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A female 'ekupu'u (Laysan Finch, *Telespiza cantans*) perches on a branch in the sunshine on Laysan Island © Robbey Kohley

Land Birds of the Northwestern Hawaiian Islands

By Susan Scott, Keith Swindle, and Sheldon Plentovich

Susan Scott and Keith Swindle, Hawai'i Audubon Society, 850 Richards Street, Ste. 505, Honolulu, HI 96813

Sheldon Plentovich, U.S. Fish and Wildlife Service, Hawai'i and Pacific Islands Coastal Program Manager

About 14 million seabirds nest, rest, and raise their young in Hawai'i's Northwestern Hawaiian Islands (NWHI), a line of atolls, pinnacles, and seamounts stretching about 1,200 miles northwest of the main Hawaiian Islands. This remote island chain, however, is also the last stand for four of Hawai'i's endemic land birds.

During the 20th century, seven land bird species survived in Hawai'i's Northwest Chain. Three bird species on Kamole (Laysan Atoll) became extinct due to the 1902 introduction of rabbits, which proceeded to eat nearly all the island's plants. By 1923, both the Laysan Honeycreeper (*Himatione fraithii*) and the Laysan Millerbird (*Acrocephalus familiaris familiaris*) were gone. The last Laysan Rail (*Zapornia palmeri*) was seen in the 1940s.

Fortunately, the brine fly-eating koloa pōhaka (Laysan Duck, *Anas laysanensis*) survived the rabbits, but their numbers fluctuated due to droughts and suspected parasites. To increase their range and population size, 42 koloa pōhaka were successfully moved from Kamole to Kuaihelani (Midway Atoll) in 2004 and 2005. The birds thrived on Kuaihelani and increased in number, which subsequently allowed

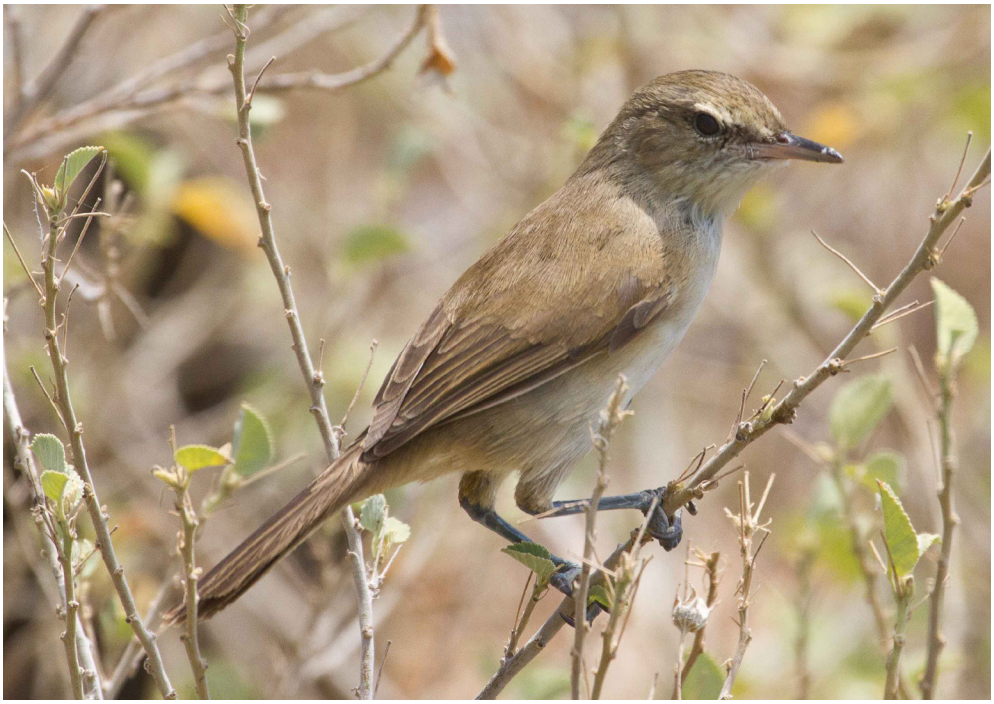
28 ducks to be relocated from Kuaihelani to Hōlanikū (Kure Atoll) in 2014. Today about 600 individuals live on Kamole, about 350 live on Kuaihelani, and about 70 on Hōlanikū.

Three other land bird species in the NWHI are hanging on, but just. Hurricanes and rising sea levels are killing plant life crucial to the birds' survival. To save the species, teams of biologists have plans to move the birds to safer places. For some species, this will be their second and third translocations.

An ulūlu (Nihoa Millerbird, *Acrocephalus familiaris*) eating a trapdoor spider, Nihoa Island, September 2011. © Eric VanderWerf

The remaining three land birds in the NWHI are:

The ulūlu (Nihoa Millerbird, *Acrocephalus familiaris*), a 13 cm (5 in) insectivore in the reedwarbler family (Acrocephalidae), was named for its appetite for miller moths (family Noctuidae). The native moth is now gone from Kamole, but other Noctuid species have been introduced. In 2011 and 2012, 50 ulūlu were translocated from Nihoa to Kamole, where they thrived. A 2022 survey estimated around 1,200 birds on Nihoa and 600 on Kamole. The name ulūlu, meaning "growing things," was chosen by the Native Hawaiian Cultural Working Group in hopes the population will continue to grow.

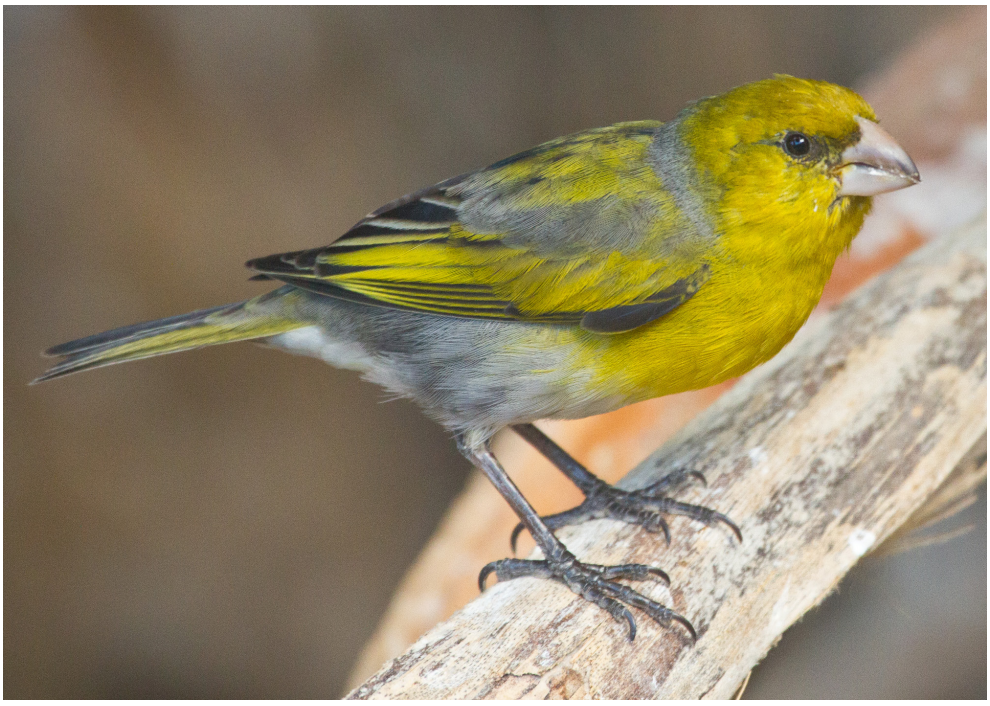


An ulūlu (Nihoa Millerbird, *Acrocephalus familiaris*) perches on a branch on Nihoa Island, September 2011. © Eric VanderWerf

The palihoa (Nihoa Finch, *Telespiza ultima*) is a 17 cm (6.7 in) Hawaiian honeycreeper. In 1967, federal biologists moved 42 palihoa to Lalo (French Frigate Shoals). By 1984, none remained. Today, the palihoa survives only on Nihoa. The current estimated population is between 6,500 and 8,500. The name palihoa combines pali (cliff) and hoa (companion)—a fitting name for a bird that lives on steep volcanic slopes and often keeps biologists' company while they work.

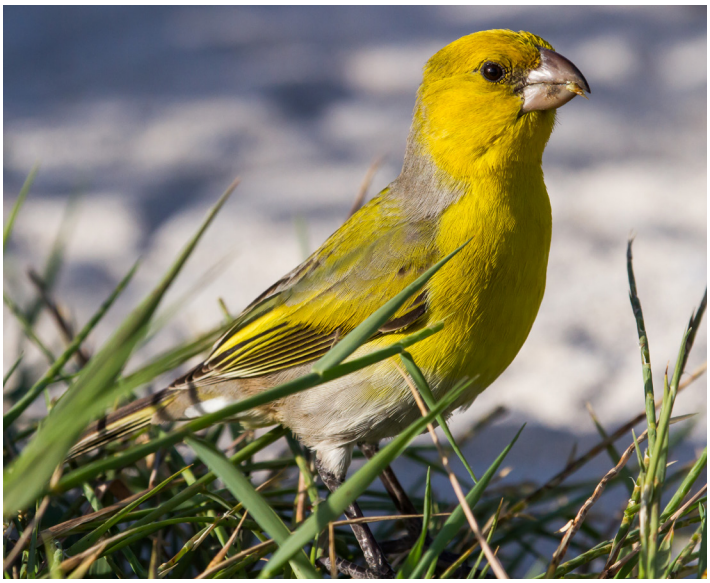
The ʻekupuʻu (Laysan Finch, *Telespiza cantans*) is the largest of the three at 19 cm (7.5 in), and is closely related to the palihoa. It shares the palihoa's omnivorous diet and bold,

curious nature. Both finches eat plant shoots, fruits, insects, and even unattended seabird eggs. Having evolved with no predators, they are unafraid of humans. Researchers have seen ʻekupuʻu raid food containers, enter tents, and try to eat freckles off biologists' skin. One was known to hop onto a person's socks to eat seeds stuck there. This fearlessness makes them relatively easy to catch for translocations, which are essential for protecting the species from extinction if disaster strikes. In 1905, ʻekupuʻu were introduced to Kuaihelani (Laysan), where they thrived until rats—brought during World War II—wiped them out by 1944. Rats, a bane to all species living there, were eradicated from Kuaihelani in 1996, a major step forward in restoring the atoll.



An adult male palihoa (Nihoa Finch, *Telespiza ultima*) seen amid its native habitat on Nihoa Island, September 2011. © Eric VanderWerf

In 1967, researchers captured 110 Kamole ʻekupuʻu and moved them to four islets at Manawai (Pearl and Hermes Atoll). Today, one islet supports an estimated 200 to 400 birds. Another has just a single individual. On Kamole, current ʻekupuʻu population estimates range from 12,000 to 23,000. But Manawai's islets rise only about four feet above sea level, and seawater from storms and large waves increasingly over-wash the land, destroying food sources and nesting sites. As a result, a translocation of the entire Manawai ʻekupuʻu population to Kuaihelani is now in the works.



A male ʻekupuʻu (Laysan Finch, *Telespiza cantans*) eating seeds on Laysan Island. © Robbey Kohley

ʻEkupuʻu are serious diggers. The name ʻekupuʻu alludes to the way the birds gather food. ʻEku, means to root or dig, and puʻu, means a bug or beetle found in dry earth. One account says the birds look like they're eating dirt. In addition to describing the bird's behavior, the name ʻekupuʻu sounds (to some) like the bird's song.

Fossil records show that all seven of the land birds found in the NWHI in the 20th century lived in the distant past on some (perhaps all) of the Main Hawaiian Islands. For the four survivors, the remote islands of Hawaiʻi's Northwest Chain are the birds' last haven. But the surrounding ocean has served as both their protector and their prison. Moving them to higher ground on predator-free islands is our chance to save them.

Check out some ʻekupuʻu antics here. (Both males and females become increasingly yellow with age.) Discover more about the translocation project here.

ABOUT NAMES IN THE NORTHWESTERN HAWAIAN ISLANDS

Hawai‘i’s bird names have changed, as have atoll names, most taken from 19th century ships and shipwrecks. Increasingly, Hawaiian names, created and confirmed by the Native Hawaiian Cultural Working Group, are in use.

Most of the northwest atolls have two Hawaiian names, one ancient and one modern. This map explains the Hawaiian names and their meanings.

Note: Capitalizing birds’ common English names is a convention in ornithology. Bird names in ʻōlelo Hawai‘i (Hawaiian language), however, are not capitalized.

Here are other names and details regarding the Northwestern Hawaiian Islands (NWHI), also called the Leeward Islands and the Northwest Chain:

- Teddy Roosevelt began federal bird protection from feather and egg poachers in this remote area in 1903. In 1909, he established the Hawaiian Islands Bird Reservation.
- In 1940, Franklin Delano Roosevelt (FDR) expanded protection to all wildlife there by creating the Hawaiian Islands National Wildlife Refuge (NWR).
- As a military outpost, Midway had been an exception to FDR’s protections, but in 1988, Midway Atoll was declared an overlay refuge, and part of the NWR while remaining owned by the U.S. Navy.
- In 1996, Bill Clinton transferred control of Midway Atoll from the U.S. Navy to the U.S. Fish and Wildlife Service and created the NWHI Coral Reef Ecosystem Reserve.
- In 2006, G.W. Bush proclaimed the chain a national marine monument. In 2007, the name became the Papahānaumokuākea Marine National Monument (PMNM).
- In 2016, Barack Obama expanded the Monument’s protected area to include the surrounding waters of Hawai‘i’s Exclusive Economic Zone (EEZ).

** * * END * * **

From Data to Dialogue: Students Use GIS to Bring Hawai‘i’s Birds to Life

By Laura Doucette

In early 2025, four students from Worcester Polytechnic Institute (WPI) traveled to Hawai‘i to learn about and support conservation education. They brought with them more than just a shared curiosity—they carried technical skills, interdisciplinary training, and a deep desire to make an impact. They met Hawai‘i Audubon Society (HAS) Board member and Hui Manu-o-Kū founder, Rich Downs, and collaborated on a vision to bring the stories of native birds and seabird conservation to a broader audience by blending science, storytelling, and public engagement through a modern, accessible tool: ArcGIS StoryMaps.

ArcGIS StoryMaps is a web-based platform that combines text, imagery, video, and geospatial data into engaging, interactive narratives. The students—Riann Divine (Biology & Biotechnology), Caitlin Murphy (Robotics & Electrical Computer Engineering), Dylan Wagner (Aerospace Engineering), and Zihan Li (Computer Science)—

Worcester Polytechnic Institute students left to right: Caitlin Murphy, Riann Divine, Zihan Li, and Dylan Wagner, checking out a nesting manu o kū at the University of Hawai‘i at Manoa campus. © Laura Doucette

collaborated with Rich, Pacific Rim Conservation, Oikonos Ecosystem Knowledge, and others at HAS to create four comprehensive maps focused on three ambassador bird species and an ambitious seabird translocation effort.

Over five months, the team interviewed experts, visited key bird habitats, and reviewed scientific literature. These StoryMaps will be live soon on HAS's website, offering a bridge between science and the public: not just data, but stories that extend HAS's educational mission to new platforms and audiences.

"This is an innovative way to connect science and people," Riann remarked during an interview at Kennedy Theatre at the University of Hawai'i campus. "We didn't do new biological research ourselves—we enabled others to tell their stories in ways that are accessible, visual, and engaging."

From Coursework to Fieldwork

The initiative was part of WPI's Interactive Qualifying Project (IQP), a required course interdisciplinary experience that pairs undergraduates with real-world organizations spanning six continents. All four students ranked the HAS project as their top choice. As team leader Riann Divine explained, "We didn't even know each other, but it turned out we had all picked the same project." The students were drawn in part by the opportunity to work with birds, but also by a personal connection to place. For Dylan Wagner, it was a homecoming; he was born in Waipahu and hadn't returned since early childhood.

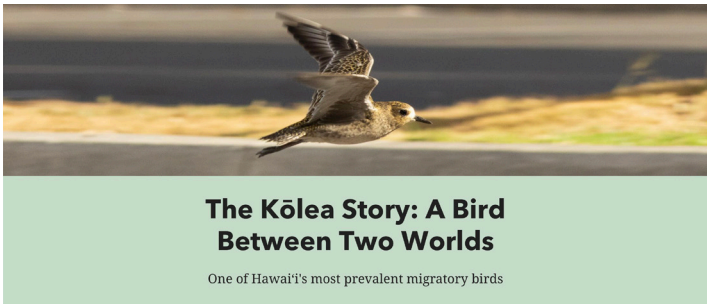
The project launched in October 2024 with a semester-long prep course and culminated in an immersive fieldwork period in spring 2025. Even before landing in Hawai'i, the team was in contact with Rich, who served as project mentor and liaison throughout.

The group produced StoryMaps on:

• The manu o kū (White Tern), Honolulu's official bird;

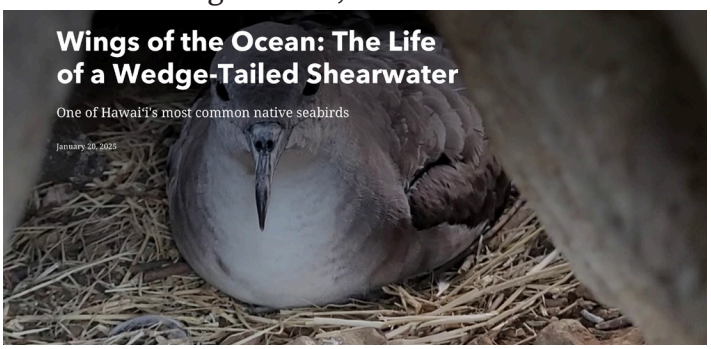
ArcGIS Manu-o-Ku StoryMaps webpage © WPI students

• The kōlea (Pacific Golden-Plover), a migratory marvel that winters in Hawai'i;



ArcGIS Kōlea StoryMaps webpage © WPI students

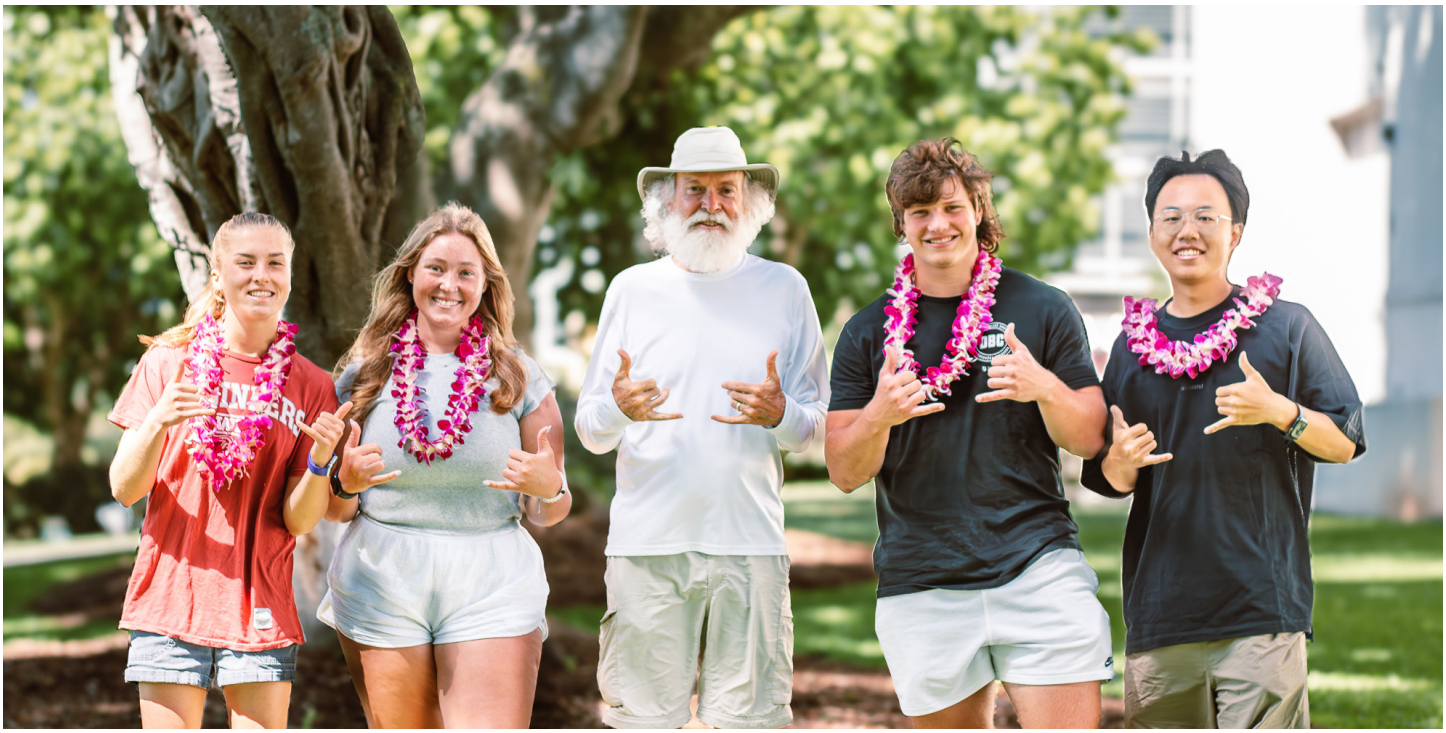
• The 'ua'u kani (Wedge-tailed Shearwater), a coastal burrow-nesting seabird; and



ArcGIS Wedge-tailed Shearwater StoryMaps webpage © WPI students

• A seabird translocation effort led by Pacific Rim Conservation, focused on relocating chicks to predator-controlled nesting refuges.

ArcGIS seabird relocation effort StoryMaps webpage © WPI students



After their project interview in Honolulu, WPI students Caitlin Murphy, Riann Divine, Dylan Wagner, and Zihan Li pose with mentor Rich Downs (center). Their StoryMaps bring Hawai'i's birds and conservation stories to life. © Laura Doucette

Each StoryMap reflects the lifecycle of its subject. The kōlea map follows the bird's seasonal migration cycle, while the manu o kū map unfolds from egg to fledgling. The ʻuaʻu kani map visualizes habitat changes with sliders and interactive imagery. And the seabird translocation StoryMap spotlights the science, sites, and volunteers behind some of Hawaiʻi's most promising seabird recovery strategies.

Research, Revisions, and Roadblocks

While technically skilled, the team overcame its challenges such as configuring ArcGIS group permissions and tracking hundreds of citations with patience and creative problem-solving. "We also tried to keep the project mobile-friendly," Caitlin added, mindful that most users would be exploring the maps from their phones.

Riann noted how fragmented the literature was. "Some of the most cited papers on kōlea migration were from the 1980s. For the White Terns, the research was much more current—2022, even—but it was tricky figuring out how to weigh the sources, especially as the science is still unfolding."

The team also visited field sites including James Campbell National Wildlife Refuge, Kaʻena Point, Freeman Seabird Preserve, and Turtle Bay. While doing so they interviewed some of the state's leading bird experts, including Ed Cashman, Eric VanderWerf, Oscar Wally Johnson, Susan Scott, Alyssa Piauwasdy, Afsheen Siddiqi, and they worked directly with volunteers at Freeman Seabird Preserve and participants in the Kōlea Count.

Among the most surprising findings for the students was the self-reliance of newly hatched kōlea chicks. "They have to feed themselves from day one—and then fly 3,000 miles to Hawaiʻi on their own," said Caitlin Murphy, "It's astonishing to think of such a small bird crossing the Pacific unaided." Dylan Wagner said, "It's like handing a six-year-old your car keys in Massachusetts and saying, 'See you in California!'"

A Living Project

The StoryMaps are now owned and managed by HAS, with plans to expand and update them. "The students did the heavy lifting," said Rich Downs. "Now the maps are living documents. Subject matter

experts are already seeing their value and thinking about what they can add."

The students have submitted a formal report to WPI, which is now archived for public access and available for review at WPI's Hawaii Project Center website: https://wp.wpi.edu/hawaii/storymaps-for-the-hawai'i-audubon-society/. The students remain in touch with HAS and have expressed interest in contributing to future outreach tools or peer-reviewed publications. "We didn't just build maps—we created tools," said Riann. "Tools for connection. Tools for education. Tools that help people understand why these birds matter." Rich highlighted the transformative potential of StoryMaps: "We live, breathe, and sleep birds every day, but not everyone does. These maps make the information accessible, engaging, and relevant to people who might not otherwise read a journal article."

That accessibility is at the heart of the team's work. "They can be used anywhere," Riann explained. "QR codes could go on bird walk brochures, bus stops, classroom walls, or even Freeman Seabird Preserve signs. They're fast, they're digital, and they're right there in your hand."

This collaboration reflects HAS's broader mission: to translate science into stories that resonate across age groups, cultural backgrounds, and learning styles. As threats to native birds escalate, tools like StoryMaps will be increasingly vital—not only for outreach, but for empowering public understanding and conservation action. After completing the project Dylan said he will "...never be able to think of birds the same way again. Now every time I see one, I wonder where it came from, if it migrates, what its story is."

The StoryMaps are undergoing final pre-publication review and will be available for online viewing soon. Once published, they will be featured on our website and shared widely through our digital platforms. We look forward to announcing their release—so be sure to keep an eye on our newsletters, website, and social media channels for the official launch.

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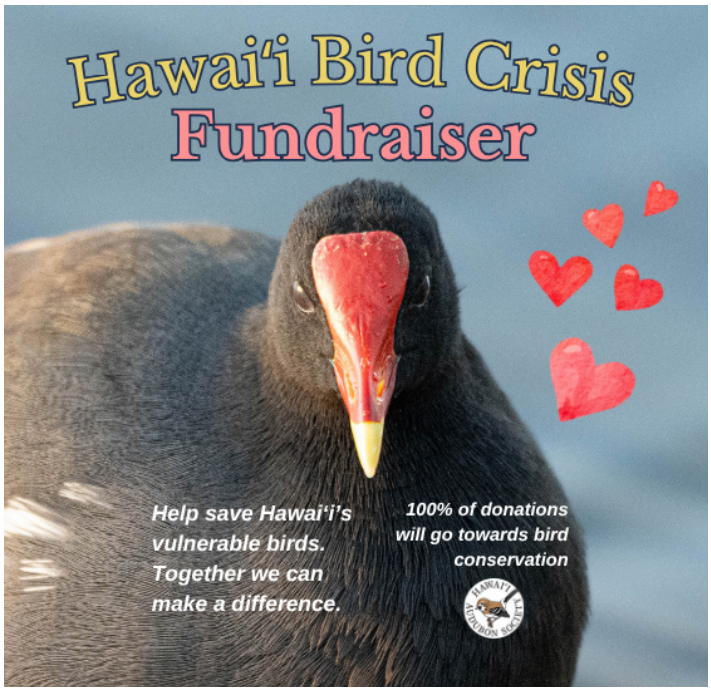

Songs, Photos, and Action: Community Contests to Save Hawai'i's Birds

In response to unprecedented disruptions in Hawai'i's federal conservation programs, the Hawai'i Audubon Society (HAS) has launched two creative initiatives—an original song contest and a photography competition—to raise awareness and funds for the Hawai'i Bird Crisis Fund. These efforts harness the power of community engagement, storytelling, and art to help fill critical conservation gaps across the islands.

♪♪ 'Ekupu'u Song Contest: A New Anthem for a New Home

To accompany the historic translocation of the 'ekupu'u (Laysan Finch, *Telespiza cantans*) to Kuaihelani (Midway Atoll), HAS is hosting a one-of-a-kind musical competition. Featuring AI-generated songs in genres like blues, gospel, ukulele, and metal, the public is invited to vote in four rounds to help select the species' "official anthem."

This translocation is a landmark step in climate resilience for Hawaiian birds. The 'ekupu'u population currently survives on Kamole (Laysan) and the islets of Manawai (Pearl and Hermes Atoll)—

islands that rise only a few feet above sea level. Increasing over-wash from storms and king tides has already degraded habitat and reduced available nesting and feeding areas. Moving ʻekupuʻu to higher, predator-free ground at Kuaihelani offers a vital opportunity to secure their future as sea levels continue to rise.

The song contest celebrates this moment through sound, inviting the public to follow along, vote, and donate.

Listen and participate:
hiaudubon.org/song-contest

📆 Vote Now in HAS's First-Ever Calendar Photo Contest

Hawaiʻi Audubon Society is proud to host its first-ever bird calendar contest. The HAS community submitted over 100 photographs capturing the beauty, diversity, and spirit of Hawaiʻi's birds—and now it's time to vote.

Twelve themed rounds of public voting are taking place throughout the year. Each round features a different set of species, and the winning images will represent each month in our 2026 calendar. From coast to forest, native to introduced, these photographs spotlight the incredible birds that share our islands.

By casting your vote, you help celebrate not only the birds themselves, but the photographers whose work helps us see them more clearly—and care more deeply.

Vote now:
hiaudubon.org/calendar-contest-voting

Why It Matters: The Hawaiʻi Bird Crisis Fund

Hawaiʻi's birds face mounting threats—from climate change to invasive species to mosquito-borne disease. But in 2024–2025, a new crisis emerged: widespread cuts to federal staffing and funding across our island refuges. Staff responsible for protecting wetlands, restoring native forests, and managing endangered species were laid off, leaving many vital operations in limbo.

The Hawaiʻi Bird Crisis Fund was created to respond quickly to these gaps. Led by HAS Executive Director Keith Swindle in collaboration with partners such as Pacific Rim Conservation and the American Bird Conservancy, the fund allows us to:

- Deploy emergency field staff when government programs are paused
- Supply fuel, tools, and materials when agency credit cards are frozen
- Support partner-led efforts like predator control, habitat restoration, and translocations
- Ensure continuity in long-term recovery plans or endangered species

These are not hypotheticals—they are real, urgent needs already affecting on-the-ground conservation. When programs are at risk of delay or cancellation, the Bird Crisis Fund enables swift action to protect species before it's too late.

Through music, images, and public participation, these contests celebrate Hawaiʻi's birds—and provide the means to protect them. Whether you vote for a song, cast your ballot for a favorite photo, or contribute to the fund, your involvement makes a difference.

HAWAIʻI BIRD CRISIS FUND

The Hawaiʻi Audubon Society and partner organizations established the **Bird Crisis Fund** to support urgent bird conservation efforts impacted by federal funding cuts and to fill critical gaps.

100% of funds raised go directly towards bird conservation.

Help spread the word and if you are able, please consider donating to the fund.

Donate here and find out more:

https://tinyurl.com/birdcrisisfund

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An O‘ahu ‘Amakihi (*Chlorodrepanis flava*) in the forest canopy. © Tom Fake

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Announcements

New *‘Elepaio* Submission Guidelines Now Available

The *‘Elepaio* recently updated the submission guidelines for both scientific and general manuscripts. These revisions aim to streamline the process and encourage a wide range of contributions focused on the birds and ecosystems of Hawai‘i.

We welcome original research, field observations, educational insights, and creative works from scientists, conservation professionals, educators, students, and community members.

Access the updated guidelines and complete submission instructions linked here:
· Scientific Submissions
· General Submissions
and on our website:
hiaudubon.org/elepaio-journal/

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Events

July 19: A Midsummer Night’s Gleam at Foster Botanical Garden (O‘ahu)

July 22-24: 2025 Hawai‘i Conservation Conference (O‘ahu)

August events will be posted to our events page as they develop.

For more details and updates visit:
hiaudubon.org/events or email
events@hiaudubon.org

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Hawai‘i Audubon Society
850 Richards St, Suite 505, Honolulu, HI 96813
office@hiaudubon.org https://hiaudubon.org

HAWAIʻI AUDUBON SOCIETY
850 RICHARDS ST, SUITE 505
HONOLULU, HI 96813-4709

https://hiaudubon.org
office@hiaudubon.org
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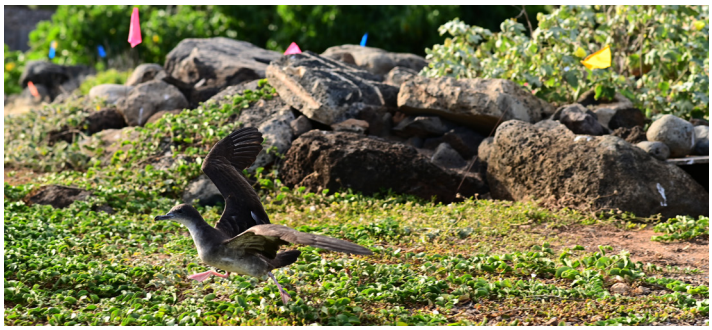

The Wedgies (Wedge-tailed Shearwaters, *Ardenna pacifica*) are back at Freeman Seabird Preserve. © Christiaan Phleger