

A Description of Maui Parrotbill (*Pseudonester xanthophrys*) Nests and Nesting Behavior

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Abstract

We found two nests of the Maui Parrotbill (*Pseudonester xanthophrys*), an endangered Hawaiian honeycreeper (family Drepanidinae), in the cloud forests of east Maui, Hawaii. We followed each nest to completion, providing the first descriptions of the breeding biology of this species. The nests, located in sub-canopy O'hi'a trees, were of cup design and made entirely of lichen. The Parrotbill nest is large when compared to that of other honeycreepers, but otherwise typical in construction and placement. We present observations concerning courtship, territoriality, and parental care as well as the first description of a young Maui Parrotbill and its development through fledging. We found that Maui Parrotbill breeding biology is consistent with that of other Hawaiian honeycreepers. Incubation lasted about 13 to 19 days and the nestling phase from 15 to 17 days. Only one juvenile was fledged from the two nests. In addition, a juvenile was observed being fed by an adult male 20 days after fledging, suggesting an extended period of parental care. We suggest that the extended parental care and an apparent low reproductive success is more likely a cause in the species' decline than a shortage of nesting sites.

Introduction

We discovered two Maui Parrotbill (*Pseudonester xanthophrys*) nests on the north slopes of Haleakala crater, Maui, and monitored them during the spring and summer of 1993. Virtually nothing has been written concerning the nesting habits of this species (Banko 1976) despite its being listed as an endangered species in 1983 (United States Fish and Wildlife Service 1983). Mountainspring (1987) described what was believed to be a Maui Parrotbill nest found in January, 1985, in the Hanawi forest providing

a description of the nest and some details of courtship. However, no further information was obtained. Our observations are the first concerning several aspects of the breeding biology of this species.

Study Area and Methods

We conducted nest searches in two 50 hectare sites on the north slope of Haleakala crater. The first site was in the Waikamoi Forest Preserve between 1600 and 2000 meters elevation south-southwest of Pu'u Lu'au. The second site was a 50 hectare area of the Ko'olau Forest Reserve between 1800 and 2100 meters elevation within the forks of the Hanawi stream.

We began searching for nests in early March, 1993. Nest observations began on 27 March and ended on 5 May. All observations ceased by 14 July, 1993. We observed 1 to 4 hours daily for as many days as possible, until either the nest failed or young fledged. No nest was unobserved for more than three days. We located observation sites an average of 50 meters from the nest tree and hid behind vegetation to minimize disturbance. We recorded all obvious activities (i.e., entering and exiting the nest, mate feeding, etc.) indicating the time and duration of each. We also recorded the behavior of the bird(s) each minute. Observations were made using a spotting scope or binoculars and noted by hand or using a hand-held recorder.

The male and female Maui Parrotbill show some sexual dimorphism (Carothers et al 1983). The male has a noticeably larger bill and body size than the female and typically has a brighter yellow breast plumage and a darker eye stripe. We made sex identifications in most instances based on these differences. However, the adult female of Nest #2 was banded during the previous fall (6 November, 1992, by D. Hopper and G. Witteman). All nestling and fledgling observations were made at this nest. Thus, our conclusions concerning the role of each sex in these stages is greatly improved.

Results

The first nest (#1) was discovered in Waikamoi during the nest building stage by S. Ashe on 27 March. The nest was approximately 7 meters above ground in the juncture of several spindly vertical branchlets in a terminal leaf cluster of a 10 meter sub-canopy O'hi'a tree (*Metrosideros polymorpha*). The tree was on the edge of a small ridge overlooking a shallow drainage at 1728 meters elevation. The second nest (#2) was in the incubation stage when discovered in Hanawi by E. VanGelder on 7 April at 2006 meters elevation. This nest was similarly situated in the terminal leaf cluster of a 12 meter high sub-canopy Ohia. Nest #1 failed after 24 days. Nest #2 successfully fledged one young.

The day after Nest #1 failed it was retrieved by J. Lockwood and J.E. Greene in hopes of recovering the egg(s). No eggs were found in the nest. We do not know how or when the egg(s) were lost or if they were ever present. The nest was of cup design and square in shape, measuring about 20 centimeters across. The cup was about 9 centimeters in diameter and 3 centimeters deep. The composition was entirely of light green lichen. The nest is currently a part of the Bernice P. Bishop Museum collection in Honolulu. Nest #2 was not retrieved, but appeared to be of similar construction.

We never simultaneously observed two Maui Parrotbill males or two females during the nesting cycle nor did we witness any aggressive behavior between any two individuals. The nesting males had singing bouts lasting from 2 to 6 minutes throughout the nesting cycle, often within 1.5 meters of the nest. In addition, on three separate occasions at Nest #2, we heard another Maui Parrotbill singing from the next ridge (about 100 meters away). The male of Nest #2 replied with song. Because of this, we suspect that intra-specific territorial marking was accomplished strictly by male singing.

It was unclear that inter-specific territorial defense was occurring. On one occasion

at Nest #1, a pair of 'Apapane (*Himatione sanguinea*) were observed stealing nest material. Further, on several occasions, we observed 'Apapane, 'I'iwi (*Vestiaria coccinea*) and Common 'Amakihi (*Hemignathus virens*) foraging within 1 meter of the nests, with no apparent response from the adults. However, on three separate occasions we observed a Maui Parrotbill (sex unknown) aggressively chasing away a Maui Creeper (*Paroreomyza montana*) which was foraging within 50 meters of the nest site.

Courtship activities, when observed, were a significant aid in identifying nesting sites. On 27 March a pair of adult Maui Parrotbills (sexes unidentified) chased one another around the O'hi'a in which they were building a nest. One adult plucked a twig from an O'hi'a tree and appeared to present it to the other. The first adult then dropped the twig and the pair resumed the chase. We observed a male feeding a female once during the nest building stage. The female solicited the feeding by pulling her head close to her body, flapping her wings, and opening her mouth. The male then regurgitated food to her.

On 1 May, 11 days after Nest #1 failed, we observed a male building a nest in nest tree #1. Because none of the adults located at this site were banded, we do not know if this was the male from the original nesting pair. However, for approximately the next eight days, a male regularly initiated long bouts of singing and was occasionally answered with a two note "chip" call typical of a female. No female was subsequently observed and nesting never progressed past the initial building stage. However, it does suggest a re-nesting attempt in the area and that the male begins building a nest in an effort to attract a female.

We determined that the female at Nest #1 began incubating on 31 March, based on a change in her behavior (i.e., when she began sitting still in the cup for more than 10 minutes). On 19 April she abandoned the nest, after 19 days of incubation. Nest #2 was found during the incubation stage on 7 April. We estimate the hatching date to be 20-22 April. Thus, the female at Nest #2 incubated for at least 13 days.

Only females incubated at both nests. We observed males feeding females on the nest and in branches approximately 1 to 2 meters away throughout this period. At times when feeding took place off the nest, the male signaled his arrival by singing or making a short series of whistles.

Female attendance at the nest during the incubation phase averaged 28 minutes per

observation hour for Nest #1 (number of observations = 36, standard deviation = .13 minutes, range 10 to 50 minutes) and 22 minutes per observation hour for Nest #2 (number of observations = 30, standard deviation .008 minutes, range 4 to 40 minutes). An average of once every hour the female of each nest stood up, dipped her head into the nest, and appeared to move or roll something. We suspect that the females were rolling the eggs, although eggs were never observed.

We first observed the nestling on 24 April at Nest #2 in Hanawi after a three day hiatus in observations due to a rainstorm. At first sighting, the nestling was completely covered with downy feathers and muscle control was poor, but the eyes were open. Based on descriptions of other nestling passeriformes, we placed its age at about three to five days (Welty and Baptista 1988). This bird fledged on 5 May.

The nestling's bill was flat in shape, with only a slightly pointed and decurved tip at first sighting. The gape was red with yellow around the edge. At the time of fledging the bill was well rounded, dark green on the upper mandible, and orange-pink on the lower. The fledgling's upper mandible was elongated, and the tip was curved downward, but not to the extent seen in the adults. The natal down was a light green-white color and the neonate's skin was dark. Primary feathers became apparent about 5 to 7 days after hatching. The bird appeared completely feathered by day 11 to 13. Also at this time, the black eye stripe was noticeable and the breast feathers turned from gray-green to yellow. The rest of the body feathers remained their original slate gray-green. At the time of fledging, secondary flight feathers and tail feathers were markedly shorter than those of the adult. The nestling's plumage coloration, bill size, and body size gave no indication of its sex.

During early development, the nestling begged with its bill agape, but we heard no calls. After age 11 to 13 days, we heard begging calls consisting of a succession of high pitched "wheats" as the nestling flapped its wings, held its head close to its body, and gaped its mouth. Preening, wing flapping, scratching, and shaking the body feathers began within one or two days of 28 April. Also at this time, the nestling began defecating over the nest rim. The 7 to 8 day old nestling began flapping its wings vigorously. By age 11 to 13 days the nestling perched (quite precariously) on the side of the nest for the first time.

During the nestling stage, the average time the female spent brooding was 13 min-

utes per hour (number of observations = 26, standard deviation = .005 minutes, range 2 to 29 minutes). This time remained constant throughout the nestling period and represents a substantial decrease in attention from the incubation stage (from 22 or 28 minutes per hour to 13 minutes per hour). It was common for the female to feed the nestling immediately after arrival and then begin brooding. Typically the adults were not at the nest at the same time. However on five different occasions we observed the male feeding the nestling and the female on the nest. On these occasions, the male hopped to the nest rim, fed the female, then fed the nestling. The female then fed the nestling and both parents flew away.

Of 44 feeding observations, the female fed the nestling 30 times (67%) whereas the male fed only 14 times (33%). The adults fed the nestling an average of 3.4 times per observation hour (number of observations = 12, standard deviation = 1.3 feedings). This average remained constant throughout the nestling stage. During any one feeding bout, the adult would regurgitate from 3 to 7 boli of food. The male continued to feed the female throughout this period.

On 3 May (age 11 or 13 days), we observed the nestling leaving the nest as the adult male approached. The male hopped to the nest rim and the nestling began to beg for food. The male, not feeding the nestling, hopped down a few branches and began to sing. The nestling then hopped to the side of the nest and began flapping its wings. The male returned and the process was repeated two or three times. This coaxing behavior continued two or three times a day until 5 May, when the nestling took its first very short flight, approximately 0.5 meters, to a neighboring branch. We continually observed these short flights for the next three days.

After fledging, the adults continued to feed the juvenile by regurgitation at the nest or wherever it happened to be perched. Of the 10 feeding observations made during this period, the male now accounted for 67% and the female 33%. If we consider the number of times the juvenile was fed as an estimate of the amount of parental care devoted to the young by each parent, we see that a reversal occurred between the nestling and fledgling periods (Figure 1). The female was the primary care taker during the nestling stage and the male during the fledgling stage.

Three days after fledging, we observed the juvenile about 10 meters from the nest in the branches of a neighboring tree. We contin-

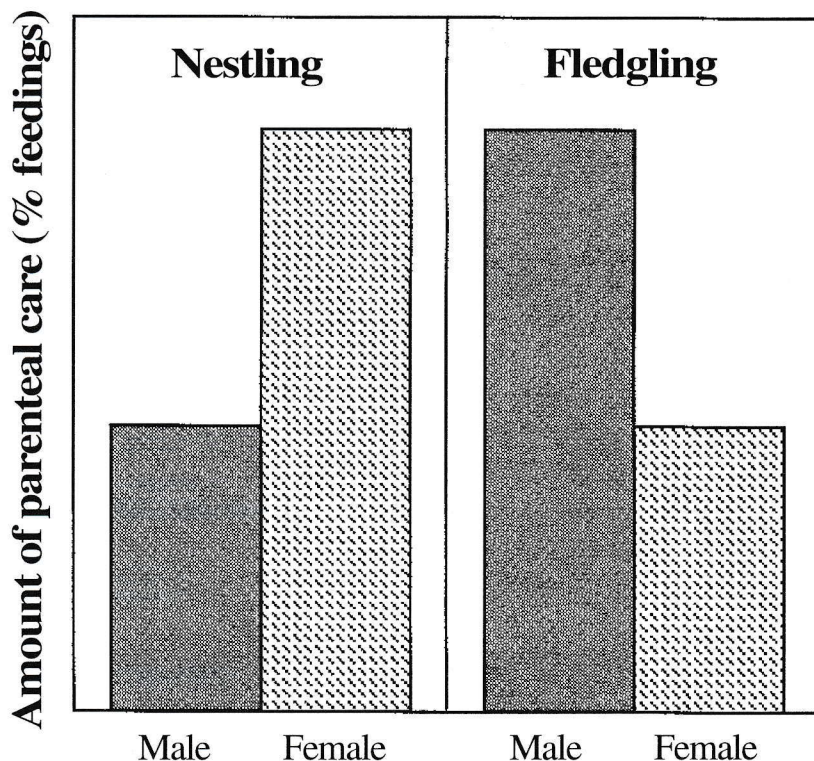


Fig. 1. The amount of care devoted to the young by each parent (estimated as the proportion of feedings observed by either sex/total observed feedings). During the nestling stage, we observed the female feeding 33% of the time and the male feeding 67%. In the fledgling stage, these numbers were reversed, indicating a reversal of parental investment after the juvenile leaves the nest.

ued observations in the area of Nest #2 until 14 July. However, we did not positively identify the fledgling or the adults again. On 24 May (20 days after the juvenile of Nest #2 fledged), we observed a fledgling and two adults about 40 to 50 meters south of Nest #2 in an Ohia tree. Due to the close proximity of this family group to the nest, we suspect that they were the same. Despite the apparent similarity in coloration of the fledgling to the adult female, we do not feel that the sex could be reliably identified. The adult male eventually fed the fledgling by regurgitation.

Discussion

Two facets of our observations deserve further consideration. One, we never observed whole food objects being passed from the male to the female nor from adults to the juvenile. Thus, it was impossible to identify food items. Two, we do not know why Nest #1 failed because we did not recover eggs. Nevertheless, we do know that the nest failed during an unusually heavy rainstorm lasting at least 48 hours when the temperature was low, between 43° and 64° F. On the first day of the storm (19 April), the female incubated until 10:00 a.m., when she departed. We did not see the female in the following 24 hours, suggesting the storm caused her to abandon the nest.

The day of abandonment was the nineteenth day of incubation, an unusually long period of incubation when compared to other Hawaiian honeycreepers (Eddinger 1970, Pletschett and Kelly 1990). Thus, it is possible that the eggs were inviable.

With these observations it is now possible to compare Maui Parrotbill breeding biology to other honeycreepers. In particular, we can address a suggestion made by Mountainspring (1987) that if the fecal sac is not removed during the first 10 days after hatching, the Maui Parrotbill should be classified with the Psittirostrini rather than the Hemignathini. We observed the female and male removing objects from the nest throughout the nestling stage. On one occasion, the female removed lichen from the inside of the nest. However, we never witnessed the removal of a fecal sac and the nestling began defecating over the nest rim after 8 days of age. This suggests that the Maui Parrotbill should be considered as a member of the Psittirostrini.

Our observations indicate that the nest and nesting behavior of the Maui Parrotbill is consistent with other Hawaiian honeycreepers. Our estimated incubation period of 13 to 19 days is the first recorded for this species. However, because incubation may have been

prolonged at Nest #1 due to egg inviability, we suspect that the average incubation period may be 13 to 16 days as it is for other honeycreepers (Eddinger 1970, Pletschett and Kelly 1990). The female being the sole incubator and our estimated length of the nestling period 15 to 17 days are consistent behavior with other honeycreepers (Eddinger 1970, Pletschett and Kelly 1990). The situation of the nest in sub-canopy 'Ohi'a trees (rather than in tree cavities or other specialized areas) and the cup shape of the nest is also common in honeycreepers (Berger 1981).

There were some differences in our observations. Mountainspring (1987) and Perkins (1903) described the nest as being composed partially of lichen, leaves, and woody material. The nest we examined, however, was composed entirely of lichen. In addition, the nest is large in all aspects when compared to other honeycreepers (Banko and Williams 1993). It is unclear what significance the large nest size holds. However, it is clear that the Maui Parrotbill does not require specialized nesting sites or material as 'Ohi'a trees and lichen were extremely common within our study sites. We suggest that, although the Maui Parrotbill is now exclusively found within what remains of the undisturbed rainforest (Berger 1981, Mountainspring 1987), a shortage of appropriate nest sites within this area is not likely a cause of the species' decline.

We did find evidence that the juvenile remains dependent on the adults for an extended period of time (i.e. juvenile was fed by regurgitation by the adult male 20 days after fledging). The Maui Parrotbill has a complex foraging maneuver that may take some time for the juvenile to learn. In addition, at the successful nest only one juvenile was fledged which, although not unusual, is below average among other honeycreepers with known breeding biology (Berger 1981). We suggest, then, that these two factors combine to limit the reproductive output of this species and thus may be a more likely culprit in the species' decline.

Acknowledgments

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Paradise Pursuits Begins Fourth Year

by Wendy Johnson

This fall marks the beginning of the fourth year of operation for Paradise Pursuits, a dynamic educational program open to all of Hawaii's high school students. Teams of bright, inquisitive young people are being formed throughout the state to prepare for the Paradise Pursuits challenge. This environmental quiz competition is designed to motivate students to learn more about Hawaii's unique ecosystems and the need to protect them. Each year the number of participating schools and students has increased, with 25 schools from four islands competing in 1993-94.

Paradise Pursuits teams consist of four student members, three of whom will participate in the competitions against other schools, and one who functions as an alternate. Each team must have at least one teacher/coach who agrees to help the students prepare through the fall and winter for outer island and O'ahu district games in March and April. Semi-final and final competitions will be held on O'ahu in April, 1995 and videotaped for later TV broadcast. Team preparation involves study and activities covering four main areas which reflect the game question categories. These are: native species, alien species' threats to Hawaii's environment, natural history of Hawaii, and human impact on the environment. Hawaii Audubon Society provides each team with a variety of source material and a bibliography of references from which the quiz questions are formulated. Colorful posters and videos are included as recommended study aids and hikes or field trips are encouraged as fun and productive ways to prepare for Paradise Pursuits.

Science teachers and environmental specialists in all of Hawaii's public and private high schools have now received Paradise Pursuits posters and information packets providing updated goals and guidelines along with team application forms. Teachers and volunteers who have participated in past years express receiving great satisfaction from the process of helping to enhance student knowledge and awareness about conservation issues in Hawaii. The high school team members are consistently eager to learn more about their island habitat and concerned about its protection. Our program seeks to both satisfy and stimulate their curiosity while introducing concepts in support of environmentally responsible actions and choices.

If you are a high school teacher or student, Hawaii Audubon Society would like to take this opportunity to encourage you to form a Paradise Pursuits team by becoming or enlisting a coach. The intangible rewards are great and so are the T-shirts and prizes. Please contact Wendy Johnson, Paradise Pursuits coordinator, to receive an application form. Completed applications must be received by 28 October to qualify for this year's challenge.

Aloha Wendy Johnson

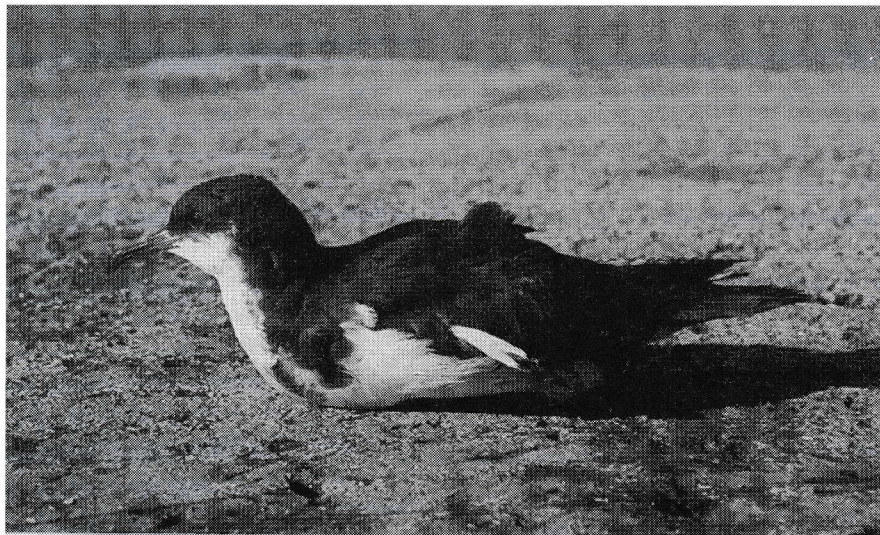
by Linda Paul

The Hawaii Audubon Society is pleased to announce that Wendy Johnson will be coordinating Paradise Pursuits, the Society's environmental quiz program for high school students for the 1994-'95 school year. Johnson is a teacher, biologist, and dedicated conservationist. She holds a bachelor's degree in environmental biology and a master's degree in environmental public health, and is currently a lecturer in environmental health at Honolulu Community College. Since 1989, Johnson has been a project manager for Earthtrust International, where among other things she coordinated Earthtrust's efforts to curb the international trade in endangered species under the Convention on International Trade in Endangered Species (CITES).

Although Johnson's conservation activities with Earthtrust have had a global orientation, her lifelong curiosity and concern about the natural world have been centered here in Hawaii, where she was born. Johnson is convinced that accessible, stimulating information can be a tremendous source of enrichment to students as individuals and can provide a basis for responsible living in harmony with the environment. She believes that Paradise Pursuits provides an engaging avenue for the pursuit of this goal. Johnson brings with her a deeply held desire to pass on her considerable interest in and knowledge about Hawaii's flora and fauna to students young and old. She also brings with her a variety of specific experiences and contacts which should greatly enrich the Paradise Pursuits Program as it continues to grow.

Johnson succeeds Sheila Laffey, who coordinated the program since its inception. HAS appreciates the work Laffey did expanding the program and wishes her the best in her new endeavors.

Fallen Shearwaters Need Your Help



Newell's Shearwater. © Tom Telfer.

It's that time of year again, when Newell's Shearwaters will be falling out of the sky, mainly on Kaua'i's highways and residential areas. A few birds also fall on the other islands. The State Department of Natural Resources (DLNR) and the U. S. Fish and Wildlife Service (USFWS) will again be setting up shearwater aid stations. They are asking us to assist these fallen birds.

During October and November, Newell's Shearwater fledglings (pigeon-sized black and white seabirds) will be leaving their mountainside nesting burrows for the first time. They do so only after dark. They are headed directly for the open ocean where they will remain for their first year of life. These young birds are inexperienced. They must fly across brightly lit urban areas while enroute to the sea. Bright lights attract them, and they become temporarily blinded and fly into utility wires, trees, or buildings, and flutter to the ground. Most often they are just stunned or confused.

Because they are seabirds with webbed feet placed well aft on their bodies, they are adept at taking off from the ocean's surface, but have difficulty taking off from confined spaces on land. They often crawl into a dark corner to gain strength after their fall. While on the ground, they are susceptible to being struck by cars, mauled by dogs and cats, or become dehydrated. A few of them receive severe injuries such as broken wings, concussion, or paralysis, but thanks to the help of concerned citizens who pick them up, more than 94 percent are safely returned to the wild annually.

Beginning 1 October, shearwater aid stations (cages) will be provided at each county

fire station, Hanalei Liquor Store, North Shore Clinic (Kilauea), and the old Y.M.C.A. building across the street from Poipu County Park. (On O'ahu birds should be taken to Sea Life Park.)

This is a "do it yourself" operation. Put the bird in an empty cage. Do not put more than one bird in a cage. Sign boards are located at each station where you are requested to write in the pick-up location of your bird (by cage number). This information is very important because it helps wildlife officials identify those areas of the heaviest shearwater fallout and where measures might be taken to reduce the fallout risk in the future.

Birds turned in at aid stations are banded and taken to a safe release site., where they can fly out to sea at will. Residents are asked not to release the birds by tossing them, because some birds may have unseen internal injuries and they could become more seriously injured by a second fall.

Shearwaters are generally docile and easy to handle, but occasionally they bite. The easiest way to handle a bird is to grasp its folded wing tips, tail, and feet in one hand, well back from the head (like an ice cream cone), and place the bird in a small cardboard box with ventilation holes cut in it. Or, if you have an old towel available, just toss it over the bird and pick it up for transfer into the box. Take it to the nearest aid station and deposit it in an empty cage.

Shearwaters feed on small fish and squid. They can go a long time without food, because they have a built in fat reserve. They will not readily eat in captivity.

For more information call DLNR on Kaua'i at 241-3433 or USFWS at 828-1413.

Wedge-tailed Shearwater Colony Discovered on Mokapu Peninsula

by Lance T. Tanino and Mark J. Rauzon

At least 10 Wedge-tailed Shearwaters (*Puffinus pacificus chlororhynchus*) (mostly wings) were found on 21 March, 1994, on the sand dunes on the southern end of Fort Haase Beach (a.k.a. Zombie's Beach), O'ahu. We thought that the birds washed ashore were carried inland by people and consumed by rats, never giving a second thought about the possibility of a colony existing in the area.

On 30 May, 1994, as Tanino was walking along the sand dunes he found a burrow under a naupaka (*Scaevola sericea*) with a pile of sand at its entrance and a distinctive musky odor. It was an active burrow, occupied by an adult Wedge-tailed Shearwater. Wedge-tailed Shearwaters are known to nest in large numbers in Hawaii on offshore islets and in the Northwestern Island chain. On rare occasions they nest successfully on the main islands, such as Kilauea Point Lighthouse NWR, Kaua'i, where mongooses have not become established. They have tried to nest at Black Point, O'ahu, but have been unsuccessful because of predators, i.e. cats, dogs, and/or mongooses.

Between 30 May and 8 August, 1994, a total of 25 burrows were found. At least three were active. Not all burrows were checked to keep disturbance to a minimum. Because of the number of burrows found and the number of adult shearwaters dead from predation, this colony has probably existed for several years. The shearwaters continue to return to colonize the area, indicating some reproductive success.

On 31 May and 8 June, an hour was spent each night witnessing adult shearwaters returning to the colony. On both nights, three shearwaters were seen flying around at one time. On other nights, only single shearwaters were observed.

On 31 May, Dr. Diane Drigot, Senior Environmental Protection Specialist, Marine Corps Base Hawaii, Kane'ohe Bay, and Tanino witnessed an orange cat prowling the perimeter of the colony near an active burrow. Predator control in the area has been initiated to help ensure the success of the shearwater colony.

'Alala Update

1995 has been a great year for the 'Alala, the endangered Hawaiian Crow. A record number of 'Alala chicks hatched at the State's Olinda Endangered Propagation Facility on Maui.

A second milestone will be reached when captive-reared 'Alala are released into the wild on the Island of Hawai'i this fall.

"This event is of national significance because the 'Alala is one of the most endangered animals in the world," said Peter Shannon, program director. "The 'Alala's situation can be compared to that of the California Condor, whose population years ago dipped to 27 individual birds. In 1992 scientists released the first half-dozen Condor chicks into the wild, and since then their population has made gains," he added.

Four chicks were successfully hatched at the Olinda facility, the most ever in one season. This brings the total number of 'Alala in the wild on the Big Island and in captivity at the Olinda facility to 35.

"This year we made some slight changes in management of the birds in an attempt to refine our techniques," said Shannon. "These changes included a greater selection of nest types and allowing the birds to do natural incubation.

"Both clutches of 'Alala have been sent to the Big Island and placed in the release aviary. Later this fall they will be released to the wild from the aviary. The release is being coordinated by the Peregrine Fund and the U. S. Fish and Wildlife Service," Shannon added.

The parents of the four 'Alala chicks are Wa'alani (female) and Ho'ike (male). Each clutch produced one male and one female chick. Wa'alani and Ho'ike also laid a third clutch of eggs, but these did not hatch.

According to Paul Conry, wildlife biologist for the State Division of Forestry and Wildlife, "the hatching of the four chicks is of great significance in the productivity of the 'Alala. The number of young added to the population is a critical factor in improving the genetic balance of the species."

The captive flock at Olinda comprises about 45% of the total 'Alala population.

Shannon and the facility's aviculture staff implement the breeding strategy, incubation, and nurturing of the chicks. "We feed the chicks using hand puppets and we cover our faces so we can prevent the birds from imprinting upon humans," said Fern Duvall, head aviculturist.

Isolation rearing is used to feed the hatch-

Nominating Committee Report

The Nominating Committee has presented a slate of officers and directors for the December election. The following members have been nominated:

Linda Paul, President; Emily Gardner, Second Vice President; Sherilyn Garrett, Recording Secretary; and Steve Carter, Reginald David, David Hill, Wendell Lee, and Dr. Florence Thomas, directors. All are two year terms. Also, Nanea Parks was nominated to serve a one-year term as director.

The terms of First Vice President Linda Paul, Corresponding Secretary Kendall McCreary, Treasurer Joyce Stanney, and directors Shannon Atkinson, Lynne Matusow, John Harrison, and Kevin Shaney expire in December, 1995.

Should any member wish to run or nominate additional Society members, the nomination must be sent to the Election Committee, Hawaii Audubon Society, 1088 Bishop Street, Suite 808, Honolulu, HI 96813. Write-in nominations must be received by 10 November. The written nomination must be accompanied by a four line biographical description of the nominee and the nominee's written consent that he or she is willing to run for election and will serve in the designated post if elected.

Members of the Election Committee are Lynne Matusow, Kendall McCreary, and Joyce Stanney.

Open House at Olinda

The Olinda Endangered Species Propagation Facility on Maui will be open to the public on Saturday, November 5, from 12 noon to 5:00 p.m. There will be displays and hopefully some forest birds will be available for viewing. The facility is located on Olinda Road, above Makawao, past the 11 mile marker. For more information call 572-0690 on Maui.

lings so they will not become accustomed to human touch prior to their release into the wild.

Source: Hawaii State Department of Land and Natural Resources, Division of Forestry and Wildlife

Pam Bunn Wins Munro Law Award

Pam Bunn, a third year law student at the William S. Richardson School of Law at the University of Hawaii-Manoa, has been awarded the George C. Munro environmental law award. The \$250 cash award was established in memory of George C. Munro for his pioneering work in protecting Hawaii's native environment. It is awarded annually to the student receiving the highest grade in environmental law.

Bunn came to Hawaii from New York in 1982. Originally trained as a biologist, she worked at the Oceanic Institute and with the City and County of Honolulu's wastewater management program at Sand Island. It was through this work with the city that she first became interested in law. Bunn says it was interesting to see how the city's behavior changed after it was sued over its wastewater management in 1990.

Soon after her experience at Sand Island, Bunn noticed problems in the waters near her Waimanalo Bay home. Dairy manure had been running into the bay at Bellows Air Force Station. Recalling how an impending lawsuit had earlier helped to alter the city's behavior, Bunn contacted the Sierra Club Legal Defense Fund (SCLDF) to see what could be done to prevent further contamination of the bay. She then became plaintiff in a lawsuit to protect the bay and worked closely with the SCLDF attorney handling the case. She found the work interesting and thought environmental law might be something she would like to pursue. She enrolled in law school in 1992.

In addition to writing for the law review, Bunn has retained her commitment to work for Hawaii's environment. She returned to SCLDF as a summer law clerk following her first year of school. Following her second year of school she served as a clerk for the law firm of Paul, Johnson, Park and Niles, assisting staff attorneys in environmental law. Upon graduating from law school next spring, Bunn hopes to continue working in environmental law.

Moving?

Please allow four weeks for processing address changes. Because our records are kept in order by zip code, we need both old and new addresses.

Hawaii Audubon Society

1088 Bishop Street, Suite 808
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T-shirts for Sale

The Hawaii Audubon Society has a stock of T-shirts designed to spread the Audubon message. Not only are they attractive personal apparel, but they make excellent presents as well.

T-shirts bearing the Society's 'Elepaio logo are available in blue spruce and mountain rose with a black design. We also have a few in ash (gray). In addition, the "hot" Kolea (Pacific Golden Plover) T-shirts are also available. This T-shirt is white with a three-color design of the Kolea and native hibiscus. Proceeds from the Kolea T-shirt go to help HAS fund research on shorebirds in Hawai'i and elsewhere in the Pacific region.

T-shirts are \$12 each, plus \$2.00 per shirt for postage. They are available in medium, large, and extra large adult sizes only. When ordering T-shirts, be sure to list size and first, second, and third choice of color. To order T-shirts send your check, payable to the Hawaii Audubon Society, to Yvonne Izu, 1957 Alai Place, Wahiawa, HI 96786. Don't forget to add \$2.00 per shirt for postage. Insufficient postage will delay your order until the proper amount is remitted. T-shirts are not available at the HAS office.

HAS Dues for 1995

All amounts are in U.S. dollars.
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(Includes delivery of 'Elepaio and Audubon Magazine as bulk or 2nd class mail to U.S. zip codes. Renewal, \$30 annually.)

Birders Network

Recently several members suggested that HAS establish a list of birders who would be interested in informal trips with other members. This would offer members the chance to find others to go along with them on their outings—for the sake of safety, to share information on good spots, or simply to increase the fun. If you are interested in putting your name on such a list, which would be circulated to all those on the list, call or write HAS, attention Andy Cowell.

Birding on O'ahu

A two-page guide listing areas on O'ahu where interesting birds may be found and where access is not a problem is now available. Written by Peter Donaldson, it offers important information for birders unfamiliar with Hawai'i. The guide is not designed to give detailed directions or information on bird identification. For a free copy, send a self-addressed stamped envelope to O'ahu Birding Guide, Hawaii Audubon Society, 1088 Bishop Street, Suite 808, Honolulu, HI 96813.

Your Bequest Can Help

A bequest to the Hawaii Audubon Society is an excellent way to help in our conservation efforts. George C. Munro, enthusiastic and tireless field ornithologist and naturalist, provided for a fund to be used exclusively for the protection of native dry forests. Today, the George C. Munro Fund provides money for research projects on such forests.

Although an attorney should be consulted in the drafting of your will, a model clause for bequests is set forth below.

"I hereby give, devise, and bequeath to the Hawaii Audubon Society, Honolulu, Hawai'i, the sum of _____ dollars (or set forth a description of property), to be used for the general purpose of said organization."

For more information and assistance, contact the Hawaii Audubon Society, 1088 Bishop Street, Suite 808, Honolulu, HI 96813, (808) 528-1432.

Calendar of Events

First Monday of Every Month

Monthly meeting of the Conservation Committee, 6:30 p.m., at the Coffee Line, 1820 University Avenue (in the YWCA). To join or for more information call the HAS Office, 528-1432.

First Thursday of Every Month

Monthly meeting of the Education Committee, 7:30 p.m., at the Coffee Line, 1820 University Avenue (in the YWCA). To join or for more information call Emily Gardner, 734-3921 (H). The Committee is actively seeking new members to work on the 1994-'95 Paradise Pursuits Program. All are welcome.

Monday, October 10

Board meeting, 7:00 p. m., HAS office. Call Reggie David on Hawai'i, 329-9141 (W), for details.

Monday, October 17

General Membership Meeting, Paki Conference Room, Bishop Museum, 7:30 p.m. Peter Luscomb of the Honolulu Zoo will present a

slide show on forest birds. Refreshments will be served.

Saturday, October 29

Field trip to Kii Unit, James Campbell National Wildlife Refuge, led by Robert Pyle. This is your opportunity to see native waterbirds as well as migratory shorebirds and waterfowl. Meet at the State Library on Punchbowl Street at 7:30 a.m. or at 8:45 a.m. in the parking lot next to First Hawaiian Bank at the Kahuku Sugar Mill shopping center. Bring binoculars, spotting scopes, water, and sunscreen. Call Lance Tanino, Monday or Thursday evening at 247-5965 (H) to sign up. Suggested donation: \$2.00.

Publications Available

The Hawaii Audubon Society publishes books, checklists, and field cards relating to birds of Hawaii and the Pacific. For a complete price list send a self-addressed stamped envelope to Publications List, Hawaii Audubon Society, 1088 Bishop Street, Suite 808, Honolulu, HI 96813.

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