



'ELEPAIO

Journal of the
Hawaii Audubon Society

For the Protection of
Hawaii's Native Wildlife

VOLUME 58, NUMBER 4

MAY 1998

Saving the Po`o-uli (*Melamprosops phaeosoma*), the World's Rarest Bird

By Sharon E. Reilly

(In times past, the `Elepaio has occasionally run non-peer reviewed articles covering current conservation topics in which our members are involved. With this article, we return to that tradition. HAS welcomes such contributions; please contact the HAS office with your comments and suggestions for appropriate topics we might want to address in the future.)

For a small nondescript bird which currently is confined within a two square mile area in the remote reaches of windward Haleakala and which has been seen by only a fortunate few, the Po`o-uli (*Melamprosops phaeosoma*) has a habit of making headline news. "New Species of Bird Found on Haleakala" read the headlines of the Honolulu Star-Bulletin on December 28, 1973. It was an amazing discovery on many accounts. This remarkable bird was observed for the first time by a group of University of Hawai`i students who were conducting research on the east slope of Haleakala. The bird was described by two of the undergraduate discoverers, Tonnie Casey and Jim Jacobi, as a new species. They named it Po`o-uli which in Hawaiian translates as "black-masked." Not only was the species the first new bird discovered in Hawai`i since 1923, but it was so unique that it was placed in a new monotypic genus *Melamprosops*.

The excitement and euphoria generated 25 years ago by the discovery of this new species has been replaced with concern and sympathy. Since its discovery the Po`o-uli population has seen a steady decline. It was never considered plentiful, with a maximum population estimated at no more than 141 birds. Today there are only three known individuals, living in distinct home ranges. The species now has the dubious distinction

of being called the "World's rarest bird" by Les Line in an article published in the National Wildlife Magazine. State and Federal biologists are now grappling with a difficult decision about how best to save this species from extinction.

The population decline in Po`o-uli is not unique. Over the past 150 years there has been a slow but steady decline in most of Hawai`i's native forest bird populations. No single threat has caused this decline, but rather a combination of limiting factors imposed by the introduction of alien species have escalated to the point where many of Hawai`i's endemic avian species have been forced to the brink of extinction. These multiple threats include depredation of adult birds, nestlings and eggs by rats and mongooses; competition with rats, mongooses, alien birds and social insects for valuable food resources; transmission of avian diseases by mosquitoes; and the continued degradation of the birds' forested habitats by pigs and other feral ungulates. Controlling these threats has been the focus of research and management activities of several conservation agencies and organizations from around the country.

In May 1997, *Initiating the Recovery of the Po`o-uli and other endangered forest birds in East Maui* was drafted but the real effort to save the Po`o-uli actually began in 1986 when the State of Hawai`i established the 7,500 acre Hanawi Natural Area Reserve (HNAR). The HNAR was established to protect the watershed in the upper elevation forest of East Maui and provide protected habitat for nine species of native forest birds, five of which were endangered, including Po`o-uli, Maui Parrotbill (*Pseudonestor xanthophrys*), `Akohekohe (*Palmeria dolei*), Maui `Akepa (*Loxops coccineus ochraceus*) and

Maui Nuku-pu`u (*Hemignathus lucidus affinis*). To begin habitat restoration, the State DLNR, Haleakala National Park (HALE) and The Nature Conservancy of Hawai`i (TNCH) began a concerted effort to remove feral ungulates from the upper elevation forests by fencing large tracts of some of the most rugged terrain in Hawai`i. Once these fenced units were established, pigs were systematically eradicated. The three known Po`o-uli currently live within the HNAR in pig free areas.

Efforts to control predators and feral ungulates have had a significant positive impact on forest bird populations in other areas throughout the State. However, conducting large-scale ground-based predator control in Hanawi is problematic. Negative impacts on the relatively pristine habitat, the rugged terrain of Hanawi, and the inefficient use of management resources are important considerations. A more effective and cost efficient technique that is currently being developed is the use of aerial broadcast rodenticides, similar to the technique used in New Zealand that helped save many of their endangered species. The testing and registration process required to secure EPA approval of an aerial broadcast toxicant is a long and arduous process. It may take several years before the technique will be permitted for use here in Hawai`i.

Another area of concern for which there is no clear solution is the continued spread of mosquito-borne avian diseases such as avian malaria and pox. How susceptible the Po`o-uli is to these diseases is currently unknown. Although mosquitoes are absent from high elevation forests, biologists are not complacent about this potential threat that has already played a pivotal role in the extinction of many of

Continued on Page 18...

Hawaii's native forest birds that once thrived in lower elevations. Sub-fossil evidence indicates that the Po`o-uli historically had a wider distribution at lower elevations. This suggests that the three remaining individuals are now living at the species' altitudinal limit and are perhaps confined to a sub-optimal habitat. More pig free areas below the existing fence lines would help prevent the spread of mosquitoes into the upper elevation forests and would also abet the restoration of more

lower elevation habitat for the Po`o-uli as well as other native forest birds.

In January and March of this year, field biologists working in HNAR were able to capture and band two of the known Po`o-uli. While the birds were in hand, feathers were collected for genetic testing. These feathers, along with feathers from the third bird captured last year, were sent to the University Diagnostics, Limited (UDL) laboratory in England. This lab has developed a technique to extract genetic

material from feathers. Using an advanced biochemical process the lab was able to determine the sex of the three known birds.

Their preliminary results indicate that of the three birds tested, two are females and the other is a male. Although the technique developed and patented by UDL has proven accurate with many other bird species, biologists are being cautious. A second lab is currently confirming these results and the accuracy of UDL's technique is being tested using feathers from closely related Hawaiian bird species of known sex.

State and Federal biologists have started to address the different options that are available to recover this species. The strategy used for the recovery of other forest birds and the current strategy for the Po`o-uli is the collection of eggs for artificial incubation, captive rearing, and release of the offspring. The Peregrine Fund has been contracted by the State and by the Fish and Wildlife Service to manage the captive propagation program for all of Hawai'i's endangered birds. Captive propagation is a tool that has helped recover the Nene and is currently being used to increase populations of the `Alala, Puaiohi, and Palila. To continue the efforts of locating additional Po`o-uli and potentially a nest, more survey crews are being organized to go into areas that have not been surveyed for a long time. This effort could also shed some light on the status of other rare forest birds such as the Maui `Akepa and Nuku-pu`u.

Other options being discussed include accelerating research on habitat management, particularly in the area of predator control; manipulating the three known birds in the hopes of establishing a breeding pair; and bringing the birds into captivity for breeding.

With such overwhelming odds against it, can the Po`o-uli be saved? The answer is a resounding-maybe! The efforts to save this species have focused on and will continue to emphasize habitat conservation and ecosystem management. All of these efforts from ungulate removal to predator control will ultimately benefit all native forest bird species and other native resources. If the Po`o-uli is not saved, it would not be for lack of trying, but it would be another tremendous loss to Hawai'i and the rest of the world at large.

(Sharon Reilly is an HAS Board member and State of Hawaii wildlife biologist.)

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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.)

'ELEPAIO

ISSN 0013-6069

Managing Editor:

(vacant)

Scientific Editor

Ronald Walker, 235-1681 (H)

Reporters:

Distribution:

Robert Pyle

The 'Elepaio is printed on recycled paper and published nine times per year: February, March, April, May, June/July, August/September, October, November, and December/January.

HAS Awards for Student Research

By Wendy Johnson

The Hawaii Audubon Society presented two awards for outstanding research relating to Hawaii's natural history at this year's 41st Hawaii State Science and Engineering Fair. At the end of March, representatives of the Hawaii Audubon Society's Education Committee joined other agency judges in studying the exhibits and interviewing students on the subject of their original research.

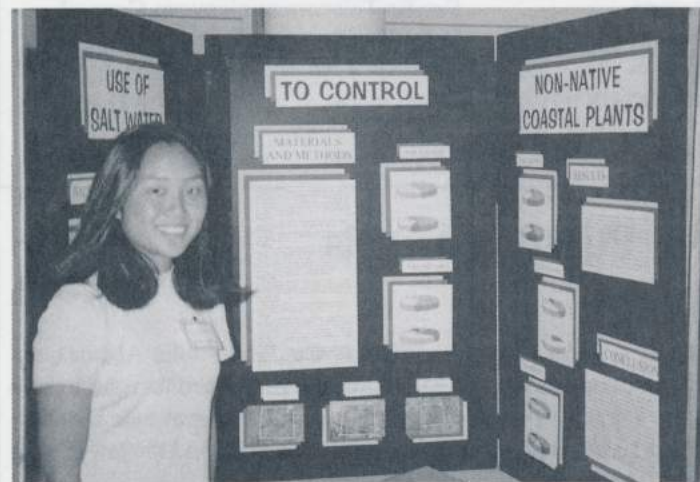
Janelle Ishida, a senior at Molokai High School, received the HAS Senior Division Research award for her project, "Use of Salt Water to Control Non-native Plants on a Coastal Strand Community". Working for several months at Kaulapapa National Park, Janelle experimented with varying concentrations of seawater/freshwater as a herbicidal spray. Her goal was to discourage the growth of alien grass species along the shoreline, allowing native grass species, naturally adapted to salt spray, to flourish and dominate their original habitat. Janelle's transect analysis and photo documentation indicated that diluted seawater can be used as an effective non-toxic herbicide in coastal strand communities in Hawaii.

The HAS award for outstanding Junior Division Research relating to Hawaii's natural history went to a team project submitted by three eighth grade students from Waiakea Intermediate. Carline Higaki, Channing Jang and Krista Kiyosaki gathered some impressive data and made perceptive observations on "The Effects of Environmental Factors on Growth and Adaptation of *Metrosideros*

collina." These young researchers chose seven stations in the *Ohi*a forests along the Saddle Road on the island of Hawaii where they monitored several environmental factors and measured four variables relating to the growth and adaptation of the trees. Carline, Channing and Krista counted stomata, trunk and canopy circumference and the height of the trees at each location. Their observations have important implications for the conservation of native forests on the Big Island.



The HAS award for outstanding research in the Junior Division went to the team project submitted by Carline Higaki, Krista Kiyosaki and Channing Jang



Janelle Ishida's project received the HAS award for outstanding Senior Research

U.S.F.W.S. Volunteers Help Pacific Region Resources

By Ron Anglin and Joy Center

Volunteers contributed over 250,000 hours to the U.S. Fish and Wildlife Service's Pacific Region last year. More than 8,000 volunteers participated in projects at national wildlife refuges, national fish hatcheries, and other Service field offices in California, Hawaii, Idaho, Nevada, Oregon, and Washington.

The Service's volunteer program is essential to helping fulfill its mission of conserving, protecting and enhancing America's fish and wildlife population surveys, biological monitoring, and providing public information and interpretation.

Volunteers at the Kealia Pond National Wildlife Refuge on Maui conducted a 6-month survey and census project of endangered Hawksbill sea turtles. They provided daily coverage surveys of the beaches where the turtles nest and tallies of their hatchlings. These volunteers have discovered and documented three previously unknown nesting areas and are working to protect them.

The Fish and Wildlife Service has volunteer opportunities at over 500 national wildlife refuges, 100 fish facilities, and numerous field office throughout the United States. For more information on the Service's volunteer program in Hawaii, contact Barbara Maxfield at 541-2749 in Honolulu.

Source: excerpt from USFWS Press Release 3/25/98

T-shirts for Sale

The Hawaii Audubon Society has a stock of T-shirts designed to spread the Audubon message. They are attractive personal apparel, and they make excellent presents as well.

T-shirts bearing the Society's 'Elepaio logo come in blue spruce with a black design and forest green with yellow design. Kolea (Pacific Golden Plover) T-shirts-white with a three-color design of the Kolea and native hibiscus-support Kolea research. Send \$14.00/shirt (including \$2.00 postage) to Yvonne Izu, 1957 Alai Place, Wahiawa, HI 96786.

Hilo High Wins 1998 Paradise Pursuits

By Sylvianne Yee

A team from Hilo High School has become the first outer island team to win a Paradise Pursuits competition, besting a strong and fired up team from Kamehameha. The two teams went buzzer to buzzer for four rounds, with Hilo finally emerging as the victor by ten points, one of the closest margins of victory in the history of Paradise Pursuits! Competition was so intense with the two teams hitting the buzzers so quickly and furiously that the system will have to be repaired before it can be used again.

This game which was aired in May was the culmination of a whole year of competition among twenty-six teams from five islands. Four teams - Hilo, Kahuku, Kamehameha, and McKinley - emerged from the play off rounds held in April. They earned the right to be part of the final four who made it to the KITV-4 games. Teams were seeded according to their scores from the play offs which saw Hilo vs. McKinley and Kamehameha vs. Kahuku. Hilo and Kamehameha won their semi-final matches which set up the exciting final game between two very equally matched teams. Please access our web page at [HYPERLINK http://www.e-gratis.com/paradise](http://www.e-gratis.com/paradise) to find out more about the competitions.

Congratulations to our 1998 Paradise Pursuits Champions, the team from Hilo High School!

Field activities for July-December 1998

July 18 Kahana Valley with Dan Sailer for damselflies and other wonders

August - Still a mystery..TBA

September 19 Campbell National Wildlife Refuge — Ki'i unit near Kahuku

October 24 Find fossil birds at the Ewa sinkholes with Alan Ziegler

November 21-22 Island of Hawai'i, Kona side and more - a special trip with Rob Pacheco

Note: Please consult future 'Elepaio issues for more details.

Mahalo to the Paradise Pursuits Prize Donors

By Sylvianne Yee



Hilo High School—1998 Paradise Pursuits Champions! Paula Akana with coach Jeanette Wong, and game personnel-Wendy Johnson & Kim Welch.

All of the students participating in the Paradise Pursuits Environmental Quiz Program receive wonderful prizes from our many generous donors. The Hawaii Audubon Society donates a specially designed Paradise Pursuits t-shirt to all students and coaches. In addition, the following organizations and individuals have opened their hearts and pocketbooks to ensure that everyone walks away a winner. From the Paradise Pursuits staff, the students, and all the present and future generations enjoying this environment known as Hawai'i, a warm mahalo to:

Atlantis Adventures
Bigelow & Holmes, Inc
Daniel Vanzyle
Farrington High School Art Academy
Friends of Haleakala National Park
Halau Wehiwehi O Leilehua
Hawaii Maritime Center
Hawaii Natural History Association
Hawaii Shirt Shop
Hawaiian Electric Co.
Historic Hawaii Foundation
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The Nature Conservancy of Hawaii
Outrigger Hotels & Resorts
Pacific Whale Foundation
Sea Life Park
Sierra Club Hawaii Service Trip Program
Trophies Hawaii
Waikiki Aquarium

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More Paradise Pursuits Angels

By Sylvianne Yee

In addition to our major sponsor, Hawaiian Electric Co., and Aloha Airlines and Outrigger Hotels, several more companies and individuals have stepped forward to help defray production costs for Paradise Pursuits. Earning our heartfelt gratitude are Ironworkers Union Local 625, BHP Hawaii, attorney David A. Johnson, and the law firm of Alston Hunt Floyd & Ing. Thank you for your support!

News from NAS — Congressional Notes

Interior appropriations: FY 99 land acquisitions threatened

House Budget Committee Chairman John Kasich's (R-OH) proposed budget resolution is rumored to contain severe cuts for environment and natural resources funding. The House Budget Committee is expected to mark up the budget resolution on May 20. Details on the contents of the Kasich plan are limited, but it reportedly provides no funding for the Land and Water Conservation Fund.

On May 14, the Senate Appropriations Committee chairman Ted Stevens (R-AK) approved preliminary estimates for the Senate Appropriations Subcommittees. The Interior Appropriations Subcommittee is slated to have \$13.3 billion in budget authority. This is \$763 million below the President's request for Interior programs and is expected to negatively affect various funding initiatives that Audubon is promoting.

Refuges: Refuge Authorization Act amended

In response to criticism by Audubon and others, House leaders have agreed on compromise language for H.R. 512 that greatly reduces opportunities to delay funding for new wildlife refuges. H.R. 512 originally would have required additional congressional approval before lands could be purchased for new refuges. The new language will codify some existing public notice requirements for new refuges and requires additional notification to members of Congress whose district includes the proposed refuge.

Wetlands: Mitigation banking bill set to move

A bill to establish a wetlands mitigation banking program, H.R. 1290, could be considered by the Water Resources Subcommittee as early as May 20. The bill, sponsored by Walter Jones (R-NC), will allow developers to undercut current guidelines that require them to avoid and minimize wetlands damage "to the greatest extent practicable."

Under this bill the destruction of wetlands can continue as long as developers have purchased credits in a mitigation bank. The bill also contains no scientific criteria

Changes in Mariana Fruit Bat Protection Proposed

By Karen Rosa and Barbara Maxfield

Based on recent studies indicating Mariana fruit bats regularly move between the islands of the Mariana archipelago, the U.S. Fish and Wildlife Service has proposed reclassification of the species on Guam from endangered to threatened and extension of threatened status to the species in the Commonwealth of the Northern Mariana Islands (CNMI).

"It makes sense biologically to manage Mariana fruit bats in the entire archipelago as one population," says Brooks Harper, field supervisor for the Service's Pacific Islands Office. "The bats on Rota may very well be the source of bats seen on Guam, Saipan, Tinian, and Aguijan, so we need to provide consistent protection for the species throughout its habitat."

The Mariana fruit bat inhabits the native-forested areas on all of the Mariana Islands. Few bats are found on Saipan, Tinian, and Aguijan. Only one population of fewer than 350 bats remains on Guam. Larger numbers are found on the small uninhabited islands north of Saipan. They feed and roost primarily in native forests and occasionally in coconut groves and coastal strand vegetation.

Fruit bats are important in tropical forests because they disperse plant seeds, helping to maintain forest diversity and contributing to forest recovery after typhoons.

The fruit bats of Guam were first given a measure of protection in 1973 when the Government of Guam outlawed hunting of the species. They were listed as endangered by the Government of Guam in 1981 and by the United States in 1984. The current proposed rule recognizes that the fruit bats on Guam and the CNMI are a single population and provides protection to the Mariana fruit bats as a threatened species throughout the Mariana archi-

pelago. In earlier efforts to protect them, the CNMI government placed a hunting ban on fruit bats in the southern islands in 1977 and listed those populations as threatened and endangered in 1991.

The 1984 Federal listing was based on the assumption that the Guam bats formed a separate population segment distinct from the CNMI bats. Recently, biologists have found evidence that bats fly between the islands, linking the colonies in a single population.

The Endangered Species Act directs Federal agencies to protect and promote the recovery of listed species. Proposed Federal projects and actions, including activities on private or non-Federal lands, that involve Federal funding or permitting require review to ensure they will not jeopardize the survival of any listed species.

The Mariana fruit bat is a medium-sized bat weighing 1/2 to 1 1/4 pounds. Males are slightly larger than females and colored black to brown with a bright golden brown mantel on the shoulders. The ears are well formed and rounded and the eyes are large, creating a canine-like appearance. Members of this family of bats often are referred to as "flying foxes."

The proposal to list the Mariana fruit bat as threatened on the northern Mariana Islands and to reclassify it as threatened on Guam was published in the Federal Register on March 26, 1998.

If made final, this listing will provide both Federal and local protection for this species.

(Source: excerpted from USFWS press release)

Note: Marianas Audubon Society has expressed concern that bat populations within the CNMI are falling due to illegal hunting. (*Koko's Call*, May 1998, p. 3)

for mitigation banks, offers little enforcement power to stop failing banks from selling credits, and allows for little public input in the establishment, use, or monitoring of mitigation banks. The bill, while establishing mitigation banking as a preferred option to compensatory mitigation, fails to set up sufficient safeguards to en-

sure that mitigation banking does not undercut avoidance and minimization requirements or that wetland losses are adequately compensated.

Excerpted from *The Audubon Advisory: National Audubon's Weekly Policy Report*, May 15th, 1998

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Calendar of Events

Thursday, June 4 and July 2

Monthly meeting of the **Education Committee**, 7 p.m. at BaLe Sandwich Shop in Manoa Marketplace (near Safeway). All are welcome. For more information, call chairperson Wendy Johnson, 261-5957.

Monday, June 8 and July 13

Monthly meeting of the **Conservation Committee** at the HAS office at 5:45 p.m. (Note new day and time.) All are welcome. For more information, call chairperson Dan Sailer, 455-2311.

Monday, June 8 and July 13

HAS Board meeting, always open to all members. 6:30 - 8:30 p.m. at the office.

Monday, June 15

The HAS **membership meeting** and program will feature Patrick Ching, well known Hawaiian wildlife artist and author, who will give a slide-illustrated talk about the wildlife of the Northwest Hawaiian

islands. Author of four coloring books and the "Hawaiian Monk Seal," Patrick will also show slides of his work and have books available for signing. The meeting is from 7:30-9:30 p.m. at Bishop Museum, Paki Hall Conference Room. Refreshments provided; HAS publications, tapes, and t-shirts available for purchase.

Sunday, June 28

Come to Waikiki for a different **field trip**: tour the Hilton Hawaiian village exotic bird collection with Arlene Buchholz. There is an extensive variety of birds including penguins, flamingos, cranes, cockatoos and parrots. Meet at 11:00 a.m. in the Hilton Hawaiian Village lobby near the valet desk and brass macaw cage. People may also meet by the State Library along Punchbowl at 10:30 a.m. to car-pool. Suggested donation is \$2.00/person. Please call Mary Gaber at 247-0104 for information.

Table of Contents

Saving the Po'o-uli (*Melamprosops phaeosoma*), the World's Rarest Bird
Sharon Reilly17

HAS Awards for Student Research
Wendy Johnson19

U.S.F.W.S. Volunteers Help Pacific Region Resources
Ron Anglin and Joy Center19

Hilo High Wins 1998 Paradise Pursuits
Sylvianne Yee20

Mahalo to the Paradise Pursuits Prize Donors Sylvianne Yee20

Field Activities for July-December 1998.....20

More Paradise Pursuits Angels
Sylvianne Yee20

News from NAS-Congressional Notes..21

Changes in Mariana Fruit Bat Protection Proposed21

Calendar of Events.....22