

KIWIKIU NEWS

Newsletter from Maui Forest Bird Recovery Project



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Project Updates

'ALALĀ PROJECT

'Alalā Project activities have ramped up in the past few months with multiple site visits to review the suitability of potential release sites in Maui Nui. We also have more planned in the coming months. Planning and cultural team members hiked existing trail networks at candidate locations to assess nesting habitat, abundance of fruiting plants, and forest structure. As omnivores, 'alalā rely on fruit as a food resource, but also insects and the occasional egg or nestling. Complex forest structure, with diverse assemblage of plant species from knee-high to a towering canopy, can serve as an indicator of food resources that would be difficult to survey directly on short visits. We infer a healthy insect population if there are an abundance of hiding places and a rich array of plant species for food for insects in a complex forest. Other factors considered by the team included the condition of trails and obstacles to navigation for field crews and proximity of existing infrastructure. Mahalo nui loa to our partners James Espaniola, Ane Bakutis, and Jon Brito for all their support in organizing logistics and serving as excellent guides for these trips, and to Lance DeSilva for those to come!

'Alalā Project and Maui Forest Bird Recovery Project staff recently joined a partner conservation project on the mainland to gain valuable experience in the safe handling of corvids. The health and safety of birds and crew is our top priority, so this experience to practice safe handling techniques and fit radio transmitters to birds with a project that is permitted and already handles large numbers of corvids was a valuable experience in anticipation of our next releases.

STAFF CHANGES & UPDATES

Our team just keeps on growing! We recently welcomed Laura Navarette and Layla Rohde as this year's MFBRP Kupu 'Āina Corps members. We are excited to have both Laura and Layla joining us as part of our crew.

In March, Erin Bell and Natalie Wronckiewicz grew into the roles of Avian Research Associates. Erin and Natalie both bring lots of great background experience and knowledge to our team and we are excited to see them continue to grow in their new roles.





East Maui Forest Bird Surveys

The East Maui Forest Bird Surveys were completed this spring. We can't believe that it's already been five years since we last surveyed East Maui! Recall our [Spring 2017 newsletter](#).

These surveys are a large undertaking and we could not have completed them without the help and support of our partners as well as our amazing team here at MFBRP. Agencies and volunteers who assisted included in our Mahalo section (pg. 08).

Twenty-nine transects were surveyed using the variable circular plot point count method when a surveyor stands at a station for eight minutes and records the species, distance, and type of detection (aural or visual) for each bird observed. Some transects have ten stations and others have 40 stations. Each station is 100-200m apart. Some transects require the survey teams to backpack and carry all of their gear in a 60 lb pack, down the mountain, and camp in order to survey for multiple mornings. Counts are only conducted in the morning so the teams have to be efficient, careful, observant, and fit enough to complete the transect.

The East Maui transects are located in TNC's Waikamoi Preserve, Makawao Forest Reserve (FR), Ko'olau FR, Hanawā Natural Area Reserve (NAR), Hāna FR, Haleakalā National Park, Kīpahulu FR, Kahikinui FR, Kahikinui Hawaiian Homelands, Nakula NAR, Auwahi Wind, and Kula FR.

Surveys often include challenging terrain including varying vegetation from subalpine shrubs to uluhe or non-native weed thickets, feral ungulates or the damage they have caused, and large and difficult to cross gulches. One can also experience some very close encounters with honeycreepers. It is an experience of early mornings, exhaustion, and awe.

As we have just finished these surveys, we have not entered the data yet. However, we did detect kiwīkiu and 'ākohekohe on at least seven transects (there are a few more transects to do as well).

An analysis of the data such as this report published from the last survey will take some time to do. We look forward to having more up-to-date population estimates of our most imperiled species. This will help guide decision-making to come and the best locations to implement management like mosquito control techniques.





Avian Research & Management

PREDATOR CONTROL GRID INSTALLATION

In February, our team installed a predator control grid at our Frisbee Meadows site in Hanawi NAR on the windward slope of Haleakalā. Within this pristine native forest site, there are six native Hawaiian honeycreepers, including the endangered kiwikiu and 'ākohekohe. The team of nine installed 135 A24s, 15 body-grip stations, and 15 DOC250 traps. These traps humanely kill introduced predators that have known effects on bird populations and breeding success. The aim of the predator control trapping effort is to reduce the predator populations and allow native forest birds a chance to flourish. Rats are also seed predators, thus reducing their populations will also have a positive effect on native vegetation! MFBRP staff abides by the University of Hawaii Institutional Animal Care and Use Committee in all of their animal procedures.



KIWIKIU SEARCHING

Kiwikiu searching this time of year mostly involves being in the right place at the right time to hear a male sing and then chase those males until we lose them. We have been encountering several solo males up at Frisbee Camp (up to ten detections so far and potentially more). The females remain silent and have not been spotted, but that doesn't mean they're not around, this species is hard to detect if they're not vocal. We did have one young male that just whistled and chipped at Frisbee, choosing to vocalize that way and forage, rather than defend a territory and sing. Down at Po'ouli, at least one male-female pair was spotted above camp and a few different males were heard singing. We also had several detections along the infamous TR8 (a rather perilous East Maui transect). The difficult terrain makes it hard to follow the birds for too long before losing them, with gulches and trees getting in the way. Additionally, we are uncertain if these are the same or different males singing each time because they remain unbanded. These next few seasons in the field will involve a big push to band as many kiwikiu as we can so that we can start tracking movements of specific individuals and who they're paired up with. We'll also be cutting more trails so that we can find, identify, and monitor as many kiwikiu as we can, this means pushing mauka from Po'ouli and makai from Frisbee (although they don't necessarily connect). We continue to make and use traditional habitat range maps at camp, but the use of new data apps on the work phones will help us map territories a lot easier.





Habitat Restoration

NAKULA FOREST RESERVE

MFBRP, in association with Pacific Cooperative Studies Unit and Maui Invasive Species Committee, just completed a 2,000 seedling planting trip in Kahikinui Hawaiian Homelands. This area is just becoming fenced and ungulate free and has suffered significant damage due to feral ungulates. Planting will help return this forest to its once diverse vegetation. Additionally, this area is adjacent to Nakula Natural Area Reserve where we have been planting and restoring (with partners and volunteers) since 2013. Creating more contiguous forests on the leeward slope of Haleakalā will help many native species as well as the watershed.

We installed one song meter near where we resighted MAPA#1. We will be going back up to Nakula in May to check the song meter, plant native seedlings behind already installed coirs in erosion scars, and conduct the annual point counts that help us monitor the avian population in the area.

MOSQUITO WORK

MFBRP has been trapping mosquitoes at various sites across East Maui to determine capture rates and look at specimens for disease prevalence and genetic population structure. We use two trap types, modified Centers for Disease Control and Prevention (CDCP) light traps baited with CO₂ and active gravid traps baited with fetid water. Mosquitoes are collected from traps, identified to species, counted, and preserved in vials with ethanol. These samples are used for genomics and analyses for malaria presence. In addition to trapping 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.

Kiwikiu and 'ākohekohe 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.





MOSQUITO WORK CONTINUED



Last fall, we completed the Western TNC Waikamoi Preserve study- wherein we set up eight sets of mosquito traps along two elevation gradients (6300ft and 5500ft). Additionally, blood samples were collected from birds to test for avian malaria (a non-native disease that typically kills Hawaiian Honeycreepers) at both elevation sites. Fortunately, no mosquitoes were collected, but some of the bird blood samples have come back positive. This is not unexpected; we have seen elsewhere in Hawai'i that there is now some presence of malaria in most bird populations but it is not known at what threshold rare honeycreeper populations can no longer persist. Birds and mosquitoes do move up and down the mountain and birds can contract the disease at lower elevations (where temperatures allow mosquitoes and avian malaria to exist), then return to higher elevations.

By the beginning of this year, we repeated similar surveys in the eastern section of TNC's Waikamoi Preserve at five different sites. Encouragingly on these surveys, we were able to band three kiwikiu from two of the sites.



This year, we are conducting the same study methodology that was completed in Western Waikamoi in Hanawi Natural Area Reserve at two sites: Frisbee (6800ft) and Poouli Camp (5300 ft). Each season, we will have two trips for mosquito trapping and mist-netting. We are also conducting kiwikiu searches and have thus far been able to detect some in the area. We have only completed one season though! Season 2 starts at the end of April!

The MFBRP team has also been working with crews from across the state to standardize our mosquito trapping techniques and protocols. Our team has trained with crews from US Fish and Wildlife Service, DLNR-DOFAW, and Kaua'i Forest Bird Recovery Project.



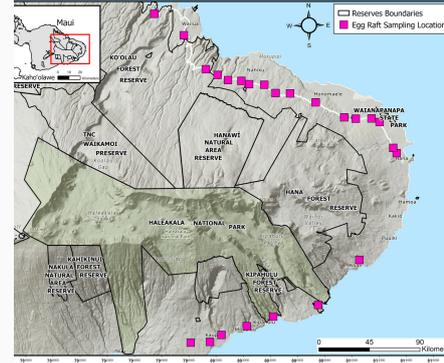
EGG RAFT ADVENTURES

MFBRP staff have been busy making late night and early morning drives around East Maui along Hana Highway to sample for mosquito egg rafts. Evening drives are spent setting up ovicups filled with stinky water in an effort to attract female mosquitoes looking to lay eggs. Then early morning drives are spent checking the ovicups and recording and collecting any egg rafts found. Collected egg rafts are then sent off to the lab to determine which strain of Wolbachia is present.

This work is vital because researchers have found that Wolbachia plays an important role in insect reproduction. Males with one strain of Wolbachia cannot produce viable offspring with females with a different strain of Wolbachia, or females without Wolbachia. This has led to the development of a form of mosquito “birth control” called Incompatible Insect Technique (IIT).

With the IIT approach, male mosquitoes are intentionally infected with a specific strain of Wolbachia in a controlled laboratory setting. These infected males are then released to target areas and when they mate with uninfected females, or with females that have an incompatible strain of Wolbachia, their offspring are nonviable. With consecutive implementation of IIT, mosquito populations decrease because new generations are not produced in the wild.

Our Hana Highway adventures to collect mosquito egg rafts for Wolbachia testing will provide researchers the necessary information to ensure male mosquitoes that will be released as part of the IIT approach are truly incompatible with the mosquitoes present in endangered forest bird habitat on Maui.





NEWS & EVENTS

Here are some upcoming events that MFBRP will be participating in:

- The next Maui Mauka Conservation Awareness Training will be held on April 28th from 10:00 am-1:00 pm. MMCAT trainings are geared to provide visitor industry professionals information to share with guests about ongoing conservation efforts on Maui. The training is free and anyone can attend, but everyone must register. Each training consists of presentations given by representatives from Maui Forest Bird Recovery Project, Maui Invasive Species Committee, and East Maui Watershed Partnership and a guest speaker. The guest speaker for this training is Ekolu Lindsey, president of Maui Cultural Lands. For more information and to register visit www.mauimauka.org
- MFBRP will be participating in Maui Huliau Foundation's Mauka Careers Exploration Day on May 1st in 'Āao Valley which is part of their ongoing Career in Conservation Series. All Maui high school and college students are encouraged to participate in this in-person event where students can learn hands-on career skills from professionals working to protect Maui's natural resources and ecosystems. This event will feature four activity stations from 9 am to 2 pm run by local professionals working in these fields, as well as information tables featuring volunteer, internship, and employment opportunities in these fields. This event is free to Maui County residents ages 14-21 and lunch will be provided. To participate you must be able to attend the entire event from 9 am to 2 pm. Participation is limited to just 48 students, so apply now to reserve your spot!
<https://mauihuliaufoundation.org>
- Maui Brewing Company and Maui Forest Bird Recovery Project are partnering once again for a Pint Night for the Birds. Help Maui Brewing Company's Lahaina Restaurant donate 50% of house beer profits from 6-10 pm to MFBRP. Please drink responsibly and have a designated driver. Maui Brewing Company brewpub is located at 4405 Honoapiilani Hwy in the Kahana Gateway Shopping Center, just north of Lahaina.
- Looking for a gift for that bird lover in your life? Head over to our online store and check out the MFBRP and 'Alalā Project merchandise that we have available. Money raised through our store purchases goes back to helping the birds and the work that we do. Visit <https://mauiforestbirds.org/shop/>
- Join MFBRP and Lonoa Honua as we participate in regular aha ceremonies to bring awareness to and reaffirm our ties with our many (bird) friends. We will gather together, via Zoom, every 10 days to help build a relationship with our native birds. Join us as we contribute to a pulse of vitality for our manu family through these 'aha every anahulu, alternating sunrise and sunset. These aha will be streamed live on the Lonoa Honua Facebook page.
SUNRISE (6:15am HST): 4/16, 5/6, 5/26, 6/15, 7/5, 7/25, 8/14, 9/3
SUNSET (6:15pm HST): 4/26, 5/16, 6/5, 6/25, 7/15, 8/4, 8/24, 9/13

MAHALO TO VOLUNTEERS & MORE

Agencies that assisted in the East Maui Forest Bird Surveys include the Department of Land and Natural Resources-Division of Forestry and Wildlife, Native Ecosystem Protection and Management, and Admin crews, The Nature Conservancy, Maui Nui Seabird Recovery Project, KUPU Hawaii, Haleakalā National Park, U.S. Fish and Wildlife Service, Windward Aviation, Haleakalā Ranch, Department of Hawaiian Homelands, Auwahi Wind, and Leeward Haleakalā Watershed Restoration Partnership. Over 30 people helped including volunteers, John Vetter, Christa Seidl, Erin Johnson, and Sam Aruch.

Mahalo to volunteers Duncan Yeaman and Tim Albares who helped the MFBRP team install the predator control grid.



Mahalo to everyone who has supported us by donating HawaiianMiles. These donations help our crews to fly inter-island for meetings, workshops, presentations and trainings.

We want to say a big mahalo to the Haku Baldwin Center for donating horse manure to use in the creation of stinky water bait for our mosquito trapping efforts.



In February, MFBRP hosted an online fundraiser to help us replace items that were taken during a break-in at our office facility. Funds received through this campaign were matched up to \$2,022 thank to a very generous donor. In total we were able to raise over \$9,000! A huge mahalo to all who participated and helped in this fundraiser.

IN MEMORY OF DR. FERN DUVALL II

We are deeply saddened to share the news that we lost a mentor, friend, supporter, and colleague with the passing of Dr. Fern Duvall II. Fern started his conservation career in Hawai'i in 1984 as a contractor for the State of Hawai'i helping to develop methods for the hatching and rearing of 'alalā on Hawai'i Island. Fern worked for the State of Hawai'i Department of Land and Natural Resources for over 30 years pursuing his passions for conservation and wildlife. He helped start the Maui Bird Conservation Center in Olinda, was a wildlife biologist focusing on species at Kanaha Pond Wildlife Sanctuary, and most recently managed the Native Ecosystem Protection and Management Program for Maui Nui. Even though Fern recently retired, he continued to be an ambassador for native species as he served on a variety of committees and boards. Fern was a wonderful conservationist, mentor, colleague, and friend. He will be greatly missed and leaves behind a legacy. We were lucky to have known and worked with him. Let us all be more like Fern, taking in the world around us and remembering to "talk less and study more".

