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Demographic and Behavioral Observations of the Hawai'i 'Akepa on Mauna Loa

Leonard A. Freed

The Hawaii subspecies of 'Akepa (*Loxops coccineus coccineus*) is distinctive among the honeycreepers (Drepanidinae) in being the only subspecies or species which nests consistently in tree cavities (reviewed in Freed et al. 1987a). The Hawaii 'Akepa also represents one of the most extreme cases of sexual dichromatism (divergence between the sexes in color and brightness of plumage) known among the honeycreepers (reviewed in Freed et al. 1987b). As part of an investigation of the ecological and behavioral correlates of cavity-nesting and sexual dichromatism, I initiated a study of Hawaii 'Akepa in the vicinity of the Kahuku Ranch cabin, just above the upper edge of the Kau Forest Reserve on Mauna Loa (approximately 1880 m elevation). This area, consisting of mature Ohia (*Metrosideros polymorpha*) forest and ecotonal habitat, has the highest density of 'Akepa on Mauna Loa (Scott et al. 1986). Here I document some findings concerning the behavior and survival of banded birds. Because access to this study site is now denied by private landowners, these findings represent all that is and can be known about the population biology of Hawaii 'Akepa in this important area of their distribution.

My assistants and I conducted banding operations with mist-nets during 1985 (8 and 25-28 March) and 1987 (13-16 January). We used both 9 and 12 m ground-based nets ($n = 6$, approximately 2 m high) and aerial nets ($n = 6$, approximately 4-8 m above the ground) in a 10 ha study site. Approximately 20% of the site consisted of mature forest with large trees and complete understory; the remaining 80% of the site consisted of more open ecotonal habitat with smaller trees and grass understory. Half of the ground-based and aerial nets were located in each subarea. Nets were operated an average of 8 hr per day, usually between 0800 and 1600, and were inspected hourly. 'Akepa captured in nets were banded with a unique combination of colored plastic leg bands and a U.S. Fish and Wildlife Service aluminum band. We banded a total of 8 'Akepa (6 bright orange adult males, 2 grayish-green adult females with dull yellow-orange band across breast). These 8 birds were involved in a total of 13 captures.

Patterns of capture in nets of different height indicate that both male and female Hawaii 'Akepa fly considerably lower than the heights at which the birds are most frequently seen or heard. Seven of the 13 captures (54%) were in ground-based nets (6 in forest, 1 in ecotonal area). In contrast, over 98% of at least 80 sightings of 'Akepa in both areas were of individuals foraging in, or flying among, the higher branches of ohia trees. The sightings in the canopy are consistent with the description of habits of 'Akepa in field guides (Hawaii Audubon Society 1984, Pratt et al. 1987). However, the capture data indicate that both females ($n = 3$ captures) and males ($n = 4$ captures) also fly within 2 m of the ground during January and March.

Patterns of capture and recapture in nets in different locations show that both sexes exhibit site tenacity. Three of the 5 birds (2 of 4 males plus one female) banded in 1985 were recaptured in 1987 in nets located within 30 m of the site of either the capture or most recent identification in 1985. Evidence of tenacity occurred in nets located in the forested area, which is the same area where 2 'Akepa nests have been found (Sincock and Scott 1980, Freed et al. 1987a). Females captured during each year did not have a brood patch, indicating that they were not associated with active nests. However, Hawaii 'Akepa are known to nest as early as March (Collins 1984), and observations below indicate that courtship and mate defense occur as early as January. The site tenacity is therefore likely to be associated with breeding. Whether the sexes remain in the same area throughout the year or return to the same area to breed cannot be addressed with this data set.

Multiple captures of 'Akepa in the same mist-net within the hour between inspections of the net accounted for 9 of the 13 captures (4 individuals). In all cases the 'Akepa had entered the net from the same side and were located within 1 m of each other. The first case, in 1985, was of a male and female in a ground-based net under an ohia tree with a trunk cavity that looked suitable for nesting. Because a pair of 'Akepa had been observed exploring this cavity the previous day, this multiple capture 1 m above the ground may have been associated with collection of nesting materials.

The other 3 cases of multiple capture occurred in 1987 and involved a male and female in an aerial net, two males in the same



Male 'Akepa, Hakalau, Hawaii Island.

Photo by Jaan Lepson

aerial net, and two males and a female in a ground-based net. All nets were located in the ohia forest within 40 m of the nest-sites discovered during previous years. The same female was involved in two 1987 events and was captured with different males in nets separated by no more than 30 m. The same male was involved in two 1987 events and was captured with different males (including the female in one event), also in nets separated by no more than 30 m. These multiple captures suggest that pairs were being formed at this time and that males were competing for females.

The multiple captures could be the result of nets located at territorial margins, the pursuit of females by males into rival territories, or direct defense of females by non-territorial males. Other data collected during January and March suggest that males defended females, not all-purpose territories (defended areas used for feeding and nesting). First, in 32 of 35 cases in which singing males were observed, females or other males were discovered in close proximity (within 10 m). Second, in 8 of 12 playbacks of recorded song to which males responded by approaching the speaker, males were silent when females were not obviously present ($n = 6$), but sang in the two cases when a female was present. The large number of males captured in a small area ($n = 4$) also suggests that all-purpose territorial defense did not exist or was not effective at this time. The capture data are thus consistent with male defense of females, as has been stated by van Riper (1980) to be the case for the Palila (*Loxioides bailleui*).

The distinction between male defense of resources and defense of females is important because in cardueline finches, from which Hawaiian honeycreepers are descended (Raikow 1977, Olson and James 1982, Sibley and Alquist 1982), males typically defend females rather than nest-sites or all-purpose territories (Wittenberger 1979, Mewaldt and King 1985). All-purpose breeding territoriality has been documented in the Hawaii subspecies of the Common 'Amakihi (*Hemignathus virens virens*) (van Riper 1987), indicating that male honeycreeper behavior can deviate from the ancestral cardueline pattern. Further investigations of Hawaii 'Akepa behavior are necessary to determine the extent to which males defend females or nest-sites, because quality nest-sites are known to be limiting, defensible, and attractive to females in other cavity-nesting species (von Haartman 1957, Slagsvold 1986).

The fact that at least 3 of 5 birds banded in March 1985 survived to January 1987 indicates that Hawaii 'Akepa may have long life spans. Because the birds banded as adults in March 1985 had to have been alive during January 1985, 60% survival over a 2-year period implies a minimum annual adult survival rate of 0.77 (square root of 0.6, assuming a constant annual survival rate). This figure needs to be interpreted with caution because of the small sample size and limited area and time period to which the estimate pertains. However, a survival rate of 0.77 in the 10-11 g 'Akepa is comparable to the average survival rate of 0.85 for the 13-14 g Common 'Amakihi documented at Puu Laau on Mauna Kea (calculated from data in van Riper [1987]). Both survival rates are higher than most of those established for north temperate passerine birds of similar body size (Lack 1954, Calder 1984) and approach or exceed rates established for some tropical birds (Snow and Lill 1974, Rabenold 1984, Freed 1987).

Site tenacity and high annual survival of adults has the potential to restrict mating and breeding opportunities for young, reproductively mature birds attempting to enter the breeding population of this area. If the demographic patterns also exist in surrounding areas, then young, reproductively mature birds may



Green-plumaged 'Akepa, Hakalau, Hawaii Island.

Photo by Jaan Lepson

have generally restricted opportunities to enter the breeding population. The extent to which this restriction is realized depends on the abundance of cavities suitable for nesting and the distance at which breeding pairs tolerate one another. These parameters are unknown at this time for any population of Hawaii 'Akepa and remain the topic of future research.

I thank the Trustees of the Estate of Samuel M. Damon for permission to study the 'Akepa in the Kau forest through January 1987. Maile Kjargaard, Rob Fleischer, Carl McIntosh, Todd Shelly, and Jaan Lepson provided assistance in the field. I also appreciate constructive criticism of previous drafts of this note by Sheila Conant, Jim Jacobi, Mike Scott, Cam Kepler, and Becky Cann.

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Waipio, Oahu, Christmas Bird Count - 1987

David Bremer

The 11th annual Waipio Christmas Bird Count, held on 2 January 1988, turned up three new species and a hoard of 4000 Chestnut Mannikins on a day marred by rain-cancelled mountain counts. Record December rainfall exceeding 16 inches, which culminated in disastrous east Oahu flooding on New Year's Eve, made the central Oahu mountain trails inaccessible and/or unsafe for hiking. Manana trail was an exception but high winds there limited observations to some common introduced species. Recent high stream waters left one fish flopping in the middle of Waimano trail.

A good day for ducks, the waterbird count had some interesting observations. Of the new species, two (Ring-necked Duck and Western Sandpiper) are considered to be occasional migrants and the third (Common Tern) is listed as an accidental straggler in *Hawaii's Birds*. A tally of 21 Koloa was a record for a Waipio Christmas Bird Count. Three Mallards, one molting male and two females, identified at Waiawa were believed to be winter migrants.

This year's Christmas Bird Count also recorded more Lesser Golden-Plovers and new highs for several nonforest species, including the Rock Dove, Eurasian Skylark, Red-crested Cardinal, Java Sparrow, Chestnut Mannikin, Red Avadavat, and Common Waxbill. The high counts for the latter four species were due in part to late afternoon observation of large flocks of Chestnut Mannikins and other birds flying from the east and southeast to roost in Haole Koa (*Leucaena leucocephala*) trees in the valley northwest of Waiau District Park. The rough estimates given of 4000 Chestnut Mannikins, 500 Common Waxbills, 250 Red Avadavats, 200 Nutmeg Mannikins, and 50 Java Sparrows were included in the count total. The observer, Peter Donaldson, is experienced at identifying these species by call as well as by field marks and flight. He noted that most of the birds that could be seen clearly were immature making identification more difficult. Java Sparrows and Common Waxbills also were observed in increased numbers in other regions of the count circle.

An interesting observation of at least 75 Ruddy Turnstones, four Hawaiian Stilts, and four Koloa in a pineapple field rain pond north of Wahiawa was made by David Cooper on 3 January. While not included in the official count, these birds are likely to have been present the day before when the party had been unable to cover that area.

Weather: Mostly cloudy in the morning with rain in mountains (inaccessible), light intermittent rain in lowlands; partly cloudy in the afternoon, winds variable with strong gusts.

Participants: 15 observers in 5 parties, plus 2 feeder watchers.

Party hours: 20 hr on foot, 17 hr by car, 37 hr total.

Party miles: 22 mi on foot, 129 mi by car, 151 mi total.

Owling: 2 hr and 4 mi.

Feeder: 1 hr.

OBSERVERS:

Party A: George Campbell, Ed Coffin, W. Michael Ord, Robert Pyle

Party B: Peter Donaldson, Eugene and Rita Donaldson

Party C: Shannon Dart, Michael Moyer

Party D: David and Sarah Bremer, Earl Fox

Party E: David Cooper, Rev. and Mrs. Potts

Feeder: Laura and Michael Donaldson

SECTORS COVERED - 1987

1A: Waipio Peninsula

1B: Honouliuli National Wildlife Refuge (NWR)

1C: Waiawa NWR

2A: Pearl City, Pearlridge, Waimano Trail

2B: Waipahu

2C: Crestview, Waikele

3A: Manana Trail

4AB: Mililani, Mililani Cemetery Road

4CE: Wahiawa, Leilehua Golf Course

5: Wheeler AFB, Schofield

6: Kunia Road

Waipio Christmas Bird Count Party/Sector Counts (2 January 1988)

SPECIES	PARTY A		PARTY B		PARTY C		PARTY D		PARTY E	Total
	1A	1B	1C	2A	3A	2B, 6	2C	4AB	4CE, 5	
Cattle Egret	67	15	14	49	—	41	46	83	19	334
Black-crowned Night-Heron	—	2	10	2	—	—	—	—	—	14
Mallard	—	—	3	—	—	—	—	—	—	3
Hawaiian Duck (Koloa)	15	2	4	—	—	—	—	—	—	21
Northern Pintail	4	2	4	—	—	—	—	—	—	10
Northern Shoveler	—	42	—	—	—	—	—	—	—	42
Ring-necked Duck*	—	—	1	—	—	—	—	—	—	1
Lesser Scaup	—	—	2	—	—	—	—	—	—	2
Ring-necked Pheasant	—	—	—	—	—	—	—	4	—	4
American (Haw'n.) Coot	8	30	5	—	—	—	2	—	—	45
Lesser Golden-Plover	105	12	38	88	3	89	13	97	233	678
Black-necked (Haw'n.) Stilt	34	51	26	—	—	—	—	—	—	111
Wandering Tattler	9	4	3	7	—	—	1	—	—	24
Ruddy Turnstone	17	1	—	—	—	—	21	23	—	62
Sanderling	19	3	—	—	—	—	—	—	—	22
Western Sandpiper*	1	—	—	—	—	—	—	—	—	1
Least Sandpiper	—	3	—	—	—	—	—	—	—	3
Dunlin	1	—	—	—	—	—	—	—	—	1
dowitcher, sp.	—	6	—	—	—	—	—	—	—	6
Common Tern*	1	—	—	—	—	—	—	—	—	1
Rock Dove	4	—	7	42	—	68	—	—	—	121
Spotted Dove	47	5	11	95	6	22	22	151	25	384
Zebra Dove	97	15	19	91	3	143	70	220	120	778
Common Barn Owl	—	—	—	—	—	—	—	1	—	1
Eurasian Skylark	14	—	6	—	—	—	1	18	15	54
Red-vented Bulbul	54	3	7	136	3	24	8	151	25	352
Japanese Bush-Warbler	—	—	—	—	—	—	—	7	24	31
White-rumped Shama	1	—	—	3	8	—	—	6	13	31
Northern Mockingbird	—	—	2	1	—	1	—	2	—	6
Common Myna	36	4	19	424	3	137	57	368	220	1268
Japanese White-eye	13	—	6	90	21	12	12	90	29	273
Northern Cardinal	14	—	2	25	—	2	1	20	30	94
Red-crested Cardinal	36	4	17	91	—	24	25	83	38	318
House Finch	20	1	9	152	—	2	7	74	32	297
House Sparrow	33	—	56	362	—	291	158	162	90	1154
Common Waxbill	137	22	30	501	—	27	12	94	—	823
Red Avadavat	39	—	2	250	—	—	9	15	—	315
Nutmeg Mannikin	4	—	9	242	—	—	19	90	25	389
Chestnut Mannikin	639	4	27	4000	—	52	67	158	105	5052
Java Sparrow	—	—	1	136	—	—	5	37	64	243
TOTAL INDIVIDUALS	1469	231	340	6787	47	941	556	1886	1112	13369
TOTAL SPECIES	28	21	28	21	7	15	20	23	17	40

*First record of species during Waipio Christmas Bird Counts.

Note: A Red-masked Conure (*Aratinga erythrogenys*) was observed in Blaisdell Park.

NATIONAL AUDUBON AND HAWAII AUDUBON JOIN TO ESTABLISH STATE OFFICE

The National Audubon Society (NAS) and the Hawaii Audubon Society (HAS) have entered into a partnership agreement to establish a state office in Honolulu. In November 1987, the Chicago based McArthur Foundation announced the award of a three-year \$275,000 grant to NAS to establish a Hawaii state office. The grant diminishes in amount each year and requires the balance to be matched by the state office.

Connected with this development, Hawaii is now included in the Alaska Region of the NAS. In late January, David R. Cline, Vice-President of the Alaska Region, met with the HAS Board of Directors in Honolulu to solicit input in the establishment of the state office. Cline also met with representatives of conservation organizations, including the U.S. Fish and Wildlife Service, Hawaii Department of Land and Natural Resources, and the Nature Conservancy. President Bruce D. Eilerts, Kauai Representative Daniel Moriarity, and HAS board member Craig S. Harrison engaged in lengthy negotiations with Cline to formulate a draft partnership agreement. After further discussions by the HAS Board and input from Peter A. A. Berle, president of NAS, the partnership agreement has been finalized. Its most important features include opportunities for HAS to have substantial input into the priorities and policies of the state office and the agreement by HAS to help raise the funds necessary to maintain the state office.

At the request of HAS, NAS Senior Vice-President for Development, Susan Martin, journeyed to Honolulu in late March to meet with the HAS board, community leaders and various foundations and corporations. Martin is developing a fund raising strategy to ensure the financial viability of the state office after the three-year McArthur Foundation grant is exhausted.

The establishment of a state office in Honolulu begins a new era for the Audubon Society in Hawaii. A paid staff should ensure that our volunteer resources are effectively utilized and should vastly increase the effectiveness of our conservation message. Members are asked to rededicate their personal commitment to protecting Hawaii's native wildlife and assist the state office and its director whenever possible.

Craig S. Harrison

CONSERVATION NEWS

WILDLIFE COOPERATIVE UNIT AT UNIVERSITY OF HAWAII--Congresswoman Pat Saiki has expressed her support for legislation to fund and authorize the establishment of a Wildlife Cooperative Unit at the University of Hawaii. She has requested \$150,000 from Representative Sidney R. Yates, chairman of the House Subcommittee on Interior Appropriations, for the establishment of a Wildlife Cooperative Unit. If this appropriation survives in the Fiscal Year '89 budget, Hawaii will finally have a Fish and Wildlife Cooperative Unit. The Fisheries Cooperative Unit was established 22 years ago.

The Cooperative Wildlife Research Unit Program has three fundamental objectives:

- (1) conduct research on a broad spectrum of wildlife resource questions;
- (2) educate and train graduate students to become professional wildlife personnel; and
- (3) communicate by providing technical assistance and information to the public.

One can only guess how much further along our efforts to protect Hawaii's native wildlife and native ecosystems might be today if a Wildlife Cooperative Unit were established in 1966 along with the Fisheries Cooperative Unit.

Craig S. Harrison

IN MEMORIAM RALPH W. SCHREIBER

Ralph W. Schreiber, age 45, passed away at his home in Los Angeles on 29 March 1988, after a short bout with liver and pancreatic cancer. Although only an intermittent resident of the State of Hawaii, Ralph left a lasting mark in the study of its marine birds. During the mid-1960s, he studied seabirds in the Northwestern Hawaiian Islands as part of the Pacific Ocean Biological Survey Program. His work on Christmas Island resulted in his classic 1970 paper in *Ibis* entitled, "Seabird Breeding Seasons on Christmas Island (Pacific)," co-authored with N. P. Ashmole. Ralph was part of the research team that discovered DDT was threatening Brown Pelican populations in California's Channel Islands and joined forces with other scientists to restrict the use of that insecticide.

In 1982, Ralph returned to Christmas Island with his wife Betty Anne and discovered that El Nino's increased sea temperatures and concomitant rainfall resulted in the abandonment of the Island's huge colony of seabirds. His August 1984 cover article in *Science* brought international recognition to the effects of El Nino on seabirds and gained Ralph the respect of his peers. Ralph was an active member of the Pacific Seabird Group, serving on its executive council and as its chairman. In December 1982, he chaired the symposium on Ecology of Tropical Seabirds at the joint Pacific and Australasian Seabird Group meeting in Honolulu. He was the chairman of ICBP's International Seabird Committee.

Ralph was irreverent and outspoken. He had a sharp mind, a quick wit and never hesitated to attack dogma espoused by biologists or bureaucrats. His achievements in a career cut short by half are remarkable: author or editor of more than 100 scientific and popular articles, not to mention several books. He was by far the most active and productive worker in tropical marine ornithology, and his loss is especially grieved by his coworkers and friends.

Contributions may be made in his name to the Los Angeles County Museum's Ornithology Research Fund.

Craig S. Harrison

FEBRUARY FIELD TRIP REPORT IHIIHILAUAKEA

The 21 February 1988 field trip was to Ihihilaauakea Crater. Thirty-six participants attending the outing were rewarded with views of native flora and spectacular scenery, even though no whales or native birds were seen.

It rained heavily before the trip started, but stopped just as the hiking began. The weather was mostly overcast, with occasional patches of sunshine. The wind was unusually still, due to the kona weather. Some of the participants started their hike at the base of the steep ridge above the crater, while others drove to the top first. Bird sightings along the trail included Northern Cardinals, Kolea, and Red-vented Bulbuls.

Along the steep road to the crater, various native plants were observed, such as the indigenous Pili Grass (*Heteropogon contortus*) and the grass 'Emoloa (*Eragrostis variabilis*). Non-native "weeds" seen along the way included *Emilia sonchifolia*, Carrion

Flower (*Stapelia nobilis*), Jamaica Vervain (*Stachytarpheta jamaicensis*), Purslane or Stonecrop (*Portulaca pilosa*), Chinese Violet (*Asystasia gangetica*), and cherry tomatoes.

At the point overlooking the southeast shore of Oahu, we saw such indigenous natives as 'Ilima (*Sida fallax*), Alena (*Boerhavia repens*), Hinahina or Beach Heliotrope (*Heliotropium curassavicum*), and the endemic natives Pa'u o Hi'iaka (*Jacquemontia ovalifolia* ssp. *sandwicensis*), Nehe (*Lipochaeta integrifolia*), the rare Ma'oli'oli (*Schiedea globosa*), the fuzzy Kakonakona (*Panicum torridum*), the small Kakonakona (*Panicum nubigenum*), and Nama (*Nama sandwicensis*).

The group reached the crater in a fairly short time. Some time was spent here to admire the very rare endemic fern 'Ihi'ihilauakea (*Marsilea villosa*), which looks like a four-leaf clover. This fern is now only found in two sites in the world, both of them on Oahu. The Nature Conservancy and the City and County of Honolulu (who owns the land) have entered into a cooperative agreement to protect this site from damage by off-road vehicles (ORV's) and other threats such as weeds. The Hawaiian Botanical Society has agreed to provide the volunteer labor for such things as monitoring and weed control to protect the fern. Some members of this group helped out by pulling weeds as they discussed this unique fern. This population is currently doing quite well as a result of the two heavy storms last December, which flooded the crater. The fern was able to reproduce for the first time in at least ten years, and many of the weeds were killed by the rain. Because of this, and a barrier built by the Hawaiian Botanical Society volunteers to keep ORV's out of the fern patch, we were treated to a lush, almost solid patch of bright emerald green "four-leaf clovers."

Marie M. Bruegmann

MARCH FIELD TRIP REPORT KAENA POINT

Thirty-four people turned out for the 20 March 1988 outing to Kaena Point on Oahu's west shore. The trip began at 9:10 AM as a small pod of Spinner Dolphins frolicked offshore and a Humpback Whale waved its flukes and spouted. The weather was warm and partly cloudy, and the ocean was almost glassy.

The walk to the point traversed an eroded jeep trail that was flanked on both sides by a mixture of native and introduced vegetation. Native plants included 'Ilima, morning glory, sandalwood, Hawaiian Cotton, Naio, and Naupaka. The endangered *Euphorbia celastroides kaenana* and *Achyranthes splendens* were also encountered by several hikers, and botanist Joel Lau explained the natural history of the area's native vegetation.

Birds seen along the coastal trail included Common Mynas, Red-crested and Northern Cardinals, Spotted and Barred Doves, Lesser Golden-Plovers, and a Wandering Tattler. Wedge-tailed Shearwaters, Red-footed Boobies, a Sooty Tern, and a Black-footed Albatross were observed feeding near some fishing boats just offshore. A big surprise was an Osprey that flew in from the water and for several minutes circled the leading contingent of the group. It then flew back and forth over the point several times, and most everyone was able to observe it.

The group arrived at Kaena Point around 11:00 AM and ate lunch. Spinner Dolphins, Humpback Whales and seabirds were visible offshore as everyone ate their lunch. Three Laysan Albatross, Red-footed Boobies, Wedge-tailed Shearwaters, a Brown Booby, and a Great Frigatebird were observed offshore just south of the lighthouse. Twelve off-road vehicles were seen parked on and driving over the native vegetation. The sand dunes and resident plants were found to be severely disturbed. The remnant colony of

the endangered *Sesbania tomentosa* was visited after lunch, and several of the plants were found to be blooming.

The hike back along the coast was livened up when two adult Humpback Whales and a calf came within 100 yards of the shore. The hike ended around 1:40 PM as everyone arrived back at the trailhead at Yokohama Bay.

Bruce D. Eilerts

VACANCY ANNOUNCEMENT

HAWAII STATE DIRECTOR FOR NATIONAL AUDUBON----
The National Audubon Society has announced the creation of the position of Hawaii State Director. As Audubon's principal field representative in Hawaii, the state director will have primary responsibility for conservation activism, fund raising, chapter relations, and office administration. Candidates should have at least three years of professional and volunteer experience in a conservation field, preferably in Hawaii. Candidates should be able to begin work by 30 June 1988. Applications will be accepted until 15 May or until the position is filled. Salary is negotiable depending upon qualifications. Interested individuals should contact any board member of the Hawaii Audubon Society.

Applications should be sent to either:

Craig S. Harrison, Director
Hawaii Audubon Society
P.O. Box 3196
Honolulu, HI 96801
(808) 547-5600

David R. Cline, Regional Vice-President
National Audubon Society
308 G Street, Suite 219
Anchorage, AK 99501
(907) 276-7034

MAY FIELD TRIP AIEA RIDGE

Due to popular demand, this month's field trip will feature forest birds. May 15th, Bruce & Robin Eilerts will lead the HAS field trip to Aiea Ridge Trail. This will be an easy to moderate hike but can be difficult at times. Participants will be able to observe native and introduced birds. Aiea Ridge Trail also offers a chance to see native plants. This will be an all day hike, so bring lunch and water. Also bring along your binoculars, rain gear, and sunscreen. Anyone interested should meet at 7:30 AM in front of the State Library on Punchbowl Street or at 8:30 AM at the Aiea State Park upper parking lot. For more information, contact Robin at 941-5974.

MAY PROGRAM TREKKING IN THE NEW ZEALAND ALPS

At the 16 May 1988 general meeting of the Hawaii Audubon Society, Peggy Hodge will be giving a slide presentation on trekking in New Zealand.

In 1979, Peggy spent 6 weeks hiking throughout New Zealand. The highlight of her trip was a 40-mile, 4-day hike on the Milford Track on New Zealand's South Island. The Milford Track, opened in 1906, is part of the Fjirdland National Park. This area was heavily glaciated thousands of years ago, and as the glaciers receded they left New Zealand with the most beautiful and

rugged mountains and valleys. A typical day's hike on the Milford Track would have you start off at sea level in the morning then ascend to 3,800 ft for lunch then back to sea level at dinner.

Peggy will show slides of not only the Milford Track but of several trails that she had hiked while in New Zealand.

FREE ICE CREAM !

Ice cream will again be served to those volunteering for paste-up of the 'Elepaio at Thane Pratt's house on Saturday, 21 May, beginning at 1:00 PM. Thanks to Sheila Conant and Lynne Matusow for helping with the current issue! For more information, call me at 524-8464.

NOTICE TO AUTHORS

The 'ELEPAIO, Journal of the Hawaii Audubon Society, invites authors to submit scientific articles on natural history of Hawaii and the Pacific. Scientific articles are subject to peer review. The 'ELEPAIO also serves as a newsletter to inform members of conservation issues, Society events, and other subjects of interest to members. Manuscripts of articles and newsletter items may be sent to Thane Pratt at 1022 Prospect St., Apt. 1103, Honolulu, HI 96822. Articles not subject to peer review MUST BE RECEIVED BY THE 15TH OF THE MONTH to be considered for publication in the next month's issue.

SCIENTIFIC ARTICLES should be typewritten and double-spaced, and three copies should be submitted. Any photographs should be submitted as photographic prints, in color or black and white (they will appear in black and white). The prints should be 3.5 X 5 inches, or larger, and should be adequately cropped if cropping is required. Original copies of figures (e.g., maps, graphs) should be clear and clean, with lettering large enough to remain legible upon reduction to fit the newsletter format. Authors are advised to design their illustrations with the 'ELEPAIO's columnar format and size in mind (please look at a copy of the journal).

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All local memberships and subscriptions are for the calendar year.

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CALENDAR OF EVENTS

- May 9 (Mon.) Board Meeting at Bishop Museum at 7:00 PM. Call Bruce Eilerts (941-5974) for details.
- May 15 (Sun.) Field trip to Aiea Ridge. Meet at State Library on Punchbowl St. at 7:30 AM. Announcement on page 42.
- May 16 (Mon.) General Meeting at Atherton Halau, Bishop Museum at 7:30 PM. Program: Trekking New Zealand Alps, by Peggy Hodge. Announcement on page 42.
- May 21 (Sat.) 'Elepaio paste-up at Thane Pratt's house, 1:00 PM. Call 524-8464.

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