



# 'ELEPAIO

Journal of the  
Hawaii Audubon Society

For the Protection of  
Hawai'i's Native Wildlife

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## State of the Society: Annual Report for 2022

By Susan Scott, Hawaii Audubon Society President as of January 17, 2022

### GOOD NEWS SOFTENS BAD

Some days, the stream of bad news that comes from my radio, TV, computer, and newspaper strikes me so hard that I give up. What's the point, I wonder, of working for Hawai'i's wildlife in the face of invasive species, habitat destruction, pollution, overfishing, and other endless human follies?

But I have a cure for that. During moments of despair, I go outside and talk to the birds. I thank the kōlea for dancing on our lawns all winter long. I tell the manu-o-kū that we love them for enchanting our city with their fairylike spirit. I share with the 'ua'u kani my memories of offshore sailing, and just by being here, they share their own stories of the open ocean.

Last January, the Society's Board of Directors chose these three native birds to highlight, because the species have adapted remarkably to the changes we humans have made to their environments, including our ever-present company. Despite lights, traffic, predators, and pedestrians, Hawai'i's White Terns, Pacific Golden-Plovers and Wedge-tailed Shearwaters thrive among us.

I'm grateful to these birds for giving us some good news about Hawai'i's native species, and in that, boosting our energy to work for them, and for those that haven't fared as well. Below are the highlights of the Society's efforts this year toward those goals.

### TEAM AUDUBON

In January, the Board of Directors elected new officers and hired an outstanding executive director, Susanne Spiessberger. The Society's devoted office and communications manager, Laura Zoller, worked with Susanne

and board members throughout this transition year. Laura is staying with the Hawaii Audubon Society (HAS) as a volunteer to help with the office tasks she does so well.

Other angels also joined our team this year. Rhea Reed, an experienced CPA and attorney (retired), and David Johnson, accomplished practicing attorney, are generously offering their professional skills to help the Society move forward.



### GROWING OUR MEMBERSHIP AND CREATING A NEIGHBOR ISLAND HUI

As of this writing, HAS has 343 members, and we're growing. Thanks to our new Big Island ambassadors, Mike and Nicole Carion, the Society added 13 new members from the Big Island this year. See Mike and Nicole's notes and tours on Facebook at Hawaii Audubon Big Island Hui (<https://www.facebook.com/groups/461190122607695>).

As we continue our outreach efforts in schools, professional organizations, and social groups throughout the state, we look forward to member numbers continuing to increase. We post program updates on Instagram (<https://www.instagram.com/hawaiiaudubonsociety/>) with 491 followers, and Facebook (<https://www.facebook.com/HawaiiAudubonSociety>) with 4,439 followers.

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Thank you for your patience as we upgrade our website pages to make joining, renewing, and donating clearer and easier.

### **ANNUAL MEETING AT SEA LIFE PARK, NOVEMBER 6**

The annual meeting at Sea Life Park was a great success thanks to countless members who helped organize it. More than 120 members and guests attended the open-air dinner and gathering. After the meal and brief business meeting, Dr. Wally Johnson thrilled the audience with his kōlea slide show, an overview of these remarkable native birds, and an update on his latest plover research; a recording is posted on <https://youtu.be/sKfzNCj751c>.

### **KŌLEA COUNT**

In 2022, the Society donated funds and organized volunteers to help Wally Johnson migrate from Montana to Hawai‘i to tag and study kōlea. In March and April, HAS volunteers worked with volunteers from Brigham Young University, Hawai‘i, to help Wally catch, band, and attach satellite tags to plovers at Punchbowl Cemetery. In October, Wally and the kōlea team reassembled to retrieve the tags from the birds.

The study’s purpose was to learn if electronic signals from tags to satellites interfere with plover migrations, or if carrying the tiny backpacks had a negative effect on the birds’ travels. The happy answer is no, they do not. Photos, study details, and results are published on <https://www.koleacount.org/fly-6000-miles-with-talking-backpacks-no-problem/>. As a result of this study, the Alaska Shorebird Group (<https://alaskashorebirdgroup.com/>) added HAS to its list of organizations concerned with shorebird research, and published the linked report above in their annual summary. The Society’s Kōlea Count (<http://www.koleacount.org/>) began its third annual citizen science project, in which visitors and residents report kōlea numbers, dates, behaviors, and other observations on the website. I (Susan) am the project manager, with Wally Johnson as science advisor.

Last season, 367 citizen scientists reported 5,124 kōlea. The project, launched in 2020, will continue through 2030.

### **MANU-O-KŪ PROJECT**

HAS made good on its April resolution to collaborate with other conservation organizations and in 2022, joined forces with Pacific Rim Conservation (PRC) for the Manu-o-Kū Project. Rich Downs, the Society’s VP, worked with PRC ornithologist, Eric VanderWerf, on a wide range of White Tern issues. Rich and volunteers walked throughout the city daily to monitor breeding adults and rescue fallen chicks. Other partners in the Manu-o-Kū Project are Kailua’s Feather and Fur Animal Hospital, Hawai‘i Wildlife Center, the Honolulu Zoo, the Department of Land and Natural Resources (DLNR), and the Conservation Council for Hawai‘i (CCH). CCH sponsored the 7th annual Manu-o-Kū Festival at ‘Iolani Palace grounds on May 7th. HAS volunteers staffed a table to celebrate manu-o-kū and share other bird news.

In cooperation with DLNR, Rich and volunteers created and placed blue ribbons on trees to alert private and professional arborists that terns are nesting in that tree.

In addition to tree-trimmers not wanting to harm White Tern families, the species is protected by state and federal laws. Keeping the blue ribbons current is a big job. Workers must monitor the breeding progress of the terns and remove the ribbons when the families leave. Find how to volunteer on <https://www.whiteterns.org/>

### **MANU-O-KŪ SUMMARY FOR 2022** by Rich Downs

- Observations submitted: 5,647
- Volunteers submitted observations: 40+
- Trees surveyed: 1,615
- Trees with documented nesting events: 813
- Breeding trees added to database: 220
- Scientific paper: Eric A. VanderWerf and Richard E. Downs “Factors Affecting Breeding Success of White Terns (*Gygis alba*; *Aves: Laridae*) in Urban Environments of Honolulu, Hawai‘i,” *Pacific Science* 76(1), 33-41, (2 March 2022). <https://doi.org/10.2984/76.1.3>

### **Outreach Highlights**

- 11 White Tern Walks
- 795 members of White Tern Citizen Science FB group

- 7th Manu-o-Kū Festival was on May 7, back in-person at the ‘Iolani Palace
- 3 volunteer group training sessions
- Breeding survey protocols
- Rescue procedures

### **Findings/Conclusions/Lessons (Re)learned**

- The terns continue to thrive.
- 2022 reinforced conclusion from the two prior COVID years that volunteers require some amount of face-to-face interaction to keep them engaged.
- Data is key to what we do with and for the terns. Constant monitoring enables alerting trimmers about breeding in trees, minimizes risk of disturbing nesting terns, and enables us to reunite fallen chicks with their parents.

### **FREEMAN SEABIRD PRESERVE (FSP) REPORT** by Wendy Johnson, HAS Recording Secretary

The ‘ua‘u kani (Wedge-tailed Shearwater ) colony is alive and well at FSP, which was donated to the Society in 2007. Throughout the year, at least 120 volunteers helped maintain and study this one-acre plot in Honolulu’s Black Point neighborhood. HAS volunteers arranged hands-on learning experiences for students of all ages as well as conservation-minded groups.

The first wedgie count at FSP was about 60 nests. In this 14th year of monitoring, volunteers counted 423 active nests, a new record. The annual September Wedge-tailed Shearwater chick count was 323 for 2022, up from 268 chicks in 2021.

Habitat restoration involved clearing paths, removing plants with thorns and burrs, and clearing vegetation and debris from existing nesting sites before adult birds returned the end of March. Volunteers also helped plant, water, and trim various plant species.

Native plants have priority, but some introduced species do well there, preventing erosion by stabilizing the soil. Researchers David Hyrenbach and Michelle Hester studied hatching and fledging success, and organized the building of new brick and tile burrows to provide more shelter for the growing wedgie population.

### **HAWAI‘I WILDLIFE CENTER’S O‘AHU SEABIRD AID RELEASES FALLEN FLEDGLINGS AT FSP**

Downed wedgie chicks collected along O‘ahu shoreline roadways in late November and early December were evaluated at Feather and Fur Animal Hospital in Kailua. Hawai‘i Wildlife Center’s O‘ahu worker, Rachel Sitzer, released 47 of these rescued fledglings at FSP. The strongest birds flew to sea directly upon release. Workers placed weaker chicks in empty burrows on the Preserve’s lower slope and found no birds there a few days later.

### **WEDGE-TAILED SHEARWATER GEOLOCATOR TAGGING PROJECT**

HPU graduate student, Alyssa Piauwasdy, tagged 25 adult Wedge-tailed Shearwaters with geolocators at FSP in August 2022. Alyssa attached a tag to only one parent of a burrow pair. These tags must be recovered from the birds to download recorded data. Alyssa will retrieve the tags during the upcoming breeding season in April, when the wedgies return. This tagging study will hopefully answer two longtime questions: 1) Where do the birds go over winter? and 2) Do the birds use the same burrows each year?

Stand by for more exciting wedgie news.

### **HAWAII’S BIRDS BOOK**

Of the nearly 500 Audubon chapter societies in the U.S., we are the only one that publishes our own bird book. In 2022, HAS sold about 6,500 copies of the 2020 seventh edition of *Hawaii’s Birds*, extensively updated by an all-volunteer team. In the book business, this number in one year is considered a huge success for a community our size. Thank you to visitors and residents for buying the book for yourselves and as gifts. In addition to helping support HAS, you are spreading the joy of Hawai‘i’s birds.

### **‘ELEPAIO**

HAS is also the only Audubon Chapter in the country that publishes its own scientific journal, compiled by Susanne Spiessberger with Glenn Metzler as additional Scientific Editor. Publications in the 2022 *‘Elepaio* issues include: January/February: *Road surveys detect unusually high Wedge-tailed Shearwater fallout in SE O‘ahu during the 2011 fledging season*, by David Hyrenbach, Jennifer

Urmston, and Keith Swindle. March/April: 2021 *Shearwater Nesting at Freeman Seabird Preserve 'Ua'u kani Enjoy Persistent La Niña Conditions*, by David Hyrenbach and Michelle Hester. May/June: *Hawaii Audubon Society: Present, Past, and Future*, by Susan Scott; *Fly Away Birds*, by Marie Riley. July/August: *Return of the Peale's Peregrine Falcon to Waikiki, Hawai'i September 30, 2021 - April 30, 2022*, by Michael Walther; *Attracting Endangered Seabirds to a Tiny Island*, DLNR news release. September/October: *Keep Cats Safe Indoors*, by Susan Scott and Susanne Spiessberger. November/December: *Aloha Fern*, by John Harrison; *Thousands of Seabirds!*, by Colleen Soares.

### EDUCATION OUTREACH

As stated by the Society's founders in 1939, teaching remains a high priority. This year, Hawaii Audubon volunteers taught over 300 students, ranging from preschool to high school seniors.



In October, Susan Scott and Kailua artist, writer, and educator Kate Righter, (pictured above, Susan Scott photo) visited approximately 80 first graders at Waipahu's Kanoelani Elementary School to teach kōlea facts and bird drawing. Teacher Ashley Ito-Macion texted later that at recess, the students found kōlea more exciting than the playground.

HAS teamed up with the Hawai'i Science Teaching Association (<https://hasta.wildapricot.org/>) and shared our native bird message at professional organization meetings and senior citizen gatherings, reaching about 300 residents. We continue to expand that outreach in PowerPoint presentations, walking tours, volunteer work, and art classes. Please check our website tab: WHAT WE DO, and/or contact us with specific requests.

### FINANCES AND DONATIONS

As an independent charitable nonprofit (we receive no funds from National Audubon Society) we must show the IRS that we have public financial support to retain our tax-exempt status and to accept large donations. The good news is that we currently have an ongoing matching grant offer for membership fees and donations. A \$25 membership, for instance, will generate \$50 for the Society.

Those who donated \$400 or more are: Susan Scott and Craig Thomas, Sara Marie Riley Trust, North Valley Community Foundation, Brian Pal, Global Health Labs LLC, Judy Dugan, Michael Griffith, Charles Quentin Powers, Lagu Foundation, Yvonne Chan & Benjamin Godsey, Mark Watanabe, John Mahoney & Karen G. Castle, Rosemary Fazio, Joy Ward, Margaret S. Walker, Rebecca L. Nadler, Trustee, Serendipity II Fund, Eric Anderson and Roger Beck Fund, Evelyn Cox, Wayne R. Carlson.

A big mahalo to all who renewed memberships and donated to the Society during 2022. Donations allow us to keep our programs active, and to work with others in the conservation world.

### A YEAR OF LEARNING, FRIENDSHIP, AND JOY

Being elected HAS president last January opened new doors for me, some of which led to matters far from my experience as a science writer. But the Society's exceptional management team, as well as community members who know my books and followed my former newspaper column, propped me up when I stumbled. As a result, over the past year I've learned new things, made new friends, and found new ways to share my joy of Hawai'i's wildlife. Those are gifts that inspire me to keep going. That, and talking to birds.



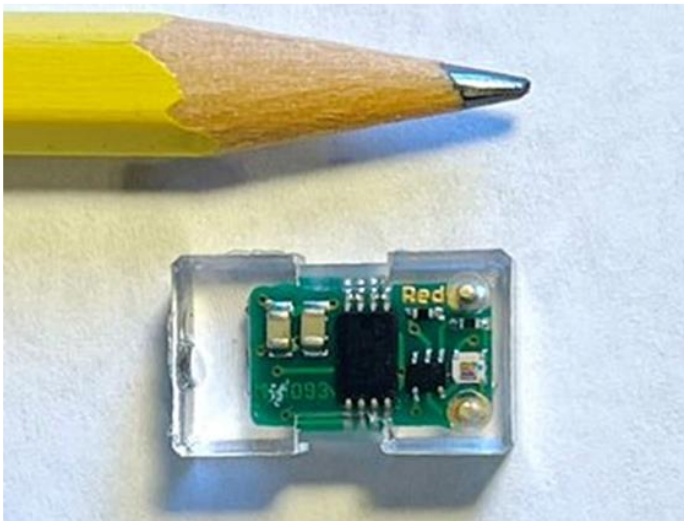
## 2022 Shearwater Nesting at Freeman Seabird Preserve: 'Ua'u kani Enjoy Persistent La Niña Conditions

by

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We report on the ongoing monitoring and restoration efforts of the Freeman Seabird Preserve (FSP) by Hawaii Audubon and Hawai'i Pacific University since 2009, share findings from the 2022 breeding season, and briefly discuss the plans for future monitoring, habitat restoration, and predator control at the site.

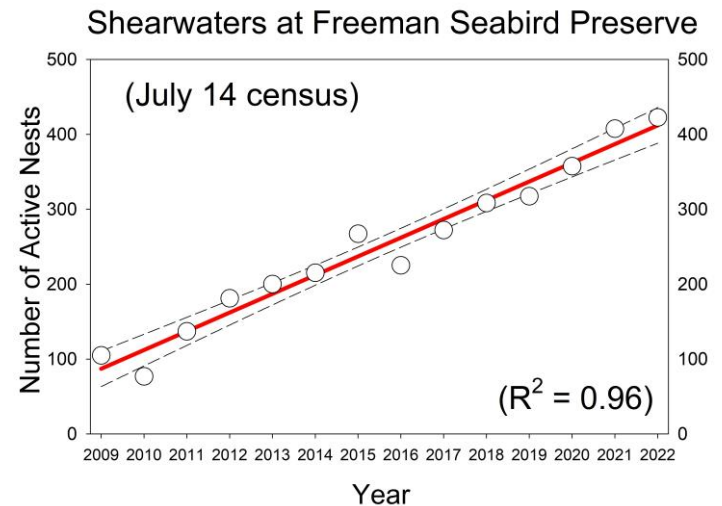


**Figure 1.** A geolocator tag used to track the Wedge-tailed Shearwater migration. The tag, which is attached to a metal band and deployed over the winter migration period, records light intensity continuously for up to two years. These data allow researchers to calculate two locations per day using day length (latitude) and the time of local apparent noon (longitude).

### 2022 Update

With participation by over 20 volunteers, we documented 423 active nests of 'Ua'u kani, Wedge-tailed Shearwaters (*Ardenna pacifica*), at the Freeman Seabird Preserve. Once more, this year's nest count is the highest to date, surpassing the previous peak of 408 nests in 2021 (Hyrenbach & Hester 2022). Overall, the annual population surveys continue to show a statistically significant trend ( $F = 307.756$ ;  $df = 1$ , which captures 96 % of the variability in the 14-year time

series (2009-2022; Fig. 2). This trend suggests that the colony continues to grow, in part due to the collaborative restoration efforts.



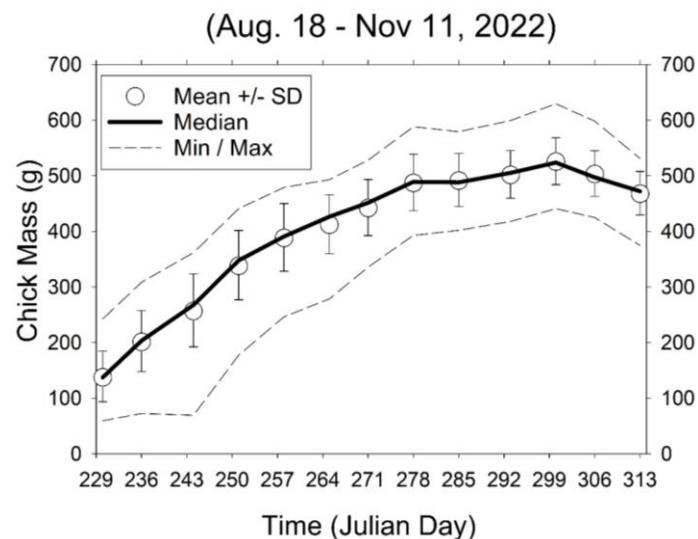
**Figure 2.** Trend in the number of Wedge-tailed Shearwater active nests at the Freeman Seabird Preserve, derived from the annual colony-wide census during the peak incubation period (July 14), showing the best-fit linear regression (solid line) and the 95% confidence interval envelope (dashed lines).

The July 14 count of 423 active nests (occupied by an incubating adult or an egg) was followed by a count of 327 chicks on September 14. This represents a loss of 22.7 % of the nests during the two-month period following peak egg laying and the first half of chick rearing. This loss rate is similar to those documented during the same time period in 2021 (25.0 %) and in 2020 (26.8 %) (Hyrenbach & Hester 2021, 2022).

The weekly monitoring also revealed that 2022 was characterized by a slightly earlier timing of breeding (phenology), compared with previous years. In 2022, chick hatching dates spanned from July 26 to August 21, with a mean of August 5 (+/- 5.9 S.D. days). The growth curves were similar to those recorded in previous years of good food provisioning (2011) and the last two La Niña years (2020 and 2021). In 2022, the maximum chick weights ranged from 442 to 630 grams, with a mean of 531.3 (+/- 42.5 S.D. grams). Chick masses started declining in the middle of October, and fledging started the first week of November (Fig. 3). Altogether, these observations suggest that the foraging conditions were good during the 2022 chick rearing.

For a third year in a row, the tropical Pacific Ocean has experienced the cool phase of the El Niño-Southern Oscillation climate pattern.

In fact, this highly unusual “triple-dip” event, with La Niña conditions persisting from late spring (May – June) of 2020 through (January – February) of 2023, has likely enhanced shearwater foraging opportunities during the last three breeding seasons (2020, 2021, 2022), as evidenced by the high chick survival and peak masses.



**Figure 3.** Time series of chick mass collected during the 2022 breeding season, showing the mean +/- S.D., the median, and the range (maximum – minimum) of weekly measurements. Sample size = 40 chicks.

Although weak La Niña conditions were still apparent across the tropical Pacific Ocean during January 2023, the most recent oceanographic models predict a transition from La Niña to ENSO-neutral in the next couple of months. The likelihood of El Niño remains low through May - July (44% chance), but becomes the most likely (55 - 65% probability) thereafter (See NOAA’s Climate Prediction Center ENSO Diagnostic Discussion, [www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/enso\\_advisory/](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/)). Thus, we anticipate that 2023 will be an “average” year for ‘Ua‘u kani breeding at the Freeman Seabird Preserve.

### Ongoing Efforts

Habitat restoration efforts continued during 2022. From January through March, while the shearwaters were at sea, Hawaii Audubon Society members and other volunteers removed alien plant species and improved natural nesting sites. This was also the first year of a tracking study to determine where in the big Pacific Ocean the breeders spend winter, after leaving FSP in late November. In August 2022, we tagged 25 adults with a geolocator tag (GLS) mounted on a USFWS metal band (Fig. 1).

To investigate potential detrimental tagging effects, we also equipped a control group of 25 adults with a metal band but no GLS tag. Both the experimental and control birds successfully fledged 23 of their 25 chicks (92% fledging success), suggesting that provisioning during the breeding season (August – November) was not negatively affected by tagging one of the parents.

With participation from the community, additional restoration and management efforts in 2023 will involve monitoring the colony and enhancing the breeding habitat at the Freeman Seabird Preserve.

**Habitat Restoration:** From January through March, volunteers will remove alien weeds, plant native species, and improve the existing rock nesting sites on the terrace.

**Research:** Starting in March 2023, we will check returning adult shearwaters to retrieve the GLS tags and to resight the tagged and control birds. In addition to analyzing the migration data from the 2022-2023 winter migration, we will deploy additional tags in August 2023, to study the 2023-2024 winter migration. By contrasting shearwater movements during the past La Niña and the anticipated El Niño, we seek to understand how changing oceanographic conditions influence their timing and the over-wintering destinations.

Population censusing and nest monitoring for phenology, chick growth, and reproductive success will continue in 2023, to augment our 14-year time series.

**Predator Control:** Ongoing surveillance for predators is planned during the 2023 nesting season, to minimize and document predation by rats, cats and mongooses on breeding shearwaters.

### Acknowledgements

Funding from Disney Conservation Fund, Atherton Family Foundation, Hawaii Audubon and individual donors. In-kind support from HPU and Oikonos. We thank the many volunteers and students who contributed to the restoration, monitoring and research efforts.

### Literature Cited

- Hyrenbach, K.D., and Hester, M.M. 2021. 2020 Shearwater Nesting at Freeman Seabird Preserve: Highest breeding pairs, average chick success, and increasing occupation of ceramic homes. *‘Elepaio* 81(2): 13-14.
- Hyrenbach, K.D., and Hester, M.M. 2022. 2021 Shearwater Nesting at Freeman Seabird Preserve: ‘Ua‘u kani Enjoy Persistent La Niña Conditions *‘Elepaio* 82(2): 13-14.

## Hawaii Audubon Society Membership and Donations

The mission of the Hawaii Audubon Society (HAS) is to foster community values that result in the protection and restoration of native wildlife and ecosystems, and conservation of natural resources through education, science and advocacy in Hawai'i and the Pacific. Founded in 1939, HAS is an independent nonprofit 501(c)(3) organization and does not receive dues paid to the National Audubon Society. Thank you for supporting your local Hawaii Audubon Society.

All annual memberships end on December 31. See details on <https://hiaudubon.org/membership>.

Please choose your membership level on our website <https://hiaudubon.org/membership>:

\$15 Hawaii Audubon Society Student Membership

\$25 Hawaii Audubon Society Regular Membership

\$40 Hawaii Audubon Society Family Membership

\$100 Hawaii Audubon Society Supporting Membership

Or, make a tax-deductible donation in any amount on <https://hiaudubon.org/donate/>.

International membership is now only \$25.

All members will receive by email the bimonthly 'Elepaio journal, with peer-reviewed scientific articles and local environmental news and activities. To request the 'Elepaio by mail (**not available to international members**), contact [office@hiaudubon.org](mailto:office@hiaudubon.org).

### Announcements

For regular updates, check out [hiaudubon.org/events](https://hiaudubon.org/events) and/or our social media sites

#### Volunteer Opportunity: Fieldwork Habitat Restoration

January through March, Sundays from 8 to 11 am  
At Freeman Seabird Preserve (FSP), located in Southeast O'ahu at Black Point.

FSP is generally closed to public visitation to protect sensitive nesting habitat. Reservations may be arranged for individuals and work groups that would like to help restore Hawaiian coastal vegetation and seabird nesting habitat.

For more information, visit:

<https://freemanseabirdpreserve.org>

RSVP: Email Alice Roberts at [mermaidsHI@aol.com](mailto:mermaidsHI@aol.com) in advance to participate.

#### Party for the Planet

April 22, 2023 at the Honolulu Zoo.

Visit our booth and celebrate Earth Day with us!

### Manu-o-Kū Festival

May 6, 2023 at the 'Iolani Palace. Visit our website for details closer to the date!



Photo by Susanne Spiessberger

**KEEP CATS SAFE INDOORS**

Keep Cats *and* Birds Safe

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We are happy to note that we have not increased membership dues since 2008 and will try to keep them at the same level. However, with increasing paper, printing, and shipping costs, regular membership dues no longer cover our expenses of providing an *‘Elepaio* paper version.

More importantly, we would like to lower carbon footprint wherever possible, especially as an environmental conservation organization.

If you still receive the *‘Elepaio* in print and would like to switch to email only, please send us a quick message to [office@hiaudubon.org](mailto:office@hiaudubon.org). A paper version will be sent to new members per request only.

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