



## Peregrine Fund to Lead Group Working to Save the 'Alala

The U.S. Fish and Wildlife Service (USFWS) has selected the Peregrine Fund of Boise, Idaho, to coordinate a project designed to increase wild and captive populations of the endangered 'Alala, or Hawaiian Crow. The Peregrine Fund is a nonprofit organization that was created in 1970 to prevent the extinction of the Peregrine Falcon. The restoration techniques developed for the Peregrine Falcon are now being successfully applied to restoring other endangered bird populations.

"The Peregrine Fund has had considerable success in working with endangered raptor species, as well as some experience in rearing and releasing crows and ravens. We are delighted it has agreed to assist the Service in restoring 'Alala populations," says Marvin L. Plenert, Pacific regional director of the USFWS.

Only 13 'Alala are known to exist in the wild, all on the Island of Hawai'i. All but one are found on the McCandless Ranch in the Kona District. The UFSWS recently prepared a long-term management plan for the 'Alala. It incorporates the recommendations of the National Academy of Sciences' National Research Council to take all steps necessary to increase both wild and captive 'Alala populations.

"Our 'Alala management plan calls for removing the first clutch of eggs from nesting wild 'Alala, then incubating, rearing, and releasing at least some of them back into the wild," says Plenert. This will begin during the 1993 breeding season. "Both the National Research Council (see *'Elepaio* 1992: 52:35) and the 'Alala recovery team recommended immediate action during the 1993 breeding season," notes Plenert. Hawaii Audubon Society President Reginald David is a member of the 'Alala recovery team.

The Peregrine Fund will be assisted in their efforts by the San Diego Zoological Society and Greenfalk Consultants. The San Diego Zoological Society will supply personnel to set up an incubation and rearing facility on the island of Hawai'i. USFWS biologists will remove wild-laid eggs from 'Alala nests,

and zoo biologists will incubate the eggs and manage hatchlings. The Peregrine Fund will design and construct a hacking facility to return young 'Alala to the wild and will release and monitor the juvenile birds.

At approximately four to six weeks of age, a portion of the young birds will be transferred from the rearing facility to the hacking facility. When these birds are fully capable of flying, locating naturally occurring foods, and feeding themselves, they will be reintroduced into the wild.

Other young birds will be moved from the rearing facility to the Olinda Endangered Species Propagation Facility on Maui. There, they will join 11 'Alala currently in captivity. The Olinda facility is owned and operated by the State of Hawai'i in partnership with the USFWS.

Knowledge of appropriate techniques for incubating 'Alala eggs, rearing young, and reintroducing them into the wild is very limited. Greenfalk Consultants of Boise, Idaho, will assist the Peregrine Fund by conducting research on similar crow and raven species in Idaho to improve success rates in working with 'Alala. The studies were scheduled to begin in March and will focus on egg transportation, incubation, and nestling release methods.

"We are honored to become part of the team and take on this new challenge," stated Dr. Bill Burnham, President of the Peregrine Fund. "The problems faced by the Hawaiian Crow are similar to those faced by the Mauritius Kestrel in the late 1970s when it was reduced to two known pairs, but, with the help of the Peregrine Fund and many others, the bird is close to having a self-sustaining population in the wild," noted Burnham. "We have a solid team established with the San Diego Zoological Society and Greenfalk Consultants, and we are excited to begin."

The USFWS has allocated approximately \$382,000 to cover the cost of the 'Alala program with the Peregrine Fund in 1993 and will seek additional funding as needed in future years.



## Scholarships

The Hawaii Audubon Society will be awarding two undergraduate tuition scholarships of \$1,340 to Hawai'i residents attending the University of Hawai'i for the 1993-94 school year. This scholarship is made available by the Yao Shen Trust, in honor of Rose Schuster Taylor. Recipients must be Hawai'i residents, attending the University of Hawai'i, whose area of study is related to Hawaiian natural history. HAS will also be awarding the Clara Grenville Hatch undergraduate scholarship. This \$1,000 stipend is for a student at any college or university in the state whose area of study is related to Hawaiian natural history.

Applicants should submit the following information by 1 May: name, address, telephone number, class year, and explain how their academic major relates to Hawaiian natural history. They should also discuss how they plan to apply their academic degree to further study or work experience in Hawaiian natural history, how their course of study will enable them to contribute to the better protection of native Hawaiian wildlife, and if they have made contributions to the study of Hawaiian natural history.

Applicants should attach a transcript of their college or high school records and three letters of recommendation. Applications should be sent to Phil Bruner, Chair, Scholarships and Grants Committee, Box 1775, BYU-H, La'ie, HI 96762, telephone 293-3820 (W).

# Saving Oiled Birds: Volunteers Are the First Line of Defense

by Lynne Matusow

Unfortunately, it is becoming a too common occurrence—an oil tanker has an accident and spews gallons of oil into the world's oceans. The resultant spill pollutes fisheries, rookeries, and creates a life and death hazard for bird and marine life the world over. You have seen the pictures—birds and animals coated with oil; volunteers feverishly working to clean them, in the hope that they can be saved and rehabilitated back into the wild. So far Hawai'i has been lucky, but it is just a matter of time. The odds are against us. Some day, our pristine environment too may be polluted by an oil spill. Knowing this, the National Audubon Society, in cooperation with the Clean Islands Council and the Hyatt Regency, sponsored a series of workshops statewide to train Hawai'i's residents in how to clean and care for oiled birds. The response was overwhelming. More than 300 people attended. Many more had to be turned away for lack of space. I was lucky enough to be one of the attendees. While much of what I heard was discouraging, I did learn that things are getting better. With each spill, the experts are learning. Their success rate in saving coated birds and marine species is improving. Unfortunately, they have a long way to go.

Jay Holcomb and Mark Russell from the International Bird Rescue Research Center (IBRRC) conducted the workshop. This organization was founded in February 1971, when two tankers collided beneath the Golden Gate Bridge in San Francisco, spilling 900,000 gallons of crude oil. At the time, little was known about oiled bird care. Only 300 of the 9,000 birds collected survived.

According to Holcomb, the backbone of a successful rescue operation is a trained cadre of volunteers. They are the work force. Without them the animals would die. The volunteers must be properly clothed. Rubber boots, gloves, safety glasses, and disposable jump suits are a necessity. So is a tetanus shot. Volunteers must work in teams, with safety their number one priority. The rescue operation must be coordinated. Finally, the rescuers must accept the fact that some animals are going to die, that they can't save them all.

The birds do not know you are helping them, Holcomb said. They need to get out of the cold water and make their way to land, but when they see people they run back to the water to be safe. The rescuer must get between the bird and the water to outsmart the



Oiled duck. Photo courtesy of International Bird Rescue Research Center.

animal. It is important to remember that some oiled birds can fly. Holcomb also said that water captures should only be done when necessary.

How does oil affect a bird? When a bird encounters oil on the surface of the water, the oil sticks to the feathers, causing them to matt and pull apart, impairing waterproofing and exposing the animal's sensitive skin to extremes in temperature. This can result in hypo- or hyperthermia. Instinctively, the bird tries to pull the oil off its feathers by preening. Preening results in the animal ingesting the toxic oil. This ingestion can cause severe damage to the bird's internal organs as well as a lack of oxygen in the blood. The focus on preening overrides all other behavior, including feeding and evading predators. The birds spend all of their time preening. They don't eat. If they don't eat, they starve and die.

So many birds are brought in for rehabilitation from some spills that rescuers have to set a species' priority. Endangered species and those species which are highly impacted by petroleum would be treated first. Loons, which do not survive more than four or five days in captivity, would also receive high priority as would those of breeding age.

Once a bird is captured it needs to be put in a proper container and kept comfortable until it reaches a rehabilitation center. The rescuer needs to record the date, time, location of capture, initial treatment at the capture site, and species. The most urgent concern when a bird arrives at a rehabilitation center is to stabilize the animal. Each animal is examined. They are checked for wounds, banded for identification, their weight and temperature are recorded, and the bird is placed in a

warm holding pen with others of its species. They are given fluids orally. Food is offered and each animal's behavior is monitored. Since most of them are underweight, they will be force fed for most of their stay.

Solid birds like loons, grebes, and Old Squaw are not made to walk well. They are made to float in water. On land they can get pressure sores and their feet can dry out. Special housing is constructed for them.

A rehabilitation center needs certain elements. It must be well ventilated. Air has to be exchanged six times an hour. It must be heated. There must be clean surface water at all times. It needs a vet room, a wash room, a lot of water, and on-demand water heaters. Most importantly, it needs a lot of room. Five hundred birds require 3,000 square feet.

Before an animal is washed, a blood test is taken to determine its internal stability. If it has poor blood values, it may not survive the stress of washing and rinsing. The birds are washed in a solution of water and Dawn dish soap. The solution is agitated through the bird's feathers to remove the oil. The soap is then rinsed out. When the oil and soap are out the feathers will start to look natural. Then the bird is placed in a drying pen. Once the bird is dry, it is placed in a pool to check for the return of its waterproofing and buoyancy. IBRRC has learned that the water used to clean birds must have the right hardness. Water that is too soft does not clean well enough; water that is too hard does not let them regain buoyancy. Food is then offered to them in the outside enclosure to encourage self-feeding. If the animal is water repellent, eating, and behaving normally, it must pass one last blood test. Then it can be released back into the wild.

# Joining Audubon at Age 10 Has Been Rewarding for Tanino

by Doug Lamerson

Like any developing avian aficionado, over time Lance Tanino has become somewhat more discriminating in his taste. For instance, he'll tell you his favorite field experience occurred on a trip to Maui's Waikamoi Preserve where lunch was shared with resident 'Amakihi and a day long search was finally rewarded with an all too short glimpse of a lone 'Akohekohe feeding in an 'ohi'a tree.

Yet, it wasn't so long ago that his interests ran to distinctly less exotic fare. "Every day on my way to school I'd see these egrets in a field and they just sort of caught my attention. That's how I got interested in birds," he recalls.

Those humble encounters, at the time incidental to more formal educational endeavors at Honolulu's Kawananakoa Intermediate School, have nonetheless proven fortuitous indeed. For now, at age 20, Tanino is the youngest—by a rather comfortable margin—of the HAS directors and is embarked on an academic career intended to put him back out in the field, albeit in search of species presumably more glamorous than the unimposing egret.

But getting into the field these days isn't quite the simple matter it used to be for one now juggling zoology studies, HAS duties, and weekends at Bob's Saimin in Kane'ohe (the family business).

It was a nascent affinity for the natural world that first brought Tanino to HAS as a junior member in 1983. In 1985, collaborating with two friends he was a winner at the State Science Fair for their display summarizing their survey of the Red-footed Booby colony at Kane'ohe Marine Corps Air Station.

Field trips and participation in Christmas bird counts reinforced a growing conviction that field work suited his sensibilities perfectly. Tutelage at the hands of field trip leaders provided encouragement and confidence that an adolescent avocation might actually blossom into a life's work. In particular, Tanino cites former HAS President Bruce Eilerts as a role model for his own academic development and growing interest in volunteerism.

In 1991 Eilerts recommended him for an HAS director's seat. In 1992 he was awarded the Rose Schuster Taylor Scholarship for his work in Hawaiian natural history. Last December he coordinated the annual statewide Christmas bird count, and in January he suc-



ceeded Casey Jarman as chair of the Field Activities Committee—a post that is probably the ideal assignment for this increasingly experienced birder.

Tanino is enthusiastic about his new area of responsibility, which he describes as "the best part" of being in HAS. However, he acknowledges there are challenges ahead. "We need to find more volunteers to lead our field trips," he says. While traditional areas like the James Campbell National Wildlife Refuge remain extremely popular with field trip participants, he hopes to find new terrain to explore.

On broader issues, Tanino believes HAS needs to achieve higher visibility. "Many people seem to know about National Audubon, but not nearly as many are aware of HAS," he says. "HAS makes very important contributions in the area of species protection but not enough people know about it." Of course, he encourages more members to get actively involved, adding, "I've met some really nice folks through volunteering."

Among them would be long-time members Bob Pyle and Reggie David, whose recreational birding has stirred Tanino's competitive urges. "Bob Pyle has seen about 210 different species here in Hawai'i and Reggie is over 200," says Tanino. "I'm almost at 100, but I'll never catch those guys because their numbers include many visiting stragglers that are rarely seen in the state." Still, Tanino says bird listing is fun and occasionally gives him "something to brag about."

The veterans agree Tanino is a "good,

young, avid birder," in the words of Bob Pyle. Reggie David, who has led birding tours from Arizona to Siberia, thinks the young challenger is ready to widen his sights with a mainland expedition or two. Tanino would like nothing better. While he may never dethrone the kings of Hawai'i birding, the broader horizon offers better possibilities. After all, time is on his side.

## Mahalo Donors!

The Hawaii Audubon Society thanks the following members and friends whose contributions were received in February:

Dale Aratani, Ronald Erle Arbuckle, Janice Birnie, Eleanor Brodsky, Lynn Carey, Laura Carpenter, Kathleen Casson, Thomas Cestare, Margaret Cook, Jane Dimmitt, Satoru Doi, Patricia Donato, Marian Eilerts, Alexis Elend, Susan Fristoe, Fred Fukuroda, Linda Gallano, Ersilia Ganz, Lila Gardner, Sarah Gentry, Sarah Gordon, Thelma Greig, Clarence Gunderson, Bill Guptill, Carol Hamasaki for Jenny Hamasaki, Therese Hayes, Leslie Higuchi, and Donald Horio.

Also, Aileen Ichijo, Rick Ingram, Cully Judd, Daniel Kahane, Fletcher Knebel, Dana Kokubun, Laura Krupp, Jean Kubota, Dora Ladas, Patricia Likos, Kathleen Litster, Amy McGrail, Robert McIntyre, Monica McLaren, Loyal Mehrhoff, Lola Mench, Gary Mitchum, Beth Miura, David Moxley, Keith Nakayama, Mary Nevin, Deirdre Newton, Scott Nichols, Tina Northern, Lisa Nungesser, Maura O'Connor, Y. Otoshi, Judge Frank Padgett, Stephen Page, Warren Paige, Sam Perri, Geoffrey Pickton, Mary Polanski, and Robert and Leilani Pyle.

Also, Peter Rappa, Neil Reimer, William and Virginia Richardson, Shaunagh Robbins, Eileen Root, G. Allan Samuelson, Susan Schenck, Dan Sheedy, Janet Shepler, Richard Soehren, Randall and Sarah Stoddard, Michelle Tatumura, Eileen Taylor, Jeff Taylor and Twyla Thomas, Carol Tenopir, Rochelle Uchibori, Michele Vail, David Ward, Jr., Dodie Warren, Bronwen Welch, Jerry Wetherall, Betty Wrixon, Kathy Yeager, and Barry Zacherle.

# Can You Give Some Time to Help Your Audubon Society?

by Lynne Matusow

A volunteer organization is only as good as the efforts put forth by its members. Without the assistance of members like you, the Hawaii Audubon Society will be hard pressed to continue and expand its services. At press time we were seeking to fill the following positions:

**Program Committee Chair.** This committee is responsible for running the general membership meetings six times a year. The committee finds guest speakers, prepares press releases concerning the meeting, conducts the meeting, and serves refreshments. Most of the work can be done from your home or office. If you can spare four hours a month to coordinate these activities, call Lynne Matusow, 532-4260 (H) or Phil Bruner, 293-3820 (W).

**Phone Tree Coordinator.** You will be responsible for maintaining the list of persons participating in the telephone tree and giving information to phone tree participants when calls need to be made. We need a self starter who is a good communicator and who can devote four to eight hours a month for a minimum of a year. This work can be done from home. Some knowledge of environmental issues and legislators is a plus. To volunteer call David Hill, 988-7460 (H).

**Phone Tree Callers.** We are growing a phone tree—a chain of people who can make calls to decision-makers on environmental issues. This allows the environmental community to respond very quickly with public pressure on important issues. To join our phone tree, call David Hill at 988.7460 (H).

**Testimony Presenters.** Here we need self-starters who can tactfully and effectively present testimony at the legislature, county councils, and hearings of governmental boards and agencies, usually on weekdays during daytime hours. If you can't write the testimony, we will have someone else do it. A knowledge of Hawai'i, including issues, politicians, and who the players are is a big plus. A minimum of four hours a month is required. To volunteer call David Hill, 988-7460 (H).

**Recordkeeper.** This position, which requires you to spend one morning or afternoon a week at the office, entails integrating our membership records with our fundraising records and locating telephone numbers for all new members. The work is done manu-

ally. To volunteer call Lynne Matusow, 531-4260 (H).

**Volunteer Coordinator.** This hardworking, gregarious individual will match volunteers with available jobs, see that volunteers are trained, and maintain contact with volunteers to see if they are happy or have suggestions for improving things, and plan volunteer recognition events. This job will take two hours or more weekly. To volunteer call Lynne Matusow, 531-4260 (H).

**Office Staff.** We would like to have our office open five days a week. People are needed for morning or afternoon shifts Monday, Tuesday, Thursday, and Friday. Among the duties are answering the telephone, distributing the mail, referring problems to the appropriate officer or committee chair, filing, and responding to routine correspondence. To volunteer call Lynne Matusow, 531-4260 (H).

**Writers and Editors for 'Elepaio.** If you can write stories, edit copy, and come up with story ideas call Lynne Matusow, 531-4260 (H).

The above is only a partial list. If you have a particular skill or interest, call Lynne Matusow, 531-4260 (H). Who knows, maybe we have the right opening but haven't publicized it yet. All of the above are volunteer positions. Hawaii Audubon does not have paid staff.

**And, a special welcome and mahalo to our newest volunteers Lila Gardner, Barbara Gurney, and Beth Hyder.**

## 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, 212 Merchant Street, Suite 320, Honolulu, HI 96813.

## World of Wildlife Exhibit at Honolulu Airport

At first it's the large rotating globe that attracts your attention. Then the wildlife drawings and carvings, illegal wildlife product display, and the videos catch your eye. The new "Enjoy a World of Wildlife" display was designed by the U. S. Fish and Wildlife Service (USFWS) to reach the 22 million people passing through the airport annually.

"Our goal is to increase people's appreciation for wildlife in its natural habitat, and to remind them of the laws that protect threatened and endangered species worldwide," said Marvin L. Plenert, Pacific regional director for the USFWS.

The five-foot globe indicates the more than 100 countries that have signed the Convention on International Trade in Endangered Species (CITES), which regulates commercial exports and imports of endangered plants, animals, and their products. Several illegal products, all of which were confiscated upon arrival in the U.S., are shown. These include tortoise shell earrings, shoes made from caiman leather, and elephant ivory carvings.

"Travellers often are not aware of laws protecting endangered species and buy such products without realizing they are illegal. We want people to understand that we will confiscate such items, and substantial fines may be imposed as well," said Plenert.

The exhibit also provides information on threatened and endangered wildlife species, with panels on marine mammals, land mammals, reptiles, and rare birds. Four carved koa panels focus on animals found in Hawai'i, including the humuhumu-nukunuku-a-pua'a or triggerfish, the Hawaiian monk seal, the honu or green sea turtle, and Koloa Maoli or Hawaiian Duck. The panels were carved by Scott Hare of Kurtistown.

## Publications Available

The Hawaii Audubon Society publishes books, checklists, and field cards relating to birds of Hawai'i and the Pacific. For a complete price list send a self-addressed stamped envelope to Publications List, Hawaii Audubon Society, 212 Merchant Street, Suite 320, Honolulu, HI 96813.

# Hawaii Audubon Society

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## 'ELEPAIO

ISSN 0013-6069

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The 'Elepaio is printed on recycled paper.

## 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 ash (gray) with a black design. We also have a few in aqua, navy, white, and beige. 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, 2069 California Avenue, #20B, 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 1993

All amounts are in U.S. dollars.  
Includes delivery of 'Elepaio.

### Regular Member

#### Delivery to U.S. zip code addresses

Via bulk mail \$ 10.00

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Junior Member (18 and under) 5.00

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(three annual payments) 100.00, 100.00, 50.00

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#### Introductory dues for

National and Hawaii Societies: 20.00

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

## Notice to Authors

'Elepaio invites submission of original scientific articles of between 1,500 and 3,000 words on the natural history of Hawai'i and the Pacific. Such articles are subject to peer review.

Scientific articles should be typewritten and double-spaced. Four copies must be submitted. In addition, authors are asked to submit the article on a computer diskette, with a clear indication of the word processing program used. Because we have a Macintosh computer, we prefer you use that Macintosh compatible software, although we can convert DOS.

We do all layouts directly on the computer. For that reason, authors are asked to adhere to the following guidelines: only one space after periods; no indentations, except for paragraphs and tables; no underlines, if on a diskette underlines should be shown as italics; no bold face type; use upper and lower case, nothing is to be in all capital letters; Hawaiian glottals should be used; capitalization for all bird species should follow American Ornithologists' Union nomenclature; dates should be shown as date, month, year; and the address of all authors should be included.

Photographs/illustrations may be either color or black-and-white prints, 3.5 by 5 inches or larger. They should be clearly labelled as to subject and photographer/artist. Cropping lines (if needed) should be indicated. The originals of figures, maps, graphs, etc. should be clean and clear, with lettering large enough to remain legible after reduction to fit journal format. Submit two good-quality xerographic copies along with each original illustration.

Manuscripts should be sent to 'Elepaio, Hawaii Audubon Society, 212 Merchant Street, Suite 320, Honolulu, HI 96813.

## Environmental Directory Available

In celebration of Earth Day 1990, the Hawaii Audubon Society published the Hawai'i Green Pages. The directory lists over 150 environmental efforts in Hawai'i. For a free copy, send a self-addressed stamped #10 envelope to Directory, Hawaii Audubon Society, 212 Merchant Street, Suite 320, Honolulu, HI 96813.

# Calendar of Events

## April 12, Monday

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

## April 18, Sunday

Bird watching trip to Ka'ena Point Natural Area Reserve, featuring nesting Laysan Albatross, native plants, and possibly whales and other seabirds. Meet at the State Library on Punchbowl Street at 7:30 a.m. or at the end of Yohkohama Bay Beach Park at 9:00 a.m. Bring lunch, water, hiking shoes, sunscreen, binoculars, and/or spotting scopes. For more information call Lance Tanino, 247-5965 (H). Suggested donation: \$2.00.

## April 19, Monday

General membership meeting, Paki Conference Room, Bishop Museum, 7:30 p.m. Ken Wood, a scientist with the National Tropical Botanical Garden on Kaua'i, will present a slide show on the "Effects of Hurricane 'Iniki on the Rare Plants of Kaua'i." Refreshments will be served.

## 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, 212 Merchant Street, Suite 320, Honolulu, HI 96813, (808) 528-1432.

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## 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.

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