HAWAII AUDUBON SOCIETY

‘ELEPAIO

Journal of the Hawaii Audubon Society

For the Protection of Hawaii’s Native Wildlife

VOLUME 69, NUMBER 1 **FEBRUARY 2009**

STATUS OF ‘AKIAPŌLĀ‘AU AT KAPĀPALA, HAWAI‘I

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INTRODUCTION

The ‘Akiapōlā‘au (*Hemignathus wilsoni*) is a uniquely specialized, insectivorous Hawaiian honeycreeper endemic to the Island of Hawai‘i (Pratt et al. 2001). Its signature feature is the extraordinary bill, which has a long, hook-shaped upper mandible and a straight, much shorter lower mandible. The bird uses its unusual “swiss-army knife” beak to locate and extract prey beneath bark or epiphytes. Caterpillars are the most common food, followed by spiders and beetle larvae (Ralph and Fancy 1996).

Although ‘Akiapōlā‘au formerly inhabited a wide range of forests (Perkins 1903), populations have declined dramatically and are now found only in montane mesic and wet forest dominated by koa (*Acacia koa*) and ‘ōhi‘a-lehua (*Metrosideros polymorpha*). Although koa/‘ōhi‘a forest occurs below 1,300 meters elevation (4,000 feet), few ‘Akiapōlā‘au are found there, presumably because of the greater abundance of mosquitoes that transmit avian malaria (*Plasmodium relictum*) and avian pox virus (Scott et al. 1986). Tree species preferred by ‘Akiapōlā‘au for foraging include koa, kāwa‘u (*Ilex anomala*), kōlea (*Myrsine lessertiana*), māmane (*Sophora chrysophylla*), and naio (*Myoporum sandwicense*) (Ralph and Fancy 1996, Pejchar et al. 2005). However, Pejchar et al. (2005) found that in general the availability of koa particularly determines the abundance of ‘Akiapōlā‘au.

Perhaps because of its specialized foraging ecology and dependence on high-elevation koa forest habitat, the ‘Akiapōlā‘au is the rarest Hawaiian honeycreeper on the Big Island, and is listed as an endangered species by the federal and state governments. Only two populations exist today (two more are possibly extinct in subalpine Mauna Kea and mid-elevation Kona), with no, or very limited, gene flow between them due to habitat fragmentation. The montane forests of windward (eastern) Mauna Kea and Mauna Loa support one population estimated at 1,105 birds in the 1990s (Fancy et al. 1996). The second ‘Akiapōlā‘au population is located on the southeastern side of Mauna Loa, in the koa forests of the Ka‘ū Forest Reserve and adjoining Kahuku section of Hawai‘i Volcanoes National Park and Kapāpala Forest Reserve (Kapāpala FR) (Fig. 1). This population was estimated to have 533 ± 320 (95% CI) individuals in 1976 (Scott et al 1986), but the few detections on a 1993 survey seemingly indicated a dramatic decline to an estimated 44 ± 40 (90% CI) birds (Fancy et al. 1996). If these two estimates were accurate, a decline of this magnitude would signal the imminent extinction of the Ka‘ū population. However, both estimates were based on surveys conducted using the Variable Circular Plot (VCP) method (Reynolds et al. 1980), which does not very accurately track species that are rare or highly variable in their frequency of vocalization. A more intensive VCP survey of the Ka‘ū population in 2005, using advanced analytical techniques, reported 1,073 ± 646 (95% CI) birds (Tweed et al. 2007, Gorresen et al. 2007)—evidence that a viable population of ‘Akiapōlā‘au still occurs in Ka‘ū.

The purpose of the present study was to conduct surveys for ‘Akiapōlā‘au in the Kapāpala Forest Reserve in order to characterize the population of this endangered species adjacent to the Kapāpala Koa Management Unit (Fig. 1). At the time of the study, the management unit was being considered for a Safe Harbor Agreement allowing for harvest of koa timber, and it was thought that ‘Akiapōlā‘au might use the Safe Harbor area. (A Safe Harbor Agreement is a type of agreement between private landowners and either the federal or state government. The intent of the agreement is to promote conservation of endangered species while minimizing restrictions on land use.) Contrary to expectations, our concurrent VCP surveys and rare bird searches failed to locate any ‘Akiapōlā‘au in the management unit (see Methods). It was apparent that the birds instead occupied the Kapāpala FR and potentially could serve as a source population for the Safe Harbor area. Therefore, our

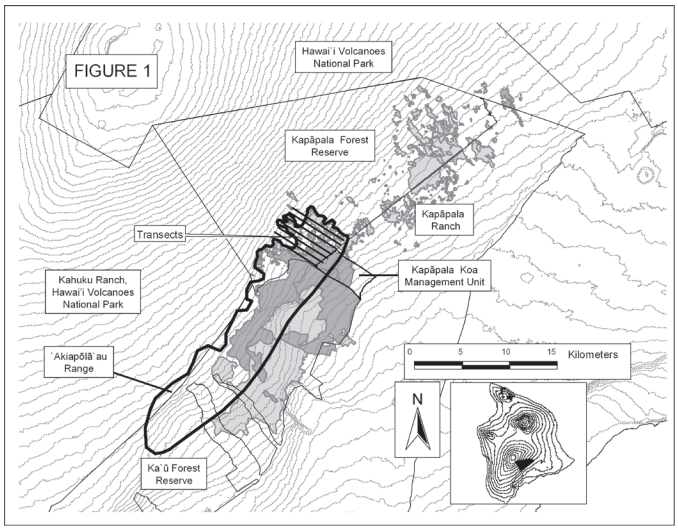

Figure 1. Our study area, marked by seven transects, lay in the Kapāpala Forest Reserve, Ka‘ū District, Island of Hawai‘i, at an elevation of 1,500-2,100 m. It is upslope of the Kapāpala Koa Management Unit and adjacent to the Ka‘ū Forest Reserve. Dark gray shading represents closed canopy koa forests and light gray represents open koa forests.

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goal in the study reported here was to (1) estimate the size of the population in the Kapāpala FR, (2) map habitat use and home ranges, and (3) monitor family groups so as to make inferences concerning the status of the population. Our results mark the first baseline information on ʻAkiapōlāʻau in Kapāpala FR wherein family groups were identified and monitored using a combination of VCP counts and spot mapping techniques.

METHODS

Study area

We conducted surveys for ʻAkiapōlāʻau in Kapāpala FR from 01 June 2003 to 31 July 2004. The area surveyed covered all koa forest in southern Kapāpala FR, except for 226 ha (558 acres) in the inaccessible far SW corner (Fig. 1). We did not survey koa forests in northeast Kapāpala FR nearest the Mauna Loa Strip of Hawaiʻi Volcanoes National Park because this area was not known to be inhabited by ʻAkiapōlāʻau in recent times and is separated from the study area by a large break in habitat (Scott et al. 1986). Downslope of the Kapāpala FR, the Kapāpala Koa Management Unit was intensively surveyed in 2004 as part of an endangered species inventory in preparation for a proposed Safe Harbor Agreement; however, no ʻAkiapōlāʻau were found there (Hawaiʻi Forest Bird Database, U.S. Geological Survey, unpubl. data; inventory details in lit. to L. Ferentinos, Hawaiʻi Division of Forestry and Wildlife, 13 Feb. 2006). Importantly, surveys the following year in the adjacent Kaʻū Forest Reserve documented that Kaʻū FR harbored a relatively large population of ʻAkiapōlāʻau (Tweed et al. 2007) and that birds from both Kapāpala and Kaʻū formed a continuous population.

In order to efficiently search the Kapāpala FR study area (~1,100 ha or 2,718 acres), we first identified koa forests from vegetation maps in ArcView GIS (Jacobi 1989). This reduced our search area to approximately 650 ha (1,606 acres). The excluded 450 ha (1,112 acres) consisted of scrub ʻōhiʻa forest on more recent lava flows that was not expected to support ʻAkiapōlāʻau. In ArcView, we next generated seven 3.5 km-long, parallel transects 400 m apart, with count stations every 200 m (Fig. 2). We located stations in the field with UTM coordinates uploaded into GPS units.

Transect Surveys

Seasonality in breeding and vocal activity is poorly understood for ʻAkiapōlāʻau, but there is evidence for breeding in most months (Pratt et al. 2001). In our study, ʻAkiapōlāʻau became vocal on a daily basis in early June 2003, and at this time we initiated surveys along transects, covering each transect once. We would listen and watch from each survey station for eight minutes. If an ʻAkiapōlāʻau was detected, we would discontinue surveys along the transect and focus on visually locating the bird(s). We would follow the bird for as long as possible using a tag-team effort with 2-3 observers. Initially, each observer would stop at different locations around the tree in which the bird was located. The first observer who saw the bird leave would give directions to the other(s), who would then quickly move to the bird's new location. This method allowed us to stay with the bird if it ceased vocalizing. While following the bird, we would mark locations with a GPS unit every 15 minutes regardless of whether or not the bird had moved. We

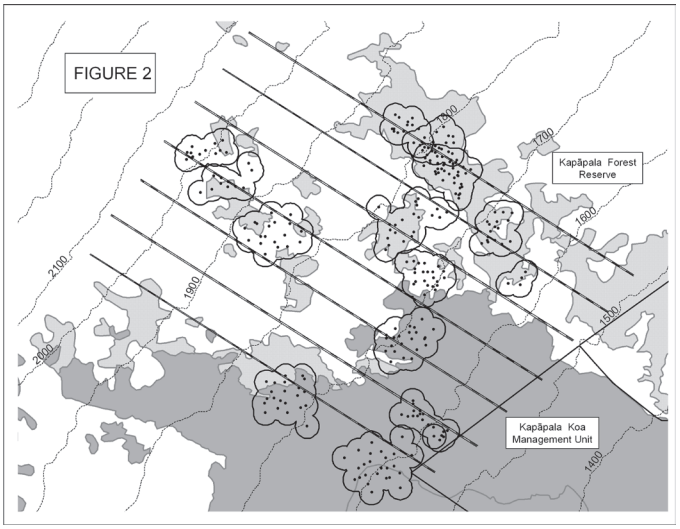

Figure 2. Fourteen home ranges of ʻAkiapōlāʻau were mapped in Kapāpala Forest Reserve. Polygons around GPS locations represent a single family group

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ʻElepaio
ISSN 0013-6069
Managing Editor: Lydi Morgan
Scientific Editor: Ron Walker

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

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documented the bird's sex, age, whether a juvenile was present, any plumage characteristics that would allow us to identify individuals, and type and frequency of songs and/or calls the bird was making. Generally, we did not observe changes in the birds' behavior in response to being followed, except that on some occasions when first being encountered the birds would move higher into the tree.

Monitoring family groups

When detection rates of ʻAkiapōlāʻau became infrequent in August 2003, we shifted our efforts from finding new individuals towards following known family groups. This allowed us to focus on any nesting behaviors and to determine home ranges. Family groups were recognized and territories were mapped using one or more identification clues: (1) the location and composition of the group, (2) slight individual differences in coloration of females and juveniles, (3) comparing family groups when they encountered each other at the boundaries of their territories, (4) the location and composition of a neighboring group if it was being simultaneously followed by another observer, (5) mapping the movements of a group for a long period while they roamed their territories, (6) following a male at dusk as it rapidly patrolled the perimeter of its territory and (7) color-band combinations or lack of bands. We would have preferred to have relied upon a larger proportion of birds color-banded but found them difficult to capture.

Banding

We set up aerial mist nets in areas where ʻAkiapōlāʻau families were consistently found and attempted to capture individuals and color band them (480 net hours). We used playbacks to try and attract birds to nets. Playbacks were discontinued if an ʻIo (Hawaiian Hawk, *Buteo solitarius*) was in the area or if playbacks appeared to chase away targeted ʻAkiapōlāʻau.

RESULTS

We detected 35 ʻAkiapōlāʻau in the Kapāpala Forest Reserve, including 14 adult males, 14 adult females, and seven juveniles. All individuals belonged to a pair or family group (hereafter "family"), and we were able to identify and collect data on all 14 families (Fig. 2). Eleven pairs were found in 2003, and an additional three pairs were found in 2004. All pairs with a juvenile were initially discovered because of the constant, strident chip notes juveniles made while still dependant on parents for food; this call could be heard up to 100 m away. All other pairs were detected either from singing males or contact calls between the male and female.

Seven of the 11 pairs in 2003 had a juvenile. Interestingly, a female from one family group with a juvenile made only juvenile chip notes as late as December 2003. All juveniles had disappeared by early November 2003 and had presumably either dispersed or died. Adult birds became less vocal by the beginning of August 2003, and detection rates of known adults remained low and inconsistent until January 2004.

None of the 14 pairs had juveniles in 2004. There was, however, evidence of attempted breeding in 2004 from at least four of the 14 pairs. In February 2004, a nest was found prior to the egg-laying stage. We first observed the female foraging at an unusually accelerated rate and followed her direct return to the nest. The nest was located in the crown foliage of a 14 m ʻōhiʻa-lehua tree. By regularly observing the parents' nest attendance from a blind, we were able to document the day the egg was laid and when it hatched (egg laid 17 February, hatched 3 March). However, when the nestling was four days old on 6 March, a tropical storm blew the nest out of the tree, and we were unable to recover it. The pair did not attempt to renest as far as we could determine. On 11 March, a female captured in one of our aerial mist nets was molting in a brood patch, evidence of attempted breeding. Two other pairs exhibited nesting behavior in February—the fast foraging behavior followed by direct flight as described above.

After the tropical storm in March, adult ʻAkiapōlāʻau vocalized infrequently, thus decreasing our ability to locate birds. As there were no juveniles present this year, it became very difficult to follow families for the remainder of the study. We captured and banded one adult pair in March 2004 and one adult male in April 2004.

DISCUSSION

We identified 35 ʻAkiapōlāʻau in approximately 650 hectares (1,606 acres) of koa forest in the Kapāpala Forest Reserve. However, this population count may be incomplete. Figure 2 shows large portions of our study area where ʻAkiapōlāʻau were not detected in closed or open koa forest. These empty spaces may have been occupied by some undetected pairs without juveniles. Since most of the families we discovered had juveniles (because of chip notes), and our experience observing these families showed infrequent vocalizations from adults, we may have been less likely to detect pairs without juveniles over the course of this study. Thus, our census results should be considered a minimum estimate of birds present in the study area at the time.

There were no detections of ʻAkiapōlāʻau in the Kapāpala Koa Management Unit. However, one family's home range in Kapāpala FR was <10 m from the boundary (Fig. 2). The management unit, with its upper boundary at 1,500 m (5,000 ft) elevation, may be at too low an elevation to protect this endangered species from disease transmission via mosquitoes. The forest on general appearance would otherwise be suitable habitat.

Because ʻAkiapōlāʻau are often difficult to detect and monitor by point counts, other methods should be sought. Our direct census of ʻAkiapōlāʻau at Kapāpala FR revealed a lower population density, 2 families/100 ha, than the 19 birds/100 ha estimated for the entire Kaʻū population from a point count survey in 2005 (Tweed et al. 2007). Long-term demography studies, in contrast to point counts, would yield more accurate population estimates and contribute supporting data on survival and recruitment.

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All detections resulted in pairs or family groups (63% had juveniles) leading us to believe the structure of this relatively small population is a healthy, breeding one. In a declining population, we might expect to see a preponderance of adult males and few if any juveniles. We were fortunate to detect the majority (seven out of 11) of ʻAkiapōlāʻau families in June and July 2003 because of what appeared to be a high reproductive year.

There is reason to believe that the ʻAkiapōlāʻau population may have increased in Kapāpala FR over the past decade or more. In the early 1990s, cattle (*Bos taurus*) were removed from the Kapāpala FR, and the fence bordering Kapāpala Ranch was replaced. We believe that koa responded with extensive recruitment until the mouflon sheep (*Ovis musimon*) population built up and their browsing halted the further recruitment of young trees. This could explain the large, even-age koa stands present in 2004 in which the majority of the trees were approximately 15 or so years old. This cohort of trees is of similar age to the koa forest plantations of Keauhou, where ʻAkiapōlāʻau detections have increased (Pejchar et al. 2005). The Keauhou plantations supported higher densities of ʻAkiapōlāʻau because the closed koa canopy provided abundant foraging substrate for the species (Pejchar et al. 2005). Densities of ʻAkiapōlāʻau were 13 pair/100 ha in koa plantations at Keauhou in comparison with 10 pair/100 ha in closed forest at Hakalau Forest National Wildlife Refuge and 5 pair/100 ha in open forest at the same refuge. Densities at Kapāpala FR were not as great, at 2 pair/100 ha. Natural koa regeneration due to a period of absence of ungulates may have helped the ʻAkiapōlāʻau population expand at Kapāpala FR.

Far greater density of koa could be achieved at Kapāpala if open meadows and shrub land were to be naturally reinvaded by this fast-spreading tree, but this would require reducing mouflon browsing on koa saplings. Heavy browsing by mouflon sheep and subsequent interruption of koa recruitment threatens ʻAkiapōlāʻau habitat at Kapāpala. Improving habitat quality by encouraging regeneration of young koa is one way land managers can actively help the Kapāpala ʻAkiapōlāʻau population while promoting a valuable timber tree. The entire Kaʻū range of the ʻAkiapōlāʻau, almost entirely on State-owned land managed by the Division of Forestry and Wildlife, is unprotected from mouflon sheep and is to a lesser extent still threatened by feral cattle. Control of mouflon sheep and cattle would likely result in extensive regeneration of koa, as happened in the 1990s at Kapāpala FR, and could be followed by an increase in the ʻAkiapōlāʻau population.

ACKNOWLEDGMENTS

This study was funded by the Hawaiʻi Department of Land and Natural Resources and by the Pacific Island Ecosystems Research Center of the U.S. Geological Survey. For field assistance, we thank G. Akau, J. Breeden, S. Gravlin, S. Reinard, and J. VanDeMark. We also thank the Hawaiian Internship Program, University of Hawaiʻi, for supporting George Akau's employment in 2003. E. VanderWerf, J. VanDeMark, and three anonymous reviewers offered useful suggestions for improving the paper. Any use of trade, product, or firm names in this publication is for descriptive purposes only and does not imply endorsement by the U.S. Government.

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LITERATURE CITED

Fancy, S. F., S. A. Sandin, M. H. Reynolds, and J. D. Jacobi. 1996. Distribution and population status of the endangered ʻAkiapōlāʻau. Pacific Science 50: 355-362.

Gorresen, P. M., R. J. Camp, and T. K. Pratt. 2007. Forest bird distribution, density and trends in the Kaʻū region of Hawaiʻi Island. U.S. Geological Survey, Biological Resources Discipline, Open-File report 2007-1076.

Jacobi, J.D. 1989. Vegetation maps of the upland plant communities on the Islands of Hawaii, Maui, Molokai, and Lanai. Technical Report 68. Cooperative National Park Resources Studies Unit, University of Hawaii at Manoa, Department of Botany, HI.

Pejchar, L., K. D. Holl, and J. L. Lockwood. 2005. Hawaiian honeycreeper home range size varies with habitat: implications for native *Acacia koa* forestry. Ecological Applications 15:1053-1061.

Perkins, R. C. L. 1903. Vertebrata. Pp. 365-466 in D. Sharp (editor). Fauna Hawaiiensis or the zoology of the Sandwich (Hawaiian) Isles, Vol. 1. The University Press, Cambridge, UK.

Pratt, T. K., S. G. Fancy, and C. J. Ralph. 2001. ʻAkiapōlāʻau (*Hemignathus munroi*) and Nukupuʻu (*Hemignathus lucidus*) *in* A. Poole and F. Gill, editors. The Birds of North America, Inc., No. 600, Philadelphia, PE.

Ralph, C. J., and S. G. Fancy. 1996. Aspects of the life history and foraging ecology of the endangered ʻAkiapōlāʻau. Condor 98:312-321.

Reynolds, R. T., J. M. Scott, and R. A. Nussbaum. 1980. A variable circular-plot method for estimating bird numbers. Condor 82:309-313.

Scott, J.M., S. Mountainspring, F.L. Ransey, and C. B. Kepler. 1986. Forest bird communities of the Hawaiian Islands: their dynamics, ecology, and conservation. Studies in Avian Biology 9.

Tweed, E., P. M. Gorresen, R. J. Camp, P. J. Hart, and T. K. Pratt. 2007. Forest bird inventory of the Kahuku unit of Hawaiʻi Volcanoes National Park. Pacific Cooperative Studies Unit Technical Report 143.

Bird Watching Fundamentals and Etiquette

By Carol Bebb

To become an exemplary bird watcher who ensures an enjoyable experience for himself and others in a group, one must minimize the impact upon the wildlife and the habitat. Please consider the following suggested practices to promote respect for others, wildlife, and the environment.

BASIC SKILLS

Research

Gain appreciation for your bird of interest by researching the species, its natural history, and its associated habitat. Similarly, utilize the many resources available to become familiar with the variety of species at a particular location. Resources may include bird guides, websites, and more (see HAS website www.hawaiiaudubon.com for Resources, Links, Events, and Outings). The knowledge obtained will enable you to correlate the species and its habitat - a key to sighting and observing birds in the wild. Moreover, the gained information may help you reduce any possible impact to the fauna and flora. Also it may inform you of the appropriate supplies and equipment to bring along on the walk or hike.

Gear

Come prepared as you would for any outing with variable weather and topographical conditions. Suggested supplies, gear, and equipment for birding may include: guides, maps, binoculars, scope, camera, food, drinking water, first-aid, whistle, watch, extra warm clothing, rain parka/pants, hiking shoes, walking stick, and more. Use neutral, earth-tone colors (browns, greens, and black) for apparel, gear, and equipment. Bright colors such as white and yellow are said to signify warning or danger to some wildlife; hence, scaring off or disturbing the normal activities of the birds. Needless to say, the topic of binoculars, camera and such is exhaustive - investigate before purchasing. It is important to obtain a comfortable pair of binoculars.

Observation Skills

Observational skills must be practiced to increase the chances of sighting wildlife, whether common or rare. Quietness, stillness, and listening are essential abilities for observing the world around us. In this case, silence is golden since it allows close viewing without disturbing the normal activities of the birds. Locating or sighting the birds requires both acute hearing and sight. Often wildlife is heard before being seen. Learn to recognize the calls and songs for this can reveal the species, the location, and the activity. It is not enough to simply count off the species seen; with time one may be enlightened to the mystery of that species' natural history - a glimpse into their world, as it were. With these skills one does not have to venture far to be rewarded.

RESPECT FOR THE WILDLIFE AND THE HABITAT

Observe, don't disturb. Model good stewardship by being sensitive and respectful of the environment you are entering and to the wildlife you want to discover. Do not create a threat to wildlife or the environment; tread lightly and respectfully. Avoid nests since undue attention may alert predators to their existence. Limit intrusive use of recording and photographic equipment. Remaining on paths and trails will prevent soil erosion and other disturbance to the habitat and to the wellbeing of the wildlife. In addition, phone use and smoking should be restricted to the parking area only. Being out among wildlife in their natural habitat helps us to connect with nature. By respectfully observing birds we may become familiar with the contributions and dependencies that avian species have upon the natural world and how we impact this, as well. A better understanding of our own connection with the natural world around us will enable us to better care for it.

RESPECT FOR YOUR FELLOW PARTICIPANTS

In the case of group outings, please follow the instructions of the Leader(s). He or she will be providing interpretation as well as signals; stay alert to these. When spotting a bird, resist the urge to be the first to blurt out the species name before others have had a chance to capture the bird in their lens or viewfinder. Upon sighting or hearing a bird, you may quietly point (do not wave or jump up and down) in the correct direction and/or whisper the location relative to your stance, e.g. "10 o'clock". Others will look at you to obtain a reference point. All participants should respect others' sense of discovery by allowing a minute or two to go by before confirming the seen species. You may whisper the identifying or distinguishing characteristics, at which time others may quietly chime in, sharing their observations in an attempt to accurately identify the species. (See HAS guide, *Hawaii's Birds*, for terminology, natural history, and descriptive morphology on the inside front cover). Also, stay close to the group. Meandering off, especially at stops, may scare off or flush out wildlife, thus disturbing the natural activities and environment of the wildlife. Finally, no matter how conducive it is to be mingling with like-minded folks, please save in-depth conversations for before and/or after the venture. During the walk extraneous chatter may scare off fauna. Asking questions or sharing your knowledge and experiences is valuable at the appropriate times.

RESPECT FOR LAWS OF PUBLIC AND PRIVATE PROPERY

Always obtain the proper permission to traverse property in the planning stage of your outing. Abide by all the required conditions for visitation.

HAS MISSION: To foster community values that result in the protection and restoration of native ecosystems and conservation of natural resources through education, science and advocacy in Hawai'i and the Pacific.

References include Hawaii Audubon Society (HAS) website; National Audubon website; American Birding Association (ABA) website; Pete Dunne on Bird Watching, 2003.

Results of the 2008 HAS Board Election

Hawaii Audubon Society is pleased to welcome two new additions to the Board of Directors, Carolyn Blackburn and Tom Jacobs.

Carolyn Blackburn was born in Alaska and has lived in Hawai'i for most of her life. She has been an active member of the Hawaii Audubon Society for several years and holds both State and Federal licenses for wild bird rehabilitation. Ms. Blackburn is committed to the protection of Hawaii's indigenous birds and native ecosystems.

Thomas Jacobs is a retired naval officer (submarines) and aerospace executive. He has been a resident of Hawai'i for over 30 years. Now he writes and publishes novels. His non-fiction work, *Hale'iwa: A Pictorial History*, won the Historic Hawai'i Foundation Honor Award for print media for 2008.

Carol Bebb, Phil Bruner, and Arlene Buchholz were also elected to continue their service on the HAS Board of Directors. Congratulations to our candidates, and thank you for voting.

Extinct Hawaiian Birds – A Follow-Up

By Ron Walker

In the December 2008/January 2009 issue of the 'Elepaio (Volume 68:9) an article entitled "Extinct Hawaiian Birds" provided a list excerpted from the "Rare Birds Yearbook 2008" by Birdlife International. An alert reader, Dan Lindsay, recently pointed out that the list did not include all the Hawaiian birds that are considered extinct. Consulting Bob Pyle's "Checklist of the Birds of Hawai'i 2002" showed that the following species had been omitted from the article:

Laysan Millerbird	*Acrocephalus familiaris*
Oloma'o	*Myadestes lanaiensis*
O'ahu Nukupu'u	*Hemignathus lucidus*
Laysan Honeycreeper	*Himatione freethii*

According to the Pyle list, the O'ahu 'Alauahio, *Paroreomyza maculata* (Creeper) is considered endangered.
Thanks to Mr. Lindsay for making this correction.

HAS Field Trips

Contact the HAS Office at:
(808) 528-1432, hiaudsoc@pixi.com

Saturday, February 21
Whale Watch Cruise
Join us for our annual Whale Watch! Call or email the HAS office by February 16 to reserve your spot and for more information.

Program Meeting Note: The date and topic for this month's program meeting will be announced on our website, www.hawaiiaudubon.com. Please check there for details.

HAS Research Grant Available

Applications Due April 1, 2009

Hawaii Audubon Society offers two grants per year for research in Hawaiian or Pacific natural history. Awards are oriented toward small-scale projects and generally do not exceed $500. Grants are reviewed semiannually. Deadlines are April 1 for summer/fall grants and October 1 for winter/spring grants. Application guidelines are available at www.hawaiiaudubon.com under "chapter news" or by contacting the HAS office at (808) 528-1432 or hiaudsoc@pixi.com.

BOOK REVIEW

By Ron Walker

Preserving Paradise: Opportunities in Volunteering for Hawaii's Environment
Kirsten Whatley, Island Heritage Publishing
First Edition, First Printing, 2008
164 Pages with Color Illustrations
5 X 7 Format, Softbound, $9.95
preservingparadise@welcometotheislands.com

This is the first book in Hawai'i on volunteering to benefit the natural environment and as such is an important reference for anyone with the time and urge to help.

It has 6 sections organized as "Multi-island", "Hawai'i Island", "Kaua'i", "Maui and Moloka'i", "Farm Apprenticeships" and "O'ahu". Sixty-eight organizations, programs, sites, trusts and foundations are covered within these categories. Each lists Volunteer Activities, When, Who, Hardiness Level, Advance Notice, Education, Donation and, most importantly for most of us, Contact. The book includes testimonials to volunteerism by named individuals with descriptions of their experiences. An appendix lists online resources and the index is conveniently divided into "General", "Project Subject" and "Time Commitment" to help narrow down reader options.

The Section on the Hawaii Audubon Society is somewhat misleading in that this organization focuses primarily on education and activism and rarely on hands-on service projects. Volunteers mostly assist in the annual Christmas Bird Count, help with educational functions and work in the office. However, with the acquisition of the Freeman Shearwater Preserve on O'ahu, the Society hopes to enlist volunteers in habitat restoration there. An introductory sentence states that "The Audubon Society has been around for over a century". This refers to the National Audubon Society, not the Hawaii affiliate. The Hawaii Audubon Society will be entering its 70th year in 2009.

For anyone who loves wild things and places, is concerned about the endangered species crisis, worries about invasive species, and likes to volunteer, this book is for you. And perhaps it will help to motivate more of Hawaii's citizens to recognize and take action toward fulfilling their responsibility to this paradise in the Pacific.

12th Annual Great Backyard Bird Count

February 13-16, 2009

Join with thousands of others to find out how many birds are being seen in your area and across the U.S. and Canada this winter. By participating in the Great Backyard Bird Count you help document where birds are and track changes in their numbers compared to previous years, helping scientists paint a picture of the state of birds this winter.

- No fee or registration required
- All ages and skill levels welcome
- Watch birds for as little as 15 minutes on one or more days of the event
- Count *anywhere*

A joint project of the Cornell Lab of Ornithology and the National Audubon Society, this free event is an opportunity for families, students, and people of all ages to discover the wonders of nature in backyards, schoolyards, and local parks, and, at the same time, make an important contribution to conservation. Visit www.birdcount.org for instructions, local checklists, and more information.

Federal Junior Duck Stamp Design Contest

Do you know of any promising young artists or conservationists? Do you want to teach your children or students about conservation in a fun and creative way? Do you want to show off your artistic skills and knowledge of our natural resources, and maybe even win a prize? If you answered yes to any of these questions, we encourage you to enter the Federal Junior Duck Stamp Design Contest.

Due date for entries is March 15, 2009.

For more information about the contest visit the U.S. Fish and Wildlife Service's website at www.fws.gov/pacificislands/fjds.html or contact Sandra Hall, Hawai'i State Coordinator, USFWS, 300 Ala Moana Blvd, Box 50187, Honolulu, HI 96850, (Tel) 808 792-9530, email sandra_hall@fws.gov.

Volunteers Needed

Hawaii Audubon Society is looking for volunteers to help clean up and prepare the Freeman Seabird Preserve at Black Point in time for the arrival of the birds in March. If you are interested in helping please call or email the HAS office. We hope to be leading a volunteer group there every weekend before the Shearwaters return and could use lots of extra hands. Contact us today!

Membership in Hawaii Audubon Society 2009

Regular Member:	$ 25.00	Foreign Membership (Airmail)	
Student Member:	$ 15.00	Mexico	$ 26.00
Supporting Member:	$100.00	Canada	$ 28.00
Family Membership	$40.00	All other countries	$ 33.00

These are annual membership dues, valid January 1 through December 31.
Donations are tax deductible and gratefully accepted.

Name _____

Address _____

City, State, Country, Zip _____

Phone _____ Email _____

Membership $ _____ + Donation $ _____ = Total $ _____

New Membership ☐ Renewal ☐

Please make checks payable to Hawaii Audubon Society and mail to us at 850 Richards St., #505, Honolulu, HI 96813.
PLEASE LET US KNOW IF YOUR ADDRESS CHANGES.

HAWAII AUDUBON SOCIETY
850 RICHARDS STREET, SUITE 505
HONOLULU, HAWAII 96813–4709

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Calendar of Events

February 13-16
12th Annual Great Backyard Bird Count
See page 7

Saturday, February 21
HAS Field Trip: Whale Watch Cruise
See page 6

HAS Program Meeting date TBA
Visit www.hawaiiaudubon.com for updates

Sunday, March 15
Federal Junior Duck Stamp Design Contest Entries Due
See page 7

Wednesday, April 1
HAS Research Grant Applications Due
See page 6

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