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In reply, please refer to:
REF: DOFAW

July 8, 1993

DOFAW

Mr. Brian Choy, Director
Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Choy:

Enclosed is a Department of Land and Natural Resources, Division of Forestry and Wildlife agency action determination of Negative Declaration for improvements to the Hamakua Wetlands in Kailua, Oahu. Only one request for a copy of the draft EA was received during the comment period of September 8, 1992 through October 7, 1992, although copies were sent to two commentators in responses to them.

We ask that the Declaration Notice be published in the July 23, 1993 issue of the OEQC bulletin. Enclosed is a completed Publication form and four copies of the Final EA.

Please contact Mr. Ronald L. Walker at 587-0166 if you have any questions.

Keith W. Ahue
KEITH W. AHUE
Chairperson

Enclosures

cc: DOFAW
DUINC

1993-07-23-OA-FA-Hamakua Wetland Protection JUL 23 1993

**Final
Environmental Assessment,
Enhancement and Management Plans
for the**

**HAMAKUA WETLAND PROTECTION AND
ENHANCEMENT PROJECT
KAILUA, HONOLULU COUNTY, HAWAII**

**PREPARED FOR:
U.S. FISH AND WILDLIFE SERVICE
U.S. ARMY CORPS OF ENGINEERS
STATE OF HAWAII
CITY AND COUNTY OF HONOLULU**

Prepared By:



**Ducks Unlimited, Inc.
Western Regional Office
9823 Old Winery Place, Suite 18
Sacramento, California 95827
(916) 363-8257**

DETERMINATION NOTICE OF NEGATIVE DECLARATION
FOR HAMAKUA WETLAND PROTECTION AND ENHANCEMENT PROJECT,
KAILUA, HONOLULU COUNTY, HAWAII
TMK: 4-2-01-01;4-2-03-17 (POR)

- I. PROPOSING AGENCY: DEPARTMENT OF LAND AND NATURAL
RESOURCES, DIVISION OF FORESTRY
AND WILDLIFE
- II. APPROVING AGENCY: DEPARTMENT OF LAND AND NATURAL
RESOURCES, DIVISION OF FORESTRY
AND WILDLIFE
- III. AGENCIES CONSULTED: DLNR, DUCKS UNLIMITED INC., U.S.
FISH AND WILDLIFE SERVICE, NATIONAL
AUDUBON SOCIETY, THE NATURE
CONSERVANCY OF HAWAII, GOVERNORS'
OFFICE OF STATE PLANNING, DIVISIONS
OF AQUATIC RESOURCES, HISTORIC
SITES PRESERVATION, AND WATER AND
LAND DEVELOPMENT, ADVISORY COUNCIL
ON HISTORIC PRESERVATION, BOARD OF
LAND AND NATURAL RESOURCES

IV. SUMMARY OF PROPOSED ACTION:

Ducks Unlimited Inc. (DU) will acquire approximately 22.7 acres from Kaneohe Ranch Ltd. and improve habitat for four species of endangered waterbirds along Hamakua canal in Kailua, Oahu. Improvements include clearing noxious vegetation, cleaning the wetland waters, installing moats to prevent egress by predators, and providing a small educational structure next to the habitat. Upon completion of the project, DU will turn the land over to the Department of Land and Natural Resources for management in perpetuity. (SEE ATTACHED ENVIRONMENTAL ASSESSMENT, ENHANCEMENT AND MANAGEMENT PLAN).

The Department concludes that an environmental impact statement is not necessary as the project is intended to improve the environment for endangered waterbirds and other native wildlife by clearing noxious vegetation, cleaning wetland waters and installing predator moats. Although there will be minor and temporary disturbance to the waters and substrate during the project, the long range benefits to the habitat and resident and migratory waterbirds far outweigh such disturbance. The Department declares a finding of no significant impact resulting in a negative declaration for this project.

HAMAKUA WETLAND PROTECTION AND ENHANCEMENT
PROJECT, KAILUA, HONOLULU COUNTY, HAWAII

List of Agencies Consulted in Making of
Environmental Assessment

1. U.S. Fish and Wildlife Service, Pacific Area Office, Honolulu
2. National Audubon Society, Hawaii Office (Ms. Dona Kokubun), Honolulu.
3. The Nature Conservancy of Hawaii (Mr. Allen Holt), Honolulu
4. Office of State Planning, Office of the Governor (Mr. Harold Masumoto), Honolulu
5. Division of Aquatic Resources, Department of Land and Natural Resources, Hawaii
6. Division of Historic Sites Preservation, Department of Land and Natural Resources, Hawaii
7. Division of Water and Land Development, Department of Land and Natural Resources, Hawaii
8. Advisory Council on Historic Preservation, Washington D.C.
9. Board of Land and Natural Resources, Department of Land and Natural Resources, Honolulu

State of Hawaii
Division of Forestry and Wildlife
Department of Land and Natural Resources
1151 Punchbowl St. Honolulu, Hawaii 96813

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Executive Summary

Ducks Unlimited (DU) proposes the long-term protection, enhancement and management of Hamakua Marsh, a critical wetland habitat along Oahu's windward coast. This urban wetland will be protected and enjoyed by Hawaii's residents in perpetuity. The actions required for the site's protection are: acquisition, enhancement, and long-term management. The wetland is home to four endangered waterbirds: Hawaiian coot, stilt, moorhen, and duck.

The project is located in Honolulu County, Kailua Town. The wetland parallels Hamakua Canal (Kawainui Stream), on its mauka side [legal description TMK:4-2-01-01; 4-2-03-17 (por)]. Hamakua Drive borders the wetland on its makai side. The nearest cross-street is Kailua Road (see Map 1). It involves the protection of 22.7 acres, all mauka of the Hamakua Canal. It remains undeveloped and unimproved wetland habitat. Existing land use is limited to livestock (cattle) grazing.

The current land owner, Kaneohe Ranch, has agreed to donate the 22.7 acre wetland (all mauka of Hamakua Drive) to DU. The land donation should be completed by the end of Summer 1993. DU will hold the property in fee through the habitat enhancement phase. Habitat enhancement will be conducted by DU. Through a cooperative proposal, DU and the Hawaii Division of Forestry and Wildlife (DOFAW) have secured sufficient funds to complete habitat work. DU has developed this environmental assessment and work plan to address enhancement goals.

DU will restore the marsh to a functional ecosystem and enhance waterbird nesting opportunities. Vegetation removal and trash clean-up are the primary actions needed to restore the wetland. A moat system for predator control will improve nesting opportunities for four endangered waterbirds. Upon completing habitat work, DU will seek long-term management of the wetland.

DU will transfer land ownership to the State Department of Land and Natural Resources (DLNR). The wetland will be managed as a wildlife sanctuary by DOFAW. DU and DOFAW have mutually agreed upon the management guidelines outlined in this plan. Management responsibility will belong to DOFAW. As part of DOFAW's commitment, educational panels will be erected. These panels will provide wetland education information for those visiting the Hamakua Marsh.

The project will involve the removal of mangrove and fleabane within the wetland. Vegetative material removed will be placed on a designated upland site, owned by Kaneohe Ranch. Moat construction will require the removal of 2,400 cubic yards of fill, all to be placed on the designated upland site. No fill will be placed in the wetland. Fill will not be removed during vegetation clearing.

As a habitat protection project, work is not expected to impact air and water quality, nor will it increase noise levels in Kailua Town. The project will improve habitat for endangered wildlife and a diversity of wetland emergent plants. One archaeological site has been identified on the edge of the wetland. DU plans to protect this site by creating a buffer zone restricting equipment access. In addition, DU will conduct a paleoenvironmental survey in the wetland. A core sample through silt layers will be taken in the wetland. Specialists will radiocarbon date organic matter and analyze pollen. This information will add to our limited paleoenvironmental knowledge of the windward region of Oahu.

Section I. Project Description

1.1 Introduction

In a cooperative effort with Kaneohe Ranch and the Hawaii Division of Forestry and Wildlife (DOFAW), Ducks Unlimited, Inc. (DU) proposes to protect and enhance the Hamakua Marsh in order to provide essential habitat for native endangered waterbirds, and to provide for wetland education opportunities for the residents and visitors of Kailua and Oahu. Hamakua Marsh has been recognized as a significant wetland by state and federal wildlife plans. Four endangered waterbird species are known to inhabit the wetland. Unfortunately, the wetland has become overgrown with non-native plants such as fleabane and mangrove. In order to provide optimal marsh habitat enhancement through vegetation removal, predator control moats (for native waterbirds), and long-term management will be required. With the completion of habitat protection and enhancement, DU anticipates that the project will: (1) protect an important urban wetland resource along Oahu's windward coast; (2) create a more productive wetland for a variety of wildlife and plants; (3) provide a demonstration area for conservationists, politicians, local government officials and, others to show that private land holdings can be managed for the mutual benefit of wildlife and humans.

Ducks Unlimited Inc., is a private, nonprofit organization dedicated to conserving wetland habitat for waterfowl and other wildlife. DU was incorporated in 1937 and has a current membership of more than 520,000. The organization has protected, enhanced and restored over 6 million acres of wetlands in Canada, the United States, and Mexico. In Hawaii, DU has delivered habitat protection projects impacting wetlands on Kauai, Oahu and, most recently, the Big Island. DU is active in assisting agencies and private land owners in wetlands management and protection.

1.2 Description of Property

Project Name: Hamakua Marsh Enhancement Project

Project Location: Honolulu County, Kailua. The wetland parallels Hamakua Canal (Kawainui Stream), on its mauka side. Hamakua Drive borders the wetland on its makai side. The nearest cross-street is Kailua Road (see Figure 1).

TMK: 4-2-01-01;
4-2-03-17 (por)

Area of Project: 22.7 acres, all mauka of Hamakua Canal
Existing Land Uses: Undeveloped and unimproved wetland habitat. Existing land use is limited to livestock (cattle) grazing.
State Land Use Map: Urban (22.7 acres)
County Land Use Map: Preservation (22.7 acres)
Zoning: P-1 Restricted Preservation
P-2 General Preservation
Principle Contact: Andrew Engilis, Jr. - Project Biologist, Ducks Unlimited, Inc

Ducks Unlimited, Inc.

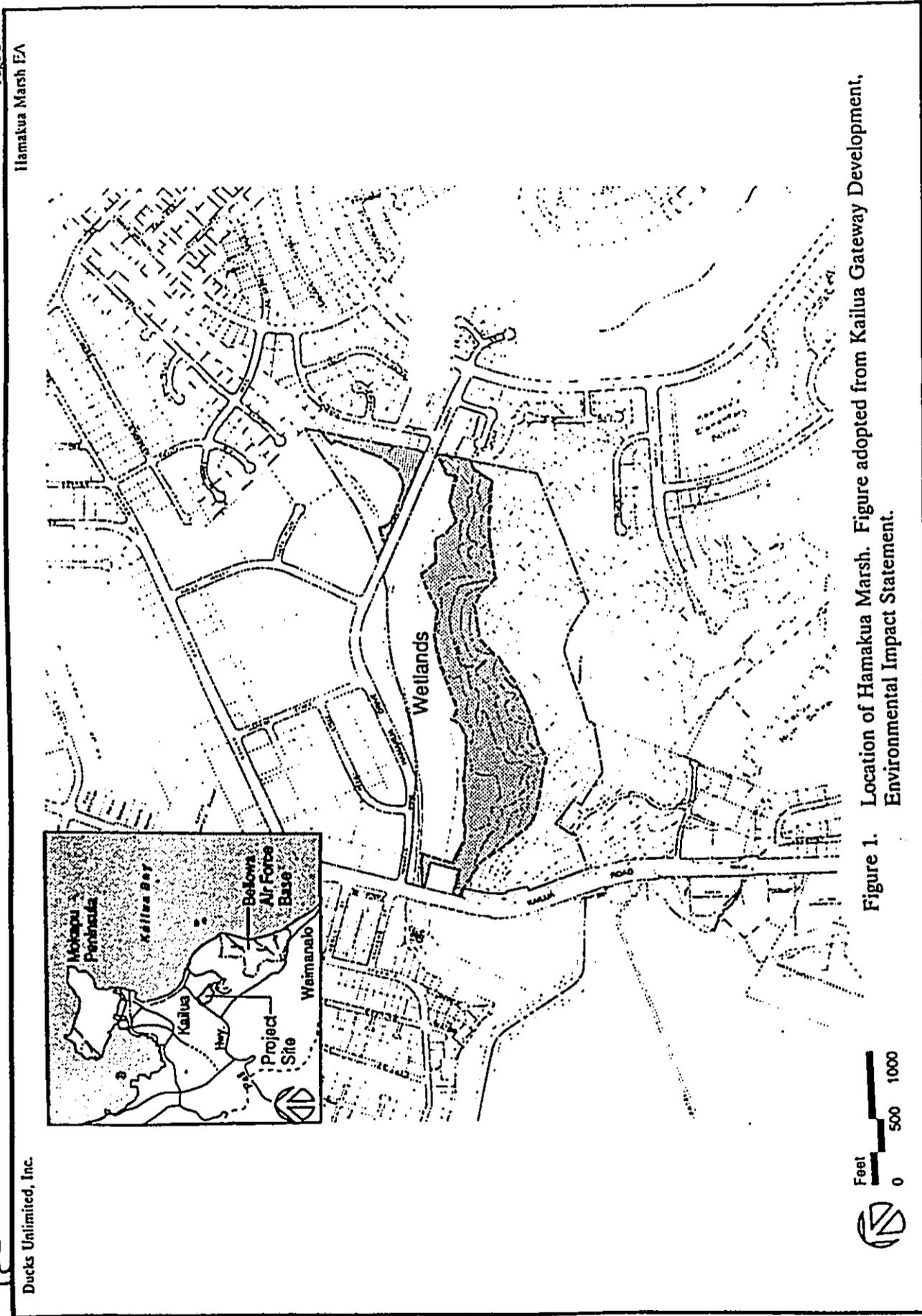


Figure 1. Location of Hamakua Marsh. Figure adopted from Kailua Gateway Development, Environmental Impact Statement.



Section II. Planned Improvements

2.1 Area Description

The Hamakua Marsh Project is located in Honolulu County and covers 22.7 acres (Figure 1). The wetland site is bound on the east by the town of Kailua and on the west by approximately 21 acres of relatively flat land, behind which is a steep hillside. Kaneohe Ranch plans to develop the 21 acre flat into a retirement community. The Hamakua Marsh basin collects rainfall runoff originating on the adjacent hillside and Coconut Grove, an urban section of Kailua. Runoff from the land is regulated by tide and downstream blockages at the mouth of Kaelepulu Stream.

Hamakua Wetland is a remnant floodplain that once linked Kawainui Marsh (Hawaii's largest remaining wetland) to Kaelepulu Pond, also known as Enchanted Lake. Kaelepulu Pond has been converted to a suburban lake front. Kawainui Marsh is currently owned by Honolulu County, and will, in the future, be managed as a wildlife sanctuary by DOFAW. Hamakua Marsh is owned by Kaneohe Ranch. The entire area supports a variety of flora and fauna including four federal and state endangered waterbirds.

2.2 Historic Background and Statement of Need

Today over 30% of Hawaii's natural lowland wetlands have been filled or converted to other land uses such as agriculture and urban expansion. Despite the loss, many of Hawaii's wetland adapted plants and animals have survived, yet several are endangered. Oahu's windward coast wetlands are small and isolated by topography and urban expansion. Most are closely associated with human communities. Long-term protection of the remaining wetlands are essential to ensure the stability of native endemic waterbirds, hydrologic cycles, ground water recharge, and aesthetic values. Hamakua Marsh is an urban wetland with intrinsic values that make it an important area for wildlife and wildlife interpretation and education.

2.3 Acquisition of Wetland

The 22.7 acre mauka wetland has been resubdivided into two parcels which Kaneohe Ranch will donate, in fee, to DU. The land donation is expected to be completed by the end of summer 1992. DU will transfer title of the property to DOFAW after completion of the wetland enhancement phase.

2.4 Enhancement Goals

DU will:

- 1) Acquire, through donation from Kaneohe Ranch, the 22.7 acre parcel.
- 2) Develop a plan and obtain permits allowing enhancement of the marsh.
- 3) Re-establish wetland basins through removal of vegetation that has overgrown Hamakua Marsh.
- 4) Construct a moat to exclude mammalian predators from the core wetland area.
- 5) Clean-up trash and other debris.
- 6) Transfer deed of ownership to the Department of Land and Natural Resources (DLNR).

2.5 Enhancement Actions

Topographic Survey

DU will conduct a topographic survey in order to assess: (1) the fall of the land, (2) location of existing levees, (3) water levels in Hamakua Canal, and (4) location of existing open wetland habitat. This information is required in order to properly enhance the wetland without impacting desirable vegetation and wildlife. DU has begun this phase of the operation.

Vegetation Removal

Vegetation removal is the most important habitat enhancement action needed to restore Hamakua Marsh. Removal of Indian Fleabane (*Pluchea indica*) from the wetland is required in Basins C and D, and, to a very limited extent, in Basins A and B. This invasive upland species has reduced available habitat for native waterbirds and is increasing siltation, thus reducing flood water storage. Removal will protect the flood basin and encourage the re-establishment of emergent wetland plants. Removal will require heavy equipment, but no soil will be moved and no fill will be placed in the wetland. Vegetation removed will be placed on upland habitat near the old quarry site on the adjacent hillside (Figure 2). In addition, removal all mangrove (*Rhizophora mangle*) from the interior of the wetland is needed (only a few mature trees are currently present inside the wetland, Figure 2). Removal includes all trees and sprouts and may require equipment (trees) and hand removal (sprouts). Cut trees will be stockpiled at the quarry site. No fill or soil will be placed or moved within the wetland.

A 60 foot wide band of fleabane and mangrove will be maintained along Hamakua Canal. The fleabane appears to be limiting the spread of mangrove into the basins. Mature mangroves provide a visual screen between waterbirds and the commercial sites along Hamakua Drive. Some mangroves along the canal will, however, be removed in order to provide wildlife viewing opportunities for the public. DU will determine which trees will be removed based on the location of educational panels planned for the Hamakua Drive viewing area.

Predator Moat Construction

Moat construction is the most cost effective predator control strategy for the site. The moat would be constructed to isolate Basins B and C (Figure 3). As a result, these basins will be managed as nesting and brood feeding areas. The final placement of these moats will be determined from topographic surveys. An excavator or other heavy equipment can access the wetland along the existing levee bisecting Basins B and C. Moat construction can then be continued along the adjacent mauka, on the upland side of the wetland. Care will be taken to avoid impacting on known existing historical sites (see discussion of archaeological and historic sites). The proposed moat dimensions are 15 feet wide and 3 feet deep, with a 2:1 slope (Figure 4). These dimensions will yield 1 cubic yard (CY) per linear foot of excavation. In Basin B, the moat is estimated to run 1,300 linear feet, yielding 1,300 CY of fill material. In Basin C, the moat is estimated to run 1,100 linear feet, yielding 1,100 CY of fill. Total fill is estimated to be 2,400 CY. Spoils from the excavation will be placed on the upland quarry site to avoid fill of the wetland (Figure 3). Since the canal is linked tidally to Kailua Bay, this action will not impact water levels in the canal or drain the wetland. Access for maintenance along the mauka portion of the moat, will be insured through mechanical control of vegetation.

Predator Removal

Predator removal will be necessary once the moat is functional. With the use of federal Environmental Protection Agency (EPA) approved chemicals and trapping methods, mongoose and rodents can be effectively removed from inside the moated basins. The area will be surveyed for the removal of cats, if necessary. For practical reasons, DOFAW will be in charge of predator removal and control on the site.

Ducks Unlimited, Inc.

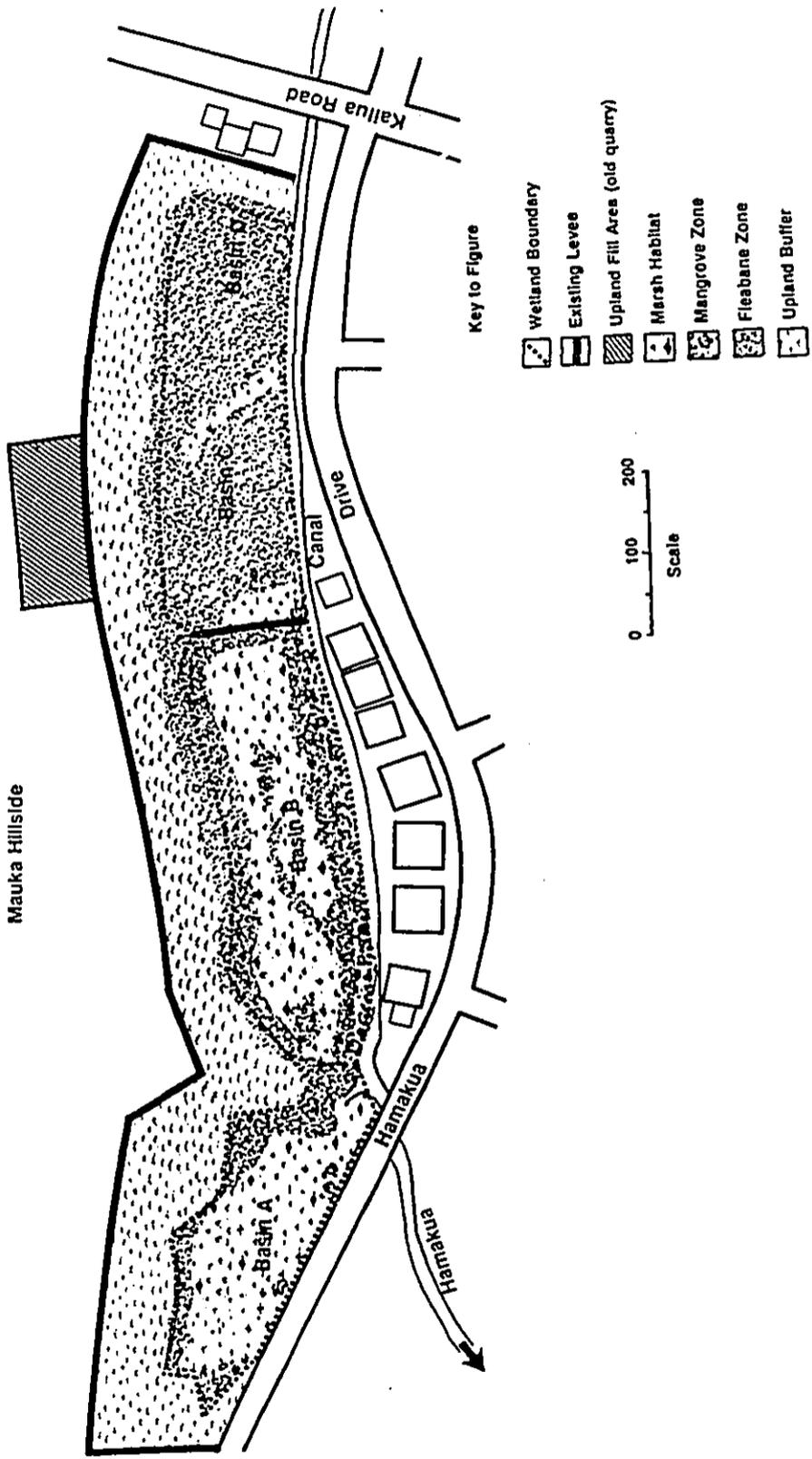
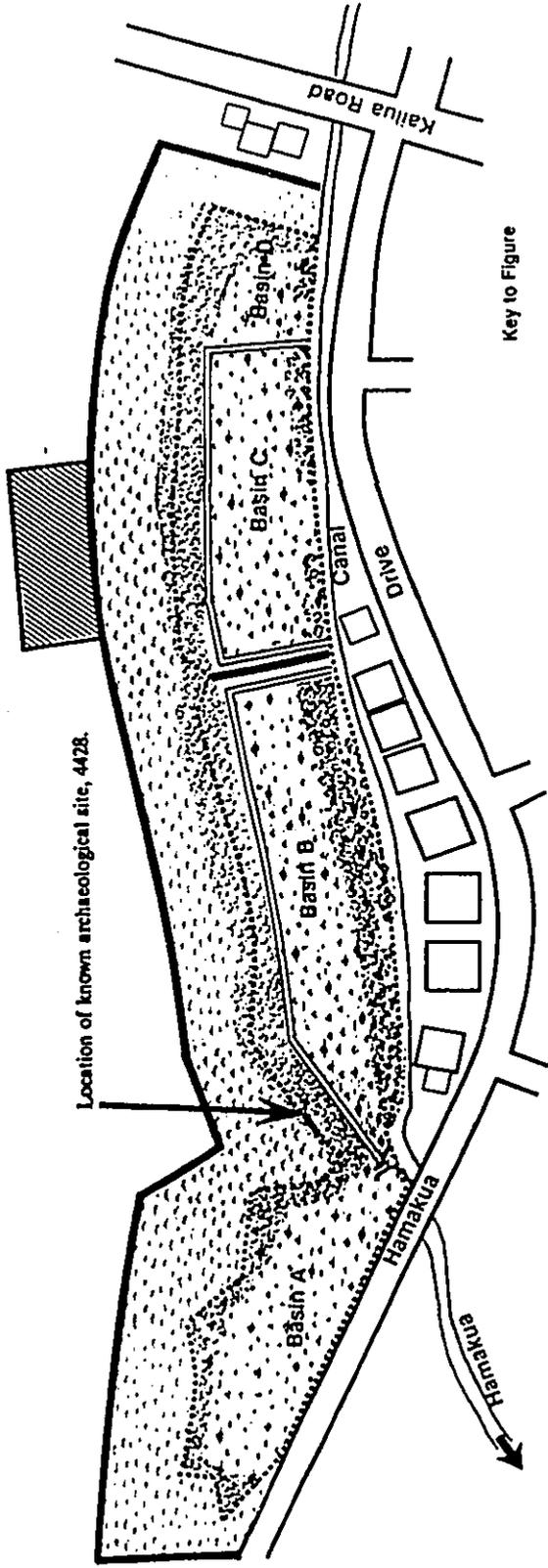


Figure 2. Existing habitat in Hamakua Marsh, based on 1992 aerial photography and DU field reconnaissance.

Ducks Unlimited, Inc.

Mauka Hillside

Location of known archaeological site, 4428.



Key to Figure

- Wetland Boundary
- Existing Levee
- Upland Fill Area (old quarry)
- Predator Moats
- Marsh Habitat
- Mangrove Zone
- Fleabane Zone
- Upland Buffer

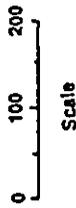


Figure 3. Conceptual habitat in Hamakua Marsh after enhancement work is completed.

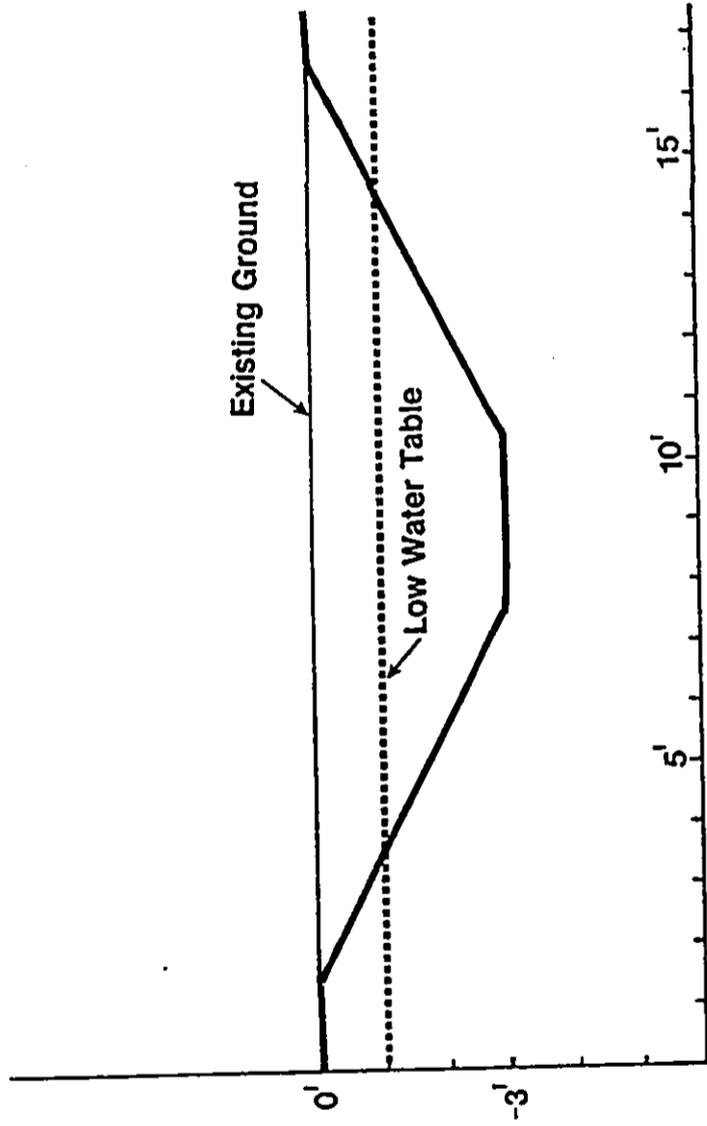


Figure 4. Cross-section of moat depicting dimensions along its length.

Trash Removal

Over the years, small quantities of trash have accumulated on the site. Trash removal could be accomplished in conjunction with vegetation removal.

Buffer Zones

Buffer zones are needed to protect waterbird species known to inhabit the wetland. Hawaiian stilt, coot and moorhen have become habituated to the presence of humans along the canal, but still require protection for nesting and rearing of young birds. Hamakua Canal and its associated vegetation provide an adequate buffer for the wetland along its makai side. A minimum buffer zone of 100 feet has been provided by Kaneohe Ranch along the mauka edge of the wetland (Figure 3). This buffer will be particularly important if the proposed Kailua Gateway Development Project (KGDP) is approved. The developers of the KGDP have agreed to the establishment of a 100 foot minimum buffer zone for the wetland. The vegetation to be left in the mauka buffer area will be negotiated between DOFAW and the developers. Plantings of native coastal shrubs in the buffer zone and along Hamakua Canal may be considered in the future, particularly if the KGDP is approved. Native shrub plantings will improve the aesthetic value of the property and provide a visual screen. Where possible, non-native trees, other than mangrove, will be maintained along the mauka buffer to provide habitat for songbirds and other wildlife. DOFAW may choose, in the future, to plant native lowland trees on the site.

Section III. Environmental Characteristics

3.1 Soils

The soils in the wetland are described in the Final Environmental Impact Statement for the Kailua Gateway Development (KGD-EIS), May 1992. According to the U.S. Department of Agriculture's Soil Conservation Service, soils in the area of the wetland are classified as Marsh (MZ). Marsh soils consist of wet, periodically flooded areas predominantly covered with grasses, bulrush, sedges, or other emergent plant life. Field borings conducted on 4 April 1992 by DU and the USFWS confirmed this soil type in the wetland.

3.2 Water Quality

In April 1992, AECOS, Inc. conducted a water quality and biological survey of Kawainui Stream [Hamakua Canal] as it related to the KGDP. The intent was to establish baseline conditions for the stream that could be used to evaluate any long term changes in environmental conditions. In the report, AECOS states the following:

"The data show that Kawainui Stream water quality in the vicinity of the proposed project [KGDP] is very low. The individual values and geometric means for most parameters far exceed the state water quality standards, especially for dissolved nutrients, total nitrogen, phosphorus and Chlorophyll *a*."

AECOS reports that turbidity exceeded state tolerances by 3.8 to 10 times and that all dissolved oxygen concentrations were below the state standard of 75% of saturation value at the given temperature and salinity. Salinity measured in the range of 17 - 24 ppm, meaning the water is brackish.

DU is concerned that, at the time the water was sampled, the condition of the sandbar at the mouth of Kaelepulu Canal was not reported. The status of this bar is significant because it controls water levels in the wetland and Kawainui Canal. When plugged, water backs up, stagnates in the canal, and inundates the wetland. When the sandbar is breached with heavy equipment, the result will be a flushing of stagnant water to the sea. Hypothetically, this flushing action may improve turbidity, Chlorophyll *a*, and dissolved oxygen. AECOS' findings, on 18 November 1992, showed high levels of orthophosphates and total phosphorus

concentrations indicating a pattern of stagnation, a condition that may be consistent with an intact sandbar.

3.3 Hydrology

Although DU has not conducted a formal hydrological survey on the wetland, there are four factors controlling hydrology and water quality in Hamakua Marsh:

- 1) The condition of the Kailua Beach Sandbar
- 2) The tides
- 3) Urban runoff from Coconut Grove and Kailua
- 4) Storm water runoff from the Puu O Ehu Watershed

Kailua Beach Sandbar

Tides, linked with the condition of the Kailua Beach Sandbar is an important hydrologic feature controlling water levels and movements in Hamakua Marsh. The sandbar forms as a result of sand deposition from tidal action and storm waves, as well as siltation from Kaelepulu and Hamakua canals (Photo 1). When formed, the bar blocks drainage from these canals, resulting in a backwatering effect. After an undetermined length of time, water levels rise, inundating Hamakua Marsh. This periodic inundation acts to control invasive weeds but, in turn, impacts waterbird use by reducing available foraging habitat.

Sandbars of this type regularly occur in Hawaii's smaller stream systems. Stochastic storm events result in runoff that blow out these bars, reconnecting streams to the ocean. In order to provide flood protection, the drainage patterns of Kawainui Marsh and Kaelepulu Pond have been significantly altered. The result is that water flow through the existing canals is not capable of breaching the sandbar. The City and County of Honolulu use heavy equipment to periodically breach the sandbar as a flood control measure.

When the sandbar is breached, the canals flush and seek water levels consistent with the tides. Tidal variation does effect water levels in Hamakua Marsh, which are slowly lowered, exposing mudflats and concentrating invertebrates. It is during this period that waterbird use increases, particularly in winter and spring, when migratory shorebirds are searching for exposed flats for foraging.



This inundation/drainage pattern is typical of Hamakua Marsh's annual hydrologic cycle. Rainfall runoff from the watershed and urban areas only acts to increase flow through the system. Although this pattern can be desirable from the standpoint of maintaining a productive wetland ecosystem, timing of the formation and breaching of the sandbar may impact nesting attempts by endangered stilt, coot, koloa and moorhen. Storm water and urban runoff enhance water levels and movements in the wetland, but are not controlling hydrological factors.

Storm Water Runoff

A civil engineering report, prepared by Smith, Young & Associates, on the Puu O Ehu watershed, examined the impacts of runoff in the 89 acre Puu O Ehu watershed (KGD-EIS). In the existing drainage pattern, storm water runoff flows down the hillside into the wetland area. Kawainui Stream drains the wetland to Kaelepulu Stream, and then to the ocean. Peak flow runoff for an average 10 year storm event was reported at 157 cfs (cubic feet per second). During storm events of this magnitude, storm water runoff can be significant to the wetland, particularly if the sandbar is intact (Photo 1). These storm runoff events are important for nutrient recharge and improved water circulation in Hamakua Marsh.

Urban Runoff

There are three, 36" storm water drain outlets on the northeast side of Kawainui Stream, between Hekili Street and Kailua Drive. These outlets release flow into the stream. Other storm drains are connected to Kawainui Stream, upstream of the marsh. Flow from Coconut Grove is continuous due to landscape watering. Storm event runoff increases flow according to storm intensity and duration. Discharge of pesticides, herbicides, and fertilizers may contribute to the canal's water quality problems, particularly orthophosphate, phosphorus and nitrate levels.

3.4 Plant Communities

A vegetation survey was conducted on 4 April 1992 by botanist Clyde Imada, in cooperation with DU biologists. The plant component of Hamakua Marsh indicates its classification as a slightly brackish wetland. No endangered, threatened or candidate plant species were found in the marsh.

Hamakua Canal is bordered along its length by a thick growth of red mangrove (*Rhizophora mangle*), which separates the waterway from the marsh proper. The lowland slopes (not in the wetland) are covered with scattered kiawe (*Prosopis pallida*), Christmas berry (*Schinus terebinthifolius*), fiddlewood (*Citharexylum spinosum*), koa haole (*Leucaena leucocephala*), and occasional Chinese banyan (*Ficus microcarpa*), with a ground layer of alien grasses. A broad band of Indian fleabane (*Pluchea indica*) marks the transition between wet and dry substrates. Pickleweed (*Batis maritima*) forms an herb zone inside the fleabane on flats bordering areas of standing water.

Once in the wetland, typical moist soil emergent plants can be found, many of which are indigenous to the Hawaiian Islands (Appendix I). Scattered mangrove and fleabane are found throughout Basins B,C, and D.

3.5 Plant Associations in Hamakua's Wetland Basins

Basin A (Photo 4)

Basin A is the lowest and wettest of the marsh. It is unique in the wetland due to its uniform cover of batis and paspalum (Photo 4). Interspersion between 70 - 80% has been reached through a steady supply of water in this lowest basin. Small clumps of mangrove and the invasion of fleabane were noted along the perimeter of the basin.

Basin B (Photo 5)

Basin B is the largest basin, with extensive mudflats and a deep pond in its center. Figure 5 depicts a typical cross-section indicating vegetation zones found in the basin. This basin showed a high diversity of wetland plants, and was only marginally invaded by fleabane and mangrove. It has been heavily impacted by cattle grazing. Tips of sedges, grazed off grasses, and deeply rutted paths were present.

Basins C and D (Photo 6)

These basins are characterized by dense stands of fleabane intermixed with batis, young mangrove, sedges and bulrush. *Pluchea* root systems were found to be accumulating silts at a faster rate than typical wetland plants resulting in the filling of this wetland basin (Photo 7). The increased presence of fleabane in these basins indicate that they are higher in elevation than Basins A and B, thus they flood less frequently.

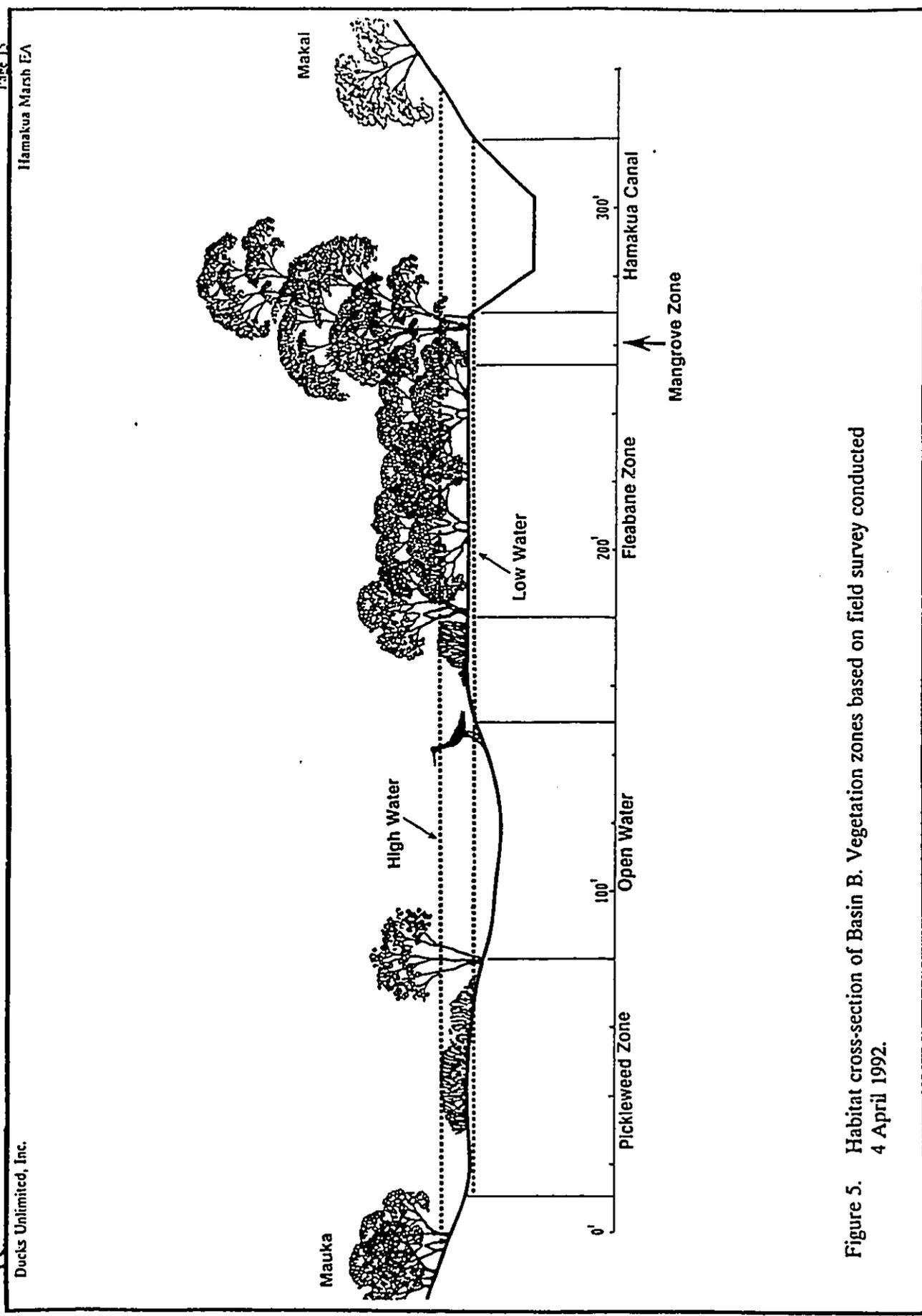


Figure 5. Habitat cross-section of Basin B. Vegetation zones based on field survey conducted 4 April 1992.

C O O



3.6 Wildlife

Waterbird Resources on Hamakua Marsh

Waterbirds on the Hamakua Marsh can be roughly divided into three groups: wintering species, migrants, and resident nesting species (Photo 8). Because of its small size and proximity to urban resources, Hamakua Marsh does not support a large number of birds. Surveys conducted in February 1991, September 1991, April 1992, and June 1992, confirmed the presence of all four of Hawaii's endangered waterbirds (Table 1).

Table 1. Counts of waterbirds present in Hamakua Marsh 1991-1992.

Species	February 1991	September 1991	April 1992	June 1992
Hawaiian Duck	2	0	3	0
Hawaiian Coot	2	2	2	0
Hawaiian Moorhen	2	2	4	1
Hawaiian Stilt	6	4	9	3
Black-crowned Night-Heron	3	2	5	3
Cattle Egret	12	12	22	8
Pacific Golden-Plover	4	0	38	0
Ruddy Turnstone	2	0	12	0
Wandering Tattler	0	0	2	0
Sanderling	0	0	2	0

Endangered Endemic Waterbirds

Hawaiian Duck or Koloa (*Anas wyvilliana*): Federal and State Endangered Species. Rare on windward Oahu where its population has been compromised through hybridization with feral Mallards. At Hamakua, the species has attempted to nest. Last recorded nesting (9 young seen with adult) was on 9 May 1987 (Yuen 1989). Three ducks (probably Koloa X Mallard hybrids) were observed on 4 April 1992.

Hawaiian Moorhen (*Gallinula chloropus sandvicensis*): Federal and State Endangered Species. In the past, fairly common on the site, with known densities reaching 1.8 birds per acre (Nagata 1983). The species is known to breed on the site; the most recent nesting was observed in April 1989 (Yuen 1989).



Hawaiian Coot (*Fulica americana alai*): Federal and State Endangered Species (Photo 9). Fairly common resident in the past, when more habitat was available. Since conditions in the wetland have deteriorated due to invasive upland plants, this species use of the site has dropped. Coot are still observed foraging on the site, but nesting has not been recorded. It is suspected that this species does breed on the site.

Hawaiian Stilt (*Himantopus mexicanus knudseni*): Federal and State Endangered Species. Regularly observed in open, shallow basins on the site. Several pairs have been recorded, with at least two attempting to nest (Yuen 1989). If vegetation is cleared and adequate nesting habitat provided, this species is expected to breed on the wetland.

Resident Waterbirds

Black-crowned Night-Heron (*Nycticorax nycticorax*): Common indigenous resident. Night-herons are regularly observed in Hamakua Marsh, where they feed on aquatic animal life. Moats will provide additional foraging opportunities for this species.

Cattle Egret (*Bubulcus ibis*): Common introduced resident. This species is seen frequenting the wetland and adjacent upland habitat. The Cattle Egret is suspected of being a serious predator on the eggs and young of endangered waterbirds.

Migratory Waterbirds

Although the site is small, its close proximity to Kawainui Marsh and Nuupia Ponds, allows for interchange of migratory and wintering shorebirds and waterfowl.

Migratory waterfowl are not common on the wetland, but are expected to occur once the site is adequately restored, and Kawainui Marsh is restored. Northern Shoveler (*Anas chrypeata*), wigeon, and perhaps Green-winged Teal (*Anas crecca*), might be expected.

Migratory Shorebirds

Currently, portions of Hamakua Marsh are so overgrown that mudflats, which support most species of shorebirds, are absent. Small numbers of shorebirds have been recorded on the site. On 4 April 1992 the following were observed: Pacific Golden Plover (*Pluvialis*

fulva), Ruddy Turnstone (*Arenaria interpres*), Wandering Tattler (*Heteroscelus incanus*), and Sanderling (*Calidris alba*) (Table 1). If managed properly, shorebirds of all types could benefit from the site's restoration. The mudflats and shallow brackish wetlands of Kaneohe Bay support thousands of wintering shorebirds. These birds move about freely searching for optimal foraging conditions. Such conditions can be provided, to a limited degree, on Hamakua Marsh.

Other Wildlife

Surveys of woodlands and grasslands associated with the wetland confirmed the expected alien avifauna that is characteristic of Oahu's lowland habitats (Hawaii Audubon Society 1989). Four bird surveys (February 1991, September 1991, April 1992, and June 1992) were conducted by DU biologists. Simple presence/absence species counts were conducted to assess species richness. The following were observed utilizing the tree vegetation and grassy areas of the marsh.

Table 2. Upland birds observed at Hamakua Marsh 1991-1992.

Species	February 1991	September 1991	April 1992	June 1992
Spotted Dove	X	X	X	X
Zebra Dove	X	X	X	X
Red-vented Bulbul	X	X	X	X
White-rumped Shama			X	X
Northern Mockingbird			X	X
Common Myna	X	X	X	X
Japanese White-eye	X	X	X	X
Northern Cardinal	X	X	X	X
Red-crested Cardinal	X	X	X	X
House Finch	X	X	X	X
House Sparrow	X	X	X	X
Common Waxbill			X	X
Nutmeg Mannikin		X	X	X
Java Sparrow	X	X		



3.7 Waterbird Habitat Requirements

Migration/Wintering - Feeding/Cover

Feeding requirements for Hawaii's waterbirds vary by species, season, sex, and habitat availability. While some species will feed in drier habitat, most prefer to eat "with their feet wet." Optimal foraging depths for Hawaii's waterbirds range from 1 to 16 inches of water. Coot and duck can exploit the deeper water habitats, but all species move freely to locate suitable foraging habitat (Engilis and Pratt 1993).

Weed seeds (from *Batis*, *Paspalum*, sedges, and rushes) are selected by most ducks, coots and moorhen and are high in nutrition for lipids and certain important amino acids. Some waterbirds (coots and some ducks) are grazers, preferring new green vegetative growth. Freshly sprouting grasses and forbs in shallow water, and on uplands surrounding a wetland, are all excellent food sources for these birds.

Invertebrates (insects, snails, worms) are important foods for stilt and moorhen year round, and are particularly important seasonally to coot, ducks and migratory shorebirds. Invertebrates are gleaned from water, vegetation and the soil.

Nesting

Hawaii's breeding waterbirds have three primary habitat needs: 1) a breeding pair territory -- space, high protein food source and a resting or loafing site; 2) nest site -- well vegetated upland area secure from flooding, disturbance, and predators; and 3) brood rearing area -- wetland areas that seldom go dry, are highly interspersed with vegetation and open water; most have gradual, gently-sloping shorelines. The primary threat from predators comes from the Indian Mongoose (Photo 10), an introduced diurnal carnivore.

Habitat at Hamakua has lost, through time, those characteristics sought by waterbirds. Overgrown wetland basins, easy access by predators, limited nesting sites, and human disturbance have all contributed to the site's degradation. DU's planned enhancement, followed by management, is designed to provide optimal foraging, loafing, and nesting habitat for Hawaii's endangered waterbirds.

3.8 Historic and Archaeological Resources

A Phase I archaeological inventory was conducted by International Archaeological Research Institute, Inc. in November 1991. Full findings of the survey can be found in the KGD-EIS. The following is a summary of the abstract and description of site 4428, both from IARI's report.

"The historical study documented the general importance of lands within the immediate vicinity of the project area for traditional Hawaiian activities, especially agriculture. However, there was no specific area for traditional Hawaiian land use on the project parcels. Rice cultivation and livestock grazing characterized the project area during the later half of the 19th century and the 20th century. Four sites were identified during the archaeological survey. These sites, including two platforms, an unidentified structure, and two lithic scatters, are briefly described and their approximate locations are indicated on a map of the project area (Figure 3). Site 4428 is located on the boundary of the wetland (Figure 1). Site 4428 is a possible habitation structure situated in the wetland area 5 - 10' above sea level. It is 50 m northwest of a horse pen. The west side features are aligned at the same bearing and seem almost contiguous except both have definite corners. No marine shell midden or historic artifacts were located, though some basalt flakes were observed."

A more detailed description of the site is included in Appendix E of the KGD-EIS.

Section IV. Impacts

4.1 Water Quality

The enhancement work, particularly vegetation removal and moat construction, will be accomplished when the wetland is dry. As a result, this project will not have a significant impact on the water quality of Hamakua Canal. As upland vegetation is removed, circulation of water in the wetland will be enhanced. The result may be improved dissolved oxygen levels in the wetland and perhaps the upper reach of Hamakua Canal. Water quality will be periodically monitored by DOFAW as a management recommendation.

4.2 Plants

There will be a significant impact on two invasive species occurring in the wetland, fleabane and mangrove. The removal of these plants will encourage regrowth of desired wetland plants such as paspalum grass, pickleweed, sedges, and wigeon grass. In all, wetland vegetation will benefit from this project.

4.3 Wildlife

All four species of endangered waterbirds will benefit from this project in three areas: improved foraging habitat, improved nesting habitat (coots, stilt, and moorhen), and protection from future human perturbations. However, the fact that these species still exist in Hamakua Marsh indicates that they are adaptable to human presence, even in an urban setting. Migratory waterbirds will also benefit from the enhancement of an additional mudflat area that is currently covered by fleabane. Mallards, mongoose, feral cats and rats will be removed from the interior of moated wetland. Management calls for control on these species throughout the wetland. All four alien species have severely impacted Hawaii's native wildlife. The project's benefit/impact on each of the four endangered species is summarized in Tables 3 and 4.

Vegetation removal, if unsupervised, could impact native waterbirds. DU proposes a window of operation from August through October for vegetation removal and moat construction. Waterbird nesting is least likely to occur during this period of time. Since coots, and koloa have shown evidence of a protracted nesting season, DU plans on having a qualified biologist present during enhancement so that incidental take of endangered species can be avoided.

Table 3. Project actions and their impacts on waterbirds using Hamakua Marsh. (+ = Benefit, 0 = No impact, - = Negative impact)

Species	Action 1	Action 2	Action 3	Action 4	Action 5
Hawaiian Duck (Koloa)	+	+	0	+	+
Hawaiian Moorhen	+	+	+	+	0
Hawaiian Coot	+	+	+	+	0
Hawaiian Stilt	+	+	+	+	0
Migratory Shorebirds	+	+	0	+	0
Migratory Ducks	+	+	0	+	0

Action 1: Vegetation Removal of Indian Fleabane and Mangrove to open basins for foraging habitat and loafing.
Action 2: Predator moat to restrict mongoose, cats and rats from interior of wetland basins for protection of waterbirds nesting, feeding or loafing.

Action 3: Predator control and removal to eliminate the threat of predation on young and nesting waterbirds, affects only those species expected to nest on the site.

Action 4: Removal and control of mallards to eliminate possibility of hybridization with koloa.

Action 5: Mauka 100' minimum buffer zone to protect the wetland from human disturbance.

Table 4. Project Benefits to native waterbirds on Hamakua Marsh

Species	Loafing	Foraging	Nesting	Brood Rearing
Hawaiian Duck	+	+	0	0
Hawaiian Stilt	+	+	+	+
Hawaiian Moorhen	+	+	+	+
Hawaiian Coot	+	+	+	+
Mig. Shorebirds	+	+	0	0
Mig. Ducks	+	+	0	0

Incidental take during construction, based on disturbance, can be argued. A temporary disturbance to waterbirds utilizing the wetland during enhancement activities cannot be avoided. Hawaiian coot, duck, and stilt are highly adaptable and freely move to locate suitable habitat (Engilis and Pratt in press). Although there is little evidence of dispersal patterns for moorhen, Nagata (1983) does suggest that this species, too, will freely disperse to find suitable habitat. After restoration is completed, displaced waterbirds are expected to return to the wetland. DU's proposal to limit the timing of the work, and to closely supervise it, can provide checks on disturbance, particularly for moorhen. DU believes that the long term gains of protecting the wetland, enhancing the habitat and long-term management far offset the short term disturbances on the waterbirds.

4.4 Noise

During enhancement work, heavy equipment will increase noise in the Hamakua Drive area. Some residents may be aware of this, but the short duration of this work, less than 4 weeks, should not present a major impact.

4.5 Air Quality

Air quality will not be impacted by this project.

4.6 Historic and Archaeological Resources

DU foresees no impact on archaeological resources in the wetland. In order to mitigate activities related to moat construction, DU proposes two actions:

- 1) DU will establish a buffer zone around archaeological site 4428. This zone will exclude heavy equipment activities during moat construction and will account for equipment turning radius. This buffer zone will be visibly staked and equipment activity will be monitored by DU staff.
- 2) DU will conduct a paleoenvironmental analysis. A core will be taken from a location impacted by moat construction within the wetland basin. Analysis of pollen and radio-carbon dating will be conducted in order to examine paleoenvironmental conditions in sediment layers of the wetland basin. The analysis will be performed by qualified research specialists utilizing appropriate equipment.



4.7 Flood Control

The fact that Hamakua Marsh conveys water during times of high rains, acting as a floodway cannot be overlooked. The project as designed will improve the conveyance of water through vegetation removal. The subsurface soils will not be disturbed and the over all topography will remain unaltered. The project will not create any blockages or other restrictions to impact the marshes ability to convey water.

Section V. Relationship of the Proposed Project to Existing Public Plans, Policies and Controls

5.1 Federal

DU will be applying for a Section 10 Permit through the Army Corps of Engineers' Pacific Ocean Division. Through this process, ACE will be consulting, under section 7, with the USFWS, if the proposed actions affect listed species. The Hawaiian Waterbird Recovery Plan identifies Hamakua Marsh as a wetland of high priority for protection. The acquisition and enhancement of Hamakua Marsh is consistent in carrying out the goals set forth in this plan.

5.2 State

This project is consistent with the Hawaii State Plan (Chapter 226, Hawaii Revised Statutes, as amended). Section 226-11 Physical Environment calls for: 1) "prudent use of Hawaii's land-based shoreline and marine resources;" 2) "effective protection of Hawaii's unique and fragile environmental resources;" and 3) "to encourage the protection of rare and endangered plant and animal species and habitats native to Hawaii." The proposed wetland improvements will support these objectives and adhere to relevant policies by providing an enhanced wetland ecosystem and protection from predators for four endemic, endangered waterbird species. The educational value of the wetlands will also be enhanced via the proposed interpretive displays.

State functional plans, including the wildlife plan and conservation lands functional plan, call for protection of rare and natural resources. The protection of this wetland is consistent with this goal.

5.3 City and County of Honolulu

The City General Plan calls for the protection of plants, birds, and other animals that are unique to the State of Hawaii and the Island of Oahu (Objective A, Policy 8). Wetland enhancement will provide a protected and valuable habitat for four endangered waterbirds. The proximity of the wetland to the town of Kailua will provide an opportunity for wildlife observation and education, particularly for school children.

Located within a Special Management Area (SMA), zoned Preservation (General), this project requires a SMA use permit from the City and County of Honolulu. The project will be managed by DLNR as a wildlife sanctuary, which is consistent with SMA land uses.

Section VI. Management

6.1 Management Goals

This management plan represents a series of recommendations that focus on problems in two areas: habitat restoration and area management. The specific purpose of this plan is to provide guidance and suggestions to restore and enhance quality wetland habitat of the Hamakua Wetland, but the principles could be applied to other Hawaiian wetland areas.

This plan is not intended to be a comprehensive wildlife management plan. It focuses on restoring a quality marsh benefiting native, endangered, resident, and migratory waterbirds.

The plan has been developed for the Kaneohe Ranch (Castle Estate) and the Hawaii Division of Forestry and Wildlife as part of a cooperative venture to restore wetlands on the island of Oahu. This is not intended as a static plan. Instead, as predator control, vegetation control, and public use activities are developed, modifications to this plan will be necessary to improve proper long-term protection of the site.

Hawaii Division of Forestry and Wildlife will:

- 1) Manage the wetland as a state wildlife sanctuary.
- 2) Implement habitat management through vegetation control and periodic water quality analysis.
- 3) Remove, to the best of their ability, mammalian predators from within moated areas of the wetland. Maintain predator control programs within the wetland to reduce predation by feral dogs, cats, and mongoose.
- 4) Maintain moats through vegetation control.
- 5) Implement control program for all Mallards and other domestic ducks found on the property.
- 6) Develop and install information kiosk and interpretive panels for public education. If desired, design and fund a marsh boardwalk.

6.2 Management Recommendations

Predator control will be imperative in order to maintain nesting populations of endemic waterbirds. DOFAW will periodically monitor rat, cat, dog, and mongoose populations at the project site. A control program will be instituted to keep predator populations low.

Continued removal of reseeded mangrove will be necessary. Periodic site visits to remove seeds, and seedling mangrove will be required. The frequency of these visits will be agreed upon by DOFAW and DU. DOFAW could involve volunteers from the community to help with removal of mangrove seedlings.

During periodic site visits, the area should be policed for trash. Volunteers from the Kailua Town could assist in trash clean-up within the wetland.

Mallards will be controlled in Hamakua Marsh through trapping or other means. Mallards present hybridization problems with native Koloa (Engilis and Pratt 1993). Other exotic waterfowl, Peking, Muscovy ducks, or other ornamental species will also be controlled.

Stabilized water levels are expected to encourage the growth of desired emergent wetland plants. No additional seeding will be necessary. Instead, those wetland plants represented in the existing seed bank will be encouraged to grow through stabilized water levels and upland plant control. Dry-season evaporation will expose portions of the marsh allowing moist-soil species to germinate. Wetland annuals and perennials are expected to thrive. Water level management will not be a factor in maintaining this wetland.

Wetland basin vegetation is expected to grow beyond our desired interspersion of 70%. We estimate that vegetation control efforts in the basins will be required every 2-3 years. DU will provide technical assistance to DOFAW in developing a vegetation control management scheme. It is anticipated that mowing may be the desired vegetation control practice. The technique best suited to this wetland will become more apparent once the wetland has been allowed to function for a period of time.

In order to maintain the predator control character of moats, periodic vegetation removal will be required. This can be done economically and efficiently through the use of EPA approved aquatic vegetation herbicides. Periodic dredging of the moats will also be required in order to maintain desired water depths, but this action is not expected to be an annual cost.



The wetland will be monitored annually to judge the degree of vegetation growth. This proactive monitoring should allow DOFAW to keep up with management duties. DOFAW will establish the criteria for the monitoring program and will consult with DU in the effort.

Water levels in the marsh will be monitored using staff gauges. DOFAW will coordinate with the City and County of Honolulu as to the timing of the management of Kailua Beach sandbar. Seasonal formation and breaching of this sandbar may impact waterbird nesting on the marsh.

Monitor waterbird populations and the degree of nesting success in order to determine the effectiveness of the management program. DOFAW and DU will agree upon criteria used to evaluate the management program.

DOFAW will be managing this wetland as a state wildlife sanctuary. DOFAW will, to the best of their ability, control human access into the wetland. Bird watchers, school children, and nature groups may view wildlife from an interpretive overlook planned for the buffer area and along Hamakua Drive, but will be excluded from directly walking into core habitat areas.

The Hamakua Marsh provides excellent opportunities for natural history education and interpretation. Endangered waterbirds and migratory birds can be regularly seen in the marsh. A visitor's kiosk with interpretive panels will be established on the Hamakua Drive frontage. In 1992, DU, Kaneohe Ranch, and DOFAW will jointly agree on construction and production of these signs. The feasibility of developing a hiking trail along the buffer zone will be explored between Kaneohe Ranch and DU. A visitor's kiosk could be placed on this side of the wetland as well. In the future, the trail could support an interpretive walk. Future funding will need to be secured for these additional enhancements.

DOFAW will maintain the interpretive kiosk along Hamakua Drive. Arrangements for managing the interpretive areas in the buffer zone need to be established.

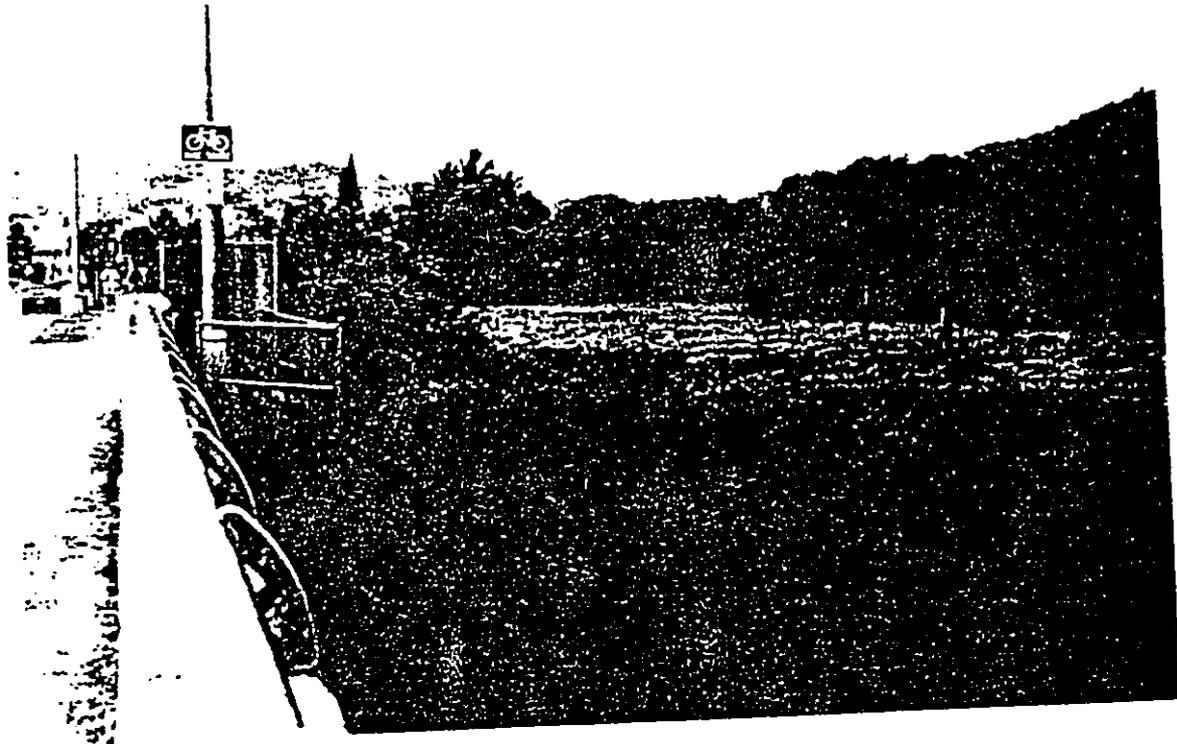
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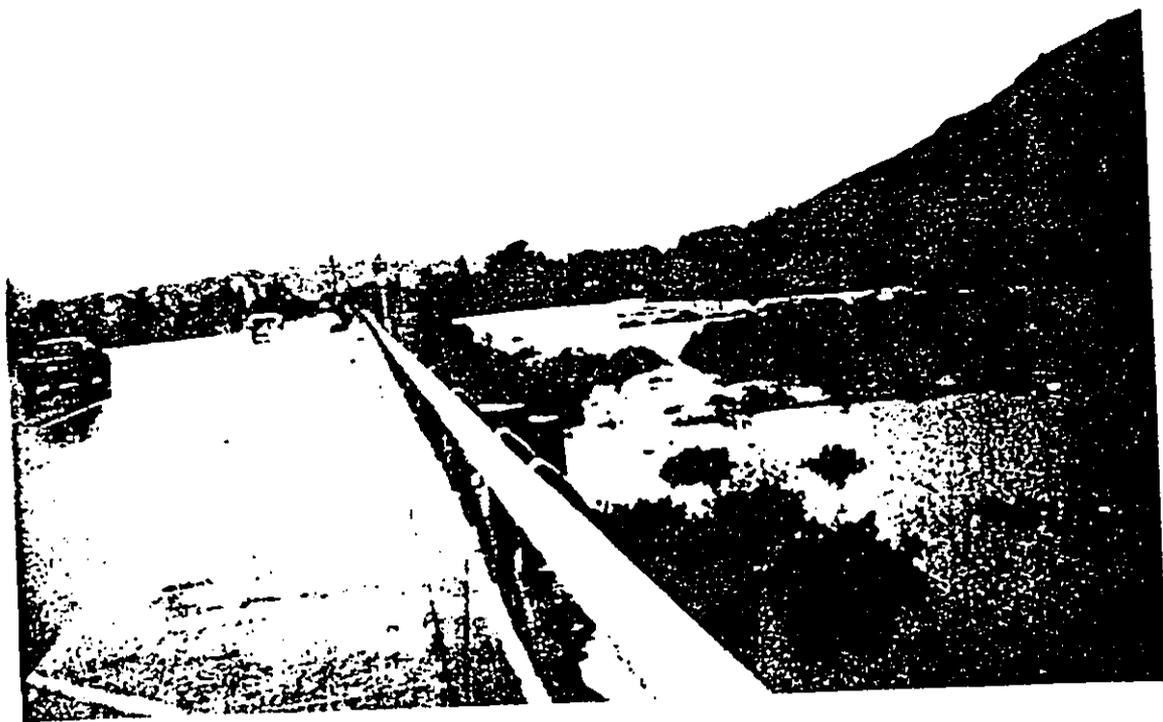
APPENDIX I
PHOTOGRAPHS



Photograph 1. Sandbar blocking mouth of Kaelepulu Canal, Kailua Beach Park, Oahu.
(Photo by F.A. Reid.)

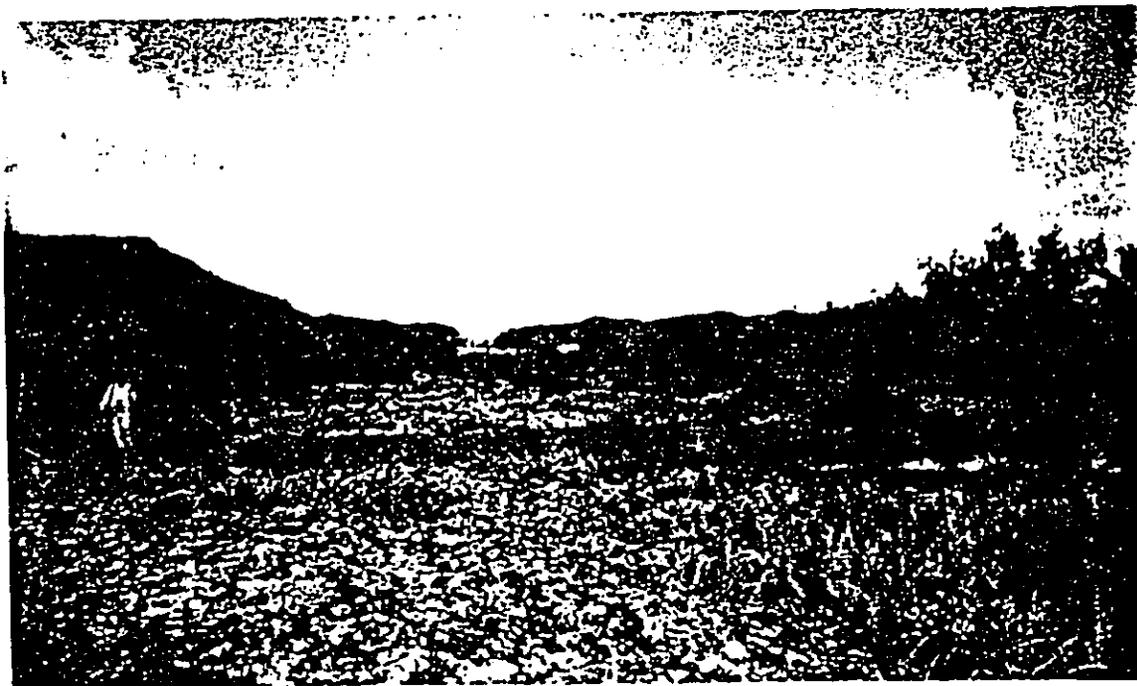


Photographs 2 and 3. Hamakua Marsh water levels when sandbar is breached (top photo) and during storm event, sandbar intact (bottom photo). (Top photo by A. Englis, Jr. Bottom photo by A. Yuen).





Photograph 4. Basin A, Hamakua Marsh. Dark green wetland vegetation is seashore paspalum, light green is pickleweed. (Photo by F.A. Reid.)



Photograph 5. Basin B, Hamakua Marsh. Note open mudflats of pickleweed and other succulent plants and permanent pond. A cattle path is located on the lower right corner of the photo. (Photo by A. Engilis, Jr.)



Photograph 6. Basins C and D, Hamakua Marsh. These basins are heavily intruded with Indian fleabane. Note solitary mangroves in the center of the basins. These basins will require vegetation removal to re-establish desired wetland habitat. (Photo by A. Engilis, Jr.)



Photograph 7. Basin D, Hamakua Marsh. Root mats of Indian fleabane accelerate siltation of the marsh. Note raised soils around each plant. (Photo by A. Engilis, Jr.)



Photograph 8. A mix of waterbirds common in Hawaiian wetlands. The ducks are northern pintail (a winter visitor), the small white shorebirds are sanderling (a common winter visitor). Hawaiian coot and Hawaiian stilt are present in the foreground. American wigeon, Pacific golden-plover, long-billed dowitcher and dunlin are also present. (Photo by S. Berendzen, Kii Ponds, Oahu.)



Photograph 9. A close-up of the Hawaiian coot. With an estimated population of over 2,000 birds, this species is endangered.



Photograph 10. Indian mongoose. This introduced mammal is an efficient predator on the eggs and young of Hawaiian waterbirds.

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APPENDIX II
VEGETATION SURVEY

Key to the short lists of wetland plants of Hāmākua Marsh, Kaitua

Native? category (from Wagner et al. 1990)

- ind Indigenous: species that occur naturally in the Hawaiian Islands but are also native to areas outside of Hawai'i
- nat? Questionably naturalized: species probably naturalized, but for which the recorded date of introduction is very early in Hawaiian history, or for which the habitat is such that the species may well have been dispersed to Hawai'i long ago by agents other than humans and thus should be considered indigenous

Note: All remaining species on this list are considered naturalized (species introduced directly or indirectly by man).

Indicator category (from Reed 1988)

- OBL Obligate wetland: species that occur almost always (est. probability >99%) under natural conditions in wetlands
- FACW Facultative wetland: species usually occurring in wetlands (est. probability 67–99%), but occasionally found in nonwetlands
- FAC Facultative: species equally likely to occur in wetlands or nonwetlands (est. probability 34–66%)
- FACU Facultative upland: species usually occurring in nonwetlands (est. probability 67–99%), but occasionally found in wetlands (est. probability 1–33%)
- NI No indicator: species for which insufficient information was available to determine indicator status
- * Asterisk: indicates tentative assignments based on limited information
- Negative: indicates a frequency toward the lower end of the category (less frequently found in wetlands)
- + Positive: indicates a frequency toward the higher end of the category (more frequently found in wetlands)

Note: The Indicator categories do not refer to the degree of wetness. For example, obligate wetland species can occur in permanently flooded areas, or they may occur in areas that are only seasonally flooded. Facultative upland species can include weedy species that are adapted to environmentally stressful or disturbed sites (including wetlands), or species in which an ecotype always occurs in wetlands. Both the weedy species and the ecotype can occur in seasonally or semipermanently flooded wetlands.

Scientific nomenclature of listed species follows Wagner et al. 1990 where possible, except in the cases of *Pluchea carolinensis* (listed as *P. symphyifolia* (Mill.) Gillis in the *Manual*), and *Eclipta prostrata* (listed as *E. alba* (L.) Hassk.); in both cases, Wagner, subsequent to the *Manual* publication, re-identified the Bishop Museum herbarium specimens, and the more recent names are used here. Nomenclature for *Azolla filiculoides* and *Nelumbo nucifera*, species not included in the *Manual*, were taken from Neal (1965).

Wetland/Upland Category

These categories indicate in broad terms whether the species was observed in wet habitats (i.e. standing water, pond margins, depressions), or in typically dry habitats (i.e. uplands, pond levees), or both.

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Short list of plants of Hāmākua Marsh, Kailua, O'ahu, Hawai'i—4 April 1992

MONOCOTS

Family	Scientific name	Common name	Native?	Indicator	Wetland	Upland
Cyperaceae	<i>Bolboschoenus maritimus</i> (L.) Palla subsp. paludosus (A. Nels.) T. Koyama	Bulrush, kaluhā	ind	OBL	x	
	unidentified sedge (sterile)		?	OBL	x	
Poaceae	<i>Bracharia mutica</i> (Forsk.) Stapf	California grass		FACW		x
	<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass		FACU		x
	<i>Digitaria insularis</i> (L.) Mez ex Ekman	Sourgrass		FACU		x
	cf. <i>Paspalum vaginatum</i> Sw. (sterile)	Seashore paspalum		FACW+	x	
Ruppiaceae	<i>Ruppia maritima</i> L.	Ditchgrass	ind	OBL	x	

DICOTS

Family	Scientific name	Common name	Native?	Indicator	Wetland	Upland
Acanthaceae	<i>Ruellia prostrata</i> Poir.			FAC		x
Aizoaceae	<i>Sesuvium portulacastrum</i> (L.) L.	'Ākulikuli	ind	FAC	x	
Amaranthaceae	<i>Achyranthes aspera</i> L. var. <i>aspera</i>			---		x
	<i>Amaranthus spinosus</i> L.	Spiny amaranth		FACU-		x
Anacardiaceae	<i>Schinus terebinthifolius</i> Raddi	Christmas berry		FACU-		x
Asteraceae	<i>Ageratum conyzoides</i> L.	Maile hohono		FAC*		x
	<i>Conyza bonariensis</i> (L.) Cronq.	Hairy horseweed		---		x
	<i>Pluchea carolinensis</i> (Jacq.) G. Don	Sourbush		FAC*		x
	<i>Pluchea indica</i> (L.) Less.	Indian fleabane		FAC*	x	x
	<i>Xanthium strumarium</i> L. var. <i>canadense</i> (Mill.) Torr. & A. Gray	Cocklebur		FACU		x

Family	Scientific name	Common name	Native?	Indicator	Wetland	Upland
Bataceae	<i>Batis maritima</i> L.	Pickleweed		OBL	x	
Bignoniaceae	<i>Spathodea campanulata</i> P. Beauv.	African tulip tree		—		x
Brassicaceae	<i>Lepidium virginicum</i> L.	Pepperwort		—		x
Caryophyllaceae	<i>Spergularia marina</i> (L.) Griseb.	Saltmarsh sand spurry		FAC	x	
Convolvulaceae	<i>Ipomoea obscura</i> (L.) Ker-Gawl.			—		x
Euphorbiaceae	<i>Ricinus communis</i> L.	Castor bean		FACU		x
Fabaceae	<i>Acacia farnesiana</i> (L.) Willd.	Klu		—		x
	<i>Desmanthus virgatus</i> (L.) Willd.	Slender mimosa		FACU*		x
	<i>Indigofera suffruticosa</i> Mill.	Indigo		—		x
	<i>Leucaena leucocephala</i> (Lam.) de Wit	Koa haole		—		x
	<i>Mimosa pudica</i> L. var. <i>unijuga</i> (Duchass. & Walp.) Griseb.	Sensitive plant		FACU		x
	<i>Prosopis pallida</i> (Humb. & Bonpl. ex Willd.) Kunth	Kiawe		FACU-		x
	<i>Senna occidentalis</i> (L.) Link	Coffee senna		—		x
	<i>Senna surratensis</i> (N. L. Burm.) H. Irwin & Barneby	Kolomona		—		x
Lamiaceae	<i>Hyptis pectinata</i> (L.) Poit.	Comb hyptis		NI		x
	<i>Ocimum gratissimum</i> L.	Basil		—		x
Malvaceae	<i>Abutilon grandifolium</i> (Willd.) Sweet	Hairy abutilon		—		x
	<i>Malvastrum coromandelianum</i> (L.) Garcke subsp. <i>coromandelianum</i>	False mallow		FACU		x
	<i>Sida rhombifolia</i> L.			FACU		x
	<i>Sida spinosa</i> L.	Prickly sida		NI		x

Family	Scientific name	Common name	Native?	Indicator	Wetland	Upland
Moraceae	<i>Ficus microcarpa</i> L. fil.	Chinese banyan		—		x
Rhizophoraceae	<i>Rhizophora mangle</i> L.	American mangrove, red mangrove	.	OBL	x	
Scrophulariaceae	<i>Bacopa monnieri</i> (L.) Wettst.	Water hyssop	ind	OBL	x	
Tiliaceae	<i>Triumfetta rhomboidea</i> Jacq.	Burbush		—		x
Verbenaceae	<i>Citharexylum spinosum</i> L.	Fiddlewood		—		x
	<i>Lantana camara</i> L.	Lantana		—		x
	<i>Stachytarpheta jamaicensis</i> (L.) Vahl	Jamaica vervain		FACU*		x
	<i>Stachytarpheta urticifolia</i> (Salisb.) Sims			FAC*		x
	<i>Verbena litoralis</i> Kunth	Vervain		—		x

Hāmākua Marsh Characterization

Hāmākua Marsh is positioned between a slow-moving brackish waterway on its seaward side and dry lowland slopes landward. The waterway is bordered along its length by a thick growth of red mangrove (*Rhizophora mangle*), which separates the waterway from the marsh proper. The lowland slopes are covered with scattered *kiawe* (*Prosopis pallida*), Christmas berry (*Schinus terebinthifolius*), fiddlewood (*Citharexylum spinosum*), *koa haole* (*Leucaena leucocephala*), and occasional large Chinese banyan (*Ficus microcarpa*), with a ground layer of alien grasses. A broad band of sourbush (*Pluchea indica*) marks the transition between wet and dry substrates. Pickleweed (*Batis maritima*) forms a herb zone inside of the *Pluchea*, immediately bordering areas of standing water. Common indigenous species include bulrush (*Bolboschoenus maritimus* subsp. *paludosus*), water hyssop (*Bacopa monnieri*), and ditchgrass (*Ruppia maritima*); 'ākulikuli (*Sesuvium portulacastrum*) is occasional. In mudflat areas, *Pluchea* shrubs are mixed with *Batis* clumps, *Bolboschoenus*, and scattered *Rhizophora*. Emergent vegetation is dominated by seashore paspalum (*Paspalum vaginatum*) (identification uncertain due to sterile material), *Bacopa*, and *Ruppia*.



APPENDIX III

ENVIRONMENTAL ASSESSMENT COMMENTS AND RESPONSES

FU



OFFICE OF STATE PLANNING

Office of the Governor

MAILING ADDRESS: P.O. BOX 3540, HONOLULU, HAWAII 96811-3540
STREET ADDRESS: 250 SOUTH HOTEL STREET, 4TH FLOOR
TELEPHONE: (808) 587-2846, 587-2800

FAX: Director's Office 587-2848
Planning Division 587-2824

Ref. No. P-3628

'92 OCT 14 P3:24 October 9, 1992

FORESTRY AND WILDLIFE
STATE OF HAWAII

RECEIVED
92 OCT 13 A 8: 02
DEPT. of Land & NATURAL RESOURCES
STATE OF HAWAII

MEMORANDUM

TO: The Honorable William W. Paty, Chairperson
Department of Land and Natural Resources

ATTN: Mr. Ron Walker
Division of Forestry and Wildlife

SUBJECT: Hamakua Wetland Protection Project, Kailua, Oahu

The Hamakua Wetland Protection Project, Kailua, Oahu, TMK:4-2-01; 4-2-03-17 (por.) is a joint project between the Department of Land and Natural Resources' Division of Forestry and Wildlife and Ducks Unlimited, Inc., a private conservation organization, on lands being donated to Ducks Unlimited, Inc., by Kaneohe Ranch, Ltd. Funding is being provided by the State and USFWS. Ducks Unlimited, Inc., will restore the wetland to a functional ecosystem and enhance waterbird habitat. Once completed, the site will then be donated to the State of Hawaii for management as a State wildlife sanctuary.

We have reviewed the Environmental Assessment, Enhancement and Management Plan and have the following comments. Hamakua Wetland has been identified in the Draft State Land Use District Boundary Review Report for Oahu as providing habitat for endangered Hawaiian waterbirds. As such, it is part of a larger Priority 1 recommendation, the Kawainui Complex, for reclassification from the Urban to Conservation District. The project objective is consistent with the resource values identified through the boundary review project. Upon project completion, the resource values will be increased.

Thank you for the opportunity to comment.

Harold S. Masumoto
Director

COPY

DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife

MEMORANDUM

September 29, 1992

TO: Office of State Planning

FROM: Ron Walker *RW*

THROUGH: Michael Buck *M. Buck*

SUBJECT: Hamakua Wetland Project

The enclosed Environmental Assessment, Enhancement and Management Plan for the Hamakua Wetland Protection Project, Kailua, Honolulu County, Oahu is a joint project of this Division and Ducks Unlimited Inc., a private conservation organization. A Private landowner (Kaneohe Ranch Ltd.) is donating the parcel to Ducks Unlimited Inc., which will supervise improvements to the wetland area to enhance habitat for four species of endangered waterbirds. Funding will be obtained from the State of Hawaii and U.S. Fish and Wildlife Service under a grant-in-aid program (Coastal Wetlands). Upon completion of the improvements the site will be donated to the State of Hawaii for management as a State Wildlife Sanctuary under a Governors Executive Order and an administrative rule.

Although your office has already received a project proposal through the Clearing House procedure and certified that it is consistent with CZM, the State Land Use Commission has suggested that you be provided with any information which may be helpful in the State land use reclassification project you are currently involved with (See attached).

Your review and comments on the Environmental Assessment would also be useful to us in proceeding with this project.

Enclosures

JOHN WAINET
GOVERNOR OF HAWAII

RECEIVED

02 SEP 17 12:19



STATE OF HAWAII

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

92 OCT 14 P3:22

WILLIAM W. FAY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

JOHN P. KEPPELER, II
DONA L. HANAIKE

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT CONVEYANCES
FORESTRY AND WILDLIFE HISTORIC PRESERVATION PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife

September 14, 1992

MEMORANDUM

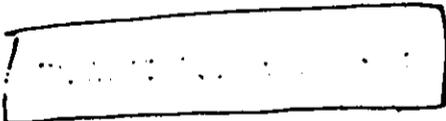
TO: Division of Water and Land Development
FROM: Ron Walker *RW* THROUGH: Michael Buck, Administrator *M. Buck*
SUBJECT: Hamakua Wetland Project

The enclosed Environmental Assessment, Enhancement and Management Plan for the Hamakua Wetland Protection Project, Kailua, Honolulu County, Oahu is a joint project of this Division and Ducks Unlimited Inc., a private conservation organization. A private landowner (Kaneohe Ranch) is donating the parcel to Ducks Unlimited Inc., which will supervise improvements to the wetland area to enhance habitat for four species of endangered waterbirds. Funding will be obtained from the State of Hawaii and U.S. Fish and Wildlife Service under a grant-in-aid program (Coastal Wetlands). Upon completion of the improvements the site will be donated to the State of Hawaii for protection and management in perpetuity. It will be designated a State Wildlife Sanctuary under a Governors Executive Order and administrative rule.

This is to request your review, consideration and comments on the project as it might pertain to your area of responsibility. We would particularly appreciate your technical advice on the feasibility of the project with respect to drainage, hydrology and water quality.

As this project is due for implementation in October, 1992, we would appreciate your attention to this proposal as soon as convenient.

Enclosure



[Signature]
MANABU TAGOMORI
OCT 13 1992

JOHN WAINEL
GOVERNOR OF HAWAII



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

WILLIAM W. PATE, CHAIRPERSON
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JOHN P. KEPPELER, II
DONA L. HANA'IKE

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HISTORIC PRESERVATION
PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

February 16, 1993

Ms. Donna Wong
Executive Director
Hawaii's Thousand Friends
305 Hahani St. #282
Kailua, Hawaii 96734

Dear Ms. Wong:

This responds to your letter of September 30, 1992 regarding the Hamakua Wetland Protection and Enhancement Project.

Figures showing the location of the proposed moat and a cross-section of the dimensions of the moat are enclosed for your information. The intent of the project is to benefit the needs of all four species of endangered waterbirds. I've also enclosed tables which depict project actions and impacts on each species and how habitat enhancement would benefit them. The exact habitat design for each species will need to be preceded by a detailed topographic survey which is part of the project. Then, precise specifications can be determined. The designs will be worked out in close coordination with the U.S. Fish and Wildlife Service which has extensive experience with designs which benefit specific birds. Both the vegetative removal and soil removal for moats will be conducted during dry conditions to avoid impacts on water quality. Both the removed vegetation and spoil material will be placed on upland habitat near the old quarry site on the adjacent hillside (see enclosed Figure 3).

All requirements of the U.S. Army Corps of Engineers, the Clean Water Act, the State Coastal Zone Management Act, County grading ordinances and other water quality regulatory processes will be complied with. There are no anticipated siltation or erosion problems associated with this project. We are not going to alter the depth of the water or marsh and no fill will be placed in the wetland. The primary action will be to remove vegetation which is choking the wetland habitat. The wetlands will be maintained by periodically removing encroaching vegetation.

Neither the State of Hawaii or Ducks Unlimited Inc. has the resources to conduct a comprehensive cultural or archeological survey of the project site and vicinity, particularly if it were to cover the larger community including Kawai Nui and Kaelepulu. The entire cash budget for this project is \$103,900 which is to cover all planning, design and improvements. The State Historic Preservation Office has determined that the proposed paleoenvironmental study to be

2.

conducted will fulfill the data needs for a full determination of the cultural relationships as Hawaii's Thousand Friends recommends (see enclosed memorandum).

For your convenience and reference, I'm enclosing a copy of the Environmental Assessment/Management Plan. If you have further concerns or questions, please advise by phone (587-0166) or to this address. Thank you for your detailed analysis and support of this project.

Sincerely Yours



Ronald L. Walker
Wildlife Program Manager

cc:Ducks Unlimited Inc.

Hawaii's Thousand Friends
305 Hahanl St., #282
Kailua, HI 96734

RECEIVED

September 30, 1992

'92 OCT -7 P1:52

Dep't. of Land & Natural Resources
Ronald L Walker
1151 Punchbowl St.
Honolulu, HI 96813

FOFLETS
STATE

RE: Hamakua Wetland Protection and Enhancement Project.

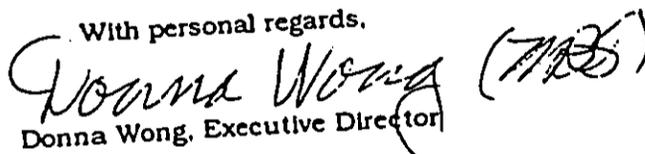
Dear Mr. Walker:

We congratulate you for an innovative effort to resolve endangered specie habitat problems in the Pu'u 'o 'Ehu Wetlands (Hamakua) of Kailua, Ko'olaupoko. Unfortunately, we believe there are unresolved questions before the project begins. Where is the proposed moat to be constructed following removal of 2,400 cubic yards of fill? Referenced Figure 2 (proposed Kailua Gateway Development project) shows no details. To what depths will the area be dredged? What area of habitat is allocated to the needs of each of the four endangered waterbird species? Where? Mapping is critical to public understanding of the nature of disruption being proposed for existing endangered species habitat. Where is the upland disposal site; will other sensitive areas be impacted?

Two of the species (gallinule, stilt), we are told, prefer shallow water levels; one (Hawaiian duck), we understand, prefers deeper running water; while the coot, we are advised, prefers deeper waters. All are ground nesters, apparently, but differing water needs should be spelled out. How will water quality and water levels be protected during activities leading to enhancement? Is the Clean Water Act applied to the planning process? How? How will maintenance of new configurations in the wetlands be facilitated? Is Hawaii's Coastal Zone Management Law being followed?

In the OEQC Bulletin notice, we see no mention that archaeological recommendations (pages 37 and 38 of studies conducted for the project's EIS) will be followed. We request that future cultural investigations include site investigations prompted by references to the makaha control near the Davis Building, and configuration of 'auwai, contained in Hawaiian Fishponds (Catherine Summers, pp. 21,22); as well as for a low wall referenced in Sites of Oahu (Sterling & Summers, p. 232), and that the significance of the whole area in cultural terms, since the area was still known in this century as "Walauia," a royal residence ((p. 230). As noted in the archaeological report, Site 4428 lies within the designated wetlands with the possibility expressed that "additional sites may also be present here." In addition, paleoenvironmental studies were urged for any of the wetland where disturbance is anticipated, as "prehistoric cultural deposits may be present." Sites here are certainly linked to the greater Kawalnui Cultural, Historic and Archaeological District, eligible for listing in the National Register (within the Kawalnui Primary Area), for which planning is now underway. We look forward to receiving the above-requested information in advance of the laudable efforts to enhance the Pu'u 'o 'Ehu Wetlands wildlife habitat.

With personal regards,


Donna Wong, Executive Director

cc: The Office of Environmental Quality, HI Coastal Zone Management; Ducks Unlimited

JOHN MAHLE
GOVERNOR OF HAWAII



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



DEPUTIES

JOHN P. KEPPELER, II
DONA L. MANAIKE

AQUACULTURE DEVELOPMENT
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

February 17, 1993

Dr. John T. Harrison
Environmental Coordinator
Environmental Center
University of Hawaii
Crawford 317
2550 Campus Road
Honolulu, Hawaii 96822

Dear John:

This responds to your letter of October 7, 1992 in which you comment on the Draft Environmental Assessment for the Hamakua Wetland Project in Kailua on Oahu.

Your finding that a full Environment Impact Statement is required for this project presents some extreme difficulties for the agencies involved. To conduct the necessary studies of the flushing effects of breaching the sand bar, the hydraulic characteristics of the water system as related to water quality, paleoenvironmental relationships using several corings, and detailed site characteristics and consequences of the proposed action would take far more resources than presently exist. Just the preparation of a full EIS could use up all available funding. The entire cash budget for this project is \$103,900 which is to cover all studies, assessments, planning, design and improvements.

The basis for your determination that a full EIS is required may be technically correct in that there will be impacts on endangered species, the project does involve a sensitive area (wetland), and it represents a substantial investment of State resources (although the majority will be the "in-kind" value of the land). At present the Hamakua canal and adjacent wetlands is a severely degraded environment which is overgrown with exotic vegetation which diminishes open wetland, a habitat for rodents and mongooses attracted to food debris, subject to drainages of possibly toxic substances from the adjacent industrial and commercial area and polluted by animal (cattle) wastes. This project is intended to ameliorate these negative impacts. The actions proposed include reducing the amount of weed plants, developing moats to separate the wetlands from fastland and removing trash and garbage from the site. The removal of vegetation and digging of the moats will take place during dry weather to minimize effects on water quality. Spoil material will be deposited off site. We do not believe that these actions will have a significant impact on the environment, at least in a negative sense.

We will correct the draft EA to clear up the impression that the project site will continue to be owned by Kaneohe Ranch and explain that final ownership will rest with the State of Hawaii. The intent was to show how positive benefits can accrue to the environment when a private landowner donates land to a private conservation organization which, in turn, deeds the improved area over to a State agency.

The discrepancy involving the width of the buffer zone will be cleared up as well. There may be some confusion over whether the reference is to buffer areas within the wetland project boundaries or on the adjacent hillside outside the project site.

While it might be beneficial in terms of maximizing wetland habitat, removal of all fleabane and mangrove and replacing it with native species is beyond the capacity of the cooperators at this time, funds being limited. Also, leaving a strip of such vegetation for the time being affords a visual barrier to prevent disturbance to wildlife from the adjacent urban area. We recognize that leaving some of this vegetation provides a nursery for subsequent plant reinvasion and would require periodic maintenance. Your recommendation is excellent and we will attempt to implement it for long term management, given future resources to do so.

Admittedly, our statement that the sandbar blockage and clearing has effects on the Hamakua canal drainage is based on assumptions and anecdotal information, not empirical evidence. However, as stated previously, to conduct a definitive study of this phenomenon would be beyond the scope of this project in terms of available funding.

Your comments on the desirability of having an archeologist present during all earthmoving operations and multiple corings are well made. However, this was not a recommendation of the State Historic Preservation Office which has stated that the paleoenvironmental study which is to be carried out will be satisfactory for this project. They point out that there is considerable historical and cultural material available on the Ka'elepulu-Kawai Nui area which can be used to avoid impacts.

The management activities (including predator control) will be carried out by the Division of Forestry and Wildlife, Oahu Branch, after the improvements have been completed, the land is deeded over to the State, and a wildlife sanctuary is designated. With limited personnel, the Division will need to work with the community and seek out volunteer labor to assist. The alternative vegetation control methods are well known and will be selected based on recommendations of the U.S. Fish and Wildlife Service. Much will depend upon the results of the paleoenvironmental and topographic surveys which will give us information on physical attributes and sensitive areas. Both mechanical and chemical means are viable options, depending on the type and location of the vegetation to be removed.

The costs of periodic "dredging" have not been determined, but the initial improvements should provide a basis for projecting future maintenance costs. The State of Hawaii will bear these costs as indicated above. Obviously, if insufficient funds are received

to maintain the improvements, the area will begin to revert to its former condition. The project is not intended to control flooding, although with moats and more open water, storage capacity should increase. Again, siltation of the moat and reversion of marsh to dense exotic vegetation could be expected without periodic maintenance. The State believes that such activity would not be enormously expensive, but there is no guarantee of future funding, which is dependent upon Executive budget requests and Legislative approval. The Division of Forestry and Wildlife would be responsible for the monitoring program. We do not know how extensively the Kailua Beach sandbar dynamics affect waterbird nesting but it is known that these species are nesting successfully on the site under the present circumstances. We cannot, of course, assure that there will be complete and successful cooperation between the City and County of Honolulu and the State of Hawaii in perpetuity with respect to the sandbar opening. We do not believe that the benefits to the entire project hinges on this but do believe that, with community support, it can be accomplished.

Your comments on possible conflicts between "flood control" activities by the City and County of Honolulu and State of Hawaii as related to this project seem to be referring to the larger project within Kawai Nui marsh proper. The State is not involved in the flood control project except as a regulatory agency- the U.S. Army Corps of Engineers is working jointly with the City and County on the flood control improvements. The Hamakua wetlands project is not intended or designed to prevent flooding in Kailua neighborhoods as mentioned above. It is to make improvements to an existing drainage and wetlands to benefit endangered waterbirds. The larger issue of the flood control improvements within Kawai Nui marsh itself and the impacts on the Kawai Nui/ Hamakua canal (which drains Coconut Grove) and the Oneawa canal (which drains Kawai Nui marsh) is beyond the purview of this project or the EA. We see no circumstances under which the proposed improvements could be construed to constitute "taking" of endangered waterbirds under either the Federal Endangered Species Act or Section 195D of the H.R.S.

I hope we have adequately addressed the concerns you raised in your commentary. We will provide your office with a copy of the final Environmental Assessment. Thank you and your staff for your thorough analysis of this proposed project.

Sincerely yours,



Ronald L. Walker
Wildlife Program Manager

cc: Ducks Unlimited Inc.



University of Hawaii at Manoa

Environmental Center
A Unit of Water Resources Research Center 7
Crawford 317 • 2550 Campus Road • Honolulu, Hawaii 96822
Telephone: (808) 956-7361
Facsimile: 956-3980

October 7, 1992
EA:00001

Mr. Ronald Walker
Division of Forestry and Wildlife
Department of Land and Natural Resources
1151 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Walker:

Draft Environmental Assessment
Hamakua Wetland Protection Project
Kailua, Oahu

The referenced project is intended to enhance habitats in the Hamakua Wetland for native endangered waterbirds, and to provide wetland education opportunities for residents and visitors of Kailua and Oahu. Approximately 22.7 acres will be acquired from Kaneohe Ranch Ltd. and improved through vegetation removal, trash clean-up, construction of moats for predator control, predator removal, and erection of educational panels. Guidelines for long-term management of the wildlife reserve also are outlined. Our review of the Draft Environmental Assessment (EA) was prepared with the assistance of Isabella Abbott, Botany; Leonard Freed, Biology; Kathleen Morrison, Anthropology; Mark Ridgley, Geography; and Elizabeth Gordon, Environmental Center.

General Comments

Pursuant to the EIS Rules (Section 11-200-9; 11-200-10; 11-200-12, H.A.R.), Environmental Assessments are intended to provide sufficient information to evaluate the significance of potential impacts. This project appears to augment the public's interest without commercial implications; however, the action occurs almost entirely within an environmentally sensitive area as defined in Section 11-200-12 b(11) and substantially affects a number of federally listed endangered species and their habitats (ref. Section 11-200-12 b(9), H.A.R.). Therefore, in accordance with Sections 343-5(b) and 343-5(c), H.R.S., we find that since the proposed action may have a significant effect on the environment, a full Environment Impact Statement (EIS) is required.

Our reviewers have noted some inconsistencies that should be corrected or clarified in the DEIS. On page four of this EA it states that "the 22.7

acre wetland will be donated by Kaneohe Ranch, in fee, to Ducks Unlimited (DU) who will then transfer it to the Hawaii Division of Forestry and Wildlife (DOFAW) after the enhancement phase." On page one, however, the project is stated to "provide a demonstration area...to show that private land holdings can be managed for the mutual benefit of wildlife and humans." This statement implies that Kaneohe Ranch will retain ownership of the wetland. The discrepancy should be corrected. Also, it is stated on page 10 that "a minimum buffer zone of 200 feet has been provided by Kaneohe Ranch along the mauka edge of the wetland (Figure 3)." However, the upland buffer drafted for figure 3 is substantially less than 200 feet. This discrepancy also should be corrected.

Vegetation Removal (Section 2.5, p. 5-6)

It has been suggested by one of our reviewers that all fleabane and mangrove be removed, instead of "maintaining a 60 foot wide band of fleabane and mangrove along Hamakua Canal," because the seeds and seedlings will require additional long-term management. Instead, indigenous woody trees such as Milo (Family Malvaceae, Thespesia populnea), Kou (Family Boraginaceae, Cordia subcordata), Naupaka-Kahakai or Beach Naupaka (Family Goodeniaceae, Scaevola taccada) could be planted (ref. Mark D. Merlin, 1980 Hawaiian Forest Plants. Honolulu: The Oriental Publishing Company).

Water Quality (Sections 3.2, p. 11 and 4.1, p. 21)

The discussion of the relationship between the bar at the mouth of Kaelepulu Stream and flow dynamics within the canal and wetland areas is overly simplistic. The distribution of salinity, as well as variation in water level throughout the drainage system are indicative of oceanic tidal influences exerted far inland of the bar. Thus, as is the case with most beach systems, porosity of the sandbar provides for considerable water flow through the bar. It is true that breaching of the bar by the City and County is periodically undertaken to flush the more seaward portions of the drainage system. However, we have not seen data to indicate that such flushing exerts a substantive effect in the vicinity of the Hamakua wetlands.

Furthermore, the high levels of orthophosphates and total phosphorus noted in water quality samples are indicative of eutrophication which may reflect stagnation, but more probably results from oversupply of phosphorus as a component of urban pollution. In view of the known significance of wetland systems as biofiltering mechanisms for the amelioration of surface waters entering the ocean, it is clear that a careful analysis of the hydraulic characteristics of this system needs to be a major component of the DEIS.

Historic and Archaeological Resources (Section 4.6, p. 22)

Although the present plans to establish a buffer zone around Site 4428 should be carried out, a trained archaeological monitor should be present in all situations involving excavation by heavy machinery, and not only in the area surrounding the site. Given the microenvironmental variability and conditions of preservation, a single core may not be sufficient to provide

Mr. Ronald Walker
October 7, 1992
Page 3

the paleoenvironmental information. Instead, several cores from dispersed locations within the impacted area should be taken.

Management Recommendations (Section 6.2, p. 24-26)

Who exactly will carry out the predator control program? Why the uncertainty about the most desirable vegetation control technique? On what attributes or characteristic problems does technique selection depend? What options are there besides mowing?

What are the risks, pros, and cons of using particular EPA -approved aquatic vegetation herbicides? What are the costs of periodic dredging, and who will bear them? What would be the consequences for management of the reserve if dredging were not done when required, and for flood management in the wider system once a well-maintained and dredged moat had come to be expected?

DOFAW will establish criteria for the monitoring program, but who will be responsible for the monitoring itself? How extensively can the Kailua Beach sandbar dynamics affect waterbird nesting? What happens if the City and County cannot coordinate with DOFAW in the management of the sandbar? To what degree does the reserve's feasibility and success depend upon such coordination? For example, what if flood management objectives conflict with those of waterbird nesting? Potentially, there could be a conflict of interest between reducing the risk of flooding to Kailua neighborhoods and maintaining a proper habitat for the birds. The issue, then, is whether DU or DOFAW or the City and County of Honolulu are effectively "taking" endangered species by flood control management that ruins nesting attempts or decreases feeding habitats. The risks to the birds from flood control management should be explicitly dealt with.

Summary

We are generally concerned with the lack of substantive information in certain areas of this document. Given the sensitivity of this environment we suggest that a Draft EIS should be prepared to more fully examine the characteristics and consequences of this action. Only then can decision making be rationally undertaken with a full appreciation of potential impacts and of options which the presently proposed action may foreclose.

Sincerely,



John T. Harrison, Ph.D.
Environmental Coordinator

cc: OEQC
Ducks Unlimited, Inc.
Roger Fujioka
Isabella Abbott
Leonard Freed
Kathleen Morrison
Mark Ridgley
Elizabeth Gordon

JOHN WAIHEE
GOVERNOR



BRIAN J. J. CHOY
Director

92 DEC 4 10 00

92 DEC -9 P2:24

FCM
S.E.L. 444

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
220 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185

December 3, 1992

Mr. William W. Paty, Director
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Paty:

SUBJECT: HAMAKUA WETLAND PROTECTION AND ENHANCEMENT PROJECT,
KAILUA, OAHU

The Draft Environmental Assessment (EA) for the above project was submitted to our office on August 31, 1992 for publication in the September 8, 1992 OEQC Bulletin. Pursuant to Act 241, SLH 1992, your agency (or the applicant) is required to respond in writing to any comments received during the review period and prepare a Final EA. This document must then be submitted to our office with a determination letter (either a Negative Declaration determination or an Environmental Impact Statement Preparation Notice determination). Notice of this determination will then be published in the OEQC Bulletin.

It has been more than two months since the Draft EA notice for this project was published in the Bulletin. Thus, please submit the Final EA or notify our office of the status of this project as soon as possible. If you have any questions about the Draft EA/Final EA process, please contact our staff at 586-4185. Thank you for your cooperation.

Sincerely,

Brian J. J. Choy

Brian J. J. Choy
Director

State of Hawaii
Department of Land and Natural Resources
DIVISION OF AQUATIC RESOURCES
September 21, 1992

RECEIVED

'92 SEP 24 P3:56

MEMORANDUM

TO: Ron Walker
Division of Forestry and Wildlife

THROUGH: Mike Buck, Administrator
Division of Forestry and Wildlife

FROM: Henry Sakuda, Administrator *HS*
Division of Aquatic Resources

SUBJECT: Comments on Hamakua Wetland Protection Project, Kailua, Oahu.

FORESTRY AND WILDLIFE
STATE OF HAWAII

This project is an admirable example of beneficial cooperation between private interests and government in the public interest. Kaneohe Ranch will donate a 22 acre parcel to Ducks Unlimited to enhance habitat for four species of endangered waterbird. The parcel lies between Kawainui Marsh and Enchanted Lake and used to be natural wetland before it was taken over by exotics. Upon completion of the improvements the site will be donated to the State of Hawaii.

The site is adjacent to the Kawainui and Kaelepulu Streams. As noted in the report, the Kaelepulu discharge to Kailua Bay is normally blocked by a sandbar which has to be opened periodically by mechanical means because natural stream flow patterns (which would normally blow out the bar during high flows) have been severely altered. The area has little significance for native freshwater stream biota because these alterations have created conditions which are unfavorable for natives but ideal for a complex of introduced species. We are however concerned about the potential effects of silt loading of Kailua Bay or of the creation of conditions that could lead to fish kills in the Kaelepulu Stream while the enhancement work is underway. Measures need to be taken to limit runoff that could lead to sedimentation or accumulation of debris in these waters.

Once the enhancement phase is completed and a functional wetland created, we expect the entire area, including the aquatic resources, will be improved.

JOHN WAIHEE
GOVERNOR OF HAWAII



WILLIAM W. PATY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

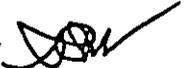
DEPUTY
JOHN P. KEPPEL, II
DONA L. MAHAIRE
AQUACULTURE DEVELOPMENT
PROGRAM
AQUATIC RESOURCES
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

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

DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife

September 15, 1992

MEMORANDUM

TO: Division of Aquatic Resources
FROM: Ron Walker  THROUGH: Michael Buck, Administrator 
SUBJECT: Hamakua Wetland Project

The enclosed Environmental Assessment, Enhancement and Management Plan for the Hamakua Wetland Protection Project, Kailua, Honolulu County, Oahu is a joint project of this Division and Ducks Unlimited Inc., a private conservation organization. A private landowner (Kaneohe Ranch) is donating the parcel to Ducks Unlimited Inc., which will supervise improvements to the wetland area to enhance habitat for four species of endangered waterbirds. Funding will be obtained from the State of Hawaii and U.S. Fish and Wildlife Service under a grant-in-aid program (Coastal Wetlands). Upon completion of the improvements the site will be donated to the State of Hawaii for protection and management in perpetuity. It will be designated a State Wildlife Sanctuary under a Governors Executive Order and an administrative rule.

This is to request your review, consideration and comments on the project as it might pertain to your area of responsibility. We would particularly appreciate your technical advice on the feasibility of the project relative to aquatic resources.

As this project is due for implementation in October, 1992, we would appreciate your attention to this proposal as soon as convenient.

JOHN WAIHEE
GOVERNOR OF HAWAII



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

WILLIAM W. PATY, CHAIRPERSON
DEPT. OF LAND AND NATURAL RESOURCES
DEPUTIES

JOHN P. KEPPELER, II
DONA L. HANA'IKE

AQUACULTURE DEVELOPMENT
PROGRAM
AQUATIC RESOURCES
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

February 16, 1993

Mr. Harold S. Masumoto
Director
Office of State Planning
Office of the Governor
P.O. Box 3540
Honolulu, Hawaii 96811-3540

Dear Mr. Masumoto:

This responds to your memorandum of October 9, 1992 to Chairperson William Paty regarding the Hamakua Wetland Protection Project in Kailua on Oahu.

You point out that the project is consistent with the Priority 1 recommendation for the Kawainui Complex (which includes the Hamakua wetlands) for reclassification from Urban to Conservation under the State Land Use District Boundary Review process. I have been working and will continue to work with your staff in describing the presence of the Hawaiian endangered waterbird habitat to document the need to proceed with this reclassification action.

Thank you for your support of this project.

Sincerely Yours,

A handwritten signature in dark ink, appearing to read "Ronald L. Walker".

Ronald L. Walker
Wildlife Program Manager

cc: Ducks Unlimited Inc.

COPY

DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife

MEMORANDUM

September 29, 1992

TO: Historic Preservation Division

FROM: Ron Walker *RW*

THROUGH: Michael Buck *M. Buck*

SUBJECT: Hamakua Wetland Project

The enclosed Environmental Assessment, Enhancement and Management Plan for the Hamakua Wetland Protection Project, Kailua, Honolulu County, Oahu is a joint project of this Division and Ducks Unlimited Inc., a private conservation organization. A Private landowner (Kaneohe Ranch Ltd.) is donating the parcel to Ducks Unlimited Inc., which will supervise improvements to the wetland area to enhance habitat for four species of endangered waterbirds. Funding will be obtained from the State of Hawaii and U.S. Fish and Wildlife Service under a grant-in-aid program (Coastal Wetlands). Upon completion of the improvements the site will be donated to the State of Hawaii for management as a State Wildlife Sanctuary under a Governors Executive Order and an administrative rule.

Although your office has been in contact with Andy Engilis of Ducks Unlimited regarding archeological matters, we have been advised by reviewers of the proposal that your office should be contacted and that studies be conducted of the historical and cultural relationships of this site to the adjacent Kaelelepulu and Kawainui marsh areas. The scope and funding of this project would preclude any such in depth study, but we ask whether your office is aware of any existing material that would be applicable to this subject.

For your information, we are enclosing a copy of the clearing house comments from Hawaii's Thousand Friends and the Environmental Assessment/Plan for your reference. Any input you can provide us would be appreciated.

Enclosures

PLANNING DEPARTMENT *7/10/93*
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANK FASI
MAYOR

ROBIN FOSTER
CHIEF PLANNING OFFICER

ROLAND D. LIBBY, JR.
DEPUTY CHIEF PLANNING OFFICER

'93 MAR 23 P2:17

ET

FOPL
STATE

March 18, 1993

Mr. Donald Friberg
Deputy Assistant Regional Director
United States Fish and Wildlife Service
911 North East 11th Avenue
Portland, Oregon 97232

Dear Mr. Friberg:

Areawide Clearinghouse Review for the
Proposed Hamakua Wetland Project
State Application Identifier No. HI920630-026-0

This is in response to Department of Land and Natural Resources' Division of Forestry and Wildlife letter of August 6, 1992. The Planning Department has reviewed the additional information provided and has no objections to the proposed Hamakua Wetland project.

Concerns raised by the Department of Land Utilization will be addressed during the Special Management Area Permit process.

Should you have any questions, please contact Eugene Takahashi of our staff at 527-6022.

Sincerely,

Robin Foster
ROBIN FOSTER
Chief Planning Officer

RF:ft

cc: ✓ Department of Land and Natural Resources
Division of Forestry & Wildlife

JOHN WAIHEE
GOVERNOR OF HAWAII



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

WILLIAM W. PASTY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

JOHN P. KEPPELER, II
DONA L. HANAIKE

AQUACULTURE DEVELOPMENT
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CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

February 16, 1993

Dr. Don Hibbard
Administrator
Historic Preservation Division
Department of Land and Natural Resources
33 South King St.
Honolulu, Hawaii 96813

Dear Don:

This responds to your letter of October 23, 1992 commenting on the Hamakua Wetland Project, Kailua, Ko'olaupoko, O'ahu.

With the paleoenvironmental material to be produced, the State and Ducks Unlimited Inc. will incorporate public informational material in the educational kiosk to be constructed in conjunction with this project to the extent funds allow.

Thank you for your response and support of this project.

Sincerely Yours

A handwritten signature in black ink, appearing to read "Ronald L. Walker".

Ronald L. Walker
Wildlife Program Manager

cc: Ducks Unlimited Inc.

JOHN W. WADSWORTH
GOVERNOR OF HAWAII



WILLIAM W. PATY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

JOHN P. KIPPETER, II
DONA L. HANAKE

AQUACULTURE DEVELOPMENT
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CONSERVATION AND
RESOURCES ENFORCEMENT

CONVEYANCES

FORESTRY AND WILDLIFE
HISTORIC PRESERVATION

DIVISION

LAND MANAGEMENT

STATE PARKS

WATER AND LAND DEVELOPMENT

LOG NO: 6620

DOC NO: 9210TD41

'92 OCT 27 P4:17

FOR: STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HAWAII HISTORIC PLACES REVIEW BOARD
33 SOUTH KING STREET, 8TH FLOOR
HONOLULU, HAWAII 96813

October 23, 1992

MEMORANDUM

TO: Ron Walker
Division of Forestry and Wildlife

FROM: Don Hibbard, Administrator
Historic Preservation Division 

SUBJECT: Hamakua Wetland Project
Kailua, Ko'olaupoko, O'ahu
TMK: 4-2-1: 1; 4-2-3: por. 17

There is quite a bit of existing material applicable to a study of the historical and cultural relationships of this site to the adjacent Ka'elepulu and Kawainui Marsh areas. Most of this material is available at our library and is well-known to archaeological consultants. We believe that the paleoenvironmental analysis that Ducks Unlimited has committed to conduct, as described in the EA, will fulfill the data needs for a "full determination of the cultural relationships" requested by Hawaii's Thousand Friends.

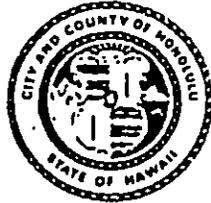
We believe that the overall aims of this project would be enhanced by the addition of historical information to the proposed kiosk and interpretive panels. This information could be readily derived from the results and interpretation of the proposed paleoenvironmental analysis.

We support this project and believe that the paleoenvironmental study proposed in the EA has the potential to address adequately the concerns raised by Hawaii's Thousand Friends. We look forward to any opportunity to help with the development of interpretive materials. Please feel free to contact Tom Dye at 587-0014 if you have any questions.

TD:amk

DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813



August 17, 1992

FRANK FASI
MAYOR

RECEIVED

BENJAMIN B. LEE
CHIEF PLANNING OFFICER

'92 AUG 24 10:45 AM LIBBY JR
DEPUTY CHIEF PLANNING OFFICER

FOR...

ET

Mr. Donald Friberg
Deputy Assistant Regional Director
United States Fish and Wildlife Service
911 North East 11th Avenue
Portland, Oregon 97232

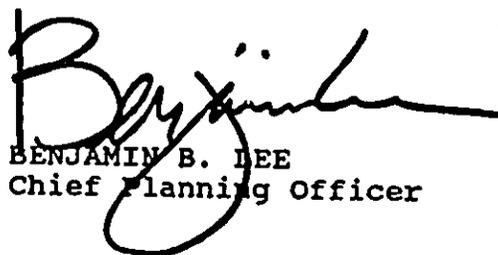
Dear Mr. Friberg:

Areawide Clearinghouse Review for the
Proposed Hamakua Wetland Project
State Application Identifier No. HI920630-026-0

Enclosed are comments from the State Land Use Commission, Department of Public Works, Hawaii's Thousand Friends and the Kawai Nui Heritage Foundation on the proposed project. These letters were received after we had transmitted the agency comments to you on July 30, 1992.

Should you have any questions, please contact Eugene Takahashi of our staff at 527-6022.

Sincerely,


BENJAMIN B. LEE
Chief Planning Officer

BBL:js

Enclosures

cc: Department of Land and Natural Resources
Division of Forestry & Wildlife

JOHN WAIHIE
GOVERNOR



08/92 - 2329

ESTHER IYDA
EXECUTIVE OFFICER

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
Room 104, Old Federal Building
335 Merchant Street
Honolulu, Hawaii 96813
Telephone: 587-3822

July 30, 1992

Mr. Benjamin B. Lee
Chief Planning Officer
Department of General Planning
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Lee:

Subject: Areawide Clearinghouse for the Proposed Hamakua
Wetlands Project State Application Identifier
No. HI920630-026-0, TMK Nos.: 4-2-01; 4-2-03

We have reviewed the information transmitted by your letter dated July 1, 1992, and find that the subject property is located within the State Land Use Urban and Conservation Districts.

With respect to the specific agency review questions, we provide the following:

- 1) The proposed project on the subject lands as described will not directly affect the current programs, projects, or plans of the State Land Use Commission.

It is our understanding that the subject Hamakua Wetlands Project may be incorporated with plans for the proposed Kailua Gateway Development project, which may involve the reclassification of the Hamakua Wetlands from the State Land Use Urban District to the Conservation District. The reclassification of lands greater than 15 acres would require the approval of a district boundary amendment from the Land Use Commission.

Mr. Benjamin B. Lee, Chief Planning Officer
July 30, 1992
Page 2

- 2) We note that the Office of State Planning's Draft State Land Use District Boundary Review Report for Oahu includes a Priority 1 recommendation for the reclassification of the Hamakua Wetlands area from the Urban District to the Conservation District. As such, we suggest that the Office of State Planning be notified of the subject project.
- 3) We do not have any comments with respect to the development of the proposed project.

Thank you for the opportunity to comment on this matter.

If you have any questions on this matter, please call me or Steve Tagawa of my staff at 587-3822.

Sincerely,



ESTHER UEDA
Executive Officer

EU:fl

MEMORANDUM

TO : DEPARTMENT OF GENERAL PLANNING
 CITY AND COUNTY OF HONOLULU, AREAWIDE CLEARINGHOUSE

FROM : HAWAII'S THOUSAND FRIENDS

SUBJECT: AGENCY PROJECT REVIEW

Project Title: Hamakua Wetlands Project
State Application Identifier No. HI920630-026-0

1. (i) Is the proposed project (described in the enclosed notification of intent) related to the current programs, projects, or plans of this agency?

As traditionally supportive of planning efforts of Robert A. Herlinger on behalf of the Kawai Nui Directional Plans, of which the Pu'u o 'Ehu Wetlands are a part (which you call the "Hamakua Wetlands"), we have cultural, environmental and social interests in how the area is used/developed. We are currently member of the Advisory Committee For Kawainui, to the Department of Land and Natural Resources; the first major project addressed by Hawaii's Thousand Friends was on behalf of the Kawai Nui complex of wetlands; our focus is on intelligent land use planning and the responsible utilization of Hawaii's unique resources.

- (ii) If so, (a) will the proposed project influence the demand for current services and/or facilities provided by agency programs, (b) will it affect agency plans for the provision of services and/or facilities in the future, or (c) will the agency be required to develop services and/or facilities at some future date as a result of the project?

See above.

Larry Abbott, President
Kawai Nui Heritage Foundation
P.O. Box 1101
Kailua, HI 96734
254-4951

Gary H. Okino, Chief
Community Planning Division
C&C Department of General Planning
650 South King Street
Honolulu, HI 96813

7/28/92

Dear Mr. Okino;

At our monthly board meeting on 7/27 we learned of the Dept. of General Planning's request for comments regarding the Areawide Clearinghouse for the Proposed Hamakua Wetlands Project, State Application Identifier No. HI920630-026-0. The cover letter of the copy sent to the Lani/Kailua Outdoor Circle states that "Under current established procedure, we are requesting comments from agencies and parties whose interests might be affected by the proposed project." I submit sir that your procedure is seriously flawed.

Our group has been on the Gateway Community Advisory Committee and has sent representative to every Ducks Unlimited public meeting held in Kailua. We have vocally opposed the Gateway Development on the grounds that it will seriously harm the Pu'u O Ehu Wetlands, referred to in your notice as the Hamakua wetlands. Our foundation is greatly affected by the Hamakua Wetlands Project and we would like to know why we were not from the list of parties from whom comments were requested. In any event, please accept these brief comments as part of your review. I understand you have a tight deadline, the 30th, so I will fax this to you and be brief.

COMMENTS

1. CLEARINGHOUSE FORM, PG 3-31; Section A, pp3; Section B, pp2

The three listed sections refer to environmental protection and conservation. We heartily support the intent of Ducks Unlimited but we assert that they must first state, specifically, what features of the habitat are important for each of the 4 species of endangered birds. This is admittedly a difficult task but it is essential to avoid increasing the habitat of one species while unknowingly diminishing the habitat of one or more of the others. All four species of waterbirds are endangered but they each have different habitat requirements.

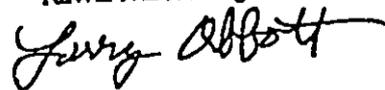
The same comment applies to Ron Walker's project description, section C part 3.

2. I am a Biologist with considerable experience with coastal wetlands in the southeast U.S.. This wetland appears to be a "salt pan" ecosystem, as indicated by the zone of Batus sp. around a shallow pond, with no macrophytes, supplied with salty water periodically. The Kawai Nui Heritage Foundation has taken the position that Salt Pan Ecosystems are critical habitat for the Hawaiian Stilt. Because the US Fish and Wildlife Service is responsible for critical habitat we would like to see them provided with a significant oversight function in the activities of Ducks Unlimited in this wetland.

3. We strongly support the intent of Ducks Unlimited and Kaneohe Ranch to manage this wetland for the benefit of its endangered inhabitants. We urge caution and clarity of purpose because this kind of natural haven is itself endangered.

Thank you for this opportunity to comment. We will forward copies to DLNR, USFWS, and to Councilmen Felix and Holmes.

Larry Abbott, President
Kawai Nui Heritage Foundation



Larry Abbott, President
Kawai Nui Heritage Foundation
P.O. Box 1101
Kailua, HI 96734
254-4951

Gary H. Okino, Chief
Community Planning Division
C&C Department of General Planning
650 South King Street
Honolulu, HI 96813

7/28/92

Dear Mr. Okino;

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COMMENTS

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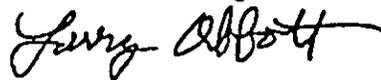
The same comment applies to Ron Walker's project description, section C part 3.

2. I am a Biologist with considerable experience with coastal wetlands in the southeast U.S.. This wetland appears to be a "salt pan" ecosystem, as indicated by the zone of Batus sp. around a shallow pond, with no macrophytes, supplied with salty water periodically. The Kawai Nui Heritage Foundation has taken the position that Salt Pan Ecosystems are critical habitat for the Hawaiian Stilt. Because the US Fish and Wildlife Service is responsible for critical habitat we would like to see them provided with a significant oversight function in the activities of Ducks Unlimited in this wetland.

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Thank you for this opportunity to comment. We will forward copies to DLNR, USFWS, and to Councilmen Felix and Holmes.

Larry Abbott, President
Kawai Nui Heritage Foundation



O WAHIEE
GOVERNOR



02/92 - 2329

ESTHER LIDA
EXECUTIVE OFFICER

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
Room 104, Old Federal Building
335 Merchant Street
Honolulu, Hawaii 96813
Telephone: 587-3822

July 30, 1992

Mr. Benjamin B. Lee
Chief Planning Officer
Department of General Planning
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Lee:

Subject: Areawide Clearinghouse for the Proposed Hamakua
Wetlands Project State Application Identifier
No. HI920630-026-0, TMK Nos.: 4-2-01; 4-2-03

We have reviewed the information transmitted by your letter dated July 1, 1992, and find that the subject property is located within the State Land Use Urban and Conservation Districts.

With respect to the specific agency review questions, we provide the following:

1. 1) The proposed project on the subject lands as described will not directly affect the current programs, projects, or plans of the State Land Use Commission.

It is our understanding that the subject Hamakua Wetlands Project may be incorporated with plans for the proposed Kailua Gateway Development project, which may involve the reclassification of the Hamakua Wetlands from the State Land Use Urban District to the Conservation District. The reclassification of lands greater than 15 acres would require the approval of a district boundary amendment from the Land Use Commission.

Mr. Benjamin B. Lee, Chief Planning Officer
July 30, 1992
Page 2

- 2) We note that the Office of State Planning's Draft State Land Use District Boundary Review Report for Oahu includes a Priority 1 recommendation for the reclassification of the Hamakua Wetlands area from the Urban District to the Conservation District. As such, we suggest that the Office of State Planning be notified of the subject project.
- 3) We do not have any comments with respect to the development of the proposed project.

Thank you for the opportunity to comment on this matter.

If you have any questions on this matter, please call me or Steve Tagawa of my staff at 587-3822.

Sincerely,



ESTHER UEDA
Executive Officer

EU:f1

MEMORANDUM

TO : DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU, AREAWIDE CLEARINGHOUSE

FROM : HAWAII'S THOUSAND FRIENDS

SUBJECT: AGENCY PROJECT REVIEW

Project Title: Hamakua Wetlands Project
State Application Identifier No. HI920630-026-0

1. (i) Is the proposed project (described in the enclosed notification of intent) related to the current programs, projects, or plans of this agency?

As traditionally supportive of planning efforts of Robert A. Herlinger on behalf of the Kawai Nui Directional Plans, of which the Pu'u o 'Ehu Wetlands are a part (which you call the "Hamakua Wetlands"), we have cultural, environmental and social interests in how the area is used/developed. We are currently member of the Advisory Committee For Kawainui, to the Department of Land and Natural Resources; the first major project addressed by Hawaii's Thousand Friends was on behalf of the Kawai Nui complex of wetlands; our focus is on intelligent land use planning and the responsible utilization of Hawaii's unique resources.

- (ii) If so, (a) will the proposed project influence the demand for current services and/or facilities provided by agency programs, (b) will it affect agency plans for the provision of services and/or facilities in the future, or (c) will the agency be required to develop services and/or facilities at some future date as a result of the project?

See above.

2. Is this agency aware of other agencies whose programs or plans may be affected by this project? Which agencies?

Yes: 1. DLNR's Historic Sites Division;
2. University of Hawai'i, Manoa: Hawaiian Studies
3. Marine Fisheries (Estuarine values of area)
4. DLNR's Aquatic experts (the endangered waterbirds are only part of a symbiotic web of relationships)
5. U. S. Army Corps of Engineers

3. Does this agency concur in the development of the proposed project?

Yes, after a full determination of the cultural relationships between this area and the larger Kawai Nui wetlands/fishpond areas, and those of the Ka'elepulu Fishpond and wetlands have been studied, both culturally and archaeologically. This area is perceived to be intimately a part of the "Wai'auia" lands, where the Makalei tree was located, and where lived a class of ali'i having stature above all others. In this area, in Hawaiian culture, one found a crucible of life for aquatic resources, and for man. This aspect of educational potential can certainly be addressed, as it relates to the quality of habitat for the endangered waterbird species. There were once two streams in the Pu'u o 'Ehu wetlands (see Hawaiian Fishponds), a concept which may have positive attributes for waterbird habitat today, while fulfilling a cultural responsibility within the Coastal Zone.

Kianna Weber
Signature of Agency Head

7/20/92
Date

07/92-2160

MEMORANDUM

TO : DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU, AREAWIDE CLEARINGHOUSE

FROM : DEPARTMENT OF HEALTH, STATE OF HAWAII

SUBJECT: AGENCY PROJECT REVIEW

Project Title: Hamakua Wetlands Project
State Application Identifier No. HI920630-026-0

1. (i) Is the proposed project (described in the enclosed notification of intent) related to the current programs, projects, or plans of this agency?

Yes.

- (ii) If so, (a) will the proposed project influence the demand for current services and/or facilities provided by agency programs, (b) will it affect agency plans for the provision of services and/or facilities in the future, or (c) will the agency be required to develop services and/or facilities at some future date as a result of the project?

No.

RECEIVED
JUL 10 1992

2. Is this agency aware of other agencies whose programs or plans may be affected by this project? Which agencies?

No.

3. Does this agency concur in the development of the proposed project?

Yes.



Signature of Agency Head
BRUCE S. ANDERSON, Ph.D.
Deputy Director, Environmental Health Administration

7-13-92

Date

07:42 - 0095

July 6, 1992

MEMORANDUM

TO : DEPARTMENT OF GENERAL PLANNING
 CITY AND COUNTY OF HONOLULU, AREAWIDE CLEARINGHOUSE

FROM : OFFICE OF ENVIRONMENTAL QUALITY CONTROL

SUBJECT: AGENCY PROJECT REVIEW

Project Title: Hamakua Wetlands Project
State Application Identifier No. HI920630-026-0

1. (i) Is the proposed project (described in the enclosed notification of intent) related to the current programs, projects, or plans of this agency?

YES.

- (ii) If so, (a) will the proposed project influence the demand for current services and/or facilities provided by agency programs, (b) will it affect agency plans for the provision of services and/or facilities in the future, or (c) will the agency be required to develop services and/or facilities at some future date as a result of the project?

- (a) No.
 (b) No.
 (c) No.

2. Is this agency aware of other agencies whose programs or plans may be affected by this project? Which agencies?

No.

3. Does this agency concur in the development of the proposed project?

No.

Dean M. Gray

Signature of Agency Head

1-6-92

Date

7/92-2285

MEMORANDUM

TO : DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU, AREAWIDE CLEARINGHOUSE

FROM : DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

SUBJECT: AGENCY PROJECT REVIEW

Project Title: Hamakua Wetlands Project
State Application Identifier No. HI920630-026-0

1. (i) Is the proposed project (described in the enclosed notification of intent) related to the current programs, projects, or plans of this agency?

No.

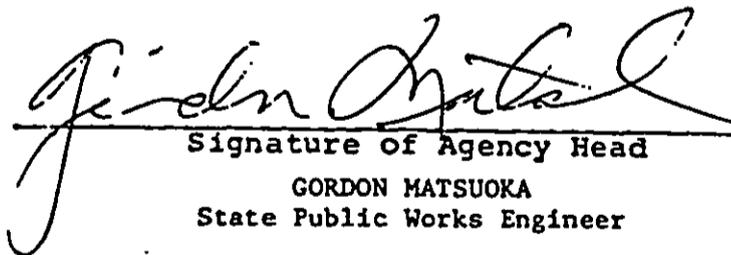
-
- (ii) If so, (a) will the proposed project influence the demand for current services and/or facilities provided by agency programs, (b) will it affect agency plans for the provision of services and/or facilities in the future, or (c) will the agency be required to develop services and/or facilities at some future date as a result of the project?

2. Is this agency aware of other agencies whose programs or plans may be affected by this project? Which agencies?

No.

3. Does this agency concur in the development of the proposed project?

We have no objections.



Signature of Agency Head
GORDON MATSUOKA
State Public Works Engineer

JUL 17 1932

Date

07/9-2199

MEMORANDUM

TO : DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU, AREAWIDE CLEARINGHOUSE

FROM : DEPARTMENT OF URBAN & REGIONAL PLANNING
U.H. OF HAWAII AT MANOA

SUBJECT: AGENCY PROJECT REVIEW

Project Title: Hamakua Wetlands Project
State Application Identifier No. HI920630-026-0

1. (i) Is the proposed project (described in the enclosed notification of intent) related to the current programs, projects, or plans of this agency?

NO

- (ii) If so, (a) will the proposed project influence the demand for current services and/or facilities provided by agency programs, (b) will it affect agency plans for the provision of services and/or facilities in the future, or (c) will the agency be required to develop services and/or facilities at some future date as a result of the project?

RECEIVED

2. Is this agency aware of other agencies whose programs or plans may be affected by this project? Which agencies?

NO

3. Does this agency concur in the development of the proposed project?

YES

Peter D. Flachsbart

Signature of Agency Head
Acting Chair, DVRP

7-15-92

Date

MEMORANDUM

TO : DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU, AREAWIDE CLEARINGHOUSE

FROM : LANI/KAILUA OUTDOOR CIRCLE

SUBJECT: AGENCY PROJECT REVIEW

Project Title: Hamakua Wetlands Project
State Application Identifier No. HI920630-026-0

1. (i) Is the proposed project (described in the enclosed notification of intent) related to the current programs, projects, or plans of this agency? *Yes. Lani-Kailua OUTDOOR CIRCLE IS CONCERNED WITH education, preservation CLEANUP, BEAUTIFICATION OF THIS AREA -*

- (ii) If so, (a) will the proposed project influence the demand for current services and/or facilities provided by agency programs, (b) will it affect agency plans for the provision of services and/or facilities in the future, or (c) will the agency be required to develop services and/or facilities at some future date as a result of the project?

(a) NO

(b) NO

(c) we will no doubt be using the improved habitat's new accessibility in some of our education programs

2. Is this agency aware of other agencies whose programs or plans may be affected by this project? Which agencies?

KAWAII HERITAGE FOUNDATION

AUDUBON
SCHOOLS

3. Does this agency concur in the development of the proposed project? YES

12 - 13 PM 1:35

RECEIVED

Hope M. Miller, Chair
Signature of Agency Head

Public Affairs Committee

Lani - Kailua Outdoor Arch

P.O. Box 261 Kailua HI 96734

July 10, 1992
Date

77(9) - 2198

MEMORANDUM

TO : DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU, AREAWIDE CLEARINGHOUSE

FROM : OFFICE OF STATE PLANNING

SUBJECT: AGENCY PROJECT REVIEW

Project Title: Hamakua Wetlands Project
State Application Identifier No. HI920630-026-0

1. (i) Is the proposed project (described in the enclosed notification of intent) related to the current programs, projects, or plans of this agency?

Yes. The proposal for Federal assistance must be consistent with Hawaii's Coastal Zone Management (CZM) Program (FC/92-039).

- (ii) If so, (a) will the proposed project influence the demand for current services and/or facilities provided by agency programs, (b) will it affect agency plans for the provision of services and/or facilities in the future, or (c) will the agency be required to develop services and/or facilities at some future date as a result of the project?

No.

08/9. 2372

92-14-0592

July 31, 1992

MEMORANDUM

TO : DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU, AREAWIDE CLEARINGHOUSE

FROM : DEPARTMENT OF PUBLIC WORKS

SUBJECT: AGENCY PROJECT REVIEW

Project Title: Hamakua Wetlands Project
State Application Identifier No. HI920630-026-0

1. (i) Is the proposed project (described in the enclosed notification of intent) related to the current programs, projects, or plans of this agency?

Yes, Kaelepulu/Kawainui Stream Maintenance Dredging Project.

- (ii) If so, (a) will the proposed project influence the demand for current services and/or facilities provided by agency programs, (b) will it affect agency plans for the provision of services and/or facilities in the future, or (c) will the agency be required to develop services and/or facilities at some future date as a result of the project?

- a) No
b) No
c) No

2. Is this agency aware of other agencies whose programs or plans may be affected by this project? Which agencies?

No.

3. Does this agency concur in the development of the proposed project?

Yes.

In addition, we have the following comments:

The Hamakua Wetlands project should have no direct impact on the municipal sewer system in the area since sewer connection is not required. However, we have the following concerns regarding any proposed municipal or private sewers required for the Kailua Gateway project which may need to be aligned within the subject wetlands project:

1. Access to all sewers must be made available at all times. Sewer easements may be required.
2. Special care must be taken to insure that extraneous water (infiltration/inflow) does not enter the municipal sewer system.

Plans for the subject wetlands project should be coordinated with the proposed Kailua Gateway project to address the above concerns. Also, construction plans for both projects must be submitted to the Division of Wastewater Management for review and approval.

If there are any questions, please contact Lynn Kurashima at extension 4671.

C. Michael Street
Signature of Agency Head
C. MICHAEL STREET
Director and Chief Engineer

8/14/82
Date

COMMENT TO PRECEDING QUESTIONS

Part 2. County Department of Land Utilization Comments

1. DU is pursuing an BMA Use Permit with the County

2. No comment needed

3a. Existing Biological resources outlined in EA.

3b. There are no anticipated siltation or erosion problems anticipated with the project. This comment is probably in reference to the Kailua Gateway project where erosion and siltation would be a concern.

3c. See EA

3d. The project will not be impacting flooding as we are not going to alter the depth of the marsh and no fill will be placed in the wetland. The removal of vegetation in the system will assist in better water movement through the marsh during flood events. See EA for hydrologic discussion.

3e. See EA. There will be no impact to surrounding land use. Again this may be in reference to the Gateway development.

3f. See EA

3g. The wetland has been an urban wetland for over 10 years and wildlife still occurs in the site. The species present seem to be acclimated to the current rate of disturbance. The biggest factor to reduced use is the quality of the marsh habitat, which this project will improve. All of this is covered in the EA. Not that this project does not assume that the Kailua Gateway project will go on. DU has been negotiating with Kaneohe Ranch in order that any improvements that they make mauka will have as little impact as possible. Whether their project will be deleterious to our wetland enhancement is a regulatory decision that we are unable to make. Note that again this question seems to be implying that the wetland project is part of Kailua Gateway, which it is not.

3h. This last question is in reference to management section. This section was to provide guidelines for DOPAW's management of the site. The actual methods in implementing the management plan is up to DOPAW.

Other comments:

1) CZM Compliance has been applied for.

2) Section 10 Permit (Corps) has been let out for comment period.

3) Section 7 consultation has been initiated at DU's request. A biological decision from the USFWS including an incidental take permit will be issued.

4) Buffer Zone is minimum of 100 feet, 200 in some areas.

5) The archaeological survey will begin by the first of year.

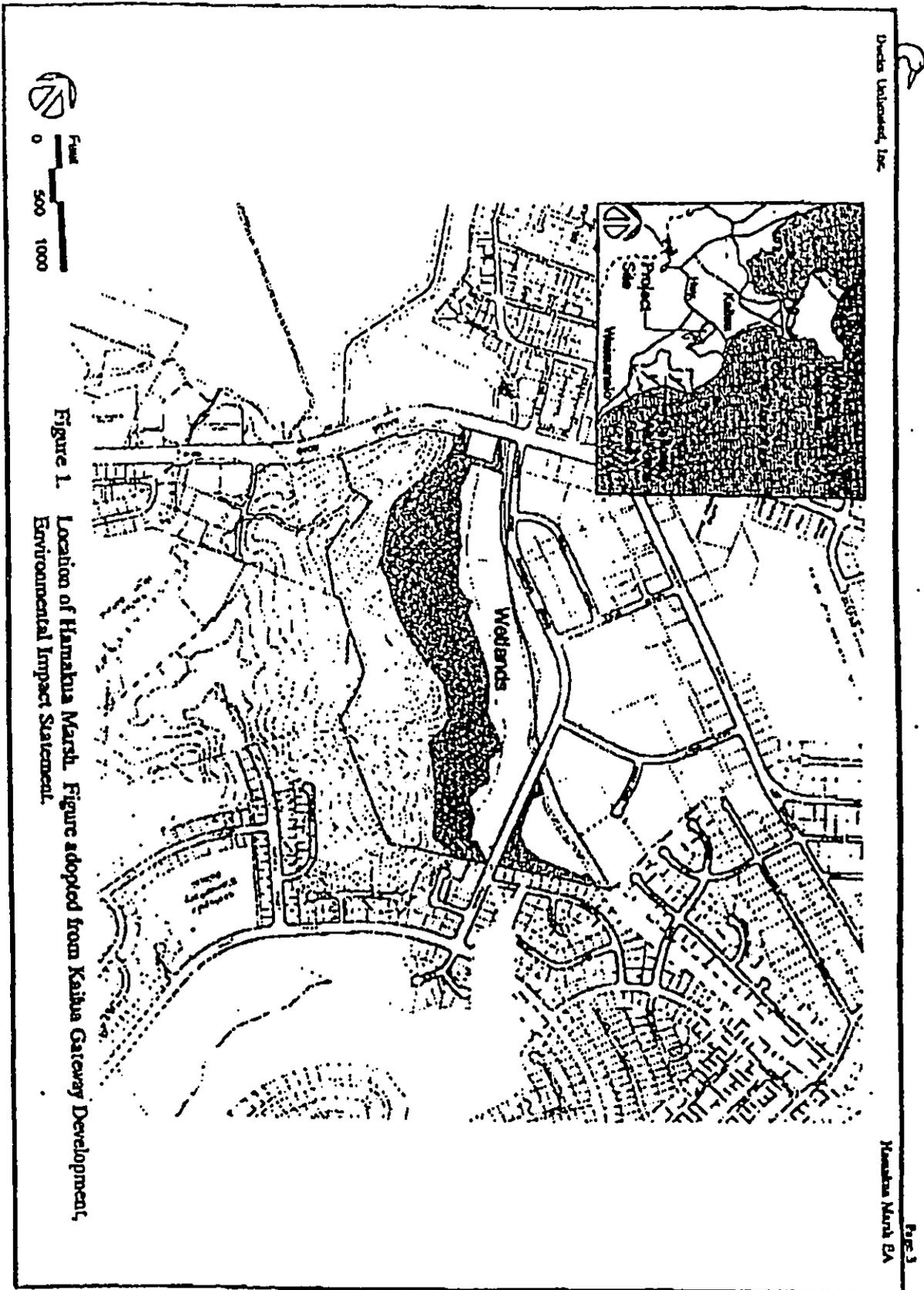
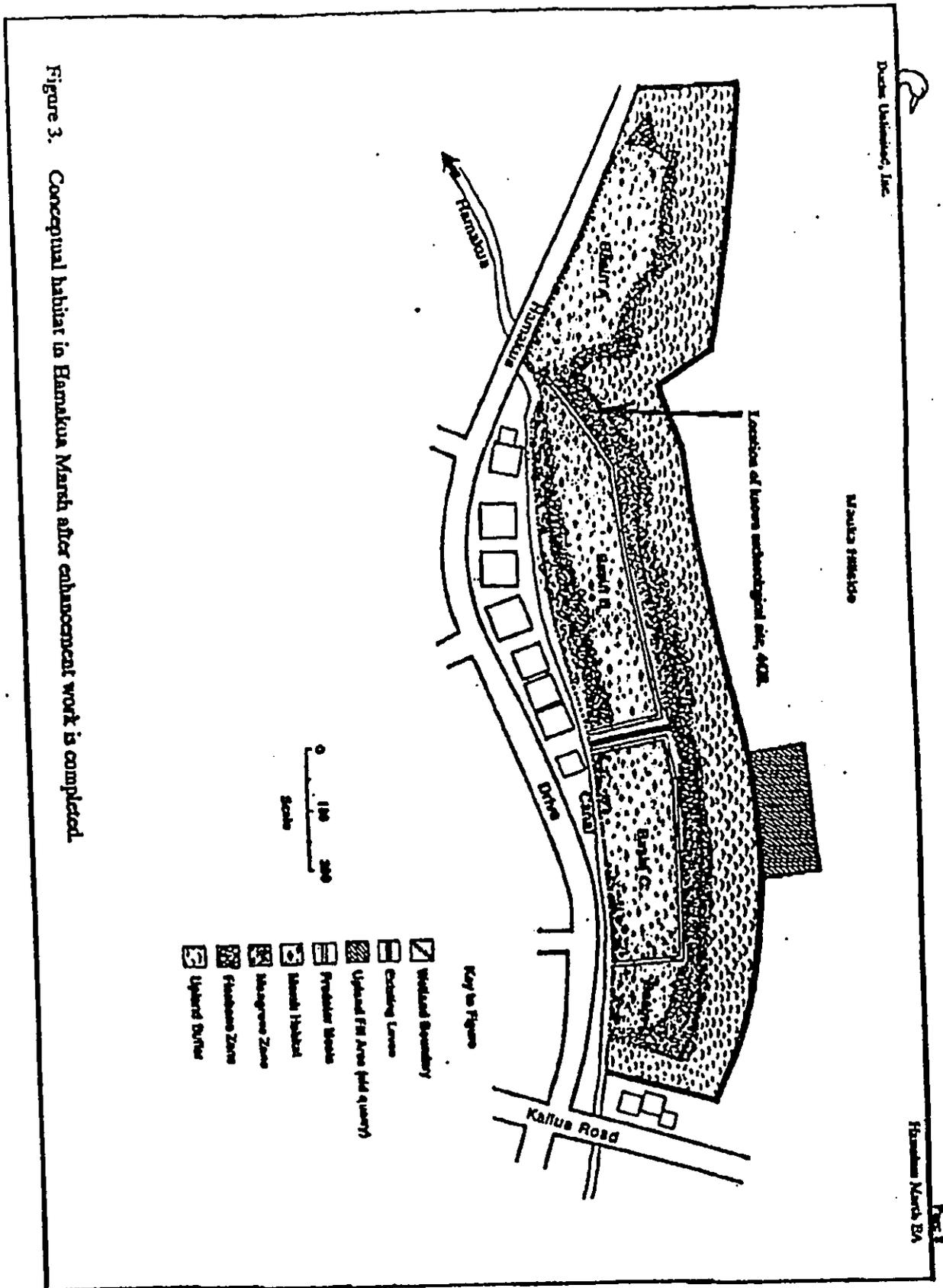


Figure 1 Location of Hanakua Marsh. Figure adopted from Kaibua Gateway Development, Environmental Impact Statement.

Ducks Unlimited, Inc.

Page 3
Hanakua Marsh EA



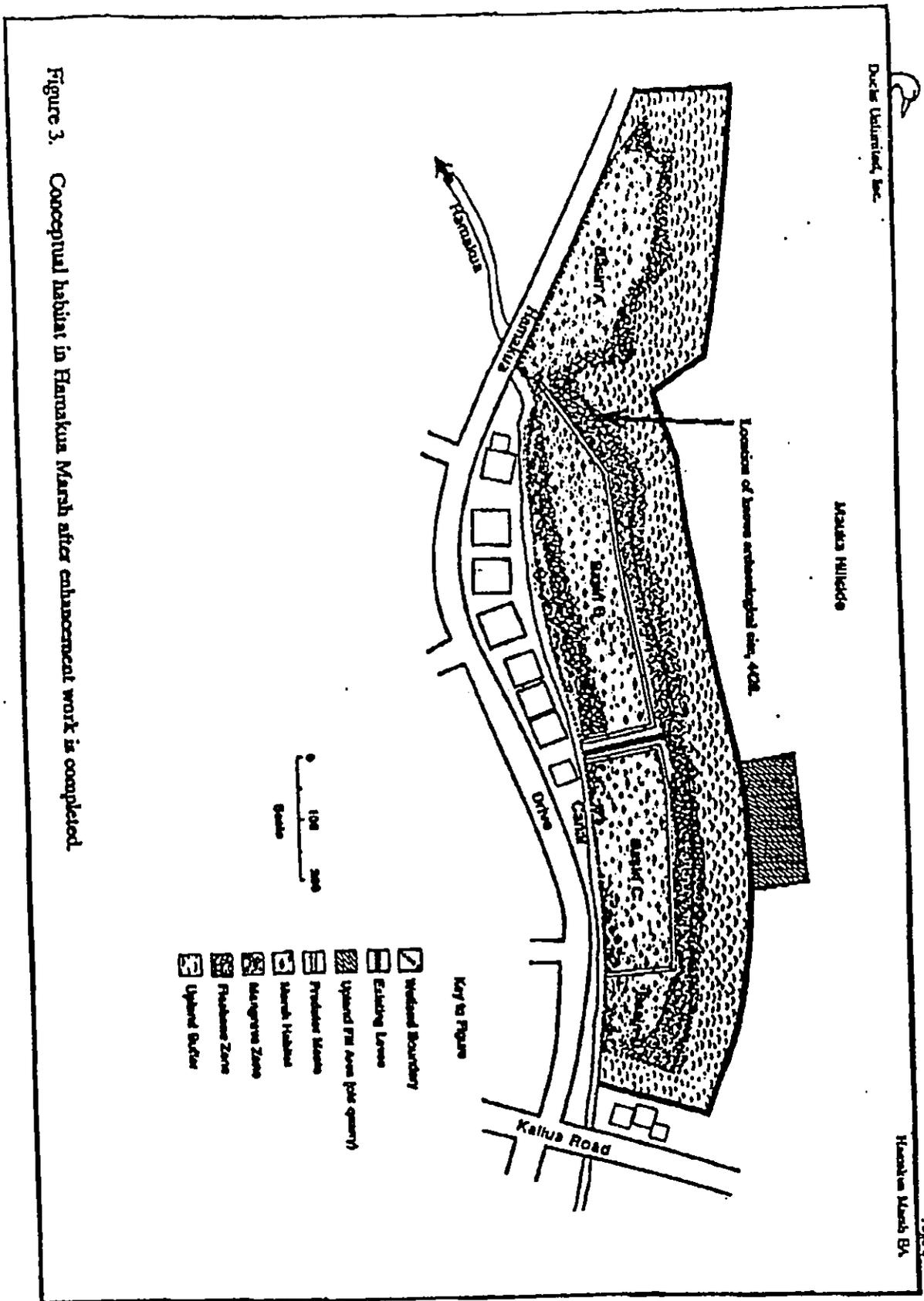


Figure 3. Conceptual habitat in Hamakua Marsh after enhancement work is completed.

07/92-2246

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU HAWAII 96813 • (808) 523 4432

FRANK FASI
MAYOR



DONALDA CLEGG
DIRECTOR

LORETTA KC CHEE
DEPUTY DIRECTOR

92-00611 (ASK)

July 22, 1992

MEMORANDUM

TO: DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU, AREAWIDE CLEARINGHOUSE

FROM: DEPARTMENT OF LAND UTILIZATION

SUBJECT: AGENCY PROJECT REVIEW

Project Title: Hamakua Wetlands Project
State Application Identifier No. HI920630-026-0

1. Is the proposed project (described in the enclosed notification of intent) related to the current programs, projects, or plans of this agency? If so, (a) will the proposed project influence the demand for current services and/or facilities provided by agency programs, (b) will it affect agency plans for the provisions of services and/or facilities in the future, or (c) will the agency be required to develop services and/or facilities at some future date as a result of the project?

The project is within the Special Management Area. Development is subject to the requirements of Chapter 25, Revised Ordinances of Honolulu, which is administered in part by the Department of Land Utilization. Based on the limited information presented, we anticipate that a Special Management Area Use Permit will be required prior to development.

2. Is this agency aware of other agencies whose programs or plans may be affected by this project? Which agencies?

Yes; State Department of Land and Natural Resources, State Department of Health, U.S. Army Corps of Engineer, U.S. Fish and Wildlife and the U.S. Soil Conservation Service.

3. Does this agency concur in the development of the proposed project?

Prior to rendering concurrence as requested, the applicant should provide a description of:

- a. Existing biological resources including and types of vegetation, aquatic resources, bird and wildlife supported by the wetland and the way these will be impacted by the proposed wetland development;
- b. Potential erosion or siltation which might result from development activities and mitigation on measures which will be undertaken to protect water quality;
- c. How the proposed development will enhance the ability of the wetland to support the desired wetland ecosystem;
- d. Impacts to flooding, existing and future drainage;
- e. Impacts to surrounding land uses including short-term construction activity and long-term wetlands management;
- f. Impacts to water quality including nearshore waters;
- g. The impact that the surrounding urban and potential future urban uses have on the viability and success of the wetland to support the desired vegetation and wildlife; and
- h. Identification of the chemicals to be used in predator removal.

A majority of these concerns will be addressed during the Special Management Area Permit process.

Loetta Chee, Acting Director 7-20-92
Signature of Agency Head Date

COMMENTS TO PRECEDING QUESTIONS

To: Ron Walker, Wildlife Program Manager

From: Andy Engilis

Subject: Hamakua Marsh Restoration, HI-0001-002 Clearing House Questions

Here are the answers to the questions asked by the clearing house, in relation to the project. I am wondering if the Clearing House received the final EA, because most of their concerns are addressed in it. Their comments have come from the draft management and restoration plan.

1) A detailed map showing the location of buffer zone, approximate location of predator moats, and vegetation clearing is provided in the Environmental Assessment prepared by DU. Until we complete our topographic surveys, exact location of predator moats cannot be determined. See attached figures (from the EA).

2) DU has abandoned the concept of fencing. It is no longer part of the project.

3). A letter from Kaneohe Ranch detailing the land exchange has been provided under separate cover. The letter specified that the project is not linked to the Kailua Gateway Project.

Comment 4.

4c. Once developed by contract engineers, I will be handling all county submissions for the project. This will include submittal of enhancement actions to the Division of Wastewater Management and SMA compliance.

4d. DU does not have the resources, nor is it appropriate for DU to conduct a cultural relationships study involving Kawainui and Kaelepulu Marshes. This type of study is beyond the scope and purpose of the project which involves wetland enhancement only on Hamakua Marsh. A cultural study will be conducted on Kawainui Marsh during the State's Conservation Planning Efforts currently underway.

4e. I have attached a chart that identifies the enhancement actions proposed by DU and how they benefit the native and migratory waterbirds that utilize the wetland.

4f. DU has and continues to coordinate all activities with the USFWS. Through the Army Corps of Engineers permit process, Section 7 consultation will ensure coordination efforts.

4g. DU has been in contact with State Historic Preservation Office. SHPO decided that all that was required was paleoenvironmental survey on the property. This has been included in the EA, DU has contracted for this survey. You have

letter on file from SHPO that states they have accepted our proposed survey as sufficient.

DU Proposal for Habitat Enhancement for Hamakua Marsh, Honolulu County, Hawaii.

Project actions and their impacts on waterbirds using Hamakua Marsh. (+ = Benefit, 0 = No impact, - = Negative impact)

Species	Action 1	Action 2	Action 3	Action 4	Action 5
Hawaiian Duck (Koloa)	+	+	0	+	+
Hawaiian Moorhen	+	+	+	+	0
Hawaiian Coot	+	+	+	+	0
Hawaiian Stilt	+	+	+	+	0
Migratory Shorebirds	+	+	0	+	0
Migratory Ducks	+	+	0	+	0

- Action 1: Vegetation Removal of Pluches and Mangrove to open basins for foraging habitat and loafing.
- Action 2: Predator Mgmt to restrict mongoose, cats and rats from interior of wetland basins for protection of waterbirds nesting, feeding or loafing.
- Action 3: Predator Control and removal to eliminate the threat of predation on young and nesting waterbirds, affects species expected to nest on the site.
- Action 4: Removal and control of mallards to eliminate possibility of hybridization with koloa.
- Action 5: Mauka buffer zone to protect the wetland from human disturbance.

Table depicting how habitat enhancement will benefit waterbirds activities on Hamakua Marsh

Species	Loafing	Foraging	Nesting	Brood Rearing
Hawaiian Duck	+	+	0	0
Hawaiian Stilt	+	+	+	+
Hawaiian Moorhen	+	+	+	+
Hawaiian Coot	+	+	+	+
Mig. Shorebirds	+	+	0	0
Mig. Ducks	+	+	0	0

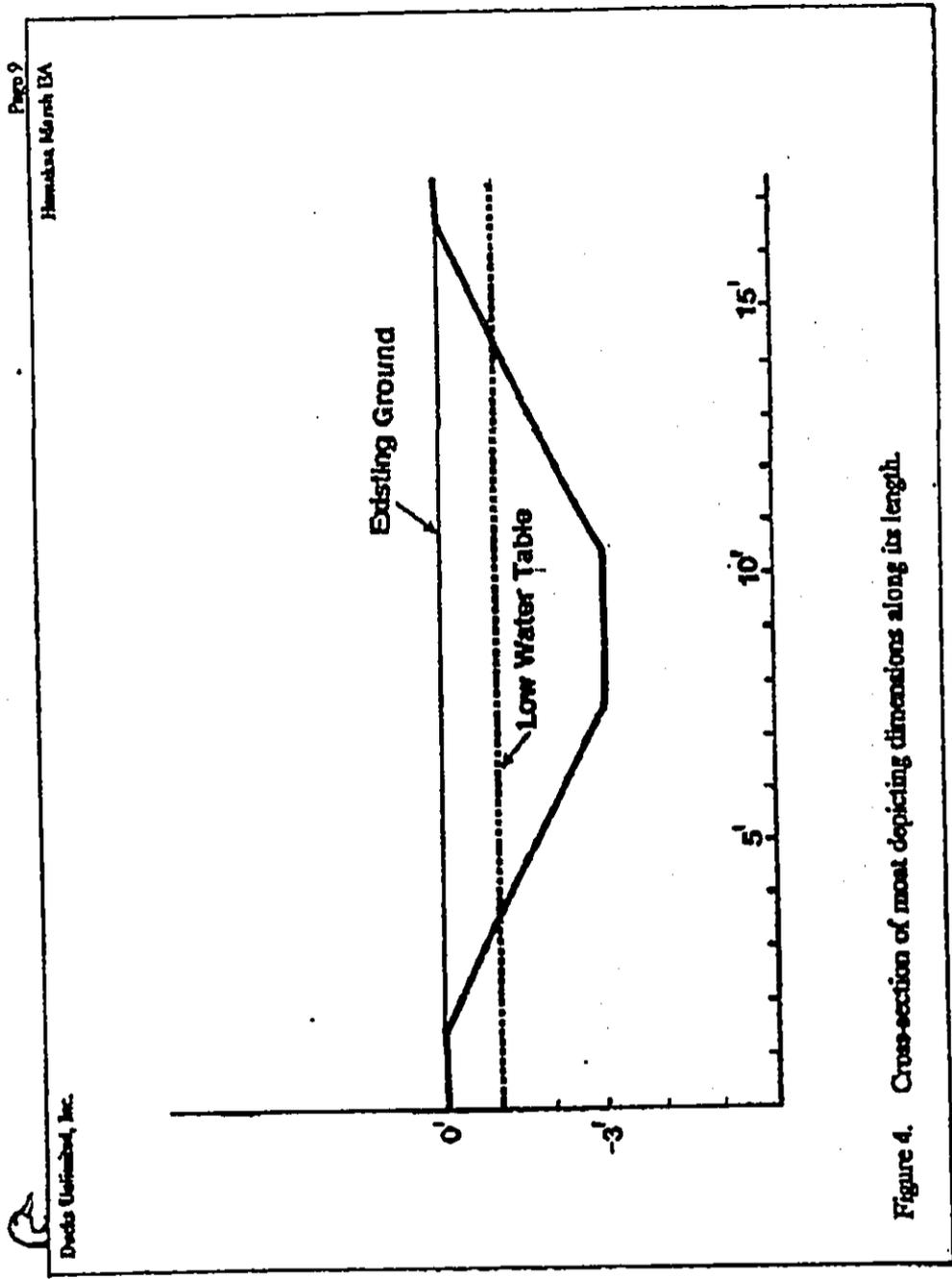
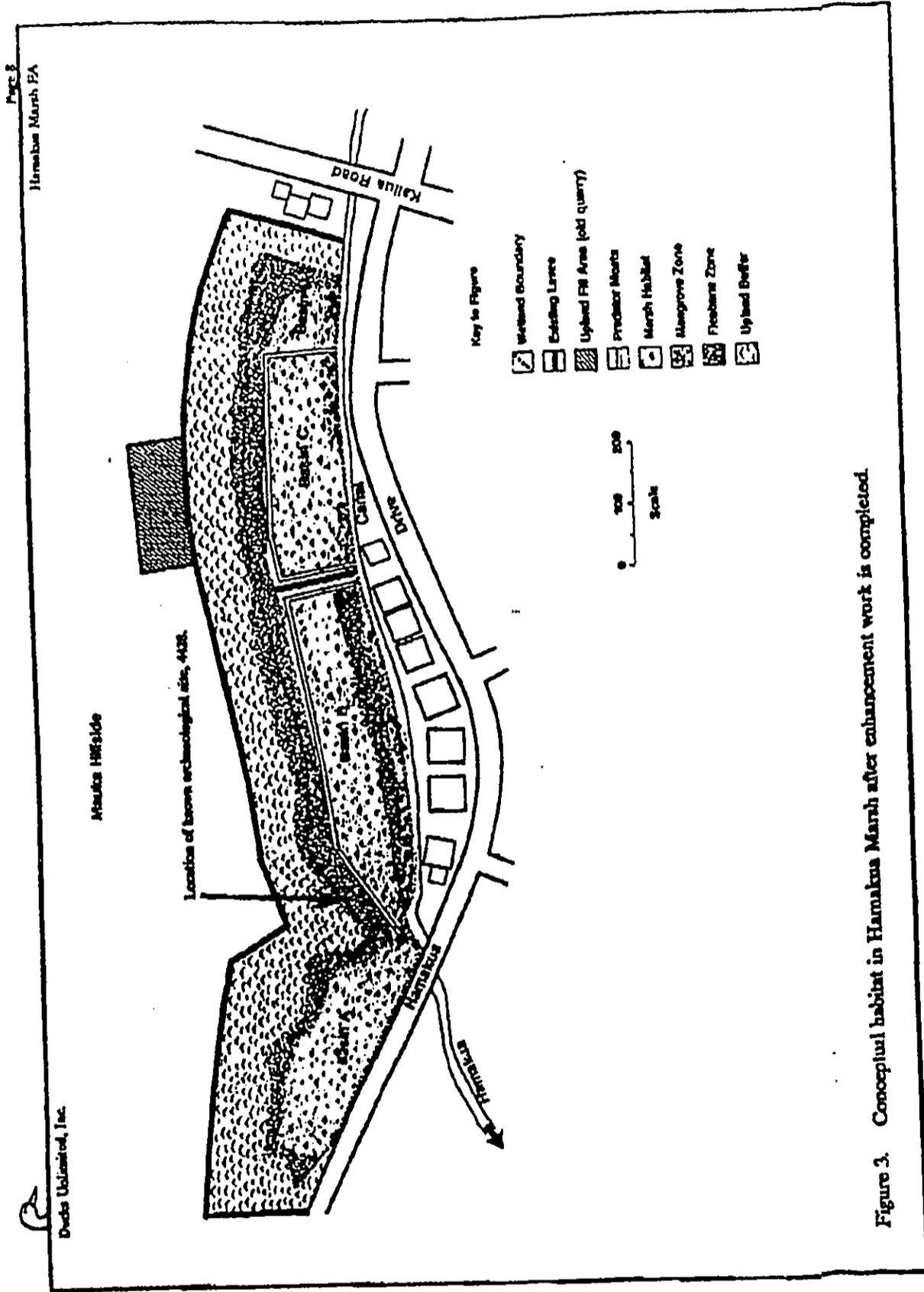


Figure 4. Cross-section of moat depicting dimensions along its length.

Ducks Unlimited, Inc.



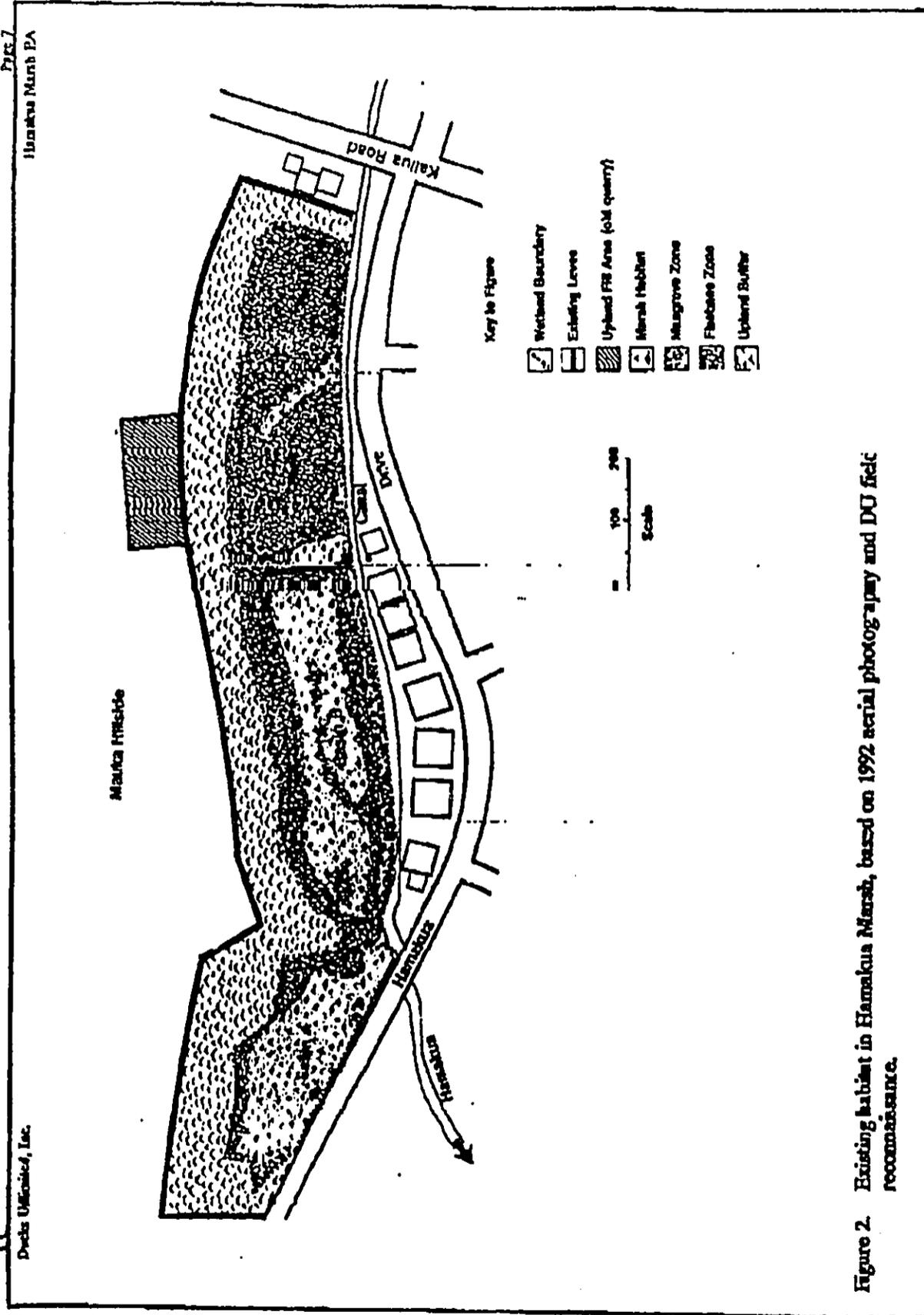


Figure 2. Existing habitat in Hamakua Marsh, based on 1992 aerial photography and DU field reconnaissance.

Part 3
Hawaii Marsh EA

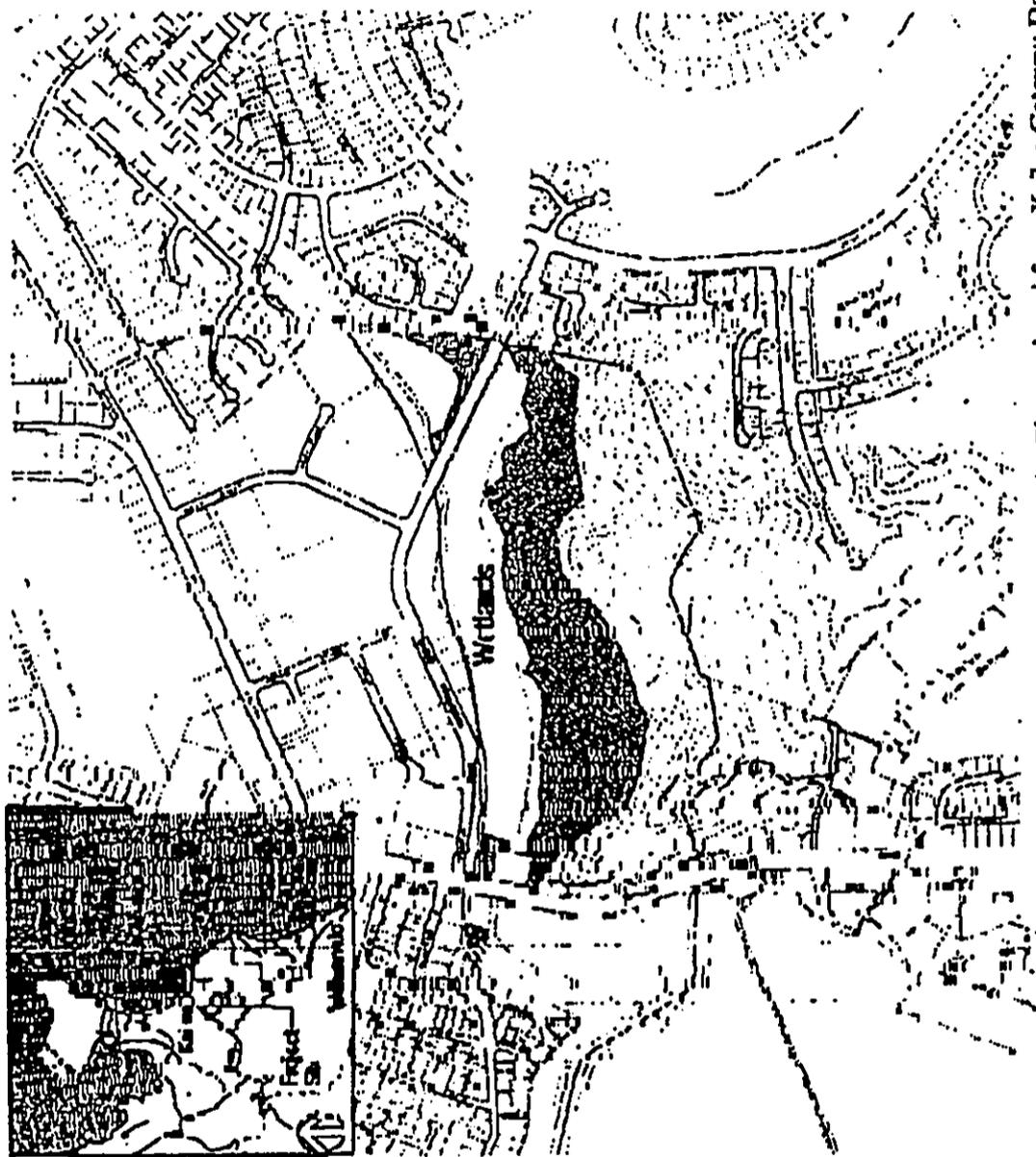


Fig. 1. Location of Hamakua Marsh. Figure adopted from Kailua Gateway Development, Environmental Impact Statement.

Part 3
Hawaii Marsh EA

0 500 1000
feet

DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

RECEIVED

32 AUG 3 A 9: 11

FRANK FASI
MAYOR

'92 AUG -4 P3:10



NATURAL RESOURCES
STATE OF HAWAII

BENJAMIN B LEE
CHIEF PLANNING OFFICER

ROLANDO LIBBY JR
DEPUTY CHIEF PLANNING OFFICER

ET 07/92-1961

July 30, 1992

Mr. Donald Friberg
Deputy Assistant Regional Director
United States Fish and Wildlife Service
911 North East 11th Avenue
Portland, Oregon 97232

Dear Mr. Friberg:

Areawide Clearinghouse Review for the
Proposed Hamakua Wetland Project
State Application Identifier No. HI920630-026-0

This is to inform you that the Areawide Clearinghouse, City and County of Honolulu, has completed its review of the proposed Hamakua Wetland Project.

In accordance with established clearinghouse procedures, we disseminated the completed Clearinghouse Form and notification of intent to the agencies and organizations listed below for their review and comment.

City and County

Department of Land Utilization*
Department of Public Works

State

Board of Agriculture
State Land Use Commission
Office of Environmental Quality Control*
Department of Health*
Department of Accounting and General Services*
University of Hawaii (U.H.) Environmental Center
U.H. Department of Urban and Regional Planning*
Office of State Planning*

Mr. Donald Friberg
Deputy Assistant Regional Director
July 30, 1992
Page 2

Federal

Soil Conservation Services
Office of Environmental Services
United States Army Corps of Engineers*

Community Organizations

Kailua Neighborhood Board
Outdoor Circle
League of Women Voters
Hawaii's Thousand Friends
Land Use Research Foundation
Kailua Community Council
Pohakupu Community Association
Kawai Nui Heritage Foundation
Lani/Kailua Outdoor Circle*

Eight of the agencies and community organizations listed above, which are identified by an asterisk, responded (see attached) as of July 23, 1992. Six of these agencies concurred with the proposed Hamakua Wetlands Project. The remaining two agencies (Department of Land Utilization and Department of the Army) offered comments on the subject application.

Clearinghouse Comments

The area of the subject application is designated Preservation on the Koolaupoko Development Plan Land Use Map.

We favor protection of wetlands and endangered species habitats. However, inadequate information has been presented for us to concur with the project. In addition to the concerns raised by Department of Land Utilization, the following items should be addressed:

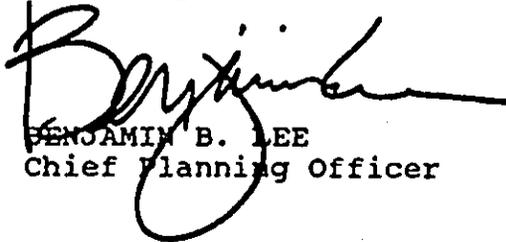
1. A map clearly delineating the project boundaries, including buffer zones and adjacent observation areas, should be provided. (Restoration Recommendations, Page 7, Action 9, references a Figure 2 which was not provided in the information submitted.)
2. The type and extent of fencing as an alternative or addition to the moats should be described.
3. The subject project was discussed within the Development Plan amendment application for the Kailua Gateway Project (92/KP-1), which was recently withdrawn

Mr. Donald Friberg
Deputy Assistant Regional Director
July 30, 1992
Page 3

from the 1992 Development Plan Annual Amendment Review.
The relationship between the subject project and Kailua
Gateway should be clarified, particularly in regards to
scheduling, buffer areas and cumulative impacts.

Should you have any questions, please contact Eugene
Takahashi of our staff at 527-6022.

Sincerely,



BENJAMIN B. LEE
Chief Planning Officer

BBL:js

Attachments

cc: Department of Land and Natural Resources
Division of Forestry & Wildlife
Department of Land Utilization

CEA

→ Ron W

DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU
RECEIVED
850 SOUTH KING STREET
HONOLULU, HAWAII 96813

92 JUL 2 A 7: 57

FRANK FASI
MAYOR



DEPT. OF LAND
& NATURAL RESOURCES
STATE OF HAWAII

92 JUL 1 11: 02

BENJAMIN B LEE
CHIEF PLANNING OFFICER
ROLAND D LIBBY JR
DEPUTY CHIEF PLANNING OFFICER

CEA
ET 6/92-1961

July 1, 1992

Honorable William W. Paty, Chairperson
Board of Land and Natural Resources
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

FOREST & STREAMS
STATE OF HAWAII

92 JUL -7 P2:11

RECEIVED

Dear Mr. Paty:

Areawide Clearinghouse for the Proposed
Hamakua Wetlands Project
State Application Identifier No. HI920630-026-0

We received your notification informing the Department of General Planning that the Department of Land and Natural Resources is proposing to acquire, enhance, protect a 20-acre wetland in an urban environment, preserve habitat for four species of endangered waterbirds, and develop interpretive facilities in the Hamakua Wetlands area.

Under current procedure established by the State Clearinghouse, your notification is being circulated for comment to various agencies who interests might be affected by your proposal.

We will provide you with our comments and recommendation upon completion of our review. Should you have any questions, please contact Eugene Takahashi of our staff at 527-6022.

Sincerely,

BENJAMIN B. LEE
Chief Planning Officer

By *Gary H. Okino*
GARY H. OKINO, Chief
Community Planning Division

GHO:js

June, 1992

Department of General Planning
City and County of Honolulu
650 South King St.
Honolulu, Hawaii 96813

Gentlemen:

Enclosed are Areawide Clearing House documents for the
HAMAKUA WETLANDS PROJECT which we hope to implement beginning in
August, 1992. Your expeditious review and approval would be
appreciated.

Yours Very Truly,

WS
William W. Paty
Chairperson

cc: Office of State Planning
Office of Environmental Quality Control
State Department of Health (Environmental Protection and
Health Services

State of Hawaii
CLEARINGHOUSE FORM

Notification of Intent To Apply for Federal Assistance or for Direct Federal Development

1. Project Title HAMAKUA WETLANDS PROJECT

2. If project is a renewal, revision, or continuation, give previous State Application Identifier numbers HI
HI

3. A. If any State agency or local government unit has been contacted or has furnished information relative to the proposed project, list individual staff members contacted and agencies they represent.

NONE

B. List any other State or local agencies which you believe might have an interest in or be affected by the proposed project.

CITY AND COUNTY OF HONOLULU

OFFICE OF ENVIRONMENTAL QUALITY CONTROL

OFFICE OF STATE PLANNING (COASTAL ZONE MANAGEMENT)

4. A. Provide a narrative description of the project and indicate the project's relationship to approved State Functional Plans and County General Plans and development plans. (Use a blank sheet of paper if the space provided here is not enough.)

Acquisition, planning, development, and management of Hamakua wetlands, Kailua, Oahu, Hawaii. Protect a 20 acre wetland in an urban environment preserve habitat for four endangered waterbirds, and develop interpretive facilities (See attached project narrative and restoration and management recommendations).

Project is consistent with the State Conservation Plan (OBJECTIVE IIB, Protection of fragile or rare natural resources), Hawaii Wildlife Plan (F-2, Endangered Species Preservation), Chapter 195-D, H.R.S. (Conservation of Aquatic Life, Wildlife and Land Plants) and City and County of Honolulu General Development Plan (Preservation).

- B. Indicate the objectives, policies or Priority Guidelines of the Hawaii State Plan which your project is guided by or carries out. For example: Section 226-21(b)(9), HRS, Support research programs and activities that enhance the education programs of the State.

Section 226-11(a) (2) - Protect unique environmental resources.
Section 226-11(b) (1) - Exercise overall conservation ethic.
Section 226-11(b) (6) - Protect rare and endangered animal species and habitats.

- C. Priority Guidelines, Part III of The Hawaii State Plan, sets forth areas of statewide concern that merit immediate attention. Indicate with an "X" the priority area which your proposal will affect the most.

- Provide jobs; stabilize and diversify Hawaii's economy
- Maintain a healthy visitor industry
- Promote the continued viability of the sugar and pineapple industries
- Protect and encourage agricultural and aquacultural activities
- Conserve water and energy resources, and increase research and development of alternative sources of water and energy
- Manage population growth so that it does not threaten Hawaii's basic resources
- Support desired statewide growth and distribution priority guidelines
- Support regional growth distribution and land resource utilization priority guidelines
- Support law enforcement and criminal justice activities
- Provide for affordable housing
- Promote quality education
- Promote the development of the information industry.

5. State agencies are to follow and use the 12 Functional State Plans as guidelines for programming and budgeting. For projects proposed by State agencies, indicate objectives, policies and implementing actions of related State Functional Plans, if applicable.

State Conservation Lands Plan

Objectives: Protection of resources from exploitation, restoration, enhancement.

Policy: Indigenous birds, endangered species to be protected.

Action: Surveys, monitor species, habitats, endangered species.

State Recreation Plan

Objectives: Exercise overall conservation ethic.

Policy: Establish resource conservation program.

Action: Determine appropriate actions to protect resources while providing recreational opportunities.

6. What are the anticipated benefits of this project? Who are the target beneficiaries?

The ultimate benefit is to assure that indigenous and endangered native species survive. The public benefits in that the future generations may see and appreciate rare native birds. Birdwatchers, scientists, and nature lovers are beneficiaries.

7. Provide the name(s) of the district(s) which will be affected by the subject proposal. If the proposal will affect more than 10 districts, indicate statewide. Use the maps on page 3-33 to assist.

KOOLAU POKO _____

8. A. Anticipated project period: From July 1, 1992 To June 30, 1995

B. Funds are for: Planning X Construction X
Program X Staff _____
Other _____ (Please specify)

- C. Federal agency information: Name U.S. FISH AND WILDLIFE SERVICE

Contact Person DONALD FRIBERG

Title DEP. ASST. REGIONAL DIRECTOR

Address 911 N.E. 11th AVENUE

City PORTLAND State OR. Zip 97232

9. If the project involves any construction activity, give the Tax Map Key, indicate if a site location map, a plat plan and a site plan have been included, and provide contact names and dates of project coordination with the Department of Health (DOH) and the Department of Land and Natural Resources (DLNR).

TMK 4-2-01 4-2-03 _____ Site Location Map Included Yes X No _____

Plat or Site Plan Included Yes X No _____

Contact Person

Date of Contact

DOH-EPHS _____

DOH-OEQC _____

DLNR RONALD L. WALKER 587-0166

10. Does this proposal require a determination of Federal consistency with the CZM Program? Yes X No _____ (Check Appendix 1 for programs which may require CZM review.)

WILLIAM W. PATY, CHAIRPERSON, BOARD OF LAND AND NATURAL RESOURCES
Name and Title of Authorizing Official (print or type)

Signature

Date



United States Department of the Interior
FISH AND WILDLIFE SERVICE

911 N.E. 11th Avenue
Portland, Oregon 97232-4181

In Reply Refer To:
FWS/AFF/FA

MAR 12 1992

William W. Paty, Chairperson
Board of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96813

RECEIVED

92 MAR 16 P2:30

Dear Mr. Paty:

FORESTRY & WILDLIFE
This letter confirms that Fiscal Year 1992 National Coastal Wetlands Conservation grant funds will be made available in the amount of \$100,000 for your "Hamakua Wetlands" project. Please submit an Application for Federal Assistance and a Project Agreement to describe the acquisition and expected costs to Donald Friberg, Deputy Assistant Regional Director, Fisheries and Federal Aid, at the above address.

If you have questions about preparation of the documents or the process, please call Kahler Martinson at 503-231-6128.

Sincerely,

WILLIAM E. MARTIN

Acting Regional Director

Enclosures

cc: Ron Walker, Div. of Forestry, Honolulu, HI

Standard Form 424A

OMB Approving 3145-0044

BUDGET INFORMATION — Non-Construction Programs

Grant Program Function or Activity (a)	Coding of Federal Demerit Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		Total (d)
		Federal (c)	Non-Federal (e)	Federal (f)	Non-Federal (g)	
1. TITLE III	P, J, 101-646	\$	\$	\$ 100,000	\$ 123,900	\$ 223,900
2.						
3.						
4.						
5. TOTALS		\$	\$	\$ 100,000	\$ 123,900	\$ 223,900
SECTION B - SUBJECT CATEGORIES						
Grant Program Function or Activity						
6. Object Class Categories		(1)	(2)	(3)	(4)	Total (5)
a. Personnel		\$	\$	\$	\$	\$
b. Fringe Benefits						
c. Travel						
d. Equipment						
e. Supplies						
f. Contractual						
g. Construction						
h. Other						
1. Total Object Charges (sum of 6a-6h)						
2. Indirect Charges						
3. TOTALS (sum of 1 and 2)		\$	\$	\$	\$	\$
4. Program Income		\$	\$	\$	\$	\$

(TO BE DETERMINED)

Authorized for Local Reproduction

Standard Form 424A, 10-69
Prescribed by OMB Circular A-103

Standard Form 424A (cont'd.)

SECTION C - NON-FEDERAL RESOURCES				(10) TOTALS
(1) Grant Programs	(2) Applications	(3) State	(4) Other Sources *	
4. TITLE III, P.L. 101-646	\$	\$ 3,900	\$ 120,000	\$ 123,900
5.				
10.				
11.	\$	\$ 3,900	\$ 120,000	\$ 123,900
12. TOTALS (sum of lines 4 and 11)				
SECTION D - FORECASTED CASH NEEDS				(10) TOTALS
(1) Grant Programs	(2) Applications	(3) State	(4) Other Sources *	
13. Federal	\$ 50,000	\$ 50,000	\$	\$
14. Non-Federal	123,900			1,900
15. TOTAL (sum of lines 13 and 14)	\$ 173,900	\$ 50,000	\$	\$ 3,900
SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT				
(1) Grant Program	(2) First	(3) Second	(4) Third	(5) Fourth
16. TITLE III, P.L. 101-646	\$ 25,000	\$ 25,000	\$	\$
17.				
18.				
19.	\$ 25,000	\$ 25,000	\$	\$
20. TOTALS (sum of lines 16-19)				
SECTION F - OTHER BUDGET INFORMATION				
(Attach additional sheets if necessary)				
21. Grant Outputs:	22. Indirect Outputs:			
23. Assets * In-Kind Value of Land-Donation from Private Landowner to Ducks Unlimited, Inc.				

SF 424A-11-80, Page 2
 Provided by OMB Circular A-101

Authorized for Local Reproduction

HAMAKUA WETLANDS, KAILUA, OAHU, HAWAII

A. NEED/PURPOSE

To acquire, enhance, protect a 20-acre wetland in an urban environment, preserve habitat for four species of endangered waterbirds, and develop interpretive facilities.

B. OBJECTIVES

1. Acquire by donation from private owner to Ducks Unlimited Inc. and transfer to State of Hawaii for management.
2. Develop improvements including removal of noxious plants, development of moats and islands, erection of predator proof fences, and construction of signing and interpretive kiosks.
3. Implement management by State of Hawaii, including annual vegetation manipulation, predator control monitoring, and control of public access.
4. Secure in perpetuity by inclusion in State of Hawaii wildlife sanctuary status (Governors Executive Order, Administrative Rule).

C. RESULTS/BENEFITS

1. Preservation of coastal wetland presently threatened with alteration and disturbance by surrounding urban developments (industrial, commercial, residential).
2. Perpetuation of hydrological unit connecting the largest freshwater marsh (Kawainui) on the island of Oahu with the ocean, passing through an urban area (Kailua town).
3. Enhancement of present habitat for 4 species of endangered waterbirds (Hawaiian Stilt, Coot, Gallinule and Duck) to include predator and disturbance free nesting, feeding and resting areas.
4. Provide convenient locale, facilities for public education, scientific research, and interpretation of wetland values.

D. APPROACH

1. Donation of fee simple title by owner (Kaneohe Ranch Ltd.) to Ducks Unlimited Inc.

2. Development of improvements by Ducks Unlimited Inc. utilizing Grant-in-Aid Federal funds administered by the State of Hawaii, Division of Forestry and Wildlife.
3. Development of management plan by Ducks Unlimited Inc., and Division of Forestry and Wildlife for short term and long range improvements and management.
4. Coordinate project with donating landowner to assure compatibility of adjacent developments with wetland preservation.
5. Transfer of property from Ducks Unlimited Inc. to State of Hawaii for wildlife sanctuary.
6. Establish wildlife sanctuary by executive order, promulgation of administrative rule to provide legal protection, enforcement authority.
7. Develop ongoing management program for habitat preservation, maintaining wetland integrity, monitoring water quality, and annual surveys of biological attributes.

E. LOCATION

Hamakua Drive, Kailua, Oahu, Hawaii (see attachment)

F. COSTS

	TOTAL	YEAR 1	2	3
1. Land Acquisition	\$120,000 (Land Donation)	120,000		
2. Planning	5,000	5,000		
3. Improvements	95,000	45,000	25,000	25,000
4. Interpretation	<u>3,900</u>	<u>3,900</u>		
	TOTAL	\$223,900	173,900	25,000 25,000

G. OTHER ACTIONS

This area consists of a drainage canal, small wetland, and periodically flooded pasture adjacent to Kawainui Marsh which has been subjected to public, private, and governmental attention. The Kawainui project is in progress and funds have been committed to land acquisition, a wildlife sanctuary and master planning totalling \$7,260,000. This wetland will provide a linkage between Kawainui and the sea in an urban environment and demonstrate the value of the overall Kawainui-Hamakua Wetland system.

H. PUBLIC INVOLVEMENT

Public and private agencies supporting this project include the Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, Kawainui Heritage Foundation, Hawaii and National Audubon Societies, Kailua Neighborhood Board, State Legislative Representatives, and the Lani-Kailua Outdoor Circle. A series of public meetings have been held involving the landowner, Ducks Unlimited Inc., and consultants to plan for preservation and enhancement of the wetlands ("Kailua Gateway Community Advisory Committee").

I. TITLE III OF PUBLIC LAW 101-646 (ACT) CRITERIA MET:

1. Addresses the "No Net Loss" concept and reverses habitat degradation.
2. Fosters biodiversity; includes 4 species of endangered waterbirds.
3. Includes inter-jurisdictional (Federal, State, County, Private) Aquatic Resource Hydrologic system.
4. Reverses effects of point and non-point source pollution.
5. Project plan includes analysis of cumulative impacts if project not implemented and prevents wetland habitat fragmentation.
6. Project involves multiple agencies (see H, above) and a private owner.
7. Project includes interpretive program for public outreach.
8. It is consistent with the National Wetlands Priority Conservation plan principles and the Hawaiian Waterbirds Recovery Plan (U.S. Fish and Wildlife Service, 1985).

Prepared By:

Ronald L. Walker
Hawaii Division of Forestry
and Wildlife
1151 Punchbowl Street
Honolulu, Hawaii 96813
(808) 587-0166

September 26, 1991

RESTORATION RECOMMENDATIONS

- Action 1. The site restoration will require a topographic survey and general vegetation mapping. Through mapping, areas for plant removal can be planned and areas for note construction can be planned.
- Action 2. Once plans are drawn DU will be responsible to obtain an Army Corps 404 permit for the sites construction.
- Remove Indian Fleabane (*Pluchea indica*) from the wetland basin. This invasive upland species has reduced available habitat for native waterbirds. Once removed emergent wetland plants are expected to return. Removal may be through heavy equipment.
- Action 3. Remove all mangrove (*Rhizophora mangle*). This includes all trees and sprouts. This effort may require heavy equipment and hand removal. The makai wetland section is particularly choked out by mangrove. Cut trees would be removed to a nearby sanitary landfill.
- Action 4. Open wetland flats can be accomplished through mowing or top vegetation removal. Flats of *Battis*, and other emergents will be mapped and removal will undertaken to try and establish a 30% interspersion (plants to open water) level. In time regeneration should lead to the desired 50% interspersion of plants and water.
- Action 5. Moat construction appears to be the most cost effective predator control strategy for the site. The moat would be constructed to isolate several portions of the wetland to allow for eradication of predators within. In this fashion, nesting and brood feeding areas can be protected. The exact layout of moats will be determined from topographic surveys and available funding. The moat should be 4 feet wide and 3 feet deep. Spoils from the excavation could be placed on upland sites to avoid fill. Some nesting islands could be established, but this alternative will need to be carefully considered.
- Action 6. Fencing may be an alternative to moat construction, but is far less effective in predator control. fencing along the Hamakua Drive side of the property would limit human intrusion.
- Action 7. Predator removal will be necessary once moats are functional. With the use of EPA approved chemicals mongoose and rodents can be effectively removed

from with the moated areas. The area will be surveyed for the removal of cats if necessary. For reasons of practicality, DOFAW will be in charge of predator removal and control on the site.

Action 8.

Trash Removal is necessary as large quantities of debris have accumulated over the years. Trash removal could be accomplished at the same time as the vegetation removal process.

Action 9.

A buffer zone, from planned Kailua Gateway Development will be required so as to maintain the integrity and values of the restored wetland. The degree of vegetation to be left along the wetland's edge will be negotiated between DU and Kaneohe Ranch; as will the desired width of the buffer zone. Plantings of native coastal shrubs in the buffer zone will enhance the aesthetic value of the property. Species such as Naupaka could be planted to outcompete indian fleabane. Plantings along the Hamakua canal could also provide a disturbance barrier without hindering viewing of the wetland.

Figure 2 depicts a conceptualized view of the restored wetland and buffer areas.

MANAGEMENT RECOMMENDATIONS

Recommendation 1.

Predator control will be imperative to maintain nesting populations of endemic waterbirds. DOFAW will periodically monitor, through trapping, rat, cat and mongoose populations at the project site. A control program will be instituted to keep predator populations low.

Recommendation 2.

Control of reseeding mangrove will also be necessary. Periodic site visits to remove seeds, and seedling mangrove will be required. The frequency of these visits will be agreed upon by DOFAW and DU.

Recommendation 3.

During periodic site visits, the area should be policed for trash. A home owners association, for Kailua Gateway could develop a fund for maintaining the buffer zone area.

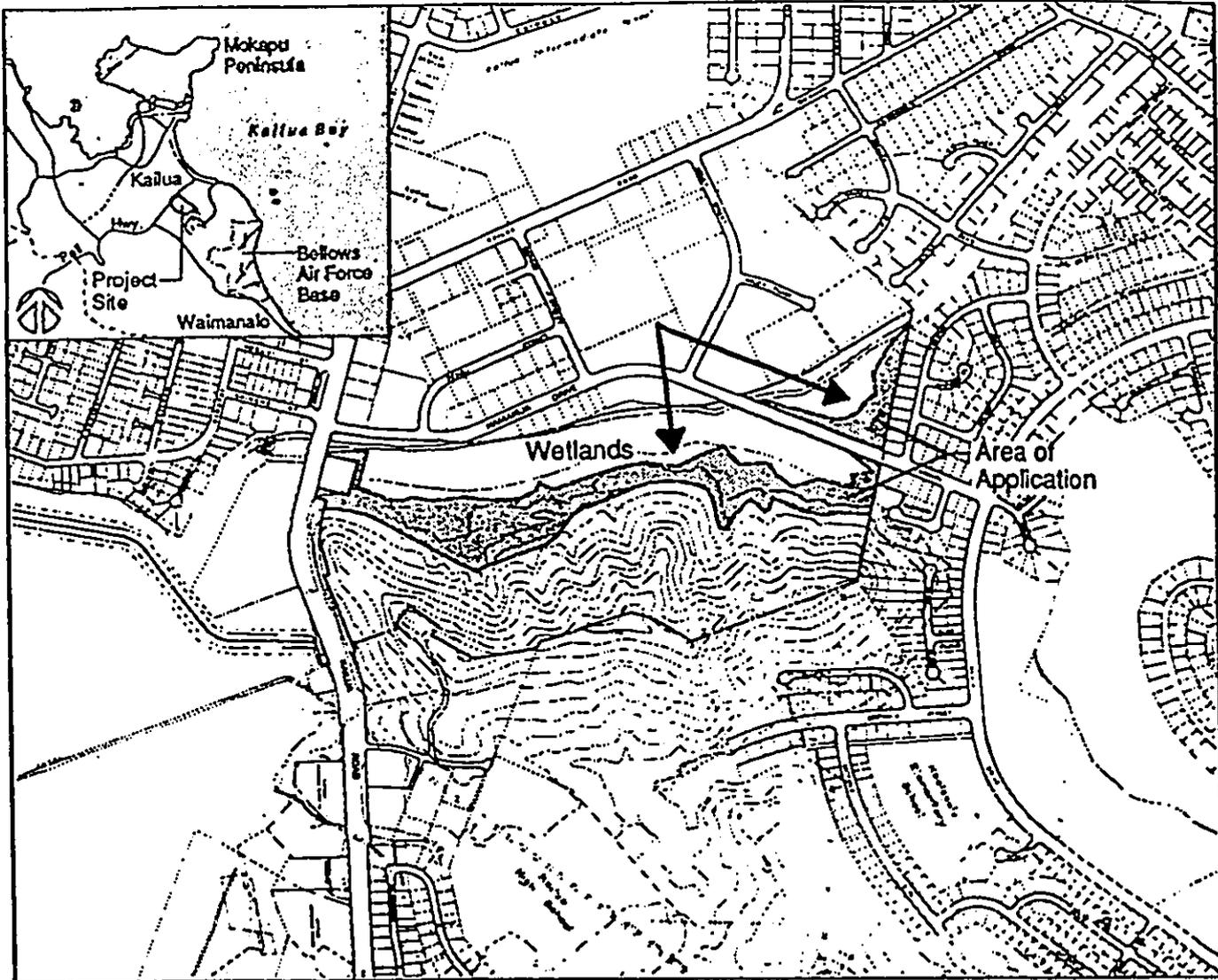
Recommendation 4.

Mallards will be excluded through trapping and removal from the Hamakua Marsh wetland. No exotic waterfowl will be allowed to inhabit the marsh.

- Recommendation 5. Stabilized water levels are expected to encourage the growth of desired emergents. No seeding will be necessary. Instead those wetland species present in the existing seed bank will be encouraged to grow through stable water level management. Dry-season evaporation will expose portions of the marsh allowing moist-soil species to germinate. Expected to thrive are wetland annuals and perennials. Water level management will not be a factor in maintaining this wetland.
- Recommendation 6. Wetland basin vegetation is expected to grow beyond our desired interspersion of 50% open water/vegetation. We estimate that vegetation control efforts in the basins will be required every 2-3 years. Ducks Unlimited will provide technical assistance to DOFAW in developing a vegetation control management scheme. It is anticipated that mowing will be the desired vegetation control practice. The technique best suited to this wetlands will become more apparent once the wetland has been allowed to function.
- Recommendation 7. In order to maintain the predator control character of the moats, periodic vegetation removal will be required. This can be done economically and efficiently through the use of aquatic vegetation herbicides.
- Recommendation 8. The wetland will be monitored annually to judge the degree of vegetation growth. This proactive monitoring should allow DOFAW to keep-up with management duties. DOFAW will establish the criteria for the monitoring program and will consult with DU in the effort.
- Recommendation 9. Monitor water levels in the marsh using staff gauges.
- Recommendation 10. Monitor waterbird populations and degree of nesting success in order to determine the effectiveness of the management program. DOFAW and DU will agree upon criteria used to evaluate the management program.
- Recommendation 11. DOFAW will be managing this wetland as a wildlife sanctuary. DOFAW will keep people from aimlessly walking about. Bird watchers, school children, and nature groups may view wildlife from an interpretive overlook planned for the buffer area and along Hamakua Drive, and will be excluded from directly walking on core habitat areas, to reduce wildlife harassment.

Recommendation 12. The Hamakua Marsh provide excellent opportunities for natural history education and interpretation. Endangered waterbirds and migratory birds can be regularly seen on the marsh. A visitor's kiosk with interpretive panels will be established on the Hamakua Drive frontage. DU, Castle Estate and DOFAW will jointly agree on construction and production of the signs. The feasibility of developing a hiking trail along the buffer zone will be explored with the Developer of the Kailua Gateway, Kaneohe Ranch and DU. A visitor's kiosk could be placed on this side of the wetland as well. In the future, the trail could support an interpretive walk. Funding will need to be secured.

Recommendation 13. DOFAW will be required to maintain the interpretive kiosk along Hamakua Drive. Arrangements for managing the interpretive areas on the Kailua Gateway side will be needed.



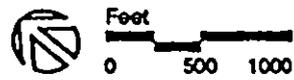
Location Map

SITE PLAN

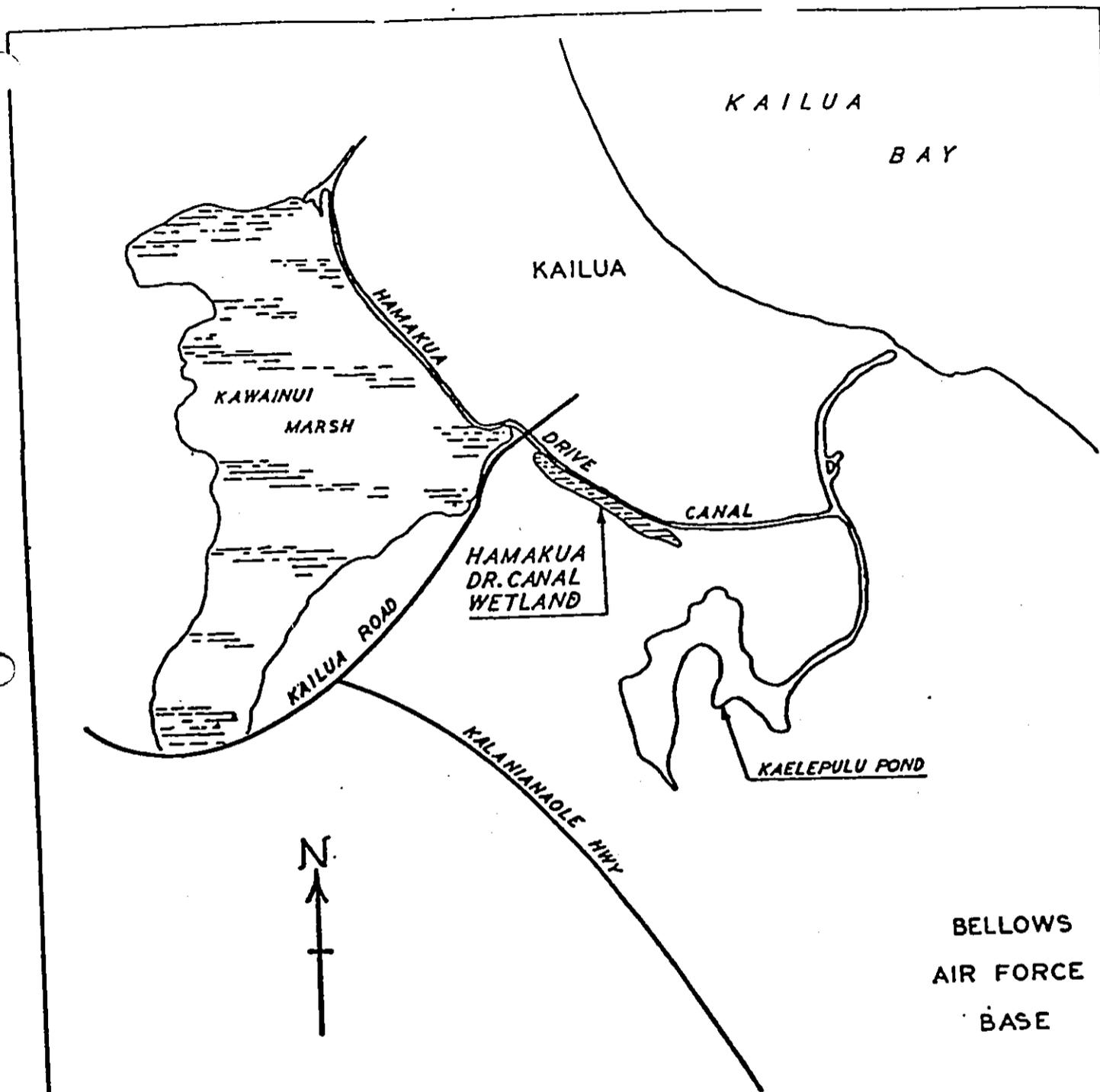
Figure

KAILUA GATEWAY

Prepared for: Kaneohe Ranch Company, Limited
 Prepared by: Helber Hastert & Fee, Planners

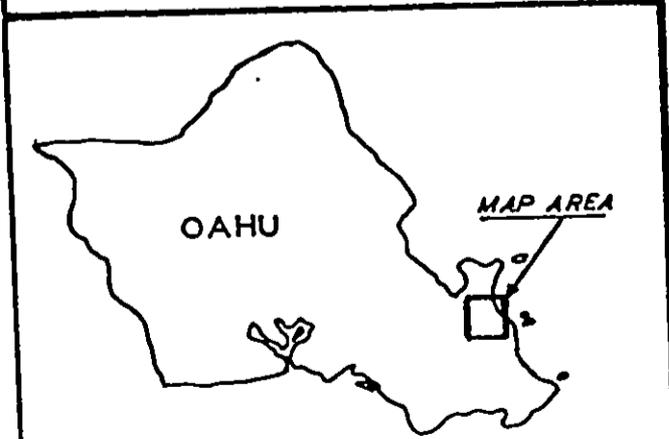


1



BELLOWS
AIR FORCE
BASE

SITE LOCATION



APPENDIX 3

CLEARINGHOUSE FORM

Send an original of the attached CLEARINGHOUSE FORM to the State Clearinghouse for all Statewide, Kauai, Hawaii and Maui County project applications.

For projects located on Oahu only, send the original to the Areawide Clearinghouse, and a copy to the State Clearinghouse.

STATE CLEARINGHOUSE

Office of State Planning
Office of the Governor
State Capitol
Honolulu, Hawaii 96813
Phone: 548-3016

AREAWIDE CLEARINGHOUSE

Department of General Planning
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813
Phone: 527-6056

For projects which involve major construction or major land use changes, please submit evidence that your project has been discussed with the following State agencies:

1. State Department of Health
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813
Phone: 548-6915
(Contact this office to determine environmental impact statement requirements)
2. State Department of Health
Environmental Protection and Health Services
1250 Punchbowl Street
Honolulu, Hawaii 96813
Phone: 548-4139
3. State Department of Land and Natural Resources
1151 Punchbowl Street
Honolulu, Hawaii 96813
Phone: 548-6550

KANEOHE RANCH
The Estates of Harold K.L. Castle and Alice H. Castle

Trustees
James C. Castle
James C. McIntosh
Hawaiian Trust Company Limited
Chief Executive Officer:
Randolph G. Moore

Castle Junction
1199 Aulua Road
Kailua, Hawaii 96734
Telephone (808) 247-2184

November 4, 1992

'92 NOV 12 P1:17

FORESTRY
STATE OF HAWAII

Mr. Ronald L. Walker
Wildlife Program Manager
Division of Forestry and Wildlife
Dept. of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Walker:

Subject: Hamakua Marsh Enhancement

This will confirm that the Castle Trusts' donation of approximately 23 acres of the Hamakua wetlands to Ducks Unlimited, Inc. is not contingent on any government approval of the proposed Kailua Gateway project.

Sincerely,

Randolph G. Moore

Randolph G. Moore
President and Chief Executive Officer

cc: Mr. Andrew Engilis, Jr.



REPLY TO
ATTENTION OF

Planning Division

Mr. Benjamin B. Lee
Chief Planning Officer
Department of General Planning
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Lee:

Thank you for the opportunity to review and comment on the Notification of Intent to Apply for Federal Assistance for the Proposed Hamakua Wetlands Project, Kailua, Oahu. The following comments are provided pursuant to Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army (DA) permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act:

a. The wetlands restoration project involves work in waters of the United States; therefore, a DA permit is required. The U.S. Fish and Wildlife Service and Ducks Unlimited Inc. have held pre-application meetings with Operations Division, and a permit application is expected shortly.

b. The project wetland and Kawainui Marsh are not connected or linked as suggested in sections C.2 and G of the notice; they are separate hydrological units.

Sincerely,


Kisuk Cheung, P.E.
Director of Engineering

07-4-2230

100-100000

10



DUCKS
UNLIMITED
INC.

DUCKS UNLIMITED, INC.
WESTERN REGIONAL OFFICE
9823 Old Winery Place, Suite 16
Sacramento, CA 95827
(916) 363-8257

January 26, 1993

Benjamin B. Lee, Chief Planning Officer
City and County of Honolulu
Dept. of General Planning
650 S. King Street
Honolulu, HI 96813

Dear Mr. Lee:

We would like to take this opportunity to address the questions raised by your department on our Hamakua Wetlands Restoration Project (Army Corps Permit Application, PODCO 93-003)..

Q1. A map was requested that clearly delineates the subject proposal. A detailed map showing the location of buffer zone, approximate location of predator moats, and vegetation clearing is provided in the Environmental Assessment prepared by DU (enclosed). Until we complete our topographic surveys, exact location of predator moats cannot be determined.

Q2. Ducks Unlimited has abandoned the concept of fencing. It is no longer part of the project.

Q3. Kaneohe Ranch has sent a letter clarifying the relationship of this project (enclosed). It is not part of the application for the Kailua Gateway Project. The projects are separate. We have negotiated a minimum 100 foot buffer zone (see enclosed map) which will be part of any development plans on the mauka hillside.

Q4. A map showing the proposed fill site is enclosed. This map was in the EA.

I hope this letter helps address the City and County's concerns. We are pleased that your department supports this project. Protecting Hawaii's natural wetland resources is a goal common to us all. If you have any further comments please contact us at (916) 363-8257.

Sincerely,

Andrew Engilis, Jr.
Project Biologist

cc: Army Corps of Engineers
Department of Land and Natural Resources

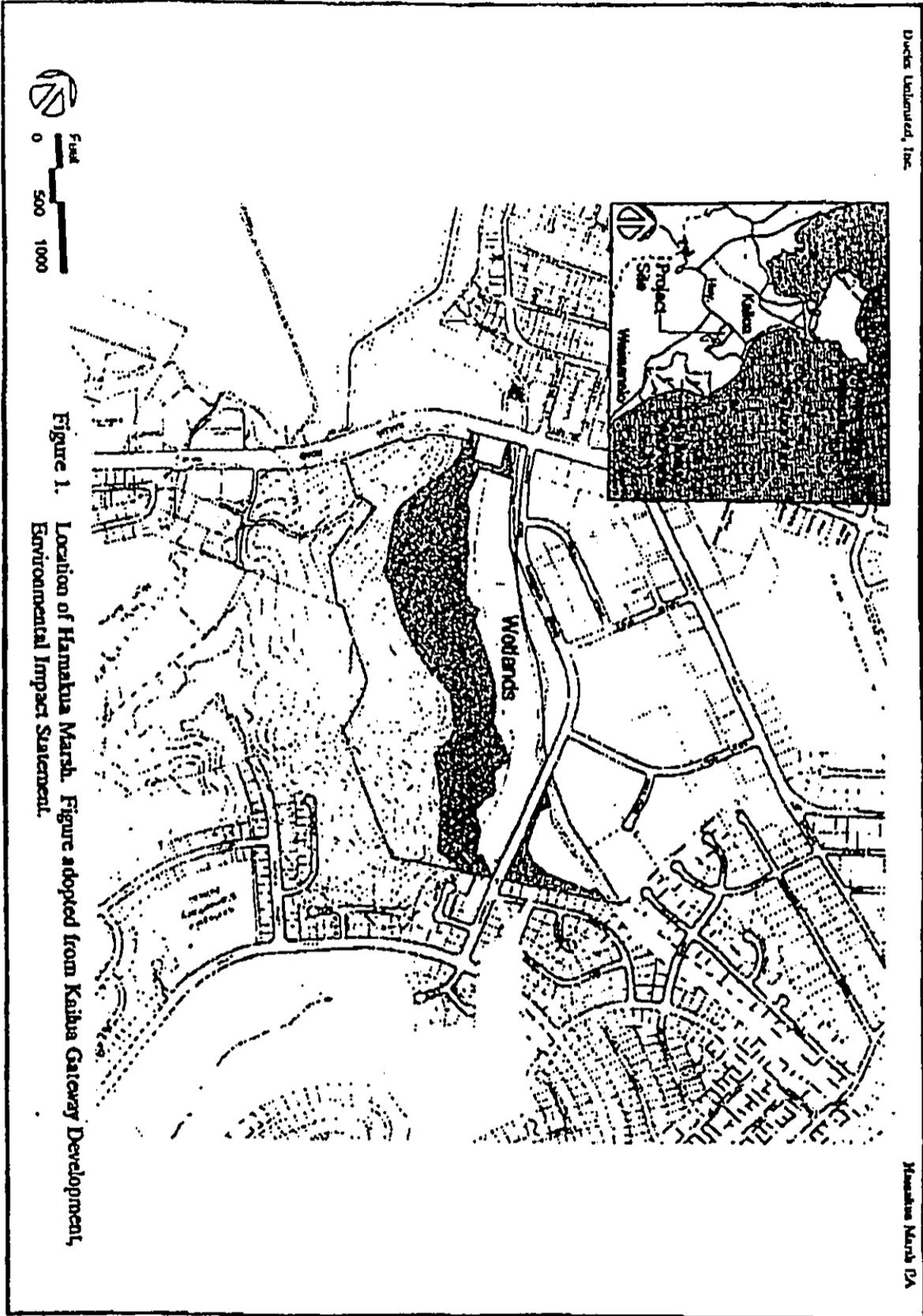


Figure 1. Location of Hamakua Marsh. Figure adopted from Kaihua Gateway Development, Environmental Impact Statement.

Figure 3

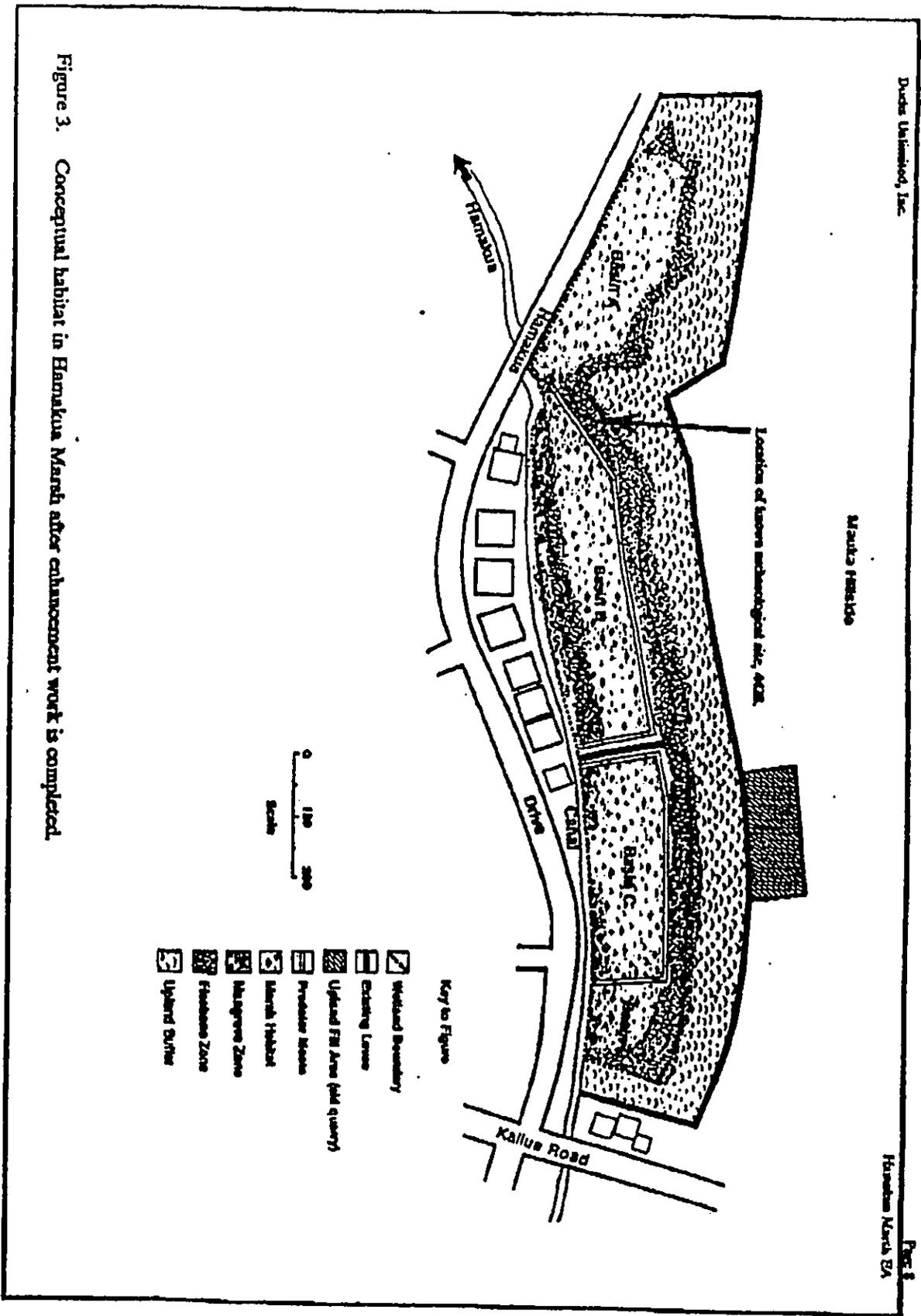


Figure 3. Conceptual habitat in Hamakua Marsh after enhancement work is completed.

Ducks Unlimited, Inc

Maunaloa Marsh

Page 3
Hamakua Marsh EA

0 150 300
Scale

KANEHOHE RANCH
The Estates of Harold K.L. Castle and Alice H. Castle

Trustees:
James C. Castle
James C. McIntosh
Hawaiian Trust Company, Limited
Chief Executive Officer:
Randolph G. Moore

Castle Junction
1189 Auloe Road
Kailua, Hawaii 98704
Telephone (808) 247-2184

COPY

NOV 12 1992

November 4, 1992

Mr. Ronald L. Walker
Wildlife Program Manager
Division of Forestry and Wildlife
Dept. of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Walker:

Subject: Hamakua Marsh Enhancement

This will confirm that the Castle Trusts' donation of approximately 23 acres of the Hamakua wetlands to Ducks Unlimited, Inc. is not contingent on any government approval of the proposed Kailua Gateway project.

Sincerely,

Randolph G. Moore

Randolph G. Moore
President and Chief Executive Officer

cc: Mr. Andrew Engilis, Jr.

JOHN WAIHEE
GOVERNOR OF HAWAII

RECEIVED



92 MAY 14 A 8:35

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
& NATURAL RESOURCES
STATE OF HAWAII
P. O. BOX 621
HONOLULU, HAWAII 96809

APR 2 1992

WILLIAM W. PATY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

JOHN P. KEPPELER II
DONA L. HANA'IKE

RECEIVED

92 MAY 15 1992
AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES CONSERVATION AND ENHANCEMENT AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT CONVEYANCES
FORESTRY AND WILDLIFE HISTORIC PRESERVATION PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

DOFAW

MEMORANDUM

TO: HONORABLE JOHN WAIHEE, Governor
State of Hawaii

FROM: WILLIAM W. PATY, Chairperson
Board of Land and Natural Resources

SUBJECT: Request to Apply for and Expend Federal Grant (Non-Appropriated Federal Fund)

Program I.D. and Title: LNR 402, Forest and Wildlife Resources

Expending Agency: Department of Land and Natural Resources

Title of Grant: Acquisition, Planning, Development, and Management of Hamakua Wetlands, Kailua, Oahu, Hawaii.

Coastal Wetlands Planning, Protection and Restoration Act (Title III, P.L. 101-646). (See attachment).

Amount of Grant: \$100,000 Fiscal Years: 1992-93, 1993-94

Purpose of Grant: To acquire, enhance and protect a 20 acre wetland in an urban environment, preserve habitat for four endangered waterbirds, and develop interpretive facilities.

The owner, Kaneohe Ranch Ltd., will donate the property in fee simple to Ducks Unlimited Inc., a national non-profit conservation organization. The value of the land (estimated to be \$120,000) and \$3,900 of existing operating funds within the Department will be used as matching funds for the \$100,000 of Federal funds granted. Ducks Unlimited Inc. will use the funds, administered by the Department, for improvements to the site including removal of noxious plants, development of moats and islands, erecting

APR 2 1992

predator proof fences and construction of interpretive facilities. Upon completion of the improvements, the property will be turned over to the State of Hawaii in perpetuity for management and protection.

The target group and beneficiaries will be the wetland resources and endangered waterbirds (Hawaiian Stilt, Coot, Moorhen and Duck). Also benefitted will be students, teachers, scientists and the general public which will have a living laboratory for study and enjoyment in a readily accessible urban environment.

State obligations will be to manage and protect the site in perpetuity as a State Wildlife Sanctuary under a Governor's Executive Order.

Period of Grant: January 1, 1992 through December 31, 1993 (and beyond if extensions are approved by the Federal government).

Intended Program Use: Hawaii presently has a system of State Wildlife Sanctuaries which protect native species and provide opportunities for study and recreation (birdwatching and nature study). A new Wildlife Biologist has been approved for Oahu who will be assigned, partly, to this project site. Through judicious original improvements, annual maintenance costs will be minimal. As the four species of endangered waterbirds currently inhabit the site (in relatively low numbers), this project will protect their habitat in perpetuity. The human clientele will enjoy the benefits well into the future at a minimal cost to the taxpayer.

Future Use and Costs: As this project is for initial improvements of a CIP nature and as it is relatively small in size, future costs will be restricted to maintenance activities funded out of regular operating funds. Federal matching funds are available under the Pittman-Robertson and Endangered Species Act programs for such operations.

General Fund Impact : Current operating funds are available for initial maintenance, but additional funds may be required periodically to upgrade the site. Annual operating costs are estimated to be \$25,000, including the time of the approved position, Wildlife Biologist II. The initial cost to the State of Hawaii will be the \$3,900 as partial matching funds.

Honorable John Waihee
Page 3

APR 20 1992

If your staff has any questions relating to this request, please have them contact Ronald L. Walker, Wildlife Program Manager, at 587-0166.

Your consideration of this request to apply for and expend Federal funds for this project is appreciated.

Attachment

APPROVED:



Governor of Hawaii

MAY 12 1992

Date



DUCKS
UNLIMITED
INC.

DUCKS UNLIMITED, INC.
WESTERN REGIONAL OFFICE
9521 Old Winery Place, Suite 16
Sacramento, California 95827
(916) 363-8257

RECEIVED

'92 SEP 21 P2:25

FOREST & WILDLIFE
STATE OF HAWAII

September 18, 1992

Mr. Ronald Walker, Wildlife Program Manager
Hawaii Division of Forestry and Wildlife
1151 Punchbowl Street
Honolulu, Hawaii 968132

Dear Ron:

This letter will re-confirm Ducks Unlimited's intention to quit claim lands donated by Kaneohe Ranch to us at the Hamakua Wetland to the Division of Forestry and Wildlife. This procedure is being followed as part of the long-term management strategy for the area and has previously been agreed upon by all parties.

The land donation will be used to satisfy the match requirement of the Coastal Wetlands Act (Breau Bill) and will allow the Division to accept this funding for the restoration of Hamakua Wetlands.

If you have any questions about the transfer of land or need additional information, please call.

Sincerely

John E. Nagel
Regional Operations Supervisor

cc: Alan Wentz
Andy Engilis
File

State of Hawaii
Department of Land and Natural Resources
Honolulu, Hawaii

DIVISION OF FORESTRY AND WILDLIFE

August 28, 1992

Board of Land and
Natural Resources
Honolulu, Hawaii

Gentlemen:

SUBJECT: Permission to Enter into a Site Specific Agreement
with Ducks Unlimited Inc. for the Development and
Improvement of the Hamakua Marsh Wetland, Island
of Oahu

Attached is a Site Specific Agreement (No. HI-0001-002,
Construction) between the Board of Land and Natural Resources
and Ducks Unlimited Inc., a private, non-profit conservation
organization. The purpose of the agreement is to enter into a
cooperative venture to improve a wetland along Hamakua Drive in
Kailua Town on Oahu for the purpose of establishing a secure
habitat for four species of endangered Hawaiian waterbirds
(coot, duck, gallinule and stilt).

This site specific agreement is pursuant to a Memorandum of
Agreement entered into between the Board and Ducks Unlimited Inc.
on January 31, 1986 to seek out, preserve, develop and manage
wetlands in the State of Hawaii to provide habitat for waterfowl
and waterbirds.

The Department sought a Federal grant under a new National
Coastal Wetlands Conservation program and was one of the few
States in the country to receive a grant-in-aid for wetland
preservation and management. \$100,000 was allotted for this
project and on May 12, 1992, Governor Waihee approved
participation in this program.

Ducks Unlimited Inc. is to receive the site gratis from the
owner, Kaneohe Ranch. An independent appraisal valued the land
and water at \$450,000. Under this site specific agreement, Ducks
Unlimited Inc. will prepare plans, seek and provide contracting
services for the improvements, advancing the funds necessary to
complete them. The State of Hawaii will, in turn, be billed for
the costs. The State of Hawaii will then seek reimbursement from
the Federal government, matching with the in-kind value of the
land. Ducks Unlimited Inc. will then deed over the site to the
State of Hawaii for management in perpetuity. The Department
will also contribute a small portion of funds to the project.

The total project cost will be approximately \$223,900. Of
this amount, \$100,000 will be Federal funds, \$120,000 will be
the State of Hawaii matching portion (non-cash, in-kind value of
the land) and \$3,900 direct funds. This process is necessary,
because only a State agency may take advantage of the Coastal
Wetland grant. The net result is expeditious land acquisition and
development of improvements by a private agency, utilization of
Federal grant-in-aid funding, minimal cost to the State, and a
wetland habitat for endangered birds protected and managed in
perpetuity.

Approved by the Board of
Land and Natural Resources
at its meeting held on

ITEM C-1

AUG 28 1992

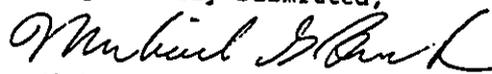
Board of Land and
Natural Resources
August 28, 1992
Page 2

An environmental assessment and management plan has been prepared by Ducks Unlimited Inc., which will also seek out and obtain all necessary approvals at the County, State and Federal levels before the project proceeds.

RECOMMENDATION:

That the Board approve this request to enter into a site specific agreement with Ducks Unlimited Inc. for the Hamakua Marsh Enhancement project, subject to approval of the Attorney General and other such terms and conditions as the Chairperson may require.

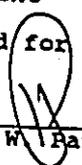
Respectfully submitted,



Michael G. Buck
Administrator

Attachment

Approved for submittal:



William W. Baty, Chairperson

JOHN WAINEE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF LAND MANAGEMENT
P. O. BOX 121
HONOLULU, HAWAII 96808

AGRICULTURE DEVELOPMENT
PROGRAM
AGRICULTURAL RESOURCES
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENHANCEMENT
PROGRAMS
FORESTRY AND WILDLIFE
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT
DN 0782F
Refer to:
ACQ-92 .307

September 25, 1992

Board of Land and
Natural Resources
Honolulu, Hawaii

OAHU

SUBJECT: Acceptance of Land Donation for Wildlife Sanctuary, Hamakua Wetlands, Kailua, Koolaupoko, Oahu, TMKs: 4-2-01:01 and 4-2-03 por. 17

STATUTE: Section 107-10, 171-30, and 171-11 and 195D, Hawaii Revised Statutes

LANDOWNER: Harold K. L. Castle Trust Estate./Ducks Unlimited Inc.

FOR: Portion of the land situate at the entrance to Kailua town along Hamakua Drive and Kawainui Stream, Kailua, Koolaupoko, Oahu identified as TMKs: 4-2-01:01 and 4-2-03: por 17 as shown shaded in yellow on maps labeled Land Board Exhibits "A" appended to the basic file.

AREA: Approximately 22.719 acres, exact area subject to verification by Department of Accounting and General Services, Survey Division.

PURPOSE: To improve Wetland Habitat for Native, Endangered Waterbirds and establish a State Wildlife Sanctuary.

STATUS: Vacant, area formerly used for cattle grazing and presently used for drainage. Property consists of portions of Kawainui Stream and adjacent marshy wetlands with large portions designated as floodway areas and floodway fringe areas.

ZONING: State Land Use Commission: Urban
City and County of Honolulu: Preservation (P-2)

APPRAISED VALUE: \$450,000.00 based upon independent appraisal report prepared for the landowner.

Approved by the Board of
Land and Natural Resources
at its meeting held on

SEP 25 1992

ITEM F-15

CONSIDERATION: Gratis, to be given as a charitable donation by Harold K. L. Castle Estate to Ducks Unlimited Inc. a private, non profit conservation organization who in turn will convey it to the State of Hawaii for Wildlife Sanctuary purposes.

REMARKS: At its August 28, 1992 meeting, agenda Item C-1, the Board of Land and Natural Resources approved a Site Specific Agreement with Ducks Unlimited Inc. for the development and improvement of the subject site.

Under the site specific agreement, Ducks Unlimited Inc. will prepare plans, seek and provide contracting services for the improvements and advance the funds necessary to complete them. The State of Hawaii will, in turn, be billed for the costs. The State of Hawaii will then seek reimbursement from the Federal government, with the State's matching share provided by way of the "in-kind" value of the land.

In order to obtain the federal funds, the State is required to show its intent to accept the land donation which the State is to use as its matching share of the project cost.

RECOMMENDATION: That the Board.

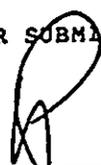
- A. Find that there is a public need to preserve, develop, establish and manage wetlands in the State of Hawaii to provide a secure habitat for waterfowl and waterbirds and that the acquisition of the subject property is for public purposes.
- B. Approve and accept the donation of the subject 22.719 acre site from Ducks Unlimited Inc. subject to the terms and conditions listed herein including the following additional terms and conditions:
 1. That the landowner convey the property to the State of Hawaii free and clear of any liens or encumbrances.
 2. That the property be used by the Department of Land and Natural Resources (Division of Forestry and Wildlife) for Wildlife Conservation purposes only.

3. Prior approval of the Attorney General as to form, exceptions and reservations pursuant to Section 107-10, Hawaii Revised Statutes.
 4. Such other terms and conditions as may be imposed by the Chairperson.
- C. Authorize the contracting of a title company and other consulting services necessary to process the acquisition of this parcel.
- D. Upon acquisition of the property, approve of and recommend to the Governor, issuance of an executive order setting aside the subject property to the Department of Land and Natural Resources as a Wildlife Sanctuary subject to the disapproval by the Legislature in any regular or special session next following the date of the executive order.

Respectfully submitted,

W. Mason Young
W. MASON YOUNG
Land Management Administrator

APPROVED FOR SUBMITTAL:



WILLIAM W. PATE, Chairperson