



Hawai‘i’s State Bird is on the Road to Recovery

This article first appeared as a news release for USFWS on March 30, 2018



Photo caption: Recovery of endangered or threatened animals and plants is a primary goal of the Endangered Species Act. Conservation agencies and private landowners have made it possible to reestablish a population of nēnē once again in Hawai‘i. Photo credit: USFWS Pacific Islands Conservation & Restoration Team.

After 60 years of collaborative conservation efforts among federal, state, non-governmental organizations, and local partners, the Hawaiian Goose, or nēnē, may be one step closer to recovery. An intensive captive breeding program, habitat restoration, and active management strategies have led to the nēnē return from the brink of extinction. As a result, the U.S. Fish and Wildlife Service has proposed downlisting the nēnē from endangered to threatened under the Endangered Species Act (ESA).

“It took decades of hard work and remarkable partnerships to bring nēnē back from the brink of extinction,” said Robyn Thorson, Regional Director for the Service’s Pacific Region. “Collaborative conservation efforts like this are the key to success in protecting and recovering Hawai‘i’s native species.”

One of the pressures that nēnē face are the invasive species. Introduced invasive predators like mongooses, rats, dogs, cats and pigs all were factors that led to the first substantial declines of nēnē. Nēnē are highly

vulnerable to predation when nesting. During nesting season, nēnē molt their feathers and are flightless making them easy prey for predators. Ongoing predator control, habitat management efforts, and collaborative conservation will continue to be important for nēnē to continue on the road to recovery.

By the mid-twentieth century, fewer than 30 nēnē remained in the wild on a small area on the island of Hawai‘i. A further 13 birds survived in captivity. The nēnē was listed as an endangered species in 1967, and in the decades following, some 2,800 captive-bred birds were released at more than 20 sites throughout the main Hawaiian Islands. The release of captive-bred nēnē on national wildlife refuges, national parks and state and private lands saved the species from imminent extinction.

Captive breeding has contributed to the ongoing recovery of nēnē throughout the Hawaiian Islands. The captive propagation of nēnē was a multi-tier effort that involved national and international conservation agencies. The State of Hawai‘i, Peregrine Fund, Waterfowl and



Photo caption: Nēnē can now be seen on both public and private lands throughout the Hawaiian Islands.

Photo credit: Kathleen Misajon/NPS



Photo caption: 2,800 captive-bred birds were released at more than 20 sites throughout the main Hawaiian Islands.

Photo Credits: USFWS

Wetland Trust, San Diego Zoo and private landowners all recognized the possibility of potential nēnē extinction. Each of their captive breeding programs helped preserve the species and aided conservation managers with the recovery effort and eventual release of nēnē back into the wild.

Today more than 2,800 individuals survive, with stable or increasing populations on Kauai, Maui and Hawai‘i Island and an additional population on Mo-Lokai.

What are Threatened and Endangered Species?

Under the Endangered Species Act, a species may be threatened or endangered depending on their risk of extinction.

The Endangered Species Act (ESA) defines an endangered species as "any species which is in danger of extinction throughout all or a significant portion of its range." Endangered species are automatically protected by prohibitions of several types of "take," including harming, harassing, collecting, or killing, under Section 9 of the ESA. There are some limited exceptions to these rules listed in Section 10 of the ESA. The Kemp's ridley turtle, considered the smallest marine turtle in the world, is listed as an endangered species throughout its range of the Gulf of Mexico and entire U.S. Atlantic seaboard.

The ESA defines a threatened species as "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Threatened species receive protections through separate regulations issued under Section 4(d) of the ESA. These regulations occur separately from the listing and detail what take prohibitions are in effect. Also called 4(d) rules, they can include the same prohibitions under Section 9. Elkhorn coral – a large, branching coral with thick and sturdy antler-like branches – is listed as a threatened species throughout its range.

Literature Cited:

U.S. Department of Commerce, and National Oceanic and Atmospheric Administration. "What Is the Difference between a Threatened and Endangered Species?" *NOAA's National Ocean Service*, 14 May 2014, oceanservice.noaa.gov/facts/endangered.html

Nēnē Restoration Project Report*

Division of Fish and Game – Department of Land and Natural Resources (Honolulu, Hawaii)

This article first appeared as the lead 'Elepaio article in 1966, issue 26:11

The Nēnē restoration project actually began in 1949 when Mr. Herbert Shipman, a rancher on the island of Hawai‘i, loaned the Board of Agriculture and Forestry a pair of Nēnē with which to start a propagation project. Mr. Shipman had the only captive flock of Nēnē in existence at that time.

Initially this program was financed by \$6,000 legislative appropriation from the Territory of Hawai‘i. Originally, the program was designed to study both the Nēnē in the wild and rear them in captivity for eventual release. The ecological wild study portion was not approved by the Board of Agriculture and Forestry at that time, however, the formal phase of the ecological study

began in 1956 when Dr. William Elder from the University of Missouri received special grants to undertake an ecological investigation of the wild Nēnē. Meanwhile, Nēnē were successfully raised at the Po-hakuloa Project each year until the flock numbered 38 in 1957.

The following are some positive steps taken toward the goal of preservation and restoration of the Nēnē prior to the inception of the federally financed program:

1. A preliminary ecological study conducted by Dr. William H. Elder, one of America's foremost waterfowl authorities, financed by

* Ronald L. Walker's contribution

private funds, was completed which revealed the nesting grounds of the wild Nēnē where a substantial number of young birds were reared and the summer range of practically all of the wild Nēnē on Hawai‘i.

2. This nesting area, containing some 8,100 acres of Keauhou Ranch, was set-aside as a sanctuary by negotiating a cooperative agreement with C. Brewer & Co. and the Bishop Estate.
3. The Nēnē was declared the official bird of the Territory of Hawai‘i by action of the Territorial Legislature.
4. The captive flock of Nēnē at Pohakuloa was increased to 39 birds.
5. As a result of the facts revealed by the ecological study and the positive steps taken in Hawai‘i, a Bill was introduced in the U.S. Congress to authorize the U.S. Fish and Wildlife Service to spend \$15,000 a year for a period five years, to carry out a program of research and management to insure the preservation and reestablishment of the Nēnē in its former known habitat. This Bill was strongly endorsed by the top conservation organizations in the United States and was passed by the 85th Congress as Act 891 during the closing days of the session. Use of these funds was made available during the month of November, 1958.

With the availability of federal funds, Mr. Richard E. Griffith, Chief of the Wildlife Division, Region 1, U.S. Fish & Wildlife Service, came to Hawai‘i to survey the program and formulate plans for future work. His initial visit resulted in two men being assigned to the program. David H. Woodside, Biologist, was designated overall Project Leader whose principal duty was to conduct the ecological phase of the project as well as supervise the entire program. Mr. Ah Fat Lee was assigned as propagationist in charge of the rearing project at Pohakuloa, Hawai‘i.

1958-1959 Season

The first year the federal project was very successful with the following results:

1. Nine wild Nēnē nests were located in and around the Keauhou Sanctuary area. Their

progress was carefully followed and recorded which produced much valuable information heretofore unknown. Prior to this time, only one Nēnē nest had ever been observed by a scientist. It was found that the fertility of wild Nēnē was extremely high as compared to the captive birds at Pohakuloa.

2. Fifteen additional Nēnē were reared at Pohakuloa bringing the total population to 54 birds for the project. This was the best production experienced since the project began.
3. A cabin was constructed at the Keauhou Nēnē Sanctuary and preparations were made for the first release of pen-reared Nēnē into wild habitat.

Many prominent authorities on waterfowl from all over the world have visited the Nēnē project over the years and the project has benefited greatly from their invaluable experience in waterfowl.

1959-1960 Season

The second year of the federal project produced even further gains toward the ultimate goal of restoring the Nēnē.

Seventeen additional Nēnē were produced at the Pohakuloa station, which brought the total raised in captivity to 71.

Twenty Nēnē, including one, two, and three-year old birds, were placed in a carefully planned 1-acre release pen located on the Keauhou Sanctuary within the breeding range of the wild Nēnē on March 17, 1960. The Pohakuloa pen-reared Nēnē were wing clipped before being released so they would remain in the open topped pen long enough to become acclimatized and learn to eat the wild food in the sanctuary area. The plan worked extremely well with a few birds leaving the pen as their flight feathers grew out but returning to eat and rest within the pen. Gradually the entire flock left the pen and established themselves in the general vicinity of the release area. For approximately six months, 14 of these released birds were observed regularly and during the following breeding season, as many as nineteen were noted. By the 1960-61 breeding season, two of the released birds paired with wild Nēnē in the area and a pair of released Nēnē composed of a two-year old gander and a four-year old goose appeared to be selecting a nest site near the release pen. Our

studies show that the scheme of gently releasing pen-reared birds into wild habitat to mingle and mate with wild Nēnē is working out ideally and since the initial release was so successful, it was felt that additional releases in other areas to supplement the Keauhou release site were desirable. An area in North Kona, lands of Keauhou 2 was selected as it was still inhabited by a few wild birds and was known to be a nesting area a few years back. An agreement was drawn up with the W. H. Greenwell Ranch and the Bishop Estate and a second sanctuary was created.

1960-1961 Season

On April 5, 1961, eleven additional young Nēnē were released in the Keauhou Sanctuary to strengthen the previous release. On May 23, twenty Pohakuloa reared Nēnē were released in the newly created Keauhou II site, following the same method used at Keauhou. Total released came up to 51 Nēnē.

The problem of low fertility and hatchability remained a strong challenge at both the Pohakuloa project and at Severn Wildfowl Trust in England where Nene are also being propagated. In order to pin point the difficulty and to find a solution, studies were continued on the mechanics of hatching and rearing to determine if this was the primary limiting factor. To investigate this phase more thoroughly, Mr. Wesley M. Batterson, Biologist with the Oregon State Game Commission, was asked to come to Hawai'i and review all aspects of the propagation phase during the 1960-61 breeding season. Mr. Batterson is noted for having raised numerous species of birds that had never been raised before in captivity, and among these Mr. Batterson has had a great deal of success in breeding Emperor geese and Ross' geese considered to be extremely difficult-to-rear birds. With such a background, we wanted Mr. Batterson to duplicate as nearly as possible the unique techniques he had so successfully employed in Oregon.

Also, in order to raise the fertility-hatchability rate at Pohakuloa, a pair of adult wild Nēnē and one young bird were captured in the Keahou area during the March of 1960 for breeding purposes. This pair produced four young during their first season in captivity. During the 1960-61 breeding season, a total of 32 Nēnē were produced making the total reared in captivity at Pohakuloa, 103.

In August, 1960, Mr. Rose Leffler, Assistant Secretary

of the Interior and Mr. Lansing A. Parker, Assistant Director, Bureau of Sport Fisheries and Wildlife, U.S. Fish & Wildlife Service made a thorough field inspection of the project at Pohakuloa and the Keauhou Nēnē Sanctuary and this resulted in the formulating of plans to extend the Nēnē project an additional 5 years and to increase the annual allotment from \$15,000 to \$25,000. There is a Bill pending in the U.S. Congress now to increase the scope of the Nēnē project.

International interest in the Nene project has always been great. At the 10th Pacific Science Congress held in Honolulu in 1961, a Resolution was passed recommending that the United States government amplify and strengthen the Nēnē Restoration program.

1961-1962 Season

During the breeding season, 45 goslings were successfully reared at Pohakuloa, (total to this date – 148) and 36 of these placed in the release pen on Hualalai on May 8. During the next few months these birds and several from the first release were seen in the sanctuary area feeding on wild foods, apparently adapting well to their new surroundings. Another five birds from this year's production were shipped to the island of Maui for release there.

Field trips by biologists revealed further evidence that wild and pen-reared birds were accepting each other as hoped for when the releases were made in areas of known Nēnē populations. For instance, on one occasion prior to the 1962-1963 breeding season, a goose from the 1960 release and a gander from the 1961 release were seen paired, and another couple consisted of a wild bird and released bird.

The largest number of wild Nēnē seen at any one time during the summer of 1962 was 30, crossing the highway between Mauna Loa and Mauna Kea.

1962-1963 Season

Fifty-four Nēnē were produced at the rearing project during this season bringing the total number brought up in captivity since the project's inception to over 200. Five additional birds were sent to Maui to augment the release there, and 42 were released at Keauhou II in September. A total of 129 Nēnē had thus been liberated on the island of Hawai'i.

Several interesting observations have been made during the ecological survey trips. One nest was discovered in March, 1963, at Keauhou, tended by an unbanded goose and a banded wild gander - the male was banded as a gosling several years previous. The homing instinct is apparently quite strong in released birds. Six released birds from the Keauhou II area were observed over a period of a week up to 15 miles away in a direction towards the Pohakuloa project. On one occasion a pair of Nēnē, one unbanded and the other a 1961 Keauhou release bird landed on the Pohakuloa pens and stayed in the vicinity for several days.

One setback occurred at the Hualalai sanctuary when it was discovered that during the flightless period, released Nēnē were falling prey to wild dogs. The remains of four birds were discovered, and immediate and intensified predator control measures were taken.

At the Pohakuloa rearing site a large prefabricated building was constructed to centralize all feeding, incubating, brooding and rearing facilities. Domestic geese were procured for experimentation with incubation and hatching techniques, as mortality during this state of the Nēnē's development continues to be a problem. The Silky bantam chicken flock was selectively manipulated to produce high broodiness foster mothers.

1963-1964 Season

Thirty-eight goslings were reared during the year, making a total of 240 Nēnē raised successfully at the Pohakuloa project over the years. Pure wild-blooded stock was again added to the project flock when a wild gosling was caught and brought back to Pohakuloa, and two out of three eggs salvaged from an abandoned nest at Keauhou hatched in the project pens. In addition, an unbanded gander was caught at Pohakuloa and added to the captive flock. This gander and its mate, a goose released in 1961, had again returned to the rearing pens and were disturbing the captive flock. The goose was also caught and sent to Maui with 7 young birds for release in Haleakalā. Twenty-four young birds were held at Pohakuloa for release during their first complete post-nuptial molt next year.

During the course of the ecological survey, nests

were discovered in the Keauhou sanctuary. Two of these were tended by wild pairs, one by a goose banded in the wild, one by a released gander and a wild goose, and the fifth was a deserted nest with 2 eggs. Although predator control measures were applied throughout the season, three of the clutches were destroyed by mon-goose. The fourth nest was abandoned, but the eggs were salvaged and brought back to Pohakuloa for hatching.

Current Season

During the winter of 1964-1965, 41 goslings were produced at Pohakuloa. (Total to date - 281) Eighteen of these birds and one old gander were released at the Keauhou II sanctuary on Hualalai in April; six others were released at the Keauhou sanctuary with 24 one-year old birds retained since last year, on March 15. The total number thus released on Hawai'i now numbers 178. The birds were placed in the release pens before they had completed their juvenile molt. It was felt that this technique would produce better-flying birds than realized when the primaries were pulled. Eight young birds are being retained as future breeders and the remaining nine will be released on Maui in July of this year.

Very strong homing instinct was exhibited by a goose raised at Pohakuloa. This goose was caught and released on Maui in July, 1964. It returned to Pohakuloa in January of 1965 with a mate (a gander sent from England and released on Maui) and was caught and re-released at the Keauhou sanctuary. Shortly after being released, this pair built a nest in the nearby Hawai'i Volcanoes National Park. Two of the 3 eggs laid were hatched, and the goslings were thriving when last seen four weeks after hatching.

Broods were seen in both sanctuary areas. A brood of 3 young from birds banded in the wild was seen at Keauhou and another brood of three young from a pair of wild bird was seen just outside the Keauhou II sanctuary.

In addition, a brood of four young from a pair of unbanded birds was seen in Kipuka Ainahou. This area lies midway between the Keauhou sanctuary and the summer roosting grounds of the Nēnē on the slopes of MaunaKea.

The future of the project and study now awaits action of the State and United States Governments.

Upcoming Events, Field Trips, & Volunteer Opportunities

Please RSVP with name and contact information to

Hawaii Audubon Society at (808) 528-1432 or hiaudsoc@pixi.com unless otherwise specified

For full descriptions of our Events, Field Trips and Volunteer Opportunities, go to our website: www.hawaii-audubon.org

EVENTS

Manu o Kū Festival

Where: Honolulu Zoo

When: Saturday May 12, 2018, 10:00am - 2:00pm

Description: This event is open to the public and there will be a normal zoo attendance fee. Celebrate the Manu o Kū – Kū's Bird (White Tern) – Official Bird of Honolulu.

- 22 Interactive Booths with keiki prizes
- 2 Manu o Kū Tours
- 3 Special Talks *
- PLUS music and entertainment

*** Talks scheduled for Safari Event Room ***

11:30 AM: CHICK DOWN! Manu o Ku Rescue and Rehabilitation - Panel Presentation: Keith Swindle USFWS, Rae Okawa HWC, Laura Debnar HNL Zoo

12:30 PM: "It Takes a Hui: How citizen scientists, researchers, government employees, educators, wildlife groups, writers, photographers, tree trimmers, birders, office workers, condo dwellers and others have come together to help Honolulu's White Terns." - Susan Scott: Author and Honolulu Star-Advertiser columnist

1:30 PM: Honolulu's Seabird: Manu o Kū, Dr. Eric VanderWerf, Director of Science Pacific Rim Conservation



FIELD TRIPS

Marine Corps Base Hawai'i:

Tour of Red-Footed Booby Colony

When: Saturday, May 19, 2018 8:00am – 11:00am

Leader: Todd Russel (MCBH), Wendy Kuntz (HAS Board Member)

Description: The Red-footed Booby colony located in the heart of an active training range on Marine Corps Base Hawai'i is one of only two large booby colonies in the Main Hawaiian Islands; the other is managed by the Fish & Wildlife Service on Kaua'i. Approximately 2500 Boobies loaf or nest in the Ulupa'u Crater Wildlife Management Area. The Boobies have become quite acclimated to the sound of weapons fire and explosions on the Range. The Red-footed Booby is white with brown wings, has a blue bill and red feet. Red-footed boobies feed at sea, but nest on land in coastal trees and low growing shrubs; they are the only tree dwelling Booby in Hawai'i and are the smallest of more than half a dozen booby species. At the colony on MCB Hawai'i, you can get quite close to them and their nests, but please stay at least 10 feet away so as not to cause stress to the adults or chicks. Pictures are permitted.

RSVP: FULLY BOOKED - please email us at hiaudsoc@pixi.com to be added to next years waiting list. ONLY 25 people maximum.

Just a Summertime Low-Low Tide:

Paikō Lagoon Wildlife Sanctuary

When: Saturday, July 14, 2018, 8:30am - approximately 10:00am

Leader: Alice Roberts (HAS Board Member)

Description: Visit Paikō during mid-summer at very low tide (-0.4'). Learn about the many native plants at the waters edge. We may see some stay behind shorebirds as well as a resident pair of Hawaiian Stilts, year round 'Iwa, Egrets & Herons, lots of urban birds & ducks.

RSVP: Please RSVP with Alice Roberts with your name and phone number at (808) 864-8122.

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Trip Highlights from the Paikō Lagoon State Wildlife Sanctuary Tour

"Ten folks toured Paikō Lagoon State Wildlife Sanctuary on Saturday 04/14/2018 from 0830-1030. The highlight of the trip was seeing two adult Ae'o or Hawaiian Stilts (*Himantopus mexicanus knudseni*) and their four very active chicks. We'd been told to look for three chicks, one had disappeared; well, it must've been hiding.

Paikō had changed a whole lot since our last visits, what with the Friday night Thunderstorms reshaping the area." – *Alice Roberts (HAS Board Member and Paikō Tour Trip Leader)*



Photo caption: Ae'o or Hawaiian Stilts at Paikō Lagoon Sanctuary. Photo credit: Jim Koermer.



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