HAWAII AUDUBON SOCIETY

# 'ELEPAIO

*Journal of the Hawaii Audubon Society*

*For the Protection of Hawaii's Native Wildlife*

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# Marine Protected Areas

by Linda Paul, Executive Director of Western Pacific Fisheries Coalition

Our most important fishery management objective is to protect the long term health of the stocks to ensure a good harvest for our grandchildren. Many populations of exploited fish are declining in numbers and size despite the best efforts of fishery managers. Sustainable fisheries have become an unreachable goal under current management approaches. Marine protected areas (MPAs) offer a way out of this downward spiral. If some of the larger, more fecund, and genetically more robust fish are fully protected from harvesting, those fish will provide a dependable quantity and quality of offspring. The actual level of protection within different types of MPAs in Hawai'i can vary; most allow some harvesting. The most effective MPAs protect ecosystem structure and function by including a core of no-take reserves in which extraction of all living organisms is prohibited. Because ocean currents transport eggs and larvae over large distances, networks of no-take reserves or Kapu Zones are needed to achieve the stock rebuilding objective. Reserves are also needed to protect functional ecosystems and habitat areas of particular concern and provide baseline data for fisheries managers to measure the health of stocks. Restricting fishing in nursery and spawning grounds to rebuild depleted stocks has long been a part of fisheries management in Hawai'i. Native Hawaiians were the first to use Kapu zones as a management tool and established caretakers for different areas of land and sea. Hawai'i has several types of marine protected areas on O'ahu, Hawai'i, Lana'i and Maui.

Fishery Management Areas (FMAs) are areas that are closed to certain fishing gears or activities, while remaining open to others, or areas that are closed for a length of time and later reopened to allow fish populations to recover and grow to harvestable lengths. Fishing methods may also be restricted to certain types of gear. The Hawai'i bottom fish plan designates 20% of important bottomfish habitat as no-fishing zones for bottomfish around the high islands.

Marine Life Conservation Districts (MLCDs) are marine protected areas that may permit some extractive activities, including certain kinds of recreational fishing such as pole-and-line, spear fishing without SCUBA, and certain types of nets. Commercial fishing is generally forbidden. There are MLCDs at Hanauma Bay, Pupukea, and Waikiki on O'ahu; Lapakahi, Kealakelua Bay, Waialea Bay, and the Old Kona Airport on the Island of Hawai'i; Molokini Shoal and Honolua-Mokule'ia Bay on Maui; and Manele-Hulopoe on Lana'i. Only two, at Hanauma Bay and Waikiki, prohibit all harvesting.

Natural Area Reserves, wildlife sanctuaries and other reserves and refuges are closed to all extractive types of fishing and gathering, except perhaps native Hawaiian harvesting. They include Ahihi-Kinau Natural Area Reserve on Maui, Kaho'olawe Island Reserve, and Coconut Island - Hawai'i Marine Laboratory Refuge on O'ahu. Marine Sanctuaries such as the Hawaiian Islands Humpback Whale National Marine Sanctuary usually allow commercial and recreational fishing, although some parts of a sanctuary may be set aside as no-take reserves.

**No-Take Marine Reserves**

Uncertainty is inherent in managing natural resources, particularly multiple interactions among elements of complex coral reef ecosystems. No-take marine reserves provide insurance against stock collapse and preserve biodiversity. By prohibiting all harvesting within a designated area, complete protection from both the expected and unexpected effects of extractive activities can be achieved. Since fish in no-take reserves aren't caught, or injured and then discarded, they will survive to grow, reproduce and be caught another day. Reserves augment traditional fishery management approaches and make ecosystem management possible. By utilizing a management tool that focuses on ecosystem processes and functions, the fishery and conservation benefits of reserves also extend beyond the individual targeted populations. Ecosystem management is important because high-volume harvesting of selected species can modify predator/prey relationships and result in widespread changes that cascade though out marine communities. Entire assemblages of fishes can be wiped out by using non-specific gear such as gillnets. Many types of gear also destroy spawning and foraging habitats. Besides eliminating the harvesting of targeted species, no-take reserves provide additional benefits by eliminating fishing mortality of associated species due to bycatch, discards and ghost fishing.

Networks of marine reserves offer the best hedge against overfishing within a biogeographic region by connecting egg and larval dispersal and juvenile and adult migration paths. Networks also enhance opportunities to build scientific understanding of complex marine ecosystems by protecting interdependent populations from extractive activities. Furthermore, even though pristine areas and lightly exploited populations such as those in the Northwestern Hawaiian Islands may be the best candidates for protection, even highly degraded areas offer opportunities to restore marine ecosystems. In fact, highly exploited areas such as those adjacent to urban population centers may show stronger responses to reserve designation, but their success with depend on protection from other forms of human disturbance such as pollution and runoff.

The first formal marine reserves in the United States were established more than 20 years ago. After just one or two years of complete protection, researchers found that fish numbers had nearly doubled, their average sizes were up by a third and the

*CONTINUED...PG. 47*

# Bird of the Month - ‘Amakihi

The ‘Amakihi is the second most common Hawaiian honeycreeper (only the ‘Apapane is more numerous). It is usually found above 2000', but increasingly below that elevation on O‘ahu and Hawai‘i. One of the more adaptable birds among Hawaiian endemics, the ‘Amakihi inhabits two quite different habitats, both rainforests and dry mamane-naio forests. It feeds on the nectar of ‘ohi‘a and mamane as well as other flowers, and also picks over the bark of trees for insects like spiders.

The ‘Amakihi is about 4 1/2" in length. Males are bright yellowish-green, females and juveniles are a little more dull. The bill is slightly decurved and gray, with dark lores. The bill of the Kaua‘i subspecies is larger than the others'. Three separate species have evolved, one each on O‘ahu (Hemignathus chloris) and Kaua‘i (Hemignathus kauaiensis), and another on Hawai‘i, Moloka‘i, and Maui (Hemignathus virens virens). The song is a flat trill, the call is a *tseet* or mewing note.

Look for the ‘Amakihi in these and other places: Koke‘e region and Alaka‘i Swamp on Kaua‘i, Lyon Arboretum and ‘Aiea Ridge Trail on O‘ahu, Kamakou Preserve on Moloka‘i, Waikamoi Preserve and Hosmer Grove on Maui, and Manuka State Park, Pu‘u Anahulu, and Pu‘u La‘au on the Big Island.

*[information taken from The Birds of Hawaii and the Tropical Pacific, by Pratt, Bruner, and Berrett (1987), Hawaiian Birdlife by A.J. Berber (1972), Enjoying Birds in Hawaii, by H.D. Pratt (1993), and Hawaii's Birds, by Hawaii Audubon Society (1996).]*

Hawai‘i Amakihi by Wilson & Evans

# Hawaii Audubon Society


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# ‘ELEPAIO

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*MARINE PROTECTED AREA CONTINUED FROM PG. 45...*

diversity of species was higher by one-fourth. The overall biomass in the reserves had almost tripled. However, full protection is critical to achieve the full range of benefits.

Demonstrated benefits of marine reserves and networks of reserves include:

- Long lasting and often rapid increases in abundance, diversity and productivity of fish populations.
- Increase in fish size and reproductive output within the reserves.
- Decreased mortality, decreased habitat destruction, decreased extinction, and balanced, healthy ecosystems.
- Provide sites for collecting valuable fishery-independent data.
- Larger reserve sizes result in increased benefits, but even small reserves have positive effects if they are part of a network.
- Size and abundance of harvested species increase in areas adjacent to reserves (spill-over).
- Networks of reserves buffer against environmental variability and provide significantly greater protection for marine communities than a single reserve.
- Reserve networks that span large geographic distances and encompass substantial areas protect against catastrophic events and provide stable platforms for sustainable marine communities in the long term.
- "Marine reserves work and they work fast. It is no longer a question of whether to set aside fully protected areas in the ocean, but where to establish them." (Dr. Jan Lubchenco)
- "The results are startling and consistent" (Dr. Robert Warner)
- "A well designed network of fully protected sanctuaries is a powerful tool for marine conservation and management" (Dr. Steve Palumbi)

**The Spill-over Effect**

Reserves serve as natural hatcheries, replenishing fish populations regionally through egg and larval spillover beyond reserve boundaries. The dispersal of eggs and larvae from no-take marine reserves to surrounding areas can maintain and improve fishing in adjacent areas because large individuals in the reserve escape capture and their total egg production is much higher. The size and abundance of exploited species also increases in areas adjacent to reserves. Fishermen excluded from marine reserves are the generally the ones that benefit the most, because fishing in neighboring areas is vastly improved.

**Examples of the spill-over effect in Hawai'i:**

**Hanauma Bay.** Fish are more abundant beyond and on either side of Hanauma Bay because the overflow of various species enhances the stocks in the adjacent areas. This domino effect has been noticed by fishermen and divers alike.

**Kaho'olawe.** The Kaho'olawe Island Reserve protects the surrounding waters to a distance of two miles from all activities except tolling twice a month outside of 20 fathoms and some subsistence harvesting. Two years after the reserve was established a survey revealed significantly higher levels of bottomfish inside the reserve than anywhere else in the main islands and an initial pattern of migration into and out of the reserve. There is anecdotal evidence that fishing has improved in the waters adjacent to the reserve.

**Other examples of the spill-over effect:**

Leigh Marine Reserve, New Zealand. Despite violent opposition to the reserve at the outset, fishermen became its champions. Twenty years after it was established densities of an exploited snapper had reached nearly 40 times higher inside the reserve than outside. Spiny lobster biomass also increased at rates of 5-11% per year of protection and fishermen are now fishing close to the reserve where catches are better due to the spill-over effect.

Soufriere Marine Management Area St. Lucia, Caribbean. Established in 1995 after three years of negotiation and collaboration between the government and the local community this management area encompasses 11 km of the island's best coral reef habitat. Within the area there are four fully protected zones (about 35% of the coral reef habitat) interspersed with fishing areas that are accessible to local artisanal fishermen. By 1998, commercially important fish stocks had tripled inside the fully protected zones and doubled in the adjacent fishing areas and fish diversity increased by 23%. The economy has also benefited from jobs created by a growing tourism industry associated with the area.

In 2001 the American Association for the Advancement of Science issued the following Scientific Consensus Statement signed by 161 leading marine scientists and experts on marine reserves:

- Reserves conserve both fisheries and biodiversity.
- To meet goals for fisheries and biodiversity conservation, reserves must encompass the diversity of marine habitats.
- Reserves must be established and operated in the context of other management tools.
- Reserves need a dedicated program to monitor and evaluate their impacts both within and outside their boundaries.
- Reserves provide a critical benchmark for the evaluation of threats to ocean communities.
- Networks of reserves will be necessary for long-term fishery and conservation benefits.
- Existing scientific information justifies the immediate application of fully protected marine reserves as a central management tool.

Fisheries management is an inexact science. It can fail because of oversimplified single- species models, insufficient data, environmental variability, inadequate compliance, and political and economic pressures. Conventional management measures are generally not suited to multi-species, multiple gear fisheries. Sound fisheries management must allow a margin of error for effects of changing environmental conditions and uncertainty or inaccuracies in stock assessment and projected sustainable catch levels. Marine reserves are a precautionary management tool that reduce risk by providing a buffer against the predominant practice of "crisis management", whereby

*CONTINUED...PG. 48*

*MARINE PROTECTED AREA CONTINUED FROM PG. 47...*

managers attempt to guesstimate the maximum exploitation level of the resource (MSY) and then implement conservation measures only after a stock is in trouble. Over-exploitation of a stock often takes years to detect. If a fish stock collapses for whatever reason, marine protected areas and no-take reserves can act as reservoirs that will enable a stock to rebuild at a faster rate than would otherwise be possible. It's like having money in a savings account that can be used to cover an overdrawn checking account. It is important, however, that the process for establishing marine reserves be adaptive so that locations, boundaries and rules can be modified to improve performance. Even well designed networks need occasional tuning.

Marine reserves networks need:

- Clearly identified goals, objectives, and expectations.
- Permanently protected representative habitats, unique ecological areas and areas of critical ecological function.
- Representative habitat types and biotic communities.
- The entire variety of habitats in the home range of the species.
- Sufficient size, numbers, and a large enough geographic area to survive isolated catastrophic events (20-25% of the essential fish habitat).
- Protection for 20- 50% of the spawning stock necessary to support optimum yield of commercially-caught species.
- To include critical, sensitive or unique habitats and species.
- Active programs that comprehensively monitor and enforce the sites.
- Adaptive resource management that utilizes feedback from researchers.
- To integrate and involve numerous users of the ecosystems in the creation, design, management and monitoring of the reserves.

Marine reserves also create economic opportunities that can contribute as much or more to Hawai'i's economy than commercial fishing, such as ecotourism and ocean wilderness tours, scientific research, marine education, recreational snorkeling and diving, underwater photography, and cultural activities. However, it must be noted that even non-extractive uses can alter and damage reserve ecosystems. Since it is usually easier to prevent environmental damage than to repair it later, caution dictates that in the absence of sufficient information on which to base safe and reliable estimates of the effect of an activity, the burden of proof must shift to those proposing activities that may have a negative effect on the ecosystem. Only after the proposed user has demonstrated with a reasonable degree of certainty that the proposed use will not impose an unacceptable cost or loss to the resource, should that activity be specifically permitted.

References:

No-take Reserve Networks: Sustaining Fishery Populations and Marine Ecosystems. Fisheries. Vol. 24, No. 11, 11-25. Murray, S.N., R.F. Ambrose, J.A. Bohnsack. L.W. Botsford, M..H. Carr, G.E. Davis, P.K. Dayton, D. Gotshall, D.R. Gunderson, M.A. Hixon, J. Lubchenco, M.. Mangel, A. MacCall, D. A. McArdle, J.C. Ogden, J. Roughgarden, R.M. Starr, M.J. Tegner, and M.M. Yoklavich. 1999.

Scientific Consensus Statement on Marine Reserves and Marine Protected Areas. National Center for Ecological Analysis and Synthesis, University of California, 735 State St. Ste. 300, Santa Barbara, CA 93101. February 2001.

# Nominating Committee Seeks Candidates for Board of Directors

At the Board Meeting of July 11, 2001, a Nominating Committee of Wendy Johnson, Trae Menard, and Linda Paul was formed. The committee is looking for Society members who are willing to serve on the Board of Directors. The bylaws call for fifteen directors to serve two-year terms; five of the fifteen directors are elected by the membership to officer positions. Normally eight directors are elected in even years and seven elected in odd years. This varies, however, as a result of resignations and Board members being appointed to fill unexpired officer terms.

Positions open for nominations are First Vice President, Second Vice President, Treasurer, Recording Secretary, and eight Directors. Incumbents whose one-year terms will end this December and are up for reelection are Chad Castle, John Harrison, and Alice Roberts. Recording Secretary Tonnie Casey's two year term also expires this December and she will be running for re-election. Incumbents continuing to serve until December 2002 are President Wendy Johnson and Directors Marlee Breese and Trae Menard.

The HAS Board is a dynamic group of committed individuals whose energy and expertise involve many aspects of environmental protection in Hawai'i from fund raising to education, and from birding to habitat cleanup. All members of the Board are expected to attend two-hour monthly meetings and a Leaders' Retreat in January. Directors are also expected to be active on one of the Society's two standing committees: Conservation and Education. Persons interested in serving on the Board are encouraged to attend a Board meeting; the next one is listed in the Calendar section on the back page.

If you want to be a candidate, please submit a letter of interest and brief resume of your background and activities (in and/or outside of HAS) to the attention of the Nominating Committee at the Society's address by November 10, 2001. For an information sheet giving more specific information regarding responsibilities of officers and directors, please call the office at 528-1432. Nominating Committee members may be contacted as follows: Wendy Johnson, 261-5957, Trae Menard, 732-4014, Linda Paul, 262-6859.

# HAS Annual Awards Dinner
## to be held in September!

*When:* **Thursday, September 20, 2001, 6:00 - 9:30pm**

*Where:* **Garden Level of the Hawai'i Imin Conference Center (previously known as Jefferson Hall), UH Manoa**
*See map on next page*

**Please join us for the Hawaii Audubon Society's Annual Awards Dinner when outstanding volunteers, corporate leaders and public servants will be recognized for their contributions in protecting Hawai'i's native wildlife and habitats.**

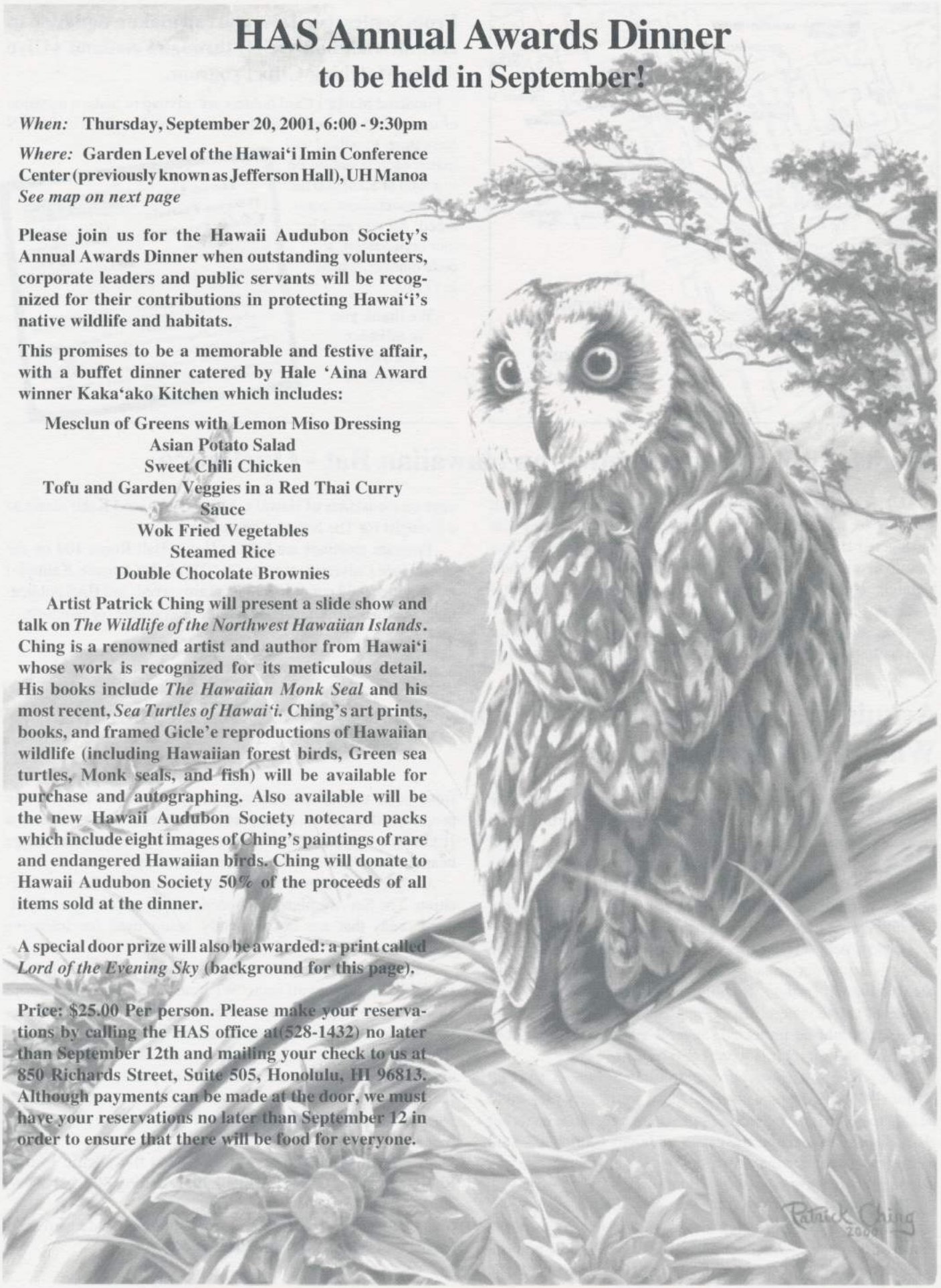
**This promises to be a memorable and festive affair, with a buffet dinner catered by Hale 'Aina Award winner Kaka'ako Kitchen which includes:**

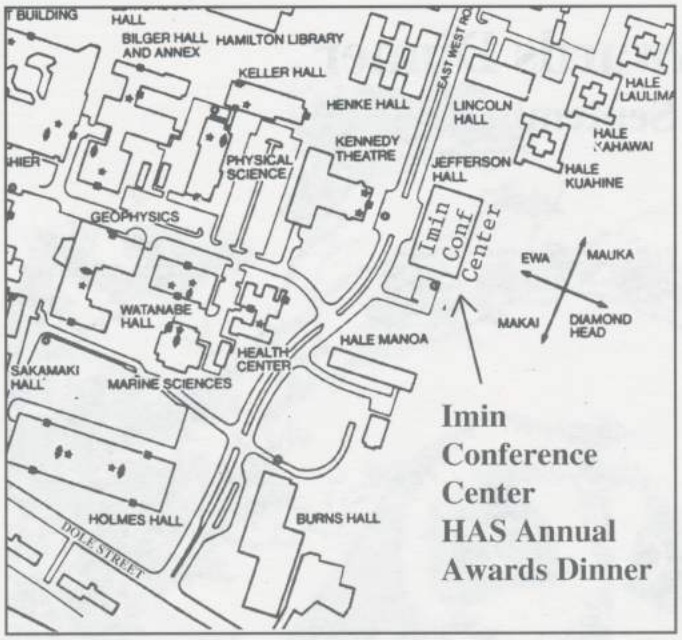
**Mesclun of Greens with Lemon Miso Dressing**
**Asian Potato Salad**
**Sweet Chili Chicken**
**Tofu and Garden Veggies in a Red Thai Curry Sauce**
**Wok Fried Vegetables**
**Steamed Rice**
**Double Chocolate Brownies**

**Artist Patrick Ching will present a slide show and talk on *The Wildlife of the Northwest Hawaiian Islands*. Ching is a renowned artist and author from Hawai'i whose work is recognized for its meticulous detail. His books include *The Hawaiian Monk Seal* and his most recent, *Sea Turtles of Hawai'i.* Ching's art prints, books, and framed Gicle'e reproductions of Hawaiian wildlife (including Hawaiian forest birds, Green sea turtles, Monk seals, and fish) will be available for purchase and autographing. Also available will be the new Hawaii Audubon Society notecard packs which include eight images of Ching's paintings of rare and endangered Hawaiian birds. Ching will donate to Hawaii Audubon Society 50% of the proceeds of all items sold at the dinner.**

**A special door prize will also be awarded: a print called *Lord of the Evening Sky* (background for this page).**

**Price: $25.00 Per person. Please make your reservations by calling the HAS office at(528-1432) no later than September 12th and mailing your check to us at 850 Richards Street, Suite 505, Honolulu, HI 96813. Although payments can be made at the door, we must have your reservations no later than September 12 in order to ensure that there will be food for everyone.**






**From September 1-30, you can make a donation to Hawaii Audubon Society through Foodland's Give Aloha Matching Gifts Program.**

Foodland Maika'i Card holders are invited to make a donation of up to $249 per person at checkout at any Foodland or Sack N Save store. Foodland will match each donation up to a total of $200,000 for all organizations combined. All you need is our organization's code number, which is 77189.

**We thank you in advance for your generosity!**


# August 20 Program Meeting on Hawaiian Bat - Ope'ape'a

Did you know that Hawaiian bats don't roost in caves or hibernate for months on end like other bats? Come find out where endangered Hawaiian hoary bats roost and where they go from season to season. Theresa Menard will present a slide show highlighting her recent findings on the seasonal activity patterns of the 'ope'ape'a.

Theresa is completing her master's degree in zoology at the University of Hawai'i Manoa. Formerly, she conducted bat surveys on the islands of Hawai'i, Maui, O'ahu, and Kaho'olawe as a biologist for The Nature Conservancy.

Program meetings are held at Henry Hall Room 109 on the Chaminade University campus (3140 Wai'alae Avenue, Kaimuki) from 7:30 to 9:30 pm. Refreshments are served, and HAS publications, T-shirts, notecards, and maps are available for purchase.

# Acquisition and Expansion of Oahu's James Campbell National Wildlife Refuge Proposed

A proposal to expand James Campbell National Wildlife Refuge to better protect Hawai'i's endangered waterbirds was announced June 6 by the US Fish and Wildlife Service. Under the proposal, approximately 160 acres of land adjacent to the refuge's Punamano Unit could be acquired from the Estate of James Campbell. In addition, the fee title to two parcels of land currently being leased from the estate would be acquired.

Located near Kahuku town on Oahu's northern shore, the refuge is a premier endangered Hawaiian waterbird recovery site. Additional feeding, loafing, and nesting habitat for four species of native waterbirds-the Hawaiian stilt, coot, moorhen, and duck-would be protected. Several varieties of migratory waterfowl and shorebirds would also benefit.

"We've been managing two wetland units as James Campbell National Wildlife Refuge since 1976, so we're very pleased to be able to move forward with acquiring not only those lands but also adjacent lands from the estate of James Campbell", said Refuge Manager Donna Stovall. "With a little luck, we can celebrate our 25th anniversary as landowners."

The Punamano and Ki'i refuge units are both natural freshwater marshes. The expansion area would protect edges of the Punamano marsh, permanent and seasonal wetlands, and depending on availability of funding, uplands that buffer wetlands from other activities. Although no development is currently proposed, if acquired, an upland area adjacent to Kamehameha Highway could provide a future site for a visitor center, refuge headquarters, and/or a maintenance building.

Congress has appropriated almost $1.8 million for the acquisition. The Service plans to concentrate on acquiring undeveloped lands that are not currently being used for intensive agriculture.

"The Estate of James Campbell staff have been very helpful over the years," Stovall said. "We much appreciate their desire to ensure the long-term protection of this area that is so important to Hawai'i's endangered waterbirds."

Ongoing refuge activities that would be conducted in the expanded area include controlling alien plants and predators, monitoring wildlife, managing wetland water levels to benefit waterbirds, and leading low-impact visitor tours during non-breeding season.

A project summary is available from the Pacific Islands Refuge Planning Office in Honolulu by calling 808-541-2749.

from a US Fish and Wildlife Service News Release dated June 6, 2001
Contact: Barbara Maxfield, 808-541-2749

# Field Trips for 2001

All trips with an * are still in the process of being planned. Details will be provided as the scheduled dates get closer. A donation of $2 per participant on all field trips is appreciated.

**August 11 (Saturday):** Kamananui Valley field trip, rescheduled from July 28th! Another chance for you to participate in this family-friendly walk into Kamananui Valley, guided by Lorin Gill. Limit 20 persons. Call the HAS office to register, 528-1432

**August 19 (Sunday):** Native Hawaiian Forest Bird Captive Propagation Unit at Honolulu Zoo. Join us on this very popular trip! We will see primarily 'Amakihi this time and hear about the Zoo's 'Amakihi program. An 'Apapane will be seen as well, and our host will also lecture and lead us through the Zoo's South American bird collection (there are baby Roseate Spoonbills!). Two trips will be made, one at 9am, one at 1:30pm. Each trip limited to 10 participants. Call the HAS office to register, 528-1432.

**September 15 (Saturday):** Another great trip to Paiko Lagoon to see aquatic creatures such as eels, crabs, snails, mantis shrimp, squid, puffer fish, ghost crabs, and whatever else becomes visible. Resident and migratory shorebirds will also be seen. This is a keiki-friendly field trip - the kids will love it! Wear old tennis shoes or reefwalkers, and bring sunscreen, water, and lunch. We will meet at Paiko Lagoon at 7:30 am. Call Alice to register, 538-3255

**September 26 (Wednesday)** 1:30 - 2:30pm A trip to Bishop Museum to see the bird collection (native Hawaiian bird *skins*, primarily). Call Alice to register, 538-3255

• **October 13 (Saturday - an afternoon time to be determined)** James Campbell National Wildlife Refuge to see Hawai'i's endangered waterbirds and other migratory waterfowl at one of O'ahu's few remaining wetlands. Birds seen in past years include Hawaiian stilt, Hawaiian moorhen, Hawaiian coot, Hawaiian duck, Northern Pintail, Northern Shoveler, Lesser Scaup, Wandering Tattler, Ruddy Turnstone, Sanderling, Red Knot, Semi-palmated Plover, Bristle-thighed Curlew, and Peregrine Falcon. This is a good place for unusual sightings! Bring water, snacks, binoculars, spotting scope if you have one, and sunscreen. Call the HAS office to register, 528-1432.

**October 27 (Saturday):** With the help of our Maui liaison, Renate Gassmann-Duvall, a field trip to Hosmer Grove and to The Nature Conservancy's Waikamoi Preserve on the north slope of Haleakala has been planned on the lovely island of Maui. We will hike 2 miles into the Preserve and 2 miles back. The hike is moderate so participants should be in reasonably good physical condition. Weather is iffy - often cold (45-50 degrees) and sometimes rainy. Birds that may be seen include the 'I'iwi, 'Amakihi, 'Apapane, 'Akohekohe, Maui Parrotbill, Maui Creeper, and Red-billed Leiothrix. Participants will be responsible for all of their own travel arrangements (air, hotel, car, food, etc.). As we will be getting an early start, an overnight stay on Friday night is suggested. In addition, The Nature Conservancy is asking for a $20.00 donation per person to enter Waikamoi Preserve. Trip limited to 10 participants. Call the HAS office to register, 528-1432.

**November 17 (Saturday):** 'Ewa Plains Sinkholes to look for fossils of extinct Hawaiian birds with Dr. Alan Ziegler, who will also share information about the geology of the area. We will meet at Kalaeloa Harbor (formerly known as Barber's Point Deep Draft Harbor) on Malakole Road at 9am. Bring hat, sunscreen, water, and, if you like, a picnic lunch to eat at Kalaeloa Beach Park. This is one of our most popular trips, and Dr. Ziegler's knowledge of this topic is encyclopedic. A non-strenuous trip suitable for those who don't care to hike. Call the HAS office to register, 528-1432.

• **November 24 (Saturday):** An after-turkey walk in Ho'omaluhia Botanical Garden, Kane'ohe.

• **December** - Christmas Bird Count (to be scheduled)

## Field Trip Report -
# Rowland's Pond at Chevron's Refinery

by Alice Roberts, Field Trip Coordinator

The field trip took place on Friday, June 29, 2001, at 9:30am. At Campbell Industrial Park, Member Mary Alice Kordof and I saw many Cattle Egrets on and flying above the very dry landscape with its kiawe & haole koa. Member Abby Brown-Watson thought she saw a Northern Mockingbird on the way in.

This was really a very special opportunity. We enjoyed pastries and coffee courtesy of Chevron, and Albert Chee gave a wonderful presentation about Chevron in Hawai'i - their history (started building the refinery in 1959 on the 252 acre coral peninsula & started operation in 1961), chemistry (it all comes in as crude from Asia, Alaska, and South America and gets changed into gas and asphalt), business (they unload their ships, in about 2 days, at their 7-point mooring off-shore), and community service (lots of educational tours, and funding for many community activities such as the Hawai'i Science and Engineering Fair.

At 10:20, we boarded Chevron's 80-passenger school bus and headed to the ponds with Chevron's environmental engineer Larry Rhodes and US Fish and Wildlife Service's James Kwon.

In 1992, the first Hawaiian Stilts on Chevron's property were seen - standing fresh water attracts birds - so Chevron fixed up several ponds and began managing them. The US Fish & Wildlife Service has been monitoring them since 1993, and trapping cats & mongoose as well. More than 300 Stilt fledglings have been counted! This year Chevron has counted more than 150 stilts (about 80-150 year round).

Our first stop was at the Impound-

*CONTINUED NEXT PG...*

**Rowland's Pond at Chevron's Refinery**

ment Basin, which holds treated waste water from the refinery and is 10-15 feet deep. The Hawaiian Stilts (Ae'o or Himantopus mexicanus knudseni) made no obvious response to our arrival or to any vehicles in area. But when Larry walked out towards one nest, the parents aggressively called and dive-bombed him; when he backed off, so did they. Many nests are in unseemly locations, like in cracks in the cement dike, as well as in the nice nesting area around Rowland's Pond (where we went last) that Chevron made especially for them. We also saw Ruddy Turnstones ('Akekeke, Arenaria interpres}, ducks (brown, looking like small and large female mallards, probably mallards or Koloa hybrids), two Sea Gulls (a Ring-Billed and an unidentifiable third year bird not found in The Sibley Guide to Birds), and also several Hawaiian coots ('Alae ke'oke'o, Fulica alai) with their white face shields/knobs. Theirs is a wonderful story: 4 years ago, one coot was seen at the pond; 3 years ago, 2 stopped by but no pairing activity was observed; last year, the first nest appeared; this year, we saw several adults and babies.

Our second stop was the Oxygenation Ponds. We saw several adult coots and a baby coot just out of the egg with an orangish bill and a face shield that looked like a red bald spot - an unbelievably cute coot!.

Our last stop was at Rowland's Pond: the water level in this pond is manipulated by Chevron according to Fish and Wildlife recommendations - dry in non-nesting season, about half to a foot deep in nesting season. Here we saw many more Stilts, nest sites marked with little green flags, lots of Ruddy Turnstones, Sanderlings (Hunakai, Calidris alba), and at least two Pacific Golden Plovers (Kolea, Pluvialis fulva) including one male in full breeding plumage.

We hope to make this an annual trip, as it was truly fantastic. Many thanks to Char Takahashi, Albert Chee, and Larry Rhodes of Chevron for their hospitality, and to US Fish and Wildlife Service's James Kwon for sharing his knowledge with us. Mahalo also to Society member David Watson for sharing his wonderful spotting scope, adding much to our tour.

## Field Trip Report -
# Paiko Lagoon Wildlife Refuge Low-Tide Reef/Mud-Walk

by Alice Roberts, Field Trip Coordinator

On Saturday, June 23 at 10:00 am, we gathered very quietly at the Makai end of Kuli'ou'ou Road to gaze at the muddy lagoon that is the refuge and to see all the mud-loving critters there. The tide was to be at a wonderful low, -0.2' at 10:37 am at Honolulu Harbor; ours was to be about 45 minutes earlier and it was! Eventually there were eleven of us - a friendly and very enthusiastic group.

Birds we saw included two Ruddy Turnstones ('Akekeke, Arenaria interpres), there when I first arrived on the flats on the Maunalua Bay side of the refuge, and one Pacific Golden (Kolea, Pluvialis fulva) on one of the sand bars in the lagoon. At the end of the flood/drainage channel, we saw three ducks with Mallard characteristics (one female, one male, one uncertain (hybrid or young male?). Out on the mud flats which were totally exposed, we watched a Wandering Tattler ('Ulili, Heteroscelus incanus). We saw a Cattle Egret (Bubulcus ibis) fly by with its yellow legs trailing behind as it headed for the mountains. On our return walk, we saw three gorgeous translucent-winged White Terns (Manu-O-Ku, Gygis alba rothschildi) doing their incredible aerobatics above us. A young Black-Crowned-Night Heron ('Auku'u, Nycticorax nycticorax hoactli) flew over us

Vertebrates we saw, other than birds, included Fish - Goby, Lizard, a school of 'aholehole, and several Wrasse. As for invertebrates, what a day we had!!! The Most Special Critter-of-the-Day was the little sand burying SQUID! As big as a big toe, these are bioluminescent. We caught it in a plastic peanut butter jar so we could observe it with its ten arms and squirts of black ink. Other mollusks seen included clams, oysters under rocks, and mussels in lava rock crevices. Our second best Special Critters-of-the-Day were the sea hares - thousands of them - all headed West! Some of them got irritated and released beautiful magenta ink. On the bottom of some of the rocks we found 'opihi and false 'opihi. On the Makai side of Paiko Peninsula, we held a snail race between some papa (Periwinkle snails with pointed shells) and pipipi (incredibly edible Nerite snails looking like little black buttons) and looked at their walk patterns. We also timed responses of brown and white featherduster worms - an annelid relative of earthworms.

Arthropods were everywhere. We saw barnacles in their volcano-like shells below the high-tide mark on the rocks. There were lots of crabs - ghost crabs, their burrows and pyramids built by males with eye stalks were along most of the shoreline, a'ama were on the rocks, and we found molts (shed exoskeletons) of Pebble, Swimming, and Box crabs. We heard lots of Popping/Snapping/Pistol Shrimp. We caught, in another plastic peanut butter jar, a gem quality emerald green Mantis Shrimp with pink fringes on its claws and swimming appendages; we looked to see if it had glass-breaking elbows or a piercing sword-like finger.

Under rocks and on seaweed, we found pink, orange, blue, purple, brown, and white Sponges; a couple of edible Sea Cucumbers (Echinoderms related to sea urchins of which we saw none); and Tunicates (big clear solitary ones, little orange solitary ones, and some yellow colonial ones) - our nearest invertebrate relative (we're both chordates).

While we walked, we talked about the area's geology - Koko Crater and Koko Head (Kohelepelepe), which was which, their ages, and of course Hanauma Bay. It felt strange looking at Diamond Head (Leahi) from the "wrong side" (the other side not used as the frequent symbol of Hawai'i). Another symbol, this one of the renaissance of Hawaiian culture, Hokule'a, the Polynesian Society's voyaging canoe, was seen across the channel in the bay.

## Field Trip Report -
# Star Watch At Hanauma Bay With Dr. Sam Rhoads

by Alice Roberts, Field Trip Coordinator

On Monday night, May 28, 23 of us met outside the gate at the top of Hanauma Bay. We drove to the upper parking lot with our low lights on to start letting our eyes adjust for the darkness. We were met by Dr. Sam Rhoads, author of the book, *The Sky Tonight - A Guided Tour of the Stars Over Hawai'i,* who started telling us about the planets, stars and constellations. He has so much wonderful information and so many delightful stories!

We sat on the warm asphalt or circulated from telescope to telescope thanks to a couple of folks who set up their telescopes so that all of us could get better views. We looked at the half moon which really lit up the sky but luckily didn't interfere with watching the stars very much. The clouds came and went, often dimming the moon to help us out.

We enjoyed seeing several colored stars and the incredibly close very orange (looked like a tangerine to me) planet Mars. It was very close to the red star Antares - the heart of the Scorpion (Maui's fishhook).

We checked on another red star, Hokule'a (Arcturus), Hawai'i's Zenith Star (directly over head in Hawai'i at sometime each day) found by following the curve of the Big Dipper. We found Hokupa'a (Polaris), the North Star, about 21 degrees above the North horizon by following the Pointer stars on the outer edge of the Big Dipper's bowl. Some of us saw a couple of satellites fly by - they're really fast!

The Southern Cross was a favorite of the night right above the seaward rim of the crater we were in. We watched it rise till we could see it all - a very unusual sight from the United States. Beta Centauri and Alpha Centauri also rose into view through the bushes and trees and we looked at and learned about the Centaur.

Our group really enjoyed the night. Many thanks to Dr. Rhoades, who has been doing these lectures for several years on the last Monday of each month (changing to next-to-the-last Monday as of July). The times change a couple of times during the year since we need darkness (8 PM August and September). If you'd like to go, just arrive at the gate to Hanauma Bay and say you're there for the star show. Reservations not needed.

Dr. Rhoads also does a planetarium show at Bishop Museum on the first Monday of each month (free for Bishop Museum members, $3 for others); it's another wonderful way to find out more about our skies at night. Call Bishop Museum for more details.

## Field Trip Report-
# Red Footed Booby Colony

by Wendy Johnson, President

Twenty eager participants in search of birds and beautiful vistas were well rewarded in May when the Hawaii Audubon Society sponsored a tour of the thriving Red Footed Booby Bird Colony at Marine Corps Base Hawai'i. Although many birds were feeding at sea during the mid-morning hours of our visit, hundreds of Boobies in the trees were easily viewed and photographed. There were several birds on nests complete with the last of this year's chicks.

The weather and scenery were spectacular and a friendly naturalist from the Base Environmental Department shared current information on the habits and status of the Red Footed Booby. Many of our group were return visitors to the colony, and all would recommend it highly as a unique experience. HAS visits this site annually (and sometimes semi-annually). Please check this journal or call the office for further information on upcoming field trips.

*Field trip participants walk through the bird colony located on the Marine Corps Base peninsula which separates Kailua Bay and Kane'ohe Bay.*

HAWAII AUDUBON SOCIETY

AUGUST/SEPTEMBER 2001

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# Calendar of Events

**Saturday, August 11**
Rescheduled from July - field trip to Kamananui Valley with Lorin Gill. See page 51.

**Mondays, August 13 and September 10**
Conservation Committee and Education Committee monthly meetings at the HAS office at 5:45 p.m. For more information, call Conservation Chair Dan Sailer, 735-5278 or Education Chair Wendy Johnson at 261-5957.

**Mondays, August 13 and September 10**
HAS Board meeting always open to all members, 6:30 to 8:30 p.m. at the HAS office.

**Monday, August 20**
Program Meeting: Theresa Menard will speak on the Hawaiian bat. See page 50.

**Sunday, August 19**
Field Trips to Honolulu Zoo Forest Bird Captive Propagation Unit. See page 51.

**Saturday, September 15**
Field Trip to Paiko Lagoon. See page 51.

**Thursday, September 20**
HAS Annual Awards Dinner. See page 49.

**Wednesday, September 26**
Field Trip to Bishop Museum to see bird skin collection. See page 51.

**More Field Trips on page 51.**

# Table of Contents