



The Status of Laysan Albatross on Kauai

by Daniel Moriarty¹, Richard Bottomley¹, Steward Fefer², and Thomas Telfer³

INTRODUCTION

During the past 10 years, Laysan Albatrosses (*Diomedea immutabilis*) have made a number of attempts to nest on Kauai (Zeilemaker and Ralph 1977, Byrd and Telfer 1979, 1980). In this paper, we report observations of albatross nesting activities on Kauai during the 1983-84 nesting season and compare their recent status with that of the past.

RESULTS

The initial sightings of Laysan Albatrosses on Kauai in 1983 were on 15 November at Kilauea Point. Thereafter we began to monitor known nesting sites and areas where courtship activity had been previously observed. We also found new areas by looking for birds in many coastal areas. Albatrosses were seen on the ground in nine different locations in 1983-1984 (Fig. 1). The earliest nesting behavior was recorded 20-21 November when nest construction was beginning at Crater Hill. Moriarty and Bottomley found the first egg on 30 November 1983; an incubating adult at Mokolea Point and an unattended egg, perhaps dropped by an inexperienced breeder, on the eastern flank of Crater Hill.

We found a total of 29 nests on Kauai during the 1983-1984 breeding season, most at the Pacific Missile Range and along the northeast coast. None of the nests were successful on the northeast coast due to predation by dogs. Dog predation was also significant at the Pacific Missile Range (e.g. on 22 February dogs killed 30 albatrosses).

Typical albatross nest sites were adjacent to windy open areas with short grassy vegetation. Some nests were found at the margins of tall weedy vegetation (e.g. *Schinus*, *Lantana*, *Casuarina*, *Leucaena*, and *Stachytarpheta*) which offered protection from the elements.

The following annotated list includes summaries of observations of albatrosses at all nine sites delineated in Fig. 1.

1. *Kilauea Point*: Although no nests were observed, Moriarty and Bottomley recorded four to twelve albatrosses on the ground here from 15 November to 4 June 1984. Courtship displays were observed almost daily; their highest intensity occurred from mid-January to mid-May.

2. *Mokuapee Islet*: Three to five courting birds were observed 25-29 March and 1 April 1984.

3. *Crater Hill*: We located five nests with eggs at Crater Hill. None of these were successful because of predation and human disturbance. Two to six birds were noted landing or engaged in courtship activities during each of our visits to the eastern flank of Crater Hill until early April. Courtship and landings were noted on the western flank of Crater Hill in early December. However, after a

bird was killed by dogs on 13 December, activity ceased except for two brief courtship sessions a month later.

4. *Mokolea Point*: We found one nest at this site which has been attractive to Laysan Albatross since 1979. Despite predation and frequent human disturbance, we regularly observed courting birds at this site; the peak count was eleven birds on 14 April 1984.

5. *Kakiu Point*: We located three nests at Kakiu Point; all were destroyed by dogs. The last courtship activity was observed here in early February. Occasional landings were reported on the beach to the east of Kakiu Point, but dog predation early in February probably resulted in the reduction of albatross activity at this site.



Laysan Albatross and chick photographed in January 1985 at the Pacific Missile Range Facility, Barking Sands, Kauai.

Official U.S. navy photo by PH2 M.B. McIntosh, USN

6. *Kepuhi Point*: We first became aware of this site on 11 March 1980 when we discovered the recent remains of six Laysan Albatrosses. Between 20 January and mid-March 1984, we located six nests here and up to 14 birds participated almost daily in courtship activity. Dogs killed six of these birds in mid-March. All six nests failed and albatross activity ceased in the area thereafter.

7. *Makahuena Point*: We observed from two to 12 courting birds during April and early May in open areas north and south of the old Poipu Coast Guard Station. Reports also indicated landings had occurred nearby at Poipu Kai Resort.

8. *Pacific Missile Range*: We located fifteen on this site. Due to dog predation and the potential hazard of an increased albatross population to military aircraft, State and Federal wildlife biologists moved eight nestlings from Pacific Missile Range to Kilauea Point Wildlife Refuge on 8 and 10 February, 1984. These birds were hand-reared and protected from predators but they did not survive to fledging. On 22 February, dogs destroyed 30 birds including some of the nesting adults that remained on the Pacific Missile Range. After this event, the number of albatrosses at the Missile Range was reduced to three to seven birds.

9. *Princeville*: We observed up to eight courting birds in this area periodically in January and February 1984, and birds were observed from 10 March to 15 April, 1984. Periodic visits to this site continued into early May. Due to a strictly enforced leash law at Princeville, no predation was observed.

DISCUSSION

A comparison of the status of Laysan Albatrosses on Kauai during the periods 1974 to 1980 (Byrd and Telfer 1980) with that of the 1983-84 season reveals that there have been increases in numbers of nesting attempts, the distribution of nesting and courting locations, and the number of individual birds seen. Since the first known albatross nest on Kauai in 1977-78, a total of three to seven nests have been found annually from 1978-1980 near Kilauea Point and the Pacific Missile Range (Byrd and Telfer 1980). In contrast, we found 29 nesting attempts at five Kauai locations in 1983-1984. Fifty individual birds were reported near Kilauea Point (including areas 1-4) and Barking Sands (Pacific Missile Range) (Byrd and Telfer 1980) compared to at least 155 individuals in 1983-1984 at the five previous and four new locations.

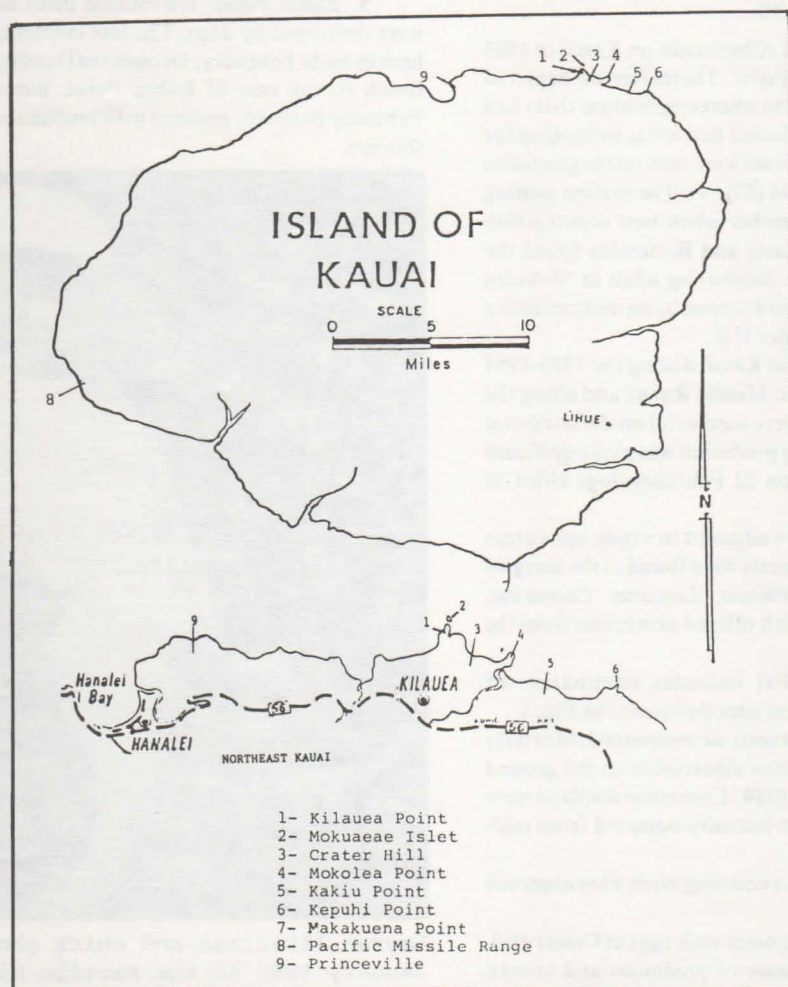


Figure 1. Locations of Laysan Albatross breeding activity on Kauai.

Uncontrolled domestic and feral dogs continue to inflict high mortality on colonizing Laysan Albatrosses on Kauai. Successful nesting can only be assured by the fencing of nest sites and other dog control measures. Increased urbanization of Kauai's north shore will continue to discourage successful colonization.

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HONOLULU CHRISTMAS BIRD COUNT

-1985-

Robert L. Pyle

In almost ideal weather, 88 participants found a record number of birds on the 42nd annual Honolulu Christmas Bird Count conducted December 22, 1985. Generally clear skies in the morning and light winds even on the mountain ridges provided excellent observing conditions throughout the count circle.

The observers worked this year in 34 parties and spent 169 party-hours counting, both

higher than the previous records for the Honolulu count set in 1983. Nearly half the coverage was devoted as usual to parks and residential areas, but percentages of party-hours spent on mountain forest trails and in low-land woods and scrublands were slightly higher than in recent years.

The total of 28,803 birds tallied was more than 10% greater than last year's previous record of 25,809. Fifty-one different species were listed, the greatest number since the record high of 55 species in 1979. As usual, Zebra Doves (count of 7,299) were the most numerous species by far. Other species found in high numbers were Common Myna (3,586), House Sparrow (2,793), Spotted Dove (2,774), Red-vented Bulbul (1,972), Lesser Golden-Plover (1,846) and Japanese White-eye (1,628). The counts of House Sparrows and Spotted Doves were new record highs. New record high counts were also established this year for 10 other species, among which Black Noddies, Red-whiskered Buleuls, N. Mockingbirds and House Finches were significantly higher.

Counts of two native landbird species, 'Elepaio and 'Amakihi, were within the range expected during the past 20 years, but the 'Apapane total was the lowest in 12 years.

Unusual species found on the Honolulu Count generally are migrant waterbirds, but this year most of the interesting ones were landbirds. Andy Engilis' party found six Warbling Silverbills near water tanks at the start of Niu Valley trail, and 4 more were observed 2 hours later by Sam Gon's group in dry vegetation along Palolo Valley trail. Both observations were made under good conditions, with detailed notes prepared. Silverbills have been reported only once before on Oahu.

Peter Donaldson's party found a European Starling in Sand Island Park, at virtually the same spot where he found one on the Christmas Count 5 years ago. It clearly was not the same individual, however, as the 1980 bird has been a specimen in Bishop Museum's collection since early 1981. A Laysan Albatross was sighted on a grassy sand dune at the Kaneohe Marine Corps Air Station, and a number of marine birds including a Wedge-tailed Shearwater and 2 jaegers were watched just beyond the reef in Maunalua Bay between Diamond Head and Paiko Peninsula. These were accompanying a school of marine mammals which included some spinner dolphins and possibly a few False Killer Whales.

Escaped cagebirds sighted during this year's count were 1 Rose-ringed Parakeet, 4 unidentified parrots and 2 Hill Mynas. Nine Guinea fowl and 2 domestic roosters also were listed, along with 2 domestic geese, 4 Pekin

HONOLULU CHRISTMAS COUNT - 1986

	Sectors	1	2	3	4	5	6	7	8	9	10	Total
Laysan Albatross	.	.	.	.	.	.	.	.	.	1	.	1
Wedge-tailed Shearwater	.	.	.	.	.	1	.	.	.	.	.	1
Brown Booby	.	.	.	.	.	11	.	.	.	4	.	15
Red-faced Booby	.	.	.	.	.	6	17	.	.	508	.	531
Great Frigatebird	.	7	.	.	.	15	5	113	54	.	.	194
Cattle Egret	.	.	.	.	.	.	87	426	94	49	.	656
Black-crowned Night-Heron	.	1	2	.	.	2	1	18	38	3	.	65
Koloa (Hawaiian Duck)	.	.	.	.	.	.	6	11	2	.	.	19
Gray Francolin	.	.	.	.	.	8	.	.	.	.	.	8
Ring-necked Pheasant	.	.	.	.	.	.	8	.	.	.	.	8
Hawaiian (Common) Moorhen	.	.	.	.	.	.	.	19	.	.	.	19
Hawaiian (American) Coot	.	1	.	.	.	.	.	18	2	2	.	23
Lesser Golden-Plover	8	358	11	90	75	294	237	156	411	206	.	1,846
Hawaiian (Black-necked) Stilt	.	.	.	.	.	.	.	.	109	.	.	109
Wandering Tattler	.	3	1	.	.	5	.	9	18	.	.	36
Ruddy Turnstone	.	19	.	5	.	40	7	14	165	18	.	268
Sanderling	.	.	.	.	.	2	.	.	8	.	.	10
Jaeger, sp?	.	.	.	.	.	2	.	.	.	.	.	2
Brown Noddy	.	.	.	.	.	4	.	.	.	.	.	4
Black Noddy	.	.	.	.	.	3	.	.	16	54	.	73
Rock Dove	.	113	.	104	.	62	36	86	12	.	.	413
Spotted Dove	30	298	141	138	99	245	290	1145	140	248	.	2,774
Zebra Dove	17	1306	144	429	711	508	2937	427	247	573	.	7,299
Common Barn-Owl	.	1	1	.	.	.	.	.	.	1	.	3
Gray Swiftlet	2	.	.	.	.	.	.	.	.	.	.	2
Eurasian Skylark	.	2	.	.	.	.	.	.	.	.	.	2
Red-vented Bulbul	88	337	125	117	41	332	150	318	90	374	.	1,972
Red-whiskered Bulbul	.	48	352	247	21	.	.	.	.	.	.	668
Japanese Bush-Warbler	8	4	13	2	.	6	7	.	.	43	.	83
O'ahu 'Elepaio	3	1	.	2	.	7	.	.	.	.	.	13
White-rumped Shama	40	52	76	41	2	62	18	11	4	58	.	364
Melodious Laughing-thrush	.	.	.	.	.	.	1	.	.	.	.	1
Red-billed Leiothrix	.	.	.	.	.	.	1	.	.	.	.	1
Northern Mockingbird	.	26	3	.	.	2	4	.	.	.	.	35
Eurasian Starling	.	1	.	.	.	.	.	.	.	.	.	1
Common Myna	6	744	23	244	423	481	409	823	276	157	.	3,586
Japanese White-eye	175	294	399	198	32	199	34	95	52	150	.	1,628
Northern Cardinal	27	60	61	31	2	81	29	51	16	39	.	397
Red-crested Cardinal	7	172	9	74	51	35	50	69	22	45	.	534
Yellow-faced Grassquit	.	3	.	.	.	.	.	.	.	.	.	3
House Finch	77	305	60	45	55	100	72	13	12	32	.	771
Yellow-fronted Canary	.	.	.	.	19	4	.	.	.	.	.	23
O'ahu 'Amakihi	21	40	24	32	.	8	.	.	.	.	.	125
'Apapane	46	8	.	5	.	7	.	.	.	.	.	66
House Sparrow	11	1460	9	272	224	354	104	173	89	97	.	2,793
Orange-cheeked Waxbill	.	.	.	.	.	5	.	.	4	.	.	9
Common Waxbill	.	.	.	.	.	.	1	.	.	.	.	1
Warbling Silverbill	.	.	.	.	.	10	.	.	.	.	.	10
Nutmeg Mannikin	8	140	6	2	.	309	60	40	15	128	.	708
Chestnut Mannikin	.	4	.	.	.	.	.	.	.	.	.	4
Java Sparrow	.	83	44	46	45	253	.	136	6	.	.	613
No. of Individuals	574	5,891	1,504	2,124	1,779	3,454	4,571	4,210	2,415	2,281	.	28,803
No. of Species	17	30	20	20	14	34	25	23	27	18	.	51
Party-hours	15.75	36.25	13.50	13.00	7.50	35.50	10.50	14.25	11.00	11.75	.	169

Moku Manu (outside Count circle): Masked Booby, 3; Brown Booby, 6; Red-footed Booby, 127; Great Frigatebird, 229.

Offshore Sand Is. (outside Count): Pomarine Jaeger, 14.

Salt Lake (outside Count): American Coot, 28; Black-necked Stilt, 2.

Ducks, 36 Muscovy Ducks and 210 Mallards and mallard hybrids. The feral waterfowl were all on the windward side, except for a few at Hawaii Kai and Paiko Lagoon.

Sectors Covered -- 1985

- 1-A: Aiea Trail: John Obata, Susan Schenck, Annette Kaohelauii, Vernon Knight
 B: Halawa Ridge Trail: Joseph Bussen, Steve Berendzen, Ken Niethammer
 2-A: Keehi Park, Sand I., Moanalua Park, Tripler: Peter, Eugene and Rita Donaldson
 Offshore Sand Island, Salt Lake (outside Count circle): same party as 2-A
 B: Ft. Shafter-Kahauiki Trail: Dennis Hodsdon
 C: Kalihi Valley, Shafter Flats: Dick and Jane Taylor
 D: Alewa Trail: Chuck Burrows, Jaan Lepson, Earl Neller
 E: Kamehameha Schools Campus: Sigrid Southworth, Laura Duffy, Audrey Heflin, Steven Oshiro, Edward Rios, Kevin Sasaki, Frank Wegesend
 F: Nuuanu, Iwilei: Arthur and Betty Joao
 G: Queen Emma Gardens, Foster Gardens: Jack Mitchell
 3-A: Makiki Loop Trail: Faith Roelofs, Lorin Gill, Rudy Spieker, Ann Swanson
 B: Round Top Dr., Manoa Cliffs Trail (west), Aihualama Trail, Manoa Falls Trail: Wayne Gagne, Allen Allison, Edward Nishimura
 C: Punchbowl: George Campbell, Betty Johnson, Helen Marston
 4-A: Ala Moana Park, Ft. DeRussy: same party as 3-C
 B: Manoa Valley, University: Sheila Conant, David McCauley
 C: Woodlawn Trail, Puu Pia: Patrick Conant, Stephanie Nagata
 D: Lyon Arboretum, Paradise Park: Leilani Pyle, Hilde Cherry, Jack Mitchell (also in party 26), and Helen Bryan (feeder)
 E: Wa'ahila Ridge Trail: Tim Ohashi, Yukie Yoshinaga, Susan Reel
 5-A: Honolulu Zoo: Peter Luscomb
 B: Kapiolani Park, Na-la'au Arboretum, Diamond Head Crater: Mike Ord
 6-A: Kapiolani College, Kahala to Paiko Lagoon, Niu Valley: Andrew and Mary Engilis, Clyde Imada
 B: Palolo Valley, Aina Haina, Waialae-nui, Wailupe: Suzan Harada, Sam Gon
 C: Waialae-iki Trail: Bruce and Robin Eilerts
 D: Kuliouou Valley Trail, Kuliouou Ridge (west) Trail: Norris Henthorne, Mae Ikawa, Ray Fox, Althea Marrack (feeder)
 E: Hawaii Kai, Paiko Lagoon: Jay Munns
 7-A: Old Waimanalo Rd., Bellows AFS, Waimanalo: Robert Pyle, David Woodside, Phil Bruner, helped by Andrea, Kenneth and Hinano Bruner (2 parties)
 8-A: Lanikai: Carl McIntosh, Ada Nemoto
 B: Offshore Lanikai (by boat): Tom Shields
 C: Kaelepulu Canal, Kawainui Canal to Kailua Rd. (by canoe): Helen Sing, Marlene Lemke, Nora Furuno
 D: Kawainui Canal and Dyke, Kailua: Don, Doris and Colin Huddleston, Adam Blenham
 E: Kawainui Marsh, Quarry Rd., Kapaa Landfill: John Engbring, Celestino Aguon, Peter Stine
 9-A: Mokapu Peninsula, Kaneohe makai: Ronald Walker, Lance Tanino, Diane Drigot
 B: Moku Manu (outside count circle): same party as 9A
 10A: Ho'omaluhia Park: Martha McDaniel
 B: Old Pali Rd., Pali Golf Course, Hawaii Loa, Hawaii Memorial Park, Heeia Marsh: Marie Morin, Joel and Steve Simasko
 C: Haiku to Kahaluu to Heeia: Tim Burr, Dennis Wysong

Eighty-six observers in 34 parties plus 2 observers at feeders. Total party-hours: 169 (120.25 by foot, 45 by car, 3.75 by canoe and boat). Total party-miles: 425 (99.5 on foot, 322 by car, 3.5 by canoe and boat).

Habitat coverage (% of party-hours): parks and residential 42%, lowland woods and scrub 26%, mountain forest 21%, marshes, ponds, canals 7%, beach and ocean 4%.

The 'Elepaio goes international...

5428) Выпуск журнала «Elepaio». «Elepaio», 1984, 45, № 5, pp. 33-40, ill. (англ.)

В выпуске помещены 3 статьи и информация о деятельности гавайского отделения Одюбоновского об-ва. Ashman P. R., Pyle P., Jeffrey J. Второе гнездо малого кауайского дрозда *Phaeornis palmeri*, эндемика о. Кауаи (описание конструкции гнезда, места расположения). Сообщение о 9 видах позвоночных, находящихся в угрожаемом состоянии на о. Гуам и сев. Марианских о-вах, 7 видов птиц и 2 вида летучих мышей включены дополнительно в Федеральный список видов США, находящихся в угрожаемом состоянии. Все эти виды эндемичны для Марианских о-вов, 5 из них встречается только на о. Гуам (*Myiagra freycineti*, *Zosterops conspicillata conspicillata*, *Halcyon cinnamomina cinnamomina*, *Rallus owstoni*, *Pteropus tokudae*). Одной из причин сокращения численности указанных видов птиц, по-видимому, является расселение к С. бурой древесной змеи *Boiga irregularis*. Др. виды (*Gallinula chloropus guami*, *Corvus kubaryi*, *Aerodramus vanikorensis bartschii*, *Pteropus mariannus mariannus*) также представлены небольшими популяциями, численность к-рых в последние годы резко сокращается.

O. A. Михалевич

RECENT OBSERVATIONS

AUGUST - NOVEMBER, 1985

(Editors' note: This article is the first of two excerpted from Bob Pyle's record of bird observations for the Hawaiian Islands. Refer to future issues of American Birds for a full account. Observations of land birds will be published next month.)

SEABIRDS - Last year's banded subadult Short-tailed Albatross returned to Sand Is., Midway by Nov. 20. The first Laysan Albatross returned to Barking Sands, K. by Nov. 15.

A fledgling Dark-rumped Petrel was found dead at Kilauea Crater, H. on Nov. 6 - evidence of breeding on the Big Is. Six live Dark-rumped fledglings were turned in at the Shearwater Rescue Project, K., this fall. This summer, 7 Bulwer Petrels fledged on Manana Is. The Shearwater Rescue Project reported receiving 1500 Newell Shearwaters this fall. Virtually all of these were fledglings found along roads and other places where they were attracted by bright lights. Biologists with the Project banded, measured, and released the birds. There were no reports of Band-rumped Storm-Petrels. The following nonresident species were reported offshore of Hilo, H. on Oct. 18: numerous Sooty Shearwaters, 10-12 White-necked (Juan Fernandez) Petrels, 125 Mottled Petrels, 1 Kermadec Petrel, and 2 Stejneger Petrel. From Laie Point and Kahuku the following were seen on Oct. 27, during the approach of Hurricane Nele: 1 Mottled Petrel, 2 Sooty Shearwaters, 4 Newell Shearwaters, and many Wedge-tailed Shearwaters.

Red-tailed Tropicbirds fledged 7 young out of 11 nests on Manana Is. this year.

This summer, Hawaii contributed a new species to the AOU Checklist for the North American region - the LITTLE TERN (*Sterna albibifrons*), an old-world species confusingly similar to the Least Tern of the Americas. Small terns of one or both species have been seen in Hawaii before, but have not been positively identified. A specimen found dead at Tern Is. (June 2) was sent to the U.S. National Museum where it was discovered to be a Little Tern. Brown Noddies nesting on Manana Is. failed to fledge any young this year.

SHOREBIRDS - The endemic Hawaiian (Black-necked) Stilt fared well at Waipio, O. this year, with counts of 200-350 birds, up 50% from the last 3 years. Of the common migrants at Waipio, Sanderlings were more abundant than usual, while numbers of Lesser Golden Plover and Ruddy Turnstone were disappointing. In

August and September, solitary Bristle-thighed Curlews were found at their favorite haunt, Ki'i Ponds, O., and also at Waipio. Unusual shorebirds were: a small Calidris sandpiper, possibly an asian Little Stint, at Waipio, O.; 2 adult Least Sandpipers at Amorient, O. (Oct. 27) and 1 at Waipio (Nov. 18); a Spotted Sandpiper at Wainio (Sept. 6) and on the reef at Aimakapa Pond, H. (Sept. 15-16); 2 Buff-breasted Sandpipers, rarely recorded from Hawai'i, were seen at Waipio (Sept. 6-11); 4 Short-billed Dowitchers were among some Long-billed D. at Waipio (Oct. 27) and one was at Amorient, O. (Sept. 6).

WATERFOWL, RAILS, AND HERONS - Last year, Hawaiian birders witnessed a rare event: the natural colonization of our islands by a new bird species. The colonists, a pair of PIED-BILLED GREBES, bred at Aimakapa Pond, H. this year for the first time. Five nesting attempts in 1985 included a successful hatching of two chicks in Oct. and a tended nest in Dec. The population at Aimakapa had increased from one pair in January to at least 6 birds and possibly 8 by November 30.

Fulvous Whistling-Ducks bred at Amorient, O. in late summer and fall. One was seen at Kealia Pond, M. on Nov. 9. A Greater White-fronted Goose was at Sand Is., Midway on Nov. 20-28. Numerous sightings of Black Brant were reported: 1 at Kakahai'a Pond, Mo. on Nov. 6; 2 at Kaneohe Marine Corps Air Station, O. in late Nov.; and 1 probably this species at 'Oma'o, K. in late Nov. Five presumed Taverner's race of Canada Goose were seen through fall at Amorient, O. Numbers of ducks were low this fall at Ki'i and Waipio Ponds, O. and Aimakapa Pond, H., but at Kealia Pond, M. 240 N. Shovelers and 70 other ducks of 11 spp. were seen on Nov. 9, including 1 Eurasian Widgeon, 1 Canvasback, 2 Tufted Ducks, 3 Greater Scaup, and 1 Red-breasted Merganser. This fall, 7 Greater Scaup and 3 Ring-necked Ducks were reported from J. Campbell N.W. Refuge, O.

High counts of Am. Coot were recorded from Aimakapa, H. this fall. Of the 190+ birds counted, 4-5 were of the migratory "N. Am." form, identified by the small red button above the bill, which in the Hawaiian birds is a large bulbous shield, usually white.

A Great-blue Heron was seen in Pololu Vally, H. on Oct. 5 and another (possibly the same bird) at Kakahai'a Pond, Mo. on Oct. 24 and Nov. 6. As in previous autumns, an adult Little-blue Heron was seen again at Waipio, O. on Aug. 25 and Oct. 27.

RAPTORS - Migrant raptors included an Osprey at Waipio, O. and a Peregrine Falcon over Konahuanui, Ko'olau Mts., O.

THREE FIELD TRIPS TO MANANA ISLAND

15 June 1985

About 20 people joined the Sierra Club on their field trip to Manana Is. on 15 June 1985. Suzanne Harada led the trip. The weather was sunny and warm with light trade winds. The group was ferried to the island in 2 trips between 9:00 and 10:00am. The landing point was on the rock shelf on the south side of the island, just east of the sand beach. The ocean was calm and the landing went smoothly.

Keeping together, we first traversed the tidal rock shelf along the south coast, then backtracked to the sand beach on the western tip of the island. From there we worked our way inland northeasterly to the crater rim which we followed in a clockwise direction to the highest peak. We returned by the same route.

Vegetation was moderately well developed, perhaps because of the relatively wet winter, but it was now beginning to dry. Two of the coconut trees on the island appeared to have recently died, possibly the result of the very dry "El Nino" years. The remaining coconuts had new green fronds.

We observed the following bird species:

Sooty Tern. Tens of thousands were present, in colonies scattered along the sloping outer flanks of the crater and on less steep portions of the uppermost rim. About 1,000 circled high above the northwest tip of the island throughout the morning. There were no eggs. Instead, young about three-fourths grown were present in low numbers throughout the island. In most areas young birds made up only a small portion of the population, perhaps 5% or less, except in one colony where young comprised possibly 25% or more. This successful colony was located on the outer slope of the crater just northeast of the sand beach where we began walking inland.

Curiously, it was reported by Stewart Fefer (USFWS), who led a field trip to the island on 11 May, that great numbers of Sooty Terns were incubating eggs at that time. The hatch from these eggs probably accounted for the young observed by our party. Had hatching success been high, we would expect large numbers of young present in June, which was clearly not the case. We therefore suspect that a large portion of this early clutch was lost. Many Sooty Terns appeared to be ready to lay again.

Brown Noddy. Abundant, but much less so than Sooty Terns, the noddies were loosely scattered along the more steep, rocky portions of the crater rim. The birds appeared to be beginning to nest, with only a few birds (10-20%) on eggs. We saw no young.

Wedge-tailed Shearwater. Shearwaters were on eggs in their burrows, mostly along the grassy slopes of the crater and on the crater floor. We did not walk over the crater floor, but could easily see numerous burrow entrances and heard at least one bird calling from this area.

Bulwer's Petrel. Bulwer's Petrels nested in shallow holes in the rock ledge near the beach. A casual search of this area revealed six active nests. One banded and incubating adult was examined. No young were found.

Red-tailed Tropicbird. Several pairs flew over the island during the morning and at least two nest sites were located. The first nest was under a rock near the shore and within 30 m of our landing site. While we were present, an adult flew in and tended a young bird that was three-fourths grown. The second nest site was under a rock high on the eastern, outer slope of the crater. We only viewed the bird in this nest from afar.

Black-crowned Night-Heron. At least 15 birds were on the island. Several were seen along the coast, several around the perimeter of the Sooty Tern colonies, and 10 or more perched in the coconut trees within the crater. This is apparently more than have been reported from the island in previous expeditions.

No rabbits were located during the walk.

Two picnickers had paddled out to the island in a canoe and spent much of the morning on the beach. We spoke with them about the off-limits status of the island.

All participants were ferried back to the Makapuu Pier between 12:30 and 1:00pm.

John Engbring

28 July 1985

About 15 people joined the Sierra Club field trip to Manana Island on July 28th. Suzanne Harada led the trip. The seas were rough with white caps visible in the channel between O'ahu and Manana. For a brief time, we were afraid that we would not be able to land. The boat arrived around 9:30-10:00am, a little late, and everyone was on the island by 10:00-10:30am.

As we landed, Sooty Terns flew up from the island's slopes. I estimated that there were 2,000-5,000 Sooty Terns on the island at that time. None were seen nesting. Only six unattended fledglings remained near the large settlement walls just south of the landing.

Brown Noddies also appeared to have completed their breeding season. Most adults were loafing around old nesting sites just inside the crater rim. However, one very young downy chick, less than a week old, was seen on the east ridge of the crater as we walked to the island's summit.

In the same area, Suzanne checked the Red-tailed Tropicbird nests she had seen in June; all were empty. One near-to-fledging chick was seen under a rock overhang near the beach south of the landing.

Bulwer's Petrels were also nesting in this area. One small, unattended chick; one chick with an adult; and one adult in a burrow of unknown contents were seen.

Wedge-tailed Shearwaters were nesting in considerable numbers. Most burrows were occupied by a single adult, presumably on an egg. No chicks were seen, but active checks were not conducted. As we walked along the trail heading north from the beach towards the crater rim, we noticed a large number of washed out burrows and abandoned eggs. Could this be due to prior disturbance?

The vegetation was very dry and composed mostly of dead grass, with lots of tobacco in the crater interior. Pua Kala (*Argemone glauca*), the native poppy, was flowering on the slopes and cliff faces on the west and north side of the island. I also noticed small patches of Nena (*Heliotropium curassavicum*) and alena (*Boerhavia diffusa*). Most of the vegetation was not native.

Audrey Newman

We walked northwest along the shore to the wider sandy beach area. En route, I located two partially feathered Bulwer's Petrel chicks in small holes in the rocks. I did not search the area thoroughly for more nests.

As we walked up from the beach towards the crater, we noticed Wedge-tailed Shearwater chicks in their burrows.

There were no Sooty Terns on the island, and we saw none overhead.

Brown Noddies were roosting on the rock ledges on the crater's rim. As we circled the crater, we saw only a few noddies on eggs but no chicks. From the rim, we counted 7 Cattle Egrets in the palms inside the crater.

Once back down on the southwest shore, we could not find any Red-tailed Tropicbird

but no chicks.

From the rim, we counted 7 Cattle Egrets in the palms inside the crater.

Once back down on the southwest shore, we could not find any Red-tailed Tropicbird nests in the rocks behind the tide pool areas close to the landing spot, but we did see one land on the slopes above that spot as we departed in the boat.

While we waited for the boat to return, a kayaker landed on the beach. I told him that he needed special permission to land on the island and advised against walking very far inland because of shearwater burrows. He left a short while later.

As we left, the boat circled the back side of Manana. We saw a single Brown Booby perched on a rock ledge on the northwest side of the island. We arrived back at the pier early in the afternoon.

Darcy Hu

JANUARY PROGRAM:

HAWAIIAN STREAM LIFE

24 August 1985

I acted as guide for the field trip to Manana Island on 24 August 1985. Suzan Hara-da arranged for boat transportation; Leilani Pyle coordinated participants and the State permit. The group assembled at the Makai Pier at 8:00am. The boat arrived about 8:45; by 9:30, we were all safely on Manana. We landed smoothly on the south rock ledge, thanks to calm seas. The day remained sunny and warm.

This month's speaker, Andy Yuen, gave an illustrated talk on "Stream Ecology of Fresh Water Fish". Yuen earned his master's degree from the University of Hawaii. He now works as a fishery biologist with the U.S. Fish and Wildlife Service in Honolulu. Together with the University of Hawaii, the Service is testing a computer model that predicts available fish habitat with the amount of water flowing in a stream. Of particular interest are the microhabitat requirements of the several Hawaiian 'o'opu or gobies, small fish living in many of our streams.

The first part of the talk used color graphs and drawings to demonstrate three stream features important to gobies: depth of water, velocity of flow, and the nature of the stream bed. The computer model simulating stream flow is calibrated to the field measurements. Temperature and oxygen can also be incorporated into the model. The Department of Land & Natural Resources, the University of Hawaii, and the Department of the Interior are sponsoring this investigation to help assess the impact of hydro-power projects and other developments on stream habitats.

Next followed colorful slides showing three species of native gobies, aquatic insects, crustaceans, and molluscs, all sharing the same streams. Gobies exhibit a two-staged life cycle: the post-larvae enter the ocean and remain among the plankton, upon which they feed. When they reach a certain size or age, young gobies migrate back to fresh water streams where they remain as adults. What triggers this return is still unknown. Slides were also shown of many Hawaiian streams, such as those near Hana on Maui and Waimea on the Big Island. Some slides illustrated the damage caused by withdrawing water for irrigation and other purposes. When streams are completely diverted, they can no longer support gobies which, because of their two-stage life cycle, require streams with a connection to the sea.

A question and answer period concluded this program.

Betty Johnson

HAWAII ENVIRONMENTAL LAW WORKSHOP

The Hawaii Chapter of the Wildlife Society is sponsoring a two-day workshop on State and federal environmental laws and their effect on wildlife and natural resource management in Hawaii. Topics and speakers are listed on the enclosed application form.

Although geared to biologists and resource managers, the workshop will be of interest to conservationists, administrators and anyone concerned with environmental laws and their impact in Hawaii.

The workshop will be held May 12 and 13, 1986, at the Hale Koa Hotel. Please register early, as enrollment is limited.

VOLUNTEERS NEEDED FOR YWCA

Kokokahi YWCA Outdoor Education Program is looking for energetic volunteers to lead school-age student groups in various outdoor activities. The activities include a Reef Walk on the Kaneohe Bay, a hike through our Friendship Gardens, and a Nature Scavenger hunt as well as some other Hawaiian Culture and recreational activities. Our 11 acre facility offers an excellent opportunity for students to explore the natural environment and enjoy a day in the outdoors; it's fun for the leaders too! The program will begin in April and end in May (2 months) with $\frac{1}{2}$ day visits by public and private schools. If you are interested in volunteering for this fun, learning experience, please call Peter Rudisill at 247-2124. Your help will have a great impact on the youth we serve!

VOLUNTEER WORK PARTY:

NATIONAL WILDLIFE REFUGE

On Saturday, March 15, a volunteer work party will be held at the Kii Unit of the James Campbell NWR near Kahuku. Volunteers are needed to clear unwanted vegetation from nesting islands created for the endangered Hawaiian Stilt.

Participants should bring lunch, water, a hat, sunscreen, old clothes, tabis or old sneakers, and hand tools (machete or hoe, if you have them). YOU WILL GET WET AND DIRTY, so come prepared.

Meet at the State Library at 7:30 a.m. for carpooling, or at the entrance to the old Sugar Mill at Kahuku at 8:30 a.m.

The leader for this trip is Jim Krakowski; for more information call him at 546-5608 (work) or 537-4633 (home).

VOLUNTEER FOR BIRD SURVEY!

U. S. Fish and Wildlife Service Biologist Marie Ecton is organizing a breeding biology survey of forest birds at Hanawi, Maui. The observers will go into the field one week of each month from January to May. The study will focus on endangered species. Volunteers must have previous Hawaii birding experience and require little training for the Maui species. Fish and Wildlife Service will pay for inter-island travel and a camping per diem. The field conditions will be rigorous. Anyone interested should call Marie (on Maui) at 878-6733.

HAS NATURAL HISTORY SCHOLARSHIP AND GRANTS

The HAS Scholarship and Grants Committee is accepting applications for the 1986-87 HAS Tuition Scholarship and for HAS grants. The \$1,000 Tuition Scholarship is provided to lend financial assistance to outstanding undergraduates majoring in natural science, especially those interested in Hawaiian natural history. The application deadline for the 1986-87 school year is May 1.

In addition to the scholarship, grants are awarded to aid in research projects on Hawaiian or Pacific Natural History. Grants are aimed at small-scale projects or projects that receive funding from sources other than the Society, and generally do not exceed \$500. The deadline for grants to be awarded in summer/fall 1986 is April 1.

For information and application forms, write or call John Engbring, Scholarship and Grants Committee, P.O. Box 4443, Honolulu, HI 96813: phone (business) 546-7530.

MARCH 1986 FIELD TRIPS

Sunday, March 9
Haiku Valley
Leader: Tim Burr (245-3905)

Tim knows this area very well and is likely to turn up some of Oahu's rarer introduced birds such as Hwa-mei, and Japanese Bush Warbler. Haiku Valley also offers beautiful scenery and an interesting hike. Meet at the Main State Library on Punchbowl St. at 7:00 a.m., or on the windward side at the end of Haiku Road (dead end gate) at 7:30 a.m. There will be someone to meet you at either locality.

Saturday, March 29
Waianae Coast Tide Pools
Leader: Emily Gardner (545-2993)

Join Emily on this half day trip to the Waianae Coast to explore some of Oahu's most pristine and diverse tide pools. The trip is scheduled to take advantage of a -0.3 low tide which means many pools will be exposed. We caution participants to bring plenty of sun screen and proper foot wear (tabis or tennis shoes). Meet in front of the Main Library on Punchbowl St. at 7:30 a.m.

MARCH PROGRAM

INTRODUCTION TO HAWAIIAN DECAPODS

Talk scheduled for March 17, 1986
Audubon General Meeting
Dr. Richard Titgen
Research Associate, Bishop Museum

Richard Titgen will present an introduction to Hawaiian decapods (crabs, shrimp, and lobsters) from an ecological point of view. Based primarily on a slide presentation, the more common Hawaiian decapods will be discussed with information on their habitat and associates. This overview will cover beaches, reefs, sand flats, the deep ocean, and a short discussion on Hawaii's unique anchialine ponds.

EDITORIAL POLICY

Notice to contributors: The '*Elepaio* 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 newsletters to inform members of conservation issues, society events, and other subjects of interest to members. Contributors should be aware that all articles, trip reports, notices, etc. MUST be submitted typewritten and double-spaced. These may be sent to the Managing Editor at 954 Spencer St, Honolulu, HI 96822. Articles not subject to review MUST be received by the 15th of each month to be considered for publication in the next month's issue.

GOURMET ICE CREAM!

Will be available at next month's paste-up of the '*Elepaio* at Thane Pratt's house at 954 Spencer St. in Makiki. TYPISTS NEEDED to type articles on Saturday, March 15; please phone Thane at 546-7530 (work) or 524-8464 (home) to set up a time. Paste up will be held on Saturday, March 22 at 1:00 p.m. Thanks to Karen and David Falkenmayer, Ray Greenfield, David McCauley, and Bob Pyle for helping with this issue's paste-up.

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(Editors' note: We apologize for two errors in last month's issue. The HAS representatives for Kauai are Dr. David and Winona Sears. Carl McIntosh's phone number is 262-4337. If readers find other errors that need correction, please let us know. Thank you.)

CALENDAR OF EVENTS

- Mar. 9 (Sun.) Field Trip to Haiku Valley,
meet at Main Library, Punchbowl St.
at 7:00 a.m. Call Tim Burr (245-3905)
- Mar. 10 (Mon.) Board meeting at Bishop Museum
at 7:00 p.m. SHARP. Call Allen Allison 848-4145-w.
- Mar. 15 (Sat.) Volunteer Work Party, Ki'i;
meet at Main Library, Punchbowl St.
at 7:30 a.m. Call Jim Krakowski 537-4633.
- Mar. 17 (Mon.) General Meeting at McKully-
Moiliili Library at 7:30 p.m.
- Mar. 29 (Sat.) Field Trip to Waianae Coast,
meet at Main Library, Punchbowl St.
at 7:30 a.m. Call Emily Gardner 545-2993

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