



## Decadelong restoration of Año Nuevo Island deemed a success

### Windswept island off San Mateo County coast now home to burgeoning number of ‘fancy’ seabirds

The nonprofit organization Oikonos (<https://oikonos.org/>), in accordance to its mission to “study and protect imperiled ecosystems by engaging diverse communities through innovative scientific and artistic collaborations”, has been successfully designing, building, and deploying ceramic nest structures not only on California’s Año Nuevo Island but also for the Wedge-tailed Shearwaters at Freeman Seabird Preserve (FSP) on O‘ahu (see, e.g., yearly research update in the ‘Elepaio 81.1 issue, page 13). The following is an article written by Cypress Hansen and was first published by the Santa Cruz Sentinel on <https://www.santacruzsentinel.com/2021/01/10/decadelong-restoration-of-ano-nuevo-island-deemed-a-success/> on January 1, 2021.

**AÑO NUEVO ISLAND** — It’s not easy to erase every ecological mistake humans made during their 70-year occupation of this rocky, windswept island off the San Mateo County coast. But after 10 long years of restoration and creative burrow-building, Año Nuevo Island is once again healthy enough to host growing flocks of unique seabirds.

“No one knew what to expect when all this restoration work was done, but we’re seeing that it’s been incredibly successful,” said Rozy Bathrick, an ecologist with Oikonos, a nonprofit coastal research group.



*Ecologist Rozy Bathrick checks on prototypes of ceramic nests on Año Nuevo Island. Behind the nesting site fence sits an abandoned lighthouse keeper’s mansion, a reminder of the island’s history. (Courtesy of Oikonos).*

In 2010, Oikonos researchers and students at the California

College of the Arts in Oakland teamed up to create ceramic dens for the rhinoceros auklet, a burrowing seabird closely related to puffins.

Before the intervention, the auklet population on Año Nuevo Island was struggling. Unable to successfully fledge their chicks because of soil erosion, predation and trampling by sea lions, the colony hadn’t grown significantly since the mid-1990s.

But last year, some 600 rhino auklets nested on the island, a 129% increase since the project began. “We’re really excited,” said ecologist Jessie Beck, project manager at Oikonos. Six hundred may not sound like much “in the big picture of things,” Beck said, but the island’s small size and role as the southernmost point of the auklet’s range make that number much more significant.

Unprotected from wind and waves, Año Nuevo Island is a treeless, 9-acre spit of land just a half mile offshore from Año Nuevo State Park, famous for its rowdy colony of northern elephant seals.

Established as a site for a U.S. Coast Guard lighthouse station in 1872, the island’s ecosystem suffered after lighthouse keepers introduced rabbits, trampled the native plants and shot the gulls, cormorants and other birds that flocked there to breed.

In 1955, the island became a state reserve, but its native greenery didn’t bounce back. Instead, the rabbits, seagulls and sea lions took over, preventing the plants from taking root. Luckily, the elephant seals stick to the beaches, keeping competition with the birds to a minimum.



*“Rhinoceros Auklet”* by Dow Lambert/U.S. Fish and Wildlife Service (<https://www.flickr.com/photos/52133016@N08/5693307928>), licensed with CC BY-NC 2.0 (<https://creativecommons.org/licenses/by-nc/2.0/>).

When Oikonos, which has offices in Santa Cruz, Hawaii and Chile, stepped in more than a half-century later, the team’s mission wasn’t to restore the island to its original state.

“We don’t actually have a great picture of what that looks like,” Beck said. Instead, “we’re trying to make it so that the maximum amount of species can safely reproduce.”

### **Birds arrive in ’82**

Having moved to the island in 1982 for the first time in recorded history, the rhinoceros auklets were of primary interest to the researchers. Described as “fancy” by birders, these long-lived diving birds are football-sized, with a long white mustache, white eyebrows and an orange bill. Named for the rhino-like horn on their bill that grows during the breeding season, auklets breed almost exclusively on islands, raising one chick per year underground.

Because many of those eggs and chicks were crushed by sea lions or collapsed burrows, the researchers decided to provide an alternative housing solution. Oikonos joined forces with ceramics professor Nathan Lynch and his design ecology class at the California College of the Arts to create the perfect birdhouse.

The auklets’ new homes had to be durable enough to survive harsh weather and roaming sea lions, but also biodegradable — a feat most easily accomplished with clay.

“By mimicking and paying attention to the birds, we came up with something beautiful that would also solve the scientific criteria,” Lynch said. The result: a bulbous, J-shaped burrow with a removable window at the crook so that researchers can peek in and check on the birds without stressing them out too much.

After settling on the design, Lynch hired a handful of his students to build 90 clay modules by hand. He said his students appreciated the project’s real-world applications and the fact that their class work was client-based and not so theoretical.

“That’s when I felt like I was doing something special for them,” he said. “We’re taking this boat to an island for an interdisciplinary ceramics course and we are in the Pacific Ocean. That’s when it’s real for them.”



*Dotted with thousands of sea lions and shrieking seabirds, Año Nuevo Island is a popular breeding ground because of its proximity to the Monterey Bay, home to one of the world’s most diverse and plentiful assemblages of marine animals. (Courtesy of Oikonos)*

In addition to the custom clay “condos,” the birds on Año Nuevo Island have benefited from the reintroduction of native shrubs and grasses that stabilize the soil, as well as fences that reduce competition for space with the sea lions, who can crush the burrows the birds dig themselves. Using donated wood from invasive eucalyptus trees, the fences are designed without metal nails or plastic ties so, like the burrows, they won’t add any trash to the island as they break down.

### **Surviving climate change**

George Divoky, an arctic ornithologist who has monitored seabirds in northern Alaska for 47 years, says it’s unlikely rhinoceros auklet populations will persist this far south as the planet warms. Still, he sees value in maintaining and monitoring the birds’ southernmost colony to see how they cope with climate change.

“Having a study there to see how the productivity and the numbers change over the next two decades is important,” he said. “I would be all over that. I’d join the board if they asked me.”

While the project has largely been a success, restoring an island ruled by animals is no easy task.

“I liken it to trying to juggle six balls at a time,” said David Calleri, a retired firefighter from Santa Cruz and a longtime Oikonos volunteer.

If you get too close to the cliffs, Calleri said, the sea lions below will get spooked and stampede, crushing their pups. If you scare a gull chick from its nest, other gull parents will kill it. Take a wrong step and you’ll crush a burrow.

The researchers and art students also had to get used to the gulls, which launch all-out assaults on their heads — screeching, poop sniping and dive bombing the moment people step off the boat.

And immediately after restoring thousands of native plants, five years of drought coincided with an influx of brown pelicans, which killed most of the new vegetation. “Pelicans love to sit on soft plants,” Bathrick said.

### Condos built

After pioneering the ceramic nest modules on Año Nuevo Island, Oikonos, Lynch and other designers have since tailored the condos for several other species, including wedge-tailed shearwaters, pelagic cormorants and ashy storm petrels.

“There are applications for this idea all over the world,” Lynch said. The modules are “working on the Farallones, they’re working on the Channel Islands and they’re working in Hawaii.”



Cassin’s Auklet (<https://digitalmedia.fws.gov/digital/collection/natdiglib/id/2598/rec/34>), photo credit: U.S. Fish and Wildlife Service (USFWS).

Another seabird, the Cassin’s auklet, also received a neighborhood of customized ceramic modules on Año Nuevo Island in 2015, but the species has not fared as well

as its horned relatives. Bathrick says the Cassin’s auklets had a “horrible year” in 2019 — mostly because of the lack of food in local waters — completely failing to raise chicks. “It’s very sad,” she said.

But there’s optimism that things will turn around: In 2020, they started breeding almost a month earlier with great results.

Both auklet species can offer an early indication of problems in the Monterey Bay’s food web. “If we see a total collapse of the anchovy population, which is something we’re really worried about, we may be the first ones to see that,” Calleri said.

Although both birds are not threatened species, their progress on this small island provides hope for the future of coastal ecology and those who study it.

“You see young chicks that seem so vulnerable and tiny and could be instantly killed by the conditions, but then they grow up and fledge,” Bathrick said. “It’s just an inspiring place.”

\*\*\*END\*\*\*

## Lovebird Essay

By Eliot Carter

The following article was written by 12-year-old Eliot Carter from Maui. The 6<sup>th</sup> grader is one of the youngest birdwatchers to submit his observations for publishing in the ‘Elepaio. On this occasion, HAS would like to encourage our hobby ornithologists to let us know about your own field science projects and observations!

The Rosy-faced Lovebird (*Agapornis roseicollis*) is fairly common in southwest Africa where they are found in dry areas. This species is common in aviculture where several color-types occur, and it populates somewhat successfully when escaped. I became interested in the feral lovebirds here on Maui because I had always been captivated by parrots, these elegant and intelligent birds. So, I was fascinated to find evidence of breeding and decided to study them further. This species was first observed on the island of Maui about 15 years ago; they are now locally common and are breeding in some locations. Despite this, not much is known about behavior, habitat requirements, and status.

Rosy-faced Lovebirds have been observed in numerous localities on the southwest slope of Haleakalā, but for my study I focused on three South Maui localities where I found

large resident populations and evidence of breeding. I observed them over the course of four months (September-December). I documented social and interspecific behavior, feeding, and habitat use.

I also observed plumage variation in the population and evaluated subspecies status.



*Rosy-faced Lovebirds with different plumage types, photo credit Warren Johnson.*

In general, Rosy-faced Lovebirds on Maui are found in and around dry kiawe (*Prosopis pallida*) woodland, a habitat with similar traits to their native range. They mostly stay high in the canopy and when perched are often inconspicuous but are loud and obvious when in flight. I saw them in seeding vegetation and foraging on the ground; however, they were only definitively observed feeding at feeders, with no clear observation of them feeding on wild-growing vegetation. Their possible reliance on humans for food is a potential limiting factor for their continued spread.

At one location, I found an active nest. In the wild lovebirds nest communally, and this proved the case on Maui as well.

The nest was in a large palm tree with many dead fronds still attached, and the lovebirds had tunneled in the dry fibers.

Probably almost 10 pairs were occupying the nest tree. The Maui population is highly variable in plumage, suggesting numerous escapes from captivity, and they showed characters of both currently recognized subspecies. Most of the birds I saw are wild type in plumage. However, several of the color types bred in captivity are present in the feral Maui population, such as blue, yellow, and grey. One type I observed is almost certainly a hybrid between the yellow and wild types: mostly green with intermixed yellow feathers.

These birds are elegantly plumaged and charismatic and are widely loved both in captivity and in wild circumstances. But as their population on Maui continues to increase, they may become an agricultural pest and a threat to native species.



*Rosy-faced Lovebirds in nest tree, photo credit Warren Johnson.*

This research applies not only to Maui but also to the other Hawaiian Islands. They are only very recently becoming established on Hawai'i Island, and there have been scattered records from O'ahu and Kaua'i, indicating potential for them to become established there in the future.

Thanks to my parents, Lisa Carter and Warren Johnson for helping with copy editing and transportation to my study sites, as well as for taking the photos of lovebirds that are now included in this article. Thank you also to Laura Berthold and Bret Mossman for reviewing earlier drafts of this article.

\*\*\*END\*\*\*

## Keep Your Popoki (Cats) Indoors!

It's that time again from late spring to early fall, when Hawaiian Humane Society's cat houses and kitten rooms begin to fill up even more than usual due to irresponsible pet ownership.

HAS would like to take the opportunity and strongly support the American Bird Conservation's (ABC) petition "**Keep Cats, Birds, and People Safe and Healthy!**" On <https://abcbirds.org/action/petition-happy-cats-healthy-birds/>, you can send a message to your elected official and ask them to incorporate the following into local ordinances:

1. Abandonment of an animal should be prohibited in all cases.
2. Sterilization should be required unless an owner explicitly wants to breed his/her pet.
3. Identification, such as licenses and microchips, should be required for pets to help return lost animals to their owners.
4. Roaming pets should be prohibited for the safety of the animal and its community.

Furthermore, you can support three measures being proposed (visit <https://www.capitol.hawaii.gov/> for more information):

- House Bill HB 1287 HD1: Requires dog and cat owners to microchip their pets, if the pets are not licensed,
- Companion Senate Bill SB1387 SD1 HD1, and
- House Bill HB 409 (deferred): Requires the Department of Health to contract with a nonprofit animal rescue group to oversee caretakers of feral cats and mongooses. Exempts registered caretakers of feral cats and mongooses from state laws and county ordinances relating to the feeding and confinement of cats and mongooses. Establishes a trap-sterilize-return process.

The lack of responsibility on both sides - government and pet owners - has been a decade old problem: See the following excerpt of the 2003 'Elepaio lead article "Popoki and Hawai'i's Native Birds", by former Director of "**Cats Indoors!**" Campaign for ABC, Linda Winter. Read the full article in the 'Elepaio 63.3 issue in our archive on <https://www.hawaii-audubon.org/elepaio-journal>:

*"...Hawaii Audubon Society (HAS) members are well aware that Hawai'i is considered the endangered species capital*

*of the world, with more endangered plant and animal species per square mile than any other place on the planet. Beginning with the Polynesian settlement over 1,600 years ago, Hawai'i's bird extinction crisis continued through the period of European settlement to today. By the late 18<sup>th</sup> century, at least 45 species of endemic birds had become extinct, including flightless geese and ibis, over a dozen honeycreepers, an eagle, a hawk and several species of owl and crow. Destruction of habitat for farming and human development, invasion of alien plant species, over-hunting, disease spread by introduced mosquitoes, predation by introduced rats, mongoose, and domestic cats (popoki), and habitat degradation by feral pigs, goats, sheep, and cattle have all played a role in bringing many of Hawai'i's unique native birds to the brink of extinction. ...Given the mild climate, cats can breed year-round in Hawai'i, with 3 litters per year of 4-6 kittens per litter. Rabies does not occur on the islands, and there are no wild predators of cats, such as coyote, bobcat, or fox, to help keep the free-roaming cat population in check. ...In 1997, concern about cat predation of birds nationwide prompted ABC to launch the **Cats Indoors!** Campaign to educate cat owners and the general public that cats and wildlife benefit when cats are kept indoors, in an outdoor enclosure, or walked outside on a harness and leash. The campaign also stresses the importance of spaying or neutering cats before a litter is produced, and strongly opposes cat abandonment..."*

Informational brochures are available in ABC's online shop <https://shop.abcbirds.org/>.

Find more information about this topic and other threats that birds around the globe face on <https://abcbirds.org/threats/>.

\*\*\*END\*\*\*

### Explore Hawai'i's Forest Birds today

Visit <https://cgee-hamline.org/MMGWeb/HIFB/> to check out this free, interactive learning resource, which is dedicated to some of the rarest bird species in the world.

*Hawai'i's Forest Birds: Maui & Kaua'i Edition* is produced by the Center for Global Environmental Education, the Maui Forest Bird Recovery Project and the Kaua'i Forest Bird Recovery Project. The site is a collaboration among a variety of organizations and people who are working to save Hawai'i's endangered birds from extinction.

## Hawai‘i’s Largest Wetland Focus of New Restoration Efforts

In the 81.1 ‘Elepaio issue earlier this year, we reported about Hawai‘i’s largest wetland, Kawainui Marsh State Wildlife Sanctuary, receiving a \$100,000 North American Wetland Conservation Grant (NAWCA).

The following is a press release, which was first published by DLNR on <https://dlnr.hawaii.gov/blog/2021/01/30/nr21-019/> on January 30, 2021.

(HONOLULU) – Wetland birds on O‘ahu have good reason to be celebrating World Wetlands Day, as wetland habitat at Kawainui marsh on O‘ahu will soon be improved through a new restoration project.

Funded by the North American Wetlands Conservation Act (NAWCA), with matching funds from the DLNR Division of Forestry and Wildlife (DOFAW), this facilitates a partnership with the nonprofit Hui o Ko‘olaupoko to create a mosaic of mudflats, open water, and native wetland plants on almost 20 wetland acres.

Amphibious machinery operated by DOFAW staff and hand pulling of invasive weeds by volunteers will improve habitat for endangered wetland birds such as ‘alaie ‘ula (Hawaiian Gallinule), ‘alaie ke‘oke‘o (Hawaiian Coot) and ae‘o (Hawaiian Stilt).

Kawainui Marsh State Wildlife Sanctuary, Hawai‘i’s largest freshwater wetland, is threatened by overgrowth of invasive plants such as bullrush, cattail, water hyacinth and water lettuce. These plants crowd out areas of open water, reducing native bird habitat. Efforts to remove these plants are set to start in February. The project site is located along the Kawainui Flood Control Levee and adjacent to Kailua Road.



*Kawainui Marsh, photo credit: DLNR.*

Lindsey Nietmann, a DOFAW wildlife biologist is spearheading the project. “I am thrilled about the visibility

and accessibility of this site to the windward O‘ahu community,” said Nietmann. “I hope this restoration effort brings community members closer to the wildlife that shares their Kailua home and provides a feeling of environmental stewardship for volunteers involved in the project.”

Hui o Ko‘olaupoko (<https://www.huihawaii.org/kawainui.html>) brings over 13 years of community-based restoration experience to the project, including wetland restoration at He‘eia State Park and a native-plant xeriscape garden at Kawainui Neighborhood Park in Kailua.

“We’re honored to enter into this partnership with DLNR and bring the wetland and bird habitat restoration techniques we have learned at He‘eia back to our organization’s hometown,” said Project Director Kristen Nalani Kane. “This will be a very visible and accessible restoration site for all who utilize the levee and we look forward to engaging the community directly with the project, through hands-on, small group experiences.”

“The partnership with Hui o Ko‘olaupoko is exciting for us at DLNR because it will expand our capacity for restoration,” added Nietmann. “With this project, we are combining DLNR’s use of amphibious machinery with their ability to mobilize groups of community members and remove invasive species that are best controlled by hand.”

The project will continue for two years with support from the NAWCA grant. DLNR will endeavor to secure additional funding to continue the effort. The project has received clearance from the DLNR State Historic Preservation Division and the U.S. Fish and Wildlife Service for all cultural and environmental compliance.

\*\*\*END\*\*\*

**Hawai‘i Legislature passed measure HR58 HD1** ([https://www.capitol.hawaii.gov/session2021/bills/HR58\\_HD1\\_.htm](https://www.capitol.hawaii.gov/session2021/bills/HR58_HD1_.htm)): “Requesting the Department of Land and Natural Resources to submit a petition to list the pueo (Hawaiian short-eared owl) as a threatened or endangered species under the Endangered Species Act.”

## Hawaii Audubon Society Membership/Donation Form

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 non-profit 501(c)(3) organization and does not receive dues paid to the National Audubon Society. Thank you for supporting your local Hawaii Audubon Society.

- \$25 Hawaii Audubon Society Regular Member  
 \$15 Hawaii Audubon Society Student Member  
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- International Membership:  
 \$28 Canada & Mexico  
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Donations are tax-deductible and greatly appreciated.

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Email: [hiaudsoc@gmail.com](mailto:hiaudsoc@gmail.com)   <http://www.hawaii-audubon.org>

**Mahalo for your concern and commitment to protecting Hawai'i's native wildlife and ecosystems.**

### Announcements

#### Upcoming Events and Field Trips

For regular updates, go to

<http://www.hawaii-audubon.org/get-outside>

##### Paikō Lagoon Wildlife Sanctuary: June 26, 2021

Visit Paikō at LOW LOW tide (-0.3'). Learn about the many native plants at the water's edge. We may see some stay-behind migratory shorebirds as well as a resident pair of Hawaiian Stilts, year round 'Iwa, egrets & herons, lots of urban birds & ducks, and other critters. Meet at end of Kuli'ou'ou Road.

Leader: Alice Roberts (HAS Board member)

RSVP: [MermaidsHI@aol.com](mailto:MermaidsHI@aol.com).

##### Manu-o-Kū Festival: May 8 – 14, 2021

Preparations for MOKF 2021 are in full swing, and the organizers are working through a plan for a hybrid (in person at the International Market Place (IMP) and virtual on MOKF 2021 webpage) week of events. For more info, go to <http://www.conservehawaii.org/manuokufestival/> or <https://www.whiteterns.org/manu-o-k363-news>.

#### Hanauma Bay Talks

Missed any of the Thursday evening talks? All presentations have been archived on <https://www.youtube.com/channel/UCi74IR7v60pZy0Qzb4UF9wQ>.

#### World Albatross Day: June 19, 2021

The Agreement on the Conservation of Albatrosses and Petrels (<http://www.acap.aq>) has adopted the theme "Ensuring Albatross-friendly Fisheries" to mark the day this year. The two Critically Endangered albatrosses, the Tristan of Gough Island and the Waved from the Galapagos, have been chosen to serve as 'feature species' to draw attention to the continuing threats that all the world's 22 species of albatrosses face at sea from fisheries.

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<p>Hawaii Audubon Society would like to note the following errors on page 12 in the 81.2 'Elepaio issue:          Line 39: "Ann Tanimoto" should be "Ann Tanimoto-Johnson"          Line 39: "Tom Flake" should be "Tom Fake"          Line 40: "Eric Vanderwerf" should be Eric "VanderWerf"</p> <p style="text-align: center;">*****</p> <p><b>HAS Is Looking for Research Grant Applicants!</b>          A research grant of \$1,000 is awarded annually by the Hawaii Audubon Society and is oriented toward small-scale projects. Applicants are encouraged to solicit grants from other organizations to fund research that cannot be funded entirely by the Society. Deadline is June 30, other stipulations apply. For more information, go to <a href="http://www.hawaii-audubon.org/grants">http://www.hawaii-audubon.org/grants</a>.</p>	<p>Decadelong restoration of Año Nuevo Island deemed a success 17</p> <p>Lovebird Essay 19</p> <p>Keep Your Popoki (Cats) Indoors! 21</p> <p>Explore Hawai'i's Forest Birds today 21</p> <p>Hawai'i's Largest Wetland Focus of New Restoration Efforts 22</p> <p>Hawai'i Legislature passed measure HR58 HD1 22</p> <p>Announcements 23</p>