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KIWIKIU NEWS

Newsletter from Maui Forest Bird Recovery Project



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Project Updates

‘ALALĀ PROJECT

The ‘Alalā Project has joined Maui Forest Bird Recovery Project to evaluate the suitability of habitat and support for ‘alalā releases within Maui Nui. As this species is currently extinct in the wild, this is an exciting step for MFBRP and all our Maui Nui partners.

The ‘Alalā Project is a conservation partnership working towards the goal of establishing a self-sustaining population of ‘alalā (*Corvus hawaiiensis*) in Hawai‘i. Alala have been extinct in the wild since 2002. But have been maintained in conservation breeding facilities on Maui and Hawaii Islands since that time. Beginning in 2016, birds were released into the forests of Pu‘u Maka‘ala Natural Area Reserve on Hawai‘i Island. Due to the increased mortality of released birds, including depredation by ‘io (Hawaiian Hawk) their natural predator, the remaining birds were recaptured and brought back to the conservation breeding facilities in 2020. Research, release planning, and supportive habitat management will be conducted on Hawai‘i Island to better inform and support future Hawai‘i Island release efforts.

As the efforts to improve the success of Hawai‘i Island reintroductions continue, the ‘Alalā Project has begun preliminary work to explore the potential for Maui Nui to serve as an additional release site for ‘alalā. While ‘alalā are known to have most recently existed on Hawai‘i Island there is subfossil evidence of ‘alalā (or a similar subspecies) within Maui Nui. Returning a Hawaiian corvid to forests within Maui Nui could restore some ecosystem function that has been lost over time. The ‘Alalā Project will be making connections with the community and partners across Maui Nui to evaluate the suitability of habitat and potential sites for ‘alalā releases.





NEW STAFF

In January, we were able to add Hunter Craft and Natalie Wronkiewicz to our team. Through his alma mater, Yale University, Hunter Craft was carrying out an anthropological study on the people who work with birds here in Hawai'i (so he was studying us!). As he finished up his project in September, he decided to stay on with our team as a yearlong KUPU member. Natalie was hired as an Avian Disease Associate along with Erin Bell, who rejoined our team. Erin was a part of the 2019 kiwikiu translocation team and we are thrilled to have her back.

In July, Rachel Kingsley joined the MFBRP team as the Hawaiian Forest Bird Outreach and Education Associate. Rachel has been a part of The 'Alalā Project since 2017 leading their education and outreach program and helping with the reintroduction efforts on Hawai'i Island. Hillary Foster also joined us as our new GIS and Data Technician. Hillary comes to us with a culmination of experiences working with various species such as manatees, sea turtles, and humpback and grey whales. Hillary is excited to apply her GIS knowledge and skills to support the conservation of Maui's incredible forest birds.

In August, Sarah Malick-Wahls joined the MFBRP team as the Maui Nui 'Alalā Coordinator. Sarah's previous experience was focused on the management of sensitive and endangered wildlife species in the northern regions of the United States.

Lastly, as MFBRP has had a lot of changes and growth in 2021, we also welcomed Sonia Vallocchia in November as our new Field and Data Technician. Sonia comes to us with a wealth of international conservation experience, particularly in bird banding projects.





Moloka'i and Lāna'i Forest Bird Surveys

MOLOKA'I FOREST BIRD SURVEYS

The Hawai'i Forest Bird Surveys (HFBS) started across the main Hawaiian Islands in 1976 and have continued since then to determine species distributions, densities, and changes in populations. Each region is surveyed every five years but Statewide funding, personnel, and goals don't always allow for this. MFBRP and partners conducted surveys on East Maui in 2017 and West Maui in 2020. Last year, Moloka'i was supposed to be surveyed as well but COVID-19 prevented those from happening. Fortunately, this past spring, MFBRP, and partners were able to conduct the HFBS on Moloka'i, 11 years after the last surveys were conducted! Additionally, surveys were conducted on Lāna'i- the last ones to occur here were in 1979.

The surveys use a type of method called variable circular plot (VCP) point counts, a type of point distance sampling. Stations are marked every 150m along a trail. At each station, the surveyor stops for eight minutes and records the species, distance, and type of detection (aural, visual, or combination) for each bird observed.

The Moloka'i surveys took 175.5 person-hours over April 12-16, 2021. Fortunately, partners on Molokai were amazing and able to flag and clear the transects in 2020, which takes an enormous amount of effort. In total, 206 stations along 17 transects were surveyed. These transects covered the majority of native forest bird habitat, mostly in areas dominated by native closed-canopy 'ōhi'a forest. Some transects ended in areas dominated by non-native tree species. We detected 14 bird species, which included only three native species: 'apapane, Hawai'i 'amakihi, and kolea. There were possible 'iwi detections but they were not definitely seen or heard so some follow-up searches are needed. Unfortunately, Moloka'i has seen many of its native forest bird species go extinct or become rare due to habitat degradation, introduced mammalian predators, and invasive disease spread by mosquitoes.



LĀNA'I FOREST BIRD SURVEYS

The highest area on Lāna'i is Lāna'i Hale, which is at 3372 ft above sea level. This is where the last remnant native forest occurs. Fortunately, organizations such as Pulama Lāna'i are working hard to restore native habitat within this area. Several invasive plants such as strawberry guava (*Psidium cattleianum*), faya (*Morella faya*), Cook Island Pines (*Araucaria columnaris*), and the New Zealand Tea Tree or Manuka (*Leptospermum scoparium*) have taken over most of the forest region of Lāna'i and created a monoculture forest. There are remnant native plants found within this mostly non-native forest, including the 'ōhi'a (*Metrosideros polymorpha*) tree and native ferns such as uluhe (*Dicranopteris linearis*) that cover the area like a blanket. In May 2021, we attempted to replicate the 1979 surveys. Two trained bird surveyors from Maui Forest Bird Recovery Project paired up with Pulama Lāna'i staff to conduct the counts over the three days which constituted 69.5 person-hours. In total, 56 stations were surveyed ranging from 1980 ft-3362 ft above sea level, 41 of the historic 77 stations that were surveyed in 1979.

There were 10 species of birds detected, two native species ('apapane and pueo), making up 2% of detections. Non-native species, Japanese bush warblers (*Horornis diphone*), warbling white eye (*Zosterops japonica*), and northern cardinal (*Cardinalis cardinalis*) were the most commonly detected nonnative species, respectively, throughout the surveys, making up 86% of detections. Between the HFBS conducted in 1979 and 2021, there was a decrease in the number of detections of 'apapane and the detections of 'apapane shifted towards higher elevation stations. Pueo (*Asio flammeus sandwichensis*) detections between HFBS in 1979 and 2021 increased slightly. Unfortunately, no Hawai'i 'amakihi (*Chlorodrepanis virens*) were detected during these surveys, possibly indicating their extirpation from the island. These birds have not been seen on Lāna'i since 1976. We hope to continue to replicate these surveys to monitor changes in the forest bird communities on Lanai.

Project News

KIWIKIU SEEN IN NAKULA

A remarkable discovery took place this past July. A male kiwikiu, released into the Nakula Natural Area Reserve on the leeward slopes of Haleakalā, was found alive and well, after not being seen for over 600 days. This bird, designated as wild #1, was part of a larger effort where seven wild kiwikiu were translocated from the Hanawi Natural Area Reserve to Nakula Natural Area Reserve in October 2019 to try to establish kiwikiu in newly restored leeward forests. This effort was thwarted by the encroachment of avian malaria, which is spread by non-native mosquitoes when five of the seven birds were found dead. With increasing temperatures due to climate change mosquitoes are able to reach higher elevation forests that were once thought safe for the native forest birds. For more than a year and a half scientists assumed the remaining two birds were dead after tracking these individuals for months without resighting them. This bird has been exposed to disease, as the others were, and somehow persevered. The resighting of this particular bird is a sign of hope for this species. We will be installing a passive audio recording device soon to determine whether he is still in the same area.





USFWS DELISTING OF SPECIES

It was announced in September that the U.S. Fish and Wildlife Service proposed to declare 22 species of animals and one plant species extinct and remove them from the endangered species list. On the list of newly declared extinct species were 8 Hawaiian bird species. The Hawaiian species that may soon be declared officially extinct are the Kaua'i 'akialoa, Kaua'i nukupu'u, Kaua'i 'o'o, Large Kaua'i thrush, Maui 'akepa, Maui nukupu'u, Moka'i creeper, and po'ouli. These 8 species have been presumed extinct by researchers for some time now, with the most recent sighting being the po'ouli in 2004. With the announcement of these species being delisted, there is greater pressure to save the species that are presently struggling. Currently, the largest threat to Hawai'i's forest birds is avian malaria carried by introduced mosquitoes. MFBRP is working with a team of other agencies and organizations to help eliminate mosquitoes through an incompatible insect technique. Listen to MFBRP's project coordinator, Hanna Mounce's interview on NPR about this subject:

<https://www.npr.org/2021/10/03/1042802549/hawaii-loses-several-bird-species-to-extinction>.



WAIKAMOI & HANAWI DISEASE SURVEYS

MFBRP has been trapping mosquitoes at various sites across three regions (Hanawi, Waikamoi, and Kula) in East Maui for capture rates and specimens for disease prevalence and genetic population structure. We use two trap types, a modified Centers for Disease Control and Prevention (CDCP) light trap baited with CO₂ and active gravid traps baited with fetid water. CO₂ and gravid traps are typically paired. Mosquitoes are collected from traps, identified to species, counted, and preserved in vials with ethanol. These samples are sent off for genomics and analyses for malaria presence. In addition to trapping for mosquitoes, at some sites we are setting up mist nets and collecting blood samples from birds to be tested for the presence of avian malaria. Kiwiku and 'akohekohe searches were also done with partners in The Nature Conservancy's Waikamoi Preserve as well as in selected locations within Hanawi Natural Area Reserve. This work will help collect necessary data to implement mosquito control measures and help recover native forest bird species (see <http://dlnr.hawaii.gov/mosquito> and https://mauiforestbirds.org/wp-content/uploads/2021/03/2020_report_Newsletter_FINAL.pdf).



Habitat Restoration

NAKULA HABITAT RESTORATION UPDATES

In 2020, we installed 30 coir rolls in Nakula Natural Area Reserve to help prevent erosion. We went back into Nakula to perform our annual point count bird surveys and also planted 248 seedlings behind these coirs (see photo below). These coirs are working how we hoped- collecting soil and preventing it from eroding into the ocean. These plants will further prevent erosion. We also had two summer planting trips to install 40 more coirs and plant 2,500 more seedlings.



PUBLICATIONS

- Warren, C.C., Berthold L.K., Mounce H.L., Luscomb P., Masuda B., Berry L. 2021. 2019 Kiwiku Conservation Translocation Report. Pacific Cooperative Studies Unit Technical Report #203. University of Hawai'i at Mānoa. Honolulu, HI. 103 pages.
- Population estimates and trends for three endemic species of Hawaiian honeycreepers on Maui island. Journal of Field Ornithology.

MAHALO TO VOLUNTEERS & MORE: (JAN-SEPT)

Unfortunately, due to COVID19 precautions, we have not been able to host volunteers as readily as we have in the past but we've still had some amazing help this year.

In January and February, we had help from partners to conduct avian disease surveys in Eastern Waikamoi. Thanks to The Nature Conservancy, Maui Nui Seabird Recovery Project, the University of Hawaii Hilo Listening Observatory for Hawaiian Ecosystems lab, and Maui Bird Conservation Center.

We've also had help on other disease study trips and Nakula restoration trips from various partners: DLNR-DOFAW, Haleakalā National Park, Plant Extinction Prevention Program, Maui Invasive Species Committee, Volunteers Melissa Simon, Kurt Ongman, Kara Winter, Ty Sharrow, Kallalei Ryden, Madison Gallagher, Amy Hodges, Ryan Pfoest, Leila Morrison, Natalie Wrokwicz, Hunter Craft, Sonia Vallocchia, Ann Marie Andres.

We also had help collecting mosquitoes on various properties including from Skyline Eco-Adventure Ziplines, Garden of Eden, Merwin Conservancy, Native Nursery, and individuals Alex Tranovich, Amy Hodges, Jay Penniman, Fern Duvall, and Cathleen Bailey.

Mahalo to everyone who has supported us this past year. We know it's a difficult time. We appreciate the emails, messages on social media, letters, and donations.



Partners & Updates

ROSE-RINGED PARAKEET MULTI AGENCY EFFORT

In July a new invasive pest, a rose-ringed parakeet, was captured in Maui. These birds, native to Africa and Asia, can be a significant threat to agriculture, native ecosystems, and economies. They are one of the most widespread and successful invasive species in the world. Escaped pets have led to established populations on Kaua'i and O'ahu islands that have caused significant agricultural losses and they can impact native forest vegetation. When gathered in large roosts, their loud calls and mass accumulation of droppings disrupt daily life and can be a potential public health hazard. There currently are no established populations on Maui and organizations are trying to keep it that way! Efforts by the Maui Invasive Species Committee, Hawai'i DLNR/DOFAW, Maui Nui Seabird Recovery Project, and MFBRP took place this year to capture and remove these birds. Rose-ringed parakeets can be identified by their long tails, red beaks, and loud calls. If you see a bird fitting this description please report it at (808)643-PEST or www.643pest.org



A Hui Ho

In the past six months, we had to say a hui hou to two of our amazing team members!

While we were very sad to see them go, both were offered amazing conservation positions, still on Maui, that will help them further their careers and increase their personal conservation capacity and impact here in Hawaii. Additionally, they are both still working as MFBRP partners so we still get to work with them each often.

Chris Warren has been with MFBRP since 2012. He not only managed our data and GIS work but was also a birding force in the field. He is a very well-rounded biologist and he is thriving in his new position as the Forest Bird Coordinator at Haleakala National Park.

Zach began with MFBRP as a volunteer in 2014, continued on as a KUPU member in 2017, and became a field associate in 2019. We are proud to have seen him grow and develop into a great conservation leader. He transitioned to the Maui Plant Extinction Prevention Program, who are lucky to have him.

