

Black-Footed Albatross Population Biology Workshop

by K.L. Cousins' Workshop Coordinator

The Western Pacific Regional Fisheries Management Council convened a Black-footed Albatross Population Biology Workshop, October 8-10, 1998. The purpose of the workshop was to assess the impact that fishing-induced mortality is having on the breeding population in the Northwestern Hawaiian Islands. Albatross experts from all over the world attended the workshop. The following life-history review was compiled by conference coordinator Kathy Cousins to set the stage for the workshop. The workshop proceedings will be available next year.

LIFE-HISTORY REVIEW

Albatross are the largest seabirds belonging to the order *Procellariiformes*. The members in this order are distinguished by a single anatomical feature, namely, the external horny tubules seen arising near the base of their bills and encircling their nostrils; hence, the earlier name for this order was the *Tubinares* and the common name for the order is the tubenoses. *Diomedea nigripes*, the Black-footed Albatross, belong to the family *Diomedidae*. Some systematists have recently suggested that the Black-footed Albatross, as well as the other two northern species, the Laysan Albatross (*D. immutabilis*) and the Short-tail Albatross (*D. albatrus*), be placed in the genus *Phoebastria* (see 1st ICBCA; Alexander *et al.*, 1995).

The Black-footed albatross, as well as other albatross species, use a form of flight called slope- and dynamic-soaring (Magnan, 1925). This type of locomotion appears relatively effortless and is based on the bird's ability to gain lift from the wind deflected upwards from the ocean surface. As dynamic-soaring is dependent upon the ocean winds, the windless doldrums at the equator can hamper the flight of the North Pacific albatrosses. There is an extensive literature on the slope- and



dynamic-soaring of the albatrosses and interested readers are referred to papers by Cone (1964), Wood (1973), Wilson (1975), Pennycuik (1982) and comprehensive reviews by Warham (1977) and Pennycuik (1987).

Unlike the Laysan Albatross, it is sometimes difficult to distinguish an immature Black-footed Albatross from an adult. The plumage coloration for both the immature and adult Black-footed Albatrosses is extremely similar; brown with a white band at the base of their bill and a white sweep defining their eyes. One of the distinguishing features between adult and an immature Black-footed Albatrosses is that the juveniles lack the white plumage at the base of their tail. In addition, the plumage of the immature birds can be, but is not always, slightly darker in coloration from the adult birds. Generally, as the juvenile Black-footed Albatrosses mature, they tend to become more grey or dusty in appearance (Miller, 1940). Unlike the Laysan and Short-tail Albatrosses, Black-footed Albatrosses have dark bills, legs and feet; hence, the appropriate common name for the species.

Black-footed and Laysan Albatrosses share nesting habitat on the coral islands and atolls of the Northwestern Hawaiian Islands. There have been recent sightings of Short-tailed Albatrosses in the Hawaiian waters, but no observations of successful nesting activity (Flint, pers. comm.). Likewise, the Wandering Albatross (*Diomedea exulans*), has also been seen frequenting the Hawaiian waters, but does not breed in the Northern Hemisphere. Historically, the breeding ranges for the Black-footed and Laysan Albatrosses was extensive, reaching as far east as the Japanese Islands of Torishima and as far south as the Taongi Atoll in the Marshall Islands. Today, the Hawaiian Islands are the primary breeding colonies for the Black-footed and Laysan Albatross populations. Apparently, the feather and egg trade in the early 1900s destroyed nesting colonies on the Japanese, Wake, Bonin and Marcus Islands, as well as colonies on Johnston and Taongi Atolls. However, a small population of approximately 1,106 - 1,206 Black-footed Albatrosses have recolonized the Japanese Islands of Torishima (Rice and Kenyon, 1962; Hasegawa, 1984; Ogi *et al.*, 1994) and there have been recent observations of Black-footed Albatrosses visiting Wake Island (Rauzon, 1988, unpubl. observ.). Likewise, Laysan Albatrosses have established colonies on Torishima Island (Kurata, 1978), as well as Guadalupe Island (Pittman, 1988) and off the west coast of Mexico (Howell and Webb, 1989). There have been no reports of recent visitations by either Black-footed or Laysan Albatrosses to Johnston Atoll or to Marcus Island (Flint, pers. comm.).

In late October, Black-footed Albatrosses begin to return to the nesting colonies in the Northwestern Hawaiian Islands, while the Laysan Albatrosses tend

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HAS Office Needs

Aloha! The Hawaii Audubon Society office is quite badly in need of the following items:

- an IBM compatible computer capable of running Windows '95
- a plain-paper fax machine with handset

- a copier that will do double-sided copies, collate, and staple
- a small microwave oven
- 13" television with VCR for showing educational tapes.

We promise to pamper the donated equipment. If you can help with any of the above items please call Linda Shapin at 528-1432. We would be extremely grateful!

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'ELEPAIO

ISSN 0013-6069

Managing Editor:

Susan Elliot Miller, 261-7580 (H)

Scientific Editor

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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.

It's Annual Mailing Time Again

We're looking for many hands
to make work light!



Saturday, November 21
and Sunday, November 22
10 a.m. - 3 p.m. at the HAS Office

Can you spare a couple of hours to stuff and seal envelopes - so you and your fellow members can receive 1998 HAS ballots and the President's annual report/appeal?

YOU WILL BE REWARDED by Pizza and refreshments! Good company!

Good feeling of job well done!

Please call Linda Shapin at the Office, 528-1432 and let her know when you can come by! MAHALO!!!!!!

8th Season For Paradise Pursuits by Sylvianne Yee

Paradise Pursuits, Hawaii Audubon Society's environmental quiz program for high school students, is off to another great season. It seems like only yesterday when teams from Kamehameha and Hilo were battling to see who would be the 1998 Paradise Pursuits Champ. Now it's the start of another season and the big question is, "Will Hilo repeat as Paradise Pursuits winners?" Or will we be "crowning" a new champion? Stay with us as we enter another exciting season of Paradise Pursuits!

Here's what you can look forward to and participate in (yes, we're always looking for enthusiastic volunteers):

- * September - packets of registration materials sent to over 60 public and private high schools
- * October - deadline for registration
- * November - bibliography and packets of resource materials sent to registered schools
- * December - finalize teams and begin studying resource materials
- * January - continue studying!
- * February - O'ahu preliminary games
- * March - Neighbor Island preliminary games
- * April - play off and championship games
- * May - wrap up another season!

If you would like to be a part of this exciting program, please call Sylvianne Yee at 373-3062.

December Program Meeting

The Fish and Wildlife Service ("FWS") has taken a bold new direction in Hawai'i to promote visitor access to its James Campbell National Wildlife Refuge through a series of scheduled guided tours. Join friends and fellow members on December 14th at the **HAS Membership and Program Meeting** when Margo Stahl, Assistant Refuge Manager, will discuss the status of the tour program and its future direction. In addition, she will speak to the potential for revitalizing the partnership between HAS and FWS and her vision for developing a Friends Program with HAS. FWS wishes to promote the development of local Friends Organizations that will provide an independent citizen voice for the protection, conservation, and enhancement of fish and wildlife and their habitats while supporting the mission of the National Wildlife Refuge System.

This meeting is also HAS's **Annual Meeting** at which the election results will be announced and the 1998-1999 officers and directors introduced. Join us at Paki Hall Conference Room, Bishop Museum, from 7:30 - 9:30 p.m. Refreshments provided; HAS books, tapes, and t-shirts will be available for purchase.

Christmas Bird Count Opportunities

Join our Christmas Bird Counts during the official count period, December 18, 1998 through January 3, 1999. If you want to do something good for birds and meet other "bird people", call one of the coordinators to sign up. (Locations and coordinators listed below are for last year. Final information will be listed in

December's 'Elepaio). There is a \$5.00/person charge to support compiling and publication of the nationwide results. NOTE: Special information is needed by the coordinator of the popular "Kulani Prison" count, so call the Big Island Volcano coordinator by the end of November to ensure your spot.

Kaua'i

Waimea Date TBA Koke'e Museum 808-335-9975

Kapa'a Date TBA Barbara Stuart 808-826-9233

O'ahu

Honolulu Saturday 12/19/98 David Smith, compiler HAS office, or 988-9806
Arlene Buchholz, organizer

Waipi'o Saturday 12/26/98 David Bremer 623-7613

Maua

Pu'u O Kaka'e Date TBA Renate Gassmann Duvall or Fern Duvall 808-572-1584

Moloka'i

Kualapu'u Date TBA Rick Potts (Kalaupapa Nat'l Park) 808-567-6802 x7

Hawai'i Island

North Kona Date TBA Reginald David 808-329-9141

Volcano Date TBA Larry Katahira 808-985-6088
or Tanya Rubenstein 808-967-7396 extension 233

O'ahu 'Elepaio Proposed to be Added to Endangered Species List

A small flycatcher that occurs only in the forests of O'ahu has been proposed for listing as endangered under the federal Endangered Species Act. Only six isolated populations of the O'ahu 'elepaio remain, and the total population is estimated to be between 200 and 500 birds.

The O'ahu 'elepaio is a member of the Old World insect-eater family of birds and probably reached Hawai'i through Polynesia or Micronesia. Although it is related to the Kaua'i and Hawai'i 'elepaio, the three subspecies differ considerably in coloration, and somewhat in their songs.

It was first identified as a unique subspecies in 1887 and was once commonly found throughout forested areas at all elevations. Today, the O'ahu 'elepaio is believed to occupy no more than eight percent of its original range, and its popu-

lation may have declined by as much as 75 percent since 1960. The six separate remaining populations are found in the southern Ko'olau Mountains and the Wai'anae Mountains on lands of mixed public and private ownership.

The O'ahu 'elepaio is small and active, with a rusty brown back, black throat, and white chin and underside. It is about 6 inches long, has long slender legs, and a broad, soft bill. The bird is threatened by modification of its forested habitat, habitat loss from deforestation and development, predation by rats, and competition from introduced nonnative birds and insects.

Federal listing protects species on federal lands and requires that agencies consult with the Fish and Wildlife Service when federally licensed or permitted

projects may affect listed species. Because Hawai'i state law automatically includes federally listed species on the state threatened and endangered species list, and the State's Endangered Species Act prohibits the destruction of imperiled species on State and private lands, protection of listed species also extends to nonfederal lands in Hawai'i.

The proposed rule was published in the *Federal Register* on October 6, 1998. Public comments will be accepted until December 7, 1998, and should be sent to Robert P. Smith, Pacific Islands Manager, Pacific Islands Ecoregion, U.S. Fish and Wildlife Service, Box 50088, Honolulu, HI 96850.

Source: Pacific Islands Ecoregion, FWS External Affairs Office

Laughing Gull Sighted in American Samoa

Mary E. Hake, Meryl Goldin, and Robert P. Cook¹

A Laughing Gull (*Larus atricilla*) in breeding plumage was first sighted on 19 March 1998, in the village of Avau, on the south coast of Tutuila island, American Samoa. Two of us (M.E.H. and M.G.) observed it at ca. 1300 hr. It was first observed at a distance of ca. 100 meters, flying towards us. We observed it for a period of two minutes, during which time it flew back and forth along the coastline. At its closest it passed us at a distance of 10 meters. Lighting was excellent, with the sun above and slightly behind us. One of us (R.P.C.) subsequently observed it for 30 seconds at the same locale at ca. 1700 hr. The bird was a medium-sized, black-headed gull, with a reddish-black bill, dark-grey mantle, secondaries, and primaries, with prominent, all black wing tips. The authors have all worked previously with colonial waterbirds, in locales where breeding Laughing Gulls are superabundant, and are familiar with the species.

The bird was sighted again on 22 and 23 March in the same general area. On all occasions it was observed in flight and was never observed standing. It did not appear to be injured or distressed. Reasons for its affinity to this particular portion of the island's coastline are unclear. There is a flat, emergent rock about 50 meters offshore that could provide a disturbance-free place to roost, and this section of coast is frequently used for artisanal fishing, which generates fish-cleaning debris. However, these explanations are speculative, with no direct observations to support them.

While Laughing Gulls breed and winter coastally in southern and eastern North America, southward to northern South America, it is also an occasional visitor to the tropical Pacific, with many records from Hawaii (Harrison 1985, 1987, Pratt et al. 1987). Its occurrence elsewhere in the tropical Pacific is less frequent, or at least, less well documented. There are records for Johnson Atoll, (Pratt et al. 1987), a single record for the Marshalls (Garret 1987), one for the Phoenix Islands and six for the Line Islands (King 1967, cited in Garrett 1987). There is only one previous record for the Samoan archipelago (Muse et al. 1980) and it has not been recorded in nearby Fiji or Tonga (Watling 1982). The Samoan record was on the island of Upolo, in the independent nation of Samoa (formerly known as Western Samoa). That record involved an immature individual that was observed for a period of one month, ending 27 February 1980. The present record is the first ever for the U.S. Territory of American Samoa, and only the second for the Samoan archipelago. As Muse and Muse (1982) point out, Laughing Gulls are an unfamiliar species to Samoans. While it is undoubtedly an infrequent vagrant here, the lack of records may also be partially due to a scarcity of observers here as well.

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¹National Park of American Samoa
Pago Pago, AS 96799

Summer Bird Census on Mauna Kea

by Lena Schnell

Kathleen Sherry and Lena Schnell of the Pohakuloa Training Area ("PTA") Environmental Office staff, recently assisted USGS-BRD biologists with a three-day bird census on Mauna Kea. Although all bird species are counted, the census focuses on Palila, *Loxoides bailleui*, an endangered bird that only lives on the western slopes of Mauna Kea. Preparing for a bird census takes time. One or two days prior to each census, the field crew gathers to practice identifying birds and correctly determining distances. During the calibration period on Mauna Kea this summer, the field crew was treated to a rare event, the appearance of an Akiapola'au, (*Hemignathus munroi*, another endangered bird) which was heard and observed. The "Aki" is extremely rare on the western slope of Mauna Kea and is always exciting to see. Bird census counts on Mauna Kea are usually conducted during the winter months after breeding season. Because the population estimates for Palila were thought to be low, more counting stations were added and an additional summer count was conducted. Kathleen and Lena were primary counters on transects in the Palila Critical Habitat on PTA. Although no Palila or other endangered birds were detected on PTA, Palila were heard along the Pohakuloa Gulch about 2 kilometers above PTA.

Source: ENVIRONMENTAL MANAGEMENT PROGRAM BULLETIN, V. 14, July 1998. Department of the Army

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Wild 'Alala Population Suffers Major Setback

Between September 1st and 3rd, the deaths of three young 'alala (Hawaiian crow) were reported by field biologists monitoring the wild population of this highly endangered Hawaiian forest bird, bringing the total number of deaths in the wild during 1998 to eight birds. All three of the most recent deaths were birds raised in captivity and released to the wild in 1996.

"Even though we always expect to see set-backs in any recovery program, losing three 'alala in such a short timeframe is very difficult to accept," said Robert P. Smith, Pacific Islands manager for the U.S. Fish and Wildlife Service. "Yesterday afternoon, our field biologists recaptured two young 'alala that were released into the wild last year in an attempt to ensure we do not lose them as well."

Two additional 1997 release birds are currently being held in an aviary for observation after being attacked by an adult female 'io (Hawaiian hawk) last week and responding in a lethargic manner, which may indicate the birds were weak or ill prior to the attack. "We are consulting with the experts on our 'Alala Recovery Team to determine what future steps should be taken for all of these birds," Smith said.

Based on discussions with these experts, a decision was made to attempt to bring back into captivity two 5-year-old wild birds, according to Smith. "These birds represent unique genetic components that we don't want to lose in our breeding program," he said.

Two of the three dead birds appeared to have been killed by 'io on September 2nd, according to biologists. The third 'alala apparently had been dead for several days and had no visible evidence of the cause of death. All three birds will be necropsied by National Wildlife Health Center staff in an effort to confirm their causes of death.

Earlier deaths in 1998 have been attributed to 'io predation; mammal (cat or mongoose) predation; parasitic, bacterial, or fungal infections; and/or unknown causes. Three 'alala deaths in 1997 were apparently caused by 'io predation, another by mammal predation, and a fifth due to bacterial infection.

Natural and Cultural History of the Kailua Ahupua'a and Kawai Nui Marsh 1998-1999

The educational tours of the Kailua Ahupua'a and Kawai Nui Marsh this year will be a general introduction of the natural and cultural history of the Kailua Ahupua'a and Kawai Nui Marsh. The purpose of these tours will be to develop a training program for volunteers to become docents for the Kawai Nui Heritage Foundation and lead school and community groups to various archaeological, historic and ecological sites in the marsh and surrounding areas.

The tour group will meet at the Windward YMCA 1200 Kailua Road, at 8:30 am and walk as well as car pool to the following sites as time permits. Return trip should be back at the YMCA by 12 noon.

1. Ulupo Heiau
2. Kukanono Historical and Hawaiian Sites
3. Na Pohaku o Hauwahine
4. Pahukini Heiau
5. Oneawa Estuary
6. Kaelepulu Pond - Wetland birds

Dates of the tours:

1. Saturday, October 10, 1998
2. Saturday, November 7, 1998
3. Saturday, February 6, 1999
4. Saturday, April 3, 1999
5. Saturday, June 5, 1999

Bring: Backpack or fanny-pack, water, mosquito repellent, sunscreen, raingear, hat or cap, sunglasses, camera and notebook.

Contact: Chuck "DOC" Burrows for more information and to sign up for these educational tours at 595-3922 (home) or 581-2922 (pager), or email cburrow@aloha.net

"Since we have seen a variety of infections in the 'alala lately, it is possible that these birds were too sick to be able to fend off 'io attacks," explained Smith. "Although it's easy to point the finger at the 'io as the sole culprit, we should not jump to that conclusion. It may very well be a combination of factors; for instance, we know that one bird died recently from a disease transmitted by feral cats."

"Like some other raptors, 'io are a natural predator of other birds, including 'alala," said Paul Conry, Wildlife Program Manager with the Department of Land and Natural Resources. "'Io are also an endangered species. This is one of those rare situations where one endangered species is preying on another. Obviously, we would prefer that the 'io found another meal rather than 'alala. Our challenge is to find some creative solutions to aid the 'alala without harming the 'io."

Since the 'alala recovery project began in 1992, 24 'alala have been raised in captivity and released into the wild. Seven other 'alala raised in captivity remain at either the Maui or Keauhou Bird Conservation Centers to broaden the genetic diversity of the breeding pairs.

"What is discouraging are the unexpectedly large number of losses during the

past four years," said Alan Lieberman, program director for The Peregrine Fund in Hawai'i. "It appears we cannot win a numbers game without effective control of the threats in the habitat."

Four 'alala chicks were hatched in captivity this year by The Peregrine Fund. Two are still at the Keauhou Bird Conservation Center, and the other two are in an aviary in south Kona in preparation for their release into the wild. Their release is now pending further discussion with the Recovery Team.

When the recovery program began in 1992, only 12 'alala were confirmed to exist in the wild. Eight of these older birds have apparently died since that time.

The 'alala recovery program is a joint project of the Fish and Wildlife Service, Hawai'i Department of Land and Natural Resources, U.S. Geological Survey-Biological Resources Division, The Peregrine Fund, and the private landowners at McCandless Land and Cattle Company, Kai Malino Ranch, and Kealia Ranch.

source: News Release, September 3, 1998, Barbara Maxfield, USFWS: 808/541-2749

Cover story continued...

to return a couple of weeks later. The results from bird-banding studies suggest that the Black-footed and Laysan Albatross species keep the same mate for life, and that the same pair will return each year to breed (Bailey, 1952). Strong evidence also suggests that the immature albatrosses stay at sea for a period of five to eight years before returning to the nesting colonies. However, Robbins (1966) reported that immature Black-footed Albatrosses return to a breeding colony after three years at sea. Generally, the males arrive first and await the arrival of the females and although there is some overlap in nesting sites between the two species, Black-footed Albatrosses prefer open wind-blown beaches while the Laysan Albatrosses prefer more sheltered sites (Bailey, 1952; Fisher, 1972; McDermond and Morgan, 1990). Often the males will wait for their mate near the same nest site the pair shared in previous years (Bailey, 1952; Fisher, 1971).

After a successful union a female Black-footed Albatross will lay a single egg in mid-November to early December. The Black-footed Albatross egg is white with brown speckles, whereas the Laysan Albatross egg tends to lack the speckles. The incubation period for Black-footed Albatross eggs is approximately 65 days and both adults incubate the egg (for a review of petrel egg incubation physiology see Warham, 1990; 1996). The adults tend to forage close to the breeding colony during the incubation period, taking turns on the nest every two to four days.

Results from a recent satellite tracking project, initiated by Dr. David Anderson of Wake University, have shown that after the chick hatches, the parents tend to forage close to the breeding colony taking short two to four day trips; however, once the chick is a week to ten days old, the adults begin to take longer foraging trips and spend anywhere between ten to twenty-eight days at sea. After two to three weeks foraging at sea, the adults return to the nesting colony to feed their chicks regurgitated food. The regurgitated food consists of, by volume, approximately 10% stomach oil, 50% fish, 32% squid and 5% crustacean (Harrison *et al.*, 1983). Usually, the adults stay with their chicks only

as long as it takes to regurgitate all of their stomach contents. After the feeding session, the parents often tend to waddle over to one or two neighboring chicks and viciously attack them before promptly departing back to sea (Fisher, 1904). There does not appear to be any coordination between the parents in terms of a feeding schedule and consequently, chicks must sometimes endure long periods alone between feedings.

Although the exact migratory patterns of the Black-footed Albatross are unknown, it is thought that they range throughout the entire North Pacific during the summer and then reduce their range closer to the Hawaiian Islands during the breeding season. It is known that some of the successful Black-footed Albatross fledglings tend to concentrate off the continental shelf of the west coast of North America, possibly attracted by the rich food source supplied by the cold upwelling current (Sanger 1974; Robbins and Rice, 1974; Tyler *et al.*, 1990). Between the months of May to October, Black-footed Albatrosses are commonly seen off the West coast of British Columbia and Washington state (Wahl *et al.*, 1990). Even though there may be some trends in the distribution patterns of Black-footed Albatrosses, such that they tend to shift from the northern latitudes to the southern latitudes during the breeding season (Sanger, 1974), the literature suggests that these creatures appear to be randomly distributed throughout the Northern Pacific at any given time of the year. It is estimated that three quarters of the total Black-footed Albatross population is at sea at all times (Anonymous, 1963) and when they are not at the nesting colonies the entire population is at sea. For greater detail on the migratory range and distribution patterns of the Black-footed Albatross, readers are referred to several excellent papers by Gould and Piatt (1990), McDermond and Morgan (1990), Robbins and Rice (1974), and Sanger (1974).

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Kawai Nui Service Projects

Kawai Nui Heritage Foundation, in cooperation with 'Aha Hui Malama Ika Lokahi, Hawaii Audubon Society, Hui Lama - Kamehameha Schools, Hawaii Service Trip Program - Sierra Club, High School Hikers - Sierra Club, and Kailua and Kalaheo High Schools, invites you to kokua and malama Kawai Nui Marsh through **service trips** to the following places:

Na Pohaku O Hauwahine (The rock formation of the Hawaiian Mo' o Goddess and guardian of Kawai Nui Marsh) is located on the right-hand side of Kapa'a Quarry road at the Y-intersection before entering the Kapa'a Landfill transfer plant. It offers a panoramic view into the "piko" of Kawai Nui Marsh where one can observe in tranquillity the wetland birds and marsh vegetation. Recent brush removal and trail construction has revealed an ancient Hawaiian terrace that aligns the massive rock outcrops. We will be clearing alien vegetation and continue with the loop trail construction and landscape the area with native plants to recreate a dry-land forest and marsh ecosystem.

Holomakani Heiau (The running wind) was presumed to be destroyed according to McAllister's account in 1933 but was rediscovered in 1987. Archaeo-

logical surveys suggest that this site may be a "possible prehistoric heiau or large terrace structure of some significance." It may have been associated with other heiau sites and important events in the Kailua Ahupua'a. This site is located on the mauka side of Kapa'a Quarry road about 0.7 miles from the intersection of Kalaniana'ole Highway. A short hike of 15 minutes from the Quarry road along roadways created by off road vehicles will lead to the site. Off road trucks have damaged the rock wall of the heiau in recent years. We have cleared the heiau terraces and posted a sign to inform others about the significance of this Hawaiian cultural site and to respect its Hawaiian religious values. We are in the process of creating a view plane into Kawai Nui Marsh and maintaining the site.

What to bring: Backpack, lunch, 1 qt. water, sunscreen, hat or cap, rain gear, mosquito repellent, gloves.

Tools (if you have them): Sickles, pruners, hand saws, machete, powered tools - weed whacker, chain saw.

Contact: Chuck "DOC" Burrows for more information and to sign up for these service projects at: 595-3922 (home) or 581-2922 (pager), or email cburrow@aloha.net

SERVICE PROJECT DATES - 1998-1999

| | | |
|------------------------------|-----------------------|---------------|
| Saturday, September 12, 1998 | Na Pohaku o Hauwahine | 8:30am-2:30pm |
| Saturday, October 17, 1998 | Holomakani Heiau | 8:30am-2:30pm |
| Sunday, November 15, 1998 | Na Pohaku o Hauwahine | 8:30am-2:30pm |
| Saturday, December 19, 1998 | Holomakani Heiau | 8:30am-2:30pm |
| Saturday, January 16, 1999 | Na Pohaku o Hauwahine | 8:30am-2:30pm |
| Saturday, February 20, 1999 | Holomakani Heiau | 8:30am-2:30pm |
| Saturday, March 13, 1999 | Na Pohaku o Hauwahine | 8:30am-2:30pm |
| Saturday, April 10, 1999 | Holomakani Heiau | 8:30am-2:30pm |
| Saturday, May 15, 1999 | Na Pohaku o Hauwahine | 8:30am-2:30pm |
| Saturday, June 12, 1999 | Na Pohaku o Hauwahine | 8:30am-2:30pm |
| Saturday, July 10, 1999 | Holomakani Heiau | 8:30am-2:30pm |
| Saturday, August 14, 1999 | Na Pohaku o Hauwahine | 8:30am-2:30pm |



NOVEMBER 1998

'ELEPAIO

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Calendar of Events

Thursdays, November 5 and December 3
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, November 9 and December 7

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

Mondays, November 9 and December 7

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

Saturday and Sunday, November 21 and 22

Mailing party! 10 a.m.-3 p.m. to get out the ballot—food and good conversation at the HAS office - see page 48 for details.

Monday, December 14

Margo Stahl, Assistant Refuge Manager, will discuss the status of the tour program at James Campbell National Wildlife Refuge and its future direction at our **Annual membership meeting and program**. In addition, she will speak to the potential for revitalizing the partnership between HAS and FRS and her vision for developing a Friends of the National Wildlife Refuge System Program with HAS. Election results will also be announced and the 1998-1999 officers and directors introduced. 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.

December 19 to January 4

The annual **Christmas Bird Count** will be happening on all islands! See page 49 for general information. Complete information on dates and contacts will be in the December/January 'Elepaio.

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