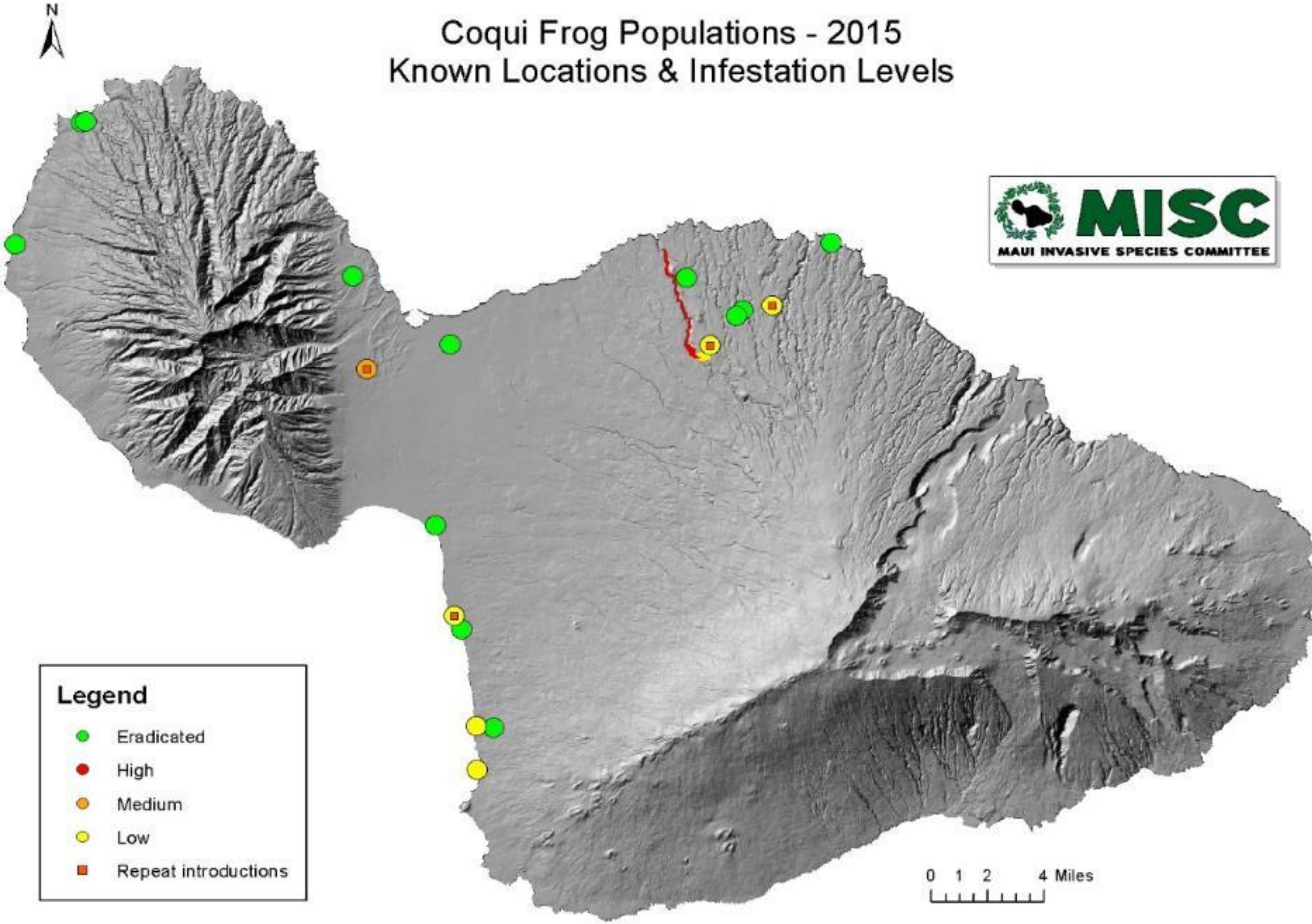
Informational Briefing: March 15, 2016

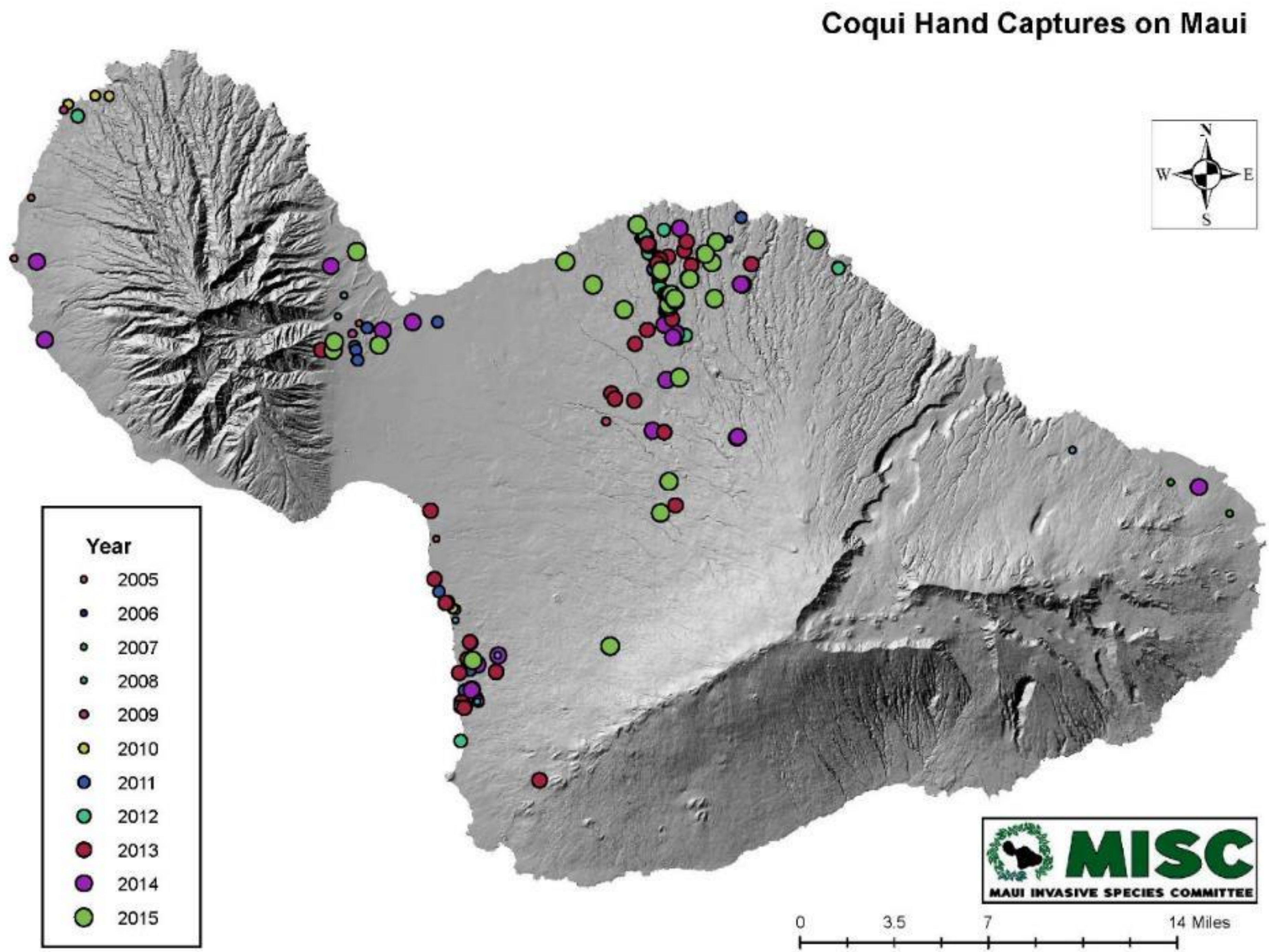
COQUI FROG ERADICATION PROJECT

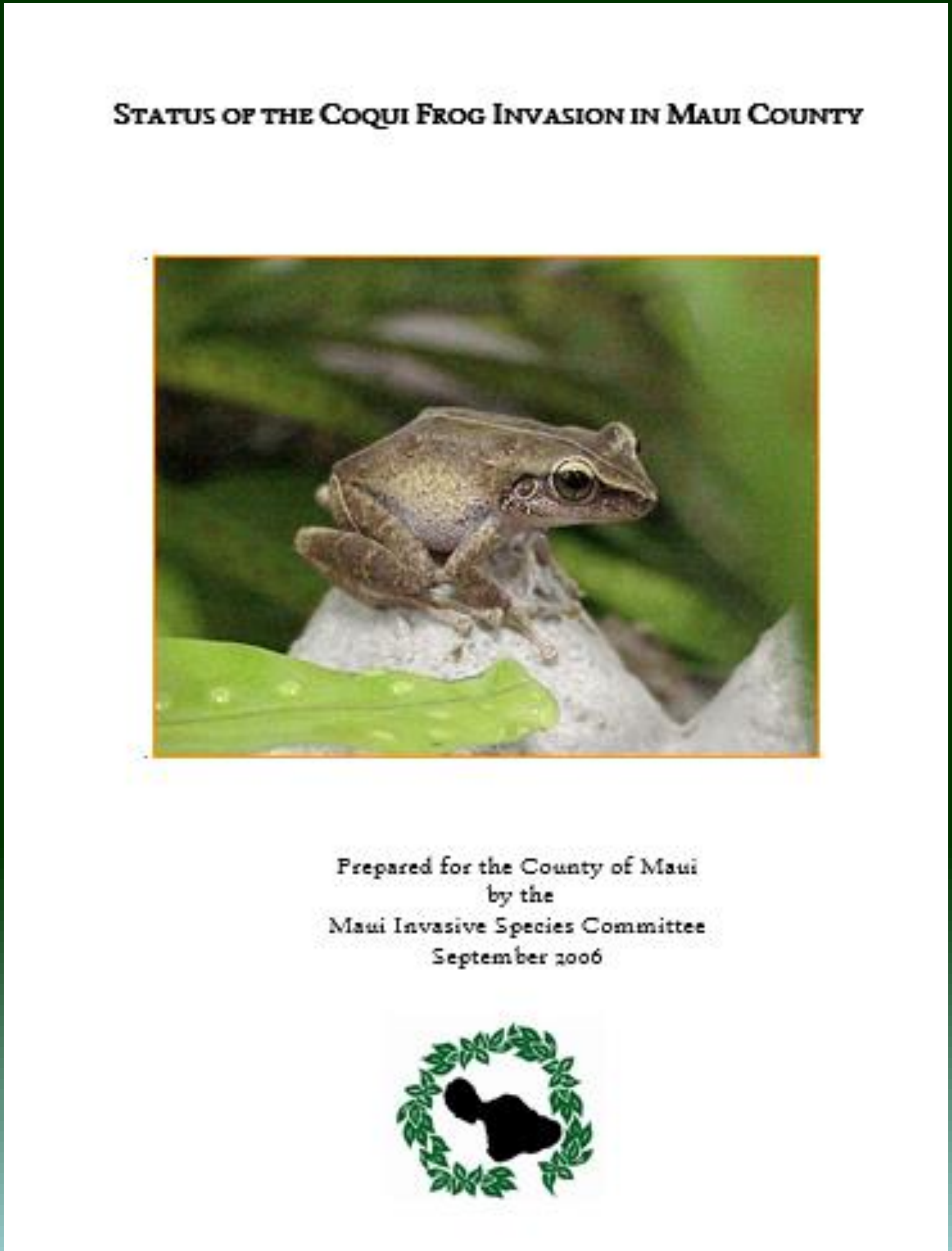
Council of the County of Maui: Economic Development, Energy, Agriculture, and Recreation Committee

MISC

MAUI INVASIVE SPECIES COMMITTEE


Coqui Frog Populations - 2015
Known Locations & Infestation Levels
N
MISC
MAUI INVASIVE SPECIES COMMITTEE
Legend
Eradicated
High
Medium
Low
Repeat introductions
0 1 2 4 Miles

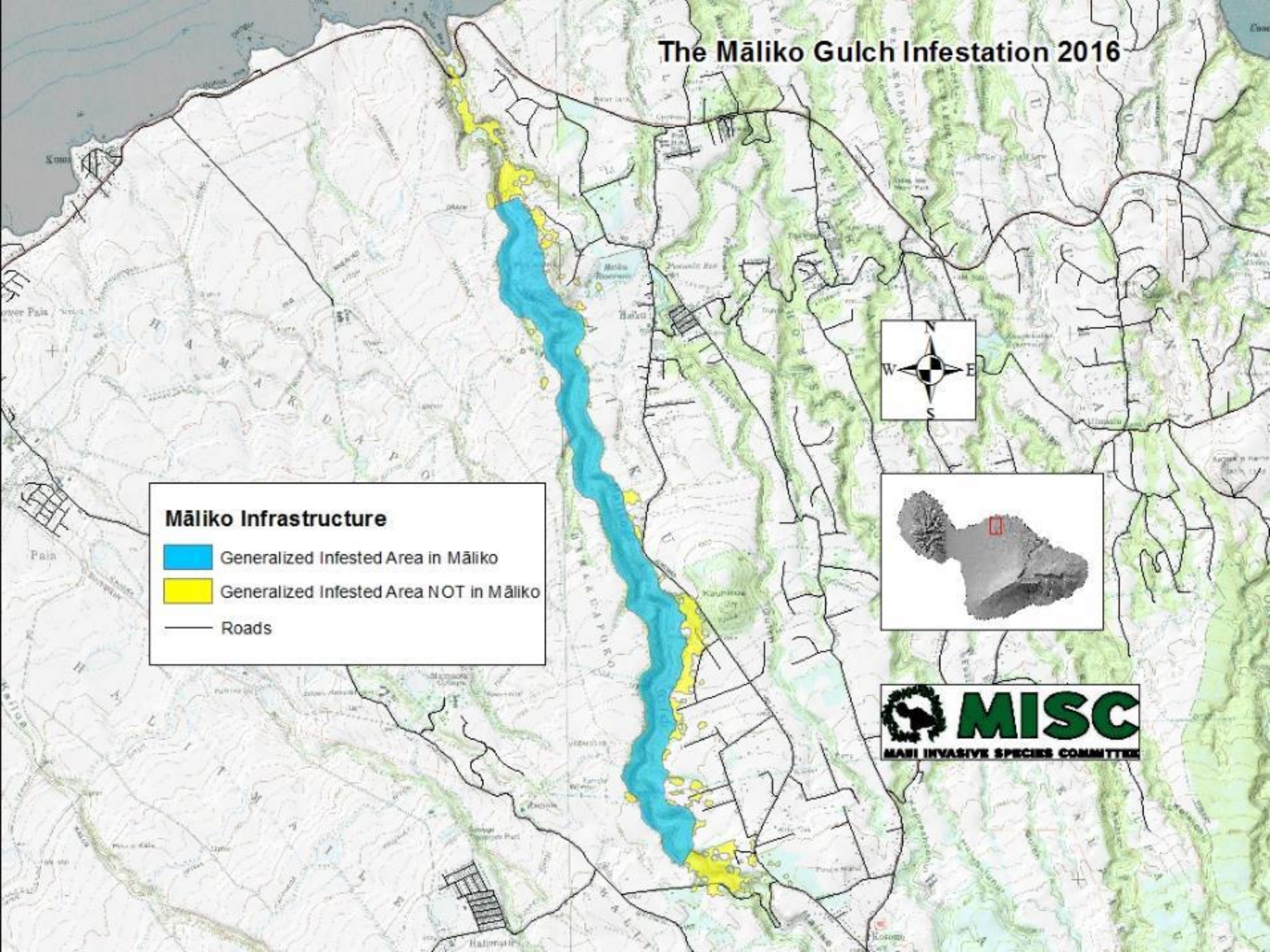

Coqui Hand Captures on Maui
N
W
E
S
Year
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
MISC
MAUI INVASIVE SPECIES COMMITTEE
0
3.5
7
14 Miles


STATUS OF THE COQUI FROG INVASION IN MAUI COUNTY

Prepared for the County of Maui
by the
Maui Invasive Species Committee
September 2006

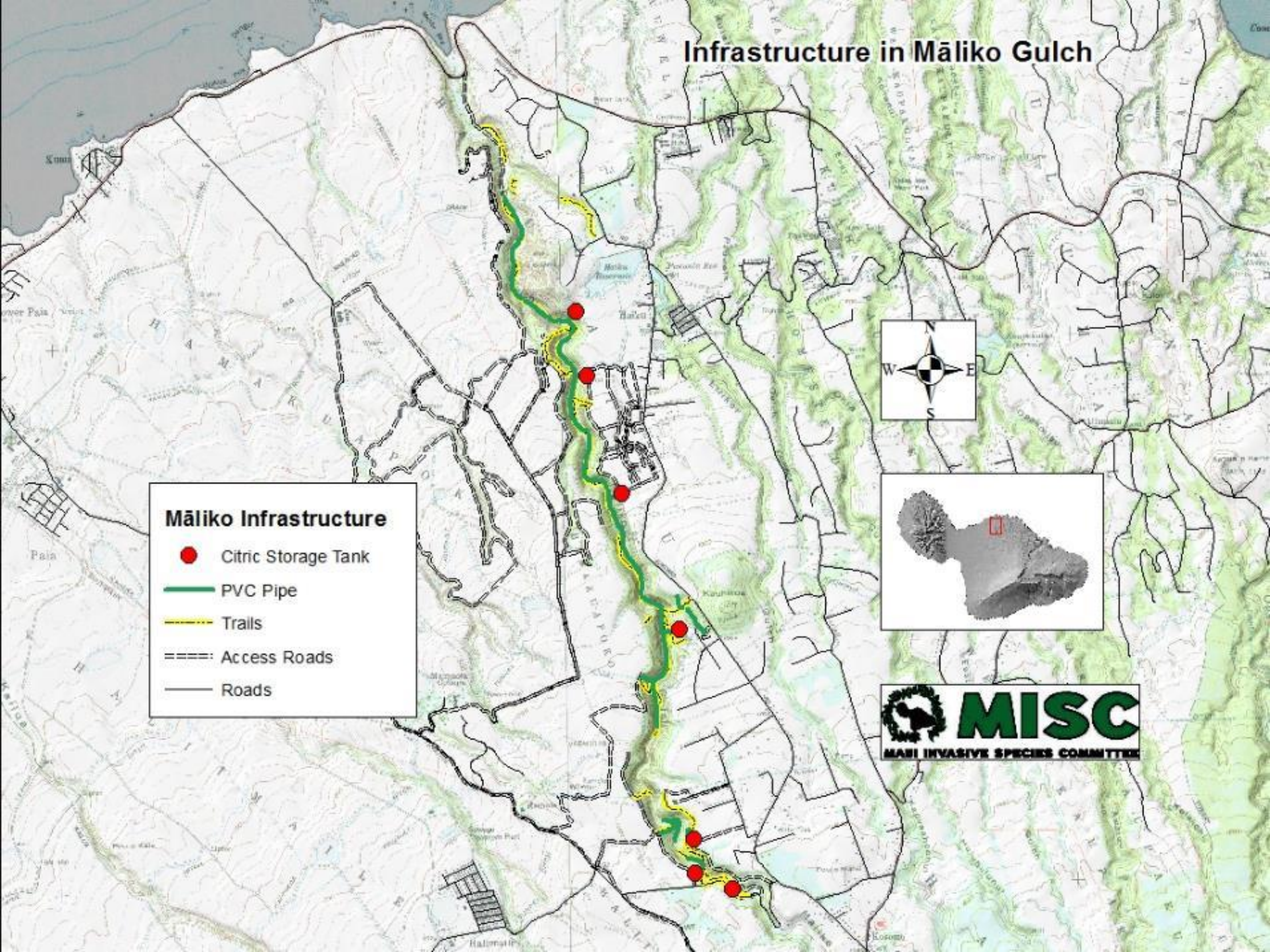
2006:
Estimated Acres for Māliko: 127
Estimated Cost for 1st year: $750,000

"Work must begin along the Māliko Rim area in order to prevent further spread and funds must be secured to begin working within Māliko Gulch as soon as possible."



The Māliko Gulch Infestation 2016
Māliko Infrastructure
Generalized Infested Area in Māliko
Generalized Infested Area NOT in Māliko
Roads
N
S
E
W
MISC
MAUI INVASIVE SPECIES COMMITTEE

Infrastructure in Māliko Gulch



Team Structure

- Team One: Moves through management units on a fixed schedule
- Team Two: Responds to new reports, puts out fires as needed, and mops up behind Team One
- Team Three: Removes frog-friendly habitat, maintains areas where work has already occurred, and keeps equipment running

Operational Strategy

- Follows an Incident Command System structure
  - Regular meetings ensure that the team is on track

Operational Strategy

- Control Operations
  - Spraying 12% citric solution via ground operations, large-capacity tanks connected to sprayers and/or a gravity fed system

Operational Strategy

- Control Operations
  - High-volume sprinklers attached to fixed stands along the edge of the gulch

Operational Strategy

- Control Operations
  - Aerial operations as needed but limited to areas not accessible by any other means and only as a last resort due to the high cost

Operational Strategy

- Control Operations
  - Hand capturing as appropriate

Operational Strategy

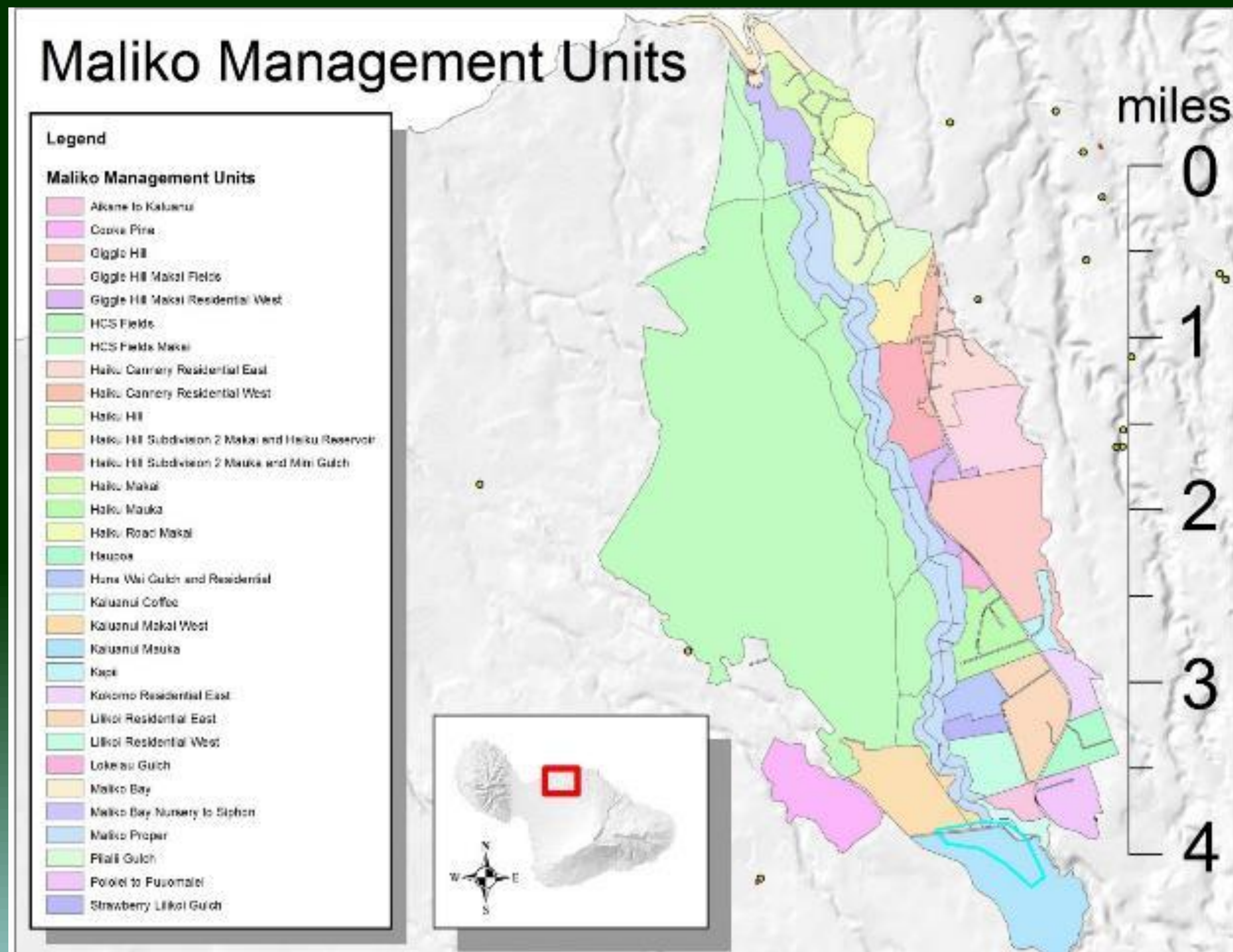
- Habitat Modification
  - Removing frog-friendly habitat from the gulch and surrounding areas
  - Maintaining areas where habitat has been minimized

Operational Strategy

- Habitat Modification
  - Installing coqui barriers in strategic locations

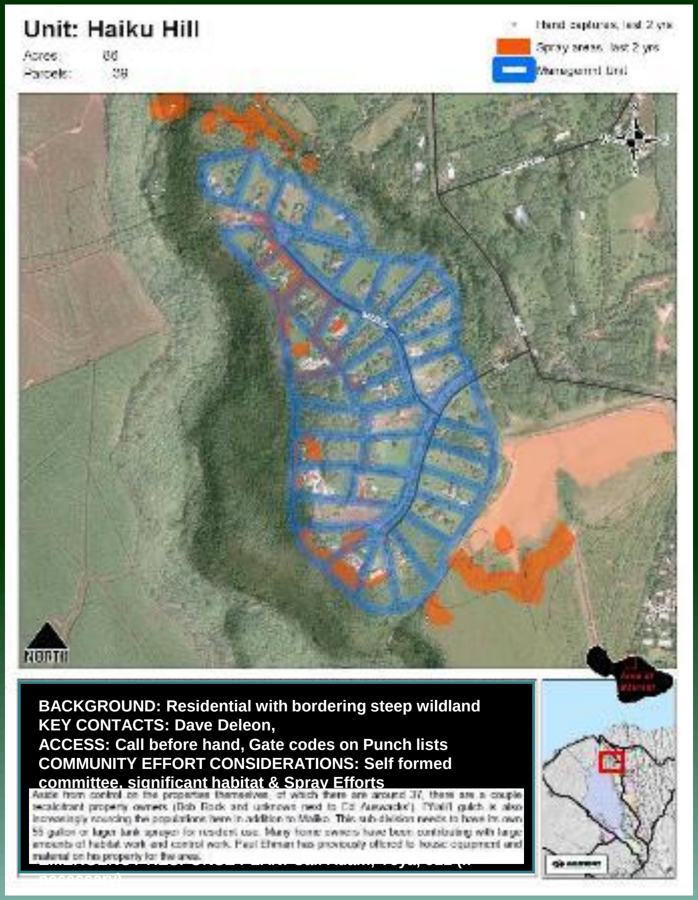
Management Units & Prioritization

- A management unit system helps organize efforts



Management Units & Prioritization

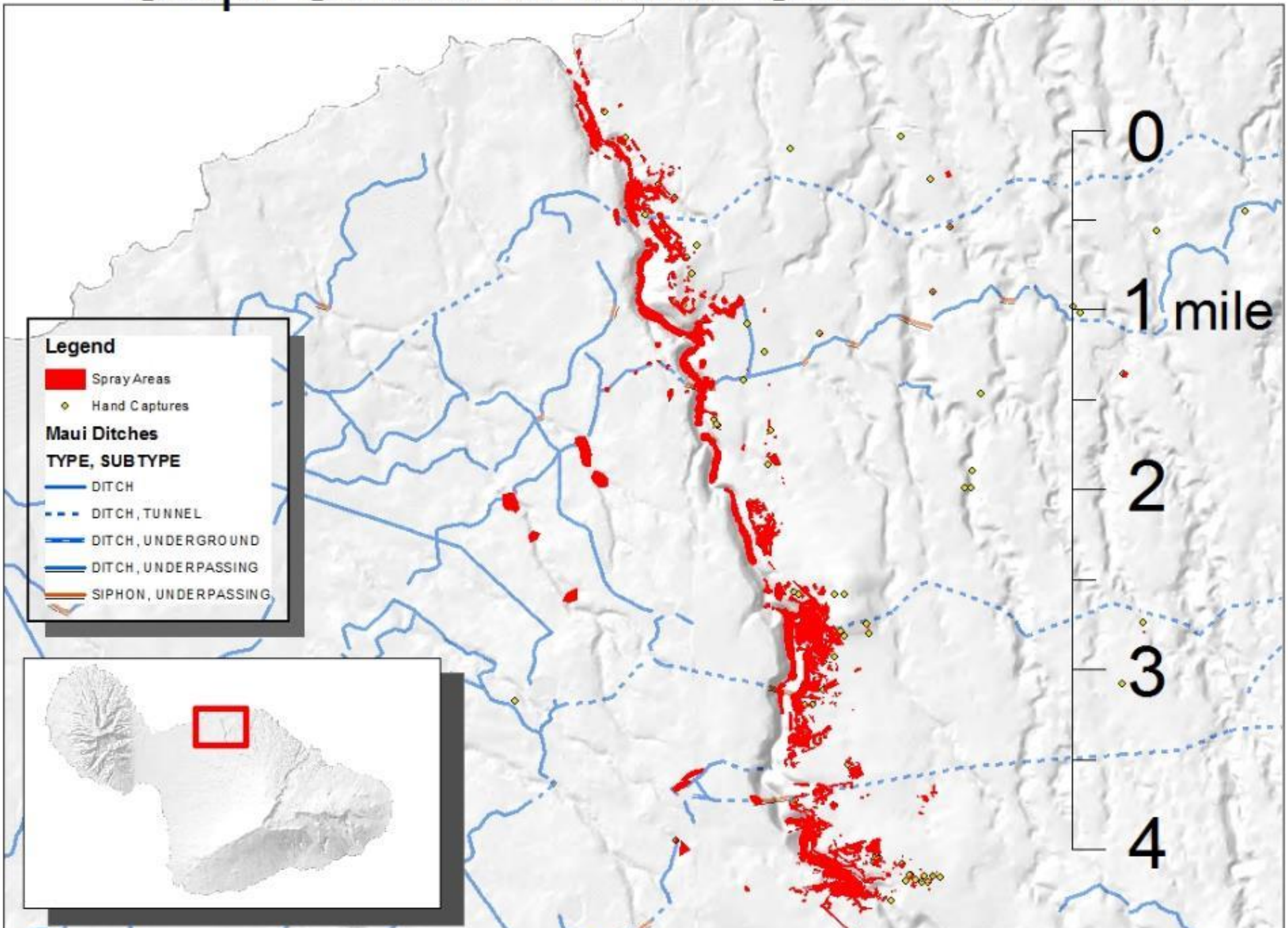
- Site-specific plans are developed for each management unit



Management Units & Prioritization

- A prioritization process is used to help develop the schedule and guide the work of two to four teams
- Considerations include:
  - Proximity of frogs to roads, moving water, established infestations
  - Contribution level of residents
  - History of control efforts
- Model output is weighed against on-the-ground realities

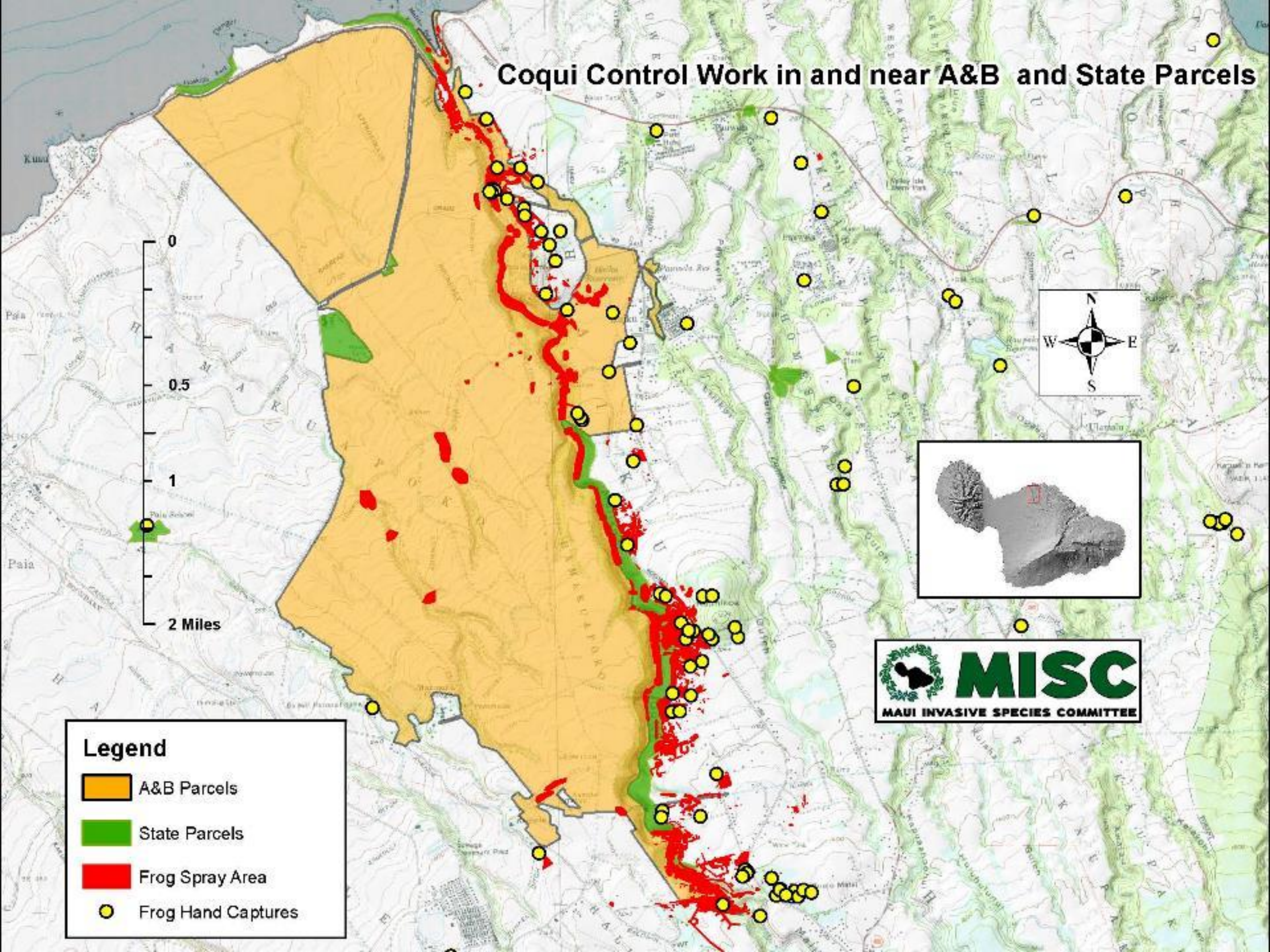
Coqui Control at Maliko Gulch Infestation



Partners
& Potential Resources

- EMWP
- DLNR
- Alexander & Baldwin
- Maui County

- Water tankers
- Fire department
- Heavy equipment
- Knowledge of the area
- Water access
- People


Coqui Control Work in and near A&B and State Parcels
0
0.5
1
2 Miles
W
E
N
S
MISC
MAUI INVASIVE SPECIES COMMITTEE
Legend
A&B Parcels
State Parcels
Frog Spray Area
Frog Hand Captures
Paia

Homeowner Engagement

- Phone Incoming/Outgoing
- Community Committees & Meetings
- Citric Distribution Program
- Sprayer Loan Program
- Web Presence
- Email Outreach

Homeowner Spray Efforts Near Māliko Gulch
Coqui Frog Citric treatment
2343 Umi Place, Haiku Hill
(All treatments 6:30-7:30pm)
1/18/16
3 Gallon
1/13/16
3 Gallon
1/27/16
3 Gallon
Driveway
fenced
fenced pasture
Barn
N
W
E
S
MISC
MAUI INVASIVE SPECIES COMMITTEE
MISC Spray Area
Homeowner Spray Area
Haiku Reservoir
400
634
BDY

Challenges

- Equipment and storage

Challenges

- Unknown future of west side HC&S fields

Challenges

- Recalcitrants

Challenges

- Crew retention and expertise

Challenges

- Sustained funding

Challenges

- Weather

COST ESTIMATE VARIABLES:

1. Cost per acre: $1,550-2,000 per treatment (citric acid + labor)
2. Pounds/gallons of citric acid per acre per treatment: 765 (up to 975)
3. Person-hours per acre treated: 30 (up to 50)
4. Infested acres: 1,000 (up to 1,300)
5. Treatments needed to eradicate coqui: 10 (up to 20)
6. Revisit interval: 4 to 6 weeks

Total cost for eradication of coqui frogs from Māliko Gulch ranges from **$4.6 million to over $15 million**.

Strategy Summary

- ***For next year :*** Expand control efforts in and around Māliko, develop necessary infrastructure, support community-based efforts, and reduce infestation levels.

- ***Next 5+ years:*** Maintain expanded level of effort in and around Māliko, ultimately ensuring a coqui-free Maui. Eradicate coqui from all other known sites. Reduce the frequency of coqui introductions to Maui.

Mahalo nui loa!