



# 'ELEPAIO

Journal of the  
Hawaii Audubon Society

For the Protection of  
Hawaii's Native Wildlife

VOLUME 66, NUMBER 2

MARCH 2006

## State of the Society-2005 by Elizabeth Kumabe, President

*MISSION STATEMENT: To foster community values that result in the protection and restoration of native ecosystems and conservation of natural resources through education, science and advocacy in Hawaii and the Pacific.*

The Hawaii Audubon Society was founded in 1939 as an independent, non-profit membership association with specific aims pertaining to the protection of Hawaii's native wildlife and habitats through education, science and advocacy. The Society has a membership of approximately 1,500 individuals and operates in accordance with a constitution and by-laws under the supervision of a Board of Directors elected by the members. The Society became a certified chapter of the National Audubon Society in 1978, but continues to function independently in all fiscal, policy and programmatic matters. An administrative assistant, an aquatics programs director, interns, and several independent contractors provide administrative and professional services for the Society but many necessary tasks and responsibilities are accomplished through the efforts of dedicated volunteers statewide. The Hawaii Audubon Society publishes the 'Elepaio, a peer reviewed journal, nine times per year, and operates two websites: [www.hawaii-audubon.com](http://www.hawaii-audubon.com) and [www.pacfish.org](http://www.pacfish.org).

In 2005, the culmination of several years of effort by members of Hawaii Audubon Society Board of Directors, staff, and dedicated volunteers, was realized with the publication of the sixth edition of the Society's classic field guide, *Hawaii's Birds*. Scores of stunning new bird photographs complement the revised text, complete with new data, the inclusion of three new birds and current taxonomy. First published by the Hawaii Audubon Society in 1967, *Hawaii's Birds* has become a favorite companion of birders and nature lovers of all ages and has regularly appeared in the top ten on the Hawai'i non-fiction bestsellers list.

**Education** (see also the *Pacific Fisheries Coalition report, page 12*): The 'Elepaio, the journal of the Hawaii Audubon Society, regularly provides important information regarding wildlife and habitat conservation matters in Hawai'i and the tropical Pacific. A variety of informational posters, publications and curriculum materials promoting the protection of marine resources were created and distributed by the Society's Pacific Fisheries Coalition program. The educational products and presentations target students and the general public as well as fishermen, lawmakers and resource managers.

At the 48th Hawai'i State Science and Engineering Fair, the Society awarded two prizes for outstanding student research relating to Hawaii's natural history. Mali'o Kodis, a seventh-grade student at Waiakea Intermediate School in Hilo, received the HAS Junior Division award for her project: "Hedychium gardnerianum's (Kahili Ginger) Effects on Surrounding Soil and Native Flora." The Society's Outstanding Research Award

for the Senior Division went to two students from Kapolei High School, Samuel Alonzo and Dillon Weir, who did extensive field studies for their project entitled "Reef Efficiency: Natural Reef vs. Artificial Reef." The office of the Hawaii Audubon Society continues to serve as an educational resource and networking point for local, national and international contacts.

**Conservation and Advocacy** (see also the *Pacific Fisheries coalition report, page 12*):

Elizabeth Kumabe, President of the Society's Board of Directors attended the White House Conference on Cooperative Conservation in St. Louis, Missouri, in August 2005. U.S. Marine Corps sponsored the travel and conference participation along with other key community partners to make the trip with Diane Drigot, Marine Corps Base Hawai'i Senior Natural Resources Manager to showcase and strengthen bonds among community partners engaged in shared governance and citizen stewardship of safeguarding and sustaining our natural resources heritage and supporting wise land use decisions. Ron Walker, First Vice-President of the Board, attended the State and National Audubon Retreat at Park City, Utah, May 19-21. Among the topics discussed were: "Building Collaborative Working Relationships With (and in) Chapters," "Developing Conservation Outcomes," and "Engaging People." A consistent theme throughout the conference was the necessity for "marketing" the Audubon mission with the general public. Society volunteers tracked bills and provided testimony on behalf of the conservation of Hawaii's, native wildlife, habitat, and marine resources. The Hawaii Audubon Society continues to be a participant in the O'ahu Invasive Species Committee, the Alien Aquatic Organism Task Force, and similar activities on Maui and Hawai'i islands. This voluntary partnership of government agencies and non-profit groups and individuals is committed to eliminating the threat which alien invasive species pose to Hawaii's native ecosystems. Society representatives continued to work with Ahahui Malama i ka Lokahi and the Ho'olaulima Ia Kawai Nui to promote endangered species conservation and cultural education programs based at Kawai Nui Marsh. The Marsh received Ramsar designation as a "Wetland of Significance" in 2005. The Society's Conservation Committee, working to prevent threats to native wildlife and habitats, reviewed and submitted comments on a variety of proposed projects and activities statewide.

**Programs and Membership:** Five bi-monthly program meetings were scheduled by the Society in 2005. These meetings are open at no cost to all Society members and the general

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public, and include informational presentations on a wide variety of topics. Programs offered in conjunction with membership meetings included the following: Christine Brammer of the Hawaiian Islands Humpback Whale National Marine Sanctuary Program gave an informative presentation on the Program's educational outreach activities in support of the protection of Humpback whales in Hawaiian waters; Dr. Wally Johnson thrilled his audience with the latest findings and photos resulting from his radiotelemetry research on Pacific Golden Plover (Kolea) migration; Sally Marston shared her unique experiences and photographs from her time as a volunteer researcher at the Midway Atoll National Wildlife Refuge; David Henkin, attorney for Earthjustice, provided important information on the state of the Endangered Species Act; a panel of three renowned contributors to the Hawaii Audubon Society, Bob Pyle, Mike Ord and Tom Dove, shared fascinating anecdotes about the history of the society and its premier publication, "Hawaii's Birds;" Dr. Lenny Freed provided a fascinating discussion and images on the topic of the possible extinction of the 'Akepa; and Ron Walker, HAS Board member and distinguished retiree from wildlife management positions in the State and Federal government, provided valuable tips for identifying Hawaii's birds in preparation for the Christmas Bird Count in December.

**Field Excursions and Service Activities:** Field excursions in 2005 included several new destinations and many sites which have proven to be annual favorites for members and visitors. Groups guided by Society volunteers visited the following sites: Pacific Ocean for a whale watch and seabird viewing cruise off O'ahu; Kahuku dunes hike for opportunities to see migratory shorebirds, especially the elusive Bristle-thighed curlew; Ka'ena Point Laysan Albatross nesting sites; Honolulu Zoo for a guided tour of rare exotic and native birds; Hilton Hawaiian Village Hotel for a look at the varied exhibits of birds on display at their facility; Ponds in 'Ewa Beach on the grounds of the Chevron processing plant where native Hawaiian stilts are provided with safe nesting habitat; Kuli'ou'ou Ridge hike for a chance to see native dryland forest plants and several species of birds; Paiko Lagoon Wildlife Refuge for reef and mud explorations and viewing opportunities for migratory shorebirds; Seabird Reha-

bilitation facility at Sea Life Park to view convalescent and non-releasable seabirds including White Tern, Laysan Albatross, Red-footed Booby, Wedge-tailed Shearwater and Sooty Tern; and James Campbell National Wildlife Refuge to observe many species of migratory and wetland birds in their natural habitat. In December, the annual Christmas Bird Counts were held at several locations on O'ahu, Kaua'i, Moloka'i, Maui and the Big Island. Society volunteers served as organizers and team leaders of the event which operates in conjunction with Christmas Bird Counts at thousands of locations in the U.S. and around the world.

**Volunteer Activities:** Hawaii Audubon Society volunteers participated in clean-ups and habitat restoration at several shoreline and wetland sites as well as at the Waimea Valley Audubon Center which is operated on the north shore of O'ahu by the National Audubon Society. Rare bird sightings by members and volunteers were registered with the database at Bishop Museum. Hawaii Audubon Society members were also invited to join field trips and projects at Kawai Nui Marsh sponsored by 'Ahahui Malama i Ka Lokahi, to participate in native forest restoration with the O'ahu Na Ala Hele Trails and Access program, and to work with the Sierra Club doing alien plant control and outplanting of native species at Manuka Natural Area Reserve on the Big Island. Members represented the Society at conferences and public hearings, and on several steering committees, teams, task forces and workshops, including: Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve Advisory Council, the 'Alala Recovery Team, the Wetland Restoration and Protection Partnership, the Forest Bird Recovery Team, the Natural Area Reserve Commission, the Marine Fish Conservation Network Advisory Board, and Hawai'i Watchable Wildlife Campaign.

**Other Society Activities:** The January, 2005 Annual Chapter Leaders' Retreat featured strategic planning activities and discussions of conservation issues and the Hawaii Audubon Society's role in promoting the protection of native wildlife and habitats.

In October, the Society's twelfth Annual Awards Dinner was held at the Atherton Halau on the grounds of the Bishop

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Fundraising: vacant

Grants & Scholarships: Phil Bruner

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Website: Stephen Bibbs



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Museum. Eight notable individuals were recognized for their vital contributions to the creation, production and revisions for the sixth edition of the Society's guide, "Hawaii's Birds." The deserving awardees included: Mike Ord, past President of the Hawaii Audubon Society and creator of the first edition of "Hawaii's Birds;" Bob Pyle, past President and avian taxonomy specialist; Lynne Madden, Vice President of Island Heritage Corporation which was responsible for the beautiful layout and design of the 6th Edition; Tom Dove, avian photographer who graciously donated hundreds of exquisite photos to the Society; Eric VanderWerf, responsible for text revisions; Ron Walker, reviewer and editor; Linda Paul, advisor and editor; Wendy Johnson, facilitator and editor; and Linda Shapin, responsible for photo acquisition, collating text revisions, and oversight of production and print processes.

**Grants and Scholarships:** The Society's George C. Munro Environmental Law Award included a small grant which was presented to Koalani L. Kaulukukui, a second year student at the William S. Richardson School of Law in Honolulu. A full tuition scholarship for use in the University of Hawai'i system for one year was provided in memory of Rose Schuster Taylor to UH student Lara Reynolds.

A small grant in support of original research was awarded by the Society to Norine Yeung, who is investigating molecular systematics and population genetics of the White Tern (*Gygis alba*). Lindsay Young also received a small grant for her work on the foraging ecology and population genetics of the Laysan albatross (*Phoebastria immutabilis*), as did Alex Wegmann who works on the impact of land crabs and rats on predation and dispersal of seeds on Palmyra Atoll. A special contribution was made in 2005 from the Society's Conservation Committee funds to support an urgent need for the design of a predator control program at Nihoa Island in the Northwestern Hawaiian Islands. A population explosion of alien grasshoppers threatens the survival of endemic insects, plants and birds on that island. Support from the Society's "Kolea Fund" was provided to Dr. Oscar W. Johnson for radiotelemetry investigations on the migratory behavior of the Pacific Golden Plover (*Pluvialis fulva*).

**Publications and Products:** The Society published nine issues of the journal 'Elepaio in 2005. This publication was mailed to all local members and subscribers and includes peer-reviewed articles on current research in addition to news relating to the conservation and management of natural resources in Hawai'i and the Pacific. The 'Elepaio also includes Society updates and notice of activities of interest to members and the general public. Other educational products produced by the Society include the following: Hawaii's Birds, a definitive, full color paperback now in its sixth edition; a companion cassette set "Voices of Hawaii's Birds;" a current checklist of the Birds of Hawai'i; "Hidden Treasures of O'ahu," a map featuring locations and detailed information on sites for exploring nature and ancient Hawaiian culture; and "The Edge of Forever," an art-quality limited edition print featuring two endangered Nene. The Society also offers several T-shirt designs and an embroidered patch featuring the 'Elepaio.

## Hawaii Audubon Society Thanks Hawaii's Mayors and County Councils

by Keiko Bonk, Northwestern Hawaiian Islands  
Communications Coordinator

Hawaii Audubon Society is presently working with a coalition of local and national environmental and Hawaiian organizations to protect the Northwestern Hawaiian Islands (NWHI). Thanks to the generous fiscal assistance of PEW Family Charitable Trust two full time Northwestern Hawaiian Island consultants have joined HAS staff to assist in this campaign. As part of this campaign HAS is pursuing Hawaii's political and business leadership for support of full protection of the northwestern islands. In the summer of 2005 Hawaii Audubon Society began the campaign to inform the mayors and county council members of the need to protect this special wild place.

Hawaii Audubon Society thanks the County Councils of Hawai'i for introducing and adopting three of the four council resolutions in support of the northwest islands. These resolutions advocate support for the Hawai'i State Marine Refuge rules and regulations, which were approved and adopted in September 2005; support of the NWHI National Marine Refuge Act introduced in Congress by Representative Ed Case; advocates that the National Marine Sanctuary Program prohibit all extractive uses in the proposed federal sanctuary; and advocates prohibiting all commercial activities, while protecting Native Hawaiian cultural, religious and subsistence practices, and allowing only limited and appropriate scientific and educational activities. We appreciate the grassroots leadership the County Councils have taken to care for Hawaii's natural and cultural resources.

Councilmembers JoAnn Yukimura of Kaua'i, Dain Kane of Maui and Robert Jacobson of Hawai'i Island introduced the NWHI resolutions that were adopted in 2005. The City and County of Honolulu Resolution, introduced by Council Vice Chair Anne Kobayashi, is pending in the Council Planning Committee.

Hawaii Audubon Society also thanks Maui Mayor Alan Arakawa and Hawai'i Island Mayor Harry Kim for their letters of support. We appreciate their conscientious effort made to care for this delicate ecosystem. HAS also requested letters of support from Kauai Mayor Bryan Baptiste and Honolulu Mayor Mufi Hannemann. We have provided these leaders with the information needed to complete their letters.

The adopted resolutions and letters from our local leaders have been sent to Vice Admiral Conrad Lautenbacher of the National Oceanic and Atmospheric Administration and Chairperson James Connaughton of the Council on Environmental Quality; Senators Inouye and Akaka; Representatives Abercrombie and Case; and Governor Lingle

For more information please contact Keiko Bonk at Hawaii Audubon Society, 548-3474 or [nwhibonk@earthlink.net](mailto:nwhibonk@earthlink.net).



## Record Albatross Numbers Tallied at Midway Atoll National Wildlife Refuge

The annual count of Laysan and black-footed albatross nests by volunteers at Midway Atoll National Wildlife Refuge has been completed, and the U.S. Fish and Wildlife Service reports numbers for both species have increased to the highest level since the count began in 1991. A total of 511,612 nests were painstakingly counted during a three-week period in December and January.

“We had a great group of counters who were incredibly hard-working,” said Dr. Annie Marshall of the Fish and Wildlife Service’s Pacific Islands office in Honolulu. “More nests meant more work, but it was extremely rewarding to see the numbers just keep rising.”

Though Midway Atoll consists of only 1,540 acres, it hosts the world’s largest populations of Laysan and black-footed albatrosses. The total number of nests counted this year by island are:

	Acres	Laysan albatross nests	Black-footed albatross nests	Totals
Sand Island	1,200	277,732	12,606	290,338
Eastern Island	334	207,369	11,461	218,830
Spit Islet	6	2,426	18	2,444
Totals	1,540	487,527	24,085	511,612

“We are particularly pleased to see an increase in the number of black-footed albatrosses,” said John Klavitter, the refuge’s wildlife biologist. “This marks the fifth year of increased numbers of black-footed albatross nests on Midway after fairly steep declines in the 1990s.”

Since it is impossible to count individual birds, the volunteers are assigned sectors on all three islands in which they count active nests. They move in a line through each section with a mechanical counter and an inverted paint can, using it to make a tiny dot of orange paint beside each active nest. The total number of nests multiplied by two represents the total breeding population, in this case, more than 1 million adults. A 50 percent multiplier is used to approximate the number of albatross on the atoll, since many unmated birds return to Midway to practice their courting ritual and eventually find a mate for life.

This year’s 21 volunteers came from as far away as Minnesota and included representatives from Oregon, California, and Hawai‘i. Each year, seasoned albatross count veterans are paired with newcomers to ensure consistent results. “Though the volunteers miss the holidays at home, they tell us their Midway experience more than makes up for it,” Klavitter explained. “Some of the folks here this year were on a waiting list for 3 years to come to Midway.”

In addition to the albatross count, the volunteers were responsible for a vegetation sampling project and helped remove invasive ironwood trees. The purpose of the vegetation sampling is to help determine the impact of invasive plants such as verbena on albatross nesting. That work is continuing through the end of January. Volunteers helped pull ironwood seedlings and cut down small trees from the northern and western shores of Sand Island to restore albatross nesting habitat. Originally introduced in the early 1900s as a windbreak, ironwood trees spread over large areas of the island. Trees adjacent to the airfield runways were removed for safety reasons, and current efforts are to control their spread into new areas.

As the volunteers return to their homes, the albatross chicks are hatching at Midway. The first black-footed albatross chick was spotted on January 16 near the west beach and the first Laysan albatross chick 4 days later in the town area. Most of the chicks will have hatched within the next week or so.

“I’ll miss seeing the chicks, but we had an incredible experience,” said Marshall. “You’re living in the birds’ natural environment, surrounded by their music and dancing. They aren’t afraid of people, and accept us as part of their community. It’s always hard to leave.”

The 2005-6 count is the sixth complete assessment of Midway’s nesting albatrosses in the last 14 years. Though numbers have fluctuated somewhat from year to year, the previous record nest counts were 441,178 Laysan albatross nests in 2003 and 21,645 black-footed albatross nests in 1996. The International Union for the Conservation of Nature identifies 17 of 21 species of albatross as being at risk, including black-footed and Laysan albatrosses.

Source: FWS News Release Dated January 25, 2006 Contact: Barbara Maxfield, 808 792 9531 or 753 0440



Photo by  
John Klavitter



## Field Trips for 2006

Field Trip information and updates are also be available on the HAS office answering machine (528-1432) and on our website, [www.hawaii-audubon.com](http://www.hawaii-audubon.com). Details for the field trips will be published and posted as they become available.

**March 12, Sunday:** Ka'ena Point with Arlene Buchholz. Enjoy the wild beauty of this undeveloped corner of O'ahu by hiking 2 1/2 miles to the Nature Preserve at the Point. See Laysan Albatross adults and chicks, humpback whales, and native coastal plants. Meet at parking lot on Mokuleia side at 9:30am. Please call or email HAS office to register (528-1432, [hiaudsoc@pixi.com](mailto:hiaudsoc@pixi.com)).

**April:** 'Ihi'ihilauakea with Liz Kumabe

**May:** Chevron Ponds with Christine Volinski

**June:** Hilton Hawaiian Village birds with Alice Roberts (?)

**July:** Honolulu Zoo with Wendy Johnson

**August:** 'Aiea Loop Trail with Phil Bruner

**September:** Kuliouou with Alice Roberts

**October:** Kahuku Shoreline with Phil Bruner

**November:** James Campbell National Wildlife Refuge with Ron Walker

**December:** Christmas Bird Count

## Tentative Schedule - Hanauma Bay Education Program Lectures and Films March 2006

**2nd:** "Getting a Sense of Numbers – Assessing Hawaii's Fish Stocks" by Wende Goo of NOAA Fisheries

**9th:** "Researching Pelagic Fish Habitat – Taking a look at the Environment" by Donald Hawn, NOAA Fisheries

**16th:** "What do Hawaii Fisheries mean to the Economy?" by Dr. Samuel Pooley and Dr. Pingsun Leung of the Pelagic Fisheries Research Program, School of Ocean and Earth Science and Technology, University of Hawaii

**23rd:** "Tagging and Tracking of Pelagic Fish – Getting a Better Sense of Movement" by Dave Itano of the University of Hawaii

**30th:** "Managing Marine Fisheries of Hawaii and the US Pacific Islands, It's Past, Present and Future" by Sylvia Spalding of the Western Pacific Fishery Management Council

### April Program Meeting

Our next Program Meeting will be April 17th. The speaker and subject have not been decided upon, but will be announced in the April issue of 'Elepaio. Information will also be available on the office phone (528-1432) and on our website, [www.hawaii-audubon.com](http://www.hawaii-audubon.com), in the near future.

### Membership in Hawaii Audubon Society

#### Regular US Member

(via bulk mail, not forwardable) ..... \$ 20.00  
 First Class Mail ..... \$ 26.00  
 Junior Members (18 and under) ..... \$ 15.00  
 Supporting Member ..... \$100.00

#### Foreign Membership (Airmail)

Mexico ..... \$ 26.00  
 Canada ..... \$ 28.00  
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*Donations are tax deductible and gratefully accepted.*

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The Pacific Fisheries Coalition (PFC), a project of the Hawaii Audubon Society, is a unique collaboration between conservationists and fishermen who found common ground in their desire to promote the conservation and responsible use of living marine resources in Hawai'i and the Pacific Basin. The project is administered by the Hawaii Audubon Society and directed by Linda Paul. The PFC Community Outreach Coordinator is Ellyn Tong, and Naomi Arcand is PFC intern extraordinaire. In July the PFC project received additional funding to hire a Communications Coordinator to build widespread public support for and understanding of the need for conservation of the Northwest Hawaiian Islands (NWHI) and Keiko Bonk was hired. In the fall the NWHI Network was formed and in December an additional grant was received to hire NWHI Network Office Administrator David Fernholz.

Linda Paul and PFC members William Aila and Rick Gaffney serve on the NWHI Coral Reef Ecosystem Reserve Advisory Council (RAC). National Oceanic Atmospheric Administration (NOAA) is now in the process of designating the Reserve as a National Marine Sanctuary and in 2005 the RAC completed its input on the draft management plan for the proposed Sanctuary and its preferred Draft Environmental Impact Statement alternative. Linda attended the annual meeting of the Sanctuary Advisory Council Chairs in San Francisco in February, gave presentations on the NWHI at the U.S. Coral Reef Task Force at the spring and fall meetings in Washington, D.C. and Palau, and participated in the NOAA Stakeholders meeting in Washington, D.C.

Congressman Ed Case introduced a bill into Congress on May 16, 2005 entitled "The Northwestern Hawaiian Islands National Marine Refuge Act", HR 2376, which would provide the National Marine Sanctuary Program with a much-needed tool to safeguard large marine areas in need of much higher levels of protection than is possible under the current National Marine Sanctuaries Act. In September 2005 Governor Lingle signed rules designating state waters in the NWHI as a state marine refuge and announced that in partnership with the Hawaii Audubon Society, the State will be actively pursuing designation of the NWHI as a mixed cultural and natural World Heritage Site. Twenty six non profit organizations support the designation.

Ellyn Tong put together a 4 color brochure One of the Last Wild Places on Earth about the NWHI, which was passed out at the Marine Educator's Conference on Maui where Ellyn gave a presentation. Naomi, Ellyn, and Lisa Altieri produced two videos on the NWHI. Ellyn completed the design and layout of a 44 page NWHI World Heritage Site illustrated educational report, which includes input from a multitude of sources. Keiko Bonk worked with all four county councils to generate resolutions of support for complete and permanent protection of the NWHI ecosystems.

Linda Paul, as a member of the national Marine Fish Conservation Network (MFCN), participated in monthly board meetings by phone and biannual meetings in Washington, D.C. The MFCN is supporting a bill in Congress that will reform how the regional fishery management councils manage fish stocks. Also in D.C. Linda attended NOAA's Managing Our Nations Fisher-

ies Conference in March and in April gave the Central & Western Pacific Regional Report at the Ocean Conservation meeting. PFC members continue to monitor meetings of the Western Pacific Regional Fisheries Management Council. Linda is also a member of the U.S. delegation to the Western and Central Pacific Fisheries Commission (WCPFC) and attended meetings in Tokyo and Pohnpei FSM, where she continued to push for the adoption of conservation measures.

Ellyn Tong did a major revision of PFC's brochure, Taking Care of Hawaii's Resources, focusing on the decline of Hawaii's marine resources and needed management measures. Now in color, it opens out to a poster illustrating the many stakeholders that want the same fish. The brochure, along with our posters and other educational materials, were distributed at many meetings and events including the Malama Kailua event on May 1 and the U.S. Coral Reef Task Force meetings. In December we reprinted 10,000 copies Ellyn's popular four color poster that illustrates the actual size that 20 commonly harvested reef fish have to be in order to reproduce.

### **Deadline for Applications for Research Grants in Hawaiian or Pacific Natural History is April 1, 2006**

The Hawaii Audubon Society offers grants for research in Hawaiian or Pacific natural history. Awards are oriented toward small-scale projects and generally do not exceed \$500.00. Grants are reviewed semiannually. Deadlines are April 1 for summer/fall grants and October 1 for winter/spring grants. Application guidelines are available by calling (528-1432) or emailing (hiaudsoc@pixi.com) the HAS office. The application are also available on our website, [www.hawaiiudubon.com](http://www.hawaiiudubon.com).

### **Deadline to Apply for UH Undergraduate Scholarship is May 1, 2006**

Through a trust set up in memory of Rose Schuster Taylor, Hawaii Audubon Society offers a full tuition scholarship to an undergraduate student in the University of Hawai'i system each school year.

Applicants must be majoring in a field related to Hawaiian or Pacific natural history. Applications are available by calling (528-1432) or emailing (hiaudsoc@pixi.com) the HAS office. The application is also available on our website, [www.hawaiiudubon.com](http://www.hawaiiudubon.com). Completed applications must be received by May 1, 2006.





Photo by Gordon Smith, USFWS

## Endangered Baby Spiders Seen for the First Time in 30 Years

Amidst a dark, mud-lined lava tube in Kauai's Koloa Basin, researchers crawling on hands and knees are ecstatic about seeing baby Kauai cave wolf spiders or "spiderlings" for the first time in 30 years. For many people this is what nightmares are made of, but for scientists and researchers in Hawaii, seeing these rare spiderlings with a known population of perhaps fewer than 30 individuals is a lifetime dream come true.

"This unique eyeless wolf spider is the most remarkable cave species in Hawaii," said Dr. Frank Howarth, an entomologist from Bishop Museum considered by many to be the leading expert on the Kauai cave wolf spider. "Besides being perfectly adapted to life in the dark lava tubes of Kauai, like their big-eyed surface relatives, cave wolf spiders share a special adaptation – their spiderlings have a row of comb-like teeth on their claws that perfectly match the spaces on the multi-branched hairs found on the mother's back. This match allows the spiderlings' to hold on for safe transport and protection by the mother."

In late November 2005, U.S. Fish and Wildlife Service biologist Gordon Smith and University of Hawaii graduate student Wendy McDowell – accompanied by representatives from the private lands that harbor this rare spider – conducted cave surveys of the spider's habitat. The team observed two hatched and two unhatched (still in the egg case) spiderlings. Biologists point out that there may have been more spiderlings present in areas inaccessible to the team. The Service has been conducting regular cave surveys of the spider and another endangered species, the Kauai cave amphipod, for the past 10 years.

The biologists survey all accessible spider habitats, identify immature and adult spiders, note the quality and condition of the habitat and determine the sex of the adults. Since 1996, biologists have occasionally seen spiders with egg cases but they had never seen spiderlings until that fateful day in November.

Dr. Howarth and McDowell suggest that this very special sighting may be attributed to several factors such as regular surveys for the past 10 years, an increase in the number of Kauai cave amphipods – believed to be a primary food source for the spiders, improved surface habitat providing more food for the amphipods, or just seasonal variability. The Service hopes that McDowell's research will provide a better understanding of the spider's life history and its habitat needs.

Little is known about this rare spider, first discovered in 1971, which is found only in the lava tubes and cave-bearing rock in Kauai's Koloa Basin. The species has been documented in five different caves within the basin, but has only been observed regularly in one of these caves.

"The Service has worked closely with the private landowners whose property harbors spider habitat," said Lorena Wada, fish and wildlife biologist with the U.S. Fish and Wildlife Service's Pacific Islands Fish and Wildlife Office. "These private landowners have been instrumental in protecting critical habitat, permitting scientific researchers' access to these highly sensitive habitats, and enhancing public knowledge of and support for protecting these species."

The primary threat to the Kauai cave wolf spider is human-caused destruction or degradation to their highly sensitive cave habitat. To protect the cave systems, the Service is working with private landowners to control human entry, prevent the destruction of native plant communities above the cave systems, prevent the introduction of nonnative predators and competitors and control those already present.

Protecting the cave itself is important, but proper management of the habitat above the caves is essential to encourage the growth of appropriate plants whose roots provide food and debris for the cave amphipod and to increase the relative humidity in caves. Both these cave-dwelling species appear to require high humidity, perhaps as much as 100 percent.

The Kauai cave wolf spider is a mid-size (0.50 to 0.75-inch) hunting spider that has completely lost its eyes as part of its adaptation to life in lava tubes. Instead of building webs, it chases and grabs its prey or may utilize sit-and-wait ambush tactics. Unlike most wolf spiders that produce 100 to 300 spiderlings per clutch, the Kauai cave wolf spider is believed to produce fewer than 30 spiderlings per clutch. Newly hatched spiderlings are unusually large and are carried on the back of the female for only a few days.

For more information about Hawaii's endangered and threatened species, visit the Service's website at <http://www.fws.gov/pacificislands/>.

The U.S. Fish and Wildlife Service is the principal Federal agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people. The Service manages the 95-million-acre National Wildlife Refuge System, which encompasses 545 national wildlife refuges, thousands of small wetlands and other special management areas. It also operates 69 national fish hatcheries, 64 fishery resources offices and 81 ecological services field stations. The agency enforces federal wildlife laws, administers the Endangered Species Act, manages migratory bird populations, restores nationally significant fisheries, conserves and restores wildlife habitat such as wetlands, and helps foreign and Native American tribal governments with their conservation efforts. It also oversees the Federal Assistance program, which distributes hundreds of millions of dollars in excise taxes on fishing and hunting equipment to state fish and wildlife agencies.

Source: USFWS News Release dated 1/24/06

Contact: Ken Foote, 808-792-9535 or 808-282-9442





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## Calendar of Events

**Sunday, March 12 Field Trip**

Ka'ena Point with Arlene Buchholz.

*See page 11.*

**Monday, March 20 Board Meeting**

Open to all members, 6:30 to 8:30pm at the HAS office. Education and Conservation Committees meet at 5:45pm before Board meetings.

**Monday, April 17 Program Meeting**

Topic to be announced.

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