

Kiwikiu news

Who is Whoo?: Owls of Hawaii

Pueo, Hawaiian Short-eared Owls (*Asio flammeus sandwichensis*), are the only extant (still living) native avian predators on Maui. A subspecies of the globally distributed Short-eared Owl, Pueo are endemic to Hawai'i, and can be seen throughout the main Hawaiian Islands. Fossil records show that Pueo arrived in Hawaii sometime after Polynesians. The introduction of rats as well as the human-altered landscapes helped Pueo establish. Unlike most other owls, Pueo are diurnal, meaning they are mostly active during the day, especially at dawn and dusk, for hunting. They feed on small mammals, such as introduced rats and mice and possibly the native Hawaiian hoary bat, as well as songbirds and nestlings. Most often seen soaring above grass and shrublands, and urban areas, Pueo can also be spotted in native and nonnative forests from sea level to 2440 m (8000 ft).

In Hawaiian culture, Pueo are one of the commonly recognized *kinolau* (physical forms) of the *'aumāku*a (ancestor spirits) and protect individuals from harm. In a legend from Maui, Pueonuiakea, an owl god, guides lost souls safely back to their homes. Even in battle, Pueo are considered guardians, and there is a saying "*Ka pueo kani kaua*" that invokes the protection of the Pueo during battle.

Pueo are easily identified by their yellow eyes, black bill, brown and white plumage, and diurnal habit. Their round facial disk, eye color, light patches on the wings, and darker plumage are quite distinctive from the heart-shaped face, black eyes, and pale plumage of the non-native Barn Owl (*Tyto alba*) also found on the Hawaiian Islands. The Barn Owl also utters a blood-curdling shriek, quite distinct from the muffled bark that Pueo use to communicate.

While Pueo have resistance to avian diseases that plague other native birds, their populations have been in decline across Hawai'i due to habitat loss, sensitivity to light pollution, collisions with cars, extensive hunting at the end of the 19th century, and "Sick Owl Syndrome" (SOS). The cause of SOS is unclear, but may be related to pesticide poisoning from toxins that accumulate in or on their food sources.



Pueo Chick in Nest. Photo by Forest and Kim Starr.



Left: Barn Owl, Photo by Peter Trimming. Right: Pueo, Photo by Forest and Kim Starr.

In addition, Pueo are ground nesters and as a result, their young are susceptible to depredation by introduced species such as cats, rats, and mongooses. Three to six eggs are laid in small grass depressions and hatchlings, which are dependent on their parents for two months, often leave the nest on foot before they can fly.

Pueo benefit from conservation efforts implemented to protect other native species, such as forest restoration in Nakula NAR.

Article written by KUPU-AmeriCorps Intern, Teia Schweizer. Teia worked with MFBRP in 2013 as a research assistant and will be with us until September as her current position. KUPU provides many opportunities for youth to begin careers in conservation.

For more information, go to www.kupuhawaii.org.

Avian Research & Management *Update*



MFBRP is currently analyzing data from the past three years of avian research in The Nature Conservancy's Waikamoi Preserve to help inform management decisions for Kiwikiu recovery on both the windward and leeward slopes of Haleakala.

This year starts our first season of research on avian demographics and composition in the Nakula Natural Area Reserve. Three point count transects were installed in the 170 ha restoration site with 36 stations for variable circular plot point counts to be completed six times this spring. During these counts, the observer writes down all the birds seen and heard, as well as the distances. These will give us a baseline estimate of species and abundances currently in Nakula. Performing these counts annually provides a temporal view of changes in the avian community as restoration efforts continue.



This spring, we will also begin catching and banding birds in Nakula. Coupled with re-sighting efforts, color banding the native birds currently there, Apapane and Amakihi, will provide annual survival estimates for these populations.

In January, MFBRP participated in the annual Palila count surveys with Mauna Kea Forest Restoration Partnership on the Big Island. These point counts monitor the population of the endangered Palila, a forest bird only found on the slopes of Mauna Kea. To learn more about the project, visit <http://dlnr.hawaii.gov/restoremaunakea/>

Photos on left from top to bottom: Hawaiian Goose or Nene in Nakula NAR, Apapane drinking nectar from ohia blossom, Palila, photo by C. Robby Kohley. Above: Teia Schweizer installing a point count station.



New Publications

Visit www.mauiforestbirds.org to access all MFBRP publications.

- Peck, RW, PC Banko, J Cappadonna, C Steele, DL Leonard, HL Mounce, CD Becker, K Swinnerton 2015. [An assessment of arthropod prey resources at Nakula NAR, a potential site of reintroduction for Kiwikiu \(*Pseudonestor xanthophrys*\) and Maui Alauahio \(*Paroreomyza montana*\)](#). Hawaii Cooperative Studies Unit, University of Hawaii at Hilo. Technical Report HCSU-059

Nakula Forest Restoration *Update*

By the end of March 2015, we planted our 18,000th seedling, from 11 different species, in Nakula since MFBRP's restoration efforts began in October 2013. The majority of these plants were planted in corridors and erosion scars. Corridors are connecting remnant forest patches and erosion scars are bare dirt patches that are found throughout the site due to prior ungulate damage and lack of plants.

Additionally, we monitored introduced predator abundances, weather, our experimental restoration plots, and collected seeds.

We plan to continue to plant important Kiwikiu food plant species (for example akala) throughout the spring and summer as available but the focus of MFBRP's efforts will now switch to bird research. Large planting trips will continue in the fall!

The Story of Iliahi

The "sandalwood" label often seen on candles and incense is the result of a long and often troubled history of a group of trees in the family Santalaceae. The fragrant oil produced by sandalwood trees (Hawaiian name iliahi) became highly desired following the establishment of trade with Hawaii in the late 18th century. The fervor for the highly profitable sandalwood oil reached such a peak that within a few short decades most of the sandalwood forests had vanished. Dwindling forests meant that the trade was no longer profitable and the sandalwood trade moved elsewhere.

The great iliahi forests of Lanai and Maui were largely lost during the height of the Hawaiian sandalwood trade and much of the land was converted into pineapple and sugarcane fields. However, iliahi can still be found in some places on Maui.

The endemic *Santalum haleakalae* is found at higher elevations on Haleakala and sports beautiful red blossoms. This vulnerable species can be seen as single trees or in small groups in Haleakala National Park and Kula Forest Reserve.

When MFBRP began conducting forest restoration work in Nakula there were only 4 known wild iliahi within the reserve. One of these trees stands at least 20 ft high and is usually riddled with feeding Apapane and Amakihi. Due in large part to generous donations from MFBRP supporters and the hard work by the good folks at Native Nursery, LLC, MFBRP has planted 575 iliahi seedlings in Nakula to date. Someday soon there will again be thousands of red iliahi blooms filled with singing birds across leeward Haleakala!

Photos: Above right: Aalii seedlings planted in a Nakula erosion scar. Above left: A blooming iliahi. Below: Planted iliahi seedling in Nakula. Iliahi are semi-parasitic and require a host plant, like aalii or koa. They will use this plant for water and nutrients.



THANK YOU!

Everyone can be a part of restoration on Maui!!

We've had many seedlings sponsored by supporters of native forest restoration.

To sponsor a tree to be planted in Nakula, or to dedicate a tree to a loved one, please visit www.mauiforestbirds.org/articles/100.

Thank you to our volunteers who have helped us in Nakula since December: Colin Lindeman, Anna Nielsen, George Akau, and Amy Hodges, Allison Weist, Ben Davis, Paula Perriera, Che Frausto, Bob and Bettina Arrigoni, Jamie Davidson, John Anderson, Jenna Bogen, Kurt Adams, Ken Lickout, Stacey Speers, Dustin Palos, Scott Richie, Katie Paradiso, Hali Davis-Sherwood.

Project Support & Partnerships

UPCOMING EVENTS

- ▶ **Walk for the Birds at the Visitor Industry's Maui Charity Walk on May 9th, 7am!** MFBRP needs walkers and/or supporters for this event! Find out more about how you can help at www.mauiforestbirds.org/articles/55 or email Teia@mauiforestbirds.org. This is a fun, charitable walk with lots of prizes! Be a part of the team!
- ▶ **Pint Night for the Birds at Maui Brewing Company. Friday, May 22nd and November 27th, 6-10pm.** Half the nights' pub profits go towards protecting native birds.
- ▶ **Maui Mauka Conservation Awareness Trainings.** This training provides information about the conservation of species and environments to tour operators and guides who work in or near these environments and who educate visitors about East Maui. To set up a training for your company, contact Allison at (808) 573-6999, pr@eastmauiwatershed.org.
- ▶ **Monthly presentations at Jean-Michel Cousteau's Ambassadors of the Environment at the Ritz-Carlton.** Learn about the natural history of Maui's native forest birds, the Hawaiian honeycreepers.



Donate Hawaiian Airlines Miles!

MFBRP is a Hawaiian Airlines Charity Organization.
Please help support MFBRP by donating frequent flyer miles!
www.hawaiianairlines.com/hawaiianmiles/donate-miles



Thank you, Blue Aina Campaign!



Thank you Trilogy for hosting the [Blue Aina Campaign](#) and Reef Clean up on April 22nd which benefits MFBRP. The Fairmont Kea Lani, with food provided by Leilani's, is sponsoring this cleanup and ocean sail. The Blue Aina program is run by Trilogy Excursions; it not only focuses on cleaning reefs and shorelines but also supports local non-profits, promotes community education, and raises awareness of protecting our island's environment. Get your tickets now at by emailing blueainareservations@gmail.com.



Mahalo to our fall and winter interns: Colin Sayre, Kyle Alreck, Janel Hull, Bob Taylor, and Heather Mackey.

Aloha to our program and data assistant, Jennifer Atkinson.

E Komo Mai to our KUPU-AmeriCorps intern, Teia Schweizer and our new banding assistants and volunteers for the spring.