

HAWAIIAN AND PACIFIC ISLANDS  
NATIONAL WILDLIFE REFUGE COMPLEX

NARRATIVE REPORT

CY 1977

DEPARTMENT OF INTERIOR  
US FISH AND WILDLIFE SERVICE  
HONOLULU, HAWAII

REFUGE PERSONNEL

Palmer Sekora	Refuge Manager (In Charge)	
J. Brent Giezentanner	Refuge Manager (Assistant)	EOD 8/1/76
	Refuge Manager (In Charge)	9/11/77
C. Fred Zeillemaker	Refuge Manager (Assistant-Kauai)	
G. Vernon Byrd	Refuge Manager (Assistant-Kauai)	EOD 9/25/77
Richard Coleman	Wildlife Biologist	EOD 6/19/77
Gordon "Demi" Black	Maintenanceman (Oahu)	EOD 4/11/76
Tokumatsu Gushiken	Maintenanceman (Kauai)	EOD 12/21/75
Florence Prus	Administrative Clerk	
Elizabeth Winstedt	Administrative Clerk	EOD 5/8/77

This report was prepared by Elisabeth Cummings, Acting  
Refuge Manager.

Submitted by:

Elisabeth Cummings  
(Signature)

Acting Refuge Manager  
(Title)

Sept. 21, 1979  
(Date)

APPROVED, Regional Office

Thomas J. Jones  
(Signature)

Senior Staff Specialist - Planning & Refugee Operations  
(Title)

4/8/80  
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# Hawaiian & Pacific Islands NWR Complex

## Narrative Report

CY 1977

### I. GENERAL

#### A. Introduction

Major administrative changes affected the refuge complex during 1977. Hawaii Area Administrator Henry Hansen arrived in January and a shuffling of FWS employees, functions, and physical location subsequently occurred. Refuge headquarters moved into the new Honolulu (Prince Jonah Kuhio Kalaniani'ole) Federal Building on May 3, sharing a suite of offices with the Area Office, Ecological Services, and Endangered Species staffs. The proximity of the refuge and area offices may mean that the refuge manager is more frequently called upon to be the Acting Area Administrator than would refuge managers in other areas, particularly since the Hawaii Administrator does not have Staff Specialists.

#### C. Land acquisition

##### 1. Fee Title

John Van den Akker worked on the EIS for the proposed Kealia NWR on the island of Maui in February. The EIS was distributed for review in April. The initial survey work on the area was also completed then. In September, Bob Ducret (RE,RO) returned to work on the Towill appraisal of Kealia. Refuge Manager Giezentanner and Hawaii Area Administrator Hansen met with surveyor Ducret at Kealia in October to establish the exact boundaries for the refuge. Meetings were held in November with the Hawaii Economic Development Office to discuss their proposal to construct an experimental bait fish production operation adjacent to Kealia Pond as there is considerable local interest in all forms of aquaculture. This bait fish operation is scheduled as an 18-month experiment and is not expected to adversely impact endangered waterbird use (355 stilts and 78 coots were censused on Kealia in January) or management at Kealia.

Kealia also provides habitat for migratory birds (150 shoveler, 37 pintail, 4 scaup, and an osprey were recorded there in January) and black-crowned night herons.

Regional Office personnel worked on boundary locations on the proposed Opaepa NWR site on the Big Island (Hawaii) in March, and were at the site again in April for road relocation surveys. Acquisition of Opaepa from the Bishop Estate stalled due to a dispute with the County of Hawaii about the need for access to the refuge. The County is requiring the Bishop Estate to guarantee an access road before the sale of the property. FWS wants a variance from the County, allowing the property to be sold without access. Condemnation may be the most expeditious route for acquisition.

D. System Status

2. Funding

Considerable time was spent preparing BLHP packages. The packages submitted totaled \$4,759,000 with vessel acquisition for this work. The decision to consider James Campbell NWR not eligible for BLHP funding makes it difficult to meet legal obligations to develop the refuge.

II. CONSTRUCTION AND MAINTENANCE

A. Construction

The County of Maui Parks Dept. progressed on construction of the day use park on the beach at Kakahaia by installing picnic tables, parking areas, and landscaping. The park is under a special use permit from FWS to the County and allows public recreation on FWS land with development and maintenance costs borne by the County. The major portion of Kakahaia NWR land, including all of the wetland habitat for endangered Hawaiian waterbirds, lies across the highway from the beach and is buffered from beach use by the road, soil dunes, and vegetation.

IV. WILDLIFE RESOURCES

A. Endangered or Threatened Species

A joint five year study by NMFS and FWS was initiated in February on the Hawaiian monk seal. This study is described in the Hawaiian Islands

NWR narrative report. A draft cooperative agreement between NMFS & FWS was developed for the management of the monk seal in the Hawaiian Islands and was forwarded to the Regional Office in April.

An ad hoc committee was formed in May of the Refuge Manager, NMFS, and Sea Life Park personnel, to plan the disposition of excess green sea turtles being hatched at Sea Life Park. Participation of the only two refuge staff members on survey cruises in the north-western Hawaiian Islands during the summer prevented the conduct of monthly surveys of endangered waterbirds on the refuges located on the main Hawaiian islands. This is discussed further under Section VI. C. Items of Interest.

In November Refuge Biologist Coleman began preparation of an inter-island movement study for Hawaiian stilts, coots and gallinules. This study is to be conducted in cooperation with the Hawaii DFG, enabling the work to proceed under the State's endangered species permit.

Endangered species were censused on lands that have been proposed for refuge inclusion. Results of these surveys are summarized in Table 1. The following items are of particular note with respect to endangered species on proposed refuge lands:

(a). Lumahai River Estuary supported populations of 70 to 100 coots during February and over 40 coots and 4 koloa in April.

(b). Critical habitat delineation for Kealia Pond was submitted in March to Ron Walker, Team Leader of the Hawaii Waterbirds Recovery Team.

(c). At least 45 coots used the fish farm ponds at Kealia in March. The summer populations of both coots and stilts at Kealia were approximately 15% higher than their respective populations at this time in 1976. The October stilt population of 427 is the highest population recorded to date at Kealia.

(d). A green sea turtle about 18" long was found in the Opaepa Pond which lies about 300 feet from the ocean. The first coot chick of the season was observed at Opaepa on Nov. 10.

## B. Migratory Birds

Seabird transects were conducted by 700-hour biologist Forsell on the USCGC MALLOW cruise to Baker, Jarvis, and Howland NWR's. Albatross were censused on Midway in March.

The tanker IRENE'S CHALLENGE, of Liberian registration, broke up about 50 miles due north of Lisianski in January, spilling most of its cargo of light crude Venezuelan oil. The resulting slick and adjacent water were surveyed and had a density of about 19 birds per square mile. Approximately 60% of these birds were terns, 10% boobies, and 30% Laysan albatrosses. No oiled birds or marine mammals were found, although the birds and marine mammals were found within the area of the slick. Dispersal of the slick occurred quite rapidly along with an eastward drift, so no oil actually contacted the islands of the refuge. Fortunately, the slick did not occur in a primary feeding area.

The following migratory birds were censused on lands proposed for inclusion in the Hawaii NWR Complex: Blue-winged teal, osprey, scaup, northern phalaropes, long-billed dowitchers (rare migrants to the Hawaiian Islands), least terns, northern shovellers, mallard, sharp-tailed sandpiper, lesser yellowlegs, pintail, ruddy turnstones, American golden plovers, wandering tattlers, sanderling, black brant, and an immature Bonaparte's gull. Areas censused, usually on a monthly basis, were Kealia Pond, Opaepa, Aimakapa (Honokahau), and Kanaha.

## V. INTERPRETATION AND RECREATION

### A. Information and Interpretation

#### 1. On-Refuge

A special use permit was issued to the County of Maui to develop the refuge beach land between the highway and the ocean at Kakahaia. The County has planned a day use beach area. Development during the year appears in Section II.A. Construction.

#### 2. Off-Refuge

Refuge personnel gave a program to the Hawaii chapter of the Audubon Society in January on refuges and the Sikes Act. Refuge personnel also participated with the Audubon Society in

Christmas bird counts on Oahu and Kauai.

Talks were given on two occasions in March at local schools to a total of about 80 students.

The wildlife and the wildlife management plan for Midway Atoll was discussed at a meeting at the naval facility there in March. Approximately 80 military personnel and their dependents attended. A TV spot was aired at Midway on the rules and regulations concerning the birds there.

A Wild Kingdom television show on the Leewards (Hawaiian Islands NWR) was aired in March. This show brought many positive comments from points as distant as Alaska, Washington DC, and American Samoa.

Refuge brochures and interpretive signs were designed and prepared for some of our refuges. The refuge brochure for Rose Atoll was forwarded to American Samoa in April for their review and comments and for translation into the Samoan language. The leaflet will be printed in both English and Samoan.

A press release on the endangered Hawaiian monk seal appeared in the news media in February.

John Sayre (PAO-RO) met in October with refuge personnel to discuss our needs for Public Affairs office support.

## VI.

### OTHER ITEMS

#### A. Field Investigations

Ed Bryan completed an annotated marine bird bibliography for the Hawaiian Islands and Central Pacific area. The bibliography contains several hundred references plus descriptions of most of the Central Pacific Islands. This bibliography should be typed and ready for publication as a FWS Scientific Study in 1978.

## B. Cooperative Programs

Refuge personnel participated in mongoose contingency planning with the Hawaii DFG. The objective of this plan is to decrease or eliminate mongoose from the island of Kauai. Mongoose are introduced mammals which can seriously impact the nesting success of endangered Hawaiian waterbirds and of ground-nesting seabirds.

Sikes Act responsibilities related to endangered species on military land were transferred by the Area Administrator from refuges to the Endangered Species Coordinator, except for those activities on Midway. Refuge personnel will continue to work with the Sikes Act responsibilities at Midway and also attended a meeting on this subject at Kaneohe MCAS in March.

Vessels began their third year of exploratory research for the Pacific Tuna Development Foundation of the West Coast Fishermens Association. If they report positively on the skipjack tuna resources in the central and western Pacific, more fishing boats can certainly be expected out here from the West Coast.

YCC camps ran from June 20 to August 12 on Kauai and Oahu with 12 enrollees on each island and with a five person staff. Enrollees were selected in the Washington DC computer selection process. Oahu enrollees worked on habitat improvement (brush clearing and mangrove control) and on mongoose tracking. Kauai projects are covered in the Narrative Reports for the refuges on Kauai. The YCC camps were successful despite the difficulty in administration due to the absence of refuge personnel while on travel or leave and to the necessity of a single camp director having to handle camps on two islands. In 1978, each island on which a camp is established should have a camp director.

Plans began for initiating YACC work units on Oahu and Kauai in 1978. The work leader positions for these two units were advertised and rated. Selections of the leaders was scheduled for January 1978 with February as a target date for beginning the program.

The third draft of the tripartite agreement was revised in February by the cooperating agencies - FWS, NMFS, and the State DLNR - and the final draft forwarded in April to those agencies for review and signature. This agreement covers wildlife and fisheries assessment work to be conducted in the leeward (northwest Hawaiian Islands) islands over a five-year period. FWS supported the agreement despite the possibility of monk seal critical habitat designation within the refuge. In July, refuge personnel assisted State and NMFS biologists on a marine resources and migratory seabird population inventory as part of the proposed tripartite assessment work. Dr. Robert Shallenberger developed a comprehensive study plan for marine bird research for the northwestern Hawaiian Islands as an initial step in the assessment. Refuge personnel attended a day long workshop on the triparty in November, but by the end of the year the agreement had not actually been signed.

A fish and wildlife management plan was developed for Midway, then reviewed and initiated. Game wardens were trained and the albatross nest relocation experiment evaluated. About 50 albatross were killed on the evening of February 14. Naval command investigated the incident and subsequently apprehended and prosecuted an individual for the offense through their own legal system. The suspect individual was also beaten up for the killing by some of his peers.

Coast Guard activities on French Frigate Shoals were discussed with the command there following a change in their personnel in April. We agreed to review recreation requirements of their personnel and possibly to permit increased visitations to the other islands during the winter.

Bird strikes on Midway and French Frigate Shoals caused the Coast Guard to lose two engines on aircraft. Recommendations were made to the Coast Guard which should alleviate the bird strike problem.

The refuge shipped 53 bird specimens from Oahu to Roger Clapp at the Smithsonian Institution. The birds were primarily seabirds and introduced species.

Two fisheries biologists from American Samoa accompanied Hawaii Area Administrator Hansen and refuge personnel on a trip to Rose Atoll NWR. The trip had to be aborted after 22 hours at sea due to safety reasons (bad weather, dirty fuel, and inexperienced crew). As a result we were unable to visit the refuge as scheduled in the Annual Work Plan. The Governor of American Samoa was to have made the trip too, but canceled at the last minute.

C. Items of Interest

Efforts to salvage the 57' yacht GOOD FRIENDS, were unsuccessful. This yacht sank about two miles west of Pearl and Hermes Reef in May. Apparently, the hull was too full of silt and hopes of recovering the boat were abandoned. The masts were cut off below the water-line so the ship would disappear from sight. Winter storms are expected to break up the remains of the ship..

Refuge Manager Sekora transferred to William Finley NWR as Project Leader there on August 14. Assistant Manager Zeillemaker transferred to Crescent Lake NWR effective July 31. Departure of both Sekora and Zeillemaker, left only two professionals on the refuge staff to handle all the islands during our peak travel period. The problem was alleviated somewhat when Vernon Byrd transferred in on September 25 to assume the Assistant Manager position based on Kauai. Selections were made for the Assistant Manager on Oahu (Elisabeth Cummings, RF-WO) and for the seabird biologist (Craig Harrison, OBS, AK), but neither was scheduled to report for duty until mid-January, 1978. Acting Manager Giezentanner was formally promoted to Refuge Manager of the Hawaiian and Pacific Islands NWR effective September 11.

Refuge Manager Giezentanner accompanied Assistant Secretary Herbst on visits to the refuge units on Oahu in December.

This report was prepared by Assistant Manager Cummings (EOD 1-23-78).

HAWAIIAN ISLANDS  
NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

CY 1977

Honolulu, Hawaii

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# Hawaiian Islands NWR

## Narrative Report

CY 1977

### II. CONSTRUCTION & MAINTENANCE

#### A. Construction

Weather monitoring equipment was installed on Laysan Island to provide a better understanding of the environment there. This should be helpful in assessing the extreme fluctuations in the Laysan duck population. Equipment installed includes a tipping rain gauge; a metero-graph which records temperature, relative humidity, and barometric pressure; and a tide gauge in the inner lagoon.

### III. HABITAT MANAGEMENT

#### F. Wilderness & Special Areas

A severe storm evidently hit Laysan Island between August 1976 and March 1977. Plants, primarily Scaveola, were killed to the top of the beach dunes. Evidence of wave action was present to about 50' inland.

### IV. WILDLIFE RESOURCES

#### A. Endangered or Threatened Species

The year began with an ad hoc meeting to discuss a joint NMFS and FWS five-year study of the Hawaiian monk seal. This cooperative study is being conducted by the FWS Marine Mammal lab based in Anchorage and by the NMFS Marine Mammal Lab based in Seattle. Specific research projects were then initiated in February on Kure Atoll by FWS research biologist Ancel Johnson and his Assistant; at French Frigate Shoals by FWS research biologist Karl Kenyon and assistant; and on Laysan Island by contract researchers Brian and Patty Johnson. The Honolulu lab of the NMFS recommended that human activity on Pearl & Hermes Reef be restricted to valid scientific studies, and that photographic missions be curtailed to reduce disturbance to the monk seal. The Southwestern Regional Office of the NMFS recommended as critical habitat all land and inter-reef areas on the Hawaiian Islands NWR, except Nihoa, Gardner Pinnacles, and Maro Reef. They also

recommended that no commercial fishing be allowed within this critical habitat. A draft cooperative agreement between NMFS and FWS for the management of the monk seal in the Hawaiian Islands was forwarded to the Regional Office in April.

A study of possible predation by sharks on the monk seals was initiated in April by Dr. Leighton Taylor of the Waikiki Aquarium and by the Marine Mammal Commission. A refuge special use permit was issued to allow the study to be conducted in the area of Pearl and Hermes Reefs and French Frigate Shoals. Results of this study should also provide information on predation by sharks on marine turtles, birds, and fishes.

Surveys for monk seals throughout all of the Hawaiian Islands chain were conducted in April and again in late summer. On the April census, an unusual high of 44 monk seals were counted on Necker Island. In July the total for the entire chain was 592 seals, including 22 pups, while the August total was 543 seals, of which 14 were pups. No observations were recorded from Necker during the summer censuses, since landing was too hazardous at that time. The most significant observations from the summer censuses were the sightings of at least 12 seals at Nihoa, including a weaned pup; a weaned pup at Necker Island; six seals at Gardner Pinnacles; six at Maro Reef; and 22 unweaned pups at French Frigate Shoals in July. The second known sighting of endangered humpback whales in the northwestern Hawaiian Islands occurred in March when an adult and calf humpback were seen just off the SE corner of French Frigate Shoals.

Laysan ducks were censused in March (43 recorded) and in July (224 birds, including young). Weather monitoring equipment (See Section II.A. Construction) was installed at Laysan to obtain more information which could lead to understanding the population fluctuations.

Nihoa finch and Nihoa millerbird transects were run on July 5 and Laysan finch surveys on August 5. Analysis of the data from the 43 transects run on Nihoa indicate a Nihoa finch population of  $5,440 + 1,360$  (95% CL) and a millerbird population of  $498 + 294$  (95% CL). It seems clear that 43 transects are not enough to adequately census Nihoa millerbirds on the island. The

Laysan finch population on Laysan Island was estimated at 7,881 + 2,364 (95% CL) based on analysis of 118 transects.

George Balazs conducted a green sea turtle study on Necker Island for about five days in July.

B. Migratory Birds

A possible sighting of a long-billed curlew was noted on Laysan in February. On the same day, 13 red phalaropes were in the small pool at the southwest corner of the lagoon on Laysan.

The first record of a black-legged kittiwake on French Frigate Shoals also occurred in February. The specimen was dead and dried.

Between 150,000 and 200,000 sooty terns nested on Eastern Island at Johnston Atoll this year. Terns did not nest in the traditional area on Sand Island.

VI. OTHER ITEMS

B. Cooperative programs

The tripartite agreement for the study of natural resources in the northwestern Hawaiian chain was redrafted and forwarded to the cooperating agencies - FWS, NMFS, and the State DLNR - for signature. A more detailed discussion of the tripartite agreement appears under Section VI.B. Cooperative Programs of the narrative report for the entire Hawaii refuge complex.

C. Items of Interest

This report was prepared by Assistant Manager Cummings (EOD 1-23-78).

JAMES CAMPBELL  
NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

CY 1977

Oahu, Hawaii

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# James Campbell NWR

## Narrative Report

CY 1977

### I. GENERAL

#### A. Introduction

The James Campbell NWR was officially established with the transmittal of the total rent pre-payment check of \$55 (\$1 per year for each year in the 55-year lease) to the Trustees of the Estate of James Campbell on April 27, 1977. The refuge is the sixth in Hawaii and the second on Oahu. The establishment date marked the 100th anniversary of the late James Campbell's acquisition of the Kahuku lands for cattle ranching.

The James Campbell NWR is located on the north shore of Oahu between the Kahuku Sugar Mill and the Kuilima Hyatt Hotel. It is approximately 30 miles north-northwest of Honolulu.

The refuge consists of two units, Kii (105 acres) and Punamano (38 acres), which are situated one-half mile apart. The Service has also acquired easement on a drainage ditch between the two units.

The James Campbell NWR is an important step in the protection of wetland habitat for endangered Hawaiian species, including the Hawaiian stilt, Hawaiian coot, and Hawaiian gallinule. Plans are to restore the Kii unit to shallow-water impoundments and to maintain the Punamano Unit in pond and marsh habitat. Nesting and resting islands will be established in both areas to increase the carrying capacity for waterbirds.

The general public will be excluded from the interior of both units to promote maximum wildlife use. Vantage points along the refuge perimeter will eventually be developed for public visitation.

Acquisition of land for the refuge at Kahuku was initially discussed with the Estate in 1970. Proposed land acquisition report for LARC was also prepared in 1970. Engineering reports on the land acquisition and on water study results were submitted in 1971. Plans for development of the

refuge were prepared for the Estate in 1972 and a first draft of the lease agreement between FWS and the Estate was drafted. Other proposals for the use of the land, a court approval requirement for the Estate to issue the lease, and Congressional inquiries into the proposed management of the ponds all contributed to delaying the transfer of the land to FWS for the refuge. In addition, Kii Pond dried up almost completely when drainage pumping and mill cane-washing were discontinued in 1971, causing the Estate to reconsider other types of development for the acreage, which further contributed to the delay in acquisition. A draft EIA was submitted in 1975 and a negative declaration signed by the Regional Director. After more revisions, the lease and agreement between the Estate and the United States was finally executed late in 1976.

## B. Climatic and Habitat Conditions

Climate in the area is mild and generally uniform throughout the year. Mean annual wind speed is slightly above 10 mph. Mean annual temperature is 74.9 F and average annual rainfall is 38.8 inches, most of which occurs in the winter.

Both refuge units lie in the flatlands between the foothills and the ocean. A few depressions fill naturally with water during wet seasons, and old maps show pre-development marshes. A tidal wave covered much of the area in 1946. Sand dunes separate the ponds in this area from the ocean.

The Kii Unit includes open water, mud flats, mats of millet and California grass, and open upland as buffer space. In addition to rainfall and runoff, Kii pond is supplied with water from the adjacent Kahuku Sugar operation. Punamano is normally fed by small seeps and rainfall and both pond and marsh have been dry at times. Surrounding high brush provides a screen against disturbance.

## C. Land Acquisition

### 1. Fee Title

All land proposed for acquisition is included in the 55-year lease agreement between the FWS and the Estate of James A. Campbell. This lease

is discussed in the introduction as part of the background data for the initial Narrative Report for the refuge.

2. Easements

An easement has been acquired for a drainage ditch between the two units of the refuge.

D. System Status

2. Funding

The decision to consider James Campbell NWR ineligible for BLHP funding makes it difficult to meet our legal obligations to develop the refuge in accordance with our lease agreement.

II. CONSTRUCTION AND MAINTENANCE

B. Maintenance

Posting the boundaries of both units began immediately after the refuge became officially ours.

III. HABITAT MANAGEMENT

C. Wetlands

Regional Office surveyors visited the refuge in March and April to work on the topographic surveys and on designs for rehabilitation of three of the four pond units at Kii. Bids went out in May for brush removal and nesting island construction involved in the rehabilitation. Approval for rehabilitation projects, including brush clearing along the drainage ditch easement, was obtained from the Campbell Estate in accordance with the terms of the lease agreement.

In June, 20 acres of brush had been cleared from the Kii Unit and in August we were able to begin pumping water onto the unit for the first time. YCC labor comprised a large part of this initial habitat manipulation on the refuge. Results of the management in terms of wildlife use are discussed under Section IV WILDLIFE RESOURCES.

In October Portland issued the contract for brush removal along the ditch between the Punamano and Kii units to Richard J.S. Lee, Inc. Within a month,

75% of the clearing was complete. However, mechanical difficulties with the dredge in December precluded completion of the project before the close of the year.

#### IV. WILDLIFE RESOURCES

##### A. Endangered or Threatened Species

Surveys were not conducted regularly on the area prior to its officially becoming a NWR. The scattered existing records indicate that endangered species use was extremely low, since the Kii unit was nearly dry for the first half of the year. Counts were made on both units of the refuge in February (six coots, two stilts) and in June (11 coots). In August, the newly-flooded 20-acre portion of the Kii unit attracted an average of 11 stilts and an average of 18 coots were also recorded. By October these populations increased to 31 stilts and 22 coots, including two juvenile coots. The Kii unit, which is shallow, held 25 of the stilts and one of the coots, while the deeper Punamano pond maintained 21 coots and 6 stilts. Maintenance of the constant water levels provided for continued use of the refuge by about 30 stilts and 20 coots through the remainder of the year.

##### B. Migratory Birds

###### 1. Waterfowl

Fall migrants included mallards, pintails, northern shovelers and American widgeons.

###### 2. Shorebirds, Gulls, Terns and Allied Species

During the fall migration the most common species using the refuge were ruddy turnstones, American golden plovers, bristle-thighed curlews, sanderlings, and wandering tattlers. Other migrant species were least sandpipers, pectoral sandpipers, sharp-tailed sandpipers, and a long-billed dowitcher.

##### C. Mammals and Non-Migratory Birds and Others

###### 1. Resident Birds

A complaint was received in April from Japanese farmers at Kahuku of crop damage

due to birds. Since the birds involved were exotics (Brazilian cardinals, barred doves and spotted doves) which were not covered by the Migratory Bird Treaty Act, the State was encouraged to handle the problem.

V. INTERPRETATION AND RECREATION

Sixteen Hawaiian Audubon Society members were given a tour of the refuge in September. News releases on the acquisition of the refuge were distributed in April. Press coverage of the new refuge was good, with announcements published in all local papers and on TV and radio. Another news release on the refuge was published in November. Copies of articles appearing in the press are appended.

VI. OTHER ITEMS

A. Cooperative Programs

Refuge Manager Giezentanner and Hawaii Area Administrator Hansen consulted with the James Campbell Estate and with Park Engineering about the construction of an injection sewage treatment plant that is to be located about 400 feet from the refuge boundary. The Estate and FWS are working to segregate the Refuge lands from Estate lands for tax purposes and to classify our land as tax exempt. FWS would then reimburse the county in lieu of taxes, according to the provisions of the Refuge Revenue Sharing Act.

B. Items of Interest

A nudist camp owned by Mr. and Mrs. Larry Beck is located on the beach adjacent to the Punamano unit of the refuge.

The narrative report was prepared by Assistant Manager Cummings (EOD 1-23-78).

James Campbell

Thursday, April 28, 1977 HONOLULU ADVERTISER ★★

## U.S., Campbell Estate set up wildlife refuge

The U.S. Fish and Wildlife Service and the Campbell Estate announced the establishment yesterday of a national wildlife refuge on 143 acres of estate lands in Kahuku.

The preserve will provide habitats for the Hawaiian stilt, Hawaiian coot and Hawaiian gallinule, each classified as an endangered species and each already found in the area.

The establishment of the refuge marks the 100th anniversary of the late James Campbell's acquisition of the Kahuku lands for cattle ranching.

Palmer Sekora, refuge manager, said the Fish and Wildlife Service negotiated with the Campbell Estate for several years, leading to a 55-year lease from estate trustees at \$1 a year.

The new refuge, the sixth in Hawaii and the second on Oahu, consists of two units of land. One is 105 acres at Kii; the other, 38 acres at Punamānu.

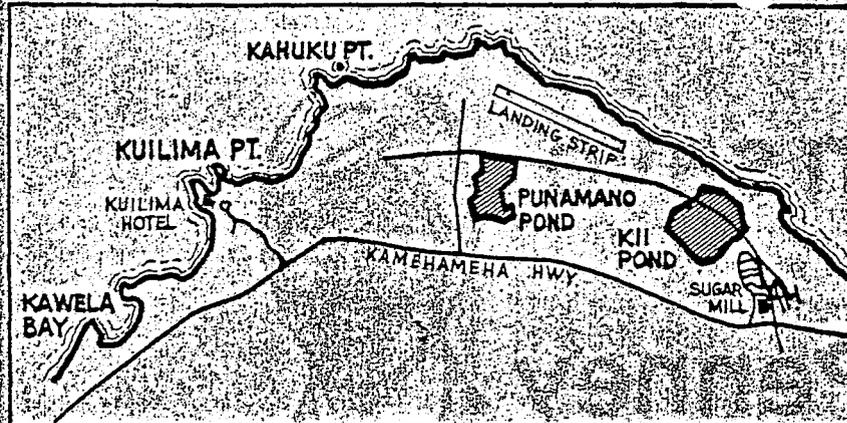
The land is located between the Kahuku sugar mill and the Kuilima Hyatt Hotel on the makai side of the highway. The two parcels are about a half mile apart.

Sekora said work will start immediately to restore the Kii unit to shallow ponds. He said the Punamānu area will be kept in its present condition of water interspersed with marshlands.

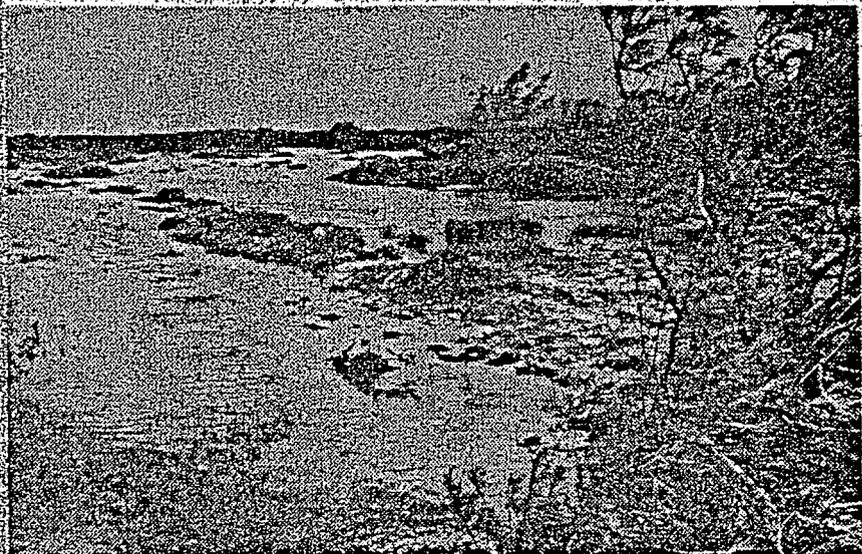
Nesting and resting islands will be established in both parcels to increase the capacity of each to carry additional numbers of water birds, he said.

Habitat improvements for the Kii parcel should be finished by May for this season's nesting, Sekora said. The general public will be able to view the wildlife from vantage points along the perimeter of the new refuge but will be excluded from the interiors of the ponds, he said.

*James Campbell*



**NEW REFUGE**—Three endangered waterbird species will be protected with the establishment of the James Campbell National Wildlife Refuge at Kahuku on Oahu's North Shore. The refuge includes 105 acres at the Kii Pond and 38 acres at the Punamano Pond. —Star-Bulletin Photos by Warren R. Roll.



## Refuge for Rare Island Waterbirds

Three endangered waterbird species will be protected with establishment of the James Campbell National Wildlife Refuge at Kahuku on the North Shore.

The refuge includes two units totaling 143 acres. The Kii Unit has 105 acres and the Punamano Unit has 38 acres.

The units are located one-half mile apart between the Kahuku Sugar Mill and the Kuilima Hotel on the makai side of Kamehameha Highway.

The establishment of the refuge was announced today by the U.S. Fish and Wildlife Service, marking the 100th anniversary of the acquisition of the Kahuku lands by the late James Campbell for a cattle ranch.

**THE REFUGE WILL** provide habitat for the Hawaiian stilt, Hawaiian coot and Hawaiian gallinule. Nesting and resting islands will be established to increase the areas' capacity to handle more waterbirds.

Palmer C. Sekora, refuge manager, said the Fish and Wildlife Service has been negotiating with Campbell Estate for many years for the lands, resulting in a 55-year lease agreement at \$1 per year.

Plans are to restore the Kii Unit to shallow-water impoundments. Work is expected to begin immediately with water in the ponds by May for this season's nesting.

The public will be prohibited from the interior of the ponds but viewing vantage points will be opened along the perimeter.

Oahu, Hawaii

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The WindWORD May 5, 1977

# Wildlife Refuge Set

A national wildlife refuge has been established on 143 acres of land on Oahu's North Shore at Kahuku as a habitat for three endangered waterbird species found in the area.

The land has been leased for 55 years at \$1 a year from the Estate of James Campbell, who acquired the land 100 years ago for use as a cattle ranch.

The area consists of two units, the Kii Unit which contains 105 acres, and

the Punamano Unit of 38 acres. They are located a half-mile apart on the makai side of the highway between Kahuku Sugar Mill and the Kuilima Hotel.

Palmer C. Sekora, Refuge Manager for the Fish and Wildlife Service, said the area will be managed as a unit of the National Wildlife Refuge System by the U.S. Fish and Wildlife Service.

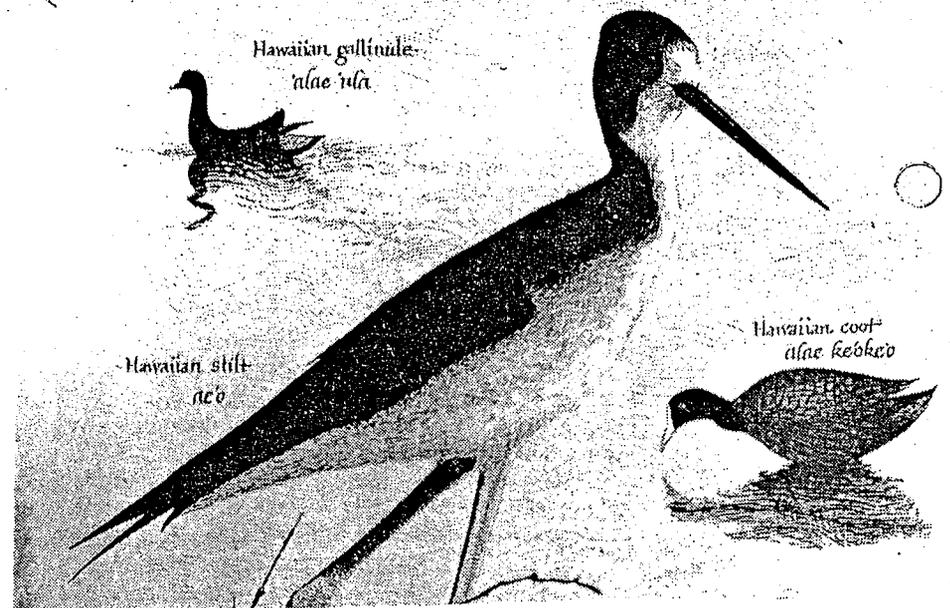
He said the endangered species already in the area are the Hawaiian Stilt, Hawaiian Coot and Hawaiian Gallinule.

The Punamano area will be maintained in its present condition. Work to restore the Kii unit to shallow-water impoundments is expected to be completed this month in time for this season's nesting, Sekora said.

Nesting and resting islands in both units are expected to increase the capacity to carry additional numbers of the endangered waterbirds.

The public will not be permitted in the interior of the areas, but vantage points along the perimeter will be established. Further information may be obtained by calling the Fish and Wildlife Service, 337 Uluniu St., Kailua, at 261-9781

James Campbell NWR  
S



Sketches of the three endangered species which will be protected in the new wildlife preserve on the North Shore.

PEARL HARBOR  
NATIONAL WILDLIFE REFUGE

Narrative Report  
CY 1977

Oahu, Hawaii

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Pearl Harbor NWR

Narrative Report

CY 1977

I. GENERAL

A. Introduction

Pearl Harbor NWR consists of two units located adjacent to Pearl Harbor on the island of Oahu. The Pearl City Unit on the Waiawa Peninsula includes 24.5 acres, while the West Lock Unit at Honouliuli is 36.65 acres.

The Pearl Harbor refuge became part of the NWR system as partial mitigation for the loss of bird habitat in Keehi Lagoon resulting from the construction of the Reef Runway at Honolulu International Airport, ADAP Project No. 8-15-0005-03. The two refuge units had been among lands included in a Cooperative Agreement for the Conservation and Management of Fish & Wildlife dated July 18, 1968, between the Navy and the BSWF (Use agreement NF(R)-10935). In the mitigation, amendments to this agreement were executed (May 5, 1970) to designate the West Loch and Pearl City units as wildlife refuges to be maintained and operated as a part of the NWR System, upon approval by the Bureau of improvements to these areas which were to be financed by the State of Hawaii through its Department of Transportation.

This cooperative agreement for the refuge was formally signed in October 1972, after approval of the airport's new runway by CEQ. Specifications for engineering and construction necessary to improve the wildlife habitat on the units were prepared in 1972 by the State. A budget of \$250,000 was allocated for the work.

B. Climatic & Habitat Conditions

Climate in the area is mild and generally uniform throughout the year. Mean annual wind speed is slightly above 10mph. Mean annual temperature is 74.9 F. & average annual rainfall is 38.8 inches, most of which occurs in the winter.

Both refuge units lie in flat land immediately adjacent to Pearl Harbor. Although these areas were natural wetlands, they have been subjected to extensive manipulation and each unit now consists of shallow-water impoundments. Low nesting islands have been developed in each impoundment. Limited vegetated buffer separates the West Loch unit from the sugar cane fields (3 sides) and from Pearl Harbor (1 side). The Pearl City unit is situated within a U.S. Navy landfill, which serves somewhat as open buffer space between the refuge and developed land. In addition to rainfall and runoff, both units receive fresh water from pumping. Tidal (salt water) flow into the refuge units from Pearl Harbor is minimal.

## II. CONSTRUCTION AND MAINTENANCE

### A. Construction

The Ralph M. Parsons Co. completed the installation of an improved permanent water pump at the Pearl City Unit in September and nearly completed constructing the water delivery system which will permit pumping into the impoundments. The pump draws from a creek on adjacent Navy land under an amendment to our agreement with the Navy. The new configuration should allow maintenance of stable water levels. The same company also completed the pumping station at the West Loch unit in October.

## III. HABITAT MANAGEMENT

### C. Wetlands

The West Loch unit dried up during the construction of the new pump station and water delivery system. We took advantage of the dry conditions to begin breaking up the large nesting islands into numerous small islands more suitable for stilt use.

## IV. WILDLIFE RESOURCES

### A. Endangered or Threatened Species

Hawaiian stilt use of the Pearl City unit has increased over last year. A record high population of 259 stilts was observed in September. The average number of stilts on the unit is 80. Stilt use on the West Loch unit was marginal (9 in January; 23 in October), due to the con-

struction activity and to the unit being dry for much of the period. The Pearl Harbor refuge also provided habitat for a few (1-3) coots, although the low water levels are more compatible with the stilts. Two koloa were noted in April on salt ponds near the refuge.

B. Migratory Birds

1. Waterfowl

Four northern shovelers used the Pearl Harbor refuge in January and a pintail was observed on the Pearl City unit in March.

2. Marsh and waterbirds

An immature dark ibis, either white-faced or glossy, spent most of April and May on the West Loch Unit.

3. Shorebirds, Gulls, Terns and Allied Species

An adult and an immature least tern were recorded on the West Loch unit on June 15.

More common species using the refuge during winter are American golden plovers (average about 50 birds in January and February), sanderlings (high of 28 in January), and ruddy turnstones (less than 10 birds).

V. INTERPRETATION AND RECREATION

A. Information and Interpretation

1. On-refuge

Sixteen members of the Hawaii chapter of the Audubon Society were given a guided tour of the refuge in July.

2. Off-refuge

A news release concerning the two NWR's on Oahu was published in November.

C. Enforcement

A local fisherman has cut through the chain link fence surrounding the Pearl City unit to traverse the refuge in reaching his traditional fishing

spot on Pearl Harbor. The same spot is easily reached by walking a little further around the boundary. The fence must be repaired continually to prevent numerous stray dogs in the area from getting into the refuge and interrupting the nesting of the endangered Hawaiian stilts.

Stilt populations in the West Loch unit experienced disturbance from a low flying crop duster aircraft during the nesting season. We discussed the problem with the aircraft's owner William W. Stearns of Murrayair Ltd. Mr. Stearns seemed friendly and cooperative.

VI. OTHER ITEMS

C. Items of Interest

This report was prepared by Assistant Manager Cummings (EOD 1-23-78).

KAKAHAIA NATIONAL WILDLIFE REFUGE

Narrative Report

CY 1977

Molokai, Hawaii

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Kakahaia NWR  
Narrative Report  
CY 1977

I. GENERAL

C. Land Acquisition

1. Fee Title

The deed to Dr. Johnson's kuleana was recorded and the property inspected by Scott Wise (RE, RO). Efforts continued to acquire the last two small inholdings necessary to complete the refuge.

IV. WILDIFE RESOURCES

A. Endangered Species

Kakahaia NWR supports a resident population of endangered Hawaiian coots. Table A lists the monthly population size and nesting status of the coots on the refuge. These statistics indicate that the population is healthy and appears to be increasing from last year by about 70%. The December population (62) was the largest recorded on the refuge. An estimated 10 to 15 coots were fledged successfully this year at Kakahaia.

B. Migratory Birds

A northern shoveler remained at the refuge through July. Pintail and plover are common winter migrants at Kakahaia.

VI. OTHER ITEMS

B. Cooperative Programs

Fencing materials were purchased and stored at the State of Hawaii Forestry Division's supply yard. A YCC unit is planned on Molokai during 1978 and will install the fence at the refuge to protect endangered waterbirds.

The County of Maui is developing a beach park with picnic area at Kakahaia on the makai (lee-ward) side of the highway. This use of the

TABLE A

## Coot Production at Kakahaia NWR

	# of Adults	# of Fledglings	# of Chicks	# Complete Nest	# Nests in Construction
JAN.	39			1	5
FEB.	42	5		5	
MAR.	40		1		3
APR.	37				
JUNE	28	12			
JULY	40	6			
AUG.	44	9	3	3	
SEPT.	47	8			
OCT.	50	7			
NOV.	52	3		1	
DEC.	62			5	

beachfront property is not expected to conflict with endangered species use of the major wetland part of the refuge which lies on the other side of the highway.

C. Items of Interest

This report was prepared by Assistant Manager Cummings (EOD 1-23-78).

HANAIEI NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

CY 1977

DEPARTMENT OF INTERIOR  
US FISH AND WILDLIFE SERVICE  
KILAUEA, KAUAI, HAWAII

# Hanalei National Wildlife Refuge

## Narrative Report

CY 1977

### I. GENERAL

#### A. Introduction

Hanalei NWR contains 917 acres, including 142 acres of taro farms and about 250 acres of other lowlands, much of which could be converted to irrigated wetlands.

#### B. Habitat Conditions

Taro paddies provide excellent habitat for the four species of endangered waterbirds; the Hawaiian duck, Hawaiian gallinule, Hawaiian coot and Hawaiian stilt. In 1977 fairly low rainfall created water shortages at the refuge and less wetland acreage was available than in high rainfall years.

### III. HABITAT MANAGEMENT

#### A. Croplands

Commercial taro farming is encouraged on the refuge because the taro provides excellent habitat for endangered waterbirds.

#### B. Grasslands

Cattle grazing is permitted on the refuge in areas not currently irrigated. When a planned new water system is constructed, much of the grazing land will be converted to taro farms to provide more waterbird habitat.

IV. WILDLIFE RESOURCES.

A. Endangered and Threatened Species

Figures 1 and 2 show average monthly populations of endangered waterbirds at Hanalei NWR. Populations have generally increased since the area became a refuge, largely due to protection from harassment and predator control.

B. Migratory Birds

Since Hawaii is so isolated geographically, few migrant birds occur. The only migratory species commonly wintering on the refuge are pintails, Northern shovelers, and American golden plovers.

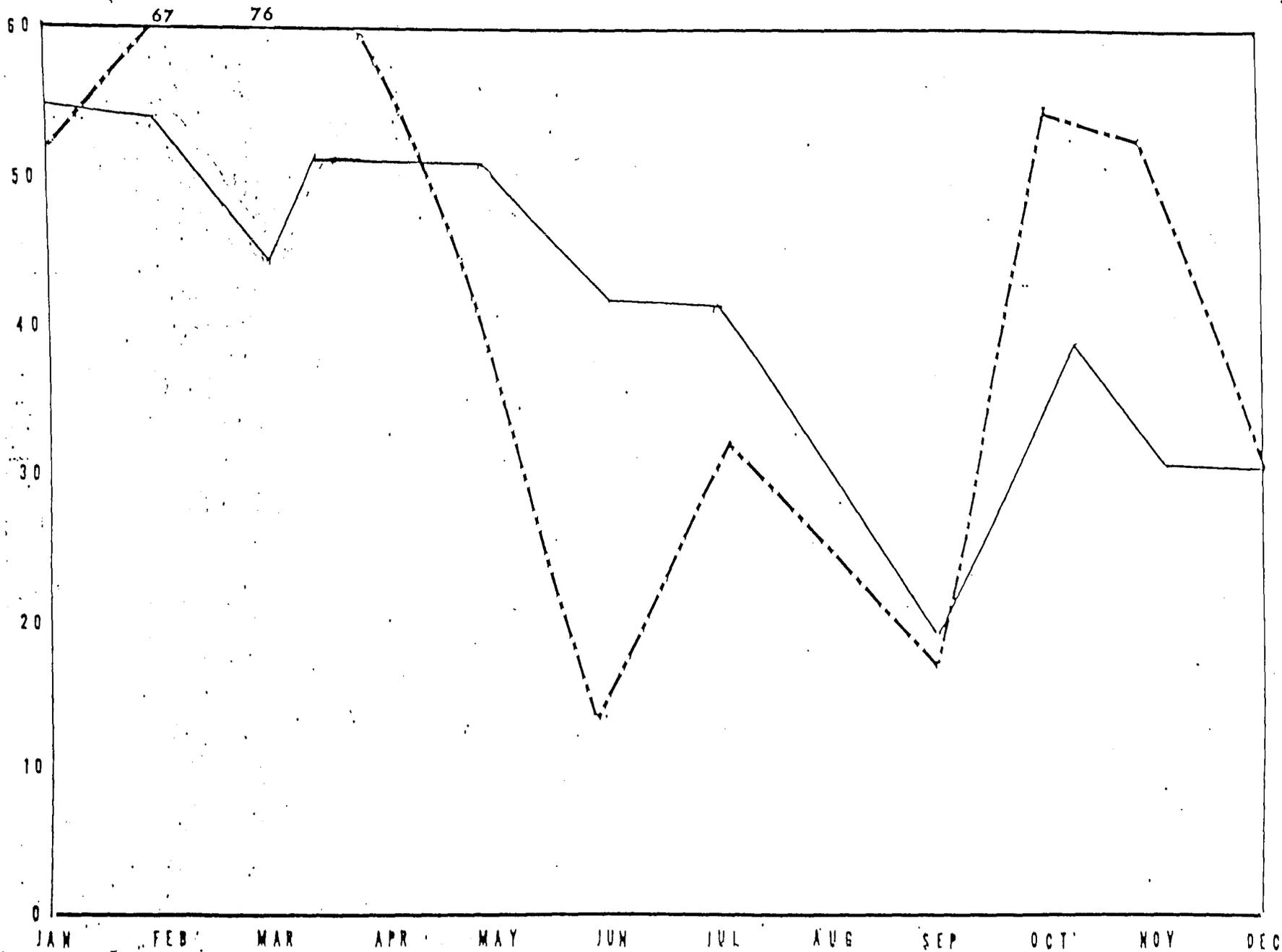


Fig. 1. Average monthly populations of Hawaiian Ducks (---) and Hawaiian Gallinules (—) at Hanalet, NWR in 1977.

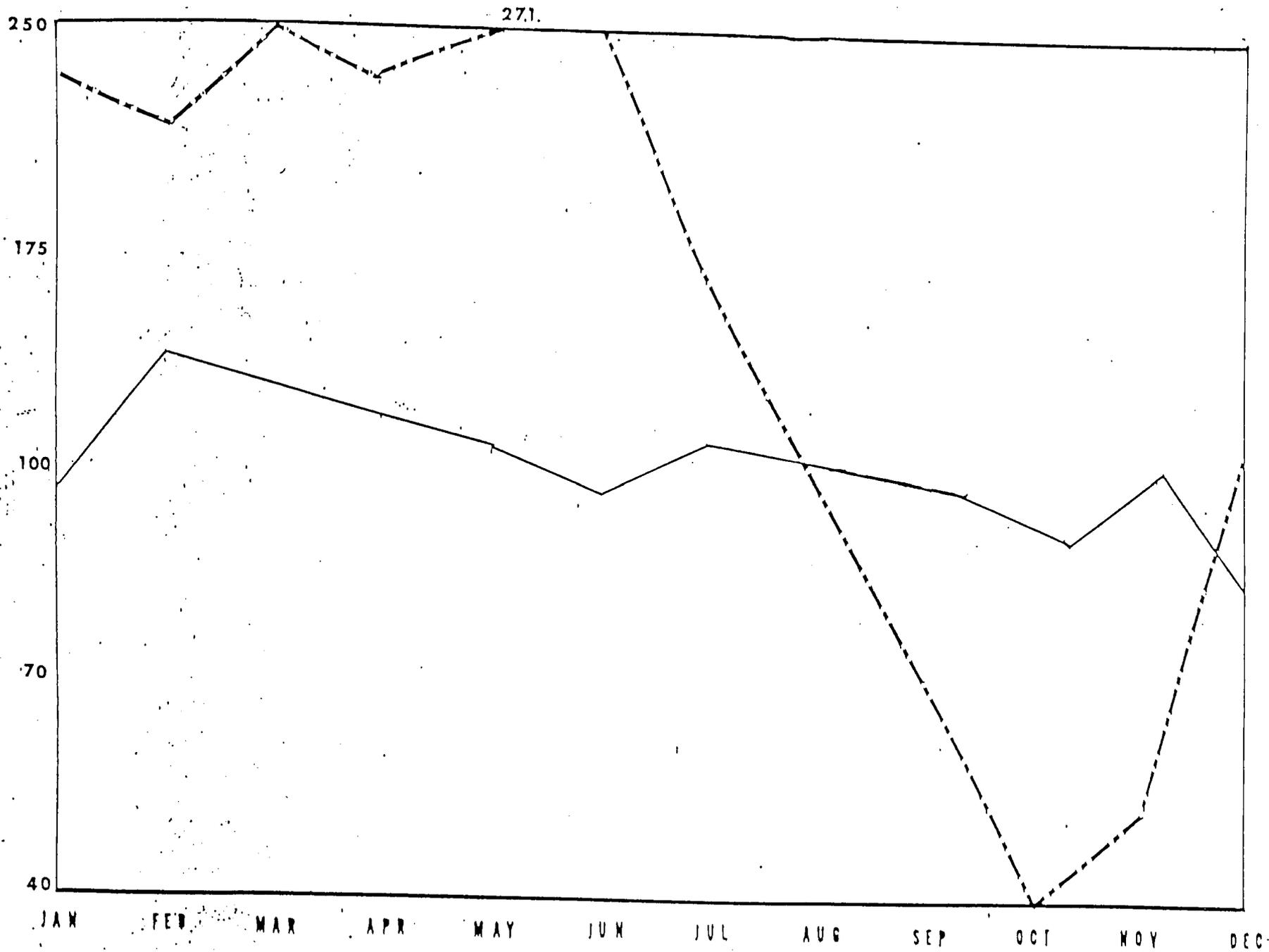


Fig. 2. Average monthly populations of Hawaiian Coots (---) and Hawaiian Stilts (—) at Hanalei NWR in 1977.

HULEIA NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

CY 1977

DEPARTMENT OF INTERIOR

U.S. FISH AND WILDLIFE SERVICE

KILAUEA, KAUAI, HAWAII

# Huleia National Wildlife Refuge

## Narrative Report

CY 1977

### I. GENERAL

#### A. Introduction

Huleia NWR contains 238 acres, about 80 of which could be developed into wetland habitat for endangered Hawaiian ducks, gallinules, coots, and stilts. The refuge was purchased in 1973, but development funds have not yet been allocated.

#### B. Habitat Conditions

Currently the only wetland habitat available is created in areas of the refuge near the Huleia River during heavy rains, and a small permanent stream which flows through the lowlands of the refuge.

Currently the only permanent wetland habitat on the refuge is a small stream which is used occasionally by Hawaiian ducks and gallinules. Temporary shallow wet areas formed after heavy rains are used occasionally by ducks and stilts. In its current state, the refuge provides little useful habitat for waterbirds.

### III. HABITAT MANAGEMENT

#### B. Grasslands

Cattle grazing is permitted on the refuge until developmental funds are available to create wetlands.