'ELEPAIO

Journal of the Hawaii Audubon Society

For the Protection of Hawaii's Native Wildlife

VOLUME 44, NUMBER 3 SEPTEMBER 1983

Observations of Migrant and Vagrant Birds on Nihoa Island

by Sheila Conant

INTRODUCTION

This paper reports incidental observations of migratory and vagrant bird species seen on Nihoa Island (Figure 1.) during four expeditions in 1980, 1981, and 1983. Included are four new sight records for the island: Cattle Egret *(Bulbulcus ibis),* Rock Dove *(Columba livia),* and House Finch *(Carpodacus mexicanus).* The dates of my visits to Nihoa were 31 May to 6 July 1980 (with Mark S. Collins), 31 January to 22 February (with Mark J. Rauzon), 18 May to 23 August 1981 (with Audrey L. Newman through 19 July and David P. McCauley thereafter), and April to May 1983 with Wayne Gagné. My co-workers confirmed most of these observations.

My primary objective on these expeditions was to study the life history and ecology of the Nihoa Millerbird *(Acrocephalus familiaris kingi)* and the Nihoa Finch *(Telespyze ultima).* Newman and Rauzon were engaged in studies of seabirds and all workers made opportunistic observations on the Island's plants and animals, including the endangered Hawaiian monk seal *(Monachus schauinslandi).*

Clapp, *et al* (1977) reported that 27 bird species had been recorded from Nihoa. Among these species are the two endemic land birds mentioned above and 16 breeding seabird species. Rauzon and Conant (unpublished data) confirmed that the Sooty Storm-Petrel *(Oceanodroma tristami)* breeds in small numbers on Nihoa, bringing the number of breeding seabirds to 17. With the exception of four species, all vagrants reported by Clapp, *et al* (1977).were seen during my expeditions. The four species not seen were each previously observed only once (Clapp, *et al* 1977) They were the Red-billed Tropicbird *(Phaethon aethereus),* the Pintail *(Anas acuta),* the Herring Gull *(Larus argentatus),* and the Mockingbird *(Mimus polyglottos).*

A map showing major land marks and place names on Nihoa is provided in Figure 2.

SPECIES ACCOUNT

These accounts detail observations of seven species, four of which are regular migrants to Hawai'i, two that are established, introduced species, and one (the Rock Dove or domestic pigeon) that has feral populations in Hawai'i. Because it was banded, the pigeon observed on Nihoa was probably an escaped or wandering domestic bird.

Cattle Egret *(Bulbulcus ibis).* —On 20 June 1980 at 1330 on Albatross Plateau (north of Miller Peak) I observed a single individual standing amongst Black-footed Albatrosses *(Diomedea nigripes).* Two days later (22 June) I saw what was probably the same bird in the same location. Although it is impossible to be certain, it is likely that this bird was a vagrant from the main Hawaiian Islands, rather than from North America or somewhere in the old world. This constitutes a new island record for Nihoa and is evidence of this species' ability to move between islands. Since its introduction in 1959, this species has established nesting colonies and increased its numbers on all five islands to which it was introduced (Byrd *et al* 1980, Berger 1981). In recent years it has also been recorded on Lāna'i (Pyle 1981), probably on Ni'ihau (Pyle 1979), Tern Island at French Frigate Shoals (Pyle 1981), Laysan Island (Pyle 1981), Midway Islands (Pyle 1979, 1980), and even flying between Hawai'i and the Line Islands (Pyle 1981). The species may be nesting on Lāna'i and Ni'ihau, but not in the Northwestern Hawaiian Islands (NWHI).

Kōlea or Lesser Golden-Plover *(Pluvialis dominica).* —I saw this species on all four visits to the island. In spite of the fact that there is a small amount of suitable habitat (i.e., open, sparse vegetation) in the Island's interior, most of the birds I saw were along the south coast, foraging in the rocky intertidal zone. This species is a regular migrant to Hawai'i, including the NWHI (Hawaii Audubon Society 1981, Clapp, *et al* 1977). Clapp, *et al* (1977) mentioned that the maximum recent estimate was 50. This seems a bit high, even for the winter months, and I suspect the usual number is closer to about 20 to 25 in the winter, and less than 10 in the summer months.

Kioea or Bristle-thighed Curlew *(Numenius tahitiensis).* — The loud, clear call of this large shorebird first attracted me to its

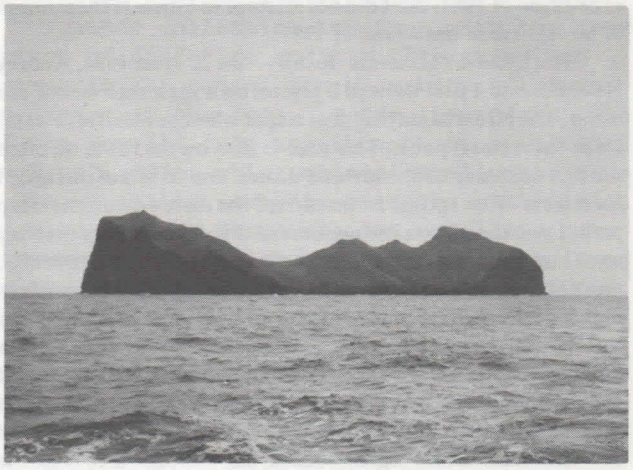

Figure 1: Nihoa Island view from the south. May 1980. *Photo by Sheila Conant.*

presence on 12 June 1980. The bird was loafing, perhaps foraging, amongst the *Eragrostis variabilis* (a grass) clumps at the summit of Tanager Peak. I had first heard the bird when it was in flight. Again on Tanager Peak, Mark Rauzon and I saw an individual on the afternoon of 3 February 1981. During the third week of August 1981, I heard the call of this species several times and saw an individual in flight along the shoreline. There were probably no more than two or three birds on the island, during the summer of 1981. This conclusion is based on my conjecture that I would have seen and heard the species more frequently if there were a larger number of birds.

'Ūlili or Wandering Tattler *(Heteroscelus incanus)*. — There were probably very few 'Ūlili on the Island at any one time, and in fact, I never saw more than one bird at a time during my trips. I regard the maximum recent estimate of two birds quoted by Clapp, *et al* (1977) as quite realistic. I saw this species infrequently during the summer and spring visits, and I think there were probably one or two birds present during the winter expedition, though they were not noted in my field notebook. Clapp, *et al* (1977) listed one observation of two birds in the winter month of March.

'Akekeke or Ruddy Turnstone *(Arenaria interpres)*. — This shorebird appears more frequently than any other in my notes, and was by far the most common of the migratory species. In the summer of 1980 I estimated two or three flocks of at least four (4 to 8) turnstones to be present. In the summer of 1981 I saw a flock of at least 20 of these birds in flight along the south coast. A similar sized flock was present during the 1983 expedition. Interestingly enough, I most frequently saw turnstones sitting in groups of three or four birds on rock outcrops in the interior of the island. Usually the birds chose spots on ridge tops or with good vantage. These birds were invariably loafing, rather than actively foraging. Clapp, *et al* (1977) quoted a maximum recent estimate of 200 birds. While this seems like a very high number, it is possible that in some years several large flocks were present. I estimated a maximum of 50 birds present during the summer months I was on Nihoa. Because I saw fewer birds in the summer of 1980, I suppose the number was smaller that year. I suspect the numbers of this species fluctuate widely from year to year. The species was also present in small numbers on the winter expedition of 1981, but I did not attempt to estimate the number of birds there in the winter of 1981.

Rock Dove *(Columba livia)*. —On 22 June 1981, Audrey Newman and I first noticed a pigeon on a rock shelf below our camp. The bird was staying near a spot where several fresh water seeps form small pools. This area is also on the route we often took to wash our cookware and dishes, and so bits of discarded food were often spilled as we carried the dishes down the steep path. I saw the pigeon eating some of this debris. From that day until I left Nihoa on 23 August, I observed this bird frequently, most often on the rocky benches below camp but sometimes in flight. I never saw it in the interior of the island. This bird was clearly an escaped domestic pigeon because it was banded with a metal band. The band number was USA 80 MKR 0108. David McCauley and I caught the bird in a hoop net to record the band number. After returning to Honolulu, McCauley called several avicultural clubs and pigeon raisers, but was unable to trace the band. I have recently written to C. Herin in Ohio in another attempt to determine where this bird may have come from. M. Morin of Hawaii State Division of Forestry and Wildlife provided Herin's address after unsuccessfully attempting to find

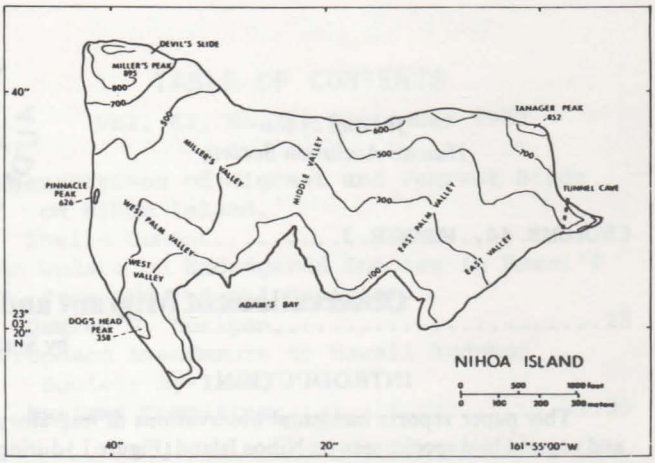

Figure 2. Map of Nihoa Island. *(Courtesy of U.S. Fish and Wildlife Service, HINWR.)*

a band series for birds banded in Hawai'i that might include the band number on the Nihoa bird. The Rock Dove, including feral or escaped domestic pigeons, is a potential reservoir for avian and human diseases (Schwartz and Schwartz 1949, Berger 1981). The large accumulations of droppings in the roosting area of the single bird we observed could be a source of disease, and a threat to Nihoa Finches, which regularly came to find water at the seep pools.

Northern Cardinal *(Cardinalis cardinalis)*. —On 25 April 1983 at 1150, I observed a single male Northern Cardinal flying down the east side of East Palm Valley. Its loud chipping call caught my attention, and I soon saw the bright red bird flying towards a grove of Lo'ulu Palms *(Pritchardia remota)*. Dr. Wayne Gagné confirmed my sighting of this species when he saw (presumably the same) a male Northern Cardinal in the same area the following day. We did not see any other cardinals during the 1983 expedition. It seems unlikely that more than one bird was present, although we could have missed others during our short stay. This one bird was probably a vagrant from one of the main Hawaiian Islands.

House Finch *(Carpodacus mexicanus)*. —My observation of a single female or immature House Finch on 13 June 1981 constitutes a new sight record for Nihoa. The bird was drinking water from a seep pool below camp when I saw it at about 1600. During the short time I observed it, I was less than 3 to 4 m away and was able to see it clearly. The bird appeared to be very tired and did not move very far from me after it became aware of my presence, although it did appear to be somewhat alarmed. Within about half a minute after I first saw it, the bird took flight and went inland. I never saw it again. It seems most likely that this bird was a vagrant from one of the main Hawaiian islands, but it is impossible to be sure.

ACKNOWLEDGEMENTS

I would like to thank the University of Hawaii Office of Research Administration and Sea Grant Program, the U.S. Fish and Wildlife Service, the U.S. Forest Service, and the National Marine Fisheries Service for their financial and logistic support. The crews of the NOAA Ship *Townsend Cromwell* and the *Easy Rider* were especially helpful in embarking and disembarking my expeditions. I thank Barbara Hoshida for typing the manuscript. S. Fefer and A. Newman made helpful comments on the manuscript.

LITERATURE CITED

Berger, A.J. 1981. Hawaiian birdlife. Second Edition. Univ. Press of Hawaii, Honolulu.

Byrd, G. V., C. F. Zeillemaker, and T. C. Telfer. 1980. Population increases of Cattle Egrets on Kauai. 'Elepaio 41: 25-28.

Clapp, R.B., E. Kridler, and R.R. Fleet. 1977. The natural history of Nihoa Island, Northwestern Hawaiian Islands. Atoll Res. Bull. No. 207. Smithsonian Institution and U.S. Fish and Wildlife Service, U.S. Dept. of the Interior, Washington, D.C.

Hawaii Audubon Society. 1981. Hawaii's birds. Third Edition. Hawaii Audubon Society, Honolulu.

Pyle, R. L. 1979. Hawaii bird observations: August 1978 through February 1979. 'Elepaio 40: 28-31.

Pyle, R. L. 1980. Hawaii bird observations: March through July 1979. 'Elepaio 41: 47-49.

Pyle, R. L. 1981. Hawaii bird observations: August 1979 through July 1980. 'Elepaio 41: 72-79.

Schwartz, C. and E. R. Schwartz. 1949. The game birds of Hawaii. Board of Comm. of Agriculture and Forestry, Honolulu.

Department of General Science
University of Hawaii at Manoa
2450 Campus Road
Honolulu, Hawaii 96822.

AN UPDATE

ON ENDANGERED SPECIES IN HAWAI'I

FROM THE FEDERAL REGISTER

by Damien P. Horigan

Background

An endangered species is any member of the animal or plant kingdom which is in danger of extinction throughout all or a significant part of its range. If a species is likely to become an endangered species in the forseeable future, it is considered to be a threatened species. The Endangered Species Act of 1973 (ESA), as amended, provides for the protection of endangered and threatened species and the ecosystems upon which they depend.

Purpose and Scope

This article is based on a review of the *Federal Register* (FR) from January 4, 1982 through July 14, 1983. Supplementary background information from other selected sources has also been included. The intention is to provide readers of the *'Elepaio* with a capsule update on recent actions taken by the Federal government which do or may have a bearing on endangered or threatened species in Hawai'i.

During that time, notices appeared in the FR concerning (1) the 'o'opu 'alamo'o, a rare, endemic, freshwater fish; (2) the Bishop's 'O'o, once considered to be an extinct forest bird; (3) the Nene, the State bird of Hawai'i and an endangered species; (4) sea turtles, found in Hawaiian waters and protected by Federal law; and (5) the 'Ewa Plains 'akoko, a plant having very limited distribution. A synopsis on each of these five organisms follows.

(1) 'O'opu 'alamo'o *(Lentipes concolor)*

In the December 30, 1982 issue of the FR the 'o'opu 'alamo'o was included in the periodic U.S. Fish and Wildlife Service (USFWS) review of vertebrate wildlife as a possibly endangered or threatened species. However, the USFWS lacked sufficient biological data to support a formal declaration that the 'o'opu 'alamo'o is endangered or threatened (47 FR 58456).

The 'o'opu 'alamo'o is a small, scaleless, purplish, endemic, freshwater goby (Gobiidae). The few recorded sightings of this fish indicate that it is only found in the streams of Hilo on the island of Hawai'i (Tinker 1978:392).

Many Hawaiians believe that the 'o'opu 'alamo'o is a sign of bad luck when it is found in a net with other fish. They consider this fish kapu because they believe that it is related to the evil mo'o or lizard gods (Titcomb 1972:127).

(2) Bishop's 'O'o *(Moho bishopi)*

The pristine forests of the Hawaiian Islands were inhabited by four endemic birds of the *Moho* genus: the Bishop's 'O'o *(Moho bishopi)*, the Kaua'i 'O'o *(Moho braccatus)*, the Hawai'i 'O'o *(Moho nobilis)*, and the O'ahu 'O'o *(Moho apicalis)*. These birds were prized by the ancient Hawaiians for their bright yellow feathers from which the Hawaiians made feather capes and headdresses (Berger 1981:105-108).

Feather collecting together with the introduction of predators and the alteration and destruction of native forest habitats led to the demise of the 'o'o. Today, the O'ahu 'O'o and the Hawai'i 'O'o are thought to be extinct. The Kaua'i 'O'o, which coincidentally has fewer bright yellow feathers than the other 'o'o, was also thought to be extinct until its rediscovery in 1960 (Berger 1981:105-107). Even so, the Kaua'i 'O'o is very rare and is found only in forests of the Alaka'i Swamp on Kaua'i (Hawaii Audubon Society 1975:65).

Until its rediscovery on Maui last year by Stephen Sabo, the Bishop's 'O'o was also thought to be extinct (Sabo 1982:69), because the last reliable sighting was made in 1904 (Berger 1981:107). Presumably, on the basis of Sabo's recent sighting, the USFWS has indicated that the Bishop's 'O'o may be consid-

ered for official listing as an endangered or threatened species. However, as in the case of the 'o'opu 'alamo'o, the USFWS lacks sufficient biological data to support a formal declaration that the Bishop's 'O'o is an endangered or threatened species (47 FR 58458).

(3) Nene *(Nesochen sandvicensis)*

In implementing the provisions of the ESA, the USFWS has appropriately listed the Nene, or Hawaiian Goose, as an endangered species since July 1, 1975 (50 CFR 23.23). However, the effort to save the Nene from extinction is frequently cited as a model of conservation in action. Today, thanks to the efforts of many aviculturalists in Hawai'i and elsewhere, the Nene seems to have been saved from imminent extinction.

Even before the onset of their decline, Nene were found only on the island of Hawai'i and in the vicinity of Haleakala on Maui. On Hawai'i, Nene lived principally on kipuka (vegetated areas) on recent upland lava flows and to a lesser extent in the leeward lowlands. In the 18th century, Nene were known to descend below 1,200 feet during the breeding season so their young could feed on freshly sprouting vegetation (Kear and Berger 1980:41).

When Captain James Cook arrived at Kealakekua Bay on the island of Hawai'i in 1779, the Hawaiians gave his party several Nene. A reasonable estimate of the Nene on the island of Hawai'i in the late 18th century would be about 25,000 birds. Nene were still plentiful when William Ellis, an early missionary, visited Kilauea Crater in 1823. Thereafter, multiple factors contributed to the decline of the Nene: the destruction of native vegetation by feral goats, the destruction of Nene eggs and young by feral pigs, the introduction of the mongoose (a natural predator of any ground nesting bird) along the Hamakua Coast in 1883, and the increased use of shotguns by sport hunters, to mention just a few. By 1951, the total wild population was estimated to be no more than 30 birds (Kear and Berger 1980:26-34).

In 1949, the worldwide population of Nene in captivity was 13 birds (Kear and Berger 1980: 67). Fortunately, two successful ongoing propagation programs were initiated--a Territorial program at Pohakuloa on the slopes of Mauna Kea in 1949, which has been continued by the State since 1959, and a private program undertaken by the Wildfowl Trust at Slimbridge, England in 1950.

By 1973, the Wildfowl Trust held or had on loan to zoos and private breeders 432 birds. By the late 1970's, the Nene rearing facility at Pohakuloa, Hawai'i had over 50 birds in captivity and was producing about 50 Nene annually. As a result of controlled rearing and releasing programs, the worldwide population during the late 1970's was estimated to be 750 birds in the wild and 1,250 in captivity (Kear and Berger 1980:115).

Since the Pohakuloa facility opened, approx. 1,700 Nene have been reared there and released into the wild. Incidentally, the Koloa-maoli or Hawaiian Duck *(Anas wyvilliana)*, the 'Alala or Hawaiian Crow *(Corvus hawaiiensis)*, and the Laysan Duck *(Anas laysanensis)*, all endangered endemic species, are also being propagated at the Pohakuloa facility. A total of 419 Koloa-maoli have been released on the island of Hawai'i from 1958 to 1980 and 376 Koloa-maoli have been released on O'ahu. The captive population of 'Alala, 8 birds, are breeding and laying eggs. Three young 'Alala have been produced. Although bred at Pohakuloa, Laysan Ducks have never been released into their original habitat on Laysan Island (DOFAW 1983).

The ESA, 16 USC 1539, requires every person to obtain a permit from the USFWS prior "to purchasing in interstate commerce" any endangered species. The USFWS is required to publish a notice of every permit application in the FR in order to give interested parties 30 days to submit comments. A significant number of private aviculturalists are involved in propagating Nene. In the span of a single month (February 25 to March 24, 1982) four permit applications to purchase and transport Nene for propagation were published in the FR. The aviculturalists who applied for these permits were: Rex Lum of Carrollton, Missouri; Donald Wells of Lake Forest, Illinois; Stanley Fejta of Metairie, Louisiana; and Peter Connally of Lana'i City, Hawai'i (47 FR 11113-14, 12683, 22230, 34454).

The dramatic, nearly hundred-fold increase in the captive Nene population from 13 birds in 1949 to 1,250 birds in the late 1970's was largely due to the diligence of personnel involved in the Territorial/State and Wildfowl Trust propagation programs. It is also encouraging to learn from the FR that private aviculturalists are propagating Nene, since this should further strengthen the overall propagation effort.

According to Daniel Taylor, Resources Management Chief at Hawai'i Volcanoes National Park, and Paul Banko, a University of Hawai'i Research Associate working with park scientists, re-establishment on the island of Hawai'i of a large Nene population is impeded by many factors. Destruction of Nene habitat by feral goats and habitat alteration resulting from the introduction of exotic plants are two principal impediments. Another significant impediment is poor reproduction--among breeding pairs many eggs do not hatch, and many young do not

survive to become fledglings. Finally, predation takes its toll of Nene. Rodents and mongooses are the chief predators. Other predators in order of decreasing adverse effect on Nene are feral pigs, feral dogs, possibly feral cats, and poachers (Banko and Taylor 1983).

The National Park Service is particularly interested in receiving reports on (1) persons releasing dogs into Nene habitats, (2) all sightings of banded Nene--noting which colors are on which legs and which color is above the other , and (3) any disturbance of Nene. These reports should be made to Hawai'i Volcanoes National Park Research Center. The telephone number of the Center is (808) 967-7367.

(4) Sea Turtles

Among the sea turtles that are found in Hawaiian waters, the green turtle *(Chelonia mydas)*, called honu by the Hawaiians, is the predominant species. The endangered hawksbill *(Eretmochelys imbricata)*, or 'ea in Hawaiian, and the endangered leatherback *(Dermochelys coriacea)* are less abundant (Balazs 1978a:1). On rare occasions the threatened olive ridley *(Lepidochelys olivacea)* and the threatened loggerhead *(Caretta caretta)* have been sighted in Hawaiian waters. Consequently, Balazs treats the olive ridley and the loggerhead as accidentals (Balazs 1978b:38).

The green, hawksbill, olive ridley, and loggerhead turtles are chelonids (family: Cheloniidae). Chelonids are restricted to sea water and are found in all warm and tropical oceans. Atlantic, Pacific, and Indian Ocean chelonids usually undertake prolonged journeys --over hundreds of miles--from the waters they normally inhabit to specific onshore nesting areas. These migrations are among the most astonishing phenomena in the animal kingdom. Although the leatherback is not a chelonid, it migrates long distances to nest (Mlynarski and Wermuth 1975:109-111).

There has not been a recorded nesting of loggerhead, olive ridley, or leatherback turtles on any islands of the Hawaiian Archipelago; however, there is evidence that the hawksbill and green turtles do. The hawksbill turtles have been known to nest on Moloka'i and Hawai'i. The green turtles exhibit characteristic chelonian behavior by migrating several hundred miles to and from a few specific islands in the Northwestern Hawaiian Islands, which lie between Kaua'i and Midway, in order to nest and bask (Balazs 1978b:38). Over ninety percent of all reproduction of the Hawaiian population of green turtles occurs on French Frigate Shoals, a coral atoll with eleven small sand islands. The balance of green turtle reproduction, amounting to less than 10 percent, occurs on Laysan Island, Lisianski Island, and Pearl and Hermes Reef. All these green turtle reproduction sites are located within the Hawaiian Islands National Wildlife Refuge in the Northwestern Hawaiian Islands (Balazs 1980a).

Green turtle has long been regarded as a delicacy (Mylnarski and Wermuth 1975:109). In 1978, the green turtle was afforded protection under the ESA. Consequently, the sale of all green turtle products was prohibited. In spite of this and other existing Federal and State laws, some restaurants in Hawai'i continued to sell turtle steak and soup a year after sales were banned (Balazs 1980b:32). However, there has been a steady decline in illegal green turtle product sales since then.

Prior to the fourth regular meeting of the Conference of Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which was held in Botswana during April 1983, the USFWS and the National Marine Fisheries Service of the Department of Commerce (NMFS) received three requests to review the current ban on commercial U.S. trade for green turtle products (48 FR 43). These requests came from the Cayman Turtle Farm, Ltd., then a private enterprise, in the Cayman Islands (a British dependency, which lies about 150 miles northwest of Jamaica); the French Overseas Department of Réunion; and the Republic of Suriname. The requests from Réunion and Suriname contained similar proposals to produce green turtle products by ranching (rearing in a controlled environment specimens taken from the wild). Since green turtle products were produced by the Cayman Turtle Farm, Ltd., by farming (breeding in captivity) rather than by ranching and CITES permitted farm-produced green turtle products to be traded if the country of export issued a proper CITES document, the Cayman Turtle Farm, Ltd. requested permission (1) to allow tourists to bring farm-produced turtle products back to the U.S., (2) to allow farm-produced turtle products to be transshipped through the U.S., and (3) to allow importation of farm-produced turtle products into the U.S. for commercial purposes. Accordingly on 3 January, 1983 the USFWS and the NMFS decided to reconsider allowing commercial importation of maricultured sea turtle products into the U.S. (48 FR 42-43). All these proposals now appear to be dead because the parties to CITES did not discuss international trade in ranch and farm-produced green turtle products at their April 1983 meeting in Botswana (Balazs 1983).

During the first half of 1983, the Cayman Islands Government took over the Cayman Turtle Farm, Ltd., and renamed it the Grand Cayman Turtle Farm (Balazs 1983). After no action was taken on lifting the restrictions on international trade in green turtle products at the

April 1983 meeting of the parties to CITES, on 4 May, 1983 the Cayman Islands Government requested the U.S. to permit transshipment of green turtle products through Miami, Florida (48 FR 20098) so that these products could be sold in the United Kingdom and other non-CITES countries. As of 24 July, 1983, no action has been taken by the U.S. on this request (Balazs 1983).

If the U.S. eventually grants the Grand Cayman Turtle Farm permission to transship green turtle products through Miami, Florida, this would not present any control problems in Hawai'i because all turtle products being transshipped would remain in the custody of U.S. Customs while in U.S. territory (Balazs 1983). However, if importation of ranch and farm-produced turtle products were legalized in the future, illegal trafficking in green turtles taken from Hawaiian waters would become more difficult to police. Regardless, suspected illegal sales of green turtle products should be reported to the Enforcement Division, U.S. Fish and Wildlife Service, 300 Ala Moana Blvd., Honolulu, Hawai'i 96813. The telephone number of the Enforcement Division is (808) 546-5602.

(5) 'Ewa Plains 'akoko *(Euphorbia skottsbergii* var.*kalaeloana)*

Effective 23 September, 1982, the 'Ewa Plains 'akoko became the sixth Hawaiian plant species to be protected as an endangered species under the ESA as previously reported in the *'Elepaio* (47 FR 36846; Hawaii Audubon Society 1982:30). In pre-Polynesian times at least four plants were endemic to the 'Ewa Plains of O'ahu. Today, the 'akoko is one of the two surviving endemic plants. It is a shrub found in kiawe *(Prosopis pallida)* thickets together with koa haole *(Leucaena leucocephala)*. Most 'akoko plants grow to heights of 1/2 to 1 meter although some vigorous specimens do reach approximately 2 meters in height. Its known range is restricted to the 'Ewa Plains in the vicinity of Barbers Point (Kimura and Nagata 1980:40).

Radiocarbon dating indicates that there has been human disturbance of the native ecosystem of the 'Ewa Plains for more than 500 years, mostly during the late 1700's and early 1800's. By 1900, however, grazing, invading non-native plants like kiawe and koa haole, and expanding sugar cane operations greatly accelerated the decline in the native ecosystem which has continued until the present day (Kimura and Nagata 1980:40). In 1979, about 100 plants were destroyed by bulldozing near the oil refinery. Additional plants were destroyed the next year by quarrying operations (47 FR 36847).

When plans to construct a deep-water harbor and dockside facilities were announced, transplant experiments were undertaken. In 1977 and 1978, only 7 of 469 transplanted plants survived (47 FR 36847). However, more recent transplant experiments and research in germination have increased the feasibility of propagating this taxon.

The USFWS and the Army Corps of Engineers have approved the construction of the deep-water harbor and dockside facilities because (1) less than 10 percent of the existant plants would be disturbed and (2) over 5,00 plants are growing on Barbers Point Naval Air Station property over which the Department of the Navy supposedly excercises strict environmental control. However, the USFWS still believes that the 'akoko is in danger of extinction throughout its entire range unless effective positive measures are applied to its conservation (47 FR 36847).

ACKNOWLEDGEMENTS

I gratefully aknowledge the continuous encouragement and support I received from Dr. April K. Purcell, Chairperson, English Discipline, University of Hawai'i at Hilo. I also thank three other University of Hawai'i at Hilo faculty members--Dr. William H. Wilson, Assis. Professor of Hawaiian, for this advice on Hawaiian animal and plant names; Dr. Leon E. Hallacher, Assis. Professor of Zoology, for information on the 'o'opu 'alamo'o; and Dr. Roger E. Baldwin, Assoc. Professor of Biology, for information on the 'Ewa Plains 'akoko.

LITERATURE CITED

1. Government Publications

50 CFR 23.23 Code of Federal Regulations, revised as of 1 Oct. 1982. Wildlife and Fisheries. Dept. of the Interior Fish and Wildlife Service. Appendices I, II, and III to the Convention on International Trade in Endangered Species of Wild Fauna and Flora. p. 224.

47 FR 11113-4 Dept. of the Interior Fish and Wildlife Service. 1982. Endangered species permits; notice of receipt of application (Wells).

47 FR 12683 Dept. of the Interior Fish and Wildlife Service. 1982. Endangered species permit; notice of receipt of application (Lum).

47 FR 22230 Dept. of the Interior Fish and Wildlife Service. 1982.

Endangered species permit; notice of receipt of application (Fejta).

47 FR 34454 Dept. of the Interior Fish and Wildlife Service. 1982. Endangered species permit; notice of receipt of application (Connally).

47 FR 36846-49 Dept. of the Interior Fish and Wildlife Service. 1982. Endangered and threatened wildlife and plants; determination that Euphorbia skottsbergii var. kalaeloana ('Ewa Plains 'akoko) is an endangered species.

47 FR 58454-60 Dept. of the Interior Fish and Wildlife Service. 1982. Endangered and threatened wildlife and plants; review of vertebrate wildlife for listing as endangered or threatened species.

48 FR 42-43 Dept. of the Interior Fish and Wildlife Service and Dept. of Commerce National Marine Fisheries Service. 1983. Review of special rules on sea turtles.

48 FR 20098-100 Dept. of the Interior Fish and Wildlife Service and Dept. of Commerce National Marine Fisheries Service. 1983. Endangered and threatened wildlife and plants.

DOFAW 1983 Hawaii State Div. of Forestry and Wildlife. 1983. Captive propagation of Hawaii's native endangered wildlife. 1 p. (Data sheet obtained at the Pohakuloa Endangered Species Breeding Facility, 27 July 1983).

2. Other Sources

Balazs, George H. 1978a. Sea turtles of Kahoolawe Island; a preliminary survey. Hawaii Institute of Marine Biology, Kaneohe, Hawaii. Photocopy.

_____. 1978b. Terrestrial critical habitat for sea turtles under United States jurisdiction in the Pacific region; an overview of existing knowledge. 'Elepaio 39:37-41.

_____. 1980a. Synopsis of biological data on the green turtle in the Hawaiian Islands. NOAA Technical memorandum NMFS, NOAA-TM-NMFS-SWFC-7, 141 pp.

_____. 1980b. Illegal turtle on sale here. 'Elepaio 41:32.

_____. 1983. Private communication 29 July 1983.

Banko, Paul and Daniel Taylor. 1983. Private communication 29 July 1983.

Berger, Andrew J. 1981. Hawaiian birdlife. The University Press of Hawaii. Honolulu, Hawaii.

Hawaii Audubon Society. 1975. Hawaii's birds. Hawaii Audubon Society. Honolulu, Hawaii.

Hawaii Audubon Society. 1982. Newest endangered Hawaiian plant. 'Elepaio 43:30.

Kear, Janet and A.J. Berger. 1980. The Hawaiian goose; an experiment in conservation. Buteo Books. Vermillion, S.D.

Kimura, Bert Y. and Kenneth M. Nagata. 1980. Hawaii's vanishing flora. The Oriental Publishing Co. Honolulu, Hawaii.

Mlynarski, M. and H. Wermuth, in collaboration with R. Kaufmann. 1975. The turtles: family Cheloniidae. In Grzimek's animal life encyclopedia VI:109-111. Van Nostrand Reihold Co. New York, N.Y.

Sabo, Stephen R. 1982. The rediscovery of the Bishop's 'O'o on Maui. 'Elepaio 42:69-70.

Tinker, Spencer Wilkie. 1978. Fishes of Hawaii: a handbook of the marine fishes of Hawaii and the Central Pacific Ocean. Hawaiian Service Inc. Honolulu, Hawaii.

Titcomb, Margaret, in collaboration with Mary Kawena Pukui. 1972. Native uses of fish in Hawaii. The University Press of Hawaii. Honolulu, Hawaii.

485 Waianuenue Avenue
Apt. 248
Hilo, Hawaii 96720

ERRATUM

A reference was inadvertently omitted from the Literature Cited section of Stone *et al*'s "Hawaiian Goose Research and Management--Where Do We Go From Here?" article in the August 1983 issue of *'Elepaio*. The missing reference is:

Ellis, David H., Steven J. Dobrott, and John G. Goodwin, Jr. 1978. Reintroduction techniques for Masked Bobwhites. Pp. 345-354 *in* Endangered birds: management techniques for preserving threatened species. S.A. Temple (ed.) Univ. of Wisconsin Press, Madison and Croom Helm Ltd. of London.

PROPOSED AMENDMENTS TO HAWAII AUDUBON SOCIETY BY-LAWS

The following proposed changes to Articles II and XI of the Hawaii Audubon By-laws were endorsed by the Board of Directors in their 8 August meeting. Notice is hereby given that these proposed changes will be voted on by the membership at the 19 September general meeting. The original by-laws were published in the October 1977 *'Elepaio*. Amendments were carried in the November 1981 and October 1982 issues.

The purposes of the proposed amendments are: (1) to set forth specifically the classification of membership in the Society; (2) to restate who may vote on Society business; and (3) to establish mail balloting as the procedure for voting on proposed amendments to the Society by-laws.

The reasons for the proposed amendments follow:

(1) At present, the classes of membership in the Society are stated in general, non-specific terms (see Article II, Sections 2, 3, and 4). To name each class of membership will better inform our members and assist them in understanding the relationship of our memberships to classes of membership in the National Audubon Society. It will also assist in relating membership categories to voting rights.

(2) At present, voting rights are covered by Section 3 of Article II. Questions have arisen in the past about who has the right to vote on Society business, particularly in the case of persons residing outside Hawaii. It is important to clarify this.

(3) In 1982, the Society amended the by-laws to establish mail balloting for the election of officers and directors. The purpose of that amendment was to enable members qualified to vote but handicapped in doing so by distance from Oahu, or for other reasons, to vote. For the same reason, it is considered desirable that mail balloting shall be available also for voting on proposed amendments to the by-laws.

Following are the proposed amendments as prepared by the By-laws Committee, composed of George Campbell, Dr. Robert Pyle, and Dr. Susan Schenck. For the reader's convenience, the present wording of relevant sections of the by-laws is shown before each proposed change.

ARTICLE II, Section 2--PRESENT

The classes of membership and membership dues of this SOCIETY shall be the same as that of the National Society. In addition, residents of Hawaii, and members of the SOCIETY at the time of chapterization with the NATIONAL SOCIETY, shall have the option of membership in the SOCIETY only, at dues established by the Board of Directors of the SOCIETY.

ARTICLE II, Section 2--PROPOSED

Section 2. The classes of membership recognized by the SOCIETY are:

a. JOINT MEMBERSHIP, which covers membership in both the NATIONAL and HAWAII AUDUBON SOCIETIES. Classes are:

Individual	Sustaining	Contributing	Life
Family	Supporting	Donor	Dual Life

Dues for Joint Membership are established by the NATIONAL SOCIETY.

b. LOCAL MEMBERSHIP, which is an option of membership in the SOCIETY only, available to residents of Hawaii and other Pacific islands served by the U.S. postal zip code system, and to persons who were members of the SOCIETY at the time of chapterization with the NATIONAL SOCIETY (February 1, 1978). Classes are:

Regular	Subscriber	Life
Junior (age 18 or under)	Complimentary	Honorary Life

Subscriber is a non-voting class of membership which is open to institutions and to any non-resident of Hawaii who wishes to receive the SOCIETY's monthy journal, *'Elepaio*. Complimentary memberships and Honorary Life memberships are given by the Board of Directors. Complimentary, Life, and Honorary Life memberships are not subject to the residency requirements. All Regular, Junior, Subscriber, and Complimentary local memberships are for one calendar year, January through December. Dues for local memberships are established by the Board of Directors of the SOCIETY.

ARTICLE II, Section 3--PRESENT

Section 3. Each member shall have the right to cast one vote at the annual meeting and at any regular or special meeting of members on any motion that may properly be brought before such meeting, including the elction of officers and directors. Members in the Family class of membership shall be entitled to two votes per family, provided that at least two members of the family are present in person or proxy at the time of the meeting.

ARTICLE II, Section 3--PROPOSED

Section 3. Local members in the Regular, Life, and Honorary Life classes, and all Joint members, have the right to cast one vote at any duly sanctioned meeting of the membership on any motion that may be properly brought before such meeting. They may also vote, in accordance with the procedures set forth in Articles VII and XI, on elections of officers and directors and on amendment of the by-laws. Persons in the Family (Joint) class of membership are entitled to two votes per family, provided that two members of that family cast said votes. Subscribers, Junior members, and Complimentary members are non-voting.

ARTICLE II, Section 4--PRESENT

Section 4. Membership dues shall be payable at the time of application and, except for Life members, yearly thereafter. In the case of Life members, dues shall be paid in full in one sum, except as may be provided otherwise in the By-laws of the NATIONAL SOCIETY.

ARTICLE II, Section 4--PROPOSED

Section 4. Membership dues shall be payable at the time of application and, except for Life members, yearly thereafter. Dues for Life memberships shall be paid in full in one sum, except as may be provided otherwise by the Board of Directors of the SOCIETY for Local Life memberships, or in the by-laws of the NATIONAL SOCIETY for Joint Life memberships.

ARTICLE XI--PRESENT

AMENDMENTS

The Constitution and By-laws may be amended by a majority vote of members present in person or by proxy at any regular or special meeting of members duly called pursuant to the provisions of ARTICLE III Section 4 hereinabove. The notice of such meeting shall recite the wording of each proposed amendment.

ARTICLE XI--PROPOSED

AMENDMENTS

The Constitution and By-laws may be amended by a majority vote of members voting, as follows:

a. Notice of the proposed amendment(s), together with the wording thereof, shall be published in an issue of the *'Elepaio* distributed to members not less than 30 days before the last day set for voting on said amendment(s). The notice shall give the reasons for submitting the amendment(s) and the position of the Board of Directors with respect to them.

b. Voting shall be by mail. A ballot containing the proposed amendment(s) and Board's position on them shall be prepared by the Elections Committee and distributed to all members eligible to vote no later than 15 days prior to the last day for voting. Voting shall be by secret ballot returned by mail or in person so as to reach the Elections Committee no later than 7:30 p.m. on the last day for voting. Ballots will be counted by the Elections Committee and results published in the following issue of *'Elepaio*.

The By-Laws Committee

ALOHA TO NEW MEMBERS

We welcome the following new members and encourage them to join in our activities.

Joint(National and Hawaii): Jenine S. Amaki, Aiea; John Armstrong, Keaau; Howard M. Baba, Honolulu; Ken Barton, Kailua,Kona; Mike Bauerlein, Haleiwa; Arthur Chang, Honolulu; Clayton L. Cole, Kailua, Oahu; Lynne M. Conner and Ginger L. Simpson, Kaneohe; Lei Cornette, Kaneohe; Susan Cunningham, Honolulu; Richard E. Fuller, Sr., Koloa; Caroline A. Garrett, Honolulu; Mary A. Girton, Pearl Harbor; Michael and Susan Graham, Makawao; Lawrence and Linda Hamilton, Honolulu; Rod and Hiroko Harada, Honolulu; Julie M. Ishibashi, Lihue; Dr. and Mrs. Casimer Jasinski, Honolulu; Angie King, Honolulu; Michael P. Laboon, Kula; John Levesque, Mililani; Wendy Mason, Honolulu; Mrs. Sherry Matias, Lawai; Melvin Matsuda, Pearl City; M. Muin, Honolulu; E. Nishimura, Honolulu; Larraine Perreira, Pukalani; Miriam Retherford, Honolulu; M. Rohlfoff, Honolulu; Gail M. Saito, Honolulu; Mrs. Margaret Taney, Honolulu; Mrs. Ivan Welin, Honolulu; and Belau Mode Kngei School, Koror, TT.

Kammy Wong

NOMINATING COMMITTEE FORMED

The Hawaii Audubon Society's Nominating Committee has been chosen, and the Committee members were announced at the 8 August Board meeting. They are: John Obata, Betsy Gagné, Audrey Newman, and Sheila Conant.

Anyone who wants to recommend someone as an officer or director for the 1984 Board should write the Committee c/o HAS, P.O. Box 22832, Honolulu, Hawaii 96822, or call a member of the Committee. Later this year, members will have a second chance to make nominations. But why wait!

SEPTEMBER FIELD TRIP EXPLORES WAIPIO

On Sunday, 11 September, the Society will conduct a field trip to Waipio Peninsula on Oahu. This area is an excellent spot to see migrant shorebirds, as well as native waterbirds, such as the endangered Hawaiian Coot and Stilt.

There is not much walking involved in this trip, but the driving will be on cane field roads, so be prepared for possible mud.

Meet at 7:00 a.m. on Punchbowl St., Honolulu, next to the Hawaii State Library. Call the trip leader, Bob Pyle, at 262-4046 for more information. Don't forget to bring your spotting scopes and binoculars!

SEPTEMBER PROGRAM: BIRDING IN ALASKA

The Monday, 19 September general meeting will feature Mike Ord and Bob Pyle, who are both well-known and active members of the Hawaii Audubon Society. Bob is also currently HAS president. Their talk will be "Birding the Western Perimeter of Alaska", with slides from the trip they took during mid-May to early June of this year.

The meeting will be held at McCully-Moiliili Library in Honolulu, at 2211 S. King St. at 7:30 p.m.

HAWAII'S BIRDS TIME FOR REVISION

Believe it or not, our supply of the third edition of Hawaii's Birds is running low so it's time again to start the revision process. This is a chance to make your pitch for changing or (perish the thought) correcting text or photographs. We'll be incorporating some AOU name changes and we'd particularly like to update information on individual birds where we now have new data on habits and distribution. A major change in photos is not planned, but we are anxious to incorporate high quality photos where they improve substantially on what we now have. It would be particularly nice to replace some of the older paintings of forest birds with quality photos. We are also looking for new cover photos, so dust off your cameras and get to work! I'd love to have your suggestions for text and format changes by September 1, and any photos for possible use as soon after that as possible. This is your chance to speak up or hold your tongue for another three years. Send your ideas and photos to Rob Shallenberger, 169 Kuulei Road, Kailua, Hawaii 96734.

MONK SEAL RECOVERY PLAN AVAILABLE

The *Recovery Plan for the Hawaiian Monk Seal*, Monachus schauinslandi, by William G. Gilmartin, 1983, is now available. Copies of the plan may be obtained by writing to either: Regional Director, Southwest Region, National Marine Fisheries Service, 300 South Ferry Street, Terminal Island, California 90731 or Administrator, Western Pacific Program Office, National Marine Fisheries Service, P.O. Box 3830, Honolulu, Hawaii 96812.

REPRINTS OF ARTICLES

Reprints of articles in the *'Elepaio* are available to authors and others at the following rate if ordered before publication date: for 100 copies, $10 per page of the article. For each additional 100 copies, add $3 per page. These prices are subject to change.

BACK ISSUES OF 'ELEPAIO

Current prices for back issues of *'Elepaio* are listed below. Actual pastage charges for shipping will also be added on to these prices.

Vol. 41, No. 1(July 1980) to present:

50¢ per issue, $5.00 per volume

Vol. 1 through 40(1939 to 1979):

$1.00 per issue, $10.00 per volume
(5 or more volumes: $8.00 per volume)

Vol. 1 through 43(complete set: 1939 to June '83)

$350.00 for the complete set

IF NOT A MEMBER, PLEASE JOIN US

JOINT MEMBERSHIP
(National and Hawaii Audubon Societies)

Individual	$ 25.00
Family	32.00
Sustaining	50.00
Supporting	100.00
Contributing	250.00
Donor	500.00
Life (single payment)	1500.00
Dual Life (single payment)	2000.00

Special rates for full-time students and Senior Citizens (65 years of age or older) are available. Please write for application form.

LOCAL MEMBERSHIP
(Hawaii Audubon Society Only)

Regular	$ 6.00
Junior (18 and under)	3.00
Subscriber (non-Hawaii residents)	6.00
Life	150.00

(payable in three equal annual installments)

All Local Memberships and Subscriptions are for a calendar year January through December. New Local Members and late renewing members who send in dues through September may obtain all previous issues of 'Elepaio in that calendar year, upon request and reimbursement to the Society for mailing costs. Dues received after September are applied to membership extended through the following calendar year, but do not include previous issues of 'Elepaio in the current year.

HAWAII AUDUBON SOCIETY

BOARD OF DIRECTORS

President	Dr. Robert L. Pyle	262-4046
1st V.P.	Dr. Wayne Gagné	941-5659
2nd V.P.	Dr. Charles Lamoureux	948-8028
Treasurer	Norris Henthorne	734-7562
Rec. Secy.	Suzan Harada	845-6704
Cor. Secy.	Thea Johanos	946-2181
Directors:	Patricia Avery	988-7622
	Phillip Bruner	293-3806
	George Campbell	941-1356
	Erma Ikawa-Nicola	967-7367
	Marie Morin	533-7530
	Marion Saunders	988-2635

COMMITTEES

Conservation	Dr. Charles Lamoureux	988-2255
Education	Patricia Avery	537-9564
'Elepaio	Peter Galloway	847-3511
	Marie Morin	533-7530
Field Trips	Peter Donaldson	456-5662
Finance	Norris Henthorne	734-7562
Mail Distrb.	Leilani Pyle	262-4046
Membership	Dr. Robert Pyle	262-4046
	Susan Schenck	488-4974
	Kammy Wong	
Programs	Phillip Bruner	293-3806
Publicity	(Vacant)	
Sales	George Campbell	941-1356
	Richard Smith	262-4784
Scholarships	Dr. Sheila Conant	948-8241
Special Pub.	Dr. Rob. Shallenberger	261-3741

'ELEPAIO

Editors.....Marie Morin, Peter Galloway
(Send articles to Marie Morin, 1415 Victoria St. #1515,Honolulu, Hawaii 96822)

Production Committee.....Anne Conibear, Kathy Harrington, Audrey Newman, and Joel Simasko.

VOLUNTEERS NEEDED

Volunteers are always needed for various projects, such as distributing postcards, and making Audubon teeshirts. Call Bob Pyle at 262-4046.

HELP WITH 'ELEPAIO

The October issue of the *'Elepaio* will be pasted-up 20 September (Tues.) beginning at 6:30 p.m. at 1415 Victoria St. #1515. If you want to help (and we need you!), call Peter at 847-3511 ex. 156 or Marie at 533-7530 for the entry phobe number. No experience necessary!

CALENDAR OF EVENTS

Sept. 11 (Sun.) Field trip to Waipio Peninsula, Oahu. Meet 7:00 a.m. at State Library on Punchbowl St. Leader B. Pyle (262-4046).

Sept. 12 (Mon.) Board meeting at the home of Norris Henthorne, 537 Kuliouou Road, Honolulu, at 7:00 p.m. (948-6636).

Sept. 19 (Mon.) General meeting on "Birding the Western Perimeter of Alaska" with B. Pyle and M. Ord. McCully-Moiliili Library, 2211 S. King St., Honolulu, at 7:30 p.m.

By-laws available by request.

TABLE OF CONTENTS

Vol. 44, No. 3, September 1983

HAWAII AUDUBON SOCIETY
P. O. Box 22832
HONOLULU, HAWAII 96822

ADDRESS CORRECTION REQUESTED

Non Profit Organization
U. S. POSTAGE
PAID
Honolulu, Hawaii
Permit No. 1156

HAWAII AUDUBON SOCIETY