

2023

ANNUAL WORKPLAN

Maui Forest Bird Recovery Project





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Maui Forest Bird Recovery Project

MISSION

Our mission is to develop and implement techniques that recover Maui's endangered birds and to restore their habitats through research, development, and application of conservation techniques.

STRUCTURE

Maui Forest Bird Recovery Project (MFBRP) is a project of The Pacific Cooperative Studies Unit of the University of Hawaii at Manoa in association with the Hawai'i Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW), U.S. Fish and Wildlife Service, US National Park Service, and Nā Koa Manu Conservation Inc.



MFBRP TEAM



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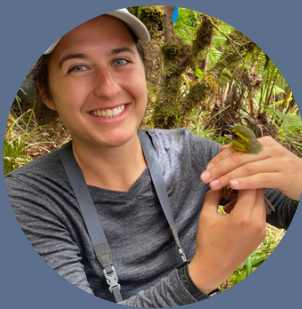
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Research Associate



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POSITIONS TO BE STARTING

KUPU 'ĀINA CORPS

- *'Alalā Team Member*
- *Kiwikiu Team Member*

2023 KIWIKIU CAPTURE TEAM

- *4 hired positions*
- *Additional volunteers*

PARTNERS

All of our work is done in partnership, under advisement, and in collaboration with a number of partner agencies and organizations.

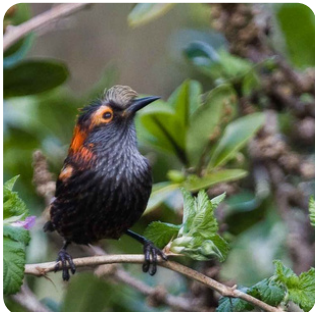
As a part of these collaborations, MFBRP participates in advisory working groups addressing various aspects of our work (e.g. Hui 'Alalā, Kiwikiu Working Group, etc.)



FOCAL PROJECTS



We focus our efforts on the conservation of the most critically endangered of the surviving Maui honeycreepers, the Maui Parrotbill/kiwikiu (*Pseudonestor xanthophrys*) and 'ākohekohe/Crested honeycreeper (*Palmeria dolei*).



These species and other forest birds such as the Maui 'alauahio or Maui creeper (*Paroreomyza montana*) and 'i'iwi (*Drepanis coccinea*) are declining on Maui for many reasons including habitat loss and degradation, introduced predators, non-native ungulates, and introduced diseases.



DISEASE

Today, exotic diseases, such as avian malaria and avian pox, restrict forest birds to high elevations where low temperatures slow the transmission of mosquito-borne diseases and often prevent the survival of the disease organisms. As temperatures increase with climate change native bird populations are moving to higher elevations.



POPULATION MONITORING AND HABITAT MANAGEMENT

We combine habitat management with ornithological research to understand reasons for declines and the ways in which we can help endangered forest bird species recover.



SPECIES RESTORATION

We are working with partners to establish a wild population of 'alalā within Maui Nui, fulfilling historical ecological functions that are currently missing within our native forests.



2023 PROJECTS

- Endangered Maui Forest Bird Population Research & Management - Pg. 8 & 9
- Kiwikiu Capture and Care: Establishment of a captive population to ensure species persistence - Pg. 10
- Mosquito Research and Control - Pg. 11 & 12
- 'Alalā research, recovery, and management - Pg. 13
- Establishing 'alalā in the wild in Maui Nui - Pg. 14
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ENDANGERED MAUI FOREST BIRD POPULATION RESEARCH & MANAGEMENT

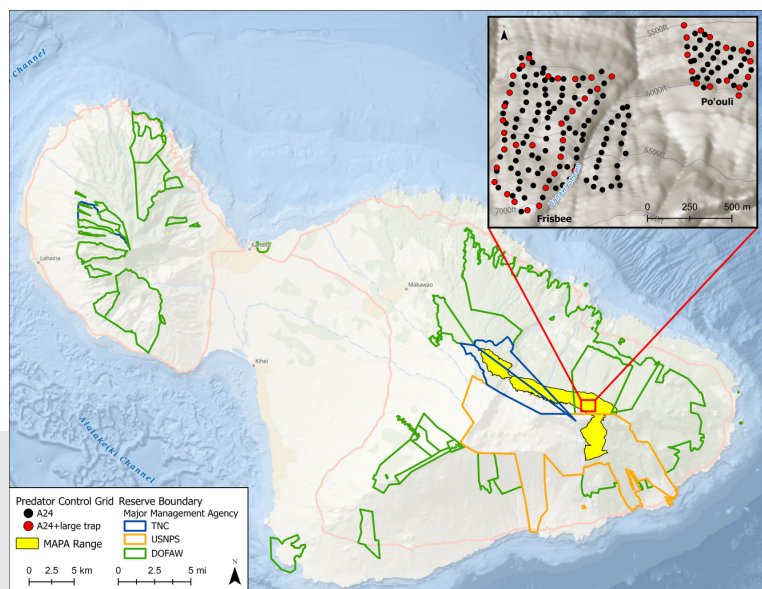
GRANT OBJECTIVES

- Investigate avian malaria spread by *Culex quinquefasciatus*
 - Mosquito trapping and avian blood sampling will be conducted in multiple sites within native forest bird range. Team will support Incompatible Insect Technique (IIT) objectives.
- Collect data to support the assessment of the current kiwikiu distribution limits and demographic factors necessary for planning the continued persistence of these species
 - Variable circular plot point counts will be conducted along the high elevation stations of 9 transects on Windward East Maui. Kiwikiu searches will be performed across kiwikiu range, including areas where birds are being selected for captive holding.
- Directly manage invasive feral cats (*Felis catus*), small Indian mongooses (*Herpestes auropunctatus*), & rats (*Rattus* species) in native forest bird habitat by conducting invasive species control.
 - Staff are maintaining and expanding a predator reduction grid in the 6,000–7,000 ft. elevational area of the kiwikiu and 'ākohekohe range, covering ~70-ha, using three types of traps.
- Engage 10 partner organizations through interagency working groups and assisting partners with projects.
- Participate in 10 in-person or virtual outreach events.



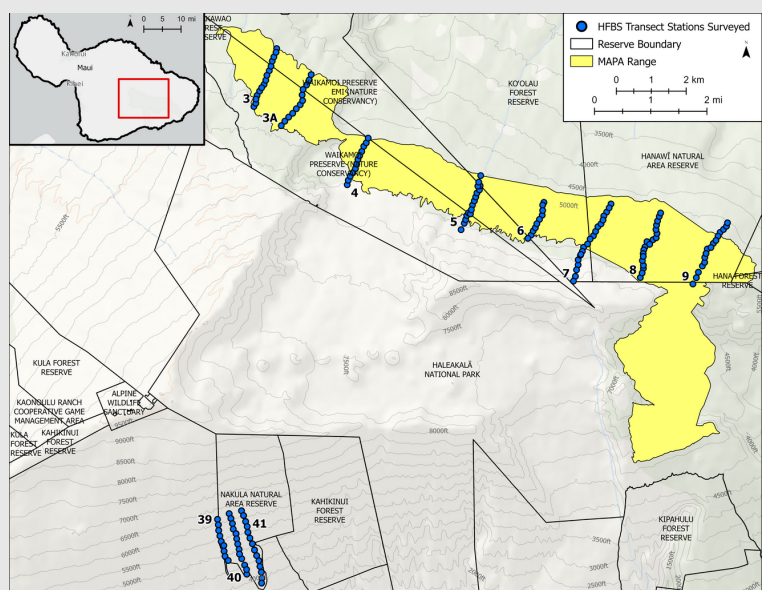
GRANT OBJECTIVES CONTINUED

- Conduct one investigation into forest bird populations at Nakula Natural Area Reserve through variable circular plot point count surveys of birds on three transects twice.
- Provide technical expertise for habitat management and species conservation of native Maui forest birds
 - Staff with assist partner agencies like Pulama Lāna'i, Maui nui Seabird Recovery Project, The Nature Conservancy, and more with bird surveys and forest restoration. 10-year plot monitoring of restoration plots and outplanting will occur in Nakula.
- Communicate with >10,000 individuals through participation in in-person or virtual outreach events, managing a website, active social media engagement, semi-annual newsletter, creation of education materials, and news media. Science communication will be fostered through scientific meetings and in published papers. We will also conduct two tour operator trainings through MMCAT program.



PREDATOR CONTROL GRID

Established predator control grid for the reduction of cats, mongooses, rats, and mice within kiwikiu range of Hanwai NAR.



HAWAI'I FOREST BIRD SURVEY TRANSECTS AND STATIONS

Transects and stations staff conducted variable circular plot point counts during 2023

These efforts are funded and supported by a State Wildlife Grant

KIWIKIU CAPTURE & CARE: ESTABLISHMENT OF A CAPTIVE POPULATION TO ENSURE SPECIES PERSISTENCE

GRANT OBJECTIVES

- Identify optimal capture areas for creating a viable captive population of kiwikiu
- Capture and transfer a maximum of 40 individual kiwikiu to captivity. Sites will be selected across the kiwikiu range to maximize genetic diversity, age and sex ratio, and to minimize impact on wild populations. The kiwikiu population is facing extinction and creating a captive population will allow for the species to survive into the future and for eventual release once mosquito populations and disease have decreased across the landscape.



These efforts are funded and supported by the U.S.
Fish and Wildlife Service
Pacific Island Fish and Wildlife Office

MOSQUITO RESEARCH & CONTROL

GRANT OBJECTIVES

- Hire, train, and assist MFBRP IIT implementation coordinator in leading hiring, supervising, logistics, and management of a UT field deployment team, which will consist of a field/operations supervisor and multiple field crews, each made up of a lead field technician and field associates
- Obtain data, geographic information system (GIS), and outreach coordination assistance to support data management, spatial, education and outreach elements of standing up and running the IIT field deployment team.
- Acquire and oversee necessary support to run IIT field deployment team, including supplies, equipment, training, and transportation (vehicle purchase and management and helicopter contracts).
- Coordinate all IIT field deployment team activities with NPS, DLNR, USFWS, and TNC (a non-governmental partner and manager of a primary site for IIT deployment) to develop project schedule and ensure all required training and Right of Entry and/or research permits are obtained to initiate IIT deployment on key forest bird habitats of East Maui (NPS uses research permits for ROE and associated work permissions regardless of if they meet typical definitions of research).

These efforts are funded by the National Park Service.



MOSQUITO RESEARCH & CONTROL

GRANT OBJECTIVES CONT.



- Collaborate to design and carry out a mark-release-recapture (MRR) study to evaluate survival and dispersal distance of IIT mosquitoes and simultaneously assess relative abundance or density of wild *Culex* population.
 - Staff will perform experimental trapping of male mosquitoes to test effectiveness of different lure types on the attraction of male mosquitoes in Makawao Forest Reserve under expert guidance from partners
 - Establish a MRR study within Makawao Forest Reserve.
- Ensure state import permits, Environmental Protection Agency (EPA) registration or emergency exemption, and state and federal compliance requirements are in place and adhered to throughout the project.
- Regularly deploy Wolbachia IIT mosquitoes in Haleakalā NP, Hanawi Natural Area Reserve, and Waikamoi Preserve. Coordinate with partners and adjust plans/schedules as necessary to ensure best chance at project success.
- Monitor and collect Wolbachia IIT mosquitoes and wild *Culex* mosquitoes in release areas.
- Develop and manage a standardized database for all Wolbachia IIT and wild *Culex* mosquito data; this includes data entry and Quality Assurance/Quality Control (QA/QC) procedures.
- Develop a succinct annual work plan and report that is submitted to NPS for their review, edits, and approval. NPS will share and work with partners, particularly those with jurisdiction over the areas included in this agreement, to ensure excellent communication and ensure work is in line with expectations.
- Analyze and interpret MRR data and IIT field deployment and monitoring data in reports to PCSU and NPS.

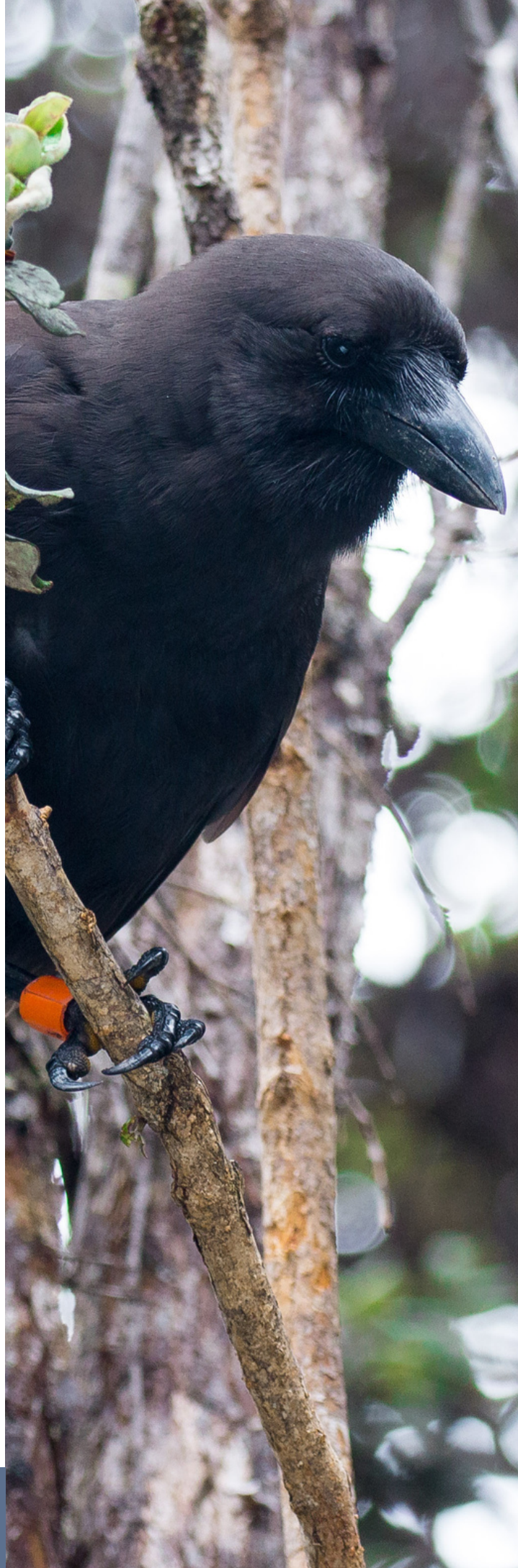
These efforts are funded by the National Park Service.

‘ALALĀ RESEARCH, RECOVERY, AND MANAGEMENT

GRANT OBJECTIVES

- Administer planning of one reintroduction project within Maui Nui through project coordination, administrative support, compliance, tracking project objectives and grant submission and reporting.
- Facilitate and organize the development of one reintroduction plan by project partners for the release of ‘Alalā at a new release area within Maui Nui.
- Coordinate and organize a moderated quantitative site selection process to select release sites within the selected new release area within Maui Nui.
 - The process involves communication with native Hawaiian community members and remote field visits to preferred sites.
- Provide technical support for an investigation on the natural predator (‘io, Hawaiian Hawk) distribution and occurrence on Hawaii Island.
- Conduct 10 outreach presentations or events and maintain 2 project websites.

These efforts are funded by a USFWS Section 6 grant obtained and supported by State DOFAW



ESTABLISHING 'ALALĀ IN THE WILD IN MAUI NUI

GRANT OBJECTIVES

- Construct two program support facilities (a flight conditioning aviary and a release aviary) within Maui Nui
- Conduct one investigation on Hawaiian Hawks ('io) on Hawai'i Island to determine their spatial movements and habitat use.
- Develop one release plan for a new reintroduction site within Maui Nui.
- Directly manage four invasive species (cats, mongooses, black rats, and Polynesian rats) within the future release area within Maui Nui to prepare for reintroduction efforts.
- Directly manage up to 10 'alalā within Maui Nui through reintroduction, monitoring, and recovery.

These efforts are funded and supported by a competitive State Wildlife Grant



ENVIRONMENTAL ASSESSMENT FOR THE RELEASES OF 'ALALĀ WITHIN MAUI NUI

GRANT OBJECTIVES

- Conduct one scoping period to consult with stakeholders and local landowners on the proposed action of the reintroduction of the 'Alalā to Maui Nui.
- Hold one public meeting to gather public commentary to be documented in the environmental assessment document for the reintroduction of the 'Alalā to Maui Nui.
- Develop one environmental assessment document for the reintroduction of the 'Alalā within Maui Nui.

These efforts are funded and supported by
USFWS Discretionary Funds



MFBRP is an active member of the following two projects/programs

BIRDS NOT MOSQUITOES

Birds, Not Mosquitoes is a multi-agency partnership, urgently working to save the native honeycreepers of Hawai'i from extinction. Our plan is to use common, naturally-occurring bacteria as a "mosquito birth control" to suppress mosquito populations in Hawai'i.



Mosquitoes carry serious diseases including avian malaria, which threatens to drive many native Hawaiian forest bird species to extinction in the next few years.

To combat this problem, scientists have developed a method to transfer a naturally-occurring "birth control" bacteria to local mosquitoes in a lab. Only male mosquitoes, which don't bite birds or people and therefore don't transmit diseases, would be released. These male mosquitoes would mate with wild female mosquitoes, but their eggs would not hatch.

This safe, targeted technique could drastically reduce mosquitoes in our forests and potentially save our birds from extinction.

www.birdsnotmosquitoes.org

MAUI MAUKA CONSERVATION AWARENESS TRAINING

MMCAT's goal is to create a mutually beneficial partnership between conservation professionals and tour guides that enhances the quantity and quality of environmental interpretation about Maui's unique species and environments.

In 2013, East Maui Watershed Partnership (EMWP), Maui Forest Bird Recovery Project (MFBRP), and Maui Invasive Species Committee (MISC) collaborated to develop Maui Mauka Conservation Awareness Training (MMCAT). These trainings focus on watersheds, native flora and fauna, and invasive species. Presentations are simple, educational, and fact-based. MMCAT is a train-the-trainer model of working with tourists.



www.mauimauka.org

MFBRP FUTURE NEEDS



MFBRP tries to stretch our funds as far as possible but there are always additional funding needs.

While public funds provide much of our annual operating costs, these funds are limited and the need for these funds is continually expanding to new challenges and new species.

The rest of our operating costs are fulfilled by small grants, corporate donations, and private donations of all sizes. MFBRP is financially sponsored by the not-for-profit Nā Koa Manu Conservation which allows us to accept financial support from these private sources.

www.nkmconservation.org



NĀ KOA MANU
CONSERVATION

MAJOR PROJECT NEEDS



VEHICLES

With the work our team does, reliable, safe, and field-appropriate vehicles are a constant need.


The roads we traverse are often rough on our vehicles so maintenance is important as well.

We need a full-size 3/4 ton or larger 4WD truck (~\$100K).

Additional funds will help us to maintain current vehicles, mostly >15 years old (~\$15K).

MAJOR PROJECT NEEDS

GEAR & OTHER SUPPLIES

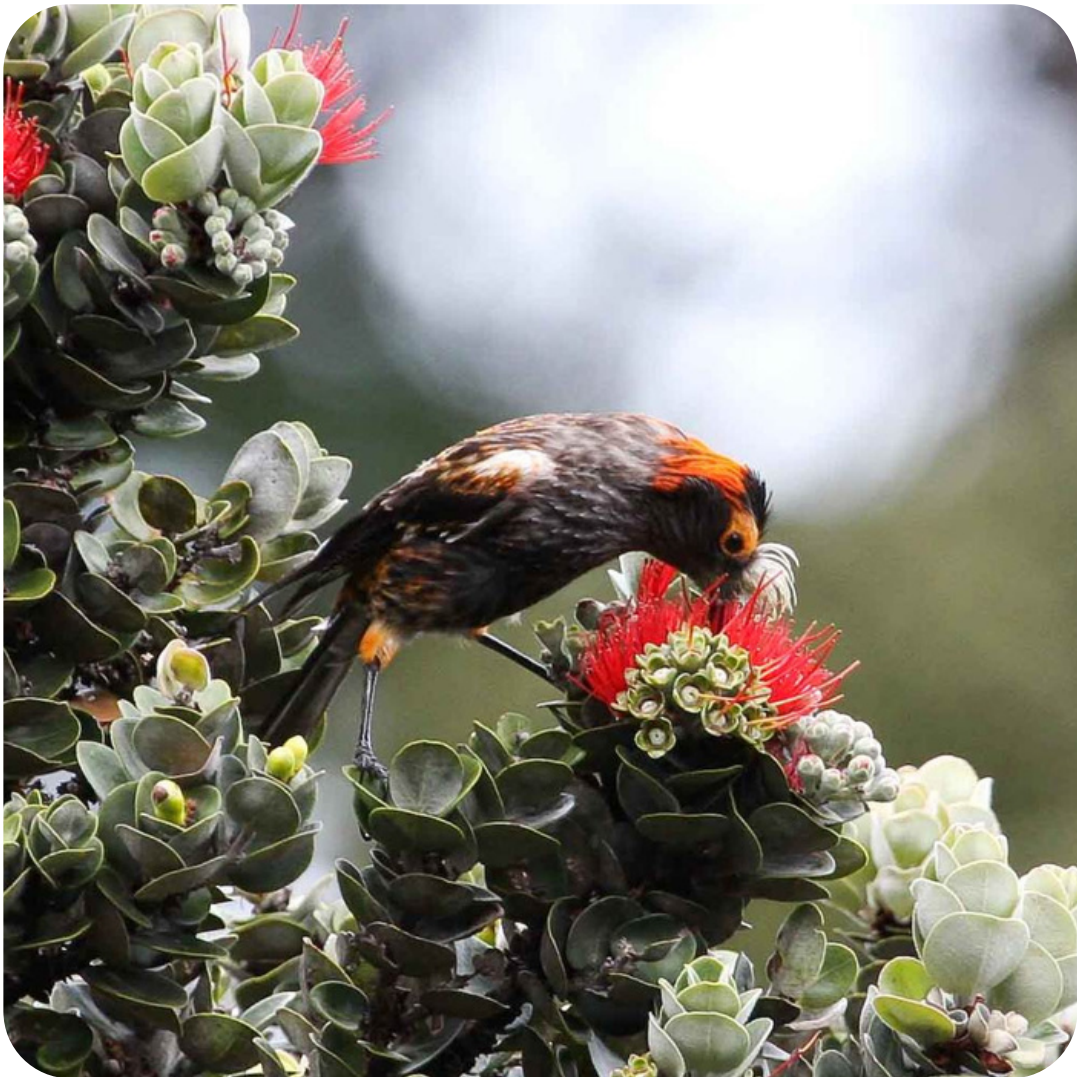


We put our gear to the test! Some gear is specialized and expensive such as helicopter helmets, digital radios, and mosquito traps. Other gear is ordinary like tents, boots, and raingear but costs add up. All of it is necessary to help keep our crew safe and able to do the work needed to save our species.

We continually need >\$35K annually for field gear and general supplies.

MAHALO NUI LOA

*Mahalo to all of our
partners, sponsors,
supporters, and dedicated
team members.*



WAYS TO FOLLOW/SUPPORT

