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RECENT OBSERVATIONS OF ENDANGERED BIRDS IN HAWAII'S NATIONAL PARKS

By Sheila Conant

Introduction

When Europeans arrived in Hawai'i in 1778, there were 69 native Hawaiian birds. These birds belonged to six indigenous (found naturally in Hawai'i and elsewhere) species, and 39 endemic (found naturally only in Hawai'i) species among 12 bird families, including the endemic family Drepanididae or Hawaiian Honeycreepers. Today 23 of these birds are extinct. Still extant are 46 forms, of which 29 are considered endangered and one threatened. Of the extant (existing) endemic birds only 16 are not endangered or threatened, and there are only six species that contain no endangered subspecies, although one of these six does have an extinct subspecies. Today, eight of the 29 endangered forms can be found in Hawaii's two National Parks. Five of these eight occur in Kīpahulu District of Haleakala National Park.

Among other things, disease, predation, competition for food with exotic biota, and habitat loss have been suggested as factors contributing to large scale population reductions and species extinctions of Hawaiian birds (Warner, 1968, Berger 1972, Atkinson 1977, Hawai'i Audubon Society 1978, Banko and Banko 1979). Habitat loss is probably the most important cause of extinction and endangerment, although many factors acting together increase the severity of the problem. Hawai'i Volcanoes National Park on the Island of Hawai'i and Haleakala National Park on the Island of Maui provide major tracts of suitable forest bird habitat that enjoy rigorous protection. Al-

though large tracts of forest bird habitat ranging from disturbed to nearly pristine are included among "conservation" zoned State lands, only a fraction of these lands are in the "protected" subzone, the only zone that offers some security (as long as existing laws are in effect) against agriculture, grazing, commercial forestry, and similar disturbing land uses. As a result, Hawai'i's national parks can be viewed as important, perhaps in some cases "critical" or essential, for the continued survival of some endangered birds.

Specific studies of bird populations in Hawai'i Volcanoes and Haleakala National Parks first appeared in the nineteen forties and fifties (Baldwin 1944, 1953). Dunmire (1961, 1962) also published accounts of the avifauna in both parks. Concurrent with Dunmire's work, Yocum (1968) compiled observations of bird distribution and annual cycles from notes he took in 1963.

In the nineteen seventies Banko and Banko (1979) resurveyed most of Baldwin's (1953) Hawai'i Volcanoes National Park plots, and Conant (1975) censused bird populations during 1973-1975 in most of the same ecosystems Baldwin and Bankos studied. Recently Conant and Stemmermann (1979) completed a survey of birds of the Crater District of Haleakala National Park, and Conant (1980) completed a survey of the southeast portion (i.e., Kalapana Extension) of Hawai'i Volcanoes National Park. Presently Conant and Stemmermann are conducting a survey of birds of Haleakala National Park's Kīpahulu District. Banko and Banko (1979) have reviewed historical trends (through

1973) of passerine birds in Hawai'i Volcanoes National Park. Unfortunately the history of bird populations in Haleakalā National Park has not been well documented. In this paper I will report on the results of the Kalapana Extension (Hawai'i Volcanoes National Park), Crater District (Haleakalā National Park), and Kīpahulu District (Haleakalā National Park) surveys with respect to the endangered birds occurring therein. A review of management issues is included.

MATERIALS AND METHODS

Avifaunal surveys of the Kalapana Extension of Hawai'i Volcanoes National Park and the Crater District of Haleakalā National Park both began in June 1976 and ended in August 1979. The Kīpahulu District survey in Haleakalā National Park began formally in August 1978, although some observations were made as early as June 1976.

I conducted much of the Kalapana Extension field work (37 person-days in the field) during the summer months, but collected at least some data during fall, winter, and spring months. In the Haleakalā Crater and Kīpahulu Districts (Fig. 1), I have made trips approximately quarterly. To date field assistants and I have spent 79 person-days in the field in the Crater District, 102 person-days in the Kīpahulu District, and 15 days in the Pu'u Alaea area northwest of Kīpahulu. Inasmuch as all the survey areas are extremely large for a one-or two-person survey team to cover, I have not able to canvass the areas exhaustively. However, censusing in all major ecosystems at different seasons has been accomplished.

Bird censuses, made at all hours of the day, were conducted using either Emlen's (1971) transect count method or the variable circular plot method of Reynolds *et al.* (1980). Although these methods can provide density estimates, I will discuss only species distributions rather than distribution and abundance in this paper.

RESULTS AND DISCUSSION

Kalapana Extension

During this study 25 birds species in 23 genera and 16 families were sighted in the Kalapana Extension (Table 1). Of these birds, three, the Nēnē (Hawaiian Goose, *Branta sandvicensis*), the 'Io (Hawaiian Hawk, *Buteo solitarius*), and the 'Ō'ū (*Psittirostra psittacea*), are endangered species (U.S. Fish and Wildlife Service 1980). Although all habitat types

Table 1.

Number and percentage of endemic, indigenous, exotic, and endangered birds in the Kalapana Extension of Hawai'i Volcanoes National Park.

	Species and subspecies		Percentage of total	
Endemic	7		28	
endangered		3		12
Indigenous	3*		12	
Exotic	15	—	60	—
Total	25	3	100	12

*One species contains an endemic subspecies.

were inhabited by at least one native bird, no one native bird was ubiquitous.

Distribution, status, and management of the Nēnē has been treated by Banko (1979). I observed it infrequently along the border between the 'Āinahou Ranch and the Kalapana Extension where J. and A. Jacobi (pers. comm.) also reported it. Attempts to reestablish this species in the park are in progress, and will be interesting to follow.

The 'Io was uncommon in Kalapana. I estimate that there were one or two breeding



'Io, or Hawaiian Hawk.

Photo by Rob Shallenberger

pairs at most. There are probably an additional one or two pairs in the upper reaches of Hawai'i Volcanoes National Park, bringing the estimated total to between four and eight birds. We don't know the proportion of the total species population that this comprises.

The 'Ō'u was sighted by D.W. Reeser (pers. comm.) of the National Park Service in the northeast corner of the Kalapana Extension. Other sightings of this species have been made in or near the 'Ōla'a Tract of Hawai'i Volcanoes National Park (Katahira 1979), near park headquarters (van Riper 1978), and a few other scattered localities on eastern Hawai'i (Scott, pers. comm.). Its presence in two localities within the park highlights the importance of preserving the rain forest habitats where this bird is found. The 'Ōla'a Tract and the Kalapana Extension include the only sizeable rain forest acreages in Hawai'i Volcanoes National Park, providing essential habitat for the 'Ō'u, and several other native forest birds including the 'Ōma'o (Hawaiian Thrush, *Phaeornis obscurus obscurus*), the only one of six forms of Hawai'i's thrushes not yet extinct or endangered.

Since the nineteen forties two endangered species have disappeared from The Kalapana Extension: the Hawai'i 'Ākepa (*Loxops coccineus coccineus*) and the Hawai'i Creeper (*Loxops maculatus mana*). The 'Ō'u and 'I'iwi (*Vestiaria coccinea*) have also declined sharply. In upper sections of Hawai'i Volcanoes National Park, the 'ākepa, the creeper, and the 'Akiapola'au (*Hemignathus wilsoni*) have all disappeared since the nineteen forties. Likely habitats into which these species may move if their status improves are rain forests of the 'Ōla'a Tract and Kalapana Extension.

Crater District

The Crater District (Fig. 1) of Haleakalā National Park provides habitat for 23 bird species in 22 genera and 15 families (Table 2). Of the five endemic species, two, the Maui 'Amakihi *Loxops virens wilsoni* and the Maui Creeper (*Loxops maculatus newtoni*) contain subspecies endemic to Maui. Two of the four indigenous species, the 'Ua'u (Dark-rumped Petrel, *Pterodroma phaeopygia sandwichensis*), and the Pueo (Short-eared Owl, *Asio flammeus sandwichensis*) contain subspecies endemic to the Hawaiian Islands. Two endangered species, the Nēnē and the 'Ua'u breed in the Crater District. Although Nēnē also breed on the Island of Hawai'i, the Crater District constitutes the primary known breeding range of the petrel.

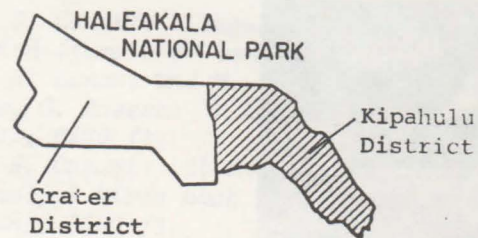


Figure 1. Map showing location of Crater and Kīpahulu Districts of Haleakalā National Park, Maui.

It appears that the Nēnē is far from "saved from extinction", as has been suggested (Kear 1975). Although 489 captive-raised birds have been released in the Crater District since 1962, P.C. Bank (pers. comm.) and Conant and Stemmermann (1979), working independently of Banko, estimated approximately 100 birds to be present, and have found limited evidence of reproductive success. Continuation of predator control programs will be important for the protection and increase of this species.

Table 2.

Number and percentage of endemic, indigenous, exotic, and endangered birds in the Crater District of Haleakalā National Park.

	Species and subspecies		Percentage of total	
Endemic	5		22	
endangered		1		5
Indigenous	4*		17	
endangered		1		5
Exotic	14	—	61	—
Total	23	2	100	10

*Two species contain endemic subspecies.

The 'Ua'u, like the Nēnē, is one of the few endangered Hawaiian birds that appear to be benefitted by specific management actions, in this case predator control. Elimination or stringent control of mongooses, rats and feral goats, pigs, cats and dogs should contribute significantly to effective management programs for both the Nēnē and the 'Ua'u. Simons (pers. comm.) is conducting an intensive study of the 'Ua'u in Haleakalā, which may suggest alternative or additional actions.



Nēnē - the
Hawaiian Goose

-Sheila Conant

Owl, has a subspecies endemic to the Hawaiian Islands. Five of the species are considered endangered: Nēnē, Maui 'Ākepa, Maui Nukupu'u, Parrotbill, and 'Ākohekohe. The Po'ouli (*Melamprosops phaeosoma*), another endangered passerine endemic to Maui, has not been sighted with the park, but occurs within about 500 m of the park border.

The Nēnē was not uncommon in alpine grasslands of this district, having been seen in groups of from two to about 40 birds. A few unbanded birds, presumably offspring of captive-raised, released birds, were present in these groups. The four endangered passerines ranged from locally common and widely distributed ('Ākohekohe) to extremely rare (remaining four species). Figure 2 shows what I think may be the distribution of the 'Ākohekohe in the upper Kīpahulu District, and Ko'olau Forest Reserve and Figure 3 shows locations of recent sightings of the five endangered Maui passerines in the same area.

The 'Ākohekohe was common enough for us to begin gathering data on seasonality of feeding behavior and occurrence. In March (two trips) this species occurred only from the upper reaches of rain forest (6800 ft or 2070 m to about 5500 ft or 1680 m). Feeding

Kīpahulu District

To date 22 species in 20 genera and 13 families have been found in the Kīpahulu District of Haleakalā National Park (Fig. 1, Table 3). Nine of the species are Hawaiian endemics, six, Maui 'Amakihi, Maui Creeper, Maui 'Ākepa (*Loxops coccineus ochraceus*, Parrotbill (*Pseudonestor xanthophrys*), Maui Nukupu'u (*Hemignathus lucidus affinis*). 'Ākohekohe (Crested Honeycreeper, *Palmeria dolei*), having forms endemic to Maui. One of the three indigenous species, the Short-eared

Table 3.

Number and percentage of endemic, indigenous, exotic, and endangered birds in the Kīpahulu District of Haleakalā National Park.

	Species and subspecies		Percentage of total	
Endemic	9		41	
endangered		5		23
Indigenous	3*		14	
Exotic	10		45	
Total	22	5	100	23

*One of these species contains an endemic subspecies.

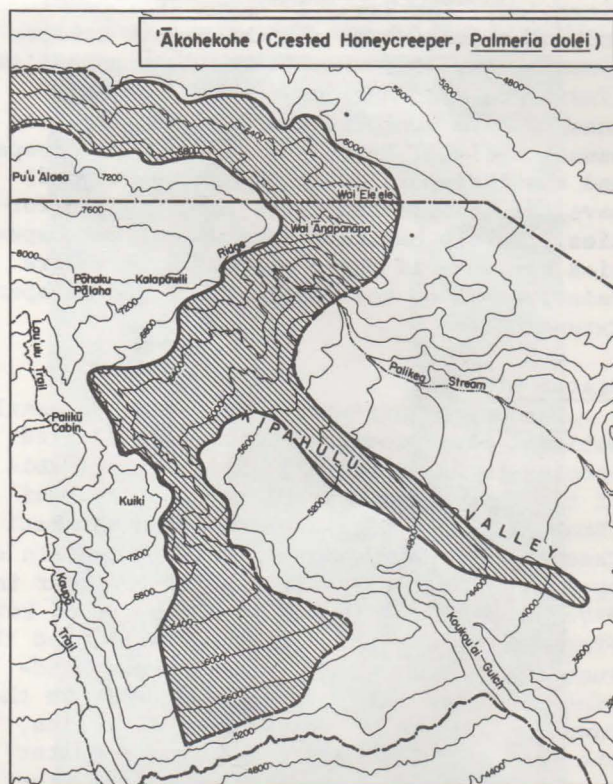


Figure 2. Map of the distribution of the 'Ākohekohe in upper Kīpahulu Valley and Ko'olau Forest Reserve.

territoriality, a behavior exhibited by the closely related 'I'iwi (*Vestiaria coccinea*) when the availability of nectar is relatively high (Carpenter and MacMillen 1976), was absent during this period. In June and August (four trips) the 'Äkohekohe was seen from 6800 ft (2070 m) to as low as 3600 ft (1100 m), and some individuals exhibited feeding territoriality throughout the range. It seems that the distribution and feeding territoriality of this bird are seasonal, a situation that must be taken into account when the critical habitat of this species is legally formalized.

The remaining three passerines that occurred in Kipahulu District were extremely rare, having been sighted within the district only a few times. These species, as well as the 'Akohekohe and the newly described, endangered Po'ouli (Casey and Jacobi 1974), have been sighted in the upper reaches of the Ko'olau Forest Reserve, immediately north of the northern boundary of the Kipahulu District (Fig. 3) since 1973 (Casey 1973, Shallenberger 1974, Scott and Sincock 1977, L. Stemmermann pers. comm.) and on recent USFWS surveys (Scott pers. comm.). Data are insufficient to detect whether seasonality in distribution or behavior of these birds exists. No nests of any of Maui's endangered passerines have ever been found.

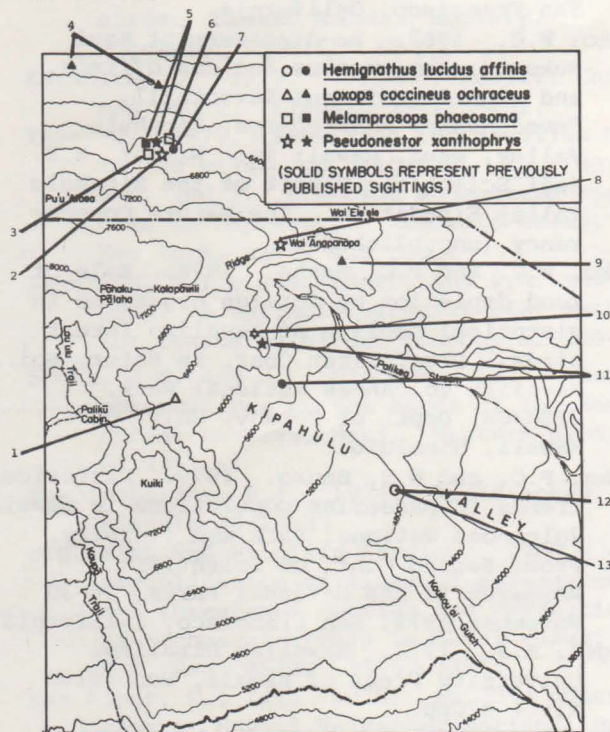


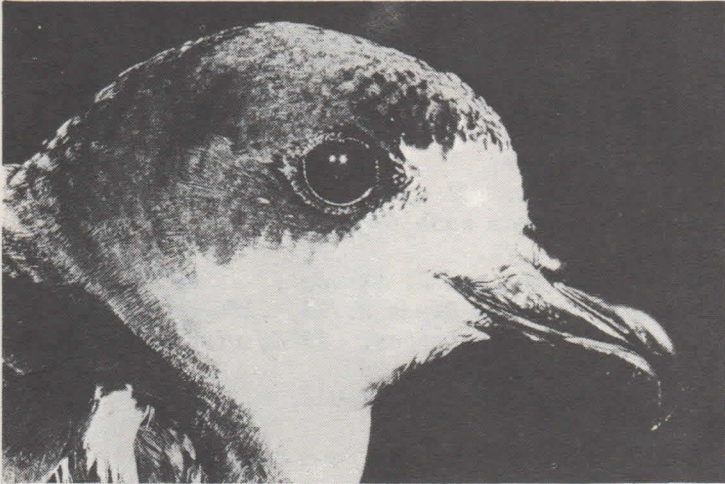
Figure 3. Map of recent sighting locations of endangered Maui forest birds in upper Kipahulu Valley and Ko'olau Forest Reserve. References and data for sightings are as follows:

1. S. Conant: 7 August 1979; visual;
1 bird (female or immature); 6300 ft.
2. S. Conant and M. Stemmermann, R.L.
Pyle, O. Bussen: 7 August 1979; visual,
aural; 6560 ft.
3. S. Conant: 21 and 22 June 1976;
visual; 3 birds each time (photographs
taken), 6600 ft.
4. J.M. Scott and J. Sincok: 1977;
visuals; Western Birds 8:113, 116.
5. R. J. Shallenberger: 1974; visuals,
aural; 'Elepaio 35:18-20.
6. S. Conant: 1975; visual; 2 birds;
6500 ft.
7. L. Stemmermann: 11 June 1976; visual;
1 bird; 6500 ft.; pers. comm. to the
author.
8. S. Conant and M.A. Stemmermann:
25 March 1979; visual; 6800 ft.; sightings
25 minutes apart.
9. T. L. C. Casey: 1973; visual; 'Elepaio
35:46-50.
10. M. A. Stemmermann: 23 November 1980;
visual; one bird; 6500 ft.
11. W.E. Banko: 1967; 2 Nukupu'u visuals;
one Parrotbill visual; Kipahulu Valley
Report.
12. S. Conant: 16 August 1978; visual;
1 bird; 4800 ft.
13. M.A. Stemmermann: 29 March 1979;
visual; 1 bird; 4850 ft.

ENDANGERED BIRD MANAGEMENT IN HAWAII'S NATIONAL PARKS

The Kīpahulu District provides habitat for the Nēnē and four endangered forest passerines. Because Maui forest passerines are so poorly known, it is difficult to plan specific management programs at this point. Programs aimed at the habitat protection will probably be the best management strategy in any case, and protection will require some specific management actions (i.e., feral pig control). Effective management planning will depend on information provided by research on the biology of the endangered species, including life histories, resource dynamics, predation, disease, habitat characteristics, and effects of habitat disturbance on population dynamics.

There are only two endangered birds, the Nēnē and the 'Ua'u, for which data are sufficient to allow implementation of species-oriented management programs at present (e.g., predator control, captive breeding and release). Nēnē management and research have been discussed by Banko (1979), and intensive studies of the petrel are now underway (Simons pers. comm.) with a view to providing management guidelines.



'Ua'u, or Dark-rumped Petrel.

Photo by Rob Shallenberger

The endangered forest birds, especially passerines, that occur in Hawai'i's national parks are uncommon and poorly known, so that the most judicious management plans must certainly be ecosystem oriented, with the primary objective being maintenance of large tracts of undisturbed forest. In this regard control or elimination of exotic plants and animals is extremely important. The feral goat eradication program in Hawai'i Volcanoes National Park and the small mammal predator control programs in that park as well as Haleakala National Park are examples of the kinds of specific management actions that are feasible at this time. Study of the feral pig problem in Kīpahulu Valley should yield data upon which an acceptable management program for this problematic exotic species can be based.

My immediate management recommendations are: (1) expansion of predator control in Nene and 'Ua'u breeding grounds, (2) control of feral goats in Haleakala National Park, (3) control of feral pigs in Kīpahulu Valley, 'Ola'a Tract, and Kalapana Extension rain forests, and (4) control or eradication of serious plant pests in both parks. Finally, (5) basic research on the bioecology of endangered species should be supported to provide guidelines for the design of future management programs.

ACKNOWLEDGEMENTS

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Pueo.

Photo by Greg Vaughn

NEW HAS OFFICERS

NEW HAWAII AUDUBON SOCIETY OFFICERS

Peter Galloway, Chairman of the 1980 Nominating Committee, introduced a new slate of officers for 1980 at the December 18th general meeting. Assembled members unanimously voted the following into office:

President	George Balazs
1st Vice-President	Wayne Gagne
2nd Vice-President	Peter Galloway
Treasurer	Norris Henthorne
Recording Secretary	Fanny Dale
Corresponding Secretary	Marilyn Milberger
Directors:	George Campbell
	Richard Coleman
	Sheila Conant
	Robert Pyle
	Susan Schenck

Congratulations to all the new board members, and Mahalo to all the outgoing members for their fine work!

HAWAIIAN MONK SEAL NUMBERS INCREASE ON TERN ISLAND

by Susan Schulmeister

On 30 June 1979, the U.S. Coast Guard deactivated the Loran (Long Range Aids to Navigation) station on Tern Island, French Frigate Shoals, and custodianship of the island's facilities became the responsibility of the U.S. Fish and Wildlife Service. French Frigate Shoals has been part of a Northwestern Hawaiian Islands wildlife reservation since 1909, but people have inhabited Tern Island almost continually since 1942 when the U.S. Navy reconstructed the island for use as an emergency landing field. The Navy decommissioned the station in 1946, and the facility was subsequently used for several years by commercial fishermen. In 1952 the Coast Guard renovated the buildings and commissioned the Loran station there.

Since the Fish and Wildlife Service gained custody of Tern Island from the Coast Guard in 1979 there has been a dramatic increase in the numbers of endangered Hawaiian monk seals (*Monachus schauinslandi*) hauling out to rest on the beaches. Prior to that time, numbers were very low. Kenyon (1966) reports, "During our visit there on 12 and 13 September 1966 I was told by one of the men stationed there that during regular beach searches for glass floats they rarely saw a seal and we found none there." Between February 1956 and June 1969, a maximum of four seals was observed on Tern Island beaches at any one time (Amerson, 1971), and during the next 10 years the number increased only to six.

The seal censuses remained low throughout the Coast Guard occupation of the station. Kenyon (1980) recently cited some examples of monk seal population declines which he thought to be related to interaction with humans. Data from censuses during the four years prior to Coast Guard departure from Tern Island are provided in Table 1.

Table 1. Results of monk seal censuses on Tern Island, 1976-1979

DATE	NUMBER	SOURCE OF INFORMATION
21 March 1976	1	DeLong et al., 1976
9 April 1977	0	DeLong and Brownell 1977
15 July 1978	2	Fiscus et al., 1978
19 May 1979	5	Rauzon, 1979

In the span of only one year, monk seal numbers have increased to 24 animals on Tern Island. This is quadruple that of any count prior to July 1979. The increase began immediately after Coast Guard departure: Between 11 and 30 July 1979, the seals were censused daily, with a maximum of 10 animals and a mean of 5.6 recorded for the 18 counts.

Karl Kenyon and Mark Rauzon spent three months on Tern Island in 1977 (17 February to 27 May) to observe monk seals in French Frigate Shoals. Their work provides a basis for comparison of seal counts conducted from March through May 1977, with those conducted during the same months in 1980 (Table 2).

Table 2. Comparison of monk seal counts on Tern Island between 1977 and 1980

DATE	MEAN	NO. DAYS	RANGE
March 1977*	.9	25	Unknown
March 1980	14.60	13	10-19
April 1977*	1.3	28	Unknown
April 1980	13.86	14	5-21
May 1977*	1.6	21	Unknown
May 1980	14.91	11	10-22

*Rauzon et al., (1978). More than one census per day was conducted in 1977 but figures in this table represent the mean number of seals per census at 1500 hours since that time best approximates the time at which most censuses were conducted on Tern Island in 1980.



Monk seals resting on the beach at Tern Island

Photo: Susan Schulmeister

The Tern Island station is presently maintained by a staff of three permanent Fish and Wildlife Service biologists, only two of whom are on the island at one time. Including dependents, there are from three to four people present at most times. Additional researchers present during the year brought the total to a maximum of 11 during October, 1979, and May and June, 1980. Disturbance to seals is kept to a minimum. Personnel use runway rather than beach access routes to bird study plots whenever possible, and the dense vegetation screens them from seals resting on the beach.

Tern Island (23 ha) is the largest of the islands in French Frigate Shoals and the use of the beaches by the endangered monk seals represents an increase in habitat for them. Hopefully this will have a positive effect on the entire French Frigate Shoals seal population.

Acknowledgments

I would like to acknowledge all those who participated in monk seal censuses on Tern Island and contributed to these data: U.S. Fish and Wildlife Service personnel Vernon Byrd, Barry Brady, Robert Schulmeister, John Andre, and Jon Grauning; also Ruth Ittner, Valerie Byrd, and Brian and Patricia Johnson. My thanks to George Balazs and C.J. Ralph who made helpful comments on the manuscript. Part of this work was done in conjunction with a study on population estimation of Hawaiian monk seals being conducted by Brian and Patricia Johnson under Marine Mammal Protection Act/Endangered Species Act permit number 258.

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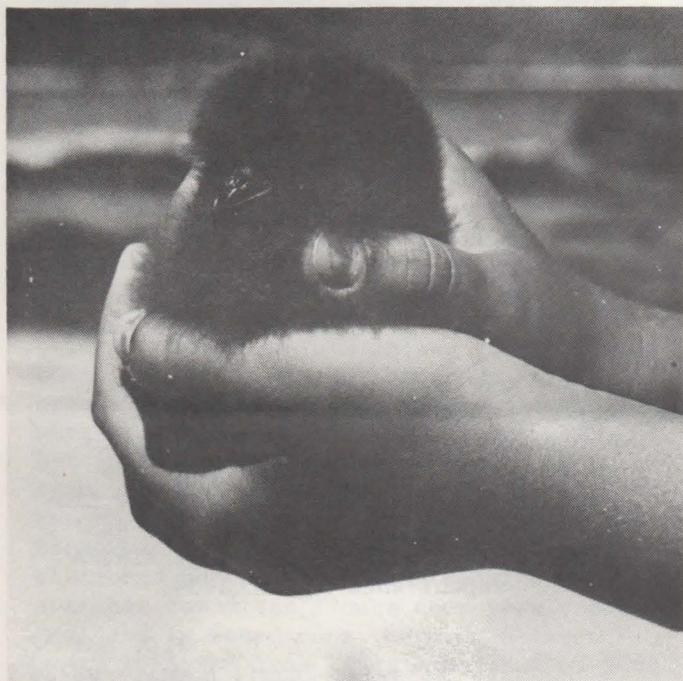
1981 TIDE CALENDAR

Society members will be interested to learn that the Dillingham Tide Calendar for 1981 features a collection of color photographs of the Northwestern Hawaiian Islands. Many of these pictures show the island and reef units of the Hawaiian Islands National Wildlife Refuge, rich breeding and foraging grounds for seabirds, endemic land birds, monk seals, and green turtles. The calendar is only available to Hawaii residents. It can be obtained free, while the supply lasts, by sending a self-addressed label to:

1981 Tide Calendar
Dillingham Corporation
P.O. Box 3468
Honolulu, HI 96810

AUGUST FIELD TRIP TO MANANA ISLAND

On 17 August, 30 Sierra Club and HAS members and guests met for this year's second trip to Manana Island. Dr. Sheila Conant was the trip leader. The weather was hot and sunny with gusty tradewinds while 2-4 ft. swells rolled in to the beach. At Makai Pier near Sea Life Park we boarded our boat for the short ride to Manana Island. Our boat ride ended in deep water 50 yards from our destination. At that point we jumped overboard



Bulwer's Petrel chick on Manana Island

Photo by Rob Shallenberger

and struggled to make our way in through the surf. There were some tense moments and a few people needed to be helped to the beach but everyone reached the island safely.

When everyone had hauled out on the beach, Sheila warned the group that care would be needed to avoid stepping on eggs or chicks, collapsing burrows or frightening birds off their nests for long periods and exposing chicks or eggs to the hot sun. We walked along the shoreline to a rocky ledge where Sheila reached her long arm into a crevice and found a fluffy, black Bulwer's Petrel chick. The bird seemed quite unconcerned as it was handled and photographed. Next we moved up to the soil covered slopes to look

for Wedge-tailed Shearwaters. Sheila soon found an adult shearwater in one of the many burrows. The bird was observed by the group, who received a brief lesson on characteristics of Procellariiform (tube-nosed) seabirds, after which the bird was released unharmed.

Higher up the slope were many Brown Noddies with eggs and chicks. Sooty Terns had finished their nesting but there were still some roosting on the slopes. We walked carefully up the rim of the crater and saw a Black-crowned Night Heron inside while high overhead White-tailed and Red-tailed Tropicbirds put on a beautiful aerial display.

After our brief hike to the crater rim the members of the group returned to the beach where they pursued a variety of interests. Birders were able to see several more species including Red-footed and Brown Boobies, Great Frigatebirds, Ruddy Turnstones, and a Bristle-thighed Curlew. Sheila found two more Bulwer's Petrel chicks in small holes in the basalt rocks at the south end of the beach. Others collected insects, examined the geological formations, snorkeled or took photographs. Some just relaxed and enjoyed the beauty and tranquility of the sanctuary.

After 2½ hours on Manana Island it was time to return to Oahu. By then the lack of fresh water and shade had already become very evident. The swim back to the boat was fortunately uneventful and everyone was back on Oahu by 1245.

Peter V. Donaldson

CONTRIBUTIONS

We would like to thank the following contributors whose gifts have arrived since the last 'Elepaio acknowledgements:

Celestina F. Aguon, Agana, Guam; George Campbell, Honolulu; Fanny Dale, Honolulu; Bernard Diffen, Haleiwa; Amy Lou Duncan, Apple Valley, CA; William Evenson, Provo, Utah; Eleanor Fahrenwald, Kailua; Howard J. Gee, Honolulu; Mary G. Grantham, Kailua; Merrill Jensen, Mililani Town; Betty Louise Foyer Johnson, Honolulu; A.O. Marrack, Honolulu; Turner Nearing, Decatur, Ill.; Gary T. Nishimoto, Hilo; Gordon Orions, Seattle WA; Dora Pratt, Honolulu; Robert L. Pyle, Kailua; C.J. Ralph, Honolulu; Christa Russell, Hawaii National Park; James Thropp, Paauilo; Alan Ziegler, Honolulu.

ALOHA TO NEW MEMBERS

The Society welcomes the following new members and hopes that they will join in our activities to further the protection of Hawaii's native wildlife:

Joint with National: Celestina F.

Aguaon, Agana, GU; Mrs. Garner Anthony, Honolulu; Dr. Richard R. Day, Honolulu; Mary Jane Dobson, Mililani; Jan D. Elliot, Hana; James Foy and Family, Kailua; Jill Friedman, Honolulu; Mr. and Mrs. Thomas Q. Gilson, Honolulu; Michael A. Graupner, FPO San Francisco; Susan Heftel, Honolulu; Sherry I. Hoe, Lawai; Jan Jardine and Family, Kamuela; L. Mahoe, Waianae; Betty Matlock and Family, Keaau; Christine Morita, Honolulu; E.A. Morris, Kailua; BT3 Greg Nuter, FPO San Francisco; Richard W. Pollack, Honolulu; Mrs. John T. Pope, Honolulu; M. Schrader, Kaneohe; Norman Scott, Kamuela; Dan Taylor, Hawaii National Park; Alfred S. Tong, Hilo; Diane L. Trembly, Honolulu; George E. Vickery, Kailua.

Regular local: James P.D. Thropp Jr., Paauila; Sean McKeown, Honolulu; Marie Morin, Honolulu; Janet P. Lang, Honolulu; Kelsey Onaga, Aiea; John Bloss, Honolulu; Joan Zealey, Hilo; Barbara P. Steenhof, Hanalei; Christa Russel, Hawaii National Park; Grace Fuller, Honolulu; T. Kelley, Kaneohe; Mary Grantham, Kailua; Diane L. Trembly, Honolulu; Mr. and Mrs. John H. Mitchell, Honolulu; Frederick and Cynthia Wilmoth, Honolulu; N.L.H. Krauss, Honolulu; D. Hopkins, Honolulu; Robert V. Clayton, Honolulu; Florence Ricci, Waianae; Elizabeth Holmes, Honolulu; Pauline Yu, Honolulu; E.L. Winternitz, Honolulu; Terri Tawata, Honolulu; Robert Zimmerman, Honolulu; Elizabeth Hatcher, Honolulu; Elizabeth Laing, Honolulu; Jane Abernethy, Kaneohe; Joyce Nunokawa, Honolulu; Doreen Tsuruda, Honolulu; David E. Smith, Honolulu; Kamanaiki Carey, Kailua; Ruth Fraser, Haleiwa; John L. Culliney, Waimanalo; Amy Sniffer, Kaneohe; Miriam E. Sinclair, Honolulu; Edward A. Arrigoni, Honolulu; Richard J. Scudder, Honolulu; Jean Nishida, Honolulu; Bruce and Judy Larsen, Ewa Beach; Janie Estermann, Honolulu.

Life: Ulalia Woodside, Waimanalo; David E. Smith, Honolulu.

Subscriber: V. Lewin, Edmonton Alberta, Canada; Linda Meyers, Brookings SD; Mary Susan Kyropoulos, South Pasadena CA; Winston Banko, LaConner WA; Betsy Webb, Boulder CO; Robert E. Beck, Jr., Knoxville TN; Mary V. Amoss, Annapolis MD; Lynn M.P. Gale, South Orange NJ.

GALAPAGOS PROGRAM JANUARY

Robert Shallenberger, Projects Officer for the National Wildlife Refuges in Hawaii and 1980 Audubon President Emeritus, will present a January program on natural history of the Galapagos. Rob led a nature tour to the Galapagos last May, and will share slides of the expedition as well as a few thoughtful comments on the striking similarities - and contrasts - between the famed Ecuadorian island and Hawaii. The program will follow the 7:30 meeting at McCully-Moiliili Library, January 19.

FIRST FIELD TRIP OF 1981

The Society's field trip on Sunday, January 11 will go to the Kahuku area at the north end of Oahu to visit the James Campbell National Wildlife Refuge and other nearby wetland areas. This has long been a prime area for wintering waterbirds, especially ducks. The Fish and Wildlife Service is pumping water into a new pond adjacent to Kii Pond, which now provides more excellent habitat for shorebirds and waterfowl.

Bring lunch and meet near the Hawaiian State Library on Punchbowl Street above King Street. Leaders: Mike Ord and Bob Pyle (262-4046).

BIG ISLAND FIELD TRIP

Audubon trip to Hilo Ponds on the Big Island - January 24, 1981 - will be led by Peter Paton (935-7307). Assemble at the Wailoa Art Center parking lot (in Hilo) at 3:00 a.m. Bring water, lunch, binoculars, and spotting scopes. This is a good chance to see vagrant gulls, terns, migrant ducks, and shorebirds.

MEMBERS WELCOME AT BOARD MEETINGS

The Board encourages members to attend and participate in the monthly Board meetings. It is a good way to get more involved in conservation issues and in the workings of the Society.

HAWAII AUDUBON SCHEDULE OF EVENTS

(for details, see inside back page)

January 11 (Sunday). Field trip to Kii Ponds Kohuku. Meet on Punchbowl Street side of Library downtown at 7:00 a.m. Call Bob Pyle (262-4046) for information.

January 12 (Monday). Board meeting at the home of Susan Schenk (488-4974) at 98-1038 Moanalua Road, Apt. 2201, at 7:00 p.m. Members are welcome.

January 19 (Monday). General meeting at Moiliili-McCully Library at 7:30 p.m. Program: *A Natural History Field Trip of the Galapagos Islands* by Dr. Robert J. Shallenberger.

January 24 (Saturday). Field trip to Hilo Ponds on the Big Island, 8:00 a.m. Wailoa Art Center parking lot. Peter Paton, leader (935-7307)

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