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For the Protection of Hawaii's Native Wildlife

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POLI POLI FIRE DEMONSTRATES VULNERABILITY OF MAUI 'ALAUAHIO

Hanna L. Mounce¹, Fern Duvall², and Kirsty J. Swinnerton¹



Maui 'Alauahio (Paroreomyza montana), East Maui only. Females, such as this one, are drab with a yellow wash on the upper breast and throat. Males are yellow-green above, lemon yellow below. The song is a rapid jumbled warble, call is a loud "cheek."

Photo by Eic Nishibayashi

Introduction

The once widespread Maui 'Alauahio or Maui Creeper (Paroreomyza montana), an endemic insectivorous honeycreeper, occurs on the island of Maui in only two known disjunct populations (see Figure 1). 'Alauahio were historically found throughout Maui and Lāna'i, but are currently restricted to East Maui in two areas: 1) from Waikamoi Preserve to Kīpahulu Valley on the northern and eastern slopes of Haleakalā, and 2) in the exotic forest of Poli Poli State Park on the leeward side of the island (Baker and Baker 2000). The habitat conditions for these two areas vary extensively. The primary 'Alauahio population occurs in wet montane forests dominated by ōhi'a (Metrosideros polymorpha), and the second population occurs in more mesic forests dominated by a variety of non-native tree species as a result of an experimental forest. Although 'Alauahio are known to be more generalist than other honeycreepers, their numbers and range are reduced from historical levels by extensive habitat destruction, and they have been extirpated from various human-modified areas.

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Audubon's 108th Annual Christmas Bird Count December 14, 2007 – January 5, 2008

Each year, over 50,000 volunteers from all 50 states, every Canadian province, parts of Central and South America, Bermuda, the West Indies, and Pacific islands participate in the Christmas Bird Count. Join the Hawaii Audubon Society for this year's event, the 64th annual count for Hawai'i! People of all levels of birding experience are welcome to participate, from the beginner to the expert. Participants are asked to donate \$5

each to support the cost of compiling and publishing the data; there is no fee for children under 18. Visit www.audubon.org/bird/cbc for more information.

This one-day annual event is a great opportunity to meet other local volunteers, hone your birding skills, and take part in a seasonal tradition. Come out this year and help to collect valuable data for Hawai'i; contact a coordinator today!

Island	Area	Count Date	Contact	Phone	Email
Oʻahu	Honolulu	December 16, Sunday	Arlene Buchholz	(808) 988-9806	snovakz@juno.com
	Waipi'o	January 5, Saturday	David Bremer	(808) 623-7613	bremerd001@hawaii.rr.com
Kauaʻi	Waimea*	December 22, Saturday	Koke'e Natural History Museum, Michele Ho'okano (808) 335-9975 www.kokee.org		www.kokee.org
	Kapa'a	January 2, Wednesday	Brenda Zaun	(808) 828-1413	brenda_zaun@fws.gov
Maui	Pu'u O Kaka'e (East)	TBA	Jennifer Higashino		jenn@maui.net
	'Iao Valley (West)	TBA	Jennifer Higashino		jenn@maui.net
Molokaʻi	Kualapu'u	December 17, Monday	Arleone Dibben-Young	(808) 553-5992	nene@aloha.net
Hawai'i Island	Volcano	December 15, Saturday	Eldridge Naboa	None	enaboa@tnc.org
	North Kona	January 3, Thursday	Nick Mitchell	(808) 322-2735	None

^{*} A Bird Identification meeting will be held on Wednesday, December 19 at 6:00 p.m. in Waimea, Kaua'i. Call the Koke'e Natural History Museum at (808) 335-9975 for more information.

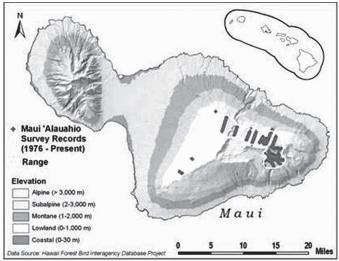


Figure 1.

Maui 'Alauahio range and survey records on Maui (1976 - present).

A massive brush fire in January 2007 in the Kula Forest Reserve consumed nearly 2,300 acres of the south-west slopes of Haleakalā, East Maui, and burned through some of the 'Alauahio's range. Due to this recent blaze, we have lost or may still be at risk of losing a significant number of the remaining 'Alauahio in one of their two subpopulations.

Observations

The area burned included much of the 'Alauahio's forest habitat in Poli Poli Springs State Park leaving only a few small intact patches where birds may be able to persist. No formal surveys have been done on the Poli Poli 'Alauahio population, but casual observations before and soon after the fire suggested a significant reduction in abundance. Furthermore, fire-fighter clean-up crews regularly encountered freshly dead "green and yellow", as well as "red", birds after the fire. This may suggest that many 'Alauahio that initially survived the fire may not have the resources necessary for prolonged survival, or more specifically may be starving to death. On 3 April 2007 three biologists from the Maui Forest Bird Recovery Project and the State of Hawai'i Division of Forestry and Wildlife visited the burn site to investigate bird activity. Instability of the terrain greatly limited access into Poli Poli and the survey could only

be conducted from the main road through the reserve at about 6,000 ft elevation, where clearing had already begun and which presented a lower risk to personnel. We located 19 surviving 'Alauahio, mostly foraging among branches of freshly burnt pine and redwood trees, in pine cones and among the green leaves of mamane (*Sophora chrysophylla*) bushes that had resprouted. The 'Alauahio were very persistent in their hunt for prey and spent long periods of time on one individual shrub, searching each branch several times. This is atypical for the species, which is usually seen moving along branches and through trees very quickly catching a large variety of prey items.

The State of Hawaii's clean-up efforts progressed over time and allowed a subsequent survey to penetrate further into the remaining patches of forest. On 3 May 2007 additional 'Alauahio observations were made along the Plum, Tie and Boundary Trails, as well as in several remote gulch areas. The casual observations that occurred over an eight-hour period covered an approximate route distance of 10 miles, and included more unburned-burned interface areas than were searched on 3 April 2007. In total 43 'Alauahio in 10 different observations were counted on 3 May 2007. Similar to the earlier investigation, the 'Alauahio were observed searching the vegetation very intensively, perhaps to maximize prey detection of reduced prey abundance on the burned substrate. This second survey resulted in higher 'Alauahio counts than previously, and offered a more positive outlook for the remaining birds. Without knowledge of the population demography before the fire, it has not been determined what effect it had on the size of the 'Alauahio population.

Discussion

The second population in Poli Poli State Park represents the species' only success outside of the core population, and was an opportunity to examine honeycreeper plasticity or re-adaptation to non-native habitats. Although not yet investigated, the Poli Poli population of 'Alauahio is hypothesized to be geographically isolated, and potentially genetically or behaviorally distinct since the non-native habitat likely favors different attributes than the native forest. Although it appears that some 'Alauahio managed to survive the fire, the vulnerability of these small and isolated bird populations was clearly demonstrated. The *continued on page 69*

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intensive foraging effort observed suggested that the 'Alauahio were not finding enough food in the burnt forest habitat, and brings doubt as to whether these individuals will be able to reproduce and persist in the long-term considering the much depleted prey base. These surveys were conducted during what should have been the start of their breeding season, and with no males singing and no courting behavior detected, the birds showed no sign of any breeding activity. We speculate that the remaining 'Alauahio in Poli Poli will have lost at least one whole reproductive year.

In the recovery of threatened and endangered species, the creation or maintenance of a second population is a high conservation priority. The extinction risk greatly increases for any species that only survives in one distinct population as they are more susceptible to the effects of a single catastrophic event. Currently classified as endangered, if the remaining Poli Poli 'Alauahio subpopulation does not endure, the species may have deteriorated in status sufficiently to be listed in a higher category of extinction risk in the IUCN Red List (IUCN 2006).

If the 'Alauahio population is to persist into the future at Poli Poli State Park, a concerted effort will be necessary to keep the remaining birds alive. This includes replanting and managing the forest for suitability to 'Alauahio and other native species. An article in *The Honolulu Advertiser* published 27 April 2007, outlined the State of Hawaii's restoration plan in which approximately 65 percent of the replanting will be native forest species. The restoration of native forest is an important step, not only for the 'Alauahio but for all of Maui's native honeycreepers. The Kula Forest Reserve fire provides the chance to restore an accessible high elevation forest to a

condition that can support other of Maui's native birds, plants and invertebrates. Potential benefactors include the endangered Maui Parrotbill (*Pseudonestor xanthophrys*) and 'Ākohekohe (*Palmeria dolei*) whose small populations in the wet forests of Maui are also susceptible to catastrophes. The replanting of the Kula Forest Reserve and Poli Poli State Park is also a unique opportunity for the public to be able to experience Maui's native forests and wildlife, which on Maui are mostly remote and inaccessible.

Acknowledgements

This research was funded by the State of Hawai'i Division of Forestry and Wildlife, the US Fish and Wildlife Service, and through institutional support from the University of Hawai'i, Pacific Cooperative Studies Unit. Special thanks to Mary Chambers for her assistance with the surveys.

¹ Maui Forest Bird Recovery Project, 2465 Olinda Road Makawao, HI 96768

²State of Hawai'i Division of Forestry and Wildlife, 54 S. High St. Rm 101, Wailuku, HI 96793

Literature Cited

Baker, H. and P. E. Baker (2000). Maui 'Alauahio (*Paroreomyza montana*). The Birds of North America, No. 504. A. Poole and F. Gill. Philadelphia, PA, The Birds of North America, Inc.

IUCN. 2006. <u>IUCN Red List of Threatened Species</u>. IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK. http://www.iucnredlist.org/

Windward O'ahu Service Projects

'Ahahui Mālama I Ka Lōkahi leads service projects at several Windward Oʻahu sites – please lend a hand for the preservation and restoration of these important cultural and natural resources!

Saturday, December 8

ULUPŌ HEIAU (Night of Inspiration) is one of the first sacred temples to have been built as a "māpele" (agriculture) heiau by the first people or menehune and dedicated to Kaneulupo. Later in the reign of high chief Kuʻaliʻi, the temple may have been reconstructed as a luakini or war temple heiau. Service projects take place on the second Saturday of each month. Meet at the heiau parking area next to the Windward YMCA.

Saturday, December 15

NĀ PŌHAKU O HAUWAHINE (the rock formation of the Hawaiian Moʻo goddess and guardian of Kawai Nui Marsh) offers a panoramic view into the "piko" of Kawai Nui Marsh where one can observe in tranquility the wetland birds and marsh vegetation. Brush removal and trail construction has revealed ancient Hawaiian terraces that align the massive rock outcrops. Dryland forest and wetland bird habitat restoration is taking place. Service projects occur on the third Saturday of each month. Meet on the right-hand side of Kapa'a Quarry

road at the Y-intersection before entering the Kapa'a Landfill Transfer Station (about one mile from the intersection of Kapa'a Quarry Rd. and Kalanianaole Hwy).

Meeting time for all service projects will be at 8:30 am and completed by 12:30 pm.

BRING: Backpack, lunch, water, rain gear, mosquito repellent, gloves.

TOOLS: Sickles, pruners, handsaws, machete, hand cultivators.

CALL: Kaimi Scudder for more information and to sign-up: Phone: (808) 593-0112 or email: <u>email@ahahui.net</u>. Visit <u>www.ahahui.net</u> for more information

Saturday, December 1 Wetland Bird Tour with Ron Walker

Sponsored by 'Ahahui Mālama I Ka Lōkahi 8:30 a.m. – 11:30 a.m.

HAS Vice President Ron Walker will lead you on a tour of Kawai Nui marsh, Hāmākua State Wildlife Sanctuary, and Kaʻelepulu wetland preserve. THIS TRIP IS LIMITED TO 25 PARTICIPANTS. Call (808) 593-0112 to reserve your space.



Christmas Gifts That Support The Society

Contribute To A Cause That You Care About With These "Green Gifts"

All products are available for purchase through our online store at www.hawaiiaudubon.com (view color photos of products there as well). Or you may fill out this form and mail it with your check (payable to Hawaii Audubon Society) to 850 Richards St. #505, Honolulu, HI 96813. Be sure to include your mailing address; products will be shipped to you upon receipt of payment.

Give the Gift of Membership

Memberships include a subscription to our newsletter, 'Elepaio, and are valid for one year, January 1 to December 31.

S	Regular Membership \$25.00 Student Membership \$15.00 Foreign Membership (Airmail) \$33.00	Name and Address of New Member:
	Products and	
Please ind	indicate quantity: (Prices Inc	clude Postage)
	Hawaii's Birds field guide by the Hawaii Audubo and illustrations. \$13.00	on Society, 6th edition, 2005. Over 150 color photographs
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BOOK REVIEW By Ron Walker

Barefoot on Lava

The Journals and Correspondence of Naturalist R.C.L. Perkins in Hawaii, 1892-1901 Edited by Neal L. Evenhuis

This 411-page book is at once a chronicle about a field biologist in Hawai'i in the late 1800s, a historical account of a bygone era in the Islands, and a broad picture of Hawaiian wild lands as they once where.

The volume is divided into four parts: an introduction and descriptions of the first (1892-1894), second (1895-1897) and third (1900-1901) expeditions in Hawaii. Chapters are divided into (1) "Journals and Remembrances" and (2) "Selected Correspondence."

It includes a glossary, literature cited, a biography of the hero, an appendix (Historical Summary and Archival Credits) and a comprehensive index of plants, insects, arthropods, birds, snails, slugs and people. There are few illustrations, but the book does include photographs of many of the key players in this history and simple island maps showing Perkins's collecting areas.

The title of this book comes from an incident on a lava field in Kona, where his shoes quickly became shredded while hiking and he continued on without them. This became his habit for nine years and exemplified his field tenacity: he would remain in the out-of-doors for hours and days, often without food. Although a neophyte when he arrived, he soon became an expert on the insects, birds and plants, learning their Hawaiian names. He was guided by other naturalists (Munro, Henshaw, Wilson, Koelbe) to areas where the prospects of seeing rare birds or insects were good. On one occasion in the windward forests of Mauna Kea, he employed a Hawaiian birdcatcher as his guide.

He was a reluctant journalist, and many of his field notes were lost or destroyed. Much of the volume is given over to his correspondence with his "bosses" back in Cambridge, England, mostly discussing the condition of specimens he sent off to them.

However, his dayto-day notes from the journals that did survive are fascinating in their descriptions of

birds now extinct, if you get by the fact that he was collecting them. It is somewhat

ironic that he was one of the first naturalists to decry the loss of species and the adverse impact of invasive species. He was particularly "disappointed" in the lack of birds when comparing his visits in 1892 and 1896.

The ten years of study by Perkins were the basis for the publication of the monumental "Fauna Hawaiiensis" and, thus, this is an important chronicle of his adventures and findings. But it is also an entertaining story as may be typified by a paragraph in a letter he wrote to George C. Munro on November 22, 1901:

My wife is still teaching here so is not likely to accompany me to Molokai as the vacation at Christmas is short, & she probably would not like to be away at that time. Your foreign snipe was probably 'Wilson's snipe' from America, or the 'Painter snipe' both of which have been known to visit the islands. I have to get specimens of the Hawaiian 'noddy' ("naio") Anous hawaiiensis. It is found the other side of the pali here at the coast. With aloha nui.

Footnotes:

- 1. Full name, position and affiliation of Perkins: "Robert Cyril Layton Perkins Naturalist for the Royal Society and British Association of England".
- 2. For another book review, see the October 2007 edition of Environment Hawai'i (Vol.18, #4), "New Book on Perkins Sheds Light on Role of Collectors in Extinctions."

Humpback Whale Sanctuary Ocean Count 2008

Saturdays, January 26, February 23, March 29 8:00 a.m. - 12:15 p.m.

This annual event places volunteers at various shore locations in order to count the number of humpback whales and record whale behaviors seen. Visit http://hawaiihumpbackwhale.noaa.gov for more information or call:

BIG ISLAND: 1-888-55-WHALE x 253

KAUA'I: (808) 246-2860 O'AHU: (808) 397-2651 x 253

The Great Whale Count will take place on Maui on Saturday, February 23, 2008. Visit www.pacificwhale.org or call 1-800-942-5311 for more information.

Annual Membership Meeting Bird Identification Lecture and Slide Show in Preparation for the Christmas Bird Count

Tuesday, December 4 6:30 p.m. – 8:30 p.m.

HAS First Vice President Ron Walker will give a presentation on common (and uncommon) birds found in Hawai'i. This will be a perfect opportunity to brush up on your avian identification skills in time for the upcoming Christmas Bird Count. Ron's legendary knowledge will make for an exciting and informative event! Christmas Bird Count information will be available at the program meeting. The meeting will be held at UH Mānoa's St. John lab building (Botany Building), in room 011 in the ground floor auditorium, 3190 Maile Way.

Excerpts from the Journal of George C. Munro

December 1890 to August 1891

Contributed by Ron Walker

On December 13, 1890, George Campbell Munro arrived in Honolulu after a voyage aboard the steamship Mariposa which left Auckland, New Zealand on the 1st of December. He was to assist ornithologist, Henry C. Palmer in collecting birds in Hawai'i under the sponsorship of Lord Walter Rothschild for the museum collection in Tring, England. His small hand-written journal of 314 pages chronicling his ornithological and cultural experiences in Hawai'i was never published. Through the courtesy of the family of Richard C. Towill, the Hawaii Audubon Society was allowed to copy the journal and present it here in a series of excerpts in the 'Elepaio. We acknowledge the assistance of Marti Steele, Steven Bunting, and Charlotte Walker in transcribing and editing the journal and Dr. Robert Pyle for coordinating the project with the Bishop Museum. Copies of the original journal and typed transcriptions are available at the Bishop Museum archives and the Hawaii Audubon Society office.

From 1935 to 1937, Munro started the first comprehensive survey of the birds of Hawai'i and in 1939 he helped found the "Honolulu Audubon Society" which eventually became the Hawaii Audubon Society.

Our series continues with this excerpt from the "Journal kept by George C. Munro while studying and collecting natural history specimens in the Sandwich Islands."

Part 5 Saturday, January 10th, 1891 (Kauai) "...The birds we have as yet got are:

Scientific Name	Native Name	Our Designation
	Kolea	plover or dotteral
	rice bird	finch
Brachysotus Gollepi geonsis	Pueo	owl
Nycticorax nycticorax manvius	Aukuu	heron
Vesteria conccinea	Iiwi or Olokehe (adult)	No. 3 honey eater
	Iiwi Popolo (young)	No. 1 honey eater
Himatione sanquinea	Apapane	No. 2 honey eater
Phaeornis Myadestina	Kamao	thrush
Acrulocercus Braccatus	Oo	dark bird
Psittacirostra psittacea	Ou	hook bill
	Apekepeke	rufus tit
	Elepaio	brown tit
	Anauanii	little yellow & green birds
Himatione pava	Amakihi	short curved bill
•	Linnet	yellow hanner-like
Hemignathus stejnegeri	Akialoa, Iiwi	No.1. long curved bill H. Hanapepe
- 0	Nukupuu	No.2 long-curved bill Oreomyza bairdi
	Akikiki	bird with white eye"

Sunday, February 8, 1891

"Finished the birds & did the washing before dinner; loaded up all the cartridges ready for tomorrow after, then strolled up the hill adjacent & luckily dropped a nice hen turkey, which I roasted before dark; the cattle here come down to the creek every evening about sunset to drink. Will now run over the birds which we have seen here, we have seen none of the native birds going flocks, although I believe the Akikiki does up in the mountains. The thrush or Kamao I believe is the most numerous, sometimes going in pairs, it is a very tame bird, the Oo, Anauanii, Amakihi, Iiwi & Apapane rank next, the Ou in the guavas next, the Apekepeke & Elepaio are not numerous, the Akikiki & Akialoa we only meet occasionally & the Nukupuu we have only seen one specimen which we have secured, there is one other bird the Ouholowai we have not yet seen, but I think it inhabits the mountains higher up, it is a small green bird with a thick bill like a finch. The plover or Kolea is numerous scattered over the grass land from the beach up into the grass patches in the bush, the Pueo or owl is numerous scattered over the dry land further down, but I have seen them in the bush, the Aukuu or heron is common in the stream in some places, where they find plenty of food in a small freshwater rock cod which lie thick on the stone covered bottom, the ducks are not common about here, the wild chicken is common wherever there is any bush. Now for the imported birds: the miner is common everywhere except in the mountains, I would not be surprised if they will compete with the Ou to the latter's disadvantage, they are thick in Waimea township, the rice bird is I think a small finch. I don't know where he comes from, they are plentiful in this locality going in large flocks, feeding on grass seed, the linnet I think is also a finch they are not plentiful, going about ½ dozen together, generally on the outskirts of the bush, often mixed with swarms of ricebirds, they sing pretty well, the doves I think come from China they are not scarce here or down below, but are exceedingly shy, so much so that we have not managed to secure one yet, the American turkey seems to do well on the grass land here. Saw one of the common butterfly laying, it fixed a single conical egg on end on a leaf & then flew off. The mosquitoes which had given me a rest since the blowy weather started are beginning to return. I have one buzzing round. It has been dead calm today, the sea looks like a millpond, the sky has a thundery appearance."

Your Membership Matters

It's that time of year again when you have the opportunity to show your support and renew your commitment to Hawaii's oldest environmental organization, the Hawaii Audubon Society. Have you enjoyed this year's 'Elepaio issues? Do you support our work to raise awareness of and interest in Hawaii's native wildlife through the sponsorship of field trips and lectures and the publication of educational materials? Are you excited about the one-acre coastal property and Wedgetailed Shearwater colony that has been donated to HAS as the Freeman Seabird Preserve? Your membership matters, and your tax-deductible donation will help us to accomplish even more for the protection and restoration of Hawaii's native wildlife and ecosystems. Please send in your membership renewal and generous donation today! You may also renew and contribute online, www.hawaiiaudubon.com. Mahalo for your continued support!

Why should I join the Hawaii Audubon Society if I'm already a member of the National Audubon Society?

Hawaii Audubon Society (HAS) was founded locally in 1939 as an independent, non-profit membership association and became a certified chapter of National Audubon Society (NAS) in 1978. HAS continues to function independently from NAS in all financial, policy, and programmatic matters as a 501(c)(3) non-profit organization. NAS members that reside in Hawai'i receive a subscription to the 'Elepaio, but only a small percent of your dues paid to NAS are received at the local level – not enough to cover the cost of your subscription. When you join as a member of the Hawaii Audubon Society, 100% of your dues and donations stay here at the local level, where we work to protect the precious native Hawaiian wildlife that you care about most!

Fond Farewell

Christine Volinski has stepped down as a member of the HAS Board of Directors due to her recent move to Beaufort, South Carolina. Christine was elected to the Board in December 2005. Her energy and enthusiasm for HAS's environmental stewardship and education efforts will be missed. Mahalo, Christine, for your service.

Keauhou Bird Conservation Center Open House Saturday, December 8

Guided tours of the facility will take place at 8:00 a.m., 10:00 a.m., 12:00 p.m., and 2:00 p.m. Reservations are required; call (808) 985-7218. HAS Board Member and Volcano resident Carol Bebb will attend the 8:00 a.m. tour and welcomes other

Audubon members to join her; call (808) 387-1111.

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Saturday, December 8 Ulupō Heiau Service Project See page 69

Saturday, December 15 Nā Pōhaku o Hauwahine Service Project See page 69

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December 25 Christmas - Buy your gifts and support the Society! *See page 70*

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