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KIWIKIU NEWS

Newsletter from Maui Forest Bird Recovery Project

This issue:

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Project Updates

MOSQUITO RESEARCH/CONTROL TEAM -IIT IMPLEMENTATION

Statewide efforts to advance the potential for landscape-level mosquito control have been slowly ramping up the past two years. During this time Birds, Not Mosquitoes (BNM) was formed, a collaboration of State, Federal, and private, non-profit partners evaluating the potential for control of mosquitoes, specifically the use of Wolbachia bacteria that leads to population suppression and reduces disease prevalence in native forest birds. An environmental assessment on using this biopesticide with a Hawaiian strain of Culex quinquefasciatus (the mosquito culprits), and an incompatible strain of Wolbachia will be released by the National Park Service and the State of Hawai'i Department of Land and Natural Resources. Distributing Woldbachia mosquitoes to Hawai'i is a multi-step process that requires review and permission from state and federal agencies. The importation and biopesticide regulation is a public notification process. A decision on whether to release Wolbachia mosquitoes in the forests of Hawai'i will only be made after substantial community engagement and input. The next steps are to map out the distribution of male mosquitoes on the Maui landscape and to do a Mark-Release-Recapture study showing where these mosquitoes are.

We are beginning to recruit the team needed for these efforts. Gabriel Figueroa joined the crew this month and is the first on the team as a Research Associate. Karla Trigueros was working with us earlier this year in a similar capacity but moved on to Colorado to attend graduate school.

STAFF CHANGES & UPDATES

The crew at MFBRP has continued to expand! We have welcomed Lilli Patton and Hope Caliendo to our team. Both have recently started working with MFBRP as Kupu ʻĀina Corps. Welcome Lilli and Hope, we are happy to have you both as part of the team.

Hunter Craft who has been volunteering and working with us since 2021 recently switched from the Kupu Conservation Leadership Development Program to Kupu ʻĀina Corps to continue his work with us until June 2023.

Home

The ʻAlalā Project

The ʻAlalā Project has been continuing to meet and discuss the potential of releases of ʻalalā in Maui. In September visits to the identified potential release locations concluded. These site visits provided a chance to view and compare locations island-wide as our team looks for the best fit for a release site. A big mahalo to all of the people who helped make these site visits a possibility and participated in ranking each location.

Staff from The ʻAlalā Project and Maui Forest Bird Recovery Project held the first community informational meeting in July at Kahanu Garden in Hana. Additional gatherings followed this meeting in the Keʻanae and Kaupō communities. These informational meetings were a chance to share information about ʻalalā and the future conservation plans for this species as well as hear concerns and gather feedback from local communities. Our staff has also been conducting in-reach presentations with other conservation organizations and other communities that may be impacted by future releases. Community members attending these events have been supportive of the effort and we look forward to working with them as the project progresses.

In August members of The ʻAlalā Projectʻs planning team met with Carl Jones and Dr. John Ewan two highly accomplished and well-known conservationists. This meeting was an opportunity to gain knowledge and share resources about the species as well as learn what others have done to conserve similar species around the world.

After nearly a year of deliberation and field visits, The ʻAlalā Project Maui Nui Planning Group selected two sites for review in an Environmental Assessment and Cultural Impact Assessment. Those sites are within the Koʻolau and Kīpahulu Forest Reserves within the contiguous native forest of east Maui. Both release sites present a continuum of habitat and resource features (e.g., conditions regarding intact native forest and precipitation) that allow a hypothesis-based release strategy for the factors that are most important to the success of ʻalalā.

Staff are also busy testing equipment that will be necessary for a successful release. Natalie and Lilli helped us pilot a solar-powered telemetry transmitter in the forest to test how well this technology would work in our field sites.

Home

Mosquito Research & Control

BIRDS NOT MOSQUITOES PARTNERSHIP

Maui Forest Bird Recovery Project has been working with partners as part of the Birds, Not Mosquitoes partnership. This partnership is dedicated to saving Hawai'i's native honeycreepers from extinction. To learn more about the partnership or read their recent newsletter click here. This newsletter contains a lot of wonderful information including an extensive Q&A section for the Incompatible Insect Technique.

The Birds, Not Mosquitoes partnership is moving from the planning phase to the preparation phase, meaning that the BNM partners are currently writing Environmental Assessments (EA) for the implementation of mosquito control on East Maui and Kaua'i. Each of these EA's will have public input opportunities. If the Environmental Assessments find that there will be significant impacts, then an Environmental Impact Statement will be pursued.

ABC STATE OF THE BIRDS REPORT

Last month, the North American Bird Conservation Initiative released its 2022 State of the Birds Report and highlighted Hawai'i birds on page 14. This report was put together by 33 leading science and conservation organizations and agencies and is the first comprehensive look at the nation's birds since a study in 2019 showed that there has been a loss of nearly 3 billion birds within the United States and Canada in 50 years. While this sounds depressing and sad there is still hope. The report also discusses ways to help our bird species including the use of the incompatible insect technique and Wolbachia bacteria. The full report can be seen here.

EAST MAUI EGG RAFT COLLECTION

During the spring and summer, the MFBRP crew set out cups with stinky water all around east Maui, made to attract female mosquitoes ready to lay eggs. Our goal was to collect mosquito eggs across different areas and elevations to test the incompatibility of all Maui mosquitoes in helping to develop Wolbachia IIT mosquito control. The samples were hatched to adults in the lab and we are able to use these mosquitoes to learn more about the strains of Wolbachia that are already present on East Maui.

Home

Mosquito Research & Control Cont.

TRAPS WITH SOUNDS AND SCENTS CATCH MALES

MFBRP Staff has been experimenting for the past couple of months with different trapping techniques to increase male mosquito capture rates at low-elevation sites. With guidance from professional partners, we have set up experimental trapping grids to test the effectiveness of different lure types ("stinky" chemical lure vs. CO2 gas vs. sound) in attracting males within Makawao Forest Reserve. Sound lures are of particular interest because they are programmed to imitate the wing beats of females in the hopes that it will attract males. A big mahalo to volunteer Austin who provided his expertise and guidance in setting up the experimental grids and assisting in running the traps during their first week of deployment.

Our crew led by the newest MFBRP member, Gabe, goes out twice a day to check
traps for male mosquitos and reset traps for the following trapping day.

This is just the first phase of a broader experimental trapping effort. Staff are also training at being able to identify common mosquito species, special shout out to Nicole from the Hawai'i Department of Health for giving an informative mosquito ID demo and providing useful mosquito ID guides.

OTHER MOSQUITO WORK

The MFBRP crew has been researching avian disease in two sites in Hanawi NAR, Frisbee at 7,000ft and Poouli at 5300ft. There are two week-long trips per season (Feb/March, April/May, July/August, and October/November). We will be wrapping up the project at the end of the year. During the trips, we have two sets of traps that we set. One will collect adult female mosquitoes overnight and the other type to collect mosquito eggs. We caught mosquitoes at Po'ouli camp but not Frisbee. We also collect blood samples for avian disease prevalence. Mosquitoes and blood samples will be analyzed in the next few months.

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Avian Research & Management

BIRD BANDING TRAINING

In September, four of our staff attended a Banding Workshop held in Pu'u Wa'awa'a on Hawai'i island. DLNR-DOFAW and Point Blue Conservation Science conducted the workshop. Banders from across the State attended in order to discuss best practices and calibrate amongst the islands. The workshop instructors were able to give the group valuable information on bird safety and training tips to form such protocols. MFBRP conducts our banding efforts with experienced permitted banders under the State of Hawaii DLNR-DOFAW banding permit.

SEABIRD BANDING PARTNERSHIPS

This October, MFBRP teamed with Maui Nui Seabird Recovery Project to band hundreds of ‘ua’u kani (Wedge-tailed Shearwater) chicks. The ‘ua’u kani is an abundant seabird of the Pacific and Indian Oceans that lands only to breed in burrows they excavate themselves. On Maui, banding took place at three different nesting colonies including Kama‘ole III, Ho‘okipa, and Hāwea where banders extracted chicks from their burrows to place a steel band with a unique 9-digit code around their leg. This annual event occurs before the chicks fledge, or leave their burrows, in November and the placed bands allow biologists to study their dispersal and survival when they are recaptured as adults years later.

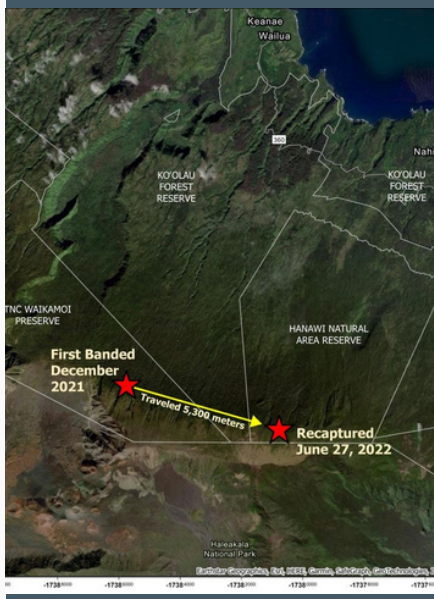
KIWIKIU SEARCHING/BANDING

Our team has been working at two sites within Hanawi Natural Area Reserve (NAR) to document kiwikiu in the upper and lower bounds of their range. The two sites are Poouli Camp at 5,300ft and Frisbee Camp at 7,000ft. Staff utilized a survey form for recording auditory and visual detections of kiwikiu. Along with the location of sighting, notes on behavior, interactions with other birds, foraging habits, sex, and age were taken on each individual seen and heard. If a bird has a unique color band combination, that information is documented as well to track kiwikiu resights for later home range estimations. We estimate that we detected seven pairs at each site; however we detected juvenile kiwikius only at Frisbee site, the higher elevation site and the site with predator control.

Home

We were able to color-band four male kiwikiu at Frisbee. This allows us to identify individuals from afar and resight them to track their movements and survival over time. We also set up mist nets and banded all species of birds. We collected data to look at disease prevalence to gain more knowledge about disease in the area and its threat to endangered birds like kiwikiu.

This past summer our field crew recaptured a male kiwikiu that had been initially banded in December of 2021 as a hatch-year bird. The bird was recaptured about 5,300 meters from where he was first captured in 2021. By mapping these capture locations we can start to piece together what a breeding home range might look like for this species. This is super exciting for our project as this is the first time we have found that information for an adult kiwikiu that we caught as a hatch-year bird.



We will be doing rapid assessments of kiwikiu and mosquito presence in The Nature Conservancy's Waikamoi Preserve at the end of the year.

Habitat Restoration

NAKULA NATURAL AREA RESERVE

We had a planting trip to Nakula NAR in May. We planted behind erosion control coirs that had been placed last year. We also planted a tree in memory of Dr. Fern Duvall, who was a mentor to MFBRP for many years. Along with planting and seed collection, we also did forest bird surveys along three transects. Next year, we will be monitoring our 10-year (!) experimental restoration plots.

After re-discovering MAPA 1 in Nakula NAR last year, a song meter was deployed to ascertain this amazing bird's whereabouts. Many hours of recordings have now been collected from the song meter, and MFBRP has partnered with the Listening Observatory for Hawaiian Ecosystems (LOHE) bioacoustics lab at UH-Hilo to detect kiwikiu vocalizations in the recordings. Instead of listening to each recording one by one, the data will be run through a state-of-the-art algorithm developed at the Cornell Lab of Ornithology. MFBRP is excited to learn more about MAPA 1's incredible story in Nakula NAR.

In September, volunteers from Explore Maui Nature assissted with collecting seeds in Kula Forest Reserve for restoration. We were able to collect from māmane and ʻōhelo plants.

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PREDATOR CONTROL

We have been managing the predator control grid each month at the Frisbee Meadows site in Hanawi NAR. This grid uses three types of traps to control non-native predators in order to protect nests and nesting birds. We have detected around five kiwikiu pairs with juveniles who are within the predator control area. We are planning on expanding the predator control grid to protect more birds from these non-native predators.

Four of our staff assisted Pūlama Lāna'i with their successful predator control grid in July. The trapping efforts help to protect seabirds, like Hawaiian petrels and wedge-tailed shearwaters, who nest on the island at various elevations.

NEWS & EVENTS

Here are some events that MFBRP has or will be participating in:

- MFBRP and 'Alalā Project staff were interviewed and highlighted as part of the Threatened podcast. This podcast features host Ari Daniel and explores how humans are answering the call to protect the birds of Hawai'i, and how the lives of these birds are connected with the lives of the Hawaiian people. Listen to Threatened, season 3 here.
- We had a wonderful time participating in the Mālama Wao Akua Art Exhibition opening reception. It was wonderful to see everyone who stopped by. All of the submitted art was amazing. This exhibition is still able to be seen in person at Hui No'eau or online at https://malamawaoakua.org/2022-mwa-exhibit/
- The next Maui Mauka Conservation Awareness Training will be held on Dec. 1st from 12:00 pm-3:00 pm at the Kealia Pond National Wildlife Refuge. 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. For more information and to register visit www.mauimauka.org
- 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. We currently have a sale on our keiki t-shirts! Visit https://mauiforestbirds.org/shop/

Home

MAHALO TO VOLUNTEERS & MORE

- Nakula restoration and Hanawi bird research: Sara Goñi
- Hanawi PC and bird research help: Duke Del Beato, Cody Lane, Kristi Fukunaga, Hannnah Landwerlen, Jacob Drucker, Lila Fried, Frank Parker, Adrian Burke
- Mosquito help: Amy and Jasmine Soriano, Duke Del Beato, Hokua Gilman, Ryan Wagner, Eric Hamren
- KFR seed collection: Volunteer team with Wendy Swee of Explore Maui Nature

In October Hanna and Laura were joined by former MFBRP technician Zach as they accepted a second-place 2021 Outstanding Team Employee of the Year Award from the Research Corporation of the University of Hawai'i. MFBRP is proud to have such an amazing team working together to put extinction in the past!

In August we received a donation of new backpacks for our field crew. These packs are a great addition and allow our crew to carry all of their field gear in style! Mahalo nui to DaKine for this wonderful donation!

MAHALO FOR THE SUPPORT

Mahalo to everyone who supported us during our first Maui Chocolate Laulima Program event.

We want to say a big mahalo to everyone who supported us during the Give Aloha program in the month of Sept. Thanks to you we raised over $400 through this effort!

MFBRP recently ran a fundraising campaign to help us purchase more flight and safety gear to help protect our bird protectors. Mahalo to everyone who helped us in this campaign.

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