

'ELEPAIO

Journal of the
Hawaii Audubon Society



For the Protection of
Hawaii's Native Wildlife

Rose-Ringed Parakeets Nesting in Hawai'i: A Potential Agricultural Threat

by: Peter W. C. Paton, Curtice R. Griffin, and Laurie H. MacIvor

Approximately 160 species of birds have been accidentally or intentionally released in the Hawaiian Archipelago since 1778. At least 58 of these species have established breeding populations on one or more of the islands (Berger 1981). We recently confirmed the nesting of the Rose-ringed Parakeet (*Psittacula krameri*) on the island of Hawai'i. This species, which is reported to be established on Kauai and O'ahu, is a potentially serious agricultural pest to Hawai'i if large populations are allowed to build up.

The Rose-ringed Parakeet, also known as the Ring-necked or Indian Green Parakeet, is native to India and Central Africa (Forshaw and Cooper 1977). The birds are approximately 40 cm in length, with a lime-green body, a 20 cm long tail, and a heavy parrot-like beak with a red upper mandible and a black lower mandible. Males have a rose-pink collar encircling their neck and a black line running from the bill to the eyes (Fig. 1).

Rose-ringed Parakeets are a common cage bird which is readily available for sale in Hawai'i. From 1978 to 1980, 7,435 individuals were imported into the United States by the pet industry (Nilsson 1980). Wild populations have become established in Virginia (Scott and Cutler 1972), Florida (Ogden 1972), southern California (Anon. 1975), Mauritius, Zanzibar, Egypt, Aden, Oman, Kuwait, Iraq, Iran, Hong Kong, Macao, and Singapore (Forshaw and Cooper 1977).

RESULTS

On 20 January 1981, while conducting an avian survey at the Mauna Loa Macadamia Nut Orchard (10 km south of Hilo, Hawai'i Island), PWCP and LHM sighted a single Rose-ringed Parakeet. We continued seeing solitary individuals, until 2 February 1981 when a flock of five was observed. It was learned from orchard employees that a pair of "parrots" frequented a lone 'ohi'a (*Metrosideros polymorpha*) in the center of the orchard. On 5 February, we discovered a male-female pair of Rose-ringed Parakeets perched in the 'ohi'a.

We continued periodic observations of the pair. Courtship behavior was noted in the first week of February with the birds preening each other and exhibiting the species' elaborate courtship display. The display consisted of the female spreading her wings while slowly moving her head from side to side, as the male strutted back and forth on the branch repeatedly raising one foot. This display centered around a small cavity, 13 m high in the 17 m tall 'ohi'a tree.

On 12 February, the male was seen one meter from the cavity entrance eating 'ohi'a leaves.

On 22 February 1981, CRG climbed the tree for the first time and found the female inside the cavity incubating 4 eggs. The eggs were 2 to 3 cm long and cream colored with light brown spots. Normal clutch size is 3 to 4 eggs, ranging from 2 to 6 (Forshaw and Cooper 1977). The external opening of the nesting cavity was 12 cm in diameter. A gently downward sloping ramp led from the external entrance to a small natural "room" in the center of the 'ohi'a tree. The internal cavity was approximately 15 cm high, 12 cm wide, and the



Fig. 1. Rose-ringed Parakeet on coffee plant.

Sketch by Helene Sides

back wall was 35 cm from the external opening. The floor of the room had been lined with ironwood (*Casuarina spp.*) needles, bark, and 15 pieces of clear cellophane ranging in size from 2 by 10 cm to 7 by 15 cm. The nearest ironwoods are about 1 km away.

The tree was climbed again on 3 March; one intact egg, two sets of egg shell fragments, and one newly hatched young were discovered. The young had no downy feathers and its eyes were shut. It apparently had hatched within the past two days. Forshaw and Cooper (1977) state that the incubation period for the species is 22 to 24 days, which would have placed the egg-laying date of this pair on/or about 9 February 1981.

On 9 March, one intact egg and one nestling were found at the nest; fragments of the other eggs were absent. The female was inside the cavity brooding the young. On 14 March, only the nestling was inside the cavity. One parent flew out of the cavity as the tree was being climbed. The nestling was about 9 cm long, with its primaries, secondaries, and body feathers just starting to protrude from its dark gray skin. When last inspected on 17 March, the nestling and female parent were inside the cavity.

One additional observation of the species on the island of Hawai'i was made on 23 March 1981. A single male was seen feeding in a corn field at the Waiakea Agricultural Station, 7 km northwest of the nest tree (Garth Spittler pers. comm.).

DISCUSSION

Although this is the first verified nest of any psittacid (parrot) in the Hawaiian Islands (Berger 1981, Pyle and Ralph 1981), there is strong evidence that Rose-ringed Parakeets have established breeding populations on Kauai and O'ahu. On O'ahu, they have been observed periodically for over 50 years. Caum (1933) reported occasional escapees, with one flock of five seen in Honolulu. Flocks of 6 and 3, respectively, were seen in Kapiolani Park in August and December 1975. According to Jack Throp, then director of the Honolulu Zoo, the birds had been there for several years (Robert Pyle pers. comm.). Parakeets, which are probably this species, are still reported in the Kapiolani Park area (R. Pyle pers. comm.). A flock of 12 to 15 Rose-ringed Parakeets has been reported in Waimanalo in a large grove of Ironwood for 5 to 6 years, but this flock has apparently dwindled recently (David Woodside pers. comm.).

On Kauai, Rose-ringed Parakeets were first reported in the summer of 1981 by corn growers in the Hanapepe Valley, where "several birds" were seen. They were also reported last summer near Kukuioolono Park (5 km east of Hanapepe) (Tom Telfer pers. comm.). In May 1982, Tom Telfer (pers. comm.) observed a flock of 6 flying in a residential/pasture area 1 km east of Kukuioolono Park. An estimated 25 birds now reside in the Hanapepe area, and another 50 to 100 Rose-ringed Parakeets are in the town of Kalaheo (Tenbruggencate 1982). One Kalaheo resident complained the parakeets were eating his fresh lychee and another resident was issued a permit to destroy parakeets causing considerable damage to his commercial vegetable crop (T. Telfer pers. comm.).

In their native range, Rose-ringed Parakeets inhabit lightly timbered areas, cultivated farmlands, and urban areas. Typically, they form small flocks, but may congregate in the

thousands at a large food source. They feed on seeds, berries, fruits, blossoms, nectar, and are serious pests in orchards, coffee plantations, and croplands (Forshaw and Cooper 1977). They are considered one of the worst avian pests to agricultural and horticultural interests in their native habitat, especially to fruit and grain crops (Anon 1975).

In 1975, due to recent nesting records of three exotic species of parrots (including the Rose-ringed Parakeet) in California, the California Department of Agriculture hypothesized on the potential impact of a well-established population of Rose-ringed Parakeets to California's agriculture industry. Based on the retail value of food crops Rose-ringed Parakeets are known to eat which are grown in California, the Dept. of Agriculture estimated the potential losses could reach \$735,000 annually (Anon. 1975). This was based on their damaging 0.1 percent of crops potentially consumable by Rose-ringed Parakeets. There was no estimate on the number of birds needed to cause this amount of damage.

If this same damage estimate, 0.1 percent, were used for Hawai'i, potential annual crop losses could reach \$50,000 (Table 1). This is based on different crops than those used in the California estimate.

We recommend that the Hawaii State Department of Agriculture, Quarantine Section, take the following steps to control the proliferation of Rose-ringed Parakeets in Hawai'i: (1) Rose-ringed Parakeets be prohibited entry into the Hawaiian Islands (Policy PI-9, Hawaii Department of Agriculture). (2) Public sale of Rose-ringed Parakeets be prohibited within the state of Hawai'i. (3) Efforts be made by the proper State authorities to capture or eradicate all Rose-ringed Parakeets in the wild in Hawai'i.

It is the opinion of Tom Telfer, Kauai State wildlife biologist, that the eradication of Rose-ringed Parakeets on Kauai would not be feasible due to their large population size. However, it still would be possible to control their population growth. Eradication of the species is probably still possible on O'ahu and Hawai'i due to the limited size of their populations on both islands. Strict regulations should be enacted to prevent Rose-ringed Parakeets from making it to Maui County.

Table 1.-Annual retail value of various crops grown in Hawai'i potentially consumed by Rose-ringed Parakeets.

	Dollars
Papayas	12,531,000.00
Guavas	865,000.00
Coffee	4,480,000.00
Orchids	4,400,000.00
Lychee	78,000.00
Sweet corn	308,000.00
Macadamia Nuts	27,720,000.00
<i>Total</i>	<i>\$50,382,000.00</i>

Data from Hawaii Agricultural Reporting Service, June 1982.

The most important recommendation, in our opinion, is the prohibition of entry of Rose-ringed Parakeets into the state. The state Department of Agriculture should re-evaluate its bird importation policy placing emphasis on *preventing* new introductions, especially of detrimental species, *before* they become established. The eradication of a species after it has become established can be a virtually impossible task.

ACKNOWLEDGEMENTS

Funds for this study were provided through a grant from the Chevron Chemical Corporation to Hawaiian Ecosystems Research. Tom Telfer, Robert Pyle, and David Woodside kindly provided information on the status of Rose-ringed Parakeets on Kauai and O'ahu. Robert Pyle, David Fellows, James Jacobi, Tom Telfer, Marie Morin, and Sheila Conant made many helpful comments on various stages of this note. Don Martin, Hawaii Agricultural Reporting Service, provided data on the value of crops in Hawai'i.

LITERATURE CITED

- Anon. 1975. An evaluation of the pest potential of the Ring-necked Parakeet, Nanday Conure, and the Canary-winged Parakeet in California. State of California, Dept. of Agriculture. 25 pp.
- Berger, A.J. 1981. Hawaiian Birdlife. U. of Hawaii Press. Honolulu.
- Caum, E.L. 1933. The exotic birds of Hawaii. Bernice P. Bishop Museum Occ. Papers. 10(9):1-55.
- Forshaw, J.M. and W.T. Cooper. 1977. Parrots of the world. T.F.H. Publ., Inc. New Jersey. 584 pp.
- Nilsson, G. 1980. The Bird Business; A study of the commercial cage bird trade. Animal Welfare Institute. Wash., D.C. 121 pp.
- Ogden, J.C. 1972. Florida region. Am. Birds. 26:848.
- Pyle, R.L. and C.J. Ralph. 1981. Hawaiian Islands region. Am Birds 35-866.
- Scott, F.R. and D.A. Cutler. 1972. Middle Atlantic Coast region. Am Birds. 26:256
- Tenbruggencate, J. 1982. Kauai's wild ringneck parakeets: If you could wring their necks. Honolulu Advertiser, 11 June 1982. p. A-1.

P.O. Box 244
Hilo, HI 96720

School of Forestry, Fisheries,
and Wildlife
University of Missouri
112 Stephens Hall
Columbia, MO 65211
1501 Camden Way
Oklahoma City, OK 73116

REPRINTS OF ARTICLES

Reprints of articles in the 'Elepaio are available to authors and others at the following rate if ordered before publication date: for 100 copies, \$10 per page of the article. For each additional 100 copies, add \$3.00 per page.

OBSERVATIONS OF THE ZEBRA DOVE AND SPOTTED DOVE ON OAHU

by Jean Bancroft

While on vacation in Honolulu during February and March, 1981, I observed nesting habits of the Zebra Dove (or Barred Dove, *Geopelia striata striata*) and Spotted Dove (also known as Lace-necked and Chinese Dove, *Streptopelia chinensis chinensis*). These two species were introduced from Asia and belong to the same large Family Columbidae (Order Columbiformes).

"The members of this family are noted for feeding their young nestlings on 'pigeon milk', a protein- and fat-rich secretion of the parent birds' crop" (Berger 1972). The male and female birds are similar, and there is usually a clutch of two eggs - "rarely one or three eggs". Incubation is by both sexes but "incubation and nestling periods apparently have not been determined" (Berger 1972). Although there is a difference in size and coloration of these two species, as well as a slight difference in their calls, I noticed that the nuptial display had the same pattern; namely, it took place on the ground, in trees, and on the roofs of buildings. With lowered head and tail elevated the male faced a female and gave cooing notes, sometimes circling or following her. The nest in both species is a flimsy platform, built of small twigs and/or grasses, in a tree.

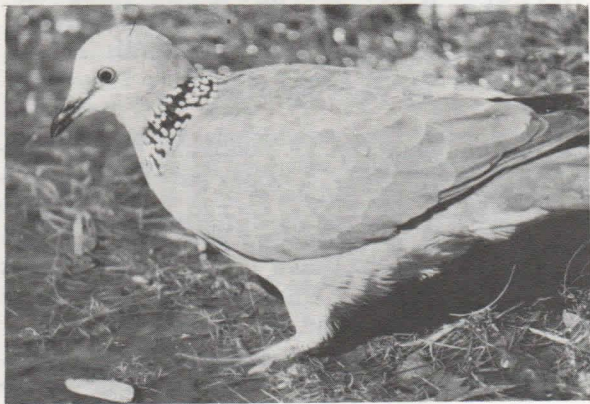
I was particularly fascinated by the Zebra Dove as, when I sat in the park area of the Honolulu Zoo, I frequently had large numbers come to get seeds and crumbs from me, even eating out of my hand.

I observed six nests of the Zebra Dove, five in the Honolulu Zoo and one on a side street in Waikiki. On 21 February I watched both sexes take part in the construction of a



Zebra Dove (*Geopelia striata*).

Photo by R. Shallenberger



Spotted Dove (*Streptopelia chinensis*).

Photo by R. Shallenberger

nest which was about 18 feet off the ground in a Kukui tree (*Aleurites moluccana*). A few days later I found that the nest had been abandoned; I presume it had been predated.

On 9 March I noticed nests in two separate Milo trees (*Thespesia populnea*). One nest, about 10 feet off the ground, was so thinly constructed that I could see two white eggs through the bottom. On the 18th, when an adult flew off the nest, I saw a tiny chick emerging from the one and only remaining white egg. Three days later I noticed there was only one nestling in the nest. On the 26th, a parent was preening the feathers of the nearly fledged young; two days later the nest was empty. Many droppings were on twigs close to the nest. The other nest was about 12 feet off the ground. In this case I was fortunate on 26 March to observe the one and only nestling being fed by the regurgitation method. Two days later I discovered the fledged young sitting on a branch above the empty nest.

On 14 March I observed the nuptial display of a male and female on the horizontal branch of an Umbrella tree (*Brassaia actinophylla*) about 12 feet off the ground. On the 23rd I noticed an adult was sitting on a small grassy platform nest on the same branch. On the 28th the adult seemed quite restless on the nest but, unfortunately, I was unable to continue my observations after that date.

On 18 March I noticed a nest 30 feet off the ground on a branch of an African Tulip tree (*Spathodea campanulata*). On the 23rd of March two fledged young were sitting close to the nest and flapping their wings: the parent bird was sitting beside them. Two days later the two fledglings were sitting on another branch in the same tree.

One day in March, on a side street in Waikiki, I observed a Zebra Dove sitting on a nest built in a small cavity atop a slender naked Palm tree about 18 feet tall; the tree

was devoid of branches. The day after the occurrence of gale-force winds, the bird was still sitting. Unfortunately, I was not able to continue further observations.

As will be noted from the foregoing, two nests had only one fledgling each, one produced two fledglings, one nest had been abandoned, and observations on the other two nests could not be completed.

In all cases the nests of the Zebra Doves were fairly well camouflaged, the nesting material and body of the bird blending in with the branch coloration. The adult sat perfectly still and, in most cases, it was difficult to locate the nests without the aid of binoculars.

During my visits to Honolulu, while I had frequently seen Zebra Doves nesting, I had never been able to find a nesting Spotted Dove, until March, 1981. This is a large grayish-brown dove about 12 inches in length; it has a rosy tinge on the upper breast feathers. It derives its name from the fact that it has a band of black with distinct white spots on the back and sides of the neck. The legs and feet are bright purplish-red.

On 5 March I observed the nest, approximately 25 feet off the ground, in an African Tulip tree in the Honolulu Zoo. Two days later I noticed the heads of two nestlings protruding from under the parent's body, but on the 10th there appeared to be only one nestling. I presume the other nestling died. I observed this nest on several more occasions and noticed that on the 21st the young one had fledged and was sitting on a branch in the same tree as the nest; the parent bird was on a branch close by. Two days later both fledgling and parent were in the same location.

"As predominantly seed-eating birds, doves must have a daily supply of water...In dry areas of Hawaii the doves drink from watering troughs and irrigation ditches" (Berger 1972). Since the Zoo park lawns were kept well watered, I presume that this is one of the reasons why Zebra Doves and Spotted Doves are attracted to this particular area. I noticed, however, that the Zebra Dove was present in much greater numbers than the Spotted Dove.

I enjoyed a very interesting holiday observing Zebra and Spotted Doves in such beautiful surroundings.

LITERATURE CITED

- Berger, A. J. 1972. Hawaiian Birdlife. The University of Hawaii Press, Honolulu, Hawaii.

306-200 Truxedo Avenue
Winnipeg, Manitoba,
Canada R3P 0R3

ERRATA

The map on page 26 of the October 1982 'Elepaio (Vol. 43, No. 4) in "The Distribution of the Brush-Tailed Rock Wallaby (*Petrogale penicillata*) on Oahu" was incorrect. Here is the corrected map; the area surveyed is shown enclosed by the polygon.

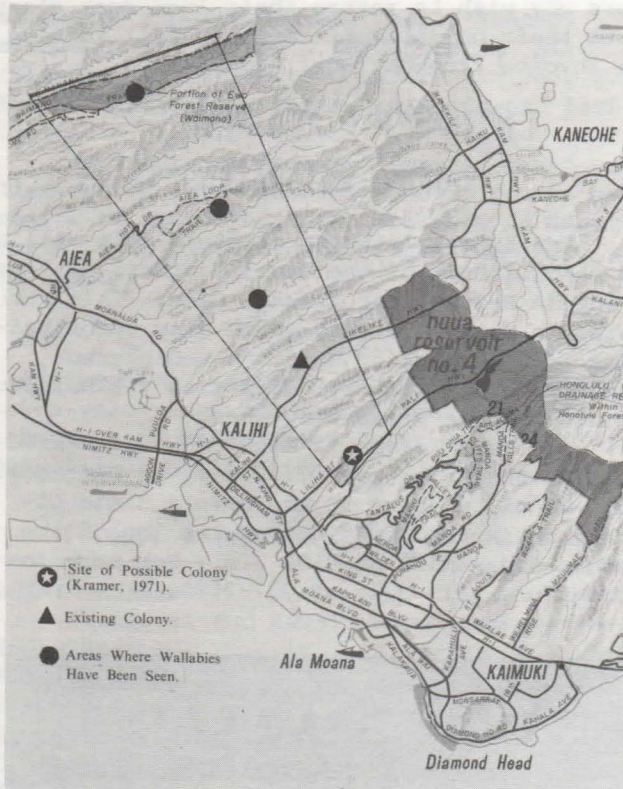


Fig. 2. Area Surveyed.

NOVEMBER PROGRAM: BIRDS AND CATS IN THE LINE ISLANDS

The guest speaker for the Monday 15 November general meeting will be Mark Rauzon.

Mark is a biologist with the U.S. Fish and Wildlife Service. His talk, entitled *Birds and Cats in the Line Islands*, will feature wildlife slides from his recent trip.

The meeting will be held at McCully-Moiliili Library on S. King St. at 7:30 p.m. Be sure to attend what promises to be an interesting and informative program!

BY-LAWS AMENDMENTS APPROVED

At the 18 October meeting of the Hawaii Audubon Society, the proposed amendments to the By-laws (as they appeared in the October 1982 'Elepaio) were approved. There were 16 proxies in addition to the 21 members present. The amendments were presented and explained. Betty Anderson moved that they be accepted; Jack Mitchell seconded. There were 36 ayes and 1 nay.

The amendments primarily dealt with changing the voting system. Under these new changes, members will be able to vote by mail. Voting will continue to be kept secret, as it was before. In addition, persons who attend the annual meeting in December may still bring their secret ballot to the meeting and give it to the Elections Committee prior to the start of the meeting. (See article *Vote by Mail* in this issue.) The new amendments also allow for nominations to be made by mail (see article *1983 Board Nominees* in this issue and also page 29 of the October 1982 'Elepaio).

ELECTIONS COMMITTEE APPOINTED

At the 18 October general meeting in Honolulu, after the proposed amendments to the By-laws were approved, President Lamoureux appointed the Election Committee. The members of the new Committee are: Susan Schenck (Chairperson), Dr. Sheila Conant, and Leilani Pyle. As stated in the newly passed By-law amendments, the Election Committee "shall prepare and distribute ballots, receive ballots and written nominations, and tally votes".

ALOHA TO NEW MEMBERS

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

Joint with National: M. Ahuna, Nanakuli; Ellen A. Bartlett, Kaneohe; J.D. Brennan, Haleiwa; Jeff W. Devins, Honolulu; Lt. James E. Haas, FPO San Francisco; Mark Hertig, Aiea; Raymond M. Joao, Kaneohe; J.T. Jones, Kailua; Vicki J. Kiker, Honolulu; Mrs. J.B. Ledoux, Kaneohe; Ernest K.H. Lee, Honolulu; William Pearson, Carpinteria, California; Capt. Joy Pickel, Honolulu; Hon. Hebden Porteus, Honolulu; M. Yamane and D. Scott, Honolulu; Elizabeth Sheekey, Ewa Beach; Alan E. Wickens, Kailua-Kona; R.B. Wilder, Kealahou.

Kammy Wong

1983 BOARD NOMINEES: HAWAII AUDUBON SOCIETY

The Nominations Committee, composed of Lani Stemmermann, Leilani Pyle, Sheila Conant, and Steve Montgomery, have nominated the following persons for the 1983 Hawaii Audubon Society Board:

President: Robert Pyle
1st Vice-President: Charles Lamoureux
2nd Vice-President: Wayne Gagné
Treasurer: Norris Henthorne
Recording Secretary: Suzan Harada
Corresponding Secy.: Thea Johanos
Directors: Patricia Avery
Phillip Bruner
George Campbell
Erma Ikawa
Marie Morin
Marion Saunders

Additional nominations can be made by any Hawaii Audubon Society member. Nominations must be either received by mail or hand-carried to the Elections Committee on or before 21 November 1982. (Please notice that this 21 November date is not a postmark deadline, but the actual deadline for receiving the mailed nominations.)

All nominations must be submitted with the written consent of the nominee. The nominee must be a Hawaii Audubon Society member or have an application pending.

If you are mailing a nomination, send it to: The Elections Committee, P.O. Box 22832, Honolulu, Hawaii 96822. Be sure that the written consent of the nominee is enclosed!

Leilani Pyle

VOTE BY MAIL

Due to the new By-law amendments which were passed at the 18 October Hawaii Audubon general meeting, it will be possible this year, for the first time, for all local and joint-with-National members to vote in the election of officers without being present at the annual meeting. Off-Oahu, Pacific Basin members will now have a more equitable voice in HAS affairs. We hope everyone will participate in the new mail-in vote, especially if a member is not able to attend the annual meeting (votes may also be handed in at the beginning of the annual meeting).

Members will find their ballot and HAS envelope in the December issue of the 'Elepaio. The ballot should be returned promptly in order to be counted at the December annual meeting, which is generally on the 3rd Monday of December.

Mainland members (not subscribers) who wish to vote should immediately request a ballot by first class mail. The 'Elepaio is mailed 3rd class and many Mainland members might not get their ballots on time if they wait for the December 'Elepaio. If a Mainland member requests a ballot, a ballot will be sent to them via 1st class mail, and should be received in time for voting.

Since all Hawaii Audubon annual memberships expire on December 31, 1982, local members may wish to return their 1983 dues along with their ballot. Joint members will receive an invoice from National Audubon.

Susan Schenck

NOVEMBER FIELD TRIP:

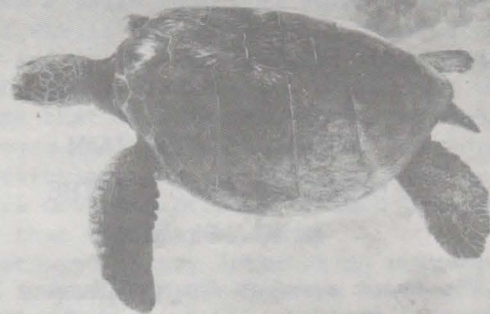
KAHUKU WATERBIRDS

The Sunday, 14 November field trip will be to the Kii Unit of the James Campbell National Wildlife Refuge near Kahuku, Oahu. This will be mainly a waterbird trip, with many opportunities to view some of Hawaii's endangered waterbirds. Migratory ducks from the Mainland should also be present by then.

The trip leader is Mike Ord. Interested persons should meet at 7:30 a.m. on Punchbowl St., Honolulu, next to the Hawaii State Library or in the roadside parking lot of the Kahuku Sugar Mill at 8:00 a.m. For more information, call Mike at 737-2535.

SEA TURTLES

Are Protected in the Hawaiian Islands



Hawaiian
Green Turtle

The green turtle (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), and leatherback (*Dermochelys coriacea*) live in the ocean waters surrounding Hawaii and are fully protected by State and

Federal laws. The following agencies are responsible for enforcing these laws. Please telephone them if you should see someone taking or harming a sea turtle.

Please Call:

National Marine Fisheries Service	955-8831
State Division of Conservation & Resources Enforcement	
24-hour Hotline	548-5918
Neighbor Islands (toll free)	Dial 0 and ask for Enterprise 5469
U.S. Fish and Wildlife Service	546-5602

This advertisement was prepared and paid for by the Hawaiian Humane Society, Friends of the Wildlife Refuges, and Sea Life Park as a public service to aid in the conservation of Hawaii's marine environment. Printed by Sturge Printing Company. Type by Star House.

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 especially material from the various Pacific Islands, such as the Trust Territories, Guam, 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 publication of your contribution, it should be mailed to the co-editors, and sent to Marie Morin, 1415 Victoria St., #1515, Honolulu, HI 96822.

HELP!

The Hawaii Audubon Society desperately needs volunteers. YOU are needed. Call Charlie Lamoureux at 948-8028 or Peter Galloway at 847-3511 or Marie Morin at 533-7530.

IF NOT A MEMBER, PLEASE JOIN US

JOINT MEMBERSHIP

(National and Hawaii Audubon Societies)

Individual.....	\$ 25.00
Family.....	32.00
Sustaining.....	50.00
Supporting.....	100.00
Contributing.....	250.00
Donor.....	500.00
Life (single payment).....	1500.00
Dual Life (single payment).....	2000.00

Special rates for full-time students and Senior Citizens (65 years of age or older) are available. Please write for application form.

LOCAL MEMBERSHIP

(Hawaii Audubon Society Only)

Regular.....	\$ 6.00
Junior (18 and under).....	3.00
Subscriber (non-Hawaii residents).....	6.00
Life.....	150.00
(payable in three equal annual installments)	

New members who send in dues between January and September will receive, if they request them, all back issues of the 'Elepaio for that year. After September, the dues are counted for the following year.

HAWAII AUDUBON SOCIETY

BOARD OF DIRECTORS

President	Dr. Charles Lamoureux	948-8028
1st V.P.	David H. Woodside	259-7030
2nd V.P.	Dr. Robert L. Pyle	262-4046
Treasurer	Norris Henthorne	734-7562
Rec. Secy.	Audrey Newman	732-7572
Corr. Secy.	Barbara Johnsen	262-6316
Directors:	Peter Donaldson	456-5662
	Dr. Wayne Gagné	941-5659
	Paul Kores	941-5659
	Barbara Lee	935-3632
	Marie Morin	533-7530
	Maile Stemmermann	949-3430

COMMITTEES

Conservation	Dr. Charles Lamoureux	988-2255
'Elepaio	Peter Galloway	988-6522
	Marie Morin	533-7530
Membership	Dr. Robert Pyle	262-4046
	Susan Schenck	488-4974
	Kammy Wong	
Finance	Norris G. Henthorne	734-7562
Field Trips	Peter Donaldson	456-5662
	Maile Stemmermann	949-3430
Programs	David Woodside	259-7030
Sales	George Campbell	941-1356
	Richard Smith	262-4784
Publicity	Bruce Bikle	734-1842
Special Pub.	Dr. Rob. Shallenberger	261-3741
Scholarships	Dr. Sheila Conant	948-8241
Mail Distrb.	Leilani Pyle	262-4046

REPRESENTATIVES

Lanai Island	Peter Connally	565-6242
Hawaii Isl.	Mae E. Mull	967-7352
Washington, D.C.	Warren B. King	

'ELEPAIO COMMITTEE

Editors.....	Marie Morin, Peter Galloway (Send articles to Marie Morin, 1415 Victoria #1515, Honolulu, Hawaii 96822)
Editorial Committee.....	Sheila Conant, Wayne Gagné, Robert L. Pyle
Production Committee.....	Janet Biggs, George Campbell, Tom Wong, Laura Carter, Karen Henthorne, Norris Henthorne, Thea Johanoa, B.J. Johnsen, Jack Mitchell, Christa Russell, Maile Stemmermann, Janet Tamura, Kammy Wong, Winifred Yamashiro, and JoAnn Yamashita

Reprinting of material from the 'Elepaio is permitted if credited to "The 'Elepaio, the journal of the Hawaii Audubon Society."

CALENDAR OF EVENTS

- Nov. 14 (Sunday). Field trip to the James Campbell National Wildlife Refuge on Oahu. Call Mike Ord at 737-2535 or see page 42 for more information.
- Nov. 15 (Monday). General meeting, featuring *Birds and Cats in the Line Islands*, by Mark Rauzon. McCully-Moiliili Library at 2211 S. King St., Honolulu at 7:30 p.m.
- Nov. 16 (Tuesday). Board meeting at the home of Norris Henthorne, 2832 Kihei Pl. #3, Honolulu, at 7 p.m. (734-7562)

TABLE OF CONTENTS

Vol. 43, No. 5, November 1982

Rose-ringed Parakeets Nesting in Hawai'i: a Potential Agricultural Threat Peter W.C. Paton, Curtice Griffin, and Laurie MacIvor.....	37
Observations of the Zebra Dove and Spotted Dove on Oahu Jean Bancroft.....	39
1983 Board Nominees Leilani Pyle.....	42
Vote by Mail Susan Schenck.....	42

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

ADDRESS CORRECTION REQUESTED

Non Profit Organization
U. S. POSTAGE
PAID
Honolulu, Hawaii
Permit No. 1156

