

# 'ELEPAIO

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For the Protection of  
Hawaii's Native Wildlife

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## BARN OWLS PREY ON BIRDS IN HAWAII

by G. Vernon Byrd and Thomas C. Telfer

The Barn Owl (*Tyto alba*) was introduced to Hawaii in 1958 from zoo stock in California and Texas (Tomich 1962). Initial releases were made on the Islands of Kauai, Oahu and Hawaii. Later releases were made on these same islands and on Molokai (Berger 1972). Subsequently Barn Owls became established on all the release islands, and they apparently colonized Maui and Lanai, since they are now found on those Islands (M. Ueoka, pers. comm.). Barn Owls have also been seen on Niihau Island (B. Robinson, pers. comm.) and Kaula Island (R. Walker and the authors, unpub. data).

Summarizing his and other studies in the continental United States, Walker (1978) considers the Barn Owl a nocturnal bird feeding almost exclusively on rodents. Sprunt's data (1955) agree with Walker, and Bent (1937) indicates rodents are most commonly taken, but he reports one example of Barn Owls feeding extensively on the Leach's Storm Petrel (*Oceanodroma leucorhoa*).

Tomich (1971), reporting on a detailed food study on Barn Owls in Hawaii, recorded remains of Black Rats (*Rattus rattus*), Polynesian Rats, (*R. exulans*), and House Mice (*Mus musculus*) in owl pellets from two locations on the island of Hawaii. Tomich stated that Barn Owls could probably not have been successfully introduced to Hawaii if rodents had not been present. Baker and Russell (1980) found only Roof Rats and House Mice in pellets found at Hawaii Volcanoes National Park. While rodents may be its primary food source, the Barn Owl also preys on birds, as indicated by the following annotated list of prey species:

Wedge-Tailed Shearwater (*Puffinus pacificus*). From 1977 to 1980 Barn Owls were heard almost nightly after dark at the shearwater colony near Kilauea Lighthouse on Kauai, and two to four Barn Owls were regularly seen after dark on power lines along nearby Kilauea Road. During this period, Byrd found ten shearwater chicks and four adults at Kilauea Point that had apparently been killed by owls. Typical owl-killed birds were headless, with the muscle and viscera stripped from the carcasses. The wings were generally left intact. A Barn Owl feather was found near a partially eaten chick, and in one case, a Barn Owl was flushed from a freshly killed chick.

Newell's Shearwater (*Puffinus puffinus newelli*). Eight apparently owl-killed birds have been found at breeding colonies on Kauai from 1978 to 1980. In one case, a feather of a Barn Owl was found nearby (J. Sincok, pers. comm.). Both Barn Owls and Short-eared Owls (*Asio flammeus sandwichensis*) in Hawaii have been observed at Newell's Shearwater colonies. Since both the shearwater and the Barn Owl are primarily nocturnal, this owl is the probable predator rather than the Short-eared Owl, which is basically diurnal.

Bulwer's Petrel (*Bulweria bulweria*). Byrd and Zeillemaker (in press) report evidence of owl predation on this petrel at Mokuiaae Islet, Kauai. The nocturnal nature of the Bulwer's Petrel near land makes the Barn Owl the most likely predator. On 19 June 1980, Telfer found the wings and skulls of 16 Bulwer's Petrels at a Barn Owl roost on Kaula Island.



Sooty Tern (*Sterna fuscata*). On 7 March 1979 a Barn Owl with one large chick was observed on Kaula Island by R. Walker and the authors. The wings and heads of two adult Sooty Terns were found at the nest, and another partially eaten Sooty Tern was found nearby. No Sooty Tern remains were positively identified in the owl caves during a trip made to Kaula Island in June 1980, despite the fact that large numbers of terns were roosting on the island.

Gray-backed Tern (*Sterna lunata*). At the same Barn Owl roost referred to above, the remains of six Gray-backed Terns were found in 1979, and seven other owl-killed birds were found elsewhere on the Island. On 19 June 1980, three Barn Owls were flushed from two separate caves on Kaula Island by Telfer. The wings and skulls of at least 50 Gray-backed Terns were found in one cave and a smaller number in another cave. In the 1979 visit to Kaula Island, Gray-backed Terns were outnumbered by Sooty Terns 167:1 (R. Walker and the authors unpublished data). In June 1980, the ratio of Sooty Terns to Gray-backed Terns on Kaula was 6.7:1 (R. Walker and T. Telfer, unpub. data). It is unknown why Gray-backed Terns were more frequently taken than Sooty Terns, despite the fact that Sooty Terns were more numerous. Polynesian Rats occur on Kaula Island, but only three to five pellets contained rat remains at the Barn Owl nest cave in 1979, and none was found in either of the two owl caves in 1980. The rats were not noticeably abundant, and the roosting terns were probably easier prey.

Brown Noddy (*Anous stolidus pileatus*). The stripped and headless remains of a single Brown Noddy were discovered on 7 March 1979 on Kaula Island by Byrd. No owl-killed noddies were found on Kaula in June 1980, despite an estimated 15,000 Brown Noddies roosting there (R. Walker and T. Telfer, unpublished data).

#### ACKNOWLEDGEMENTS

Dan Moriarty, John Maciolek, John Sincok, Ron Walker, and Meyer Ueoka contributed observations. Curtis Griffin, Quentin Tomich, C. J. Ralph, and Robert Shallenberger critically reviewed the manuscript. Mayleen Sheldon typed various drafts of the manuscripts.

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#### ALOHA TO NEW MEMBERS

Welcome to the following new members. The Society hopes that they will share our activities and help further the protection of Hawaii's wildlife.

Joint with National: Eugene Alper, Paia, Hawaii; C. Anderson, Wailuku; Mrs. Pauline E. Birkmire, Waipahu; Christopher L. Cowan, FPO San Francisco; Terry L. George, FPO San Francisco; Curtice R. Griffin, Pahoa; Eric Hyman, Honolulu; Lorenzo V. Lemi, Honolulu; Grace E. Livingston, Wailuku; D. K. C. MacKeeby, Honolulu; Mr. and Mrs. Ben May, Jr., Honolulu; R. K. McCurdy and Family, Hauulu; Gregor R. McDonald, Mililani Town; Dr. Robert A. Nordyke, Honolulu; Mr. and Mrs. George Peabody, Kaunakakai; C. Pierce, Honolulu; Mr. and Mrs. Stevens D. Robinson, Makakilo; Mrs. Kimiyo W. Sasaki and Family, Honolulu; Mr. and Mrs. John L. Sincok, Koloa; Mrs. Pauline Vinson, Honolulu; Linda Webb, Honolulu; Col. G. E. White, Jr., Honolulu; Frank R. White, Jr., Honolulu; Dr. Carl K. Yorita, Honolulu.

Oops! Last month we mistakenly listed some joint members as local. Don't worry! We know what kind of members you are.



## A BIRDING VACATION ON CHRISTMAS ISLAND

by Robert L. Pyle

The beginning of scheduled airline passenger service between Honolulu and Christmas Island provided an opportunity for eight outdoor enthusiasts to fly to that remote atoll in early January for six days of fabulous birding and fishing. Christmas is a very large atoll at 2° North latitude, about 1200 miles directly south of Hawaii. (It should not be confused with another island of the same name in the Indian Ocean off Australia.) Captain Cook discovered it on Christmas day in 1777, a few months before he first sighted Hawaii.

The island is included in the new country of Kiribati that was formed in July 1979 when the Gilbert Islands achieved independence from Great Britain. "Kiribati," pronounced Kee-ree-bahs, is the Gilbertese transliteration of "Gilberts." Christmas Island is about 1700 miles east of the Gilberts, and has always been linked to them administratively and commercially. Christmas has no indigenous people, but has a population of about 1000 Gilbertese settlers. Many of them work on the Kiribati-owned copra plantations.

Air Tugaru, based at Tarawa, the capital of Kiribati, provides local air service within the Gilberts area. But the long flight from Tarawa to Christmas and Honolulu is chartered to Air Nauru, which has been providing cargo service on this route for a number of years.

The inaugural passenger flight came up from Tarawa January 8th (1980), bringing a full load of dignitaries including the Presidents of Kiribati and of Nauru and numerous other government officials. This first flight was inauspicious in that it finally arrived at Honolulu an hour after the airport was reopened on the night of Oahu's worst wind and rain storm in many decades. But the return flight to Christmas and Tarawa departed the next morning, essentially on schedule, with many of the dignitaries and our group of eight on board.

Christmas Island is famous for its enormous populations of nesting seabirds. Fortunately, all wildlife on the atoll is protected by very strict local laws. Enforcement is one of the jobs of the Wildlife Conservation Officer. Corrently, this officer is Martin Garnett, a British civil servant and graduate wildlife biologist with prior experience as Wildlife Officer in the Seychelles. Martin and his two Gilbertese assistants also conduct a program to educate the Gilbertese residents

about the natural history of their island, particularly the birds. This includes teaching courses in the school, and presenting informational programs for adults. It also includes guiding and informational services for visiting wildlife enthusiasts who, it is hoped, will be coming to Christmas in greater numbers now that regular air service has been established. We were told that a brand new minibus would soon arrive on the island to be used specifically by wildlife tourists.

Bird Reserves have been formally established on four of the islands in the central lagoon. A fifth reserve occupies the northwest coastal area where hundreds of thousands of Sooty Terns come twice a year to nest. Entry to these reserves is strictly prohibited except when accompanied by a Wildlife Warden. The reserves protect the more important nesting colonies, but seabirds nest on most other islets and in many places on the main island as well.

The vegetation on Christmas Island is largely native. Dominant plants are the tree heliotrope (*Messerschmidia argentea*), beach naupaka and various grasses. 'Ilima grows in great profusion in several parts of the island. However, numerous introduced plants are well-established, particularly in the northern part of the atoll where most of the human activity has been concentrated. Large acreages in the northern part of the atoll and around the village of Poland in the southwest corner have been planted with coconut trees for copra harvesting.

A series of sand dunes along the southeast coast includes one that rises 12 meters, the highest point on the island. Otherwise, except for a few knolls several meters high and wide, no part of this 140 square mile island lies more than 3 meters above sea level.

In our group, Leilani and I, our children Ellen and Richard, and Hawaii Audubon member Mary Grantham were the "wildlife" tourists. The other three, Bart and Esther Eveleth and Ed Heu, had come for the fishing. We all stayed in the Captain Cook Hotel, which is one constructed like a typical U.S. motel. Meals there were excellent.

Our days were occupied with half-day trips by outboard motor launch to the Bird Reserve islands, and one all-day trip driving completely around the perimeter of the atoll.



On one of the motor launch trips about 25 spinner dolphins cavorted around us for 15 minutes. Some were spinning as they leaped out of the water.

Free time in the afternoons provided opportunities for swimming, snorkeling or special trips to mudflats to see migrant shorebirds. On Sunday some of us had a trip on the lagoon in a traditional Gilbertese sailing canoe. On a less windy day this would have included a stop at an islet for a picnic lunch.

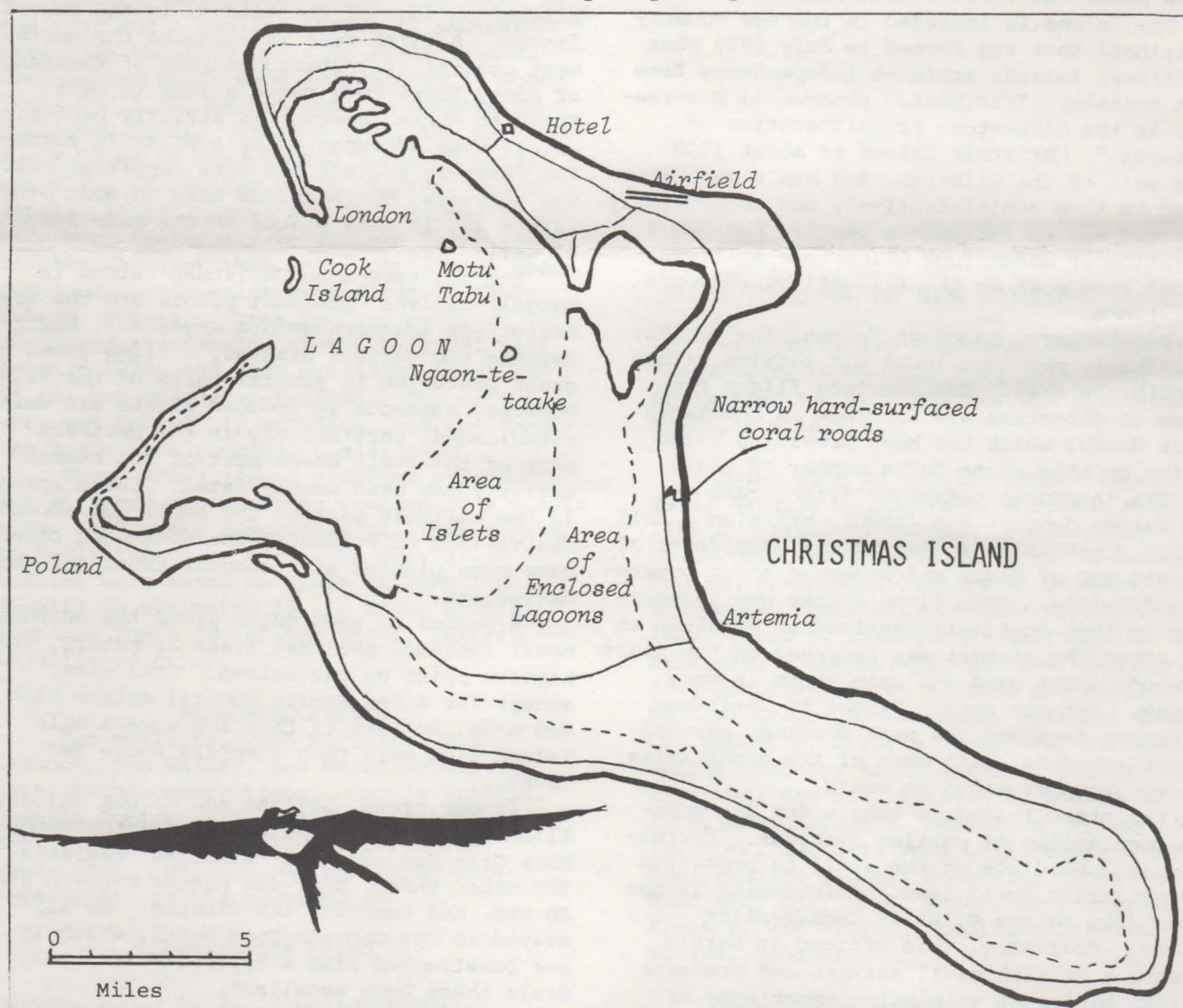
A leisurely, sometimes relaxing week on this primitive, isolated tropical atoll amidst vast numbers of fabulous seabirds was an absolutely unique experience for our family that we shall long remember.

Our arrangements on the island were ably handled by Patrick "Paddy" Lawrence, Natural Resource Development Officer, and by his assistant Tekiera Mwemwenikeaki, and Andrew Barty-King, Manager of the Captain Cook Hotel. Honolulu agent for visits to Christmas Island is Island Rainbow Air Tours, 3049 Ualea St. #801, Honolulu 96819.

#### BIRDS OF CHRISTMAS ISLAND

Christmas Island has only one indigenous landbird species, the Kokikokiko, or Christmas Island Warbler. This is a small insect-eater related to the old world warblers and now considered to be in the same genus with the millerbirds of Nihoa and Laysan. It occurs on several of the Line Islands. A few lori-

Map of principal localities on Christmas Island.



*Drawing by Marilyn Milberger*



keets, brilliantly-colored small parakeets, were brought some years ago from nearby Washington Island, but we did not see any during our visit. Christmas Island has no other introduced landbird species. A small number of migrant shorebirds appear in fall and winter, generally the same species that come regularly to Hawaii.

The seabirds, however, are the ubiquitous birds of Christmas Island. Phoenix Petrels, Christmas Shearwaters, Crested, Sooty and White Terns, various noddies and boobies, and Great Frigatebirds are in the air throughout the day, along the beach, above the hotel, and over the roads. Sooty Tern Nesting colonies are active twice a year, normally peaking in December-January and in June. Other species breed primarily in the northern spring and summer, although some nesting activity can be found in any month.

During our visit, Martin Garnett was our indefatigable escort and guide. He oversaw the logistics of our travels and provided the indispensable access to the Preserves. He was always willing and eager to share his knowledge of the birdlife, plants and other wildlife of the island. His total commitment to the protection of Christmas Island's bird colonies and their habitats helped us to understand and appreciate how unique and how fragile they are. Martin is a fun person to be with. We gratefully acknowledge his assistance and companionship, which made our experience there much more productive and enjoyable than it might have been.

We observed the following species of birds on Christmas Island during our visit January 9 to 15, 1980.

Phoenix Petrel. These were seen quite commonly flying around the hotel, and in most other parts of the island. On Motu Tabu there were many incubating an egg in a shallow depression under a bush. One was found on an egg at Cook Island.

Christmas Shearwater. This all dark shearwater, named for Christmas Island, was seen frequently in the air every day over the hotel and almost everywhere on the island. On Motu Tabu we found many sitting on eggs in shallow scrapes under low vegetation. Others were sitting in the open, some courting. They were also on the ground on Cook Island, but we did not find any nests or eggs.

Audubon Shearwater. This is probably the rarest of the nesting birds on Christmas Island. We saw perhaps a dozen on January 9 shortly after sunset as they flew in over a small lagoon northwest of Artemia. A few were seen to land on one of the islets. They are

smaller than a Phoenix Petrel, with much more rapid wingbeats mixed with periods of gliding.

White-throated Storm-Petrel. Small numbers nest on islets southeast of the main lagoon. We watched 25 or more during an hour's observation at the lagoon northwest of Artemia on January 9. They came in shortly before and after sunset, some landing on small islets close by. This generally dark storm-petrel has well-marked white underparts and a prominent white rump patch. Its tail is slightly notched in flight. While skimming low over the lagoon, they occasionally kick the surface of the water in a characteristic motion that may be related to their foraging behavior.

Red-tailed Tropicbird. On the island of Ngaon-te-Taake (which is Gilbertese for "nest of the tropicbird"), one of the Bird Reserves, we found 2 full grown chicks under *Messerschmidia* trees, and saw about 5 adults in the air overhead. An estimated 300 pairs nested on this islet in the summer of 1979, the largest nesting concentration in the atoll.

Blue-faced Booby. Several adults and a few subadults were on Ngaon-te-Taake January 11. About a dozen nesting birds were seen at scattered localities around the southeast peninsula on January 14. One had a large downy chick, one a medium-sized chick and the rest were probably on eggs or very small chicks.

Brown Booby. These were seen more frequently than Blue-faced Boobies, usually flying over the lagoon or along the shorelines. Several were seen in grassy areas of the southeast peninsula, possibly on nests.

Red-footed Booby. This booby, much more numerous than the other boobies, was commonly seen flying overhead or roosting in large *Messerschmidia* trees. A few nests with eggs and one half-grown chick were found on Ngaon-te-Taake, and many immatures were seen at Motu Tabu. Adults differ from the form resident in Hawaii in having uniform brown wings, but otherwise are white-plumaged.

Great Frigatebird. The frigatebird is the official symbol of Kiribati, and is featured on the national flag. We found it abundant throughout Christmas Atoll. As a heavy predator on Sooty Tern chicks, frigatebirds were always mingling with the terns in the air over colonies with chicks, but paid no attention to colonies where eggs had not yet hatched. Males with an inflated red gular patch were seen occasionally in flight or perched on low bushes. Two full grown feathered chicks were found on Ngaon-te-Taake. Up to a dozen frigatebirds, mostly subadults,



would follow close behind our small boat as we crossed the lagoon toward the southeast islets, occasionally diving at the trolling lure. Lesser Frigatebirds also have bred on Christmas Island in past years, but we did not see any on this trip. Later in February, however, Martin Garnett wrote in a note that he had seen some on the island.

Golden Plover, Ruddy Turnstone, Wandering Tattler, Bristle-thighed Curlew. These migrants were present in small numbers near ponds and shorelines. Plovers and tattlers were seen more frequently than turnstones and curlews. About 20 curlews, 30 tattlers, 1 turnstone, and 130 plovers including 97 in one loose flock, were scattered over a large mudflat a few miles northeast of London on January 11. We did not see any Sanderlings, which is the scarcest of the regularly wintering shorebirds.

Willet. One bird was watched carefully for 15 minutes on January 11 at the mudflat in the lagoon a few miles northeast of London. It was observed with binoculars at a distance of 50 meters as it foraged on the open flat with Bristle-thighed Curlews, Golden Plovers and Wandering Tattlers for size comparison. The black and white wing pattern showed prominently in flight. This may be the first reported occurrence of a Willet at Christmas Island.

Sooty Tern. Uncountable hundreds of thousands of these birds were nesting in dense colonies along the northwest and southwest coasts of the island, at the southeast peninsula, and on Cook Island. Most were on eggs, but chicks had hatched in some of the colonies. Another population comes to nest on Christmas in June, but Sooties are mostly gone during the spring and fall periods between nestings.

Gray-backed Tern. This species nests regularly in small numbers on Christmas Island during the northern summer season. We heard and saw several on January 9 near sunset flying overhead at the small lagoon northwest of Artemia. We saw no others during our visit.

Crested Tern. This large tern of the tropical western Pacific is resident in small numbers. We saw them regularly around London harbor, sparingly in the lagoon, and occasionally flying along the shorelines.

Blue-gray Noddy. This beautiful little noddy was most numerous on Cook Island, where we saw about 20 and found one old nest with an old egg. There were a few at Motu Tabu and Ngaon-t-Taake.

Brown Noddy, Black Noddy. Both noddies were widely distributed in small numbers, usually seen in flight or perched in low bushes. Browns outnumbered Blacks on Cook Island, but Blacks were more numerous on Motu Tabu. We saw no active nesting by either species.

White Tern. We found the unique and strikingly beautiful White Tern abundant on Cook Island and numerous on Motu Tabu. Otherwise, only a few were seen in flight over other parts of the island. Several nearly full grown chicks and an egg were observed on Cook Island, and on Motu Tabu a few were seen carrying a small fish or squid. But the bulk of the nesting occurs during the northern summer season. One of the exquisite and thrilling experiences of the entire trip was to stand on Cook Island with one or more White Terns hovering just beyond arm's reach, their immaculate white plumage seeming to flow in the bright sunlight against a deep blue sky.

Kokikokiko. The only native landbird species on Christmas Island inhabits *Messerschmidia* thickets in a few scattered localities. We saw them around the Captain Cook Hotel, and they may also be seen near the airfield and at other favored spots along the north rim of the island.

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Any stamps (especially commemorative and foreign) can help save the American Bald Eagle. The Florida Audubon Society saves stamps for resale to collectors to help fund the Society's raptor research and rehabilitation program. These stamps are collected through Audubon's bald eagle and birds of prey program which is directed by Doris Mager, the nation's best-known bald eagle advocate.

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## SHORT-EARED OWL PREYS ON WHITE TERNS

by Robert P. Schulmeister

The Short-eared Owl (*Asio flammeus*) is an occasional visitor to the Northwest Hawaiian Islands. There have been 2 sightings at French Frigate Shoals (Amerson 1971) and over 20 sightings on Kure and Midway Atolls (Woodward 1972). A single Short-eared Owl was regularly sighted on Tern Island, French Frigate Shoals between November 6, 1979 and February 4, 1980.

Polynesian Rats (*Rattus exulans*) and House Mice (*Mus musculus*) are the major prey species of Short-eared Owls (Tomich 1971) in Hawaii. Owl pellets from Kure Atoll contained only Polynesian Rat remains (Woodward 1972). Since no small rodents occur on any islands within French Frigate Shoals, the owl observed on Tern Island had to choose an alternate food source.

During the time that the owl was observed on Tern Island, the predated remains of 11 White Terns (*Gygis alba rothschildi*) were found. No other avian predators exist on Tern Island so I assumed that the terns were preyed upon by the Short-eared Owl.

Three of the carcasses were found at random locations. The other 7 were found within a 12 square foot area where the owl was often observed roosting on the ground. Remains of no other predated bird species were found despite the fact that over 1200 Black Noddies (*Anous tenuirostris melanogenys*), over 400 Brown Noddies (*Anous stolidus pileatus*), and varying numbers of Bonin Petrels (*Pterodroma hypoleuca hypoleuca*) and migratory shorebirds were present. Numbers of White Terns on Tern Island during this period did not exceed 100.

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U.S. Fish and Wildlife Service  
P.O. Box 87  
Kilauea, Kauai, Hawaii 96754



A Short-eared Owl on Tern Island on November 10, 1979.

Photo by Robert Schulmeister

## BACK ISSUES OF 'ELEPAIO AVAILABLE

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## THANKS FOR RARE BIRD PICTURES

The Rare Bird Documentary Photograph File was established in March 1977 as an archival repository for photographs documenting the occurrence of unusual birds in Hawaii (see 'Elepaio 37(9):101). A major purpose of the File is to encourage observers to take photographs of unusual birds that are not collected for preservation as scientific specimens.

Other pictures of resident birds whose occurrence need not be substantiated, but which show the bird clearly or document nesting or other behavior, are also much appreciated for the Society's Educational Picture Collection.

So, all you photographers who have pictures of unusual birds stored in your closet, or who are setting out to find unusual birds, think seriously of making these pictures available to the Society's Rare Bird File or Educational Collection. The Society can reimburse for the cost of duplicating pictures suitable for either purpose.

Through July 1980, 126 pictures had been placed in the Rare Bird File, and 13 in the Educational Collection. The Society is deeply grateful to the photographers listed below, and is happy to acknowledge their contributions.

### Rare Bird Documentary Photograph File:

George H. Balazs	- 2 (Steller Sea Eagle)
David Boynton	- 1 (storm-petrel)
Omer Bussen	- 7 (Ruff, Wilson Phalarope)
Nancy Butowski-Casey	- 5 (Short-tailed Albatross, albinistic Laysan and Black-footed Albatross)
G. Vernon Byrd	- 5 (storm-petrel)
Richard Coleman	- 1 (Bristle-thighed Curlew)
Norman David	- 1 (gull)
Peter Donaldson	- 30 (Curlew Sandpiper, Ruff, Bar-tailed Godwit, sandpipers, Glaucous-winged and Herring Gulls, Snowy Egret)
Gilbert S. Grant	- 12 (Gadwall, ducks, Bufflehead, Cattle Egret, Glaucous-winged Gull, Short-eared Owl)
Spencer Gushiken	- 1 (Laysan Albatross-Kauai)
Craig Harrison	- 1 (Short-tailed Albatross)

Reynold Larsen	- 15 (Hooded Merganser, duck, Black-bellied Plover, Western Gull)
Laurie MacIvor	- 3 (Black Tern)
Gary Means	- 1 (gull)
Jyrki Muona	- 2 (Laughing Gull)
Walter F. Nichols	- 2 (Emperor Goose)
Mark J. Rauzon	- 10 (Fulmar, teal, duck, Bristle-thighed Curlew, dowitcher, sandpiper, Slaty-backed Gull)
Jennifer Richardson	- 2 (Cattle Egret)
Ed Shallenberger	- 1 (jaeger)
Muriel Van Fleet	- 2 (Rothschild Myna)
Lester Walls	- 1 (Barn Owl)
John Walters	- 1 (Barn Owl)
Fred Zeillemaker	- 22 (Horned Grebe, Golden Eagle, Bar-tailed Godwit, Willet, sandpiper, Black-headed Gull)

### Educational Picture Collection:

Gilbert S. Grant	- 1 (White-tailed Tropicbird nest)
Norman H. Mellor	- 1 (Red Munia)
Timmy J. Ohashi	- 1 (Red-whiskered Bulbul nest)
John Walters	- 2 (Ōma'o on nest, 'Ākepa)
Fred Zeillemaker	- 8 (Gray Francolin, Green Pheasant, Greater Necklaced Laughingthrush, 'Ō'ō, Yellow-billed Cardinal)

R. L. Pyle

## NOTE TO CONTRIBUTORS TO THE 'ELEPAIO

All contributions concerning natural history and conservation are welcomed, especially those pertaining to the Pacific area. The Editorial Committee wishes to encourage material from the Pacific Islands, such as the Trust Territory, Guam, American Samoa, and other areas. Articles on all natural history subjects are solicited.

It would facilitate the processing and review of your contribution if it could be submitted typewritten and double spaced, although this is not a requirement. All articles of a scientific nature are sent out for comments to at least two reviewers familiar with the subject.

To insure proper handling and rapid publishing of your contribution, it should be mailed to the Editor: C.J. Ralph, 3467 Alani Drive, Honolulu, HI 96822.



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Scholarship Committee . . . . .	Sheila Conant, Robert Shallenberger, and C.J. Ralph

## TWO TOPICS FOR NOVEMBER:

REPTILES AND AMPHIBIANS OF HAWAII;  
ZOO BREEDING OF ENDANGERED SPECIES

Mr. Sean McKeown, curator of reptiles and amphibians at the Honolulu Zoo, will discuss two topics at the November program. He will present slides and discuss the natural history of Hawaiian reptiles and amphibians, and discuss captive breeding of endangered species in the Honolulu Zoo. Mr. McKeown came to Hawaii with experience of several other zoo programs, and has taken an active interest in breeding rare island herpetofauna at the Honolulu Zoo, which has long been noted for successful breeding of Galapagos Tortoises.

ALEWA HEIGHTS TRAIL FIELD TRIP  
FOR POSSIBLE 'I'IWI

The November 9 field trip will be a forest bird hike to a trail the society has not traversed on a formal hike for some years. Scheduling this field trip was prompted by Jaan Lepson's sighting of an 'i'iwi on this trail during the 1979 Christmas Count. The trail begins at the top of the Kamehameha Schools campus. The trail can be hiked as far as the Koolau summit, although some hikers may prefer to turn back sooner. There should be opportunities to see 'apapane, 'amakihi and 'elepaio, three native forest birds. Because this is a ridge trail, hikers should wear good shoes and bring rain gear. Lunch and water are also recommended. Please bring a car if you can, or plan to share gas costs. Meet on Punchbowl Street by the library at 7:00 a.m. Leader: Maile Stemmerman (949-3430 or leave message at 948-8617).

## MEMBERSHIP RENEWALS NOW DUE

Enclosed in this issue is a return envelope for dues payment of all local members. As you will note, dues are now \$ 6.00 annually for local members and subscribers. Please consider adding a donation to the Society in your membership envelope.

If you wish to become a National Audubon member and receive their magazine, please include a check for Joint Membership. This includes dues for both H.A.S. and National.

Your prompt payment of Local dues will save the Society money for reminders. Mahalo!!



# HAWAII AUDUBON SCHEDULE OF EVENTS

(for details, see inside back cover)

November 9 (Sunday). Field trip to Alewa Heights Trail. Meet at 7:00 a.m. on Punchbowl St. at the State Library. Leader: Maile Stemmermann (949-3430 or leave message at 948-8617).

November 10 (Monday). HAS Board Meeting at the home of Sheila Conant, 3663 Alani Drive, Manoa. Ph: 988-6522 or 948-8241.

November 17 (Monday). Regular meeting at the McCully-Moiliili Library, 7:30 p.m. Sean McKeown will speak on *Reptiles and Amphibians of Hawaii and Zoo Breeding of Endangered Species*.

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

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