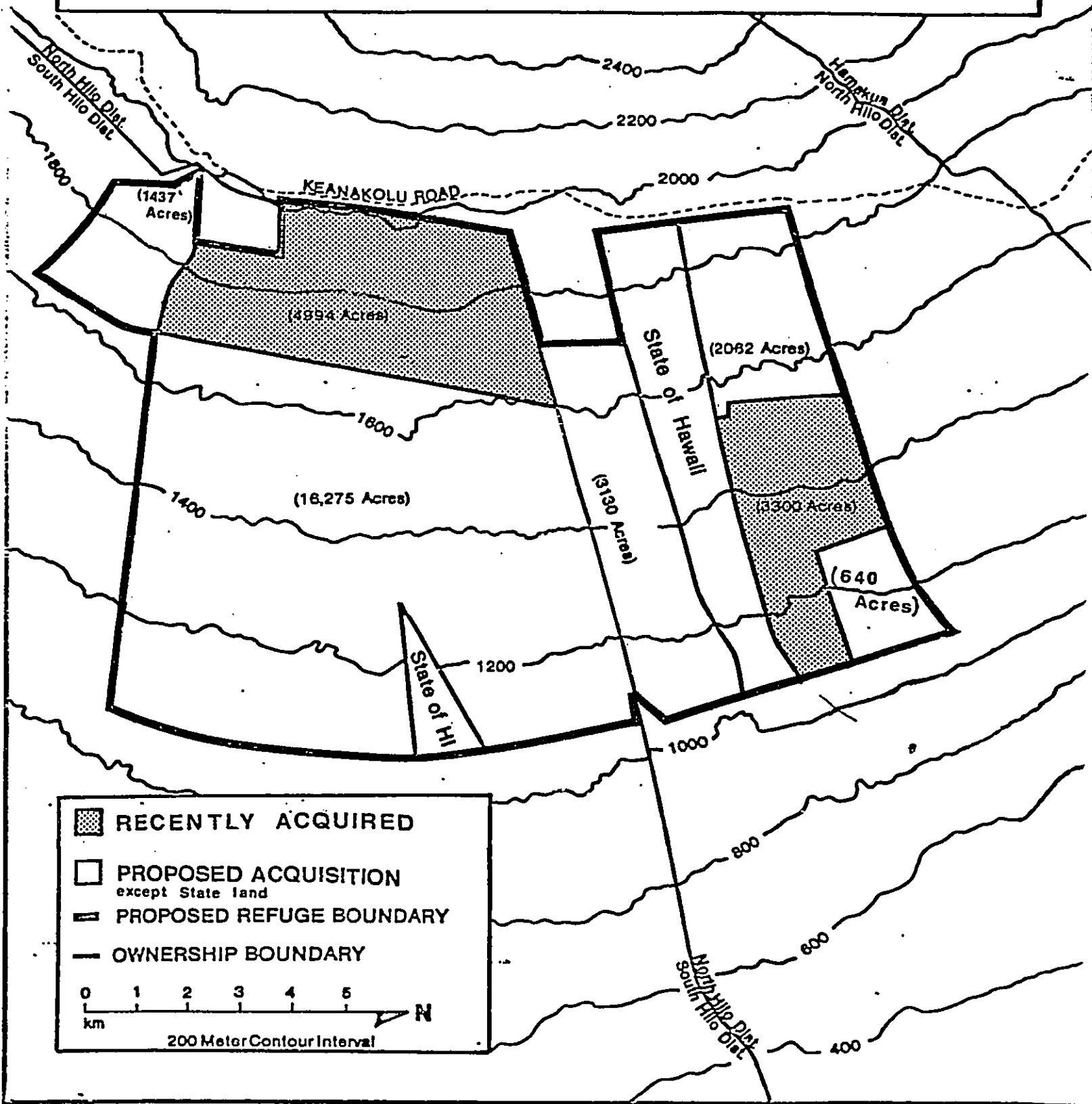


Figure 1. Location of Upper Hakalau Forest Bird Project Site



# HAKALAU FOREST

## Proposed National Wildlife Refuge



# **UPPER HAKALAU FOREST**

**HAWAII COUNTY, HAWAII**

**Environmental Assessment**

UPPER HAKALAU

Hawaii County, Hawaii

Environmental Assessment

ENVIRONMENTAL ASSESSMENT

PROPOSAL TO ESTABLISH AN  
UPPER HAKALAU NATIONAL WILDLIFE REFUGE  
HAWAII COUNTY, HAWAII

PREPARED BY

DEPARTMENT OF THE INTERIOR  
U.S. FISH AND WILDLIFE SERVICE  
HONOLULU, HAWAII

Author: Peter Stine

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## I. PURPOSE AND NEED FOR ACTION

In recent years, the U.S. Fish and Wildlife Service (USFWS), in cooperation with the State of Hawaii and other entities, has proposed and undertaken a number of actions to ensure the continued existence of endangered Hawaiian forest birds. The approved recovery plan for the Hawaii Forest birds (Scott *et. al.* 1983) is the driving force in guiding this effort. Included among those actions is the perpetuation of habitats in the Upper Hakalau Forest situated on the island of Hawaii. This is a high priority action in the Hawaii Forest Bird Recovery Plan.

As a preferred alternative to effect protection of that ecosystem, the USFWS proposes to establish the Upper Hakalau National Wildlife Refuge within boundaries as identified on the map in Figure 4.

In developing this proposal a number of alternatives were taken into consideration and are identified in Section II of this assessment.

### A. Purpose of Action

A major purpose of the Endangered Species Act of 1973 (ESA) is ". . . to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved". Protection and maintenance of habitats is a crucial element of conserving most fish, wildlife, and plants facing extinction. Thus, the USFWS must use its expertise and resources to protect and maintain endangered and threatened species habitat.

On the island of Hawaii, there are 20 species of plants or animals which have been formally listed as threatened or endangered (1 reptile, 13 birds, 1 mammal, and 5 plants). Many more candidate<sup>1</sup>

<sup>1</sup>Candidate - A species which is a subject of a Notice in the Federal Register and may be considered for a proposal to be listed as threatened or endangered at some future date.

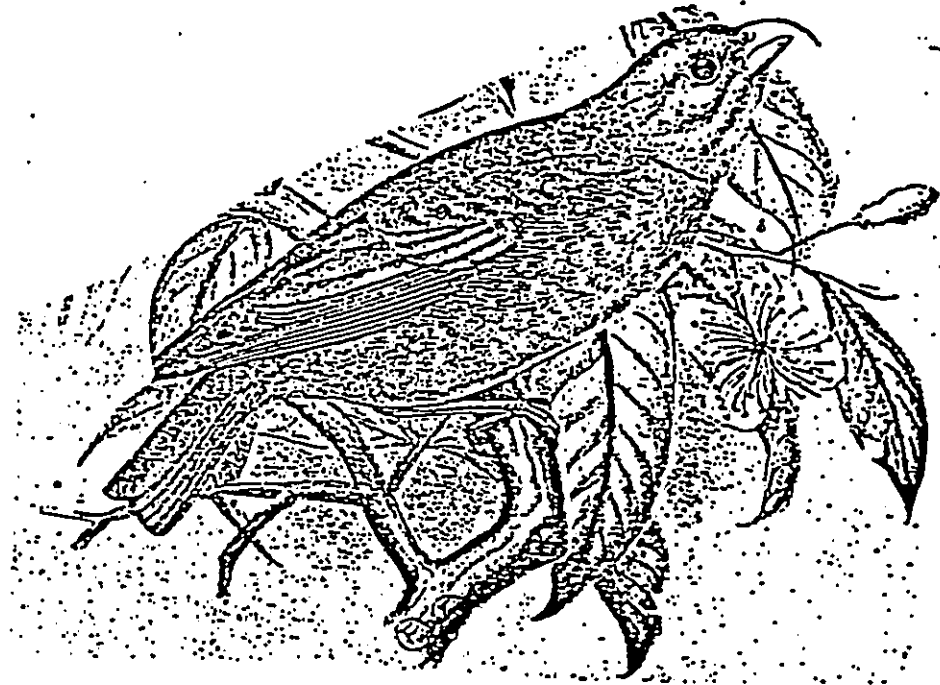
species are also found on the island of Hawaii. A large number of these taxa, both listed and candidates, are found in the mesic (moist) and wet forests on the slopes of Mauna Kea and Mauna Loa, the two largest volcanoes on the island. Although much of this forest habitat is in public ownership, some vitally important forest habitat is privately owned. One significant area, essential to the long-term stability of three or perhaps four endangered forest bird populations, is a region known as the Upper Hakalau forest. This area contains some of the finest stands of koa (Acacia koa) -ohia (Metrosideros collina) and ohia forests remaining in Hawaii (and the world).

The Upper Hakalau forest region is part of the expansive middle forest zone of the mesic and wet koa-ohia forest on the windward slopes of Mauna Kea (Rock 1913). It is located about 20 km northwest of Hilo at elevations between 1,200 m and 2,200 m (Figure 1). An important feature of the koa-ohia and ohia forests of this region is the substantial populations of native birds found there. In particular, the area supports a large percentage of the known populations of the endangered Akiapolaau [Hemignathus munroi (=wilsoni)], Hawaii Akepa (Loxops coccineus coccineus) and Hawaii Creeper [Oreomystis (=Loxops) mana] (Figure 2). The endangered Hawaiian Hawk or Io (Buteo solitarius) is found throughout much of this area and the endangered Ou (Psittirostra psittacea) is present, although very rare, in the mid-elevation (around 1,300 m) ohia forest of this region (Scott et. al. in press). The endangered Hawaiian hoary bat (Lasiurus cinereus semotus) is also present throughout this area.

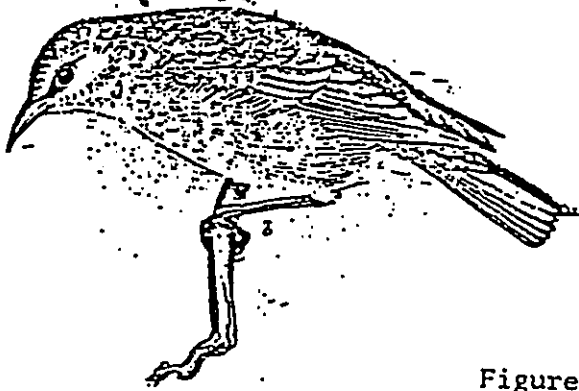


HAWAII AKEPA

OU



AKIAPOLAAU



HAWAII CREEPER

Figure 2 Endangered Hawaii Forest Birds

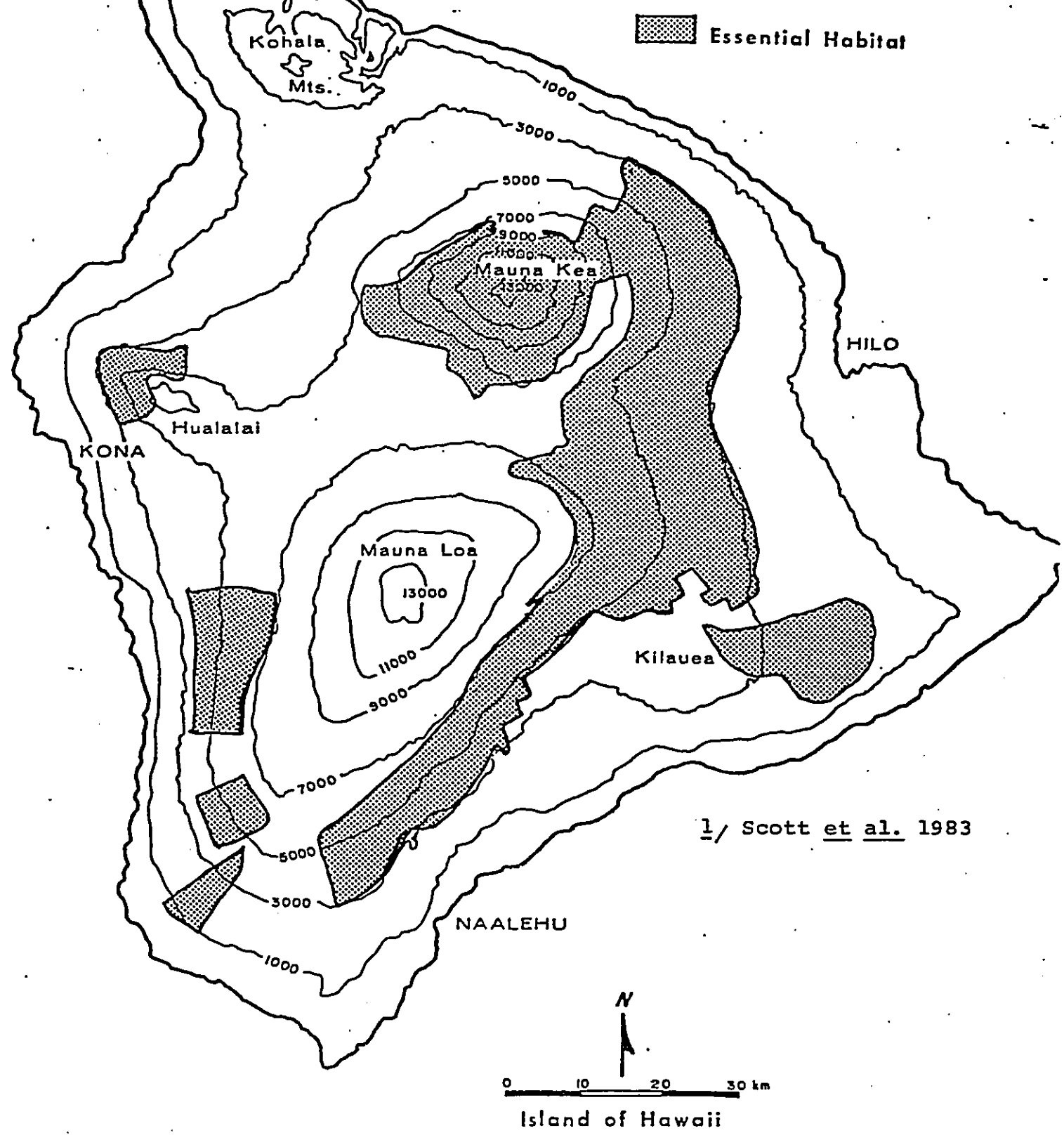
The Upper Hakalau forest region is an integral component of the continuous belt of mid-elevation forest from windward Mauna Kea to leeward Mauna Loa. Much of this continuous belt of forest constitutes the essential habitat identified in the recovery plan (Scott *et. al.* 1983) prepared for the four endangered forest birds on the Big Island (Figure 3). Upper Hakalau forest is a core of the current distribution of these endangered forest birds. The purpose of the proposed action is to sustain the naturally evolving mid-elevation rain forest of this area and, as necessary, allow for the management of this forest and its assemblage of native and non-native plants and animals. If accomplished, the Upper Hakalau forest community could function as a hub of the native koa-ohia and ohia forest habitat, allowing for the long-term maintenance of these systems and their component organisms including six endangered species and many more candidate or rare species. This objective can be met by implementing one or a combination of the alternatives presented in this report. The Service's preferred alternative is Alternative B, formation of a National Wildlife Refuge.

Authority for establishing the needed protection is derived from the Endangered Species Act of 1973, (87 Stat. 884) as amended. Funding is available through the Land and Water Conservation Fund Act of 1965 (16 U.S.C. 4601-4 to 4601-11) pursuant to Section 5 of the ESA.

#### B. Need for Action

The native forested habitats on the island of Hawaii have been subject to many disruptive factors since Hawaii was discovered by people 1500 years ago (Kirch 1983). The rate of changes in the character of the land has increased dramatically in the last 200

FIGURE 3. Endangered Hawaii Forest Birds Essential Habitat 1/



1/ Scott et al. 1983

Island of Hawaii

years. The wet and dry lowland forests have been almost entirely eliminated by the activities of early Polynesians and by agricultural development and urbanization over the last 100 years. Major portions of mid to upper elevation native forest have been logged and/or cleared for rangeland development or reforested in silviculture projects which primarily utilized introduced tree species.

The major changes in native forests on the island of Hawaii have had a corresponding effect on virtually all populations of native forest birds (Scott et al. in press). In conjunction with other major limiting factors (e.g. competition with introduced birds, vulnerability to avian diseases, and predation), loss of suitable habitat (or portions of its components such as key food items) has decreased the range and drastically reduced the populations of all native birds. Table 1 summarizes estimated populations and distribution status of all Hawaii forest birds from data collected during the Hawaii Forest Bird Survey (Scott et al. in press). Seven of these birds are listed as endangered; of these seven, five are found within the Upper Hakalau region.

The Hawaiian Hawk is actually fairly widespread on the island. It presently occupies an estimated 90% of its historical range. The Upper Hakalau region, however, provides a significant part of the total present-day habitat for Akiapolaau, Hawaii Creeper, Hawaii Akepa and to some extent, Ou. An estimated 12% of the extant population of Akiapolaau is found in the upper elevation koa-ohia forests in the Upper Hakalau area. These birds seem to prefer areas with stands of large koa trees in a relatively mesic koa-ohia woodland.

The Hawaii Creeper appears to be most common in the wet, dense

TABLE 1

Status and Distribution of Extant Endemic Hawaii Forest Birds<sup>1</sup>

<u>Species</u>	<u>Status</u>	<u>Estimated<sup>2</sup> Total Populations</u>	<u>% of Original Range Still Occupied</u>
Alala	E	76 (most recent estimates are less than 25 birds)	3
*Ou	E	400	2
*Akiapolaau	E	1,500	5
*Hawaiian Hawk	E	1,600 - 2,500	90 +
Palila	E	2,200	5
*Hawaii Creeper	E	12,500	15
*Hawaii Akepa	E	14,000	10
*Omao		170,000	19
*Elepaio		215,000	36
*Iiwi		311,000	38
*Common Amakihi		870,000	34
*Apapane		1,090,000	39

\* = found in the Upper Hakalau area.  
E = endangered.

<sup>1</sup> (from Scott et al. In Press)

<sup>2</sup> Based on data collected from 1976-1979.

forests at higher elevations where large koa trees are fairly common. About 22% of the entire extant population of Hawaii Creeper is found in the Upper Hakalau area.

Almost 35% of the entire extant population of Hawaii Akepa occupy the Upper Hakalau region. They are most abundant in the mesic to wet forests in this area between 1,500 and 2,100 m (Scott et al. in press). The habitat preferences and year-round distribution of Ou are not as well understood but this species has been recorded from the lower reaches of the Upper Hakalau forests. They are found in this area to below 1,300 m where they occupy wet ohia forests (Scott et al. in press).

Although large numbers of endangered forest birds occupy koa-ohia and ohia forests of Upper Hakalau, the habitat is changing. Portions of the upper elevation koa forests are continually subjected to cattle grazing, and maintenance and regeneration of this forest is threatened. Grazing thins out the understory and eliminates koa regeneration (Scott et al. in press). Some of the fine stands of koa found throughout Upper Hakalau area have been partially logged in the past, and remaining stands are under increasing pressure for potential logging because other sources of koa are dwindling. The pressure of some form of direct economic use of all these lands continues to affect land use decisions.

Concurrent with various direct human land uses which deteriorate native forest conditions is the continuous degradation of some native forests by feral (wild) ungulates (hoofed mammals). Feral cattle (Bos taurus) and pigs (Sus scrofa) continue to cause noticeable changes in native forests through grazing, trampling, or



rooting activities. Introduced plants such as banana poka (Passiflora mollissima) (on the Piha and Laupahoehoe State forest lands) have become well established in certain forested areas of the island of Hawaii and threaten to overwhelm large tracts of native forests.

II. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

The Upper Hakalau forest bird habitat project area, hereafter referred to as the project, includes or comprises those private land holdings within the boundaries shown in Figure 4. The major landowners of the project site are listed and the tax map keys of the units of land are described in Table 2 and Figure 4.

The following alternatives have been considered as possible means for achieving the objective of maintaining and where necessary, restoring the Upper Hakalau forest system for endangered forest birds and associated components of the koa-ohia and chia forest of this area.

A. No Action

As the "no action" term implies, the Fish and Wildlife Service would pursue no activity towards preserving the Upper Hakalau forest. The Service also would not be involved in encouraging others to do anything toward assuring that the Upper Hakalau forest retains those values necessary for the perpetuation of the endangered species using it.

Such an action would be inconsistent with the historical role of the Service and would be contrary to the intent of the Endangered Species Act of 1973.

The following alternatives, having the potential to assure the perpetuation of the habitat within the project area in a manner that would be conducive to the continued existence of the endangered and threatened

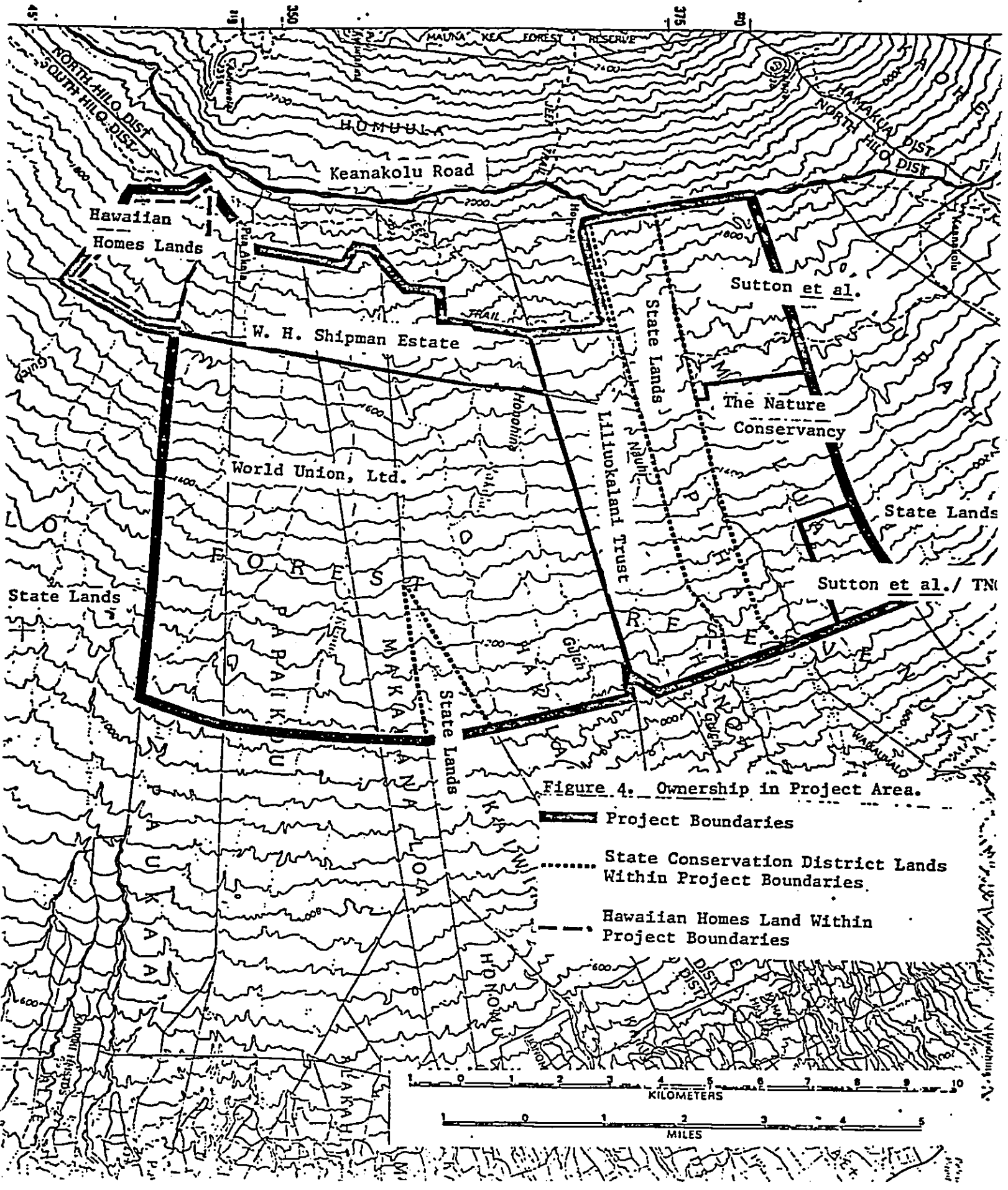


TABLE 2

<u>Owner</u>	<u>Tax Map Key</u>				<u>Acres (estimated)</u>	
	<u>Zone</u>	<u>Sec.</u>	<u>Plat</u>	<u>Parcel</u>	<u>Inside Project Area</u>	<u>Outside Project Area</u>
World Union Industrial Corp. Ltd.	2	7	01	1	8,050	10,052
	2	8	01	2	2,150	1,600
	2	9	05	2	<u>6,075</u>	<u>2,910</u>
				TOTAL	16,275 (6,589 ha)	14,562 (5,895 ha)
W. H. Shipman Ltd.	2	7	01	4	1,500	308
	2	8	01	1	955	302
	2	9	05	3	<u>1,215.5</u>	<u>1,213.5</u>
				TOTAL	3,670.5 (1,480 ha)	1,823.5 (738 ha)
The Nature Conservancy	3	7	01	1	3,300 (1,336 ha)	
Liliuokalani Trust	3	3	01	3	2,420	1,355
	3	3	01	7	<u>710</u>	<u>1,042</u>
				TOTAL	3,130 (1,267 ha)	2,398 (971 ha)
Richard and Anne Sutton <u>et al.</u>	3	7	01	01	2,628 (1,064 ha)	
TNC/Sutton <u>et al.</u>	3	7	01	01	640 (258 ha)	
			PRIVATE	SUBTOTAL	29,743.5 acres (12,000 ha)	
Hawaiian Homelands	2	6	18	2B	1,437 (582 ha)	
				TOTAL	31,180 (12,622 ha)	

species now inhabiting the site, have been considered.

B. Create a National Wildlife Refuge Through Fee Title Acquisition  
(the preferred alternative)

The USFWS would purchase fee title to those privately owned lands within the project area (see figure 4), using Land and Water Conservation Fund monies. These acquired lands would then constitute the Upper Hakalau National Wildlife Refuge to be managed primarily for the benefit of endemic endangered and threatened species in accordance with the various rules and regulations governing the operation and management of the National Wildlife Refuge System. Acquisitions would be based on the appraised fair market value of the rights purchased. Landowners who qualify would be eligible for applicable benefits available under the Uniform Relocation Assistance and Land Acquisition Policies Act of 1970 (P.L. 91-646).

Such benefits include:

1. Reimbursement of moving and related expenses or certain substitute payments.
2. Replacement housing allowance under certain conditions.
3. Relocation assistance services to help relocate replacement housing, farms, or business properties.
4. Reimbursement of certain expenses incurred in selling real property to the Government.

The public (State) lands inside (and those adjacent to) the project boundaries are not part of this acquisition proposal. They are, however, part of the same ecosystem, and thus are important components with respect to habitat protection. It is the objective of this overall project to work with the state to manage the entire system as one system.

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C. Regulatory or Restrictive Zoning

Regulation of use of most public and private forest lands in Hawaii is governed by State zoning regulations as prescribed by Title 13, Chapter 2, Department of Land and Natural Resources. Any one of five different subzones (P-Protective, L-Limited, R-Resource, G-General, S-Special) is assigned to these Conservation District Lands, affording varying degrees of restrictions and resource protection.

The majority of the Upper Hakalau forest region is presently classified as Conservation District - "R" subzone. The "R" subzone restricts most land uses but it permits forestry activities which normally result in decline in quality of native forest bird habitat. However, the State Board of Land and Natural Resources must approve any proposed use within the Conservation District even if the use is permitted within any subzone. In addition, permission for activities normally not allowed in a particular subzone, for example cattle grazing on "R" subzone lands, may possibly be obtained through approval of a Conservation District Use Application (CDUA) by the Board of Land and Natural Resources.

The most restrictive zoning within Conservation District Lands, subzone "P", could be imposed on the properties. Permission for restricted activities can be obtained even within this subzone. Therefore, it would be necessary to ensure at the onset that any activities detrimental to the furtherance of endangered species objectives would not be allowed.

The Fish and Wildlife Service has no authority to impose such a zoning ordinance over private property. This authority lies with the Board of Land and Natural Resources of the State of Hawaii.

D. Acquisition/Management by Others

There are organizations other than the Fish and Wildlife Service that could acquire and manage the project area for the protection and conservation of its endangered species and other native wildlife community resources. Potentials include:

- 1) The Division of Forestry and Wildlife within the Hawaii Department of Land and Natural Resources.
- 2) Non-governmental conservation organizations such as The Nature Conservancy or the Trust for Public Lands.
- 3) The National Park Service within the U.S. Department of the Interior.

All have a commitment toward and a deep interest in habitat protection for endangered species. In fact, portions of the Upper Hakalau forest are already owned by the Hawaii Department of Land and Natural Resources and The Nature Conservancy (see Figure 4). However, perhaps due to the magnitude of the effort, none have expressed an intention to undertake the entire project, and most have encouraged FWS involvement because of the endangered wildlife focus of this project.

E. Exchange for Public Land

This would entail the exchange, on an equal-value basis, of private for publicly owned properties within Hawaii. While the exchange of private lands within the Upper Hakalau forest for either federal or state lands is a potential alternative, its feasibility is quite restricted due to the limited acreage (if any) of available public lands within the state that would also be of interest to landowners.

From an administrative perspective, it would be highly impractical to entertain a concept of exchanging private lands on the islands for public lands on the mainland.

F. Acquisition of Partial Interest

A conservation easement or a similar less-than-fee title acquisition, purchased by either a private or governmental entity, could be utilized to protect the Upper Hakalau site. To be effective for the long-term it would be necessary to preclude activities such as timber removal, grazing and other uses that would be detrimental to endangered species utilizing the area. Obtaining such rights would probably approach costs similar to fee title purchase and may leave the owners with little more than the right to pay taxes. If purchased by a non-governmental entity, rights to manipulate the habitat for the benefit of endangered species could be negotiated, whereas the expenditure of public funds for management activities (e.g., fencing to contain or exclude wild pigs, or banana poka control) on private lands may not be feasible.

III. AFFECTED ENVIRONMENT

A. Physical Environment

The Upper Hakalau forest area is located on the Island of Hawaii. This island has been formed over the last 1 million years by tremendous outpourings of lava from five volcanoes; Kohala, Mauna Kea, Hualalai, Mauna Loa, and Kilauea. The Upper Hakalau forest area is situated on the southeast flank of Mauna Kea. This volcanic dome is about 13,785 feet (4,177 m) high, the highest insular peak on earth (Stearns 1966).

The project area begins at about 3,500 feet (1,060 m) elevation and stretches upslope to about 7,260 feet (2,200 m). The organic

soils are fairly well developed and continuous. The bedrock is old lava, probably about 4,000 years old. The lower elevation lands contain deep, gentle to steep, and moist to fairly well drained soils with a moderately fine textured subsoil (Sato et al. 1973). The soils on the upper elevation portions of the site are similar but slightly drier and coarser.

The climate is characterized by warm temperatures, with mean high temperatures from 68 to 80 degrees fahrenheit and mean low temperatures from 55 to 64 degrees fahrenheit. Trade wind precipitation predominates, with a mean annual rainfall of up to 280 inches (700 cm) (highest on the island) recorded from the lower elevations. Widespread cloudiness characterizes these windward slopes, particularly during trade wind weather.

#### B. Biological Environment

The Upper Hakalau area consists of typical mixtures of Hawaiian montane rain forest dominated by ohia and, in some areas, both ohia and koa trees. The ohia rain forest is the most common forest type in this project area. It is generally found in moderately moist to wet situations in the lower and middle elevations, 3,600 - 5,000 feet (1,100 - 1,500 m). Subcanopy trees and shrubs include kawau (Ilex anomala), kolea (Myrsine lessertiana), kopiko (Psychotria spp.) and olapa (Cheirodendron trigynum). The understory is dominated by tree ferns (primarily Cibotium glaucum). Conspicuous in this wetter forest habitat are several species of Clermontia and many more species of epiphytic ferns.

At the lowest elevation of the project area is the bog - ohia dieback community. This unit is actually a mosaic of open bog, matted fern and native shrub communities, and open to scattered wet



ohia forest with many standing dead or partially defoliated trees. The forest dieback in this area is believed to be a result of the poor rooting conditions found in this extremely wet habitat (Jacobi 1983) but the area is now showing signs of regeneration. The wet open boggy areas are dominated by introduced grass and sedge species with scattered native shrubs.

At the higher elevations, generally between 4,600 and 6,400 feet (1,400 and 1,950 m), koa becomes a codominant or dominant tree species in the forest. The structure of a typical koa-ohia rain forest is characterized by tall koa and ohia trees forming a closed tree canopy 50 - 80 feet (15 - 25 m) tall, ohia trees forming the mid-story, and tree ferns (Cibotium spp.) and native shrubs forming the understory (Mueller-Dombois 1981). The wet koa-ohia forest extends across the project area in a narrow band between 4,600 and 5,300 feet (1,400 and 1,600 m). Sub canopy trees in this particular forest type include those found in the wet ohia forest. Less than 50% of the estimated 85,000 acres (35,000 ha) of the original distribution of this habitat remains today (Jacobi and Scott in press).

The mesic koa-ohia forest with native shrub dominated understory extends from 5,300 to 6,400 feet (1,600 to 1,950 m). Today this particular forest type is fairly restricted in distribution, being found only where cattle grazing has been absent. Subdominant trees include kolea, kawau, and kopiko and the understory is chiefly comprised of native shrubs such as kanawao (Broussaisia arguta), akala (Rubus hawaiiensis), ohelo (Vaccium calycinum) and some ferns. Mesic koa-ohia forest is especially rich in endemic forest birds. This habitat type has also undergone the most

significant changes in recent decades. Less than 15% of the estimated 100,000 acres (40,000 ha) of the original distribution of this vegetation type remains today (Jacobi and Scott in press).

The uppermost elevations of the project area have been subjected to managed cattle grazing for several decades and wild cattle have been present in this general area for over a century. This has resulted in a slow but steady change in the character of the forest habitats naturally found at these elevations. In areas that have been more heavily grazed, introduced grasses cover much of the ground. Populations of native shrubs and ferns are reduced. The overstory is largely in good condition, providing valuable habitat for birds. However, little regeneration of woody vegetation survives grazing in these areas.

Fairly large areas, upslope from (outside) the project are dominated by a dry habitat type of introduced grasses with only occasional koa or other native or introduced trees. These areas have been heavily grazed for many decades; whatever woody vegetation naturally occurred in this area has been replaced by open rangeland dominated by exotic grasses.

Figure 5 provides a detailed vegetation map of the project area. Table 3 provides a list of candidate (category 1 or 3C) or uncommon plants from the project area.

The Upper Hakalau forest supports a superb avifauna, rich in species and high in density. Three of the four endangered forest birds of the island of Hawaii -- Akiapolaau, Hawaii Creeper, and Hawaii Akepa are represented with substantial populations (see Table 1). Portions of the koa-ohia forest habitats support up to 130-260 Akiapolaau/mi<sup>2</sup> (50-100/km<sup>2</sup>) and much larger sections have

between 26-130 birds/mi<sup>2</sup> (10-50/km<sup>2</sup>) (Figure 6). The majority of the project area supports densities of Hawaii Creeper exceeding 260 birds/mi<sup>2</sup> (100/km<sup>2</sup>) and a substantial parcel has densities of over 520/mi<sup>2</sup> (200/km<sup>2</sup>) (Figure 7). The Hawaii Akepa appears to be the most numerous of the endangered birds here. Densities exceed 520/mi<sup>2</sup> (200/km<sup>2</sup>) over a large part of the project site (Figure 8) (Scott et al. in press). Although the highest concentrations of these species extend from the project area to the south, a short distance outside the boundary areas of the project, the areas south of the project are already public lands in the Conservation District.

The Ou is found infrequently in the lower elevation ohia forests. Patterns of the distribution of this very rare bird are not clear. Three other endangered birds are also found in or around the area. The Hawaiian Hawk is widespread throughout the Upper Hakalau region, the Nene (Nesochen sandvicensis) nests nearby and has been observed in areas adjoining the project area; and small numbers of the Hawaiian Duck or Koloa (Anas wyvilliana) use streams and other aquatic habitats within and near the project site. Three endemic subspecies are also commonly found in the area. These include the Common Amakihi (Hemignathus virens virens), the Hawaii Thrush or Omas (Phaeornis obscurus obscurus), and the Hawaii Elepaio (Chasiempis sandwichensis sandwichensis).

A number of other native birds and a variety of introduced birds are also common in the project area. The Iiwi (Vestiaria coccinea) has a patchy distribution throughout its historical range (occupying approximately 38% of former range). This species has apparently declined significantly in some areas but there still appear to be robust populations in the Upper Hakalau area.

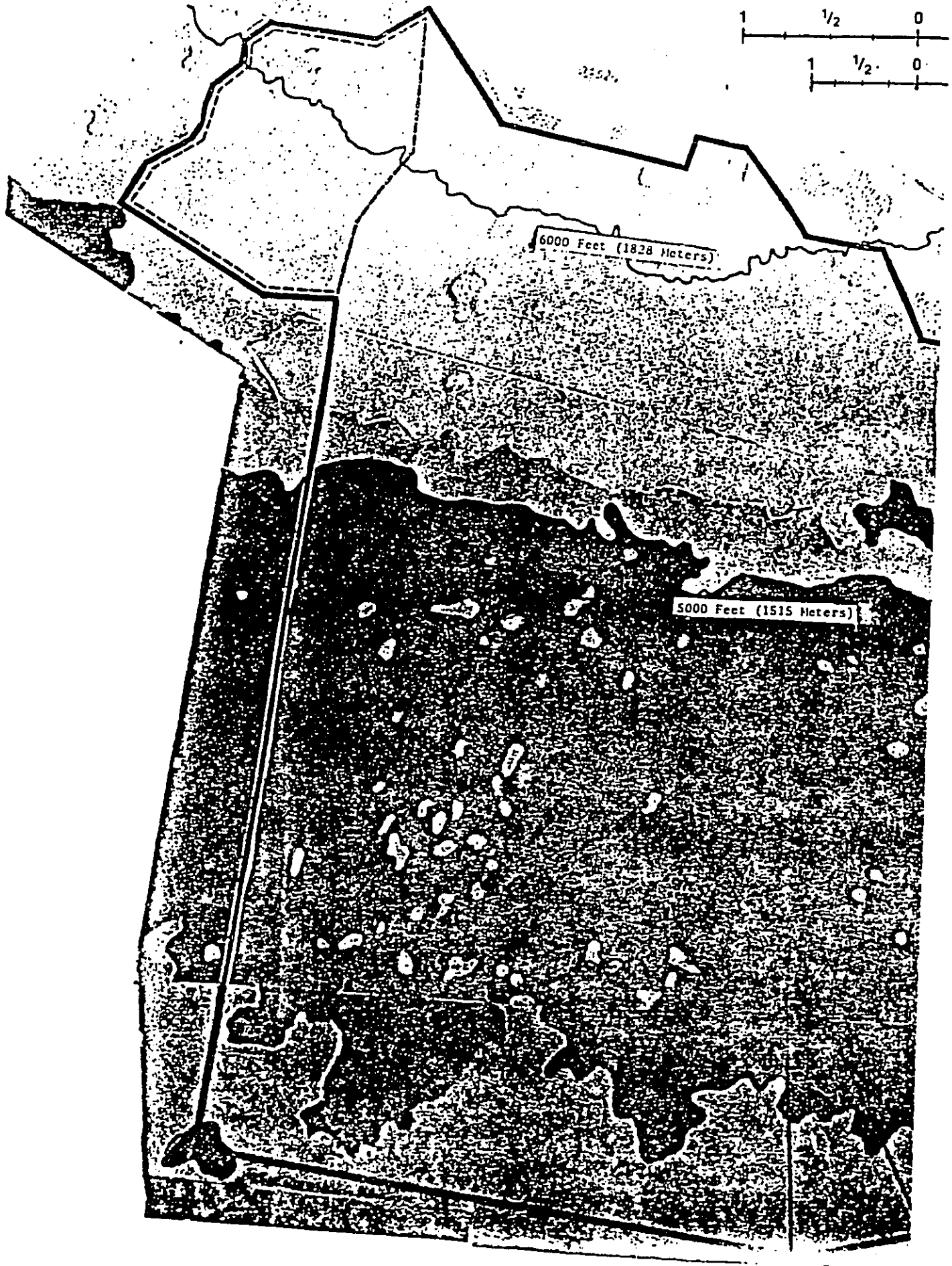


FIGURE 5

# UPPER HAKALAU FOREST

1 mile  
1 km

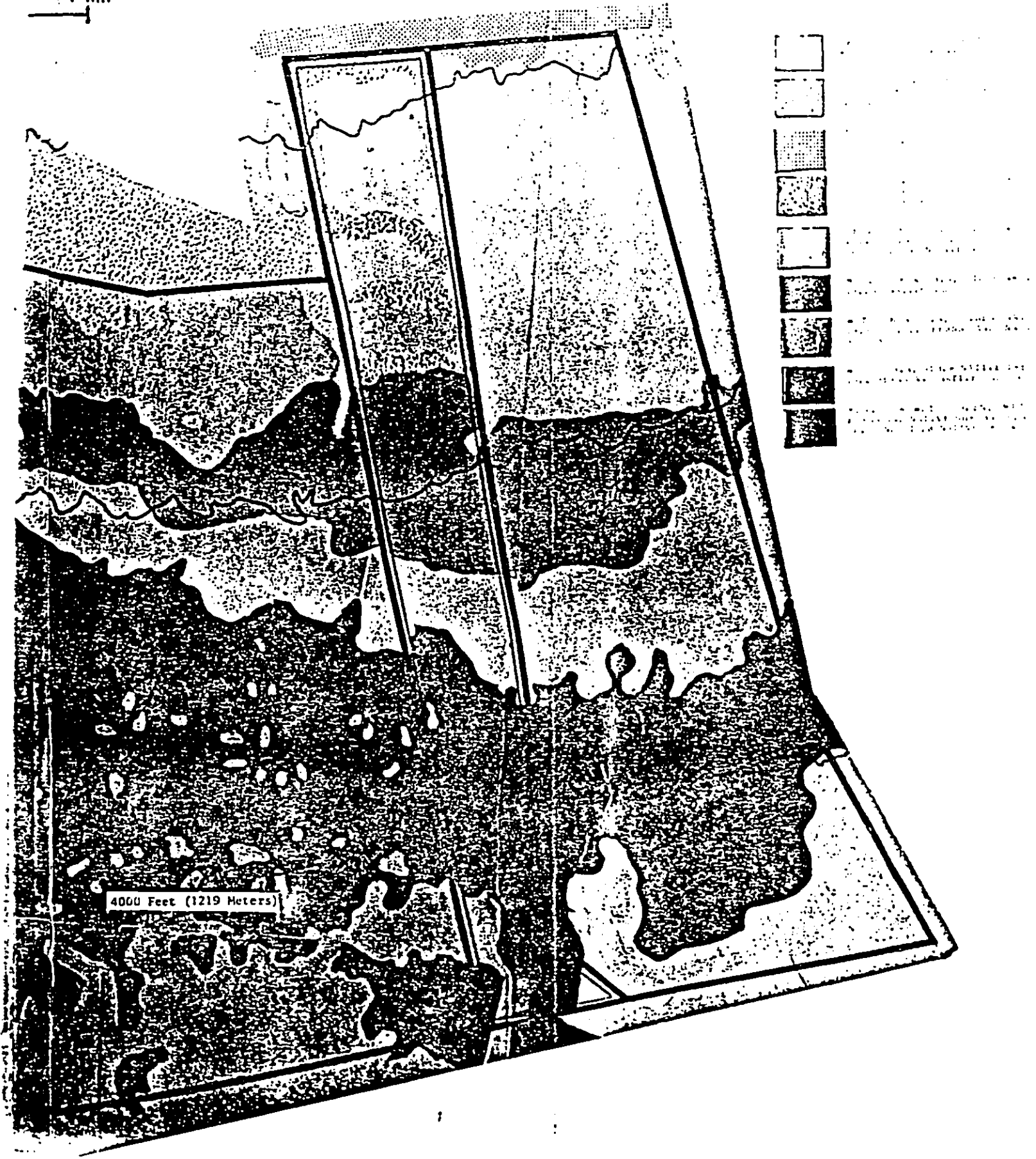


TABLE 3

List of Candidate (Category 1 or 3C)<sup>1</sup> or uncommon (U)<sup>2</sup> plants known from the project area<sup>3</sup>

Species		Status	Vegetation Unit
<u>Clermontia lindseyana</u>	Rock	1	mesic and wet koa-ohia forest
<u>Clermontia pyrularia</u>	Hillebr.	1	mesic koa-ohia forest
<u>Cyanea fernaldii</u>	Rock	1	wet koa-ohia forest
<u>Cyanea shipmanii</u>	Rock	1	mesic koa-ohia forest
<u>Gouldia terminalis</u> var. <u>quadrangularis</u>	Fosb.	1	mesic koa-ohia forest
<u>Platydesma remyi</u>	(Sherff)	1	wet koa-ohia forest
<u>Clermontia peleana</u>	Rock	3C	wet koa-ohia and ohia forest
<u>Joinvillea ascendens</u>	Brongn. & Gris.	3C	wet koa-ohia and ohia forest, bog/ohia dieback forest
<u>Embelia pacifica</u>	Hillebr.	U	mesic & wet koa-ohia forest wet ohia forest
<u>Eurya sandwicensis</u>	A. Gray	U	wet koa-ohia and ohia forest
<u>Phyllostegia racemosa</u>	Benth.	U	mesic koa-ohia forest
<u>Platydesma spathulata</u>	(A. Gray) Stone	U	wet koa-ohia and ohia forest
<u>Pritchardia beccariana</u>	Rock	U	wet koa-ohia and ohia forest, bog/ohia dieback forest

<sup>1</sup> Candidate species; Category 1 is defined as taxa for which there are adequate data to support listing as threatened or endangered; Category 3C is defined as taxa that are more abundant or widespread than previously thought but could be elevated in consideration if threats increase.

<sup>2</sup> U = Status unknown but thought to possibly be in jeopardy.

<sup>3</sup> USFWS, Mauna Loa Field Station unpubl. data.

Figure 6 AKIAPOLA'AU

Scott et al. in press

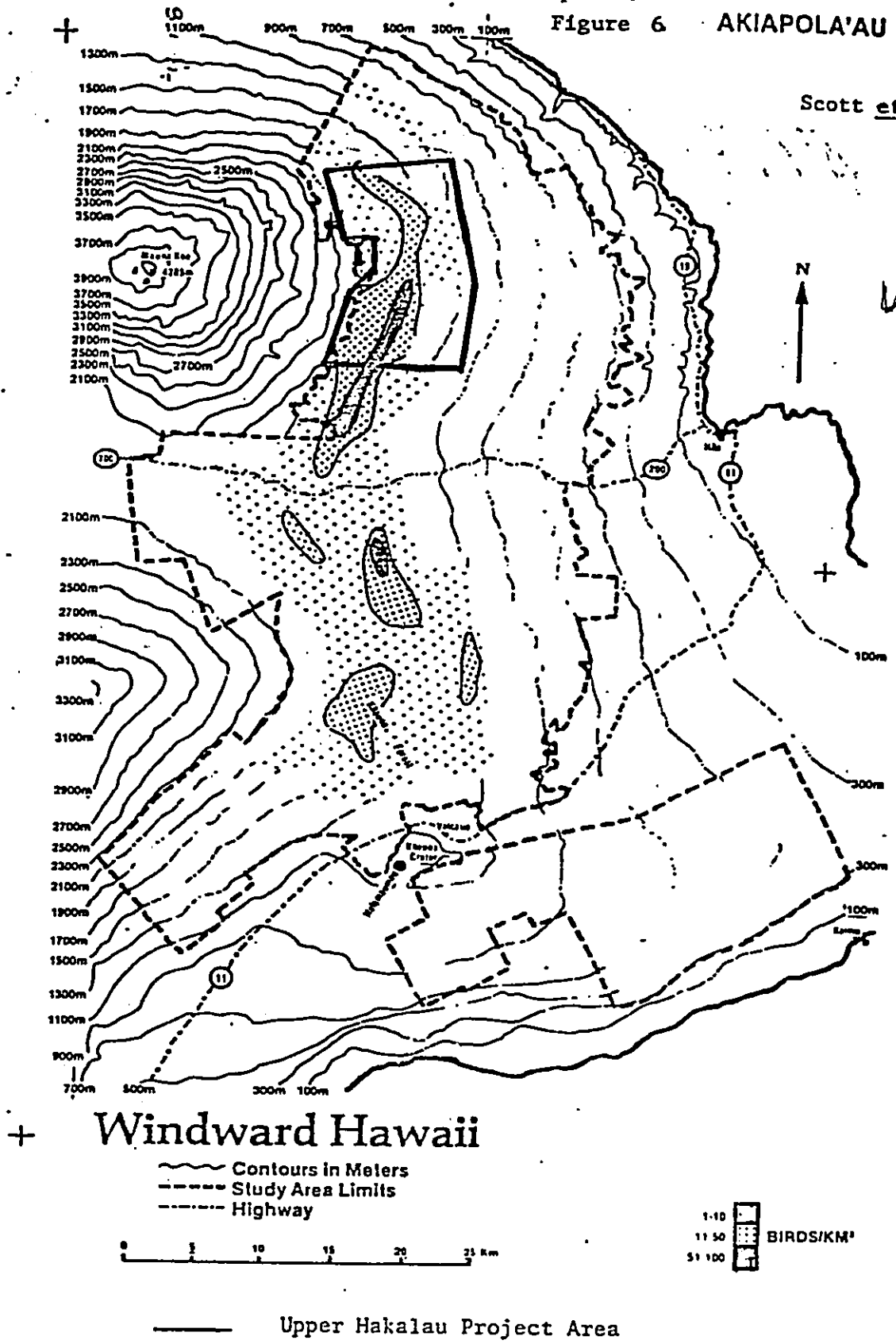


Figure 7. HAWAII CREEPER

Scott et al. in press

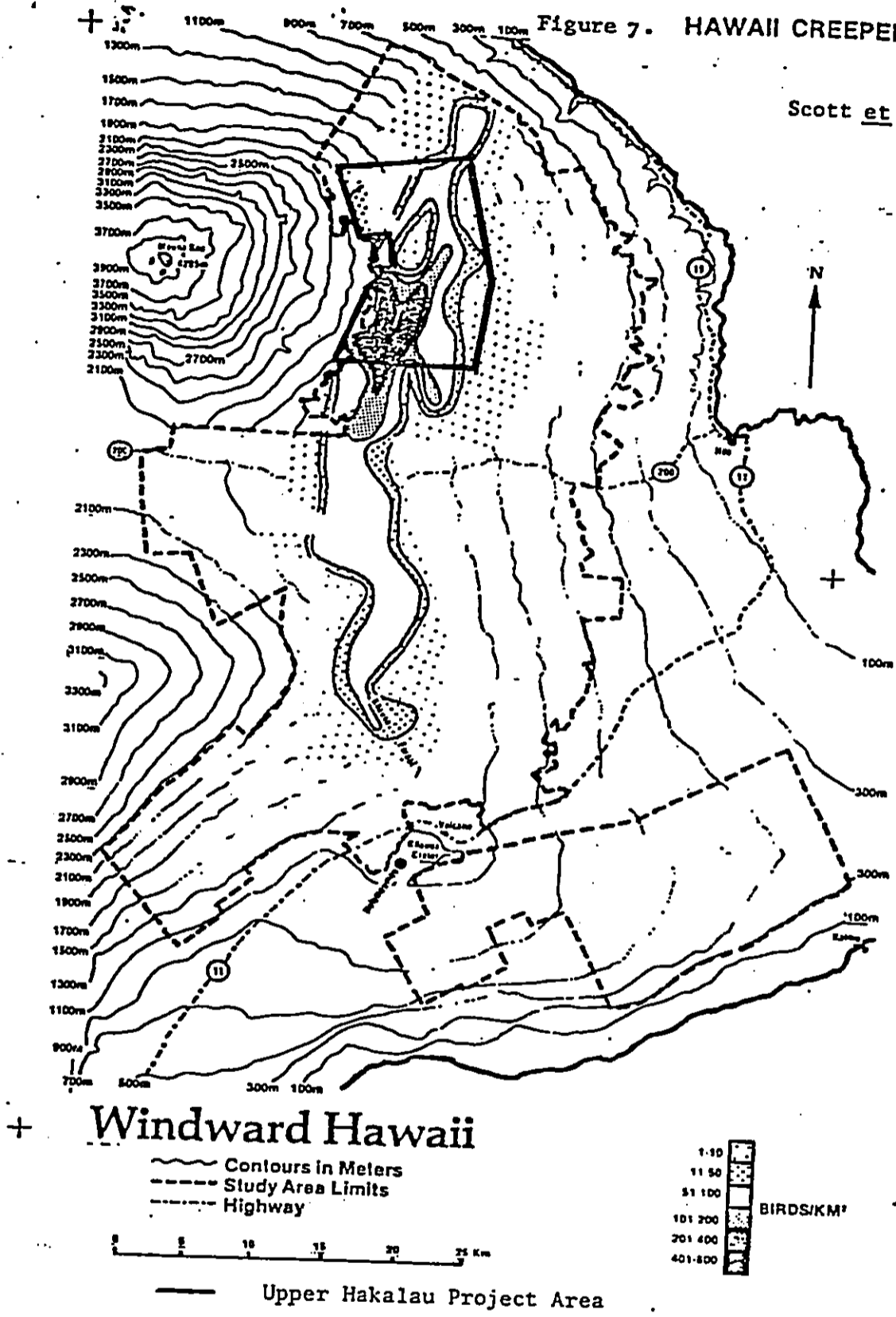
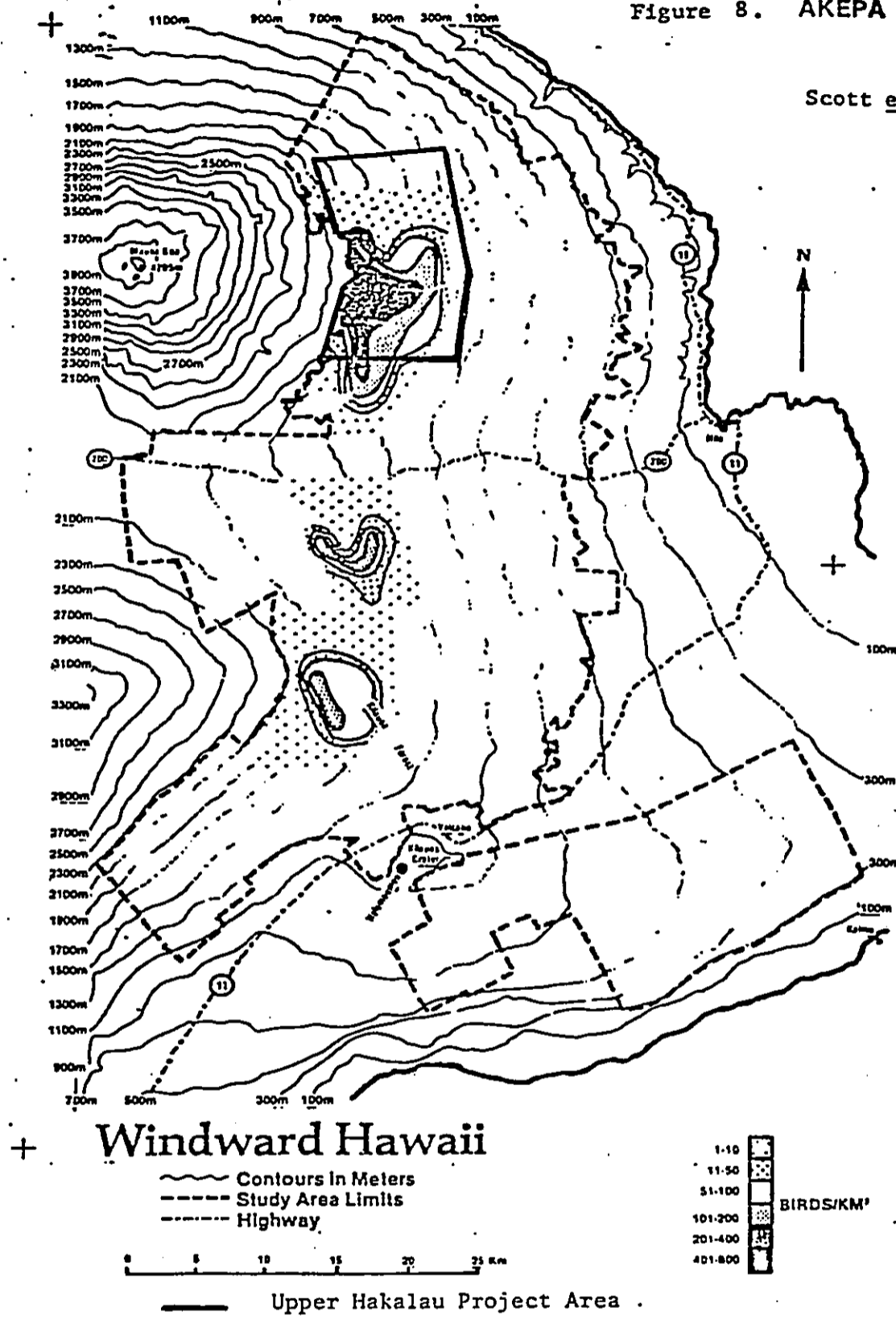




Figure 8. AKEPA

Scott et al. in press



The Apapane (Himatione sanguinea) is the most common native bird on the island and is abundant in the Upper Hakalau area.

Several endemic taxa of birds, formerly found on the island of Hawaii are now extinct. The general vicinity of the project area includes the last known localities for the Hawaii Mamo (Drepanis pacifica) and the Greater Amakihi (Hemignathus sagittirostris) (Berger 1981). Table 4 lists extinct forest bird species formerly found on the island of Hawaii.

The only land mammal native to Hawaii is the Hawaiian Hoary Bat. It is found within the project area, but little data exist on distribution and abundance in the project area. A number of introduced mammals are frequently found in the area. Several rodents, [black rats (Rattus rattus), polynesian rats (Rattus exulans), and house mice (Mus musculus)], feral cats (Felis catus), mongoose (Herpestes auropunctatus), feral pigs and some feral cattle and feral dogs (Canis familiaris) all occur within the project area.

The invertebrate fauna of the project area is not well known. However, the Hawaiian invertebrate fauna is widely recognized for its remarkable examples of evolution, speciation and endemism (Zimmerman 1972). A large share of these endemic invertebrates inhabit the koa-ohia rain forest system. Detailed studies of invertebrate faunas in a similar mesic koa-ohia rain forest system about 30 km south of the project site are discussed in Mueller-Dombois et al. (1981).

#### C. Human Environment

The majority of these lands are presently in a wild, relatively pristine condition. Portions of the forest have been logged in

TABLE 4

Extinct Forest Birds of the Island of Hawaii <sup>1</sup>

<u>Species</u>	
Hawaii Oo	<u>Moho nobilis</u>
Kioea	<u>Chaetoptila angustipluma</u>
Lesser koa-Finch	<u>Rhodacanthis flaviceps</u>
Greater koa-Finch	<u>Rhodacanthis palmeri</u>
Grosbeak Finch	<u>Chloridops kona</u>
Hawaii Akialoa	<u>Hemignathus obscurus obscurus</u>
Ula-ai-hawane	<u>Ciridops anna</u>
Hawaii Mamo	<u>Drepanis pacifica</u>

<sup>1</sup> This list does not include undescribed species from fossil remains of prehistoric birds.

the past and forest products (primarily koa wood) are harvested for lumber and cabinet wood. The upper elevations are adjacent to (just downslope from) lands that are presently used as rangeland for grazing cattle. Portions of the project area have also been used for cattle grazing. On the whole, however, relatively little consumptive use has been made of the ohia and koa-ohia forests of the area.

The entire area has historically served as an important watershed for various agricultural and domestic uses. The private and public lands are classified by the State Department of Land and Natural Resources as Conservation District lands for the purpose of maintaining the watershed capabilities of the land as well as protecting other valuable natural resources.

Almost all of the private lands are in the "R" subzone. This particular subzone designation permits limited use and development, with appropriate management, of the natural resources of the area under sustained use practices. Commercial logging, biomass production, woodchipping, and other forestry uses that have been contemplated for portions of the project area come under this use category. Grazing is also permitted in certain forested areas because it was an established use before that land was designated as conservation lands.

Virtually no notable "improvements" (i.e. structures, etc.) to the land have been made in this area. One unimproved dirt road (Keanakolu Road) leads in towards the project site from State Highway 20 (the Saddle Road). This dirt road travels roughly along the uphill boundary of the project. Several jeep trails lead downslope into the forest to a few cabins or campsites.

There are also a few houses and storage buildings in and nearby the upslope end of the project site that support ranching operations. The Dr. David Douglas Historical Monument, a simple memorial at the site where this famous naturalist was killed in 1834, is located just north of the project site near Keanakolu Road.

#### IV. ENVIRONMENTAL CONSEQUENCES

Presented here are the environmental consequences or impacts expected to result from the various alternative actions described in part II.

##### A. No Action

Under this alternative, FWS will be limited to regulatory actions (Sections 7 and 9 of the ESA) to try to assure that the Upper Hakalau forest retains the attributes necessary to sustain the endangered species and their habitat found in the area. FWS will not encourage acquisition by any conservation interest. The lands would remain in private ownership.

Under these circumstances, the following conditions would probably develop:

- Current land use (some logging, some cattle grazing) will persist. Economic pressures will probably require that these uses be intensified and expanded to previously undisturbed habitat.
- Additional land uses, for example, silviculture of non-native trees for biomass production, will be contemplated. Further modification of the land will undoubtedly continue.
- FWS protection efforts through Section 7 (Inter-agency cooperation and regulations to prevent jeopardizing species) and Section 9 (Prohibition of taking) of the ESA will continue. It is anticipated that these provisions will be inadequate to

fully protect habitat.

- No management effort of significance could be undertaken to maintain native forests. Feral animal and introduced plant populations will persist/increase and cause further decline in the condition of the native forest.
- Wildland conditions will most likely endure but the nature of the forest would change. Many introduced plants will become established and some would become dominant species. Significant components of the native rain forest including the understory will eventually be replaced by a non-native assemblage of trees, shrubs, and grasses. The rate of this process is not certain but the end result is.
- The deterioration of the native forest system will be accompanied by significant declines in native fauna, including birds. Certain species, such as Common Amakihi, Hawaiian Thrush, and Apapane, may maintain themselves in small numbers. Other bird taxa, particularly the endangered ones, will likely decline to extremely low levels and eventually become extirpated from this area.
- Some number of unlisted taxa of endemic plants and animals will likely decline to levels at which they would become threatened or endangered. Loss of this habitat will mean the loss of an opportunity to protect a significant portion of the koa-ohia ecosystem and much of its component organisms. Additional species will need to be listed as threatened or endangered.

B. Fee Acquisition of Private Lands, Formation of a National Wildlife Refuge.

This alternative will require use of Land and Water Conservation Fund money to purchase, in fee, the private lands of the Upper Hakalau area. The lands will then become a National Wildlife Refuge, administered and managed by the FWS. Habitat protection specifically for the portion of the proposed refuge now under the control of the Department of Hawaiian Home Lands (DHHL) (see Figure 4) may be approached in a different fashion. As a public agency, DHHL's mission is to promote and facilitate homesteading of DHHL lands by native Hawaiians, which limits their opportunities to actually sell land. Thus protection of habitation DHHL lands may be accomplished by any one of several options.

The anticipated effects of this action include the following:

- Approximately 12,622 hectares of koa-ohia and ohia rain forest would be protected in perpetuity. With State owned lands (predominantly "P" subzone Forest Reserve or Natural Area Reserve) on the north and south flanks of this project area, this will provide an opportunity to manage virtually the entire band of montane rain forest from Keanakolu to the Kilauea Forest as one system. USEFWS and HDLNR would be able to work together on one ecosystem.
- No significantly adverse modification of native forest habitat due to direct human use will occur. Land uses that cause detrimental changes in the quality of the native forest, such as timber harvest and cattle ranching, will no longer continue.

- Management of this refuge will minimize present and future effects of feral animals and introduced plants. Efforts will focus on perpetuating the natural functions of the ecosystem.
- Most or all endemic plant and animal populations in this forest will be maintained indefinitely. Several endangered species will be significantly closer to recovery goals. Increased numbers of Akepa, Creeper, and Akiapolaau could be expected as undergrowth comes back and canopy fills out. Other rare taxa will probably sustain themselves at levels which do not require listing attention.
- Opportunities for educational, recreational and scientific pursuits in this area will be enhanced. Educational opportunities could include interpretive displays and self-guided tours, use by schools, etc. Wildlife oriented recreational possibilities include birdwatching, hiking, outdoor experiences for a variety of organizations, etc. A number of opportunities would exist for field research in a variety of biological/ecological disciplines.
- Public hunting of game mammals and birds may be included as part of a comprehensive management program for the project. This activity could be part of the overall management program to reduce feral animal populations to a level which does not significantly damage the ecosystem. It may be necessary to fence feral ungulates out of some areas to protect especially sensitive habitat. Public hunting could be used as one management tool, as long as it is consistent with the primary purposes of the refuge.



-- Federal (FWS, NPS) and State (DLNR) land management agencies could work cooperatively on management of a contiguous band of montane rain forest. This rain forest, extending from windward Mauna Kea to leeward Mauna Loa, with the exception of a few areas, would be a continuous band of public lands. Vital watershed values will be maintained as well as a variety of other public uses.

-- The impact on the local economy is not entirely clear. Existing land uses in the project area would cease, having an effect on a ranching operation and potential logging operations. Future economic use of the land will be extremely limited (except for watershed and flood control values). The tax base may decrease also, although other forms of payment to the county in the absence of property taxes would occur. Hawaii County will receive monies from the Refuge Revenue Sharing Act (49 Stat. 383, as amended 16 U.S.C. 715s) which provides annual compensation in lieu of discontinued taxation of private property<sup>1</sup>. Based on the formulae described below, this could result in significant payments to the Hawaii County possibly as high as 5 times that currently received in property taxes.

The attraction of this refuge may also have a positive effect on the visitor industry. The FWS 1980 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation states that about 28.8 million adults (17% of the American population) took trips primarily to observe

or photograph wildlife (USFWS 1982). This indicates that there might be visitor interest in a National Wildlife Refuge of this magnitude on the island of Hawaii.

A limited amount of full time and intermittent employment opportunities will also result from the establishment and subsequent management of this refuge.

<sup>1</sup>Refuge Revenue Sharing Act payments are made to counties on the basis of one of the following, whichever is highest:

- 1. Twenty-five percent of the net revenue received from operation of the refuge.
- 2. Three-fourths of one percent of the cost of the property. Property costs are adjusted every five years to reflect current market values.
- 3. Seventy-five cents per acre. The funding source for such payments derives from revenues generated from refuges throughout the country. In the event that insufficient revenues are available to make full-formula payments to the counties, the amount of payment is a determined percentage of the full amount calculated. Also, Congress may make up the insufficiency by special appropriation, if it chooses to do so.

C. Regulatory or Restrictive Zoning

Under this alternative, legal protection could be sought through designation and maintenance of maximum restrictive zoning for the project area. Under maximum restrictive zoning conditions, land use will be highly restricted and will remain compatible with habitat maintenance objectives for forest birds. Virtually no

land uses which alter the habitat would be permitted.

Ownership would remain private. It is unlikely that sufficient incentive will be available for the landowners to control populations of introduced animals and plants. Land use practices will remain relatively stable; however, the effects of introduced species will continue. In certain areas the effects may further deteriorate habitat conditions.

D. Acquisition/Management by Others

Under this alternative, acquisition and management would be assumed by another organization with interest in the conservation of endangered species and other native wildland resources. If another organization would be able to acquire the project area and establish a management program, the effects on the biological and human environment are anticipated to be very similar to establishment of a National Wildlife Refuge (Alternative B). The koa-ohia rain forest ecosystem would be maintained intact for the perpetuation of endangered species and other native wildland resources. No other entity has indicated an intent to acquire and manage these areas.

E. Exchange for Public Land

An exchange of the private lands of the project area for acceptable public lands would result in impacts similar to either alternative B or D. If federal lands were involved and/or the federal government would be responsible for subsequent management, the impacts discussed in Alternative B would result. If another organization provided the lands for exchange and assumed responsibility for management, the impacts in Alternative D (similar to Alternative B except a different organization is involved) would

result. No other organization has indicated an intent to exchange lands for this area.

F. Acquisition of Partial Interest

Acquisition of simply a conservation easement or a similar less-than-fee title acquisition, would result in establishment of refuge and management program very similar to Alternative B. However, long-term commitments of resources for management purposes may be more limited than under Alternative B. Rights for management of the area may also have some limitation depending on the conditions of the easement (or other such agreement).

The lands would probably be maintained in a condition similar to that resulting under Alternative B for the duration of the easement term.

V. CONSULTATION AND COORDINATION

Consultation/coordination activities have been pursued as follows:

A. Policy and Legal Compliance

1. Executive Orders -- Compliance by the FWS with Executive Order 11988 (Floodplain Management) and 11990 (Protection of Wetlands) will be adhered to since the FWS plans to make no significant changes relative to floodplain or wetlands on the Upper Hakalau forest lands once they are in refuge status.
2. Executive Order 12372 (Intergovernmental Review of Federal Programs) -- Copies of this Environmental Assessment will be sent to the Hawaii State Clearinghouse and concerned federal entities.
3. Archaeological and Historic Property Acts -- Following establishment of the refuge, the National Historic Preservation Act of 1966, as amended, and refuge policy will assure protection

to sites of significant importance.

4. Endangered Species Act -- Six endangered species occur in the Upper Hakalau area. Relative to the Endangered species Act of 1973, an internal Section 7 Consultation has been initiated.

B. Agencies and Organizations Contacted.

Initial reference to the importance of the Upper Hakalau forest area for endangered forest birds was made in the Hawaii Forest Birds Recovery Plan. Many government agencies and other organizations were contacted during the review process of this plan. Protection of the Upper Hakalau area was one of many tasks identified in the plan.

Upon completion and analysis of the Hawaii Forest Bird Survey data, protection of this area became a prime priority. Habitat protection proposals and budget initiatives were started.

Various interested and/or affected parties have been contacted over the last few months. These include:

W. H. Shipman Estate

Queen Liliuokalani Children's Trust

The Nature Conservancy

Department of Hawaiian Homelands

World Union Industrial Corporation

The Robertson Family

Richard Sutton

State Department of Land and Natural Resources

County of Hawaii

County Council of Hawaii

National Park Service

U.S. Forest Service

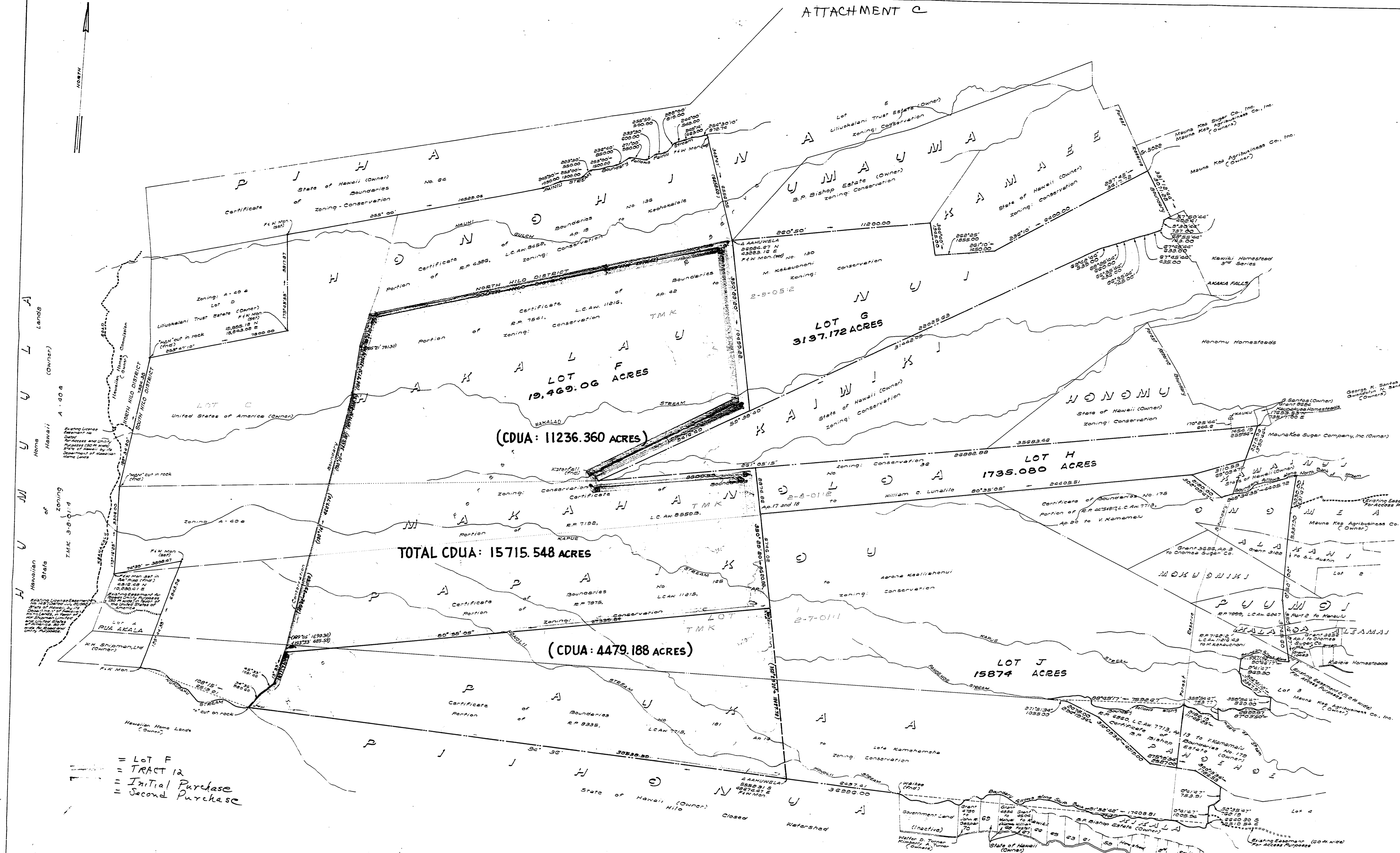
Governor of Hawaii

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= Lot F  
 = TRACT 12  
 = Initial Purchase  
 = Second Purchase

MAP  
 SHOWING LANDS COVERED BY  
 CONSERVATION DISTRICT USE APPLICATION

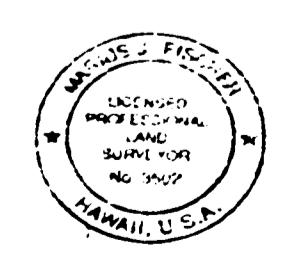
**PROPOSED**  
**CONSOLIDATION OF:**  
 LOT C (TMK 2-9-05:5 AND 3-3-01:8)  
 LOT I (TMK 2-7-01:1, 2-8-01:2 AND 2-9-05:2)  
 AND  
**RESUBDIVISION INTO:**  
 LOT F, LOT G, LOT H AND LOT J

CONSISTING OF  
 PORTION OF PROPOSED LOT F  
 AREA: 11,236.360 ACRES  
 AND PORTION OF PROPOSED LOT J  
 AREA: 4479.188 ACRES  
 FOR A TOTAL OF 15,715.548 ACRES

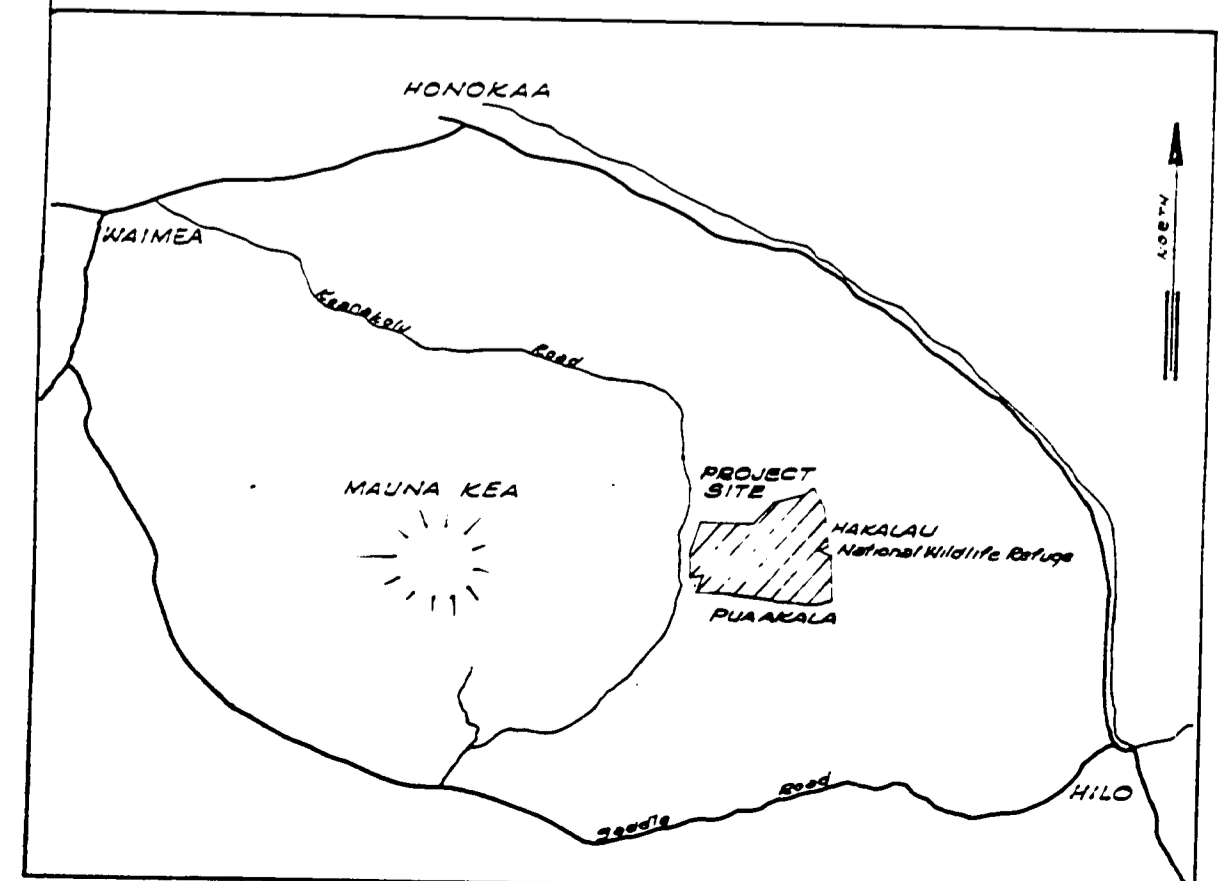
Owner of TMK 2-7-01:1, 2-8-01:2 and 2-9-05:2  
 World Union Industrial Corporation, Ltd.  
 Room 10, 909, Luk Hoi Tong Building  
 31 Queen's Road, Central  
 Hong Kong  
 Phone: (011) 852-265-867-5  
  
 Owner of Lot C:  
 United States of America  
 U.S. Fish and Wildlife Service (ARW/RE)  
 511 N.E. 11th Avenue  
 Portland, Oregon 97232-4181  
 Phone: (503) 251-2236  
  
 Submitted by:  
 Georgia Shirilla, Senior Realty Specialist  
 U.S. Fish and Wildlife Service (ARW/RE)  
 511 N.E. 11th Avenue  
 Portland, Oregon 97232-4181  
 Phone: (503) 251-2236  
  
 Date: December 7, 1992

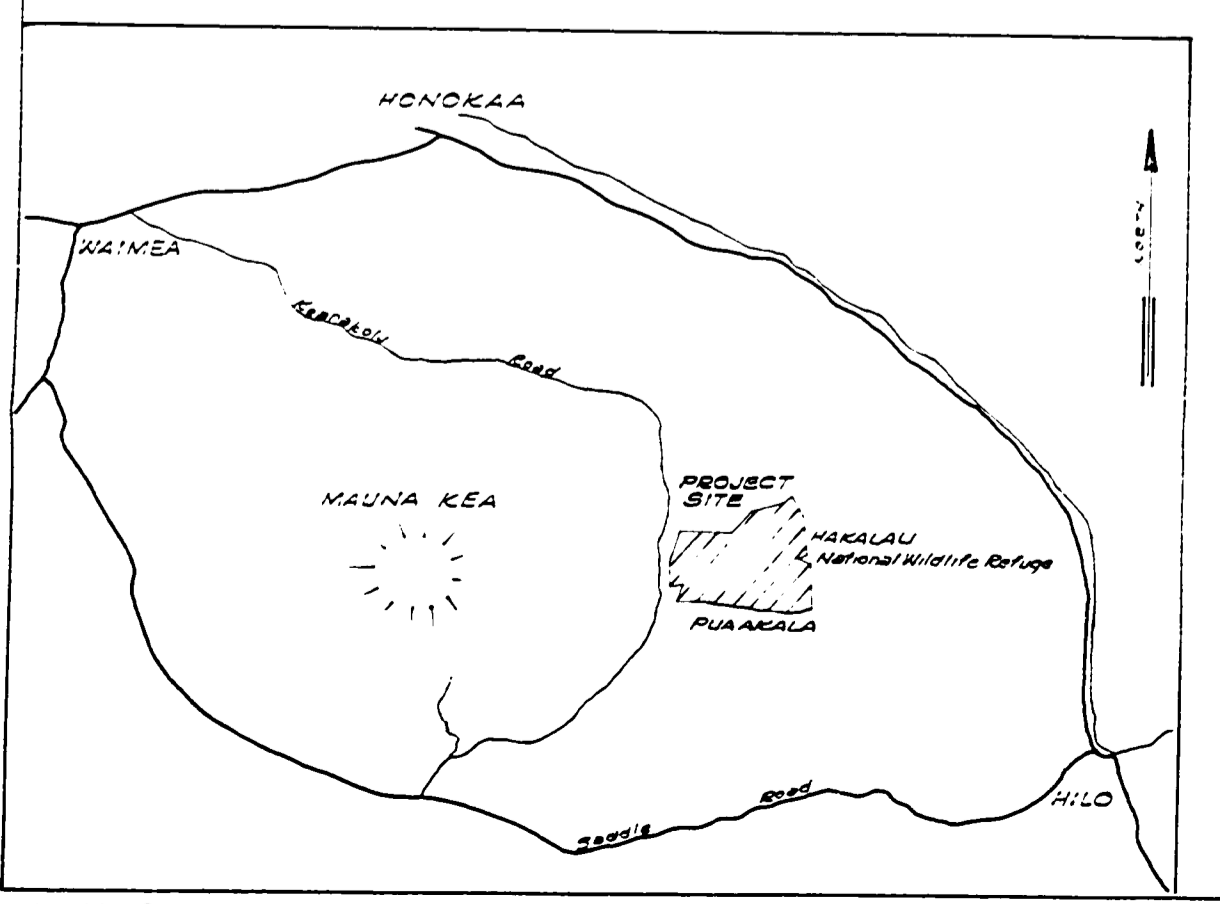
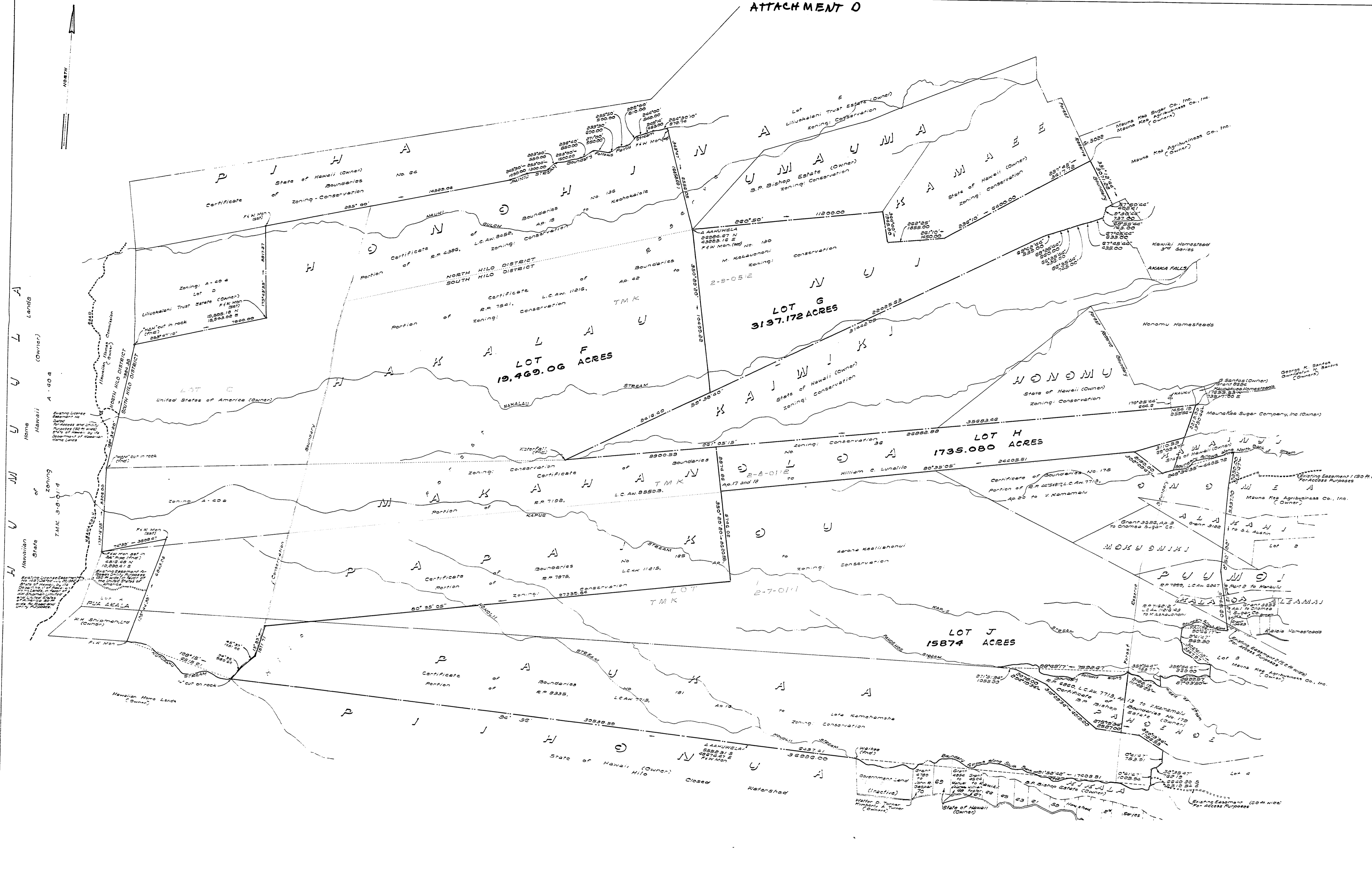
Surveyors: R.M. Towill Corporation  
 420 Waiakama Road, Suite 411  
 Honolulu, Hawaii 96813

THIS MAP WAS PREPARED UNDER THE DIRECT SUPERVISION OF THE  
 UNDERSIGNED IN PART FROM GROUND SURVEYS CONDUCTED BETWEEN  
 JULY AND OCTOBER 1985, AND IN PART FROM RECORD DATA, AND MAY BE CHECKED WITH FIELDBOOKS ON FILE AT  
 THE OFFICE OF THE U.S. FISH AND WILDLIFE SERVICE IN PORTLAND  
 OREGON.



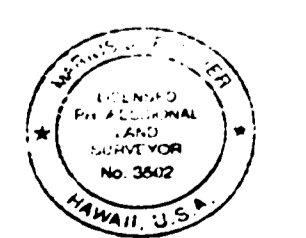
[Signature]  
 LICENSED PROFESSIONAL SURVEYOR  
 CERTIFICATE NUMBER 3502





Surveyors: R. M. Towill Corporation  
 420 Vail's Road, Suite 411  
 Honolulu, Hawaii 96813

THIS MAP WAS PREPARED UNDER THE DIRECT SUPERVISION OF THE UNDERSIGNED IN PART FROM GROUND SURVEYS CONDUCTED BETWEEN JULY AND OCTOBER 1986, AND IN PART FROM RECORD DATA AND MAY BE CHECKED WITH FIELDBOOKS ON FILE AT THE OFFICE OF THE U.S. FISH AND WILDLIFE SERVICE IN PORTLAND OREGON.



*R. M. Towill*  
 LICENSED PROFESSIONAL SURVEYOR  
 CERTIFICATE NUMBER 3502

Owner of TMK 2-7-01:1, 2-8-01:2 and 2-9-05:2  
 World Union Industrial Corporation, Ltd.  
 Room 16, 605, Luk Mei Tong Building  
 31 Gussner Road, Central  
 Hong Kong  
 Phone = (01) 852-265-807-0

Owner of Lot C:  
 United States of America  
 U.S. Fish and Wildlife Service (ARW/RE)  
 911 N.E. 11th Avenue  
 Portland, Oregon 97232-4181  
 Phone = (503) 231-2236

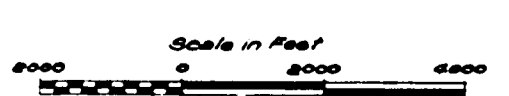
Submitted by:  
 George Shirilla, Senior Realty Specialist  
 U.S. Fish and Wildlife Service (ARW/RE)  
 911 N.E. 11th Avenue  
 Portland, Oregon 97232-4181  
 Phone = (503) 231-2236

Date: December 7, 1986

**CONSOLIDATION OF:**  
 LOT C (TMK 2-9-05:5 AND 2-3-01:8)  
 LOT I (TMK 2-7-01:1, 2-8-01:2 AND 2-9-05:2)  
 AND  
**RESUBDIVISION INTO:**  
 LOT F, LOT G, LOT H AND LOT J

AT PAUKAA, PAPAIEOU, MAKAHANGLOA, HAKALAU NUI, HONOHINA, ONOMEA, ALAKAHI, MOKULONIKI, KALAGA, PUUMOI AND ALIAMAHI NORTH AND SOUTH HILO DISTRICTS ISLAND AND COUNTY OF HAWAII STATE OF HAWAII

Names of adjoining owners from Tax Records



CONSERVATION DISTRICT USE APPLICATION  
CONSOLIDATION AND RESUBDIVISION  
U.S. FISH AND WILDLIFE SERVICE

RECEIVED  
1993 JUN 8 PM 1:28  
DLNR  
OCEAN

The United States of America, acting by and through the U.S. Fish and Wildlife Service (Service), is seeking approval to consolidate and resubdivide certain lands located in the South Hilo and North Hilo Districts on the island of Hawaii.

V. Environmental Requirements

The proposed use under this application is the acquisition of 15,715.548 acres of land by the Service for inclusion in the Hakalau Forest National Wildlife Refuge (refuge). The environmental assessment that was prepared for the establishment of the refuge is attached hereto as Attachment "A". After the environmental assessment was completed, the name of the refuge was changed from Upper Hakalau National Wildlife Refuge to Hakalau Forest National Wildlife Refuge.

VI. Summary of Proposed Use

Over the past several years, the Service has been purchasing lands for inclusion in the refuge. To date, 15,480 acres have been acquired.

Between 1986 and 1989, the Service and World Union were unable to reach price agreement for its lands located within the approved boundaries for the refuge. In 1989, a condemnation lawsuit was filed by the United States against 15,715.544 acres of land owned by World Union. In 1992, the Service and World Union reached settlement over price and the payment schedule as set out in the Partial Judgment attached hereto as Attachment "B". Tract 12, the lands subject to the lawsuit and this application for a permit, is shown in green on the map attached as Attachment "C".

As set out in the Partial Judgment (Attachment "B"), the Service needs to purchase Tract 12 in 2 or more installments. Funds are available to purchase 11,236.36 acres, as shown in blue on the map attached as Attachment "C". It is anticipated that funds for the remaining 4,479.188 acres, as shown in pink on Attachment "C", will either be reprogrammed in FY 1993 from other projects or appropriated for FY 1994.

Concurrently with this request, the Service is submitting an application to the County of Hawaii for approval to consolidate and resubdivide. The map showing the initial consolidation and resubdivision is attached as Attachment "D". We are proposing to consolidate the lands to be purchased first from World Union with lands already owned by the Service (Lot C), creating Lot F as shown in yellow on Attachment "C". As soon as the remaining funds become available to us, we will seek approval from the County to consolidate the remaining land in Tract 12 with Lot F. There will not be an increase in the number of tax map key parcels due to this acquisition proposal.

THE SERVICE IS SEEKING A CONSERVATION DISTRICT USE PERMIT FROM THE STATE WHICH WILL COVER BOTH THE CONSOLIDATION OF THE INITIAL 11,236.36-ACRE PARCEL TO LOT C AND THE 4,479.188-ACRE PARCEL TO LOT F, BEING ALL OF SAID TRACT 12, WITH LANDS OWNED BY THE UNITED STATES.

\*\*\*\*\*

INFORMATION REQUIRED FOR ALL USES

I. Description of Parcel

A. The existing use is natural forest open space. There are no structures on the property.

B. The property has no identified public utilities or services.

C. Tract 12 is located approximately 15 miles north of the Saddle road, with access to the general area by way of a gravel road known as Keanakolu Road. Access locations and widths for the subject tax map key parcels are shown on Attachments "C" and "D".

D. Tract 12 is generally forested with ohia, koa, and other native trees and has various types of ground cover, including grasses, ferns, and native and introduced shrubs. The koa-ohia forest covers approximately 2,440 acres of the westerly extreme of the property. Ohia forest is dominant over the remainder of the property. More information about the vegetation is provided in the attached environmental assessment (Attachment "A").

E. The contour lines are shown on Attachment "C".

F. Shoreline - Not applicable.

G. A copy of a status title report is attached as Attachment "E".

H. No historic sites will be affected by this proposal.

II. Description:

The Service is seeking approval to consolidate and resubdivide as shown on Attachments "C" and "D" and described herein. The purpose of this application is to gain approval to purchase portions of three tax map key parcels for inclusion in the Hakalau Forest National Wildlife Refuge. The refuge was established to assure the perpetuation of native forest habitats for the protection of a number of endangered animals and plants endemic to the area. Activities on the land to be acquired from World Union will be related to refuge management and biological research. Specific activities will include feral animal control, reforestation and exotic plant control. Fences will be constructed to control feral pigs and cattle as described in Conservation District Use Application No. HA-2/6/92-2551 approved July 20, 1992. The refuge also offers educational and recreational opportunities

including field research, birdwatching, hiking and hunting. The land will be left in its natural state. More information about the refuge activities may be found in the attached environmental assessment (Attachment "A").

-3-

III. Commencement Date: The Service has opened escrow for the purchase of the 11,236.36 acre parcel.

Completion Date: Upon receipt of this permit and approval from the County to consolidate and resubdivide these parcels, we will purchase the 11,236.36 acres parcel. As funds become available, the Service will purchase the remainder of Tract (12) in accordance with the Partial Judgment (Attachment "B").

IV. Type of Use Requested

A. Permitted Use; DLNR Title 13, Chapter 2, Section 13; Resource (R) subzone.

B. Area of Proposed Use is 15,715.548 acres (Tract 12).

C. The nearest town is Hilo, approximately 43 miles away.

Attachment B

24656.rsa.copy.22862.dwl

KOBAYASHI, SUGITA & GODA

DALE W. LEE, #1468-0  
ROD S. AOKI, #5524-0  
8th Floor, Hawaii Tower  
745 Fort Street  
Honolulu, Hawaii 96813-3889  
Telephone: 539-8700

Attorneys for Defendant  
World Union Industrial Corporation, Ltd.

FILED IN THE  
UNITED STATES DISTRICT COURT  
DISTRICT OF HAWAII

DEC 2 1992

at 9 o'clock and 20 min. 3M.  
WALTER A.Y.H. CHINN, CLERK

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF HAWAII

UNITED STATES OF AMERICA,  
Plaintiff,

vs.

15,715.544 ACRES OF LAND  
(TRACT 12), MORE OR LESS, IN  
THE COUNTY OF HAWAII, WORLD  
UNION INDUSTRIAL CORPORATION,  
LTD., AND UNKNOWN OWNERS,  
Defendants.

) CIVIL NO. 89-00939 DAE  
)  
) PARTIAL JUDGMENT FIXING JUST  
) COMPENSATION AND ORDERING  
) PAYMENT THEREOF  
)

) Trial Date: Tuesday, May 5,  
) 1992

) Before: The Honorable David A.  
) Ezra  
)

PARTIAL JUDGMENT FIXING JUST COMPENSATION  
AND ORDERING PAYMENT THEREOF

The United States of America, United States Fish &  
Wildlife Service (hereinafter "the Service"), plaintiff herein,  
and defendant WORLD UNION INDUSTRIAL CORPORATION, LTD.

(hereinafter "World Union"), a Hong Kong corporation, owner of  
Tract 12, consisting of 15,715.544 acres of land located on the  
Island of Hawaii, described as Tract 12, and consisting of

portions of three separate tax map key numbers: 2-9-05:02, 2-8-01:02, and 2-7-01:01 all as more particularly described in the Complaint filed in Civil No. 89-00939 (DAE), having STIPULATED AND AGREED AS TO JUST COMPENSATION, and the Court being fully advised in the premises, the Court finds:

1. This condemnation action was instituted on December 5, 1989 by the filing of a Complaint in Condemnation.

2. The proceedings have been conducted according to law; the Court has jurisdiction of the parties and the subject matter.

3. All parties in interest herein were served with notice of this action.

4. The claims to ownership in and to some or all of the property subject to the condemnation by William P. Kalawaiianui were dismissed by Order Granting Defendant's Motion for Summary Judgment filed November 27, 1990, and the remaining parties have entered into a comprehensive stipulation for settlement.

It is therefore, ORDERED, ADJUDGED and DECREED as follows:

1. The Stipulation as to Just Compensation is in all things ratified, confirmed and adopted and the sum of TEN MILLION AND NO/100 DOLLARS (\$10,000,000) represents fair and just compensation to World Union for the property to be taken, inclusive of interest except as hereinafter provided.

2. The Service shall pay to World Union the sum of \$10,000,000 inclusive of interest except as hereinafter provided, in exchange for Tract 12 subject to all recorded easements for roads and utilities, reservation in favor of the State of Hawaii of all mineral and metallic mines, and reservation of bauxite mineral rights and water rights to the Mauna Kea Sugar Company under terms of deeds between Mauna Kea Sugar Company, Inc., and World Union Industrial Corporation, Ltd., dated July 23, 1976, recorded in Liber 11553, Page 385, and Liber 11553, Page 393.

3. The Attorney General's (or his designee's) approval of the parties' settlement agreement embodying these terms having been obtained as of August 14, 1992, the Service will pay to the order of World Union the sum of FIVE MILLION SIX HUNDRED FIFTY THOUSAND AND NO/100 DOLLARS (\$5,650,000) for 8,221.53 acres, referred to herein as the First Installment, and FIVE HUNDRED EIGHTY AND 46.33/100 DOLLARS (\$580.4633) per acre for any or all of the remaining 7,494 acres located within Tract 12. The lands corresponding to the First Installment are all of the lands located within Tract 12 presently located within tax map key number 2-9-05:02 and 2-8-01:02 (approximately 7,765 acres) and approximately 456.53 acres located in tax map key 2-7-01:01. The boundaries of the 456.53 acres of land located in tax map key 2-7-01:01 shall be: the northerly boundary of tax map key 2-7-01:01, the easterly and westerly boundaries of Tract 12, and a line south of, and parallel with the northerly boundary of tax map key 2-7-01:01.



The Service shall deposit the First Installment of \$5,650,000 in an escrow account with Title Guaranty Escrow Service, Inc. forthwith, with instructions that pending the acquisition of such consents from governmental agencies needed to consolidate and resubdivide the affected tax map key parcels and the recordation of the deed including the transfer of the First Installment of acreage contemplated herein, said funds for the First Installment shall be placed in an interest bearing account with the entirety of any and all interest accrued thereon to be paid, together with the principal amount, to World Union upon the recordation of a deed therefor.

The Service has obligated \$7,400,000 for the purchase of 11,236.36 acres of land within Tract 12, including the First Installment lands. When said consents from governmental agencies to consolidate and resubdivide the lands are obtained by the Service, the Service shall forthwith deposit the remaining \$1,750,000 in said escrow account to be paid to World Union upon the recordation of a deed therefor.

All costs and expenses associated with recordation and escrow services shall be the responsibility of the Service. Escrow shall be directed to record the deed and transmit the purchase consideration, together with all accrued interest on said \$5,650,000 by Wire Transfer to the account of World Union Industrial Corporation, Ltd. in the manner as described in the Remittance Instructions attached to the Stipulation as to Just Compensation immediately following recordation.

4. The Service shall be solely responsible for the preparation, acquisition or recordation, as the case may be, at its sole expense, of the following:

a. A land survey to determine the metes and bounds of the properties to be transferred, and

b. Deeds for each of the parcels to be conveyed to the Service by World Union.

5. Title to the remainder of tax map key 2-7-01:01 lying within Tract 12 will be transferred to the United States when funds become available for this purpose. Payment for future installment purchases will be effected in accordance with Section 3 and 7 herein.

6. If the remaining balance of the principal amount of \$10,000,000 is not appropriated and tendered to World Union on or before August 14, 1993 (twelve (12) months from the approval by the Attorney General or his designee of the parties' settlement), the Service will have an extension of an additional six (6) months to tender payment thereof, PROVIDED that from and after August 14, 1993, interest on the then remaining principal balance, after deducting the initial installment payment and any subsequent installment payments made to World Union shall accrue at the rate of 3.51 per cent (3.51%) per annum until date of payment (rate of interest as set out in 40 U.S.C. §258(e)(1) in effect as of August 14, 1992). Further extension may be agreed upon by mutual agreement of the parties upon the same terms.

7. If, prior to the termination of such extensions for payment of the balance, the Service has obtained funds for a portion, but not all of the remaining balance, the Service may purchase on a pro rata basis, as such funds become available, such acreage of tax map key 2-07-01:1 based upon the price of \$580.4633 per acre, the boundaries of which shall be the eastern and western boundaries of Tract 12 and a line south of, and parallel to northern boundary of tax map key 2-07-01:1 so as to create a new parcel that coincides with the number of acres to be purchased.

8. Notwithstanding any provisions heretofore, if at the termination of such extensions for payment of the total agreed upon "just compensation" of \$10,000,000 the Service has not acquired the entirety of the remaining balance that the Service shall take from tax map key 2-07-01:1, the Service will dismiss the Complaint as to such remainder of tax map key 2-07-01:1 and pay to World Union all of World Union's litigation expenses, including reasonable costs, disbursements and expenses, including reasonable attorneys and appraisal fees actually incurred because of and relating to the full condemnation proceedings of Tract 12, Civil No. 89-00939 (DAE) as shall be determined by the Court pursuant to 42 U.S.C. §4654, and for this purpose, pending receipt of the payment of the principal sum of \$10,000,000 as agreed "just compensation," this Court shall

retain jurisdiction over this matter until further order of this Court.

Dated: Honolulu, Hawaii, DEC 02 1992

DAVID A. EZRA

UNITED STATES DISTRICT JUDGE

United States of America v. 15,715.544 Acres of Land, et al.;  
Civ. No. 89-00939 DAE; Partial Judgment Fixing Just Compensation  
and Ordering Payment Thereof

retain jurisdiction over this matter until further order of this Court.

Dated: Honolulu, Hawaii, DEC 02 1992.

DAVID A. EZRA

UNITED STATES DISTRICT JUDGE

United States of America v. 15,715.544 Acres of Land, et al.;  
Civ. No. 89-00939 DAE; Partial Judgment Fixing Just Compensation  
and Ordering Payment Thereof

*Attachment E*

**PRELIMINARY REPORT**  
(No Liability Hereunder)

This report is issued in conjunction with an order for a title insurance policy. It is issued for the convenience of the titleholder, titleholder's agent, counsel, purchaser or mortgagee. Coverage or liability will only arise upon the subsequent issuance of a title insurance policy.

-----

Title Guaranty of Hawaii, Inc. hereby reports that title to the land described in Schedule "C" attached hereto is vested in:

WORLD UNION INDUSTRIAL CORPORATION, LTD.  
a Hong Kong, B.C.C. corporation

Subject only to those matters set forth in Schedule "B" hereof. This report is to the hour of 8:00 o'clock a. m. on November 27, 1992.

Title Guaranty of Hawaii,  
Incorporated

By \_\_\_\_\_

**COPY**

256719

JHP

**TITLE GUARANTY OF HAWAII**

Page 1

INCORPORATED  
HONOLULU HAWAII

## SCHEDULE B

1. Real Property Taxes, Second Installment, Fiscal Year July 1, 1992 - June 30, 1993. (see tax statement attached)

Tax Key: 2-7-001-001 (3)	Area assessed: 19,337.000 Acres - covers Parcel First
Tax Key: 2-8-001-002 (3)	Area assessed: 4,686.810 Acres - covers Parcel Second
Tax Key: 2-9-005-002 (3)	Area assessed: 8,985.000 Acres - covers Parcel Third
  
2. Reservation in favor of the State of Hawaii of all mineral and metallic mines.
  
3. A portion of Parcel First and all of Parcels Second and Third lie within Hilo Forest Reserve.
  
4. -AS TO PARCEL FIRST ONLY:-

Declaration of Private Easements dated November 10, 1975, recorded in Liber 11047 at Page 50.
  
5. -AS TO PARCEL SECOND ONLY:-

Covenants contained in DEED dated July 23, 1976, recorded in Liber 11553 at Page 376.
  
6. EASEMENT AGREEMENT dated July 23, 1976, recorded in Liber 11553 at Page 403, by and between MAUNA KEA SUGAR COMPANY, INC., a Hawaii corporation, and WORLD UNION INDUSTRIAL CORPORATION, LTD., a Hong Kong, B.C.C. corporation.

SCHEDULE B CONTINUED

7. Reservations and agreements in Deeds dated July 23, 1976, recorded in Liber 11553 at Page 393, dated July 23, 1976, recorded in Liber 11553 at Page 376, and dated July 23, 1976, recorded in Liber 11553 at Page 385. (see Exhibit "A")

8. NOTICE OF GRANTS OF OPTION AND RIGHT OF FIRST REFUSAL TO LEASE dated July 23, 1976, recorded in Liber 11553 at Page 417. (see photocopy attached)

9. NOTICE OF PENDENCY OF ACTION

PLAINTIFF : UNITED STATES OF AMERICA (Attorney(s) - Daniel Bent and Sharon B. Takeuchi)

DEFENDANT : 15,715.544 ACRES OF LAND (TRACT 12), MORE OR LESS, IN THE COUNTY OF HAWAII; WORLD UNION INDUSTRIAL CORPORATION, LTD., and UNKNOWN OWNERS

DATED : December 5, 1989

FILED : United States District Court for the District of Hawaii, Civil No. 89-00939, on December 5, 1989

RECORDED : Liber 23963 Page 703 on December 7, 1989  
RE : Condemnation for public use

10. -AS TO PARCEL FIRST (B) ONLY:-

Any adverse claim or boundary dispute which may exist or arise by reason of the failure of those certain grants of easements to locate with certainty the boundaries of the easements discribed in said Deed.

11. -AS TO PARCELS SECOND AND THIRD ONLY:-

Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct boundary and improvement survey or archaeological study would disclose, including, without limitation, trails, rights of way, historic property and burial sites.



SCHEDULE B CONTINUED

-Note:- It is recommended that a modern metes and bounds survey be made of said premises so that the boundaries can be definitely established.

12. Claims arising out of rights customarily and traditionally exercised for subsistence, cultural, religious, access or gathering purposes as provided for in the Hawaii constitution or Sections 1-1 or 7-1 of the Hawaii Revised Statutes.

-NOTE:-

1. Attention is invited to the requirement re: compliance with the provisions of Chapter 418 of the Hawaii Revised Statutes, as amended, relating to the registration of WORLD UNION INDUSTRIAL CORPORATION, LTD., a Hong Kong, B.C.C. corporation, with the Department of Commerce and Consumer Affairs of the State of Hawaii.
2. The abstractors find no liens docketed against U.S. FISH AND WILDLIFE SERVICE, the proposed purchaser(s).

## SCHEDULE C

-FIRST:-

(A) All of that certain parcel of land (portions of the lands described in and covered by Royal Patent Number 8335, Land Commission Award Number 7715, Apana 16 to Lota Kamehameha, Certificate of Boundaries No. 181; Royal Patent Number 7875, Land Commission Award Number 11215, Apana 1 to Aarona Kealiihonui, Certificate of Boundaries No. 165; Royal Patent Number 7162, Apana 2, Land Commission Award Number 11216, Apana 43 to M. Kekauonohi; Royal Patent Number 7999, Land Commission Award Number 6247, Part 2, to Kanaulu; Royal Patent Numbers 4475 and 8117, Land Commission Award Number 7713, Apana 20 to V. Kamamalu, Certificate of Boundaries No. 175; Land Patent Grant Number 3656, Apanas 1 and 3 to Onomea Sugar Company and Royal Patent Grant Number 3122 to S. L. Austin) situate, lying and being at Paukaa, Papaikou, Aleamai, Kalaoa, Puumoi, Mokuoniki, Alakahi and Onomea, District of South Hilo, Island and County of Hawaii, State of Hawaii, being LOT 1, and thus bounded and described:

Beginning at a spike at the Northeast corner of this parcel of land, the coordinates of which referred to Government Survey Triangulation Station "ALALA" being 4,053.48 feet South and 11,964.19 feet West and running by azimuths measured clockwise from true South:

1.     4°    37'                   2230.00 feet along remainder of R. P. 8117, L. C. Aw. 7713, Ap. 20 to V. Kamamalu to a pipe;
  
2.     0°    57'    15"       5337.90 feet along remainders of R. P. 8117, L. C. Aw. 7713, Ap. 20 to V. Kamamalu; Grant 3122 to S. L. Austin; Grant 3656, Ap. 3 to Onomea Sugar Company and R. P. 7999, L. C. Aw. 6247 to Kanaulu to a pipe;
  
3.    350°   21'    40"       3745.60 feet along remainders of R. P. 7999, L. C. Aw. 6247 to Kanaulu; R. P. 7162, Ap. 2, L. C. Aw. 11216, Ap. 43 to M. Keauonohi; Grant 3656, Ap. 1 to Onomea Sugar Company and R. P. 7875, L. C. Aw. 11215, Ap. 1 to Aarona Kealiihonui to the middle of Kaieie Stream;

SCHEDULE C CONTINUED

thence along remainder of R. P. 7875, L. C. Aw. 11215, Ap. 1 to Aarona Kealiihonui along middle of Kaieie Stream, the direct azimuth and distance between points along said middle of Kaieie Stream being:

4. 90° 51' 30" 2671.42 feet: thence

5. 2° 47' 869.30 feet along remainder of R. P. 7875, L. C. Aw. 11215, Ap. 1 to Aarona Kealiihonui along middle of Kapue Stream, passing over pipes at 23.00 feet and 750.13 feet;

thence along remainder of R. P. 7875, L. C. Aw. 11215, Ap. 1 to Aarona Kealiihonui along middle of Kapue Stream, the direct azimuth and distance between points along said middle of Kapue Stream being:

6. 306° 46' 25" 2347.97 feet: thence

7. 0° 00' 860.00 feet along remainder of R. P. 7875, L. C. Aw. 11215, Ap. 1 to Aarona Kealiihonui to middle of stream;

thence along remainder of R. P. 7875, L. C. Aw. 11215, Ap. 1 to Aarona Kealiihonui along middle of stream, the direct azimuth and distance between points along said middle of stream being:

8. 87° 09' 03" 2899.57 feet: thence

9. 0° 00' 793.77 feet along remainder of R. P. 7875, L. C. Aw. 11215, Ap. 1 to Aarona Kealiihonui to middle of Pahoe Stream, passing over a "+" cut on rock at 1.00 feet;

SCHEDULE C CONTINUED

thence along R. P. 6860, L. C. Aw. 7713, Ap. 18 to V. Kamamalu along middle of Pahoehoe Stream for the next three (3) courses, the direct azimuths and distances between points along said middle of Pahoehoe Stream being:

10.	111°	53'	36"	2186.19 feet;
11.	87°	30'		2590.94 feet;
12.	91°	45'		4980.82 feet: thence
13.	282°	30'		1055.00 feet along R. P. 6860, L. C. Aw. 7713, Ap. 18 to V. Kamamalu;
14.	294°	24'	30"	2078.00 feet along R. P. 6860, L. C. Aw. 7713, Ap. 18 to V. Kamamalu;
15.	310°	14'	30"	4019.00 feet along R. P. 6860, L. C. Aw. 7713, Ap. 18 to V. Kamamalu;
16.	275°	24'	30"	2527.00 feet along R. P. 6860, L. C. Aw. 7713, Ap. 18 to V. Kamamalu;
17.	300°	18'	30"	1786.53 feet along R. P. 6860, L. C. Aw. 7713, Ap. 18 to V. Kamamalu;
18.	0°	47'		753.91 feet along remainder of R. P. 8335, L. C. Aw. 7715, Ap. 16 to Lota Kamehameha to middle of stream;

thence along remainder of R. P. 8335, L. C. Aw. 7715, Ap. 16 to Lota Kamehameha along middle of stream, the direct azimuth and distance between points along said middle of stream being:

19.	52°	41'		762.19 feet: thence
20.	0°	47'		1005.94 feet along remainder of R. P. 8335, L. C. Aw. 7715, Ap. 16 to Lota Kamehameha to the South bank of Honolii Stream, passing

SCHEDULE C CONTINUED

over pipes at 16.00 feet and 940.94 feet;

thence along R. P. 7715, L. C. Aw. 9971, Ap. 15 to W. P. Leleiohoku, Grant 4504 to William Foster, Grant 4854 to Manuel d'Alamoda, Government Land, Grant 4789 to John R. Gaspar and Government Land of Kaiwiki along South bank of Honolii Stream for the next three (3) courses, the direct azimuths and distances between points along said South bank of Honolii Stream being:

21.	86°	02'	28"	1954.83 feet to a pipe;
22.	92°	29'	06"	8574.20 feet;
23.	92°	54'	30"	6797.30 feet: thence
24.	94°	50'		36,996.00 feet along Government Land of Piihonua to middle of Nukupahu Gulch;
25.	214°	36'		980.60 feet along remainder of R. P. 8335, L. C. Aw. 7715, Ap. 16 to Lota Kamehameha;
26.	225°	33'		1051.00 feet along remainder of R. P. 8335, L. C. Aw. 7715, Ap. 16 to Lota Kamehameha;
27.	193°	33'		2357.30 feet along remainder of R. P. 8335, L. C. Aw. 7715, Ap. 16 to Lota Kamehameha;
28.	189°	05'		1690.30 feet along remainder of R. P. 7875, L. C. Aw. 11215, Ap. 1 to Aarona Kealiihonui;
29.	189°	42'		3911.60 feet along remainder of R. P. 7875, L. C. Aw. 11215, Ap. 1 to Aarona Kealiihonui;

SCHEDULE C CONTINUED

30. 260° 50' 49,671.50 feet along R. P. 7192, L. C. Aw. 8559-B, Ap. 2 to William C. Lunalilo;

31. 302° 15' 2180.00 feet along Government Land of Kawainui to the North bank of stream;

thence along Government Land of Kawainui along the North bank of stream for the next two (2) courses, the direct azimuths and distances between points along said North bank of stream being:

32. 240° 17' 20" 592.43 feet;

33. 248° 46' 39" 3793.19 feet to the point of beginning and containing an area of 19,337 acres, more or less.

(B) Together with Easement "1" (50.00 feet wide) and Easement "3" (50.00 feet wide) for access purposes over existing cane haul roads over Lots 2 and 4, respectively, as set forth in that certain Declaration of Private Easements dated November 10, 1975, recorded in Liber 11047 at Page 50.

Together also with easements and additional easements as set forth in that certain Easement Agreement dated July 23, 1976, recorded in Liber 11553 at Page 403.

BEING THE PREMISES DESCRIBED IN DEED

GRANTOR : MAUNA KEA SUGAR COMPANY, INC., a Hawaii corporation

GRANTEE : WORLD UNION INDUSTRIAL CORPORATION, LTD., a Hong Kong, B.C.C. corporation

DATED : July 23, 1976  
RECORDED : Liber 11553 Page 393

SCHEDULE C CONTINUED

-SECOND:-

All of that certain parcel of land (portion of the land described in and covered by Royal Patent Number 7192, Land Commission Award Number 8559-B, Apanas 17 and 18 to Wm. C. Lunaliilo) situate, lying and being at Makahanaloa, District of South Hilo, Island and County of Hawaii, State of Hawaii, bearing Tax Key designation 2-8-001-002 (3), and containing an area of 4,686.81 acres, more or less.

BEING THE PREMISES DESCRIBED IN DEED

GRANTOR : MAUNA KEA SUGAR COMPANY, INC., a Hawaii corporation  
GRANTEE : WORLD UNION INDUSTRIAL CORPORATION, LTD., a Hong Kong, B.C.C. corporation  
DATED : July 23, 1976  
RECORDED : Liber 11553 Page 376

-THIRD:-

All of that certain parcel of land (portion of the land described in and covered by Royal Patent Number 7541, Land Commission Award Number 11216:42 to M. Kekauonohi) situate, lying and being at Hakalau Nui, District of South Hilo, Island and County of Hawaii, State of Hawaii, bearing Tax Key designation 2-9-005-002 (3), and containing an area of 8,985.0 acres, more or less.

BEING THE PREMISES DESCRIBED IN DEED

GRANTOR : MAUNA KEA SUGAR COMPANY, INC., a Hawaii corporation  
GRANTEE : WORLD UNION INDUSTRIAL CORPORATION, LTD., a Hong Kong, B.C.C. corporation  
DATED : July 23, 1976  
RECORDED : Liber 11553 Page 385

DATE PRINTED: 12/01/92

JHP/JHP

STATEMENT OF ASSESSED VALUES AND REAL PROPERTY TAXES DUE

NAME OF OWNER: WORLD UNION IND CORP LTD  
LEASED TO :

TAX MAP KEY

DIVISION ZONE SECTION PLAT PARCEL HPR NO.  
(3) 2 7 001 001 0000

CLASS: 5,6 AREA ASSESSED: 19337.000 AC

ASSESSED VALUES FOR CURRENT YEAR TAXES: 1992

This certifies that the records of this division show the assessed values and taxes on the property designated by Tax Key shown above are as follows:

BUILDING	\$	0
EXEMPTION	\$	0
NET VALUE	\$	0
LAND	\$	2,808,800 HIGHEST & BEST USE
EXEMPTION	\$	0
NET VALUE	\$	2,808,800
TOTAL NET VALUE	\$	2,808,800

CURRENT YEAR TAXES:	AMOUNT DUE	CREDIT
1ST INSTALLMENT (DUE 8-20-92)	\$ 14,044.00	\$ 14,044.00
2ND INSTALLMENT (DUE 2-20-93)	\$ 14,044.00	PENDING
TOTAL TAXES:	\$ 28,088.00	

PRIOR YEAR TAXES:	NONE	
1ST INSTALLMENT (DUE 8-20-91)	\$ 14,044.00	\$ 14,044.00
2ND INSTALLMENT (DUE 2-20-92)	\$ 14,044.00	\$ 14,044.00
TOTAL TAXES:	\$ 28,088.00	

TITLE GUARANTY OF HAWAII, INCORPORATED



DATE PRINTED: 12/01/92

JHP/JHP

CLASS BREAKDOWN FOR TAX MAP KEY BELOW:

TAX MAP KEY					
DIVISION	ZONE	SECTION	PLAT	PARCEL	HPR NO.
(3)	2	7	001	001	0000
CLASS: 5	AREA ASSESSED:				1279.000 AC
BUILDING		\$		0	
EXEMPTION		\$		0	
NET VALUE		\$		0	
LAND		\$	64,000	HIGHEST & BEST USE	
EXEMPTION		\$		0	
NET VALUE		\$	64,000		
TOTAL NET VALUE		\$	64,000		

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TAX MAP KEY					
DIVISION	ZONE	SECTION	PLAT	PARCEL	HPR NO.
(3)	2	7	001	001	0000
CLASS: 6	AREA ASSESSED:				18058.000 AC
BUILDING		\$		0	
EXEMPTION		\$		0	
NET VALUE		\$		0	
LAND		\$	2,744,800	HIGHEST & BEST USE	
EXEMPTION		\$		0	
NET VALUE		\$	2,744,800		
TOTAL NET VALUE		\$	2,744,800		

DATE PRINTED: 12/01/92

JHP/JHP

STATEMENT OF ASSESSED VALUES AND REAL PROPERTY TAXES DUE

NAME OF OWNER: WORLD UNION IND CORP LTD  
LEASED TO :

TAX MAP KEY

DIVISION ZONE SECTION PLAT PARCEL HPR NO.  
(3) 2 8 001 002 0000

CLASS: 6 AREA ASSESSED: 4686.810 AC

ASSESSED VALUES FOR CURRENT YEAR TAXES: 1992

This certifies that the records of this division show the assessed values and taxes on the property designated by Tax Key shown above are as follows:

BUILDING	\$	0
EXEMPTION	\$	0
NET VALUE	\$	0
LAND	\$	862,400
EXEMPTION	\$	0
NET VALUE	\$	862,400
TOTAL NET VALUE	\$	862,400

CURRENT YEAR TAXES:	AMOUNT DUE	CREDIT
1ST INSTALLMENT (DUE 8-20-92)	\$ 4,312.00	\$ 4,312.00
2ND INSTALLMENT (DUE 2-20-93)	\$ 4,312.00	PENDING
TOTAL TAXES:	\$ 8,624.00	

PRIOR YEAR TAXES:	NONE	
1ST INSTALLMENT (DUE 8-20-91)	\$ 4,312.00	\$ 4,312.00
2ND INSTALLMENT (DUE 2-20-92)	\$ 4,312.00	\$ 4,312.00
TOTAL TAXES:	\$ 8,624.00	

TITLE GUARANTY OF HAWAII, INCORPORATED

DATE PRINTED: 12/01/92

JHP/JHP

STATEMENT OF ASSESSED VALUES AND REAL PROPERTY TAXES DUE

NAME OF OWNER: WORLD UNION IND CORP LTD  
LEASED TO :

TAX MAP KEY

DIVISION ZONE SECTION PLAT PARCEL HPR NO.  
(3) 2 9 005 002 0000

CLASS: 6 AREA ASSESSED: 8985.000 AC

ASSESSED VALUES FOR CURRENT YEAR TAXES: 1992

This certifies that the records of this division show the assessed values and taxes on the property designated by Tax Key shown above are as follows:

BUILDING	\$	0
EXEMPTION	\$	0
NET VALUE	\$	0
LAND	\$	1,473,500
EXEMPTION	\$	0
NET VALUE	\$	1,473,500
TOTAL NET VALUE	\$	1,473,500

CURRENT YEAR TAXES:	AMOUNT DUE	CREDIT
1ST INSTALLMENT (DUE 8-20-92)	\$ 7,367.50	\$ 7,367.50
2ND INSTALLMENT (DUE 2-20-93)	\$ 7,367.50	PENDING
TOTAL TAXES:	\$ 14,735.00	

PRIOR YEAR TAXES:	NONE	
1ST INSTALLMENT (DUE 8-20-91)	\$ 7,367.50	\$ 7,367.50
2ND INSTALLMENT (DUE 2-20-92)	\$ 7,367.50	\$ 7,367.50
TOTAL TAXES:	\$ 14,735.00	

TITLE GUARANTY OF HAWAII, INCORPORATED

# EXHIBIT A

## RESERVATIONS AND AGREEMENTS

Grantor and Grantee hereby covenant and agree that the premises granted herein (herein in this Exhibit B referred to as the "property") shall be subject to the following reservations and rights in favor of Grantor:

1. Bauxite Rights. Reservation unto Grantor of an interest, as set forth below, in all bauxite mineral rights in, under and upon the property. This reservation shall include the right of surface entry from time to time for exploratory purposes only at a number of places which, when aggregated with similar exploratory rights reserved by Grantor in two other deeds of like date to Grantee for adjacent property, shall not exceed six (6) places, aggregating not more than six (6) acres, on the property and adjacent property granted by said two other deeds of like date, as mutually agreed upon. Grantor hereby covenants and agrees to restore the surface of the ground to approximate grade or contour existing prior to the exploration activities. If any other exploratory or bauxite mining operation is effected or undertaken upon the property, then Grantor, at its election, shall have the right to either (a) participate in the venture with Grantee as an equal partner (50%/50% equity basis) and share profits accordingly, or (b) not participate in the venture and receive twenty-five per cent (25%) of the net profits realized by Grantee, its successors and assigns from such venture. It is understood that, notwithstanding anything herein above stated, Grantee or its successors or assigns owning the property shall make the sole determination whether any mining endeavor for said bauxite shall be undertaken at any time on the property.

2. Water Rights. Reservation unto Grantor of water rights which shall enable it to continue to take, at diversion points not located on the property, such water from the property as being presently appropriated for the operation of sugar cane mills owned by Grantor and located or to be located in the lower-lying lands which, when aggregated with similar water rights reserved by Grantor in two other deeds of like date to Grantee for adjacent property, shall not exceed a maximum quantity of 40,000,000 gallons per twenty-four hour day or such lesser amount as will not, in more than one month in any one year, exceed fifty per cent (50%) of the flow each month measured at or near the makai boundary of the property in the streams named below located on the property and on adjacent property covered by said two other deeds of like date. Such reservation shall exist for as long as Grantor continues to operate such sugar cane mills; provided, however, that upon the cessation of such sugar cane milling operations on the lower-lying area, then the maximum gallons which Grantor shall have a right to take under this reservation is hereby limited to and shall not exceed twenty-five per cent (25%) of the total available water in said streams as measured and averaged over a twenty-four hour period and further limited to not more than fifty per cent (50%) of the total water and water rights flowing or arising from any one source, stream or watercourse. The streams hereinabove referred to are as follows: Honolii, Pahoaheo, Kapua, Kamaui, Kawaiui, Waiaama, Aia, Kapahu, Malamalamaiki (Mowoku), Pahoaheo, Kolakole and Nakaiau.

Such reservations above are intended to be covenants running with the land and shall inure to the benefit of Grantor and its successors and assigns.

RECORDATION REQUESTED BY:

MAUNA KEA SUGAR CO. INC.

AFTER RECORDATION, RETURN TO:

MAUNA KEA SUGAR CO. INC.  
P.O. BOX 1000  
HONOLULU, HAWAII

RETURN BY MAIL ( ) PICKUP (✓)

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1976 JUL 26 AM 9:42

NOTICE OF GRANTS OF OPTION  
AND RIGHT OF FIRST REFUSAL TO LEASE

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, by unrecorded Contract of Sale dated June 8, 1976, as amended by Addendum to Contract of Sale dated July 23, 1976 (together called the "Contract"), WORLD UNION INDUSTRIAL CORPORATION, LTD. (herein, "World Union"), a Hong Kong, B.C.C. corporation, with its principal place of business and post office address at Room 1405, 14th Floor, The Sincere Building, 173 Des Voeux Road Central, Hong Kong, B.C.C., did agree to grant to MAUNA KEA SUGAR COMPANY, INC. (herein, "Mauna Kea"), a Hawaii corporation having its principal place of business at 827 Fort Street, Honolulu, Hawaii, and its post office address at P. O. Box 3470, said Honolulu 96801, an option to lease and a right of first refusal to lease, for certain purposes and under terms and conditions therein stated, affecting that certain parcel of land at Paukaa, Papaikou, Aleamai, Kalaea, Puumoi, Mokuoniki, Alakahi and Onomea, Island and County of Hawaii, known as Lot 1 (herein, "the land"), area 19.337 acres, and more particularly described in a deed of even date herewith, made by Mauna Kea in favor of World Union, and intended to be recorded immediately prior to the recording hereof;

JUL 22 1976 C.A.

NOW, THEREFORE, for the consideration stated in the Contract, World Union does hereby grant to Mauna Kea:

(1) An option, for a period of three years from the date hereof, to lease for not more than fifteen years, for the purpose of cultivation and production of sugar cane, as many as three thousand acres of the land. This option is subject to the terms and conditions set forth under the subject heading "Option to Lease" in paragraph 3 of Exhibit C (Special Conditions of Sale) of the Contract, it being intended to ratify, and not to expand, the privileges and obligations therein stated.

(2) A right of first refusal, for a period of six years from the date hereof, to lease for sugar cane growing as many as one thousand three hundred fifty-nine other acres of the land if World Union intends to lease the same for sugar cane growing to a third party. This right of first refusal is subject to the terms and conditions set forth under the subject heading "Right of First Refusal to Lease" in paragraph 3 of Exhibit C (Special Conditions of Sale) of the Contract, it being intended to ratify, and not to expand, the privileges and obligations therein stated.

IN WITNESS WHEREOF, World Union has caused this instrument to be executed this 23 day of July, 1976.

WORLD UNION INDUSTRIAL CORPORATION,  
LTD.

By *Richard King*  
Its Director

WV 89 186874

DEC 7 1989  
23963 703

LAND COURT SYSTEM

REGULAR SYSTEM

AFTER RECORDATION, RETURN BY MAIL (X)

United States Attorney  
District of Hawaii  
Room C-242, U.S. Courthouse  
300 Ala Moana Blvd., Box 50183  
Honolulu, Hawaii 96850

TITLE OF DOCUMENT:

Notice of Pendency of Action; Affidavit in Support of  
Pendency of Action; Exhibit "A"

PROPERTY DESCRIPTION:  
15,715.544 Acres of Land (Tract 12)  
More or Less, in the County of  
Hawaii, World Union Industrial  
Corporation, Ltd., and Unknown  
Owners

LIBER/PAGE: 11553/420

DOCUMENT NO.:  
TRANSFER CERTIFICATE OF  
TITLE NO(S):

In accordance with the provisions of Sections 634-51, 502-31  
Regular System, and 501-151 Land Court, Hawaii Revised Statutes,  
this page is attached to that certain instrument dated  
December 5, 1989 and entitled:

U.S.A. v. 15,715.544 Acres of Land (Tract 12),  
More or Less, in the County of Hawaii,  
World Union Industrial Corporation, Ltd.,  
and Unknown Owners  
Court No. Civil No. 89-00939 DAE

23963 704

DANIEL BENT  
United States Attorney  
District of Hawaii

SHARON S. TAKEUCHI  
Assistant U.S. Attorney  
Room C-242, U.S. Courthouse  
300 Ala Moana Blvd., Box 50183  
Honolulu, Hawaii 96850  
Telephone: 541-2850

Attorneys for Plaintiff  
UNITED STATES OF AMERICA

FILED IN THE  
UNITED STATES DISTRICT COURT  
DISTRICT OF HAWAII

DEC 9 1989

11 o'clock and 25 min. a.  
WALTER A.Y.H. CHINN, C. L. D.

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF HAWAII

UNITED STATES OF AMERICA,  
Plaintiff,

vs.

15,715.544 ACRES OF LAND  
(TRACT 12), MORE OR LESS,  
IN THE COUNTY OF HAWAII,  
WORLD UNION INDUSTRIAL  
CORPORATION, LTD., AND  
UNKNOWN OWNERS,

Defendants.

CIVIL NO. 89-00939 DAE

NOTICE OF PENDENCY OF ACTION;  
AFFIDAVIT SUPPORTING FILING OF  
NOTICE OF PENDENCY OF ACTION;  
SCHEDULES "A" AND "B"

NOTICE OF PENDENCY OF ACTION

Plaintiff United States of America, by its undersigned attorneys, pursuant to Rule 71(A), Federal Rules of Civil Procedure and Sections 634-51 and 501-151, Hawaii Revised Statutes, as amended, hereby gives notice of the pendency of the above-entitled action.

Plaintiff commenced this action in the United States District Court for the District of Hawaii against Defendants:

ATTEST: A True Copy  
WALTER A.Y.H. CHINN  
Clerk, United States District  
Court, District of Hawaii  
By [Signature]  
Deputy



23963 705

15,715.544 Acres of Land (Tract 12), More or Less, in the County of Hawaii, World Union Industrial Corporation, Ltd., and Unknown Owners, whereby plaintiff seeks to condemn for public use certain real property identified as 15,715.544 Acres of Land (Tract 12), More or Less, in the County of Hawaii, State of Hawaii. The condemnation will affect the title or rights to possession of the real property and the rights of all persons claiming or having an interest in said property. Said action and the real property that will be affected by said action are more particularly described in the Affidavit Supporting Filing of Notice of Pendency of Action and Schedules "A" and "B."

DATED: Dec. 5, 1989 at Honolulu, Hawaii.

DANIEL BENT  
United States Attorney  
District of Hawaii

By Sharon B. Takeuchi  
SHARON B. TAKEUCHI  
Assistant U.S. Attorney

Attorneys for Plaintiff  
UNITED STATES OF AMERICA

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF HAWAII

UNITED STATES OF AMERICA,	)	CIVIL NO. _____
	)	
Plaintiff,	)	AFFIDAVIT SUPPORTING FILING OF
	)	NOTICE OF PENDENCY OF ACTION
vs.	)	
	)	
15,715.544 ACRES OF LAND	)	
(TRACT 12), MORE OR LESS,	)	
IN THE COUNTY OF HAWAII,	)	
WORLD UNION INDUSTRIAL	)	
CORPORATION, LTD., AND	)	
UNKNOWN OWNERS,	)	
	)	
Defendants.	)	

AFFIDAVIT SUPPORTING FILING  
OF NOTICE OF PENDENCY OF ACTION

SHARON B. TAKEUCHI, being first duly sworn on oath,  
deposes and says:

She is one of the attorneys representing the plaintiff  
United States of America in the above-entitled action and makes  
this affidavit in support of an Ex Parte filing of a Notice of  
Pendency of Action.

Plaintiff filed a Complaint in Condemnation on  
Dec. 5, 1989, to condemn for public use 15,715.544 Acres of  
Land (Tract 12), More or Less, in the County of Hawaii, State of  
Hawaii, more particularly described in Schedules "A" and "B"  
attached hereto and incorporated by reference.

3. Defendants 15,715.544 Acres of Land (Tract 12),  
More or Less, in the County of Hawaii, World Union Industrial

Corporation, Ltd., and Unknown Owners, are the owners or have an interest in the said property.

4. The condemnation will affect the title or rights to possession of the real property and the rights of all persons claiming or having an interest in said property.

5. By the recording and/or filing of this Notice pursuant to Sections 634-51 and 501-151, Hawaii Revised Statutes, as amended, the plaintiff intends that all persons and encumbrances of said property have constructive notice of the condemnation action and be bound by all judgments and orders entered in the condemnation action.

6. This Notice is not intended to create any new interest, lien or encumbrance in said property but informs the world that the property is being condemned and plaintiff desires to take advantage of the provisions of Sections 634-51 and 501-151, Hawaii Revised Statutes, as amended.

FURTHER, AFFIANT SAYETH NAUGHT.

*Sharon B. Takuchi*  
SHARON B. TAKUCHI

Subscribed and sworn to before me  
this 5th day of December, 1959.

*Patricia L. Redondo*  
Notary Public, State of Hawaii

My commission expires: 6/3/91  
L.S. 2



SCHEDULE A

HAKALAU FOREST NATIONAL WILDLIFE REFUGE

Tract No. 12

AUTHORITY FOR THE TAKING:

The authority for the taking of the land is under and in accordance with:

Act of Congress approved August 1, 1908, as amended, 25 Stat. 157, 40 U.S.C. § 257;

Endangered Species Act of 1973; as amended, 87 Stat. 884, 16 U.S.C. §§ 1531-1544;

Land and Water Conservation Fund Act of 1965, as amended, 78 Stat. 897, 16 U.S.C. § 4601-4;

Fish and Wildlife Act of 1956, as amended, 70 Stat. 1122, 16 U.S.C. § 742f;

Department of the Interior and Related Agencies Appropriation Act, 1985, Pub. L. No. 98-473, 98 Stat. 1838.

PUBLIC USES:

The public uses for which said land is taken are as follows:

The land is required for the proper development and management of the Hakalau Forest National Wildlife Refuge, including the protection, restoration, and conservation of wildlife and natural resources, particularly the endangered species of the Hawaiian forest birds, and for such other purposes as may be authorized by Congress or by Executive Order.

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SCHEDULE B  
HAKALAU FOREST NATIONAL WILDLIFE REFUGE  
Tract No. 12

ESTATE TAKEN:

The estate taken for said public use is the fee simple title to Tract 12 described herein including all water rights and other rights, easements, and appurtenances thereto subject to:

1. Existing easements for roads and utilities.
2. Reservation in favor of the State of Hawaii of all mineral and metallic mines:
3. Rights of Mauna Kea Sugar Company under terms of deeds between Mauna Kea Sugar Company, Inc. and World Union Industrial Corporation, Ltd., dated July 23, 1976, recorded in Liber 11553, Page 376, Liber 11553, Page 385, and Liber 11553, Page 393.
4. Rights, if any, of Mauna Kea Sugar Company under that certain Notice of Grants of Option and Rights of First Refusal to Lease dated July 23, 1976, recorded in Liber 11553 at Page 417.

11/12/76 11:53 AM (11) 11553/393



## SCHEDULE B

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28DESCRIPTION:

The following described Tract of Land is located in the State of Hawaii, Island and County of Hawaii and its South Hilo district, about ten (10) miles Northwest of Hilo, about five (5) miles East of Keanakolu Road and about eleven (11) miles North of the junction of Keanakolu Road with Mauna Kea Access Road. The tract comprises portions of the following lands:

THE LAND OF HAKALAU NUI, ROYAL PATENT 7541, LAND COMMISSION AWARD 11216, APANA 42 TO M. KEKAUONOHI, CERTIFICATE OF BOUNDARIES NO. 130; THE LAND OF MAEKANALOA, ROYAL PATENT 7192, LAND COMMISSION AWARD 8559-B, APANAS 17 AND 18 TO WILLIAM C. LUNALILO, CERTIFICATE OF BOUNDARIES NO. 38; THE LAND OF PAPAIZOU, ROYAL PATENT 7875, LAND COMMISSION AWARD 11215, APANA 1 TO AARONA KEALIIABONUI, CERTIFICATE OF BOUNDARIES NO. 165; THE LAND OF PAUKAA, ROYAL PATENT 8335, LAND COMMISSION AWARD 7715, APANA 16 TO LOTA KAMEHAMEHA, CERTIFICATE OF BOUNDARIES NO. 181; AND FURTHER DESCRIBED AND OF RECORD IN BOOK 11553, PAGE 420 AT THE BUREAU OF CONVEYANCES, STATE OF HAWAII.

## TRACT NO. 12

Beginning at the Southwest corner of this Tract of Land, at a cross (+) cut in rock on the South side of Mukupahu Stream, on the boundary with the Government Land of Piipohua, and at a distance of about 2.3 miles East of Keanakolu Road, the coordinates of said point of beginning referred to Government Survey Triangulation Station "AARUWILA" being 3,103.14 feet South and 18,234.24 feet East and running by azimuths measured clockwise from true South:

- |     |            |          |  |
|-----|------------|----------|--|
| 1.  | 214°36'    | 980.60   | feet along the Hilo Forest Reserve boundary and along Tract 10 of the Hakalau Forest National Wildlife Refuge;   |
| 2.  | 225°33'    | 1051.00  | feet along same;   |
| 3.  | 193°33'    | 2357.30  | feet along same;   |
| 4.  | 189°05'    | 1680.30  | feet along same;   |
| 5.  | 189°42'    | 3911.60  | feet along same;   |
| 6.  | 190°14'    | 4807.70  | feet along same;   |
| 7.  | 190°10'    | 3435.00  | feet along same;   |
| 8.  | 189°12'30" | 2002.20  | feet along same;   |
| 9.  | 184°27'30" | 2358.70  | feet along same;   |
| 10. | 185°21'    | 781.30   | feet along same;   |
| 11. | 189°24'20" | 1963.33  | feet along same to a 2" pipe;  |
| 12. | 253°47'10" | 20706.62 | feet along the North-South Hilo District boundary and Tract 11a of Hakalau Forest National Wildlife Refuge to a U.S. Fish and Wildlife Service Survey Monument No. 3080, stamped "415", 1987, surrounded by four (4) painted drums, being the Southeast corner of Tract 11a; |
| 13. | 350°29'20" | 10499.22 | feet along the remainder of R.P. 7541, L.C. Aw. 11216, Ap 42, to M. Kekauonohi, to the Government Land of Kaiwika;   |
| 14. | 59°38'40"  | 9416.40  | feet along the Government Land of Kaiwika to a waterfall in Kolekole Gulch;  |

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World Union Industrial Corporation, Ltd.

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- 1 15. 261°05'15" 8800.58 feet along the Government Land of Kaiwili.  
2 16. 350°29'20" 19048.66 feet along the remainders of R.P. 7192, L.C. Aw.  
3 8559-8, Ap. 17 and 18 to William C. Lunaliio, R.P.  
4 7875, L.C. Aw. 11215, Ap. 1 to Aaron Keesiibocou  
5 and R.P. 8335, L.C. Aw. 7715, Ap. 16 to Lots  
6 17. 94°36' 30538.59 feet along the Government Land of Piibonua, to the  
7 point of beginning and containing an area of  
8 15715.544 Acres.

9 BOUNDED on the North side by Tract 11a of Makaleu Forest National Wildlife  
10 Refuge, on the East side by other lands owned by WORLD UNION INDUSTRIAL  
11 CORPORATION, INC. and by the State of Hawaii, on the South side by the State  
12 of Hawaii and on the West side by Tract 10 of the Makaleu Forest National  
13 Wildlife Refuge.

14 The above describe Tract of Land is delineated on a map tracing designated  
15 "WORLD UNION INDUSTRIAL CORPORATION, INC. TRACT 12" bearing date of May 31,  
16 1967, of record in the files of the Department of the Interior.

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