



Saving the Kiwikiu (*Pseudonestor xanthophrys*): Recovery Efforts in Maui, Hawaii

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Kiwikiu Recovery Efforts 2005-2019

**RESEARCH
RESTORATION
REINTRODUCTION**



POPULATION



POPULATION

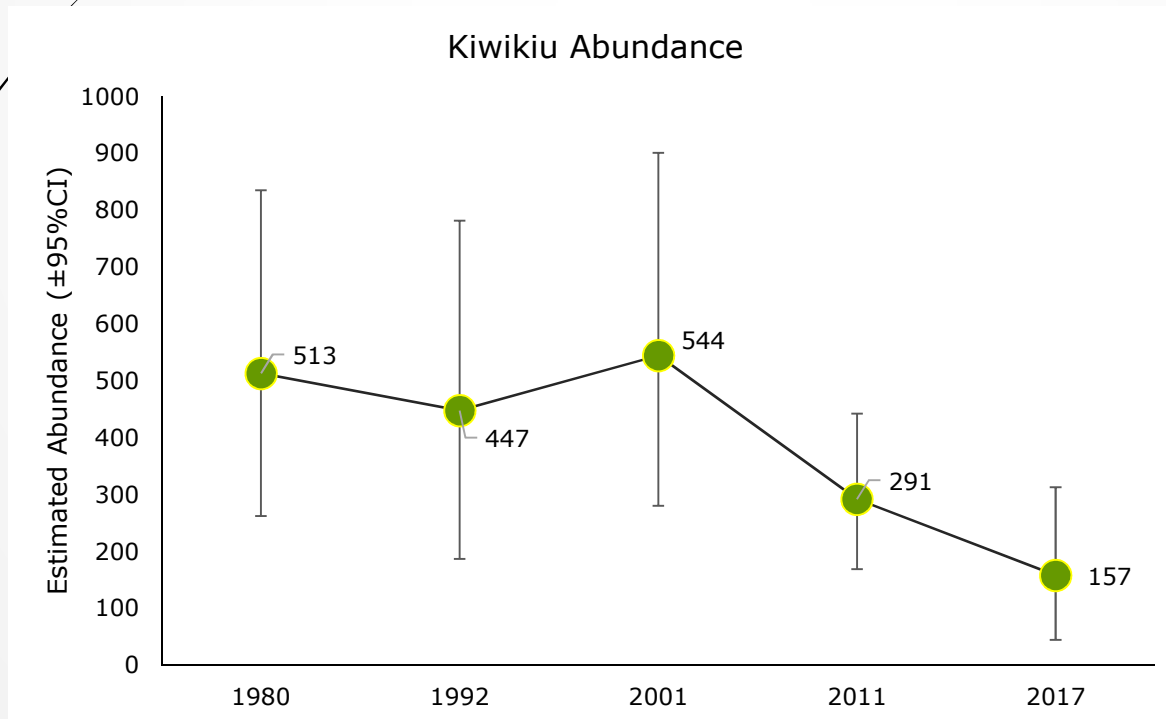


Kiwikiu (Maui Parrotbill; *Pseudonestor xanthophrys*)

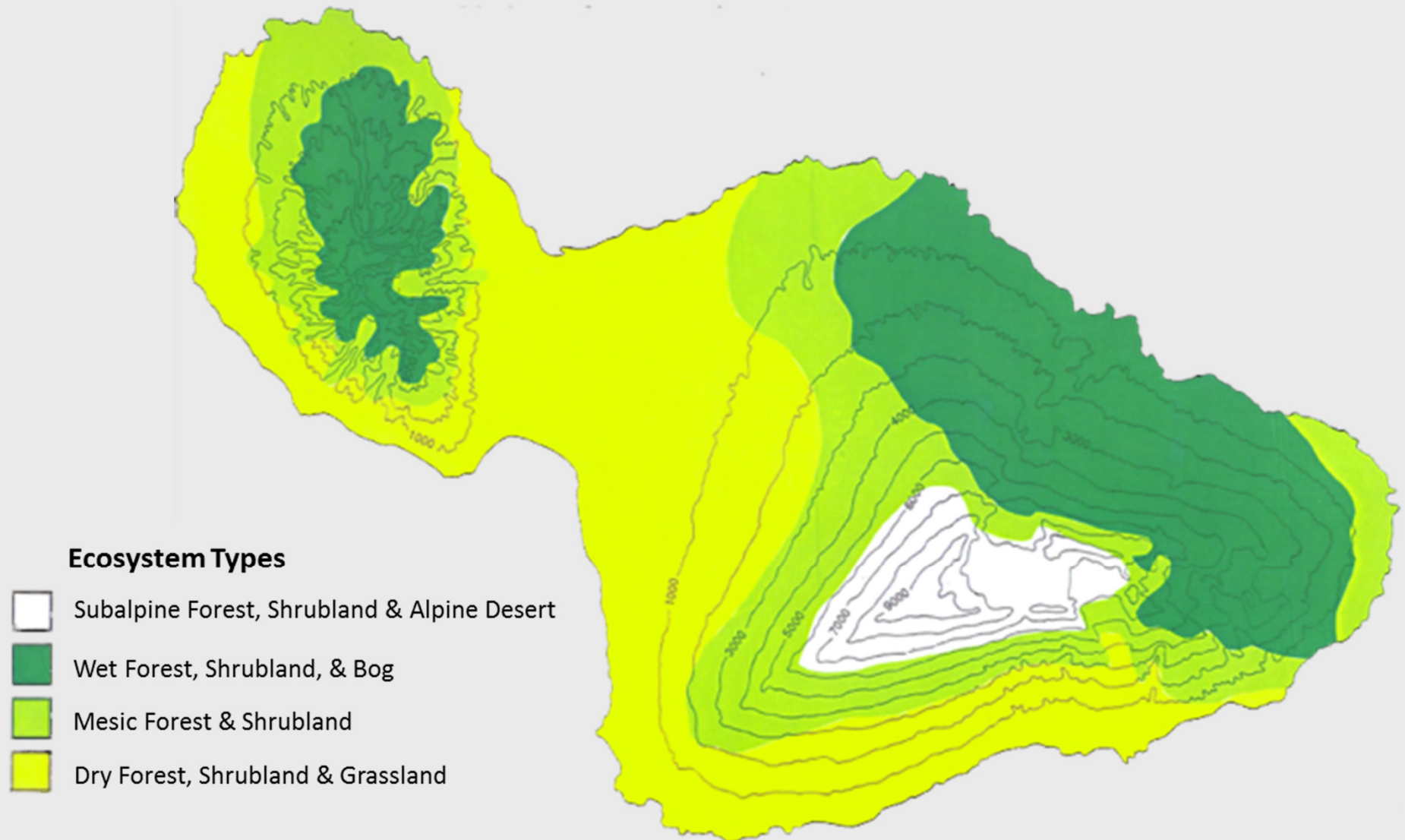
- **critically endangered**
 - insectivorous
 - Hawaiian honeycreeper

Population estimates reveal **continued decline** even in protected habitats with **<312 individuals** left in the wild.

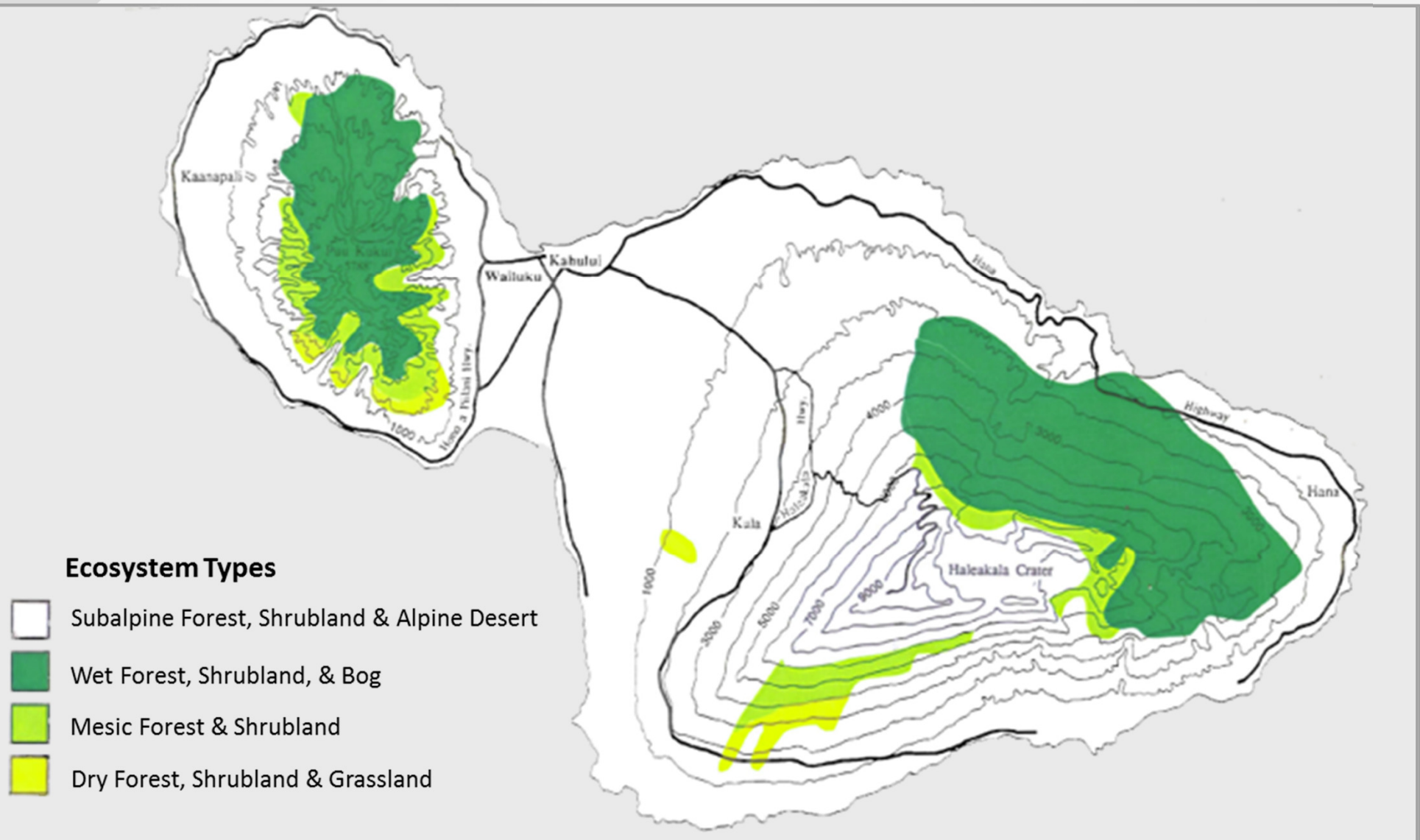
POPULATION



THREATS



THREATS



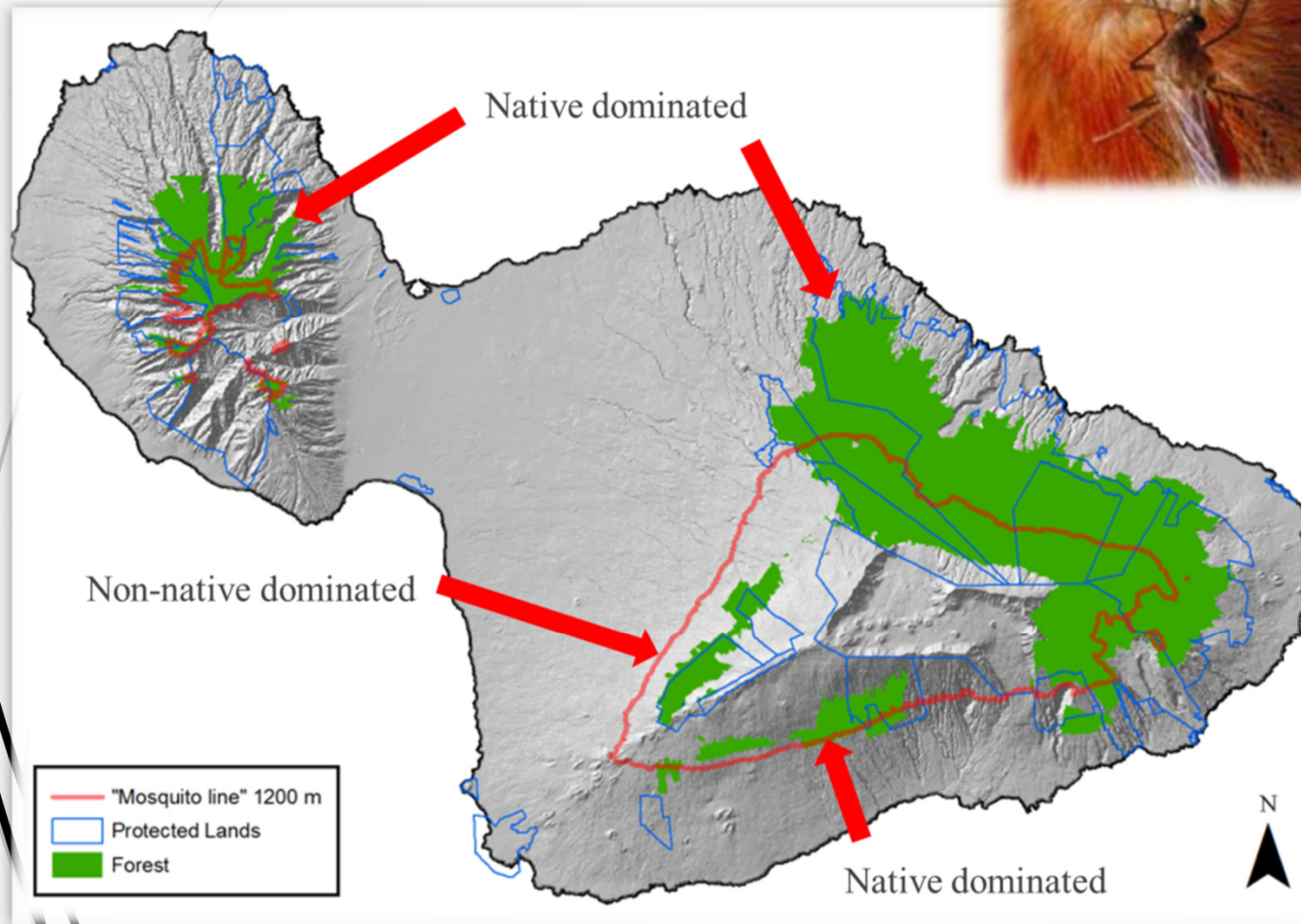
THREATS



THREATS



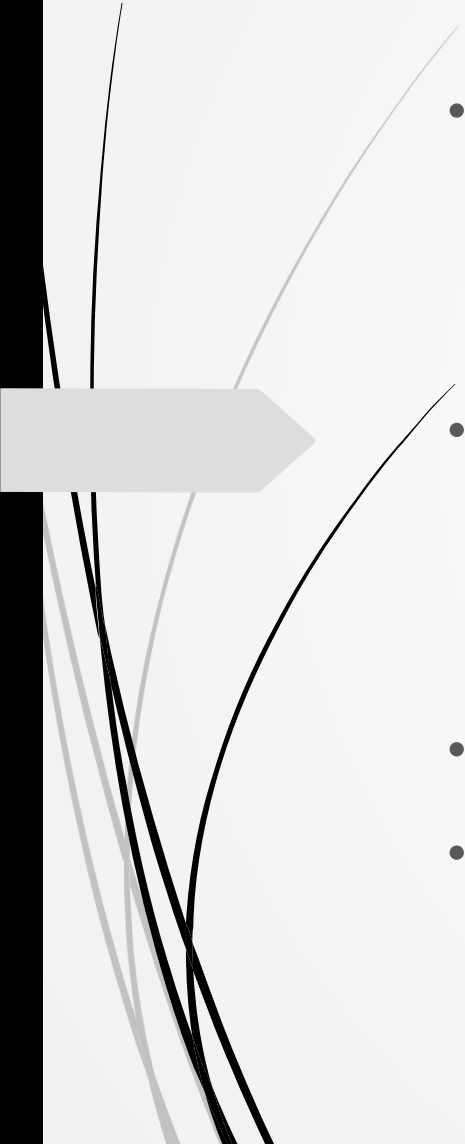
THREATS



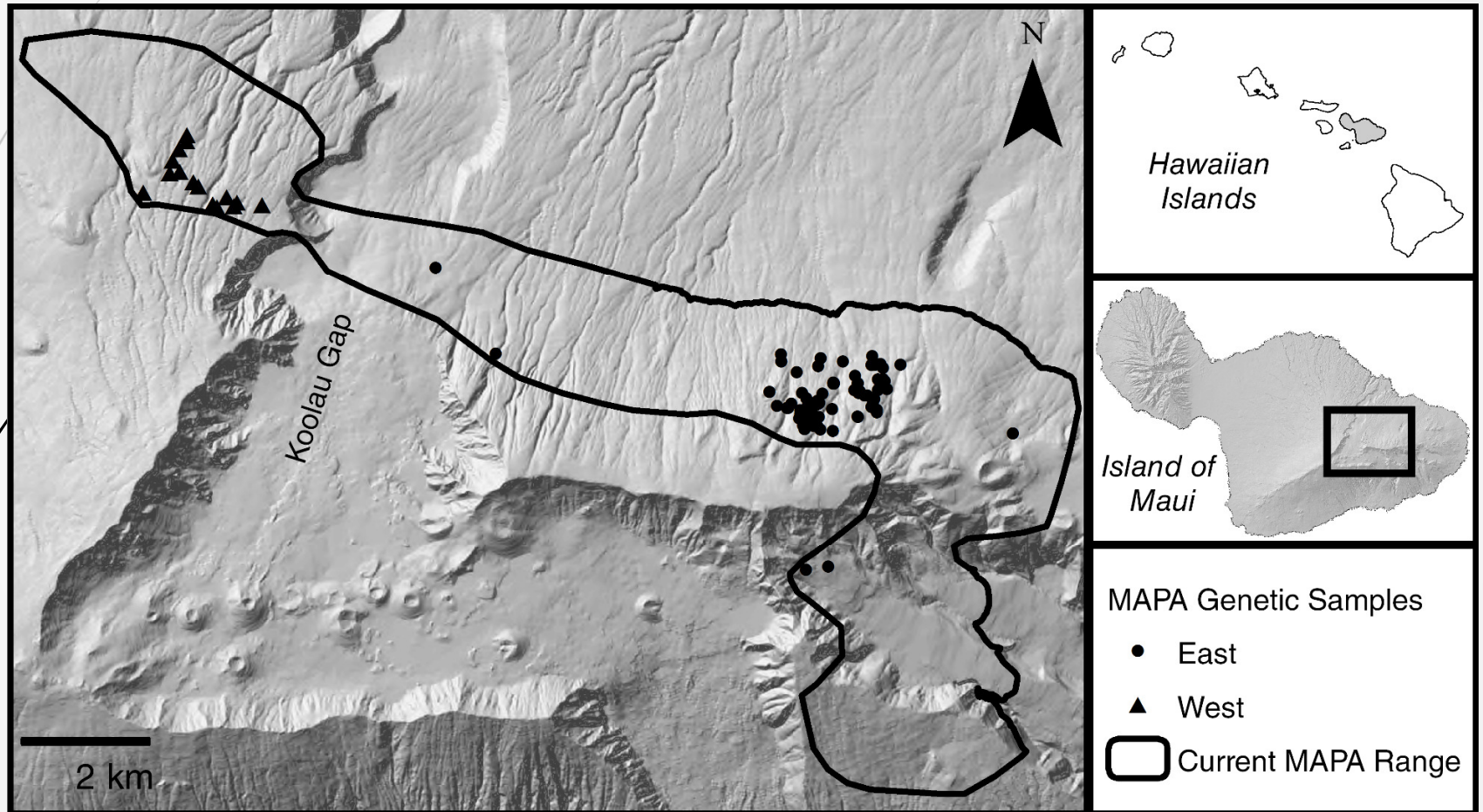
RESEARCH



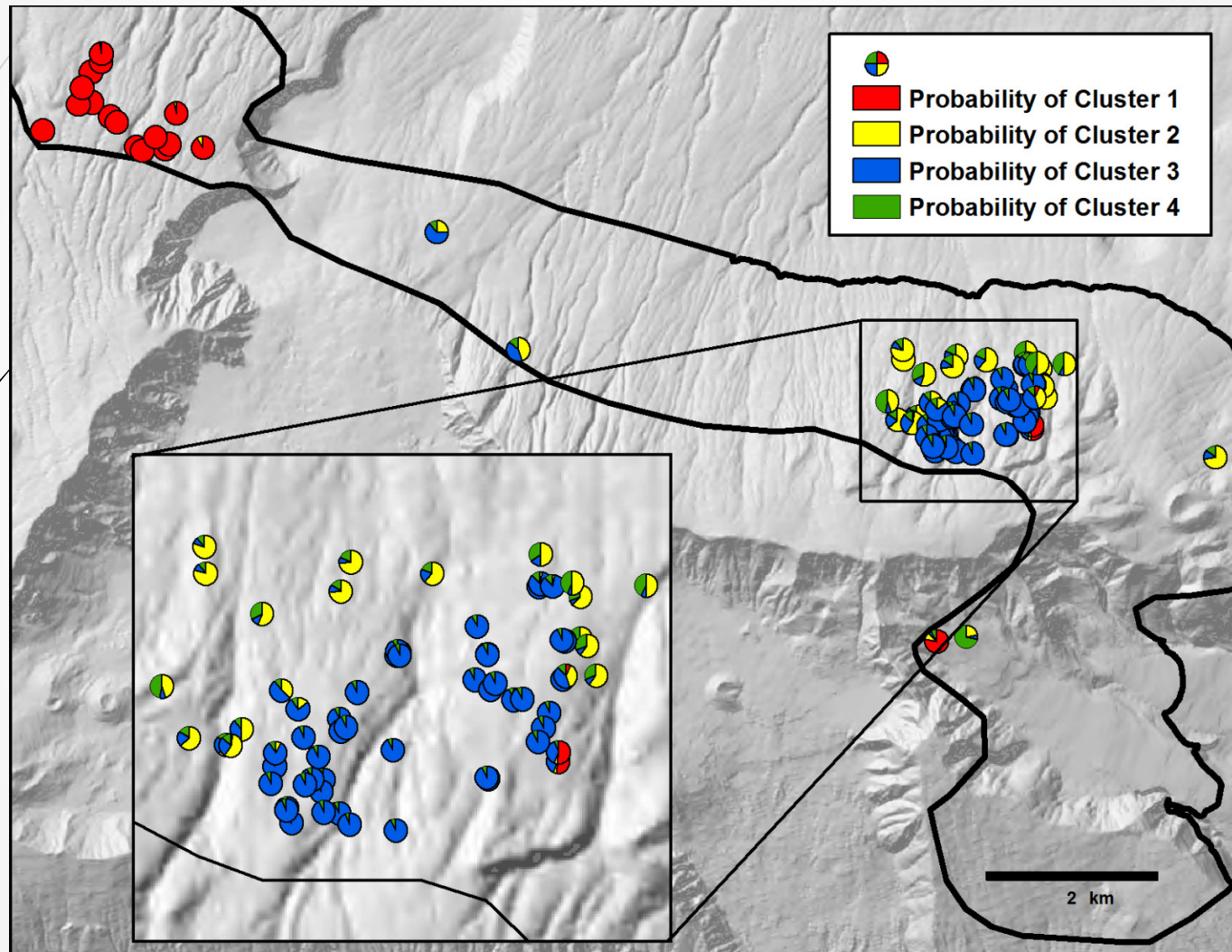
RESEARCH

- 
- Productivity studies
 - Habitat “full”
 - Low productivity given species biology
 - Nests are failing in heavy weather events
 - Survival studies
 - High adult survival
 - Low juvenile survival/recruitment
 - Productivity limited by weather - Habitat
 - Survival limited by space available - Habitat

RESEARCH



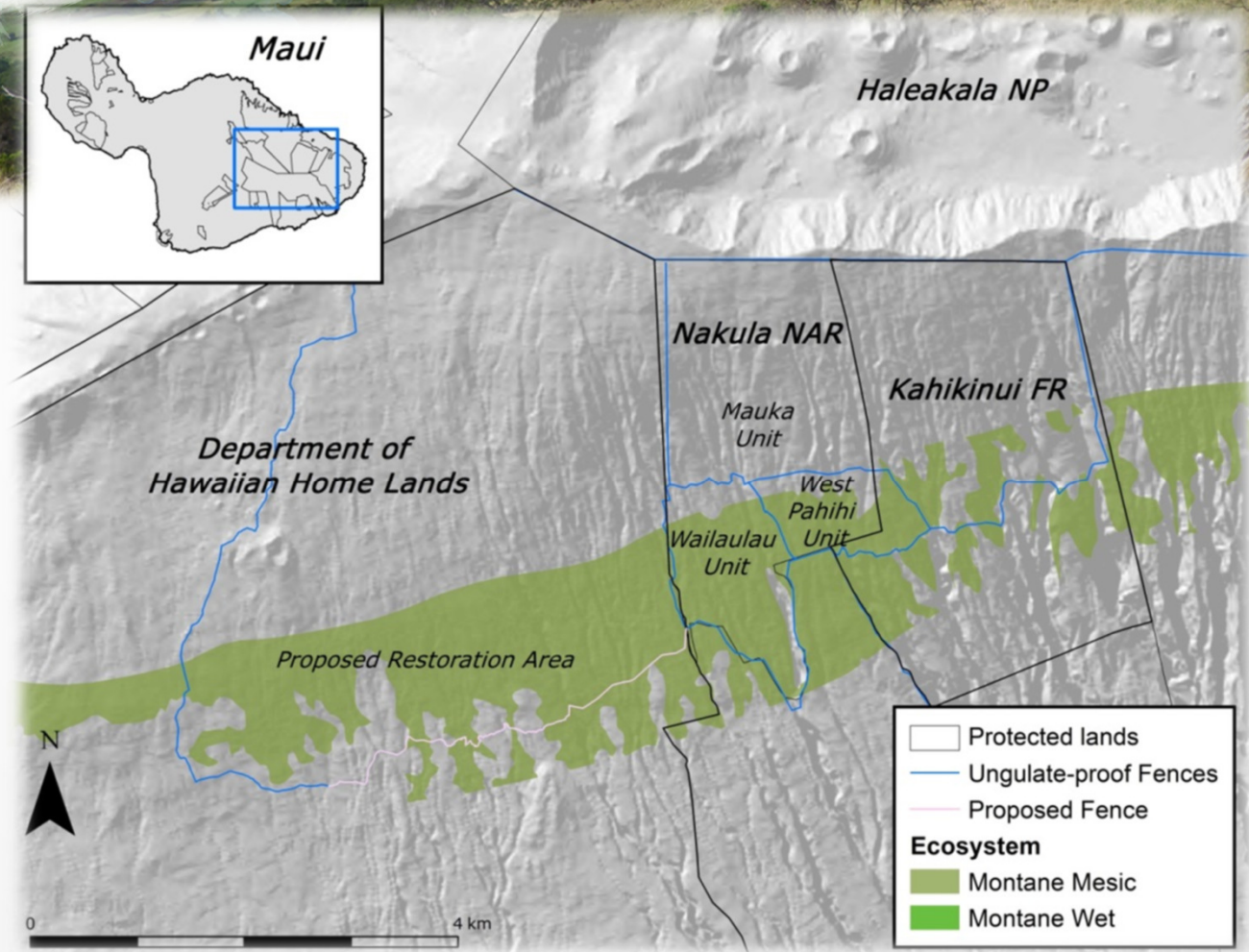
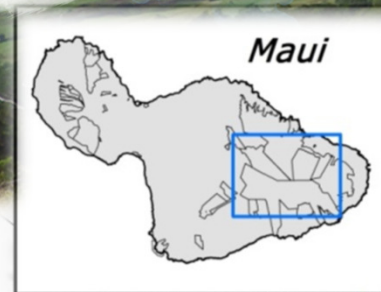
RESEARCH



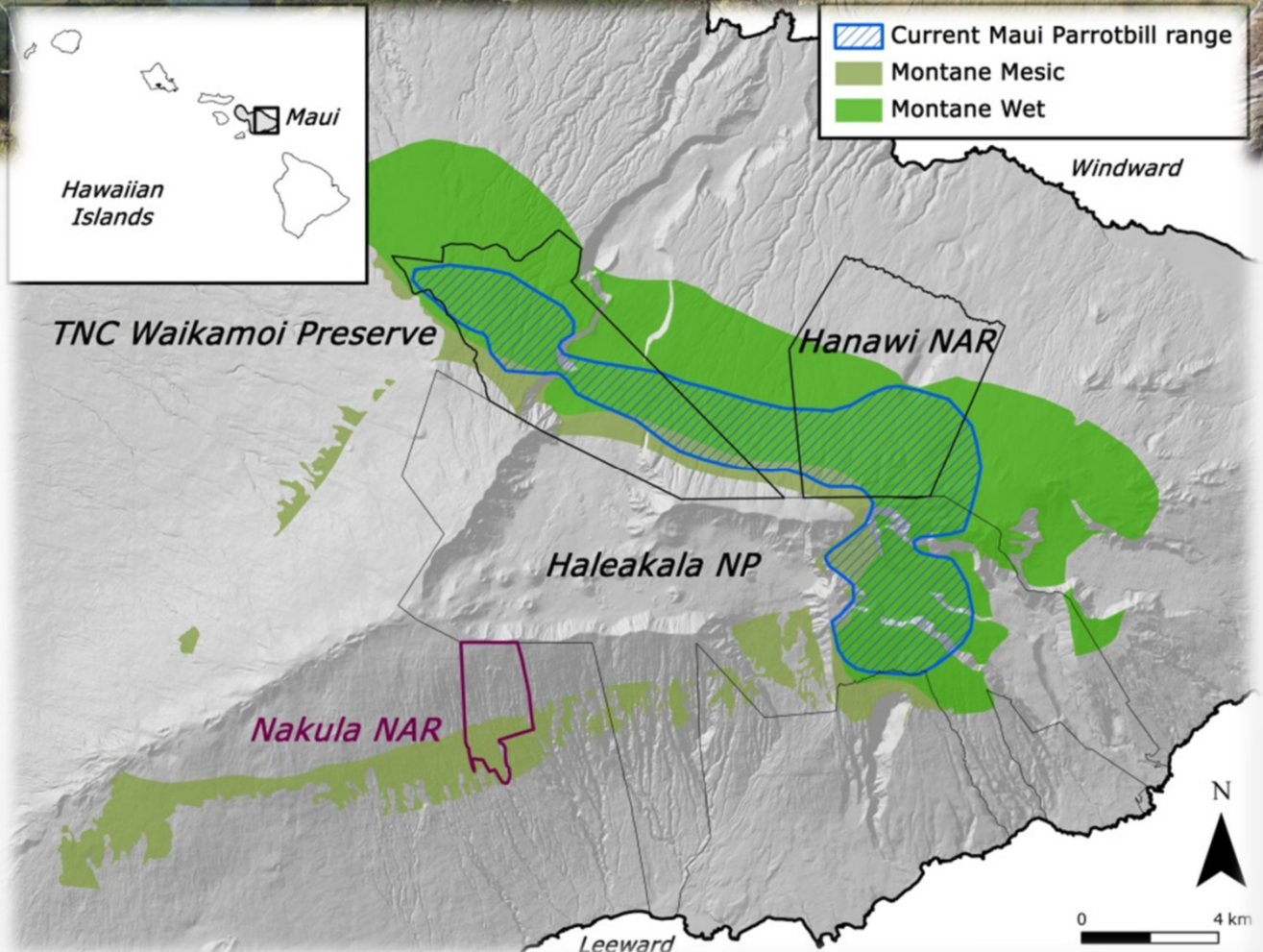
Kiwikiu Translocation



Kiwikiu Translocation



Kiwikiu Translocation



RESTORATION





RESTORATION

- Fencing/ungulate removal
- Restoration trials
- Landscape level restoration

RESTORATION



RESTORATION



RESTORATION

- Fencing/ungulate removal
- Restoration trials
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- Outplanting was very successful; 82% two-year survivorship.
- Nakula is returning to a **primarily forested habitat** through widespread natural regeneration and broad-scale plantings.
- **> 250,000 seedlings** of 16 native tree and shrub species have been planted on leeward slopes with plans for more restoration across the region.
 - Future challenges will be in **restoring woody plant diversity** to the site, which may be critical to long-term success for Kiwikiu.

REINTRODUCTION

The short-term goal of this reintroduction is to create a disjunct population of Kiwikiu, separate from the main source population, which survives through multiple years.



REINTRODUCTION

The long-term objective is for the newly established population of **Kiwikiu** to be self-sustaining, successfully breeding, and achieve sufficient size to provide significant protection from extinction in case the source population is threatened or extirpated.



REINTRODUCTION

Completed tasks prior to reintroduction include:

- **Reintroduction Plan** finalized.
- Funding secured.
- Disease, mosquito, prey, and predator abundance surveys conducted.
- Nakula forest bird community monitored through repeated annual census.
- **Threat reduction** for cats, mongooses, and rats ongoing.
- **Release aviaries** constructed.
- Supplemental feeders designed.





**October
2019**

Birds to be captured
in Hanawi NAR

2019 - 2020

Future

**November
2019**

Bird releases
in Nakula NAR

Monitoring and
behavioral observations

Evaluation of the
release will inform
planning for future
translocations.

REINTRODUCTION

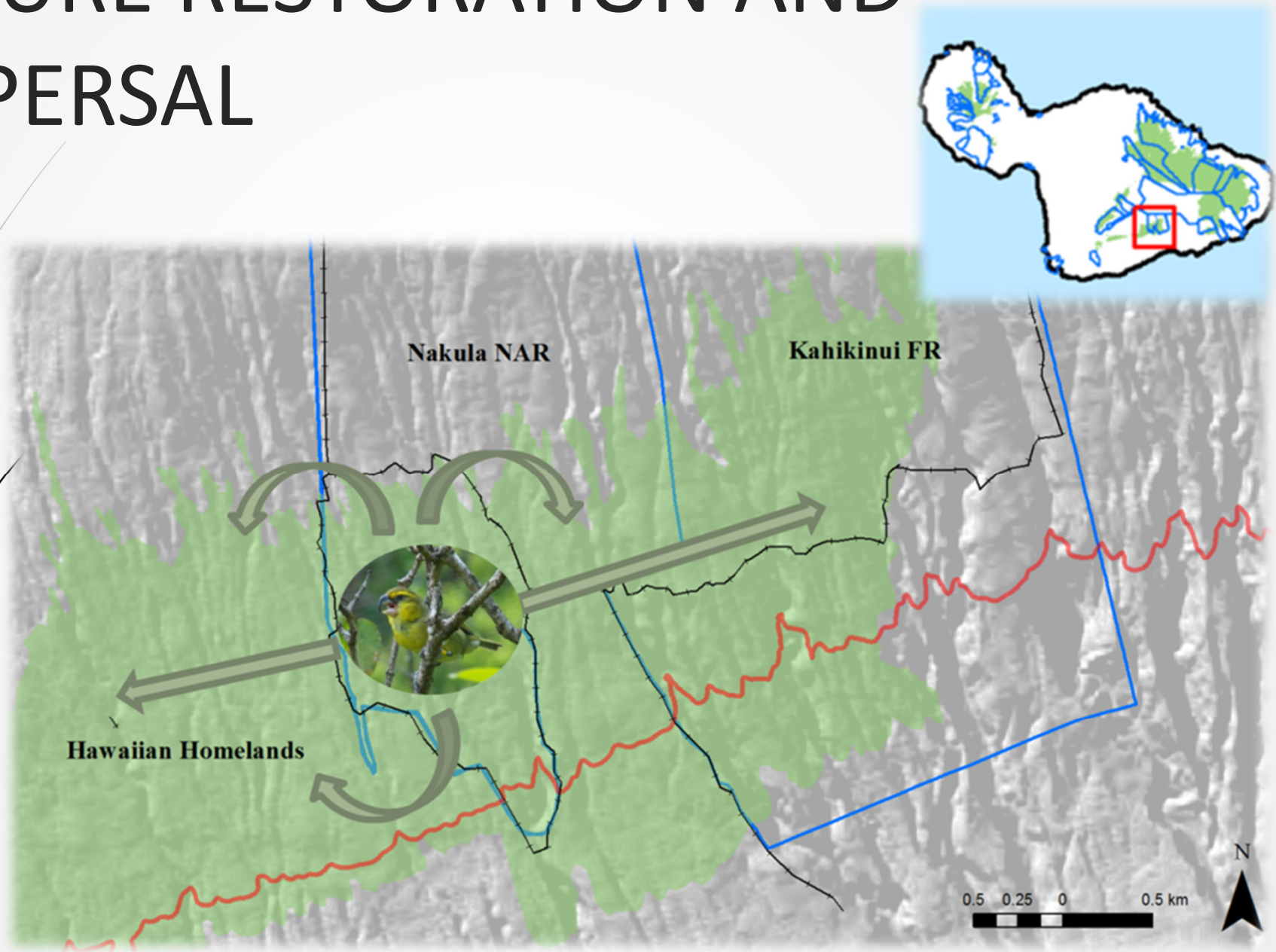
- Cohort for translocation and release will consist of 12 wild and 8 conservation breeding birds individuals.



- Soft release technique
- Food Supplementation
- Post-release monitoring
- Continued forest restoration



FUTURE RESTORATION AND DISPERSAL



PARTNERSHIPS



■ *The Kiwikiu Reintroduction Plan has been drafted and reviewed by the **Maui Forest Bird Working Group** including: American Bird Conservancy, Haleakalā National Park, Leeward Haleakalā Watershed Restoration Partnership, Maui Forest Bird Recovery Project, National Park Service Inventory & Monitoring, Pacific Bird Conservation, Pacific Cooperative Studies Unit, San Diego Zoo Global, State of Hawai‘i Department of Land & Natural Resources – Forestry & Wildlife, State of Hawai‘i Department of Land & Natural Resources – Native Ecosystems Protection & Management, The Nature Conservancy of Hawai‘i, US Fish & Wildlife Service, and US Geological Survey - Biological Resources Division.*

■ *These Kiwikiu recovery efforts have been funded by the State of Hawai‘i Department of Land & Natural Resources, US Fish & Wildlife Service, American Bird Conservancy, National Fish and Wildlife Foundation, Disney Conservation Fund, San Diego Zoo Global, Mohamed bin Zayed Species Conservation Fund, Patagonia, Doolin Foundation for Biodiversity, Hawaiian Airlines, Nā Koa Manu Conservation, Inc. and many private individuals and organizations.*

PEOPLE





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