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NEST CONSTRUCTION OF THE HAWAIIAN CREEPER NEAR VOLCANO, HAWAII

by

Howard F. Sakai and C. John Ralph

Berger (1972) reports that little is known about the breeding habits of the various races of the Hawaiian Creeper (*Loxops maculata*). We report here for the first time, the details of a pair of Hawaiian Creepers constructing a nest.

Creeper nests were collected on Oahu in 1901 and on Molokai in 1907 by W. A. Bryan (1905, 1908). In 1969, C. R. Eddinger (1972) found the first creeper nest on Kauai. In 1971, C. van Riper III (1972) discovered the first Maui Creeper nest. Although Perkins (1903) may have been the first to find a nest of the now endangered Hawaii Island race, referred to as the Hawaii Creeper (*L. m. mana*), he failed to describe the nest except to say it resembled an 'Amakihi (*Loxops virens*) nest, contained a single nestling, and was built in an 'ohi'a (*Metrosideros collina*) tree. Seventy years later, another nest of this race was found on February 8, 1976, by J. M. Scott (pers. comm.). The nest was 11 m up in a dead 23 m snag of a koa (*Acacia koa*) tree, and sheltered between some loose bark and the trunk. Scott observed a pair of creepers carrying nesting material to the nest. Three days after discovering the nest, it was checked again, but had been abandoned by the birds.

OBSERVATIONS

On January 3 and 4, 1978, a pair of Hawaiian Creepers were observed actively constructing a nest in a koa tree at Keauhou Ranch, near Volcano, Hawaii, at 1760 m elevation. The tree was in an open canopy, 'ohi'a-koa forest with an understory ofnaio (*Myoporum sandwicense*), ohelo (*Vaccinium* sp.), and grass. This area has been extensively logged and subsequently grazed.

Nest Placement

The nest was in the fork of a small (3 cm diameter) horizontal dead branch 13 m up in a 19 m high koa tree. The tree had a diameter at breast height (d.b.h.) of 106 cm and an average canopy width of 23 m. The nest was located on the west side of the tree, about 12 m from the trunk and 4 m inside the canopy edge. A cluster of green koa phyllodes formed a droopy shelter above the nest, probably concealing it from above. The nest branch was covered profusely with a mat of lichens about 8 cm deep. The nest itself was made primarily of lichens and thus was well camouflaged, except for some twigs protruding from its outer wall. Its outer rim was about 4 cm high.

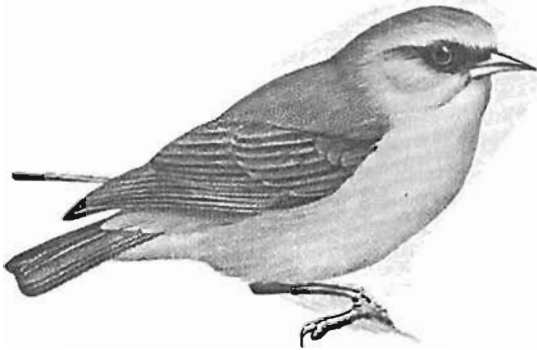
Creeper Behavior During Nest Construction

The nest was observed for 99 minutes after being found on January 3. Two creepers visited the nest 23 times (Table 1), spending a total of 5 minutes 35 seconds in nest building (\bar{x} = 14.6 seconds/visit). Because the Hawaii race of the creeper is not markedly sexually dimorphic in color, it was impossible to determine the sex of either of the birds. On January 4, during 264 minutes of observation, the pair visited the nest 10 times, spending 5 minutes 18 seconds in nest construction (\bar{x} = 31.8 seconds/visit).

The nest was observed from a distance of 14 m for a total of 363 minutes before it was abandoned by the birds. Subsequently, an additional 340 minutes were spent in the area in a futile attempt to locate a new nest. The abandoned nest was inaccessible so was not retrieved.

On January 3, on five separate visits to the nest, a creeper quivered its wings and body. Six quivering bouts were observed on January 4. During these bouts, the creeper was in the nest with its wings spread out, body quivering, and usually with the tail cocked up. This quivering of the body could have functioned to press the nesting material down as well as molding the central cavity.

Also on January 3, a creeper was observed working nesting material into the nest when another creeper with a twig in its beak flew directly to the nest and deposited it before flying off. No interactions took place. A few minutes later the same thing happened, a creeper depositing a twig while the other was working on the nest. This time, however, both birds flew from the



Adult Hawaii Creeper (taken from: Scott, Conant and Pratt. 1979. *Field identification of the Hawaiian Creeper on the Island of Hawaii*. Western Birds 10: 71-80; Painting by H.D. Pratt.)

nest, chasing each other. They were seen about 15 m away, fluttering in midair as they grappled a few seconds, and then plummeting out of sight into a koa canopy. Although visual contact was lost, the foliage shook and many vocalizations were heard for several seconds. Both birds, still chasing each other, then flew out of sight. Although this may have been some form of courtship flight, it appeared to be an agonistic encounter. The first visitor may have been a mate and the second an interloper.

An interspecific encounter was observed on January 3, when a creeper working in the nest chased a female 'Akiapola'au (*Hemignathus wilsoni*) that was foraging on a dead koa twig, 1 1/2 m above the nest site. The creeper pursued it emitting rapid, harsh calls. No contact was made. The pursuit continued for about 10 m before the creeper returned to the nest to resume construction.

NESTING MATERIAL

Spider Webs

Creepers obtained spider webbing for their nests from spider egg casings extracted from 'ohi'a leaves and koa phyllodes. In three separate observations, a spider egg case was plucked from a koa phyllode and brought to the nest. On January 3, a creeper was observed with an 'ohi'a leaf in its beak. After grasping the leaf in its claws and twice probing at it, the bird dropped it and flew off. When retrieved, the leaf had one-half of a spider egg casing on the underside. Some webbing still remained on the case.

Indirect evidence also pointed to the use of spider webs in nest construction. In 18 of the 23 total visits to the nest by the creepers, no visible nesting material was brought. During 14 of these visits, however, head bobbing bouts were observed, as if the birds were working material into the nest. These head bobbing bouts suggested to us that the creepers were working spider webbing into the nest to hold lichens in place.

In three separate observations after probing several times at an 'ohi'a leaf, a creeper took them to the nest. This may indicate that the leaves contained spider webbing. These leaves probably remained in the nest for use as nesting material; in van Riper's (1972) analysis of material in a Maui Creeper nest, leaves and leaf skeletons of 'ohi'a were found.

Twigs

In eight different observations, creepers were observed bringing twigs to the nest. On one occasion, a creeper worked a twig into the nest and after some body and wing quivering, hopped and flew to a dead koa twig (about 6 cm long and 5 mm wide) and made two unsuccessful attempts to break it off.

SUMMARY AND DISCUSSION

A nest of the Hawaii Creeper was found near Volcano, Hawaii, in January 1978, under construction by a pair of birds. The nest was built in a fork of a horizontal branch of a koa tree. Another nest of the Hawaii Creeper found in 1976 was wedged behind loose bark, also in a koa tree. This difference in placement of nests suggests that creepers may use a variety of nest sites. The nesting material consists of lichens, twigs, and possibly 'ohi'a leaves. Spider webs were apparently used as an

Table 1. Visits of Hawaiian Creepers to Nest Site site

Date	Time of observation	Bird visits
Jan. 3	1124* - 1200	3
Jan. 3	1300 - 1410	20
Jan. 4	0956 - 1100	0
Jan. 4	1100 - 1200	9
Jan. 4	1200 - 1300	1
Jan. 4	1300 - 1420	0**

* Time of nest discovery.

**Heard creepers 16 times, singing at distances ranging between 20-40 m.

adhesive. Use of surrounding lichen growth in the construction camouflaged the nest well. Hopefully, the observations reported here will assist others in locating more creeper nests so that a more detailed breeding biology of the Hawaii Creeper can be obtained.

Acknowledgments

We thank especially Myron Thompson, William Stayton, and William Rosehill of the Bishop Estate for permission to work on Keauhou Ranch. We also thank Winston Banko, Carol Pearson Ralph, J. Michael Scott, and Charles van Riper III for their helpful comments on this manuscript.

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FIRST RECORD OF THE WARBLING SILVERBILL ON LANAI

by Lawrence T. Hirai

The Warbling Silverbill (*Lonchura malabarica*) is a small-sized finch native to Africa. It was first reported in the State on the island of Hawaii in 1974 (Shallenberger 1974, Berger 1975). Since then an apparently established population was found at Ulupalakua, Maui in December 1978 (Walters 1979).

On August 24, 1979, I discovered a small number of Warbling Silverbills in the coastal kiawe forest (*Prosopis pallida*) at the northeastern end of the island of Lanai (Fig. 1). This species has heretofore not been reported from Lanai. Near Halepalaoa Landing I observed four adult birds in a single flock, feeding on seeds alongside the road. They resembled silverbills that I have seen on the island of Hawaii. They were grayish above and lighter below, with the outer primaries and tails a darker gray-brown. Their bills were blue-grayish. I also heard the high-pitched calls of two birds in a kiawe tree near the flock and three others about a half mile to the southeast. I found no nests and noticed no breeding behavior. I surveyed this side of Lanai by driving along the road between Keomuku Highway and Naha but only encountered silverbills in the above area.

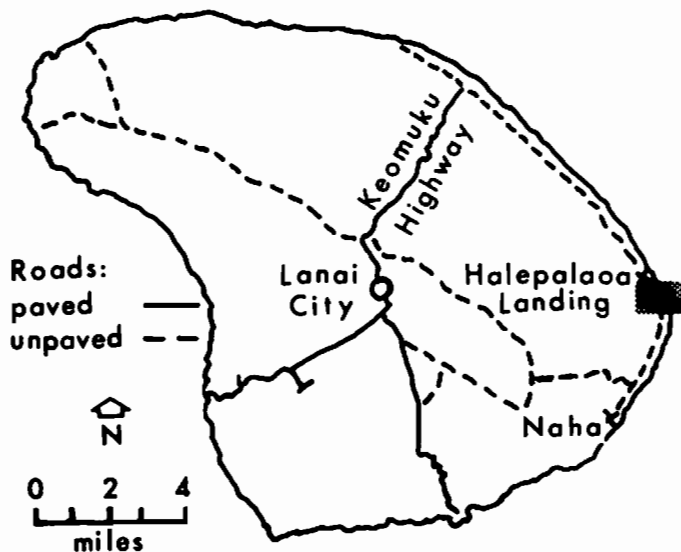


Fig. 1. Map of Lanai and Halepalaoa Landing, site of silverbill observations.

It would seem that these birds were from the Maui population. Only eight miles separate Lanai from Maui, and Halepalaoa Landing appears to be a logical landing site for arriving Maui silverbills. Because of the small numbers that I found, their apparently restricted distribution, and their absence from the area during surveys by the author in 1975 and 1976, this species is probably a very recent addition to the avifauna of Lanai, possibly within the past year.

This work was conducted through support provided by the Hawaii Division of Fish and Game. I thank the many persons who kindly provided assistance, with special thanks to Ronald L. Walker, Meyer Ueoka, William Kwon, Peter Connally, Patrick Conant and Sam Shin. Ronald Walker, David H. Woodside, Charles van Riper, III, C. John Ralph, J. Michael Scott and Timothy A. Burr kindly commented on the manuscript.

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UNIVERSITY SPONSORS ZOOLOGY SYMPOSIUM IN APRIL

The Zoology Department of the University of Hawaii will be holding the 5th Annual Albert L. Tester Symposium this April 10 and 11th. All members of Hawaii Audubon Society are invited to attend.

The symposium runs for two days; two morning sessions and one afternoon session are devoted to research talks of approximately 15 minutes given by upper division undergraduates and graduate students in the biological sciences at Manoa. The second afternoon session is largely devoted to a talk by the invited speaker. This year the Department's guest is Dr. Gareth Nelson of the American Museum of Natural History in New York. His interests are in the areas of zoogeography, and the evaluation and systematics of fishes. He is a past-editor of Systematic Zoology.

TUFTED PUFFIN FROM LAYSAN -- FIRST OCCURRENCE IN THE TROPICAL PACIFIC

by Roger B. Clapp and J. Brent Giezantanner

On 13 April 1977 Giezantanner found the remains of a puffin lying on an exposed mud flat between the north pool and the central part of the lagoon on Laysan Island, Northwestern Hawaiian Islands. The remains consisted of a skull with most of the rhamphotheca intact and about four inches of the vertebral column. The feathers had worn or rotted away except for a small patch on the hindneck. The specimen (USNM 576074) proved to be a Tufted Puffin (*Fratercula cirrhata*) and the number, size, and depth of the rhamphothecal sulci strongly suggest that it was an adult. Too few feathers remained to identify any specific plumage that might indicate the season in which the bird died.

Alcids are extremely rare in the tropical or subtropical waters of the Pacific. There are records from this area for only two other species, the Horned Puffin (*Fratercula corniculata*) and the Parakeet Auklet (*Cyclorhynchus psittacula*) (Fisher, 1965; Robbins, 1966; Clapp and Woodward, 1968; Woodward, 1972) all from the Northwestern Hawaiian Islands and all apparently part of a "wreck" that occurred during the winter of 1962-63. The number of individuals involved in this wreck is unknown but must have been relatively large because not less than 21 puffins and several auklets were found at four localities (Kure and Midway Atolls, Pearl and Hermes Reef, Laysan Island) that span a distance of about 380 nautical miles. No other Tufted Puffins were found during the winter of 1976-77 or subsequently either on Laysan or the other islands of the chain, three of which were continuously occupied by observers. Thus, if a wreck occurred during the winter, it seems likely that it was much smaller than the one in 1962-63.

The Tufted Puffin breeds across the north Pacific, south in the eastern Pacific to Anacapa Islands off southern California (Small, 1974) and in the western Pacific to eastern Hokkaido in northern Japan (O.S.J., 1974). Largely resident, it has wandered south to San Nicolas Island, California (A.O.U., 1957), and to Honshu, Japan (O.S.J., 1974). The record from Laysan thus represents not only the first report of the Tufted Puffin in the tropical Pacific but also the southernmost record of its occurrence.

Acknowledgments

We thank Wayne A. Hoffman for comments on the specimen and Richard C. Banks and Richard L. Zusi for comments on the manuscript.

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USSR, Asia, Africa, Pacific area	10.25

1979 HONOLULU CHRISTMAS BIRD COUNT

by R. L. Pyle

A large team of observers, aided this year by normally good Hawaiian weather, found a record high number of birds on the 36th annual Honolulu Christmas Bird Count on December 16, 1979. An even 50 participants counted 18,909 birds, topping the previous high total of 16,393 reported in 1976. The 55 different species on this year's Count equalled the all time high species total reached in 1976 and again in 1978.

The large overall total this year resulted from higher counts of most of the common landbird species, which in turn reflects the increased observer counting time. Counters spent 130 party-hours in the field, compared to 102 last year and under 100 in most prior years. Ninety-seven party-hours were spent in forests, parks, and residential areas compared to only 66 hours in 1978. Especially large increases in counts of Red-whiskered Bulbul (118 vs. 13 last year) and Java Sparrow (515 vs. 141 last year) probably indicate increasing populations of these species within the Count area. Shammas and both cardinal species also showed notable gains.

Most heartening were the large totals of native Hawaiian species associated with good blooming conditions in the mountains. The 182 'Amakihi was a record high, while the 243 'Apapane were more by far than in any year since the 1950's. And an 'I'iwi studied well on Kapalama Ridge by Jaan Lepson and Dan and Gyhslaine Vitiello was the



Acop Waahila Ridge--Marilyn Milberger, Greg Fulkerson and Norris Heathorne list 'Amakihi.

prize find this year. Since 1952, only once (in 1962) have 'I'iwi been found on the Honolulu count. Another most unexpected bird was a Marsh Hawk watched by Rob Shallenberger and Eric Knudtson as it foraged over Kawainui Marsh. Marsh Hawks have been seen in Hawaii only three or four times previously, and never before on a Honolulu count. Among the waterbirds, fewer ducks were found this year, including only 14 Koloa (Hawaiian Duck) compared to 26 last year. The Red-footed Booby count at Kaneohe MCAS was also down.

Escaped cagebirds observed this year by the Count participants included 28 feral Mallards, a flock of 18 Indian Ring-necked Parakeets in Waimanalo, 7 Red-crowned Parrots and a Yellow-headed Parrot at Kapiolani Park, a weaver (probably Napoleon Weaver) in winter plumage also at Kapiolani Park, and 2 Indian Hill Mynas at Lyon Arboretum. These species have not established viable breeding in the wild, and thus cannot be included on the official Count.

Notes on Less Common Species

Green-winged Teal. Fine drake observed well by Ron Walker party at Kaneohe MCAS. Only the 2nd occurrence on the Honolulu Count, although the species is regular in winter in small numbers elsewhere on Oahu Island.

Marsh Hawk. Watched for 6 minutes by Rob Shallenberger party while it foraged over Kawainui Marsh. Female plumage, typical shape and foraging behavior, prominent white rump patch, all observed at several hundred yards distance with binoculars and zoom scope in good light. Observers are quite familiar with this species on the mainland. First record for the Honolulu Count, and fewer than 5 prior records for the state.

Western Gull. The same individual, now in full adult plumage, that has been seen regularly throughout 1979 at Paiko Lagoon by numerous observers since it was first discovered on last year's Christmas Count. Black eye and pink legs distinguish it from other Pacific dark-mantled gulls.

Caspian Tern. Probably the same individual that was first seen on Oahu last January, and resident since March at Kaneohe MCAS. Adult in winter plumage, observed by Ron Walker party at KMCAS. This is the first and only individual of this species recorded in the state.

Gray Swiftlet. Seen by Frank Howarth on Halawa Ridge near the caves in Halawa

Valley where nests of this species were found in 1978. Identified by shape, color and flight during a quick glimpse lasting a few seconds as it flew past the observer. Releases of this species were made on Oahu in 1962 and 1965 (none since). Species is very rarely seen.

'I'iwi. Seen well by Jaan Lepson party on two occasions totaling 15 minutes, near 2000 ft elevation on Kapalama Ridge. Bird was in the same trees with many 'Apapane, providing ready comparison of voice and plumage. Bill, plumage and white wing spot seen well. Distinctive voice noted. Full details submitted. The species is very rare on Oahu and is a real find for the Honolulu portion of the island.

Sectors Covered

- 1 A-Aiea Trail: John Obata, Susan Schenk
B-Halawa Ridge: Omer Bussen, Frank Howarth
C-Moanalua Valley: Lorin Gill, Arnold Ikawa
- 2 A-Sand Island, Salt Lake, Ft. Shafter, Nuuanu, Moanalua Park, Keehi Park: Peter Donaldson, Jack and Alice Mitchell, Jim and Fritz Merrihew
B-Kapalama Ridge: Jaan Lepson, Dan and Ghyslaine Vitiello
- 3 A-Makiki Valley, Tantalus and Round Top Drives: Larry Hirai
B-Manoa Cliffs Trail: Peter Galloway, Margit Anonsen, Haakon Hop
C-Pu'u 'Ohi'a Trail: Sheila Conant
- 4 A-Upper Manoa Valley: Sheila Conant, Maile Stemmermann
B-Wa'ahila Ridge, Woodlawn Trail: C.J. Ralph, Norris and Karen Henthorne, Marilyn Milberger, Greg Fulkerson
C-Pauoa Flats to Manoa Falls Trail: same party as 3B
D-Aina Moana Park, Punchbowl, Lower Manoa: George and Jean Campbell, Shirley VanCampen
E-Lyon Arboretum: Leilani Pyle
- 5 Kapiolani Park, Na Laau Trail: Michael Ord
- 6 Diamond Head Crater, Kahala, Paiko Lagoon: Michael Ord
- 7 Waimanalo, Bellows Field, Kaelepulu, Maunawili: David and Ulalia Woodside, Oscar Johnson
- 8 A-Lanikai: Peggy Hodge, Lee Hickok, Mary Grantham, Richard Macfarlane, Wendy Fitzroy
B-Kawainui Dike, Hamakua Canal, Kailua: Don and Doris Huddleston, Frank Conkey

con't	1	2	3	4	5	6	7	8	9	10	Total
Lavender Fire-Finch	-	-	-	-	4	-	-	-	-	-	4
Orange-checked Waxbill	-	-	-	-	-	-	-	-	10	-	10
Spotted Munia	13	47	16	35	-	-	16	105	64	40	336
Black-headed Munia	75	5	-	-	-	-	-	-	-	-	80
Java Sparrow	-	18	-	267	30	200	-	-	-	-	515
House Sparrow	11	292	-	302	90	100	55	118	302	267	1537
Saffron Finch	-	-	-	-	6	-	-	-	-	-	6
Red-crested Cardinal	4	56	-	54	85	-	29	26	98	46	398
Northern Cardinal	31	33	63	55	4	30	9	30	14	13	282
Yellow-fronted Canary	-	-	-	-	2	-	3	-	-	-	5
House Finch	42	99	58	139	56	-	2	47	1	10	454
No. of individuals	694	2533	588	2819	1501	497	732	2432	5933	1180	18909
No. of species	19	31	14	21	21	15	28	26	27	22	55

ANNUAL TREASURER'S REPORT 1979

<u>Assets</u>	<u>1 Jan. '79</u>	<u>31 Dec. '79</u>	<u>1979 Expenses</u>	
Checking Account	\$ 3,607.49	\$ 1,436.15	Contributions	
Saving Accounts:			Taylor Scholarship	\$ 450.00
General	18,725.51	10,120.70	Grants	839.74
Book	7,392.93	22,649.64	Science Fair	37.44
Savings Certificate	10,047.02	10,978.48	General Office	
Totals	\$39,772.95	\$45,184.97	Postage (office and book)	579.02
Balance: + \$5,439.86			Copying and Printing	443.89
			Telephone Calls	116.92
			Tripod	64.48
			Other Supplies	449.86
<u>1979 Income</u>			Excise Tax	72.03
Dues			Fees and Refunds	377.68
Local, regular		\$ 982.00	40th Anniversary Celebration	2,206.78
Local, life		800.00	Travel	
Joint from N.A.S.		3,777.50	Inter Island	124.00
Donations			Out-of-State (NAS Convention)	752.80
Wildlife Poster		600.00	N.A.S. Joint (from H.A.S.)	222.00
Other Contributions		490.14	Publications	
40th Anniversary Celebration		1,250.00	Wildlife Poster (6,000 copies)	1,487.84
Tax		5.83	Society T-Shirts	1,012.98
Postage		151.53	Pacific Birds Book	
N.A.S. Dues (through H.A.S.)		432.00	Paintings (12 @ \$400)	4,800.00
Savings Interest		2,050.53	Lawyer Fees	523.90
Publications			Other Expenses	3.60
Hawaii's Birds			'Elepaio (12 issues)	
Direct Sales		5,639.37	Printing	7,656.99
Distributor Sales		11,466.00	Postage	424.00
Guide to Hawaiian Birding		147.14	N.A.S. Labels, Plates	169.85
Field Checklist		35.50	Supplies	154.37
Preliminary Checklist		9.00	Total Expenses	\$22,942.33
Posters		20.50		
'Elepaio Back Issues		50.93		
Society T-Shirts		474.32		
Total Income		28,382.19		

Audit Committee: L.T. Hirai
N. Henthorne
C.J. Ralph

LIHUE, KAUAI, CHRISTMAS COUNT 1979

Areas	1	2	3	4	5	6	7	Total
White-tailed Tropicbird	-	-	-	-	1	-	-	1
Great Frigatebird	-	-	-	2	-	-	-	2
Cattle Egret	34	70	149	952	17	8	3	1233
Black-crowned Night Heron	2	2	4	-	6	-	-	14
Brant	1	-	-	-	-	-	-	1
Mallard	-	4	-	-	-	-	-	4
Hawaiian Duck (Koloa)	7	-	19	-	-	-	-	26
Pintail	-	-	44	-	-	-	-	44
Canvasback	4	-	-	-	-	-	-	4
Red Junglefowl	13	1	4	-	22	5	-	45
Ring-necked Pheasant	-	-	2	-	1	-	2	5
Com. (Hawaiian) Gallinule	20	-	14	2	8	-	-	44
Am. (Hawaiian) Coot	5	420	-	-	-	-	-	425
Am. Golden Plover	20	14	80	8	12	3	-	137
Ruddy Turnstone	18	-	7	-	-	-	-	25
Wandering Tattler	2	-	3	-	-	-	-	5
Black-necked Stilt	59	3	32	-	-	-	-	94
Rock Dove	12	-	-	-	-	-	-	12
Spotted Dove	16	1	40	19	32	6	-	114
Barred Dove	119	11	313	82	27	76	1	629
Barn Owl	-	-	-	1	-	-	-	1
Short-eared Owl (Pueo)	1	-	-	-	-	-	-	1
Mockingbird	-	-	-	9	2	1	-	12
Melodious Laughing Thrush	4	1	2	6	-	2	1	16
Shama	2	3	3	6	7	8	-	29
Common Myna	101	13	138	134	44	83	6	519
Japanese White-eye	36	13	43	41	92	34	-	259
Spotted Munia	25	-	123	3	5	24	8	188
Black-headed Munia	-	-	-	-	-	-	2	2
House Sparrow	20	-	21	29	10	88	-	168
Western Meadowlark	5	-	11	5	2	1	-	24
Red-crested Cardinal	1	-	-	1	-	3	-	5
Cardinal	9	2	25	12	19	21	2	90
House Finch	22	10	40	-	5	3	-	80
No. of species	26	14	23	17	18	16	8	34
No. of individuals	558	148	1537	1312	312	366	25	4258

Twenty-two observers on December 15, 1979 in five parties, including nine at feeders: Stuart Bradley, Brian Brown, Sophie Cluff, Zipporah Douglas, Bernice Fehr, Mary and Tony Guerrero, Lynwood Hume, Peggy Kai, Dorothy Kruse, Jack La Croix, Pearl Lockwood, Dan Moriarity, Maura Naughton, Tim Negle, Gil and Muriel Parfitt, David and Winona Sears (Compiler -- 190 Lulo Road, Kapaa, HI 96746), Virginia Siewertsen, Frances Sills, Reva Stiglemeier.

Areas covered:

- 1 Wailua River to north side of Lihue, including airport road and holding ponds west of Lihue to Wailua Falls.
- 2 Nawiliwili Harbor and Muleia Stream.
- 3 South side of Lihue to Knudsen Gap Road, including Waita Reservoir.
- 4 Omao Road, Koloa town and Poipu.
- 5 Pacific Tropical Botanical Gardens and two feeding areas in Lawai Valley.
- 6 Six feeding areas in Lihue.
- 7 One feeding area in Kalaheo.

KAWAINUI MARSH THREATENED

Many of those attending a November 20 Department of Land Utilization hearing regarding Kawainui Marsh felt that the overwhelming public response against a proposed subdivision bordering the marsh would insure the project's demise. Indeed, the DLU recommended strongly against granting a Shoreline Management Area permit for the project based on the public hearing. Similar opposition was raised by the State's Department of Planning and Economic Development and the Department of Land and Natural Resources.

Rather than act on this advice and deny the permit outright, the City Council chose to hold a "mini-hearing" on February 5. The Council sought additional guidance to resolve conflicting testimony regarding the potential impact of the proposed housing development on wildlife and historical resources. The developer chose, however, to temporarily withdraw his permit application rather than risk denial of the permit by the Council. He expressed his intent to meet with opponents of the project in an attempt to resolve conflicting "facts" and explore means to mitigate any unavoidable adverse impact of the project.

The Society, through its president Dr. Robert Shallenberger, has been involved in Kawainui issues for nearly a decade. We have lent our support to the Ad Hoc Committee for Kawainui Marsh in its efforts to see that necessary baseline studies are undertaken in the marsh and its watershed. Their objective is to develop a feasible management plan for the marsh's rich biological and cultural resources and to insure that a program for non-conflicting interpretive and recreational use of these resources is realized.

In large part as a result of the Ad Hoc Committee's efforts, the Department of Planning and Economic Development has recently organized a Kawainui Marsh Technical and Policy Advisory Committee, which held its first meeting in January. This new committee will develop a scope for multidisciplinary studies in the marsh ecosystem and ultimately direct the development of a workable management plan. Several agencies and public organizations are represented on the committee.

In the meantime, the Society will continue its efforts to prevent the proposed housing development project based on its anticipated impact on marsh ecology, cultural resources and future public use. We

are not confident that these impacts can be mitigated sufficiently to justify the housing project in the proposed location. The project would involve 764 homes on over 250 acres of sloping watershed that abuts the marsh and lies within a stone's throw of the best habitat for koloa, coot, gallinule and migratory waterfowl in the marsh. The adverse effects of sedimentation from earlier construction in the watershed has been documented during recent flood conditions in the marsh. Other anticipated effects are less well documented, but nevertheless justify intensive study before making an irreversible land use decision.

The marsh also suffers from an immediate management problem, for which the landowner (City and County of Honolulu) has ultimate responsibility. Encroaching emergent and floating vegetation have resulted in diminished use by waterbirds, and if left unchecked, will accelerate the further reduction of open water through the accumulation of organic matter and the filtering of stream-borne sediments. Although the City has agreed to pursue this problem, their progress has been agonizingly slow. The Society will continue to play a guiding role in correction of the immediate problems and development of long term management solutions. Participation by the membership in this effort is strongly encouraged. Anyone wishing additional information or willing to commit some time to this effort should contact Rob Shallenberger (261-3741).



An endangered Koloa (Hawaiian Duck), one of the threatened inhabitants of Kawainui Marsh.

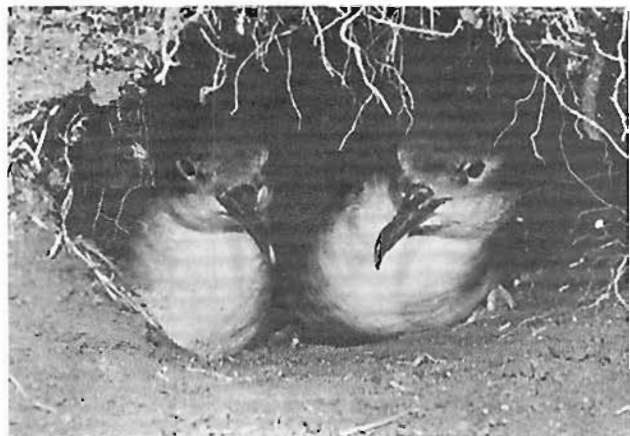
NAVY'S USE OF KAULA ISLAND DEEMED "IN CONFLICT"

The Fish and Wildlife Service, by letter on 22 January 1980, denied the U.S. Navy permission to kill nesting seabirds on Kaula Island during bombing activity. This ruling, pursuant to the Migratory Bird Treaty Act, comes less than a year after the Navy agreed to comply with a National Marine Fisheries Service Request to stop the use of live ammunition on Kaula from December through April. This was to avoid adverse impacts on Humpback Whales known to frequent the waters around the island. The FWS letter, from Mr. Jack E. Downs (Special Agent in Charge, Law Enforcement District #2), indicated that the "authority to issue Special Purpose Permits is based upon a sufficient showing of benefit to the migratory bird resource, important research reasons, humane, or other compelling justification." He noted that the proposed bombing "appears to be in direct conflict with these standards." Downs' letter went on to say, "We are unable to reconcile our commitment to protect migratory birds with a proposed activity that has such potential for mass destruction of these birds; specifically an activity for which there is no practical means of accurately assessing the destruction, thus precluding any meaningful limitations as a condition of the permit. The very nature of the activity 'practice bomb' does not lend itself to a disciplined controlled take of birds, nests, or eggs."

It is apparent, however, that the issue of bombing at Kaula is not settled for good. Bombing with inert ordnance will continue while Navy attorneys meet with Interior department officials in Washington to appeal the permit denial. Lt. Jamie Davidson, a Navy spokesman, has been quoted as saying that the Navy will seek the permit on the basis of "compelling justification." He also noted that bombing is restricted to the southern tip of the island where birds do not nest and that field studies at Kaula found no damage to birds. However, it should be noted that it was repeated observations of bombs exploding far from the target area on the southern tip that originally led scientists aboard the research vessel *Easy Rider* to threaten a court injunction to stop the bombing. Also, contrary to Lt. Davidson's quoted remarks, state and federal biologists did document seabird mortality directly attributable to bombing during a March 1979 survey of the island.

One astute observer has asked the question, if the Navy can successfully restrict its ordnance to the small southern target area, as they contend, then why do they have to practice?

The Society has a long history of documented opposition to the continued bombing of this valuable nesting island and is in strong support of the FWS denial of the Special Purpose Permit. The Navy has yet to fully assess the adverse impacts of this activity, or to make the complete results of preliminary surveys available for public review. A Navy EIA, dated 27 December 1976, concluded that there was "no evidence to indicate that military use was adversely affecting bird populations on the island," although it was not mentioned that no surveys prior to that date had been conducted during the peak nesting season of the most abundant bird, the Sooty Tern. The EIA also wrote off a list of potentially viable alternatives apparently with little evaluation. An Environmental Impact Statement has not been prepared and circulated for public review, and the Society feels that the failure to do so is in direct conflict with the National Environmental Policy Act. We will continue to oppose the misuse of this island through efforts in Hawaii and in Washington, with the assistance of the National Audubon Society. Any participation from the membership would be welcomed.



THE NAVY'S TARGET?? Nesting seabirds have been killed by "practice" bombs on Kaula Island.

ALASKA LANDS: THE SHOWDOWN IS NEAR

Conservationists' years-long battle to get strong protection for the Alaska national interest lands is now in the home stretch in Congress. The Alaska Lands Bill is expected to come to the floor of the Senate - the last big showdown for this legislation - in late February or early March.

Now is the time to urge our senators Matsunaga and Inouye to line up behind strong conservation positions in this showdown. To get this message to them, write or call their Washington or local offices or send a mailgram. Get your friends and neighbors to join you in the effort. Neither of our senators has taken a clear public position on this issue, but they will have to make commitments soon. Let them know we are watching and what we expect.

Two key versions of the Alaska Lands Bill are likely to be considered by the full Senate. S.9 is the industry-backed version which came out of the Senate Energy and Natural Resources Committee. It is seriously deficient in protection of wildlands and wildlife and is regarded by conservationists as unacceptable in its present form.

The Tsongas-Roth Substitute is the conservationist-backed bill. It is very similar to the bill resoundingly passed by the House last spring, with the addition of several amendments. Some of these are from the Energy Committee Bill, and some are concessions to the State of Alaska arrived at through negotiations with Alaskan government officials. The amendments do not seriously jeopardize protections of the conservation lands, but make the bill more acceptable to a broader range of supporters.

Although the number of acres in national parks, monuments, and preserve systems is nearly the same in the two bills, the degree of protection provided under S.9 is dramatically weaker. Wildlife refuge acreage is cut by nearly half in S.9, and very little of it is given the high protective status of wilderness, as it is in the Tsongas-Roth Substitute.

Although the native people of Admiralty Island have asked that clearcutting on their island not be allowed, S.9 permits it. The Tsongas-Roth Substitute does not.

Although the native people of northeastern Alaska have asked that the caribou calving grounds of the Arctic National Wildlife Range be closed to oil and gas exploration, S.9 leaves them open by withholding wilderness designation. The Tsongas-Roth Substitute does not, although it allows development of 95% of the high-value onshore oil

and gas areas.

Both bills provide protection for the U.S. Borax mining rights within Misty Fjords, but the Tsongas-Roth Substitute provides much stronger protection for the area.

In short, S.9 in its present form does not satisfy the interest of this and future generations in preserving the incomparable natural values of Alaska.

Urge our senators to throw their support behind the Tsongas-Roth Substitute, or if they will not, to support amendments to S.9 to increase the protections it provides Alaskan wildlands, wildlife, and scenic values.

Finally, urge our senators to vote for cloture in the event that the Alaska senators attempt to frustrate this legislation through filibuster.

Mary Hudson

TO TELEPHONE

Senator Daniel Inouye:

Honolulu. 546-7550

Washington. (202) 224-3121

Senator Spark Matsunaga:

Honolulu. 546-7555

Washington. (202) 224-3121

TO WRITE

Address both senators care of:

U.S. Senate

Washington D.C. 20540

TO SEND A MAILGRAM

Telephone 521-1818 (toll free) and dictate the message. A charge of \$2.50 for the first 100 words will appear on your next telephone bill.



Adult jaeger on nesting grounds in proposed Alaska wildlife refuge.

KAPA'A, KAUA'I CHRISTMAS COUNT

Laysan Albatross 3, White-tailed Tropicbird 8, Brown Booby 2, Red-footed Booby 800, Great Frigatebird 16, Cattle Egret 1012, Black-crowned Night Heron 22, Canada Goose 1, Mallard 2, Koloa (Hawaiian Duck) 30, Pintail 16, Red Jungle Fowl 23, Hawaiian (Com.) Gallinule 30, Hawaiian (Amer.) Coot 262, American Golden Plover 152, Ruddy Turnstone 4, Wandering Tattler 56, Sanderling 3, Hawaiian (Black-necked) Stilt 60, Rock Dove 3, Spotted Dove 79, Barred Dove 487, Barn Owl 2, Short-eared Owl 1, Skylark 1, Mockingbird 2, Greater Necklaced Laughing-Thrush 6, Melodious Laughing-Thrush 70, Shama Thrush 82, Common Myna 642, Japanese White-eye 393, Spotted Munia 187, House Sparrow 230, W. Meadowlark 35, Red-crested Cardinal 12, Norther Cardinal 196, House Finch 366.

Habitat coverage: 60% open grasslands, pastures; 15% reservoirs, ponds, streams; 10% residential; 10% forested; 5% taro patches. Dec. 22, 7:15 a.m. to 5:00 p.m. A.M. partly cloudy, P.M. intermittent light rain. Temp. 68° to 80° F. Wind NE, 5-15 m.p.h. Eleven observers in 6 parties, 2 at feeders. Total party hours 18.75 (4 on foot, 14.75 by car), plus 7 at feeders. Total party miles 109.2 (105.7 by car, 3.5 on foot).

Total 39 species, 5299 individuals. In count area count week but not seen count day: Dark-rumped Petrel, Manx (Newell's Shearwater) and Ring-billed Gull. Participants: Vernon Byrd, Clark Dalton (Compiler, RR1 Box 293-4 Kapa'a, HI 96746), Eleanora Dalton, Vivien Gilbert, David Hallett, Doris Hiramoto, Dan Moriarty, David and Winona Sears, Betty Seay, Grace Yoder.

AUDUBON MEMBERS ON KAUA'I MEET

There were 20 persons attending the first get together of Kauai Auduboners and friends on Saturday afternoon, December 8th, at the Kilauea Lighthouse on Kauai. A short talk by G. Vernon Byrd, Assistant Manager, Hawaiian Is. NWR, on the "recurrent residence" of shearwaters, tropic birds, and albatrosses was followed by a hike to see the latter in their precarious roosts on the rocks. (A few less hardy souls stayed back and listened to records of the songs of Hawaiian birds which had been brought along by Mrs. Vivien Gilbert of Princeville and Honolulu, who had organized the event.)

When the hikers returned, a pot luck supper was enjoyed by all. The buffet table was beautifully enhanced by a bowl of pink

roses brought by Ms. Jackie LaCroix. Following the dinner; Mr. Byrd showed moving picture films of his week on French Frigate Shoals, and then Mrs. Winona Sears showed slides of the birds of Kauai, most of which had been taken by Dr. David Sears. Mrs. Sears patiently briefed the up-coming "counters" on points to look for, etc., for which the neophytes present were especially grateful!

During the evening, Mrs. Cecily Trent of Kokee and Mrs. Doris Hiramoto of Kalihiwai joined the National Audubon Society, while others signified interest in doing so. A warm welcome to them!

Another get-together of Kauai Auduboners is tentatively planned for May --- probably closer to Kokee this time, with all due respect to our hardy travellers from there to Kilauea.

Vivien Gilbert

GLEANINGS FROM THE TECHNICAL LITERATURE

A GUIDE TO HAWK WATCHING IN NORTH AMERICA
by Donald S. Heintzelman
Pennsylvania State University Press, 1979

Here is an up-to-date book for hawk watchers in North America; a two-page appendix discusses the Hawaiian Hawk and stragglers that have been seen in the Hawaiian Islands. In field-guide style, the species' accounts discuss wingspread, length of bird, field recognition, flight style, voice, nesting, food, habitat, and range. Other chapters deal with hawk identification, field equipment, spring and fall migration periods, the mechanics of hawk flight, hawk migration lookouts by states, and Bald Eagle viewing areas. Both immature and adult birds are illustrated in flight. Appendices list raptor conservation organizations and sample field data forms. In short, the book contains everything that a hawk watcher needs to know.

A. J. Berger

MAHALO FOR CONTRIBUTIONS!

Many thanks to all the friends of H.A.S. who participated in our recent appeal for donations.

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ALOHA TO NEW MEMBERS

Joint with National: E. H. Bryan, Jr., Honolulu; Mary R. Bunch, Honolulu; Mrs. Jean Carmichael, Kailua; Mota S. Cason, Kailua-Kona; Ernie Clouse, Kihei; Virginia Crozier, Kailua; Bill Davis, Kula; Leal De Roza, Koloa; Ms. Cheryl Fecko, Agana; Miss Romy Fisher, APO San Francisco; Dr. Douglas R. Gillett, FPO San Francisco; A. J. Greene, Ft. Smith, Ark.; Mrs. Priscilla Harpham, Honolulu; J. R. Judd, Jr., Kaneohe; Cal Kammeyer, Kailua; T. Kawano, Hilo; Mrs. P. Luscomb, Honolulu; Larry Martin, Honolulu; Mrs. Masao Okumoto, Honolulu; Robert E. Rau, Honolulu; John A. Roney, Honolulu; R. Sutton, Honolulu; S/Sgt. Donald R. Swingler, FPO San Francisco; Carol Tenopir, Honolulu; and Lt. John Wortman, Wahiawa.

Local Regulars: David Anderson, Portland, OR; Patricia A. Avery, Honolulu; Stella Baughman, Honolulu; Mrs. John W. Bustard, Honolulu; The Lord Chatfield, Ont., Canada; Oliver Coker, Honolulu; Margaret Davis, Honolulu; Kelley Dobbs, Honolulu; Eleanor Fahrenwald, Kailua; Mr. & Mrs. J.D. Filson, Pahoa, HI; Laura M. Hoover, Honolulu; Kathleen Johannes, Kihei, HI; Pearl C. Johnson, Honolulu; Bert Y. Kimura, Mililani; Jo Ann Lee, Honolulu; Donald A. MacKay, Kailua, HI; Donna MacLaskey, Honolulu; Jonathan McRoberts, Honolulu; Joyce Miller, Kailua; Maude L. Nielson, Kailua, HI; Ed & Francis Pattimore, Lanai City, HI; Margaret Person, Kailua; Steve Sanders, Honolulu; Rebekah Seal, Pahoa; Leighton R. Taylor, Jr., Honolulu; Amadeo S. Timbol, Honolulu; Betty Anne Tribble, Honolulu; Shirley Van Campen, Honolulu; Gillian V. Viguers, Ewa Beach; Philora & Dorothy Wass, Kaneohe; and Stephanie Y. Wayne, Honolulu.

MARCH TALK ON MARINE ANIMALS

Dr. Michael Hadfield, whose interests include comparative embryology of marine invertebrates and the life history of molluscs, is a researcher and faculty member of the University's Zoology Department and Pacific Biomedical Research Center. He will speak on *Habitat Selection in Marine Invertebrates*. He is specifically interested in the factors that influence the whys, wheres and hows of settling by pelagic (free swimming) larvae of bottom dwelling marine invertebrates. His talk promises to reveal some little known facets of the behavior and ecology of these interesting creatures.

MARINE MAMMALS COURSE

Winter marks the arrival of the migratory humpback whale in Hawaii. For all of us in the islands, lay people as well as marine biologists, whalewatching becomes an occupation in itself. But this widespread public interest needs to be tempered with greater understanding.

The Waikiki Aquarium will present on March 7 through April 25, 7:30 to 9:30 on Friday evenings at a cost of \$30.00, the "Marine Mammals of Hawaii".

Dr. Edward W. Shallenberger, Director of Science and Education at Sea Life Park, will instruct this eight week course. The lectures are illustrated with slides and will include two field trips, one aboard the R/V Manta. For more information, please contact the Waikiki Aquarium, 2777 Kalakaua Avenue, Honolulu, HI 96815.

SEA GRANT MARINE ADVISORY PROGRAM

In connection with the Waikiki Aquarium, the UH Sea Grant College announces a Spring 1980 natural history lecture series.

- Mar 12 Native Insects, Snails and Spiders:
The Role of Mini-Wildlife
Steve Montgomery, Entomology, UH,
and National Wildlife Federation
- Mar 26 Hawaii's Unique Birdlife
Dr. Robert Shallenberger, U.S. Army
Corps of Engineers (Environmental
Section), and Hawaii Audubon Society

All the lectures will be held at 7:30 PM in the foyer of the Waikiki Aquarium, 2777 Kalakaua Avenue. They are open to the public, but a \$1 donation would be appreciated. For more information, please call 923-4725.

KAWAINUI MARSH SITE OF FIELD TRIP

On March 9, the Society field trip will be to Kawainui Marsh on Windward Oahu. Currently caught in the middle of a heated debate over development of watershed lands, Kawainui is the largest fresh water marsh in the state. It is home to both migratory and resident waterbirds. The marsh and its watershed are rich in cultural history as well. The purpose of the trip is to acquaint Society members and friends with this rich resource, as well as its problems and potentials. The trip around and into the marsh will be led by Society President, Rob Shallenberger, a long time marsh buff and Kawainui fan. Mrs. Muriel Seto, of the Congress of Hawaiian Peoples, will join in with the group to provide a perspective on the cultural history of the marsh and the potential for compatible use of the marsh's land and water resources. Come prepared to get a bit wet and muddy. Meet at the entrance to Kailua drive-in at 7:30 a.m. or at the Hawaii State Library on Punchbowl at 7:00 a.m.

WILDLIFE WEEK PHOTOGRAPHY CONTEST

In conjunction with National Wildlife Week (March 16-22), the Conservation Council for Hawaii is holding a photography contest focused on this year's N.W.W. theme, "Save a Place for Wildlife." Any amateur is invited to enter his best slides taken in Hawaii in any of the following categories: (1) animal life, (2) plant life, (3) wildlife habitat conservation. Each slide should be labeled with the photographer's name.

The competition program will be held on Friday, March 7, 7:30 p.m., at the McCully-Moiliili Library. Slides will be registered at the beginning of the program and returned at the end. Any questions can be directed to Peter Galloway at 947-4045.



"Mamane in Mourning" by Debby Ward was taken on a foggy day in Mauna Kea's sheep-devastated forest.

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HAWAII AUDUBON SCHEDULE OF EVENTS

(for details, see inside back page)

- Mar. 3 (Monday) Board Meeting at Anita Manning's home, 1617 S Beretania St. (946-8131). All members welcomed - 7 pm.
- Mar. 9 (Sunday) Field Trip to Kawainui Marsh to view waterbirds and old Hawaiian cultural practices in the area. 7 am at the State Library on Punchbowl or 7:30 at the Kailua Drive-in. Leader Rob Shallenberger (261-3741).
- Mar. 17 (Monday) Regular meeting on *Habitat Selection in Marine Invertebrates* by Dr. Michael Hadfield. At the McCully-Moiliili Library, 2211 S. King St. at 7:30 p.m.

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HAWAII AUDUBON SOCIETY
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