

## Survey of the Nene Population on Maui

**A** note concerning our lead article this month, which is a Job Progress Report: Job Progress Reports of the State Division of Forestry and Wildlife document work done under the Federal Aid to Wildlife Restoration program of the U.S. Fish and Wildlife Service. The source of the funding is a federal tax on sporting arms and ammunition paid by hunters. These grant-in-aid projects provide monies (usually on a 75% Federal/25% State matching basis) for eligible wildlife projects including research, surveys, inventories and management of both game and non-game wildlife species. Many of these jobs deal with threatened or endangered native Hawaiian birds and plants.

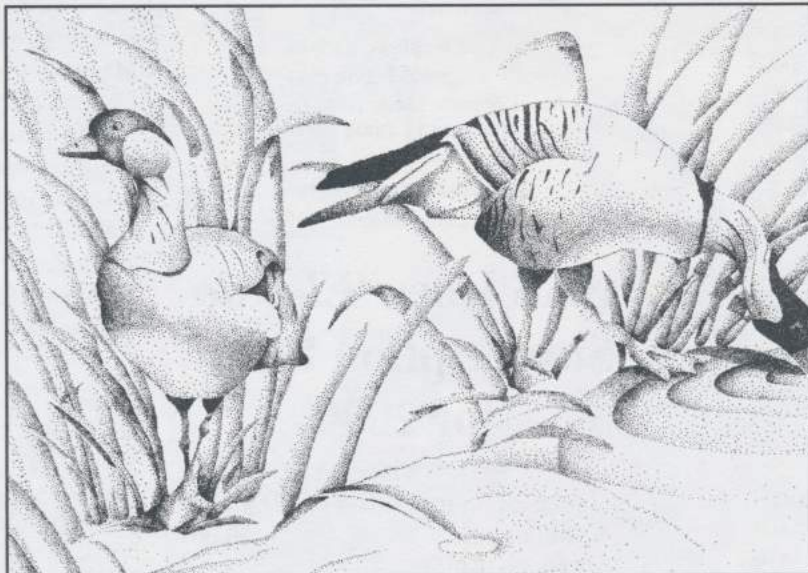
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 Study No.: R-I  
 Study Title: Nene Investigation  
 Job Title: Survey of the Nene Population on Maui  
 Period Covered: July 1, 1997 to June 30, 1998  
 Prepared by: John S. Medeiros, Wildlife Biologist  
 Submitted by: Meyer L.H. Ueoka, Wildlife Manager  
 Approved by: Paul Conry, Wildlife Program Manager, and Michael G. Buck, Administrator

### Summary:

**Haleakala** - This season a high count of 36 nene was obtained this past year during the month of December. Of the 36 nene, 28 (78%) were banded and eight (22%) unbanded. One hundred seventy eight birds were individually identified by their darvic coded bands. A total of 22 nests were located by National Park and State personnel. Nine fledglings were sighted during the month of May. Three nene, one from Hana'ula and three goslings from Maui Bird Conservation Center were released in Haleakala crater at Paliku's open-top release pen. The population was estimated at 229.

**Hana'ula** - This season a total of 12 captive propagated young of the year was released at Hana'ula area in the West Maui Forest Reserve through the use of the open-top release pen. Two foster parents were also being held in a temporary quarantine pen for the Moloka'i project. All of these birds were obtained

from the Maui Bird Conservation Center. Two of the young were fitted with radio transmitters to track movements. This year, a pair nested in the open-top release pen that resulted in four fledged young.



2000 State Runner-up in Federal Junior Duck Stamp contest—Jennifer Leong, age 16, Iolani School

To date a total of 62 nene was released in the Hana'ula area. Of the 62, one fledgling was found dead in Kihei (FY95), one fledgling was found dead in Haleakala crater by Kapalaoa cabin

(FY96), one adult was found dead in the Hana'ula pens (FY96), one fledgling was found dead on the Honoapi'ilani Highway (FY97), one presumed dead in the Lahaina area (FY97), four fledglings were

found dead near the Hana'ula Ike gate (FY97), one fledgling was killed at Sandalwood Golf Course (FY98), and one fledgling was found dead at Wailuku Elementary School (FY98). All nene found dead were sent to Dr. Thierry Work of the U.S. Fish and Wildlife service to determine the cause of death. Four fledglings and four adults returned to Haleakala National Park in the latter part of 1996 and are currently remaining in the area. One was relocated to the Big Island. Of the 42 nene currently in the Hana'ula area, 29 have been sighted this year.

### Objectives:

\* To determine distribution and to approximate population trends of nene on

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Maui.

\* To monitor movements, determine nest success and survival of nene with the use of radio telemetry.

\* To continue monitoring nene populations trends and estimate survival within Haleakala National Park and Hana'ula.

\* To monitor habitat preference of released nene in Maui County.

**Procedures:**

Collected data from field observations and tracking of banded nene were analyzed with reference to survival. Data from banded birds were obtained from both Haleakala Crater and Hana'ula area. Clutch size, gosling production and mortality were collected whenever possible. Observations were noted of fledglings to measure nesting success. Banded and unbanded ratios were used in the Lincoln Index to estimate approximate populations trends and compared with results of previous years.

**Findings:**

Haleakala - In the eastern section of Haleakala National Park rainfall data was measured during the five months of breeding season. A total precipitation for the five month period was 34.65 inches (Table I). A high count of 36 nene was obtained this past year during the month of December. Of the 36 birds 28 (787%) were banded and eight (22%) were unbanded. One hundred seventy eight birds were individually identified by darvic coded bands throughout the year.

This breeding season a total of 22 nests was located with the assistance of National Park personnel. Nine fledglings were sighted during the month of May. One adult nene from the Sandalwood Golf Course and three goslings from the Maui Bird Conservation Center were released at Paliku's open-top release pen in May (Table V). Total population was estimated at 229 birds. Hana'ula - In the Hana'ula area rainfall data was measured during the five months of breeding season. Total precipitation for the five month period was 22.66 inches.

This past season one nest was recorded for the first time in the Hana'ula area. Reproduction occurred in the open-top release pen which resulted in four goslings. A total of 12 captive propagated young of the year were released at Hana'ula in the West Maui Forest Reserve through the use of the open-top pen. All of these birds were obtained through the Maui Bird Conservation Center. Of the 12 birds, two were fitted with radio transmitters to track movements and future nesting activities. One adult nene from the Sandalwood Golf Course was relocated to Haleakala's open-top pen with the three goslings from the Maui Bird Conservation Center.

**Recommendations:**

1. Continue to locate other possible release sites on Maui, Moloka'i and Lana'i.
2. Continue the use of telemetry to track movements and nesting activities of newly released birds.
3. Continue to monitor movements and nesting activities of the Hana'ula nene.

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**Table I. Rainfall Total Recorded at Paliku' for the November thru March Breeding Season**

<u>Month</u>	<u>Rainfall in Inches</u>
November	8.63
December	17.70
January	6.77
February	1.46
March	0.90

**Table II. Rainfall Total Recorded at Hana'ula for the November Thru March Breeding Season**

<u>Month</u>	<u>Rainfall in Inches</u>
November	10.2
December	10.1
January	13.1
February	2.8
March	1.8

**Table III. Yearly Population Estimates of Nene in Haleakala Crater**

<u>Year</u>	<u>Population Estimate</u>
1979.....	106
1980.....	118
1981.....	130
1982.....	108
1983.....	112
1984.....	119
1985.....	128
1986.....	129
1988.....	104
1989.....	119
1990.....	145
1991.....	140
1992.....	288
1993.....	171
1994.....	156
1995.....	245-275 (Baker's Est)
1996.....	227
1997.....	201
1998.....	229

**Table IV. Record of Nene Released at Hana'ula and Sighted**

<u>Year</u>	<u>No. of Birds Released</u>	<u>Total Birds Released</u>	<u>No. of Birds Died</u>	<u>No. of Birds Sighted</u>	<u>% of Birds Released Sighted</u>
1995	22	22	1	5	23
1996	11	33	2	18	55
1997	16	49	6	28	60
1998	12	63	3	29	54

Total Number of Nests Located	24
Total Number of Birds Renested	2
Total Number of Nests Predated	?
Total Number of Nests Abandoned	?
Total Number of Nests Outcome Unknown	6
Total Number of Eggs	67
Total Number of Eggs Salvaged	21
Total Number of Eggs Hatched	25

Number of Goslings Fledged in the Wild	16
Number of Goslings Fledged from Prop Pen 2*	
Total Goslings Fledged in Haleakala	18

\* One adult from Hana'ula was placed with two goslings from Peregrine Fund in propagation pen.

**Table VI. Nene Nesting Summary for 1997-1998 Breeding Season in Hana'ula**

Total Number of Nests Located	1
Total Number of Birds Renested	0
Total Number of Nests Predated	0
Total Number of Nests Abandoned	0
Total Number of Eggs	4
Total Number of Eggs Salvaged	0
Total Number of Eggs Hatched	4
Number of Goslings Fledged in the Wild	0
Number of Goslings Fledged from Prop Pen 4	
Total Goslings Fledged in Hana'ula	4

## ***Hawaii Audubon Society Whale Watch Field Trip to Makapu'u Point***

***by Marlee Breese, Trip Leader***

On Saturday, March 25 a lucky group of HAS members, friends and family participated in the field trip to Makapu'u Point. Makapu'u is a scenic and wonderful place any time of the year, however, when you add humpback whales to the equation you get a trip that is hard to beat. Add to that great weather and good people and you're in field trip heaven. We had all of the above, in abundance.

After sign in and a brief discussion of the geology of the area we were off. Our first sighting of a whale was made by young Keith Armstrong as we walked up the eastern side of Kealakipapa Valley,

before we had even reached the first ocean overlook. This critter was quite close to shore and was repeatedly slapping his/her tail fluke on the surface, creating a great spectacle for us humans. Although we were fortunate in having many more whale sightings, this was probably the best, in that the animal stayed at the surface and remained active for such a long time.

Whales were not the only wildlife on the roster for the day - we had great seabird sightings as well. The most numerous were the sooty terns which we observed flying overhead, around Manana (Rabbit Island) and out at sea. Their raucous cries were heard by all. Amidst the sooty terns, was a special treat: flying

above and around Manana, were three or four tropic birds. An occasional great frigate bird soared by and a steady stream of red-footed boobies flew the coast in route from their home at Ulupa'u Head on Mokapu Peninsula to the Kaiwi Channel to feed. Curiously we did not spot any brown boobies flying this day nor did we spot any wedge-tailed shearwaters. In the terrestrial bird department, flocks of common waxbills, a fair number of pigeons and, of course, the ubiquitous red-vented bulbul rounded out the bird sightings.

On the way back down the hill we all pitched in and picked up trash. Thanks to all for their kokua with the clean up and for a great time.

# Citizen Suit to Protect Habitat for Guam Endangered Species

The Marianas Audubon Society and Center for Biological Diversity, represented by Earthjustice Legal Defense Fund, filed suit in federal district court today (04/03/00) against Bruce Babbitt, Secretary of the Interior, and Jamie Rappaport Clark, Director of the United States Fish and Wildlife Service (Service), for failing to designate critical habitat, as required by the federal Endangered Species Act ("ESA"), for seven endangered species from Guam. The seven Guam species are the Mariana crow (*Corvus kubaryi*), Guam rail (*Rallus owstoni*), Guam Micronesian kingfisher (*Halcyon cinnamomina cinnamomina*), Guam broadbill (*Myiagra freycineti*), Guam bridled white-eye (*Zosterops conspicillata conspicillata*), Mariana fruit bat (*Pteropus mariannus*), and little Mariana fruit bat (*Pteropus tokudae*).

The Service listed all seven Guam species as endangered in 1984, and their continued survival remains in doubt, due largely to predation by the introduced brown tree snake and continued fragmentation and destruction of their native habitat. While all seven species were once common throughout Guam, only two — the Mariana crow ("Aga") in Chamoru) and Mariana fruit bat (fanihi) — are now known to occur naturally in the wild on Guam and are restricted to a few distinct forested areas. Captive breeding programs have allowed the Guam rail (ko'ko') and the Guam Micronesian kingfisher (sihek) to avoid extinction. As part of these efforts, the Guam rail has recently been reintroduced to native forest habitat in the northern part of Guam.

"Now that we are starting to get a handle on how to control the brown tree snake, protecting native habitat becomes all the more important," said Gretchen Grimm, president of the Marianas Audubon Society. "If we do not protect essential areas through critical habitat designation, wild and reintroduced populations of Guam's endangered animals will not have any place to live, and the

only place we will be able to see these unique parts of Guam's natural heritage is in the zoo.

"Critical habitat" consists of those areas that must be managed to permit an endangered species to recover to the level where it is safe, in the foreseeable future, from the danger of extinction. Under the ESA, federal agencies may not carry out,



DAWR photo by Gary J. Wiles  
*Guam Rail (rallus owstoni) Endangered species endemic to Guam*

fund, or approve any actions that result in destroying or adversely modifying critical habitat. Since the restrictions associated with critical habitat designation are directed solely at federal agency actions, designation generally has little direct effect on private landowners. However, designating critical habitat also performs an important educational role, informing the public as well as local governments about areas essential to the conservation of imperiled plants and animals.

"Some on Guam have raised concerns that designating critical habitat would prevent the Navy or Air Force from returning "excess" military lands to the Government of Guam or to local families, but that's simply not true," said David Henkin, attorney with Earthjustice Legal Defense Fund. "Designating critical habitat has nothing to do with who owns the land. It simply ensures that any federal action — whether it involves a land transfer, road construction, or military training — will not result in adverse

modification or destruction of habitat that Guam's endangered species need to survive and, eventually, to recover."

The Guam species face threats from a variety of federal actions, including military training exercises; the clearing and fragmentation of forest habitat for roads, warehouses or other construction projects; the construction of resorts, golf courses, and other recreational facilities where federal permits are required; and the release or exchange of excess military property without adequate assurances for habitat protection.

"Without critical habitat, we risk losing these magnificent species forever," said Peter Galvin, conservation biologist for the Center for Biological Diversity. "We have an obligation to protect this essential habitat, so that future generations will have the chance to study and enjoy these unique animals in the wild, not just in picture books."

The Marianas Audubon Society is a chartered chapter of the National Audubon Society organized in 1983 and is dedicated to preserving the Mariana Islands' unique wildlife, plants, and culture.

The Center for Biological Diversity is a science-based environmental advocacy organization founded in 1989 with more than 5000 members nationwide. It is currently working to protect biological diversity and habitat in the western United States, northern Mexico, and the Pacific.

Earthjustice Legal Defense Fund (formerly Sierra Club Legal Defense Fund) is a non-profit, public interest, environmental law firm. Earthjustice's Mid-Pacific office opened in Honolulu, Hawai'i in 1988 and has represented dozens of environmental, native Hawaiian, and community organizations in litigation and administrative proceedings.

Source: Earthjustice Legal Defense Fund news release dated April 3, 2000  
Contact: David Henkin, (808) 599-2436 (Earthjustice) Peter Galvin, (510) 841-0812, ext. 2 (Center for Biological Diversity)

# Mahalo A Nui Loa to our Annual Appeal Donors!

*The Board of Directors and the Staff of the Society wishes to thank those who responded between November 1999 and April 2000 to the Fall 1999 Annual Appeal. These contributions will be used to continue and expand our many programs that benefit Hawai'i's native wildlife. Many thanks to:*

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## *To Save Hawai'i, Study Hawai'i*

*Reprinted with the kind permission of Environment Hawai'i, a monthly newsletter. This is Emma's Column by Emma Yuen, from Environment Hawai'i Volume 10, No. 10, April 2000. Environment Hawai'i can be reached by mail at 282 Ululani Street, 1st Floor, Hilo, Hawai'i 96720, or toll free at 877-934-0130.*

"I go out in nature a lot. I love Waipi'o and the mountain," a Hilo High School freshman named Jessica says. Her friend Miki agrees. "We go camping and I love the ocean. Something just compels me to the water."

These two girls are members on the Hilo High team for Paradise Pursuits, a quiz show where students from high schools around the state compete to answer correctly questions about Hawai'i geology and native species. Paradise Pursuits is sponsored by the Hawaii Audubon Society.

The Hilo High team consists of four girls, myself included. All of us love practicing with the buzzers and are looking forward to a chance to be on TV if we win the district competition. But when we think harder about it, we realize what the competition is really giving us: a deeper love and appreciation for Hawai'i's

natural history in all its aspects.

"Sometimes, I get an urge to protect Hawai'i's environment, when I go into koa forests and I see how beautiful everything is," says Jessica. "Paradise Pursuits has made me aware of some of the problems that are happening in Hawai'i."

"Yes, especially because there are so many native species," Miki agrees. "It seems like so many of our plants are going away and being depleted."

For me, I see the beauty of Hawai'i and Hawai'i's native plants when going through hala covered valleys, interspersed with kukui nut trees and all the variety of plants everywhere around the coast where I live. Only a few miles away, though, are gulches completely covered with Miconia, where all you see are those awful purple leaves that mean destruction and threat. I want Hawai'i to keep that diversity.

The members of the team all do various service projects. "We go with our club, the Leo club, and clean up streams," the girls say. "And also, when we go camping, we always have to pick up all the rubbish that we find lying around everywhere, because we have to leave the area cleaner than we found it."

It makes me sad when I see garbage

bags strewn around the ground in places that otherwise are gorgeous. I feel almost guilty for being part of a race that is the number one destroyer of nature.

Paradise Pursuits is just another way for us to learn about Hawai'i, which makes us appreciate it. Knowing the names of a plant or understanding what its significance is, or even learning little interesting facts about Hawai'i is always rewarding. Miki likes marine biology and Jessica likes facts about the forests.

"I think I might work in the National Parks inside the forests someday," Jessica says. "I just want to be outside and see the plants and all the green everywhere. Because in our classes we only learn about the general biology of the world, and nothing specific to Hawai'i, this is one of the only chances for us to really learn about Hawai'i land."

We practice for the competition, but it's much more relaxed than school - just an informal thing. We comment on the information we're quizzing each other about, or sometimes just joke around. But we all agree that because of all the wonders that we now know about Hawai'i, the environment has become a bigger part of our lives.

# Field Trips for 2000

Here is the updated list of field trips either scheduled or being planned for 2000. All trips with an \* are still in the process of being planned. Details will be provided as the scheduled dates get closer.

May 20th	Service Trip to Pahole Natural Area Reserve to plant native seedlings. The 658 acre Pahole Reserve is a lowland mesic forest in the Mokule'ia foothills. Within the Reserve are Hawaiian plants and animals such as 'oha wai, a rare lobeliad; palapalai fern; 'ohia lehua trees; 'amakihi and 'elepaio birds; the "happy-face" spider, and pupu kani oe, or O'ahu tree snail, an extremely rare and imperilled animal. Call Sharon to register, 386-7029.
June 17	Pelagic Birding boat trip -on a 43-foot boat to look for seabirds. All seats taken - Call HAS office to be placed on cancellation list, 528-1432.
June ?	*Tide Pools
July 8	Poamoho Trail led by Sharon Reilly. Call office to register, 528-1432. Limited to 10-15 participants. About 5 miles round trip.
July 23	Kamananui (Moanalua) Valley Family Walk - this valley is where H-3 was originally supposed to go! There are petroglyphs and more.
August 20	Native Forest Bird Captive Propagation Unit at Honolulu Zoo. Two trips, 9:30am and 1:30pm, each limited to 10 people. This is a very popular trip. See and hear 'amakihi, 'apapane, and 'i'iwi up close, along with an aging but charming Laysan finch.
September 4	Keauhou on the Big Island - trip to see forest birds
October 28	James Campbell National Wildlife Refuge
November 25	'Ewa Plains Sinkholes to look for fossils of extinct Hawaiian birds with Dr. Alan Ziegler.
December -	*Christmas Bird Count

## Hilo High School Captures Statewide Paradise Pursuits Championship

On April 14 and 15 the Paradise Pursuits play-off games took place at the 'Olelo studios in Honolulu. Robbie Ripp, video production consultant, helped by students of Mid Pacific Institute's media arts class did an outstanding job of taping the preliminaries games.

The six schools that played were 'Aiea, Hilo, Iolani, Kaimuki, Lahainaluna, and Leilehua. With Aulani Wilhelm from the State Department of Land and Natural Resources as moderator, the six teams played through the evening of April 14. At the end of the evening the schools going into the semi-final rounds were 'Aiea, Hilo, Iolani, and Leilehua.

The next morning at the KITV studios the four teams played the semi-finals. By noon the two schools left to face off in the finals were 'Aiea and Hilo. 'Aiea was last year's winner - they were defending their title and Coach Jason

Brennan had done a great job of training several new players. Hilo's team was new to Paradise Pursuits, composed of two freshmen and two sophomores (there is an article on page \_\_\_ of this issue of 'Elepaio by team member Emma Yuen). The final game was probably one of the most competitive games ever played. Both teams missed very few questions and pretty much all the questions for the rounds were answered.

In the end Hilo became the new statewide champion, winning the \$500 donated by William R. Liggett of Chaney Brooks, as well as the copies of the Atlas of Hawai'i donated by Jonathan Starr, Helen Nielsen, and Robin Brent. Chuck Friedman of Hawaiian Electric was on hand to present the trophies and congratulated the teams on their game. Both teams demonstrated an impressive bank of knowledge about Hawai'i and, more importantly, that the future is in the hands

of intelligent, hard working and talented young people.

A big Mahalo to the people who worked on the games - Robbie Ripp, his volunteers and students, and David McDonough and the KITV staff, who pretty much do this "for fun" each year. Thanks also to the Paradise Pursuits volunteers: Sylvianne Yee, Wendy Johnson, Liz Kumabe, Atomman Kimm, Burt Lum, Heidi Bornhorst, Nylene Takahashi and the Farrington High School Leo Club, and to William Liggett, Jonathan Starr, Helen Nielsen, Bailey Farms, and Robin Brent.

Another big Mahalo to our corporate sponsors: Hawaiian Electric, Aloha Airlines, Waikiki Sheraton and Pizza Hut. We really appreciate the community turning out to help with the games.

Make sure you watch them - you'll be impressed! Tune in to KITV on Sundays, April 23, April 30 and especially the final game, May 7 at 4:00 p.m.

## April Field Trip Report—Manana Trail

by Dan Sailer, Trip Leader

Upon our arrival at Keiwa Heiau State Park, we were told the park was closed due to a law enforcement problem. Undaunted by the park's closure and gloomy weather, our party of four instead headed over to nearby Manana Ridge Trail above Pacific Palisades with hopes of sighting family groups of 'apapane. A quiet morning for birds and occasional showers did not dampen our spirits as we headed through eucalyptus groves toward the Hunter's Shelter. We

traded sightings and stories of birding trips afar. Robin Leong, a part-time Hawai'i resident and Point Reyes Audubon chapter board member, shared his tale of seeing quetzles in Central America while we listened to 'amakihi songs, Mejiro calls, and Shama melodies. I shared my observations of O'ahu 'elepaio nesting efforts in the Wai'anae mountains this spring and our young birder extraordinaire, Mark Jenkins expounded on the diversity and distribution of Floridian avifauna.

Along an open ridge amidst koa and ilihi stands, we made a last effort to spot the crimson and black honeycreepers that had so far eluded us that morning. Without the 'ohi'a lehua trees in bloom our efforts were in vain and we let the rain drive us back. Upon leaving the Forest Reserve, we were scolded by red-billed leiothrixes. Despite our soaking, we said our farewells, safe in our new found knowledge of the trail and warmed by thoughts of what future birding trips would hold.

# Second International Conference on the Biology and Conservation of Albatrosses and other Petrels

The Second International Conference on the Biology and Conservation of Albatrosses and Other Petrels will take place at the Ilikai Hotel, Waikiki, Hawai'i May 8-12 2000. In 1995 the First International Conference on the Biology and Conservation of Albatrosses was convened in Hobart, Tasmania, Australia.

A group of 120 participants came together to exchange scientific information on the biology and conservation of albatrosses. Ninety of those biologists, fisheries managers, and representatives of the fishing industry and non-governmental conservation organizations then participated in a workshop focused on the serious problem of albatross mortality in the world's longline fisheries. The first meeting and workshop resulted in a publication that summarized the state of the art of research on the ecology of albatrosses and current knowledge about the scope and effect of the longline problem in addition to technical information about the methods available to reduce bird mortality in longline fisheries.

Participants in the first conference agreed to convene again in the year 2000, and Hawai'i has been chosen as the site of this Second International Conference. The first conference and workshop succeeded in bringing together scholars representing a variety of research areas including systematics, population ecology,

foraging ecology, physiology, and behavior.

This forum also resulted in an assessment of the nature and extent of the fishery interaction problem, recommendations for mitigating measures that could be enacted by fisheries immediately, and identifying areas in need of further research and development. In the intervening years progress by the world community has been made on several fronts including international policy in the form of an IUCN Resolution concerning mortality of seabirds in longline fisheries passed in October of 1996 and an FAO Technical Consultation on the Incidental Catch of Seabirds in Longline Fisheries. The latter resulted in an International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries that was approved in June 1999.

It is now an appropriate time for people to report on a number of their local initiatives such as research into efficacy of various mitigation techniques in the fisheries, progress in regulations and regulatory management of the problem, and studies on the population effects of fisheries on Procellariiform birds.

This year the format of the conference will be expanded beyond just albatrosses to include other species in the Order Procellariiformes. Participants will present their work on breeding biology,

foraging ecology, energetics, and population dynamics of albatrosses and all other petrels. Many members of this group, in addition to albatrosses, face pressing conservation problems due to introduced mammalian predators in their breeding colonies, global contaminants, as well as fisheries interactions.

This gathering will provide a platform for presentations about advances in understanding the biology of all petrel species, allow participants to share technologies, and encourage them to plan for the best use of conservation resources to avert future petrel extirpations and extinctions. The agenda includes 3 days for presentation of scientific papers and 2 days for workshops on specific topics such as fishery interactions and island restoration techniques.

These workshop sessions will allow smaller groups of people to work in a more flexible format. More information about the agenda will be posted on a conference website as it is finalized. Conference Website: <http://www.environment-hawaii.org>. Registrations should be sent to Beth Flint, Pacific/Remote Islands Refuge Complex, U.S. Fish and Wildlife Service, P.O. Box 50167, Honolulu, Hawai'i 96850. Beth Flint can be reached at 808-541-1699 X170, fax 808-541-1216 or email [beth\\_flint@fws.gov](mailto:beth_flint@fws.gov).

## CONFERENCE INFORMATION:

Registration for conference and workshops: \$150 (\$185 if received after March 30)

Banquet: Wed. evening, May 10 - \$35 per person

Note: We are applying for grant money to cover conference expenses for participants who may not be able to come otherwise. Please contact us for further information.

## Schedule:

Monday, May 8	8:00 am - 5:00 pm	Registration and Scientific Presentations
	5:30 pm - 9:30 pm	Welcome reception at the Waikiki Aquarium
Tuesday, May 9	8:00 am - 5:00 pm	Scientific Presentations
Wednesday, May 10	8:00 am - 5:00 pm	Scientific Presentations
	6:30 pm - 10:00 pm	Cocktails and Banquet
Thursday, May 11	8:00 am - 5:00 pm	Workshops
Friday, May 12	8:00 am - 5:00 pm	Workshops

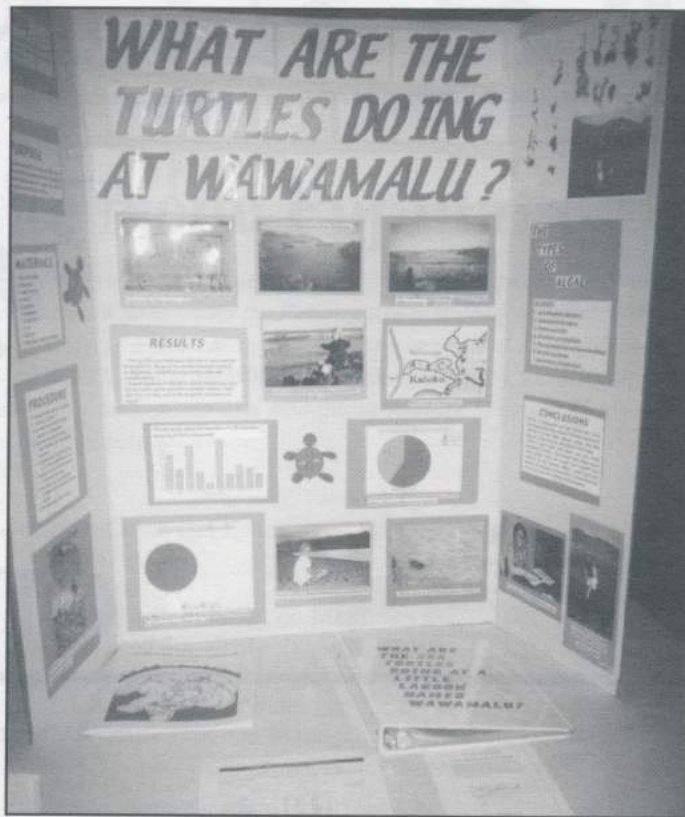


# HAS Awards For Student Research

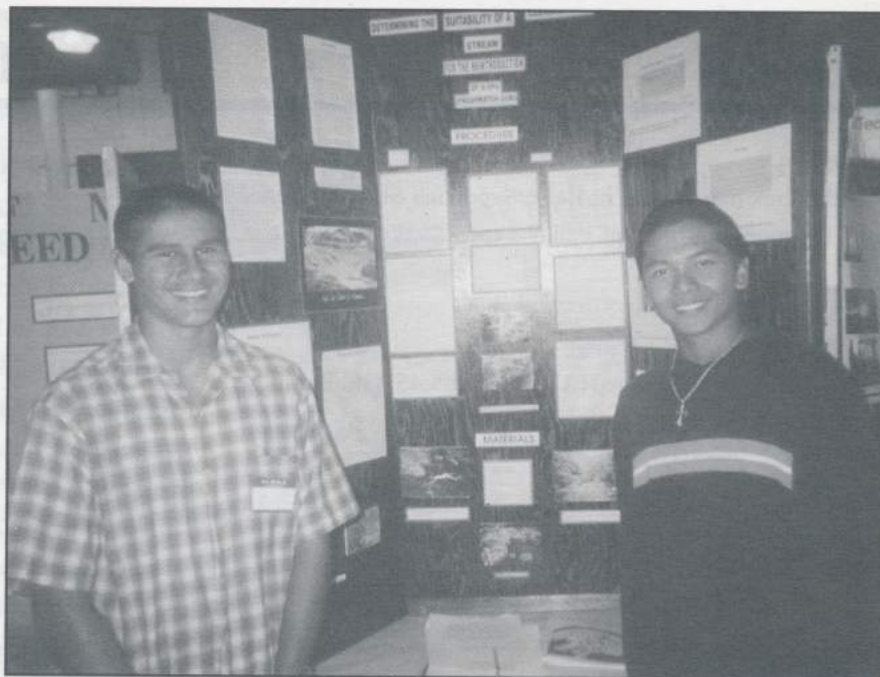
by Wendy Johnson,  
Education Committee Chair

The Hawaii Audubon Society presented two awards for outstanding research relating to Hawaii's natural history at the 43rd Hawai'i 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.

Rueban Arreola-Sotero and Jonathan Valdez from Wai'anae High School received the HAS Senior Division Research award for their team project entitled "Determining the Suitability of Leeward Oahu Streams for the Reintroduction of O'opu: Water Quality and Biotic Index Comparisons between Wai'anae & Waikolu Streams." Working on the Kalaula Stream portion of the Wai'anae Stream where O'opu have not been seen for many years, Rueban and Jonathan measured chemical parameters and identified existing flora and fauna at several sites. The students also traveled to Moloka'i to observe O'opu in their prime habitat in Waikolu Stream and compared the conditions and measurements from both locations. Water volume and stream flow appear to be the critical factors in habitat suitability for the native gobi, so Jonathan and Rueban



*The HAS award for outstanding research in the Junior Division went to this project submitted by Dara Balzs.*



*Jonathan Valdez (l) and Rueban Arreola-Sotero (r) received the HAS award for outstanding Senior Research relating to Hawai'i's natural history.*

O'ahu. The boys gained an understanding of the connection between native wildlife protection and economic and political issues. Jonathan and Rueban hope to continue working on this project with the long term goal of participating in the successful reintroduction of O'opu to the Wai'anae Stream.

The HAS award for outstanding Junior Division Research relating to Hawai'i's natural history went to a project submitted by Dara Balzs, a sixth grader at St. Patrick School. Dara spent many hours in the field making observations and gathering data which answers the question "What are the Sea Turtles Doing at a Little Lagoon Named Wawamalu?" Working at the lagoon inland from Kaloko Point near Sandy Beach, Dara counted

and studied the behavior of green sea turtles on ten days over a two month period.

Numbers ranged from two to seventeen turtles which were usually eating or sleeping. Dara collected and identified several types of algae which the turtles were feeding on. She noticed that none of the turtles she observed in Wawamalu appeared to have fibrous growths or tumors on their head or flippers. This is useful information

broadened the scope of their project to include investigations into water supply and usage issues on the leeward coast of

for researchers trying to determine the distribution and cause of this fatal affliction effecting sea turtles in Hawai'i.



MAY 2000

# 'ELEPAIO

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## Calendar of Events

### Thursdays, May 4 and June 1

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

### Mondays, May 8 and June 12

**Conservation Committee** monthly meeting at the HAS office at 5:45 p.m. For more information, call chairperson Dan Sailer, 455-2311.

### Mondays, May 8 and June 12

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

### Saturday, May 20

**Service Trip** to Pahole Natural Area Reserve to plant native seedlings. See page 31 for details.

### Saturday, June 17

#### **Pelagic Birding boat trip**

All seats taken! Call HAS office to be put on cancellation list, 528-1432. See page 31 for details.

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