Journal of the Hawaii Audubon Society

For the Protection of Hawaii's Native Wildlife

VOLUME 69, NUMBER 9

Audubon's 110th Annual Christmas Bird Count December 14, 2009 - January 5, 2010

EPA

Since the Christmas Bird Count began over a century ago, it has relied on the dedication and commitment of volunteer citizen scientists. In other words, it all starts with you! Everyone can participate from first time birders to experts and everyone in between. Come be a part of the Longest running wildlife census. The information we collect will help the Audubon as well as other organizations assess the health of bird populations.

This year marks the Hawaii Audubon Society 66th year. We will be having counts state wide. Please let your local contact person know you will be participating. If you would like to lead a count this year or in the future please contact the HAS office. Here are some of the counts we will be having this year please check our website at www.hawaiiaudubon.com for future updates.

This one day event is great opportunity to meet other birders and volunteers near you. It is also a great chance to learn some new birding skills as well as collecting valuable data for Hawai'i. So please remember to sign up and we look forward to counting with you this Holiday season!

Contact your local CBC Contact to sign up

Waipio Count Jan 3rd with David Bremer Contact bremerd001@hawaii.rr.com

> **Kulana Count** Dec 19 with Eldridge Naboa Contact enaboa@tnc.org

Honolulu Count Dec 19 with Arlene Buchholz Contact abvetlab@yahoo.com

Kauaii Kapaa Count Date TBA Contact Shayna_Carney@fws.gov

North Kona Count Date TBA Contact Nick Mitchell 808-322-2735

Molokai Count Dec 14 with Arleone Dibben Young Contact nene@aloha.net

Please visit our website for more dates and locations.

Ground Breaking Research for the Nihoa Millerbird

By Ken Foote

Found only on the small Hawaiian island of Nihoa, the critically endangered Nihoa millerbird (Acrocephalus familiaris kingi) teeters on the brink of extinction. Its single, small population is highly vulnerable to chance events such as severe storms and droughts, accidental introduction of alien species and diseases, and population fluctuations. But new research provides hope that a second population can be established.

Fish and Wildlife Service Biologists and other scientists are concerned that the Nihoa millerbird could meet the fate of its close relative, the Laysan millerbird (Acrocephalus familiaris familiaris). In 1923, the same year that the Nihoa millerbird was scientifically described by AlexanderWetmore, the Laysan millerbird, endemic to Laysan Island was declared extinct. Habitat destruction by introduced rabbits (Oryctolagus cuniculus) led to the demise of the Laysan millerbird and several other terrestrial bird species found only on that island. With the near-complete devegetation of Laysan Island, the millerbird's insect prey disappeared, along with the bird's nesting habitat.

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Nihoa Island does not have rabbits: however, in the 1980's, a non-native grasshopper (*Schistocerca nitens*) arrived on the island. This particular insect is prone to population bursts that result in major damage to island's vegetation and the millerbird's habitat. Although millerbirds eat insects, and may add grasshoppers to their diverse diet, they can't keep this abundant invader under control. The island's remote location and rugged terrain make management of this pest a difficult challenge.

In 2006, owing to the urgency of protecting the Nihoa millerbird, the Service commissioned a ranking of this potential translocation sites for this species and two other endangered birds of the Northwest Hawaiian Islands, the Nihoa finch (*Telespyza ultima*) and Laysan finch (*Telespyza cantans*). This effort ranked Laysan island at the top of the list for a second population of Nihoa millerbirds. Having once had its own millerbird species, Laysan was a logical choice. Moreover, a comprehensive restoration plan for Laysan Island, completed in 1998, includes a call for introducing the Laysan millerbird's closest relative, the Nihoa millerbird, in order to replace a missing component of the island's ecosystem.

The translocation of the Nohoa millerbird from Nihoa to Laysan will thus accomplish two goals: establishing a second



population of a critically endangered species (thereby reducing the threat of extinction) and contributing to the restoration of Laysan Island. Before a translocation is feasible, however, critical data on millerbird life history and habitat requirements are needed.

Mark MacDonald, a graduate student from the University of New Brunswick in Canada, leads a team that is working with the Service to collect information needed for translocations. From July through September of 2007, MacDonald and his team captured and banded Nihoa millerbirds, collected body measurements, assessed body fat and breeding condition, identified individual territories and analyzed vocalizations, conducted feeding experiments, collected fecal samples, observed behavior to determine diet composition, noted the presence and abundance of non-native grasshoppers, and sampled the insect community on Nihoa and Laysan to assess the millerbirds potential prey base.

MacDonald's study estimated the Nihoa millerbirds population at approximately 800 individuals – a relatively high number in 40 years of low fluctuating numbers. He believes this could be attributed not only to high numbers of birds present during the survey period but also a larger survey area, the use of more experienced observers, or (most likely) the greater visibility of the birds during the late summer when vegetation caver is most limited.

Using mist nets, 85 Nihoa millerbirds (60 males and 25 females) were captured and banded. Banding permits identification of previously captured birds and reduces stress that can be caused by multiple captures. Most importantly, however, banding allows individual birds to be identified in the field and enables biologists to identify pairs, map their territories, ad track individual survival from year to year through repeat sightings. Photographs and measurements of wing and tail feathers were taken of each individual, as well as small feather samples for genetic analysis. Growth bars visible on the tail feathers can help scientists determine the age of the bird, and comparison of photographs and measurements with

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results of lab analyses will aid in the field. Development of these methods will ensure hat the right numbers of male and female birds and moved to Laysan.

Several Nihoa birds were placed in a temporary enclosure and presented with a selection of insects. The purpose was to identify millerbird dietary preferences and see if the birds would eat in captivity. Preliminary results showed that the birds fed readily from the plastic container of prey items. Of the choices offered the y left behind only lady bugs, sow bugs, and ants. One bird was quick to chase down fast-moving cockroaches before taking smaller, slower insects such as spiders and beetles. Another test with a male and female showed that, after a brief adjustment period, the pair fed together without hesitation.

Using an iPod and speaker, the team played millerbird songs within the territories of all 60 banded males and recorded the responses with a microphone. These recordings were used to determine the territories of 20 males and will also be analyzed to determine if differences exist in millerbird songs across Nihoa. Preliminary spectrograph analysis of the recordings shows variety among the songs of male millerbirds, but more research is needed to determine if these differences are significant. Identifying millerbird dialects on such a small special scale would be a novel finding and a major accomplishment of the expedition.

Thanks to MacDonald and his team, the Service is one step closer to establishing a second population and greatly reducing the risk of extinction for the Nihoa millerbird.

Ken Foote is an information and education specialist with the Service's Pacific Islands External Affairs office.

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Hawaiian Petrel Faces Uncertain Future

By Matthew Cimitile

They were said to have darkened the skies as large flocks flew overhead. Hawaiian Petrels (*Pterodroma sandwichensis*) are remarkable seabirds that travel as far as the Aleutian Islands in Alaska to obtain food for their young, and then return each year to the Hawaiian Islands to breed. While bird enthusiasts hope to hear the rhythmic vocalization of a petrel or spot it returning to its colony after a foraging trip at sea, researchers probe the mysteries surrounding this species. What is its preferred breeding habitat? Where does it go at sea? Has its

diet and foraging range changed over time? What is its impact on the surrounding ecosystem? Answering these and many other questions will help protect the Hawaiian petrel, but for some of its colonies, time may be running out.

Now a rare sight, Hawaiian petrels are restricted to high elevations on several of the main islands. The birds nest in burrows within remote areas of forests and on the high slopes of volcanoes. Their dwindling Habitat has resulted in a drastic population decline for a bird that may have once numbered in the hundreds of thousands or even millions. Today, an estimated 19,000 individuals remain, and the species is listed as endangered. Continued habitat modification, the spread f invasive species, and predation by non-native mammals threaten the

remaining colonies. Their story is part of the greater biological destruction taking place on the Hawaiian Islands, endangering much of the biodiversity that remains.

According to the American Bird Conservancy, one-third of the birds found on the U.S. endangered and threatened species list occur only in Hawai'i, from snails to trees, are listed as endangered or threatened, more than any other state. As development proceeds at a dizzying pace and natural communities are overrun by non-native plants and animals,

Ornithological radar for studying endangered seabirds in Kalalau Valley, Kaua'i.



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many of the endangered species are on the brink of disappearing.

One example is the po'ouli (*Melamprosops* phaeosoma), a Hawaiian honeycreeper. This forest bird species has not been seen since 2004, and biologists do not know if it survives. An attempt by conservationists to breed the bird in captivity did not succeed. Driven from its preferred habitat, the po'ouli became restricted to a cold, wet area where it slowly declined. Researchers now suspect this was secondary habitat at best, not capable of supporting the population. Such cases reveal that some modern bird habitats on the islands may be quite different from their natural habitats in the past.

The po'ouli is just one example of species

decline due to ecosystem modification. Biodiversity loss is compounded as ecological relationships among different organisms deteriorate. Pollination rates and dispersal of plants have changed due to lower bird populations. Consequences from a reduction in nutrient flow from the ocean to the forests because of seabird declines are still being determined. Decreases and extinctions of certain species have resulted in the decline of entire ecological communities. As Jonathan Price, assistant professor of geography at University of Hawai'i-Hilo, says, "We are dealing with ecosystems that are just unraveling."

The drastic change of Hawaii's environment since human arrival has focused attention on preserving and restoring the islands' natural history. Over the past 30 years, paleontologists Helen James and Storrs Olson of the Smithsonian Institution have uncovered and described around 40 extinct bird species that once inhabited the islands. Many more are still to be described. Their research has not only given a glimpse into the past life that existed on these islands but has laid out a picture of what Hawai'i should look like, giving conservationists a baseline from which to tailor programs for conserving biodiversity.

"In order to create a healthy forest for these species, we need to understand what was the functional ecology of the past," said James. This means identifying what a natural Hawaiian ecological community consisted of and preserving and restoring these communities.

A Hawaiian petrel takes off after being picked up by the Kaua'i Save Our Shearwaters program.



For these petrels, current observations indicate their natural habitat is high-elevation regions. But ancient bird bones belonging to the species have been uncovered from the coast to the mountains on many islands. It appears that, like other species of Hawaiian birds, the petrels were driven out of their natural homes and now congregate on the diminishing areas of habitat that remain.

Erecting fences to keep out non-native ungulates, shielding streetlights to avoid blinding birds and collisions, and maintaining existing colonies will assist in the struggle to protect these petrels. Encouraging these seabirds to breed in predator-free areas and restoring former habitat for colonies may help them extend their range.

"If I think things are looking better, it's because many people and many resources are focused on preserving this and other species," said Dr. Nick Holmes of the Kaua'i Endangered Seabird Recovery Project. "And the new information that science is providing plays a key role in helping to achieve effective conservation because it supplies invaluable context for interpreting what's important."

But, said Holmes, the trends of habitat loss, encroachment by non-native plants, and predation by introduced mammals threaten to undo conservation efforts. Greater assistance from federal, state, and local governments to prevent the introduction and spread of invasive species is needed. In addition, public outreach and education on the unique natural wonders of the islands, and the problems they face, help to generate public support for the long-term efforts necessary for healthier ecological communities in Hawai'i.

Matthew Cimitile, an environmental journalism graduate student at Michigan State University

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Program Announcement!

We have moved our Annual Meeting to Monday December 14th

Hawaii Audubon Society program is scheduled for 6:30 pm at UH Manoa St John Hall room 011. The speaker will be Kira Krend, PhD student UH Manoa zoology department. She will be speaking on her research on avian malaria on Oahu. The title of her talk is "Passerines and Parasites on the Populated Isle". We will also be collecting any remaining ballots at that time and announcing the results at the end of the program. We look forward to seeing you there!

Elepaio Submissions

We are currently looking for submissions for 2010.

Please send us your Hawaii wildlife artwork, poems, short stories, and scientific articles.

Who knows - maybe it will make an issue!

New Editor for 'Elepaio

Casey Primacio, current Office Manager for the Hawaii Audubon Society, is the new editor for this publication. Casey is already very experienced in handling the daily activities of the Society on every level and the HAS Board of Directors is very pleased that she has accepted the position as 'Elepaio editor. **Lydi Morgan** served the Society as editor for several years, but her varied interests and talents have led her to new challenges and commitments. Lydi proved to be an excellent 'Elepaio editor, with rare organizational skills and a fine attention to detail. Under Lydi's leadership, the 'Elepaio has benefited from an increase in the number and quality of submissions of scientific articles relevant to the Society's mission. Lydi also maintained very high standards for writing composition, accuracy and design, and the Board of Directors is most appreciative of her significant contributions to this publication. *Thanks, Lydi!*

		Membership in	Hawaii Auc	lubon Society 2010)
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	Student Member:		\$ 15.00	Mexico	\$ 26.00
	Supporting Member:		\$100.00	Canada	\$ 28.00
	Family Membership		\$40.00	All other countries	\$ 33.00
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Annual Fall Trip To Paiko Wildlife Refuge to Welcome Our Kolea And Other Shorebirds From Alasak.

Low-Tide Reef/Mud-Walk Saturday, September 19, 2009, 9:30-11:30 AM most definitely FAMILY-FRIENDLY by Alice P. S. Roberts

This was my 5th Paiko Trip this year: Annual Spring Farewell to Our Shorebirds, Temple Emmanuel Eco Group (1 of our members got 25 folks from her temple to visit Paik), Kauai Audubon member on a Sunday (she'd called me after she missed another Saturday trip, she works on O'ahu Thursday thru Saturday), Annual Summer Very Low Tide, & this our Annual Fall Welcome Home...; I wonder how many years we've been doing Paiko? I started taking my Maryknoll Marine Science students in 1988 after the house-moving floods!

As we gathered at the lagoon end of Kuli'ou'ou Road, we were greeted by a Hawaiian Black-necked Stilt (*Ae'o/ Kukuluae'o, Himantopus mexicanus knudseni*). We spent quite a while watching as it moved towards us. We saw many mud crabs scurrying into burrows & schools of little fish jumping, looking like little mullet. Then our group of 15 left the roadway.

Tide calendars showed the morning low-tide in Honolulu Harbor was expected to be only 0.3' (not great for reef-walking) at 10:37 am coming in to a high-tide of 1.6' by 4:23 pm; our tides were expected about 45 minutes earlier. These tides were very similar to last year's with a new crescent new moon the night before.

The red Northern Cardinal was noticeably missing again this trip; he'd greeted us or warned us of his territory for years. Several ducks swam in the lagoon – were the babies, seen on our May trip, all grown up? A grandma & her little grandaughter brought a bunch of food for them; she told me they come once a week. Our group discussed the Koloa-Mallard situation -endemics hybridizing with Mallards – with updated info from the Audubon Program August 17. We kept looking up & there were some nice winds but no Great Frigatebirds ('Iwa, *Fregata minor palmerstoni*) were seen this trip.

On the mud flats in the sanctuary's lagoon & out, we saw several Pacific Golden Plovers (Kōlea, *Pluvialis fulva*) darting about & tipping like CA oil derricks. Several Ruddy Turnstones ('Akekeke/Keke, *Arenaria interpres*) with their black bibs were flipping stones. Early on we heard "ulili-ulili-ulili-ulili" a Wandering Tattler ('Ülili, *Heteroscelus incanus*); later we saw one, a grayish bird with a long straight bill, it's head moving back & forth like an Egyptian dancer. Our 1st arriving walkers saw a brownish juvenile Black-Crowned Night-Heron ('Auku'u, *Nycticorax nycticorax hoactli*) fly in with large slowly flapping wings; later on one flew in which had striking adult characteristics.

At the beginning of the walk, we looked at some trees - Milo (a hibiscus relative with gorgeous wood) even had some

yellow "today" flowers & a few orange "yesterday" flowers, Coconut Palm, & Ironwood/Casuarina (I've been told machetes nick when cutting the wood). We closely inspected some ironwood "needles" that are actually branches & curled leaves; with binoculars reversed things appear magnified. Around the lagoon, most of the Pickleweed ('Ākulikuli-Kai) has been removed & many native species have been planted - multi group effort (Malama Moanalua, DoFAW, & the Youth Conservation Corps). Across the gravely space, there were no rain puddles & therefore no Bufos/Hawaiian Toads (Bufo marinus) eggs &/or tadpoles. Some thorns remained from the many Kiawe trees that had been cut down. [Before last trip, I'd learned they were cut down to allow HPD to better watch the area for drug dealing & homeless/camping in the refuge.] We discussed short thorned, no thorned, & the dangerous long thorned Kiawe. Covering the refuge land are bushes of Naupaka; the invasive kiawe is being eliminated. The sandy edges are covered with Beach Morning Glory with neat bilobed leaves & very straight runners, 'Akulikuli with beautiful little hot pink star flowers, Akiaki grass, & baby Milo. We talked about how coastal plants deal with salt water. As we walked in the water, we found many Mangrove embryos.

As usual we went around the refuge. [FYI: The Honolulu Advertiser, Friday, 9/9/2005, page B3, "Trash, trespassers taint Kuli'ou'ou sanctuary" by Suzanne Roig. She'd spoken with Dave Smith (Audubon President's Awardee at this year's mid-October dinner) DLNR O'ahu District Manager; there are no rules requiring permits to enter the sanctuary in the day, the sanctuary was established decades ago with a land gift from the Paikō family.]

Along the "beach", we saw Ghost Crab holes, only a few with large pyramids (male advertising); but this trip we did not catch any. Later, we found a beautiful perfect whole molt (no smell) of a male Swimming Crab. Then, before we turned around, Daughn caught us a wonderful male Box Crab – truly an amazing creature which looks like a round tank with a large front claw to crack snail shells & another to pick out the snail meat.

We found less Seaweed/Limu/Algae than usual. We found some REDs - invasive "Gorilla" Ogo (related to the delicious poke ogo which we haven't seen out here in many trips) that's destroying so much of our shallow water areas & 2 other "bad" invasives *Hypnea* with little hooks, & *Acanthophora*; BROWN – Ear algae *Padina* with calcium rings; GREENs - oatmealsand making *Halimeda*, & *Avrainvillea amadelpha* the leathery

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able to see!

Hawai'i's Birds Book

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Polo Shirts in Men and Women sizes with embroidered Hawaii Audubon Society logo on front: \$40.00

To view or purchase, check our website or stop by our office M-F 9am to 1pm!

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invasive called "mudweed"; & even some itchy BLUE-GREEN *Lynbya*. We threw many clumps of invasives above the high tide line where they'll not reproduce.

Along the way, many things appeared changed since our May 23rd trip: we saw only a few "tongues" (mucous filled sacs used for feeding by burrowing worms), no little tiny Gobies (a family of fish with pelvic fins fused as suction cups for jumping waterfalls on their spawning return to freshwater streams of their birth), no Lizardfish seen darting off in characteristic zig-zag fashion, & no schools of young Mullet ('Ama'ama).

It was a gorgeous day; both Koko Crater & Koko Head were highlighted by a blue sky. While we walked, we talked about the area's geology - Koko Crater & Koko Head & which was which & their ages & of course Hanauma Bay.

We saw a few invertebrates or remains of invertebrates including Oysters under rocks & Snail & Clam shells. Under rocks & on seaweed, we found orange, blue, & white Sponges; & some clear, white, & brown Tunicates (our nearest invertebrate relative -- we're both chordates).

Then some of us turned around while others continued onward; we collected bags of trash & talked about what we'd seen. Besides those animals & plants noted above, we'd also seen a trio of White Terns (Manu-O-Kū, *Gygis alba*), a Cattle Egret, Red-Vented Bulbuls, Zebra/Barred & Spotted Doves, Mynas, Red-Crested Cardinals, Sparrows, & assorted little finches.

2010's 1st Paik $\bar{\mathbf{0}}$ trip should be late-March to mid-April to bid Farewell to our Shorebirds before they leave for Alaska.

See you then?

Aloha, Alice

Research Grants 2009

The Hawai'i Audubon Society would like to congratulate our \$500 grant recipients. We look forward to reading their summary of their findings since we have three very interesting topics this year. Thanks again for your hard work and research in learing about Hawai'i's biota!

Hanna Mounce - Recovery of the endangered Maui Parrotbill: Population dynamics, Genetic analysis and strategies for reintroduction.

Kira Krend - Genetic Diversity and Gene Flow ion Oahu Amakihi.

Richard Pender - Can morphology and distribution studies identify potential interactions between Clermontia species and their avian pollinators?

January Field trip

January 23rd we will be having a field trip to the BYUH Museum of Natural History (9am to 12 noon). The 9am start time at BYUH would allow people in town sufficient time to get here without having to leave too early from town. Please call the office at 528-1432 for more information and to make a reservation. We look forward to seeing you there!



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Monday, December 14th HAS Annual Meeting and Program UH Manoa St Johns Hall room 11 6:30 pm all are welcome	New Editor
Saturday, January 23 rd HAS fieldtrip BYUH Museum of Natural History Please call to reserve a spot (808) 528 1432	Research Grants 2009

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