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Many seabird species, like the endemic Newell’s Shearwaters and Hawaiian Petrels, return to the area where they fledged. One conservation approach is to relocate chicks to sites where they are sheltered from at least some threats like invasive predators or habitat degradation/loss. Unfortunately, other threats remain, like anthropogenic climate change and plastic ingestion caused by the growing misuse of our oceans as a dumpsite.

The following is a composite of news releases by the State of Hawai‘i Department of Land and Natural Resource (DLNR) dated December 27, 2018, and the United States Fish and Wildlife Service (USFWS) dated March 11, 2019.

A Great Year for Endangered Hawaiian Seabirds

39 Chicks Fledge from Protected Nihokū Site in 2018

In 2018, conservation partners again provided a new home, safe from invasive predators, for some of Hawai‘i’s most imperiled seabirds. A total of 39 chicks, including 20 endangered ‘ua‘u (Hawaiian Petrel) and 19 threatened ‘a‘o (Newell’s Shearwater), were moved from colonies in the mountains to the translocation site, called Nihokū, at Kīlauea Point National Wildlife Refuge. In this location, they are protected by a predator-proof fence surrounding the Nihokū restoration site (*www.Nihoku.org*).

Hawaiian petrel (‘ua‘u) chick on 10/12/2018, photo credit: DLNR/Pacific Rim Conservation/American Bird Conservancy.

Over the course of several weeks, the chicks are fed and cared for by a dedicated team of biologists and volunteers until they fledge – finish molting into adult plumage and fly off. Over the last four years, 112 chicks have successfully fledged from the site. The chicks will spend a few years at sea before returning to the exact area where they were raised, hopefully establishing a new seabird colony at Nihokū.

All of the translocated chicks were collected from colonies located in the rugged, mountainous interior of Kaua‘i, where the birds are under threat from introduced predators, including feral cats, rats, and pigs, as well as loss of breeding habitat. These dangers, coupled with collisions with power lines and attraction to artificial lights, have dramatically reduced populations of the ‘ua‘u and ‘a‘o on Kaua‘i. The effort to create a new, fully protected colony of these birds at Nihokū is part of a larger effort to protect the two species and help their populations recover.

The 7.8-acre translocation site is protected within a predator-proof fence. Made with very small, woven, stainless steel mesh, buried three feet underground, and with an upper hood that prevents the incursion of predators, this is one of the best tools available for conservation of seabird colonies. Such fences now are more frequently used as a hedge against introduced predators plaguing native birds, plants, and even small endangered tree snails in Hawai‘i.

The project has not been without its challenges. This year a record-breaking rain event in mid-April swept across the island, flooding the nearby Hanalei Valley and part of the refuge. An estimated 49.6 inches of rain fell in 24 hours, nearly blowing out a drainage culvert under the protective

predator-proof fence. In addition, Hurricane Lane drove in more rains in mid-August.

"We experienced a difficult year with many close-calls due to unanticipated weather events, but despite these challenges, we are very pleased to have completed another successful year of this important seabird recovery project," said Heather Tonneson, Refuge Complex Manager at the Kauaʻi National Wildlife Refuge Complex. "Quick response from the U.S. Fish and Wildlife Service staff and volunteers resulted in clearing the damaged culvert and preventing further damage and erosion under the fence."

Lindsay Young, executive director for Pacific Rim Conservation, who led the project to build the fence, attributes part of the success to good design: "The record rainfall this year had minimal impacts on the fence as a result of design features that allowed water to exit the fenced area." All partners are grateful for the help of dedicated volunteers, who helped to keep debris away from the drainage culverts, keeping Nihokū predator free.

Translocation site Nihokū, at Kīlauea Point National Wildlife Refuge, photo credit: DLNR/Pacific Rim Conservation/American Bird Conservancy.

Other challenges came from the birds themselves. "Each chick has its own personality, and more often than not, they are just plain feisty, which makes daily care a challenge," says outreach coordinator for Pacific Rim Conservation Leilani Fowlke.

Another potential stumbling block: traveling in and out of the rugged, mist-shrouded mountains to recover chicks for translocation and bring them to Nihokū for care until they fledge. André Raine, project lead for the Kauaʻi Endangered Seabird Recovery Project, explained: "After monitoring the chicks in all seasons, we move them during a narrow window, a few weeks before fledging. Chicks are transferred from underground nests to a special transport box, and delivered via a short helicopter ride to their new home at Nihokū. The weather is always an unpredictable factor each year, as it is often raining and misty in their mountain homes, but despite this, the translocations all went well this year!"

By December 2018, all 19 Newell's Shearwater chicks and 19 of the 20 Hawaiian Petrel chicks had fledged. "We are doing our best to give them a good start here so they are best prepared to thrive once they fly out to sea," says Hannah Nevins, American Bird Conservancy's seabird program director. "The healthier they are when they depart their nest to fly out to sea, the better the chances they will return to breed."

These seabirds spend their first four to five years at sea and the partners are anxiously waiting for the first translocated birds to return to the site to breed — the ultimate measure of success for the project.

In spring 2019, the first cohort of petrel chicks — nine birds that fledged in 2015 — is expected to return. The partners hope that they will establish Nihokū as a breeding site and create the next generation of seabirds for this area. See additional project information: *www.Nihoku.org.*

This joint release was first issued by American Bird Conservancy and appeared as news release by DLNR *(https://dlnr.hawaii.gov/blog/2018/12/27/nr18-246/)* on 12/27/2018.

Albatross Chicks Take 1300 Mile Plane Ride from Midway Atoll to New Home on Oʻahu

James Campbell National Wildlife Refuge has 25 new residents! On February 16, 2019, a group of kaʻupu (black-footed albatross) chicks made the 1300 mile journey from

Midway Atoll National Wildlife Refuge and Battle of Midway National Memorial in Papahānaumokuākea Marine National Monument to O‘ahu. Their new home is a 16 acre predator exclusion area inside James Campbell National Wildlife near Kahuku. These chicks are part of a long-term partnership effort to create new albatross colonies in the main Hawaiian Islands that will be safe from predators, future sea-level rise, and to help perpetuate our relationships with these culturally significant bird species.

Culturally, ka‘upu and other albatross species are kinolau (body form) of the Hawaiian deity Lono. The birds’ return to land for mating coincides with the beginning of the makahiki season, occurring between October and November, and an important aspect to some practitioners’ ceremonies and practices during that time.

A ka‘upu soars over the ocean, photo credit: Lindsay Young/ Pacific Rim Conservation.

Currently, ninety percent of the world’s ka‘upu population nests and breeds on Midway Atoll, Laysan Island, and Tern Island. All three of these locations have very low elevations and are predicted to be highly susceptible to storm surges and sea-level rise in the coming century.

Ka‘upu are particularly at risk because they tend to nest along the shoreline where there is no protection from coastal vegetation. “Midway Atoll is home to one of the largest black-footed albatross populations in the world. As conservation managers, it is important we use good science to evaluate other options that might protect these seabirds into the future,” said Midway Atoll Refuge and Memorial Project Leader Bob Peyton. “Refuges like Midway Atoll and James Campbell provide the healthy habitat that black-footed albatross, and other seabirds, needs to thrive.”

“We are thrilled that the Refuge can provide a safe place and a new home for this species on O‘ahu,” said Glenn Klingler, Refuge Manager, James Campbell National Wildlife Refuge. “This translocation is another step toward creating a new colony of albatross in the main Hawaiian Islands and ensuring the albatross will be protected for future generations.”

Albatross, nests, and chicks along the beach at Midway Atoll, photo credit: Lindsay Young / Pacific Rim Conservation.

The chosen translocation site at James Campbell National Wildlife Refuge is high enough that they are less at risk from rising sea-levels and increasing storm surges.

Additionally, birds nesting within the predator-free enclosure are protected from non-native predators that are prevalent in the main islands such as mongooses, rats, and feral cats and dogs.

The three-week-old chicks will be hand fed a diet of fish and squid and closely monitored by biologists for four to five months, until they are able to fly out to sea and feed themselves. Ka‘upu chicks imprint on their birth colony at about one month of age and they will return to breed at the same colony as adults. By moving the chicks at this critical one-month period, they will imprint on their new home at the James Campbell National Wildlife Refuge and become the seeds of a new colony when they return as adults to raise their own chicks.

Between 2015 and 2018, Pacific Rim Conservation translocated 50 mōlī (Laysan albatross) chicks from Pacific Rim Missile Facility on Kaua‘i and 40 ka‘upu chicks from the Monument to the predator exclusion area of James Campbell, and eighty-two of those birds successfully fledged - took flight as adults.

A ka'upu chick sits in a tub ready for feeding, photo credit: Elena Fischer/USFWS Kupu AmeriCorps Intern.

Once they fledge, juvenile albatross stay away at sea for 3 - 5 years before returning home to find a mate and begin breeding. In 2018, the first James Campbell fledgling - a mōlī named V106 - returned to the colony.

"We are very hopeful that this colony will continue to grow provide a safe and stable home for albatross on O'ahu," said Klingler. Partners on these projects include Pacific Rim Conservation, Papahānaumokuākea Marine National Monument, U.S. Fish and Wildlife Service, Department of Defense, the National Fish and Wildlife Foundation, and the David and Lucile Packard Foundation.

This article first appeared as a news release by USWFS *(http://usfwspacific.tumblr.com/post/183392231465/albatross-chicks-take-1300-mile-plan-ride-from*).

Getting to know the HAS Board:
The Multifaceted Susan Scott
Conservationist, naturalist, adventurer, author, captain…

The organizational structure of non-profit organizations is formed by the board of directors. They are the governing body, volunteering their experience and dedication to define the organization's mission, strategy, and goals. In our next issues, we would like to briefly introduce each member, starting with Susan Scott:

Susan joined the HAS Board of Directors in January, 2019, and is pleased to share her skills in writing and knowledge of Hawai'i's wildlife with the Hawaii Audubon Society.

Since 1987 Susan Scott has written a weekly column called *Ocean Watch* for the Honolulu Star-Advertiser and is the author of nine books about nature in Hawai'i.

Susan's last two books are about Hawai'i's Pacific Golden Plovers (2016) and the White Terns of Honolulu (2018.) Susan earned a bachelor's degree in biology from the University of Hawaii and is a graduate of the university's Marine Option Program, where she studied marine journalism. As a volunteer for the U.S. Fish and Wildlife Service, Susan has counted albatrosses at Midway, tagged crabs on Palmyra, and rescued monk seals and sea turtles at French Frigate Shoals.

In 2006, Susan sailed her boat, HONU, from the Ala Wai Boat Harbor to Palmyra, Mexico, and across the South Pacific to Australia, where it is today, enabling her to periodically explore the Great Barrier Reef.

She is also an avid advocate of reducing single-use plastic, especially when it comes to bottled drinking water *(http://www.susanscott.net/ow/upset-about-pollution-stop-buying-bottled-water/).*

One million plastic bottles are bought around the world every minute, according to *https://www.theguardian.com/environment/2017/jun/28/all*. They take hundreds of years to decompose and the vast majority ends up either in the ocean or a landfill. In the ocean, they usually break down into micro plastic (pieces smaller than 5 mm) over time, absorb pollutants like pesticides and chemical toxins, and end up being consumed by plankton, crustaceans, birds, fish, marine mammals, and - us.

So, refill your reusable bottle with Hawai'i's tap water – it is one of the best the country. According to the Honolulu Board of Water Supply, "The municipal water supply served to Oahu's residents is safe to drink and use, and does not require treatment by a home filtration unit." *(https://www.boardofwatersupply. com/water-quality).*

Aberrant plumage in a Pacific Golden-Plover *Pluvialis fulva*

Oscar W. Johnson[1] & Susan Scott[2]

[1]*Department of Ecology, Montana State University, Bozeman, MT 59717, USA. owjohnson2105@aol.com*

[2]*Honolulu Star-Advertiser, 500 Ala Moana Blvd., Honolulu, HI 96813, USA*

Keywords: eumelanin, phaeomelanin, brown aberration

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Numerous Pacific Golden-Plovers *Pluvialis fulva* that nest in Alaska spend the non-breeding season in the Hawaiian Islands, where they have adapted to urban wintering grounds. The birds are strongly site-faithful from year to year, often defend winter territories, and coexist with people to a remarkable degree (Johnson & Scott 2016, Johnson *et al*. 2018). Many island residents regard the trans-Pacific migrant plovers with great interest, and Susan Scott (a nature columnist for a Honolulu newspaper) frequently mentions the plovers in her weekly columns. In mid-November 2017, a reader contacted Susan Scott about a white plumaged plover he had spotted. We went to the location indicated, found the bird, and observed it periodically until spring migration in April 2018.

The plover (sex and age unknown) occupied a patch of grass (approximately 500 m^2) at the entrance to He'eia Kea Boat Harbor (21.443°N, 157.811°W) in Kāne'ohe, O'ahu. There were no other plovers nearby, as this grass is the only suitable habitat in the immediate area, which otherwise consists of roads, a parking lot, and a brushy ditch. The bird disappeared in April coincident with the period when plovers typically depart Hawai'i. It did not return to the site in fall 2018, and the space was not occupied by another plover. Presumably, given the high site fidelity of this species, lack of reappearance indicated mortality.

Reports of aberrant plumage often involve birds that disappear after brief sightings. Instead of a brief encounter, we were able to observe the plover's coloration throughout the non-breeding season, and the changes we saw complicated what at first appeared to be an example of leucism. Our initial photos taken in November (Fig. 1) show a bird in mostly white feathering with tinges of brown plus a scattering of normal, though somewhat pale-colored, feathers on the back and crown. Considering the late fall time frame, this was likely a basic plumage. By mid-December, pre-alternate molting was evident and, gradually as the season progressed, darker feathering replaced a substantial amount of previously white feathering (Fig. 2).

In his review of color aberrations in birds, van Grouw (2013) considered leucism to involve 'partial or total lack of melanins in feathers and skin due to heritable absence of pigment cells from some or all of the skin areas; ' thus, an individual would have 'all-white plumage or all-white feathers mixed with normal-colored ones.' While this description initially seemed to fit the fall plumage shown in Fig. 1, regarding the bird as leucistic became questionable because of the bird's appearance in spring.

Fig. 1. Two views of an aberrantly plumaged Pacific Golden-Plover at Kaneohe, Oahu, photographed on 15 November 2017 (photos: Susan Scott).

Fig. 2. Two views of the same bird on 12 April 2018 (photos: Susan Scott).

With pre-alternate molting, numerous dark feathers (though slightly paler than normal) appeared in what had been totally white areas of the plumage, indicating that pigment cells were not absent. After examining our comparative fall vs. spring photos, H. van Grouw (pers. comm.) concluded that the bird's coloration 'cannot be leucism', and suggested instead that the plover's unusual plumage most likely represents a variant of what he terms 'brown'.

In his review, van Grouw (2013) describes the 'brown' aberration as a mutation causing a 'qualitative reduction of eumelanin due to incomplete synthesis' but not affecting synthesis of the yellowish-brown pigment phaeomelanin. The eumelanin thus produced is sensitive to sunlight and tends to bleach more quickly than the normal form of this pigment such that feathers can become almost white. Plumage aberrations are widespread in the avian world (Sage 1963, Gross 1965, Lepschi 1990, Guay *et al*. 2012).Although the reported incidence is low among shorebirds (Graham *et al*. 2005, González 2011, Ayala-Perez *et al.* 2013), the actual occurrence in shorebirds is probably comparable to landbirds (H. van Grouw pers. comm.).

Fig. 3. An example of rare white feathering in wings of a Eurasian Golden-Plover. The bird was captured for banding in 2010 near Workum, Netherlands (photo: Rinkje van der Zee).

To our knowledge, this is the first report of an aberration in the Pacific Golden-Plover. As for the other three *Pluvialis* plovers, there appear to be no published records for the American Golden-Plover *P. dominica*, and very few for the Eurasian Golden-Plover *P. apricaria* and the Black-bellied Plover *P. squatarola* (Sage 1962, Tiunov & Blokhin 2011).

Fig. 4. A mounted specimen of an aberrantly plumaged Eurasian Golden-Plover. The bird was captured in The Netherlands about 1970, an era when plovers were still being hunted for food (Jukema *et al*. 2001). The bird's unusual plumage prompted the hunter to preserve it (photo: Pieter Visser).

However, specimens of Eurasian Golden- Plovers with aberrant plumage exist in museum collections (H. van Grouw pers. comm.), and though rare, white feathering in wings (Fig. 3) occurs among birds captured for banding. Also, there is at least one mounted specimen of this plover showing unusual plumage (Fig. 4). We thank William Coke for reporting his sighting of the aberrantly plumaged Pacific Golden-Plover to us; Joop Jukema and Pavel Tomkovich for records of atypical plumage among other *Pluvialis* plovers; Hein van Grouw for his helpful interpretation of the subject bird's plumage and review of the manuscript; and Sigrid Southworth for assistance with periodic monitoring of the bird at the Boat Harbor.

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

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White Tern Walk

May 18, 2019, in conjunction with the Manu O Kū festival at ʻIolani Palace

June 22, 2019, 9.00am to 10.30am, details to follow

Leader: Rich Downs (HAS Board member)
Please text or call 808-379-7555

Paikō Lagoon Wildlife Sanctuary

June 15, 2019, 8.00am on Kuliʻouʻou Road

Leader: Alice Roberts (HAS Board member)

Visit Paikō at 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 ʻIwa, Egrets & Herons, lots of urban birds & ducks, and other critters.

Please call or text 808-864-8122 and leave your name and phone number.

Manu O Kū Festival

Saturday, May 18, 2019, from 11am to 3pm, on the Coronation Lawn of ʻIolani Palace. This is a free, family-friendly event and open to the public.

Games and activities will engage participants in learning about Honolulu's official bird. Details on *manuokufestival.org*

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Hawaii Audubon Society
850 Richards St, Suite 505, Honolulu, HI 96813
Email: hiaudsoc@gmail.com
http://www.hawaiiaudubon.org

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

www.hawaiiaudubon.org
hiaudsoc@gmail.com

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