

# Maui Invasive Species Committee Project Quarterly Report January through March 2015



*Coqui barrier and habitat removal  
along Māliko gulch*

*Teya Penniman & Marshal  
Loope at Hawai'i Invasive  
Species Awareness Week  
award ceremony*



## **MISC ACCOMPLISHMENTS JANUARY THROUGH MARCH 2015**

---

Staff from MISC and MoMISC conducted survey and control operations for established and incipient invasive plant, animal, and invertebrate pest species on Maui and Moloka‘i this quarter. A total of 11,068 acres were surveyed by ground and air and 14,458 plants were removed. Twenty-six plant species, two vertebrate species, one invertebrate species, and one plant virus were the focus of the project. An active public education and outreach program reached at least 22,000 members of the Maui and Moloka‘i communities. The following report summarizes work conducted during the period from January through March 2015.

### **Miconia (*Miconia calvescens*)**

**Ground operations:** This quarter the Hāna miconia crew worked primarily in the Nāhiku, Olopawa, and Ka‘elekū areas. A large patch of miconia, including several seeding trees, was found and controlled in a patch of hau near the East Maui Irrigation camp in Nāhiku. Very few plants were found in the Ka‘elekū area. In February, a group of students from Seabury Hall joined the crew for three days working in the Hāna miconia core. The students were a big help and full of positive energy. This quarter one immature miconia plant was found and removed from central Ha‘ikū at a previously unknown location. A total of 130 mature and 10,999 immature plants were controlled by ground crews while covering 142 acres.

**Aerial reconnaissance & control:** Helicopter work using both herbicide ballistic technology (HBT) and the long-line spray ball occurred over 8,555 acres. Suppression of outlier infestations and coverage of potential habitat outside of heavily-infested core areas continued to be the top operational priority. HBT efforts concentrated on outlier areas. Work also continued around the edge of the Hāna core. Staff used the spray ball to better contain the core and treat dense pockets of plants found during HBT operations. Conducting spray ball operations immediately following HBT efforts has proven very effective and allows for timely, uniform treatment of large areas. A total of 120 mature plants were found, mostly near the core; an additional 1,064 immature plants were also removed.

### **Pampas Grass (*Cortaderia jubata* and *C. selloana*)**

**Ground operations:** Seasonal ground surveys for pampas grass started up again this quarter. Crews surveyed upcountry ranchlands and residential areas hoping to find plants before they flower later in the spring. A total of 25 plants were removed during ground-based efforts; only five were mature. Three hundred and one acres were surveyed. Remote camping trips to East and West Maui as well as day drops into remote areas of East Maui will begin next quarter.

**Aerial reconnaissance & control:** Helicopter survey and control operations using a long-line spray ball will begin later this spring when pampas starts to flower and becomes much easier to detect.

## **Fountain Grass (*Pennisetum setaceum*)**

All sites visited appear to have a rapidly depleting seed bank with only four immature plants found this quarter. Seventy-four acres were surveyed in upcountry, Waiehu, and the Kanaio-Auwahi areas.

## **Ivy Gourd (*Coccoloba grandis*)**

Maui Meadows and South Kīhei continue to be the most active ivy gourd areas with control focusing on elimination of the existing seed bank (i.e., controlling newly sprouted plants). Monitoring of Lahaina and Kapalua infestations is also a major focus.

Only nine mature plants were found this quarter at eight locations. Four hundred and twenty-seven nodes (the point on a plant stem from which the leaves, lateral branches, or roots grow) were treated. Ivy gourd typically roots at each node ultimately making separate plants. Therefore, MISC staff treat each node when they find a plant. Four hundred thirty-six acres were surveyed.

## **Other Invasive Plants**

In addition to monitoring and control of priority target species, staff on Maui and Moloka‘i continued to assess candidates for control and functioned as rapid response teams to incipient threats. In general, early detection and rapid response to newly detected harmful invaders is exponentially less expensive than controlling a species once it becomes established. Mapping and assessment of additional plant species is ongoing with new species added to control lists based on recommendations of subject-matter experts and the MISC and MoMISC Committees. Species added are controlled or eradicated using mechanical or chemical means as appropriate. Numbers of plants, reproductive status, and geospatial information provides the basis for adaptive management strategies.

Highlights for additional plant work from this quarter include:

### On Maui

- Cat's claw (*Caesalpinia decapetala*): no plants were found during survey of three acres, all upcountry.
- Downy rose myrtle (*Rhodomyrtus tomentosa*): no plants were found during surveys covering two acres in Ha‘ikū.
- Giant reed (*Arundo donax*): no plants were found during surveys covering three acres, all near wetlands and high-value natural areas.
- Milk thistle (*Silybum marianum*): no plants were found during surveys of the Makawao site.
- Osage orange (*Maclura pomifera*): no plants were found.
- Parasol leaf tree (*Macaranga tanarius*): ten immature plants were controlled during surveys of 109 acres.
- Spanish heath (*Erica lusitanica*): no plants were found during surveys covering nine acres, all upcountry.
- Tumbleweed (*Salsola tragus*): two mature and 338 immature plants were removed from 21 acres, all in a South Maui nursery.

- Common mullein (*Verbascum thapsus*): thirty immature plants were removed from two upcountry sites.
- Victorian box (*Pittosporum undulatum*): nine mature and 153 immature plants were removed from nine surveyed acres.

### On Moloka'i

- MoMISC intensified early detection and control efforts for Australian tree fern (*Cyathea cooperi*) and mule's foot fern (*Angiopteris evecta*). Over 90 acres were surveyed and 256 trees were controlled with help from partners.
- Barbados gooseberry (*Pereskia aculeata*): six immature plants were removed from Halawa valley.
- Fireweed (*Senecio madagascariensis*): surveys were conducted over 34 acres and 142 plants were controlled.
- Gourka (*Garcinia xanthochymus*): 18 acres were surveyed and five plants were controlled.
- Palm grass (*Setaria palmifolia*): ten immature plants were removed from a one-acre area.
- Quail bush (*Atriplex lentiformis*): 110 acres were surveyed and 178 plants controlled.
- Rubber vine (*Cryptostegia madagascariensis*): 406 acres were surveyed and only two plants were found and controlled.
- Tumbleweed (*Salsola kali*): 256 acres were monitored and 515 plants were controlled.
- Wood rose (*Merremia tuberosa*): three mature and 21 immature plants were controlled across two acres.
- Surveys were conducted for bo tree (*Ficus religiosa*), giant reed (*Arundo donax*), multiflora rose (*Rosa multiflora*), New Zealand flax (*Phormium tenax*), and pampas grass (*Cortaderia* spp.) with no plants found.

## Early Detection

Early detection work involves surveys at botanical gardens, nurseries, high-value natural areas, and along roadsides to detect new species that could become problematic. Early detection species also include those currently considered eradicated from Maui or Moloka'i or from specific geographic locations.

While Plant Extinction Prevention Program staff were searching for a native species (*Macuna* spp.) they discovered one immature miconia plant out of place. The plant was found in a Ha'ikū valley where miconia had never been found before. MISC staff followed up with a thorough survey of the area and found no additional plants.

The Hawai'i Plant and Insect ID sites on Flickr continue to provide free identifications to conservation professionals and the general public. In the last quarter there were 156 plants and 26 insects identified.

## Summary of Plant Work

The following table summarizes the number of acres that were surveyed and number of plants controlled. Figures 1 and 2 at the end of this document show locations where plant control work occurred on Maui and Moloka'i.

Common Name	Island	Mature Plants Controlled	Total Plants Controlled	Acres Surveyed
Cat's claw	Maui	0	0	3
Common mullein	Maui	0	30	10
Downy rose myrtle	Maui	0	0	2
Fountain grass	Maui	0	4	74
Giant reed	Maui	0	0	3
Ivy gourd	Maui	9	436	320
Miconia	Maui	250	12,313	8,697
Milk thistle	Maui	0	0	9
Osage orange	Maui	0	0	2
Pampas grass	Maui	5	25	301
Parasol leaf tree	Maui	0	10	109
Spanish heath	Maui	0	0	9
Tumbleweed	Maui	2	340	21
Victorian box	Maui	9	162	9
Australian tree fern	Moloka'i	1	1	55
Barbados gooseberry	Moloka'i	0	6	15
Bo tree	Moloka'i	0	0	554
Fireweed	Moloka'i	142	142	34
Giant reed	Moloka'i	0	0	6
Gourka	Moloka'i	1	5	18
Mule's foot fern	Moloka'i	112	255	35
Multiflora rose	Moloka'i	0	0	4
New Zealand flax	Moloka'i	0	0	2
Palm grass	Moloka'i	0	10	1
Pampas grass	Moloka'i	0	0	1
Quailbush	Moloka'i	3	178	110
Rubber vine	Moloka'i	0	2	406
Tumbleweed	Moloka'i	54	515	256
Wood rose	Moloka'i	3	24	2
<b>Total</b>		<b>591</b>	<b>14,458</b>	<b>11,068</b>

## COQUI FROGS

Residents near Māliko Gulch teamed up with MISC staff to remove frog friendly habitat and install coqui barriers along the rim of the gulch. Residents also continued spraying coqui when they heard them, allowing crews to focus on heavily infested areas. MISC helps train community members on control methodology and provides citric acid for community use.

This quarter:

- Crews made 128 separate visits to 85 frog-infested areas, suspect locations, or coqui-free participant businesses.
- 21 new reports and almost daily updates from residents in or near population centers were received and all had follow-up.
- MISC staff and volunteers spent 611 hours working on the coqui project.
- 1,810 pounds of citric acid were used this quarter.
- Eleven acres were treated.

MISC's coqui-free program recognizes the proactive efforts of plant-related businesses to prevent the spread of coqui frogs. There are 30 coqui-free certified businesses on Maui and one on Moloka'i. On Moloka'i, MoMISC continued to monitor plant nursery imports for the coqui frog with no detections. MISC staff worked at three nurseries to remove coqui frogs and visited several other coqui-free program participant businesses.

## OTHER VERTEBRATES

- MoMISC staff responded to 26 reports from the public for various species including rabbits, little fire ant, red vented bulbul, coqui frog and more. None were found.
- Staff from HDOA assisted MoMISC with surveys and also looked at the impacts from the coconut mite at the Kapuāiwa coconut grove and collected samples of hala scale from pandanus in east Moloka'i.
- MoMISC also looked for upside down jellyfish and gall wasps but found none.
- MISC, HDOA and DLNR staff responded to a snake report in Kula. It was decided that the report was not credible.
- Two parrots were removed from the Huelo area by a resident. Approximately 10 birds remain.
- Staff also followed up on reports of lizards and other oddities with no notable discoveries.

## BANANA BUNCHY TOP VIRUS

This quarter 56 properties were visited on Maui and 26 of these were surveyed (Figure 3). Of the 25 that were found to have bunchy top, eight were treated. The remaining sites will be treated next quarter pending resident/owner permission.

On Moloka'i staff from MoMISC and HDOA surveyed 285 acres and 53 infected mats were removed (Figure 2).

## LITTLE FIRE ANTS

Control of the Ha‘ikū, Huelo and Nāhiku infestations began. The Ha‘ikū infestation is very small, less than a quarter acre, Huelo is nearly three and a half acres, and Nāhiku is over 20 acres. Both the Ha‘ikū and Huelo infestations were thoroughly treated this quarter, while the first phase of the Nāhiku treatment is focused on areas where people might move or come in contact with the ants (i.e., roads, driveways, and structures). Phase two and three of the Nāhiku treatment plan will expand to more challenging terrain and waterways.

Over 2,730 ant samples were collected from locations throughout Maui. Most were from Nāhiku, but others were collected as a result of new reports or in areas that may have had LFA brought in. Forty-four acres were surveyed. MISC continues to work collaboratively with HDOA and Hawai‘i Ant Lab to address the Maui LFA infestations.

On Moloka‘i, 665 acres were surveyed with no LFA detected.

Work continued on the updated little fire ant video, and we anticipate that the video will be completed this spring.

## PUBLIC RELATIONS & OUTREACH

### Print Media

The discovery of little fire ants in Huelo generated a number of stories in the Maui News and community interest and concern remain high regarding both the Huelo and Nāhiku populations. In total, there were 9 articles referencing MISC this quarter.

Through the three Kia‘i Moku columns this quarter, MISC provided information about the endemic insects of Haleakalā and the threats to their survival, the role of seabird guano in the function of island ecosystems, and the impact of invasive species on culture. The Kia‘i Moku articles are available online at <http://mauiinvasive.org/kiai-moku/>.

MoMISC staff went door to door canvassing in Kala‘e, in central Moloka‘i, handing out invasive species fliers for Australian tree fern and other pest species. Over 100 households were reached.

Article Date	Article Name	Topics Discussed	Audience Reached	Audience Type
January 11	Maui News: Ahead of the class-Tour Operator Training	Maui Mauka conservation awareness training	22,000	Maui News Readers
January 28	Maui News: Little fire ant infestations reported in Huelo, Ha‘ikū - Latest encounter with stinging insect ‘discouraging,’ says MISC head	Little fire ants	16,000	Maui News Readers

<b>Article Date</b>	<b>Article Name</b>	<b>Topics Discussed</b>	<b>Audience Reached</b>	<b>Audience Type</b>
February 11	Maui News: Ant pesticide use questioned - Landowner says effort may hurt ecosystem; little fire ant eradicators say methods are safe	Little fire ants	16,000	Maui News Readers
February 19	Maui News - Letter to the Editor: Pesticide use needed now for fire ant eradication	Little fire ants	18,000	Maui News Readers
February 22	Maui News: Promising results seen in fight against little fire ant (AP)	Little fire ants	22,000	Maui News Readers
February 24	Maui News: County in Brief-- Little fire ants meeting Wednesday	Little fire ants	16,000	Maui News Readers
February 26	Maui News: Expert: Quick action needed on little fire ants	Little fire ants	16,000	Maui News Readers
March 2	Maui News: Ask The Mayor	Little fire ants	16,000	Maui News Readers
March 8	Maui News - Letter to the Editor: Work together to contain spread of little fire ants	Little fire ants	22,000	Maui News Readers
<b>Kia'i Moku</b>	<b>Article Name</b>	<b>Topics Discussed</b>	<b>Audience Reached</b>	<b>Audience Type</b>
January 11	Argentine ant a threat to rare endemic insects of Haleakalā	Evolution	22,000	Maui News Readers
February 8	Seabirds and ecosystems interrelated	Evolution	22,000	Maui News Readers
March 8	Cultural practice of sharing island bounty hampered by invasive species	Coqui frogs, little fire ants	22,000	Maui News Readers
	<b>Total:</b>	<b>12 articles</b>		

### Events

With assistance from the County of Maui, MISC coordinated a community meeting to address concerns and answer questions from Ha‘ikū and Huelo residents about the discovery of little fire ants in their area. Cas Vanderwoude of Hawai‘i Ant Lab gave a presentation and answered questions. In March, MISC participated in the statewide award ceremony for the Hawai‘i Invasive Species Awareness Week (HISAW). MISC nominated the Hawai‘i Department of Agriculture’s Maui Plant Quarantine inspectors for “Most Valuable Player” for their significant efforts in preventing little fire ants from becoming established on Maui.

<b>Date</b>	<b>Event Name</b>	<b>Topics</b>	<b>Audience</b>
February 26	Ha‘ikū Community Center LFA Meeting	Little Fire Ants	65
March 2	HISAW Award Ceremony	Little Fire Ants	50
		<b>Total:</b>	<b>115</b>

## Presentations

Thanks to help from committee members and partners, MISC was able to reach out to several high priority audiences with information about little fire ants including electrical workers, arborists and tree trimmers, and health professionals and volunteers involved in disaster preparedness. Other groups included Maui realtors, teachers, and tour guides. In total MISC did 11 presentations reaching an estimated 642 Maui County Residents.

Date	Presentation Name	Topics Discussed	Audience
January 15	Tour Operator Training	Coqui frogs, little fire ants, native animals, pampas grass, watersheds	5
January 31	Haleakalā National Park-Hō‘ike Workshop	General, little fire ants	6
February 5	Maui Realtors - Government Affairs Committee	Little fire ants	36
February 11	Tour Operator Training	Coqui frogs, little fire ants, native animals, watersheds	14
February 17	LFA for Asplundh	Little fire ants	12
February 24	Maui Farmers Union United Meeting	Little fire ants	95
February 26	Tour Operator Training	Coqui frogs, little fire ants	14
March 20	Realtors Association of Maui	Little fire ants	42
March 25	Aloha Arborist Workshop	Little fire ants	38
March 25	MECO: LFA Presentation	Little fire ants	350
March 31	Maui County Health Volunteers	Little fire ants	30
		<b>Total:</b>	<b>642</b>

## Internet

MISC’s websites had a total of 16,844 page/post views this quarter. Of note was the popularity of the Kia‘i Moku article about endemic insects of Haleakalā. We reached a record number of daily views when the article was reposted on our blog.

Website	Topics	Page/Post Views
coquifreemaui.org	Coqui frogs, coqui-free certification program	388
mauiinvasive.org/mauiisc.org	General MISC information	5,467
Facebook	General MISC information	832
YouTube	Little fire ants, miconia	3,897
lfa-hawaii.org	Little fire ants	4,524
hoikecurriculum.org	Hō‘ike o Haleakalā	1,736
	<b>Total:</b>	<b>16,844</b>

**Public Service Announcements**

A statewide news story on the LFA infestation in Huelo aired on KHON and MISC aired LFA PSAs on Maui radio stations KPOA and KISS reaching an estimated 3,700 listeners. Work continues on an updated LFA video incorporating the new information about the spread of LFA across O‘ahu and discussing quarantine issues.

<b>Date</b>	<b>Media Name</b>	<b>Topics</b>	<b>Audience Reached</b>
January 28	KHON: Little fire ant infestation continues to spread	Little fire ants	unknown
January 5 - February 8	LFA PSAs through Pacific Radio Group	Little fire ants	3,700

**Email Blasts**

Electronic updates on LFA and coqui were sent to people who signed up for updates at community events and through our website.

<b>Date</b>	<b>Subject</b>	<b>Topics</b>	<b>Audience</b>
January 22	1.22.15 Update On LFA Infestation In Nāhiku	Little fire ants	23
January 26	Coqui Update	Coqui frogs	37
February 5	Coqui Community Control Contact List	Coqui frogs	39
February 10	Hana LFA Identification Training	Little fire ants	22
February 24	LFA-Community Meeting-Ha‘ikū-Feb 25, 2015	Little fire ants	87
		<b>Total:</b>	<b>208</b>

**Environmental Education**

The highlight of the school outreach activities was partnering with Seabury Hall for their school-wide community day activity. All students in the 6-12<sup>th</sup> grades attended a screening of the 7.5 minute LFA video and then participated in an LFA related activity at their service project location, whether surveying or handing out information. Other school groups were also actively involved in learning about different invasive species topics.

<b>Date</b>	<b>School/Group Visited</b>	<b>Topics Discussed</b>	<b>Audience</b>
February 9 - February 12	Seabury Winterim - Miconia	Miconia	14
February 19	Maui High-Environmental Science Class	Deer	23
February 20	Seabury Community Day - LFA surveys & presentation	Little fire ants	452
March 2	Maui Prep: LFA w/Carrie DeMott	Little fire ants	12
March 5	King Kekaulike STEM project	General information - MISC	2
March 16	Pukalani Elementary	General information - MISC	70
March 17	Kam Schools Kids at Kua‘ia Cacao Farm	Little fire ants	25
		<b>Total:</b>	<b>598</b>

### **Landscape Industry**

At least 12 calls asking about invasive plants were fielded by the Weed Risk Assessment Specialist, who is housed at MISC's Pi'iholo baseyard. MISC staff handled approximately 47 additional calls or inquiries. They identified plant and animal species, recommended possible responses, and provided informational materials or references as appropriate. The Weed Risk Assessment Specialist and MISC staff also interacted with members of the Master Gardeners, Landscape Industry Council of Hawai'i, Tumbleweed Cooperative, Maui County Farm Bureau and other professional entities.

g

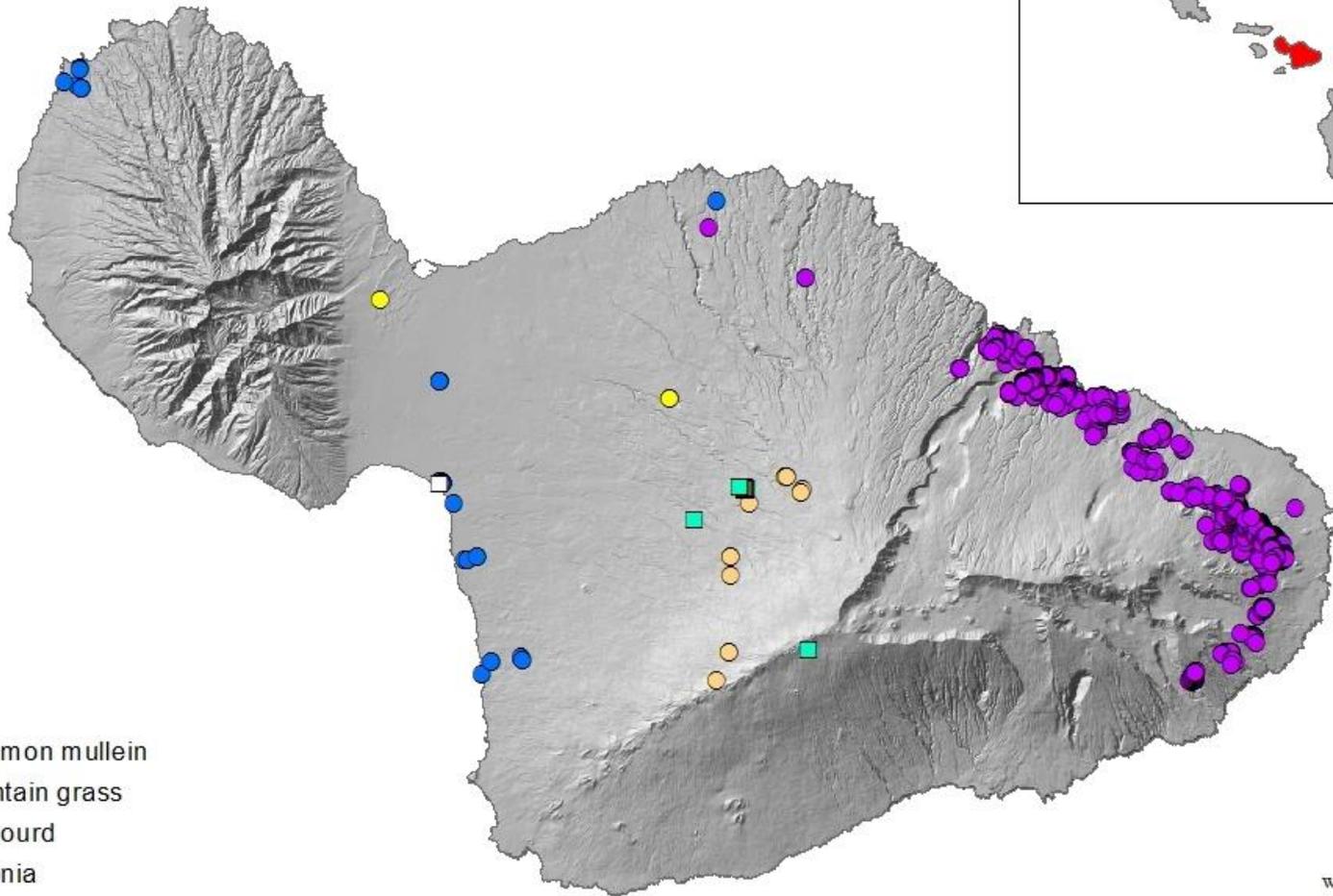
# MISC Target Species Control Activity

January 1, 2015 - March 31, 2015



## Plants

- Common mullein
- Fountain grass
- Ivy gourd
- Miconia
- Pampas grass
- Parasol leaf tree
- Victorian box

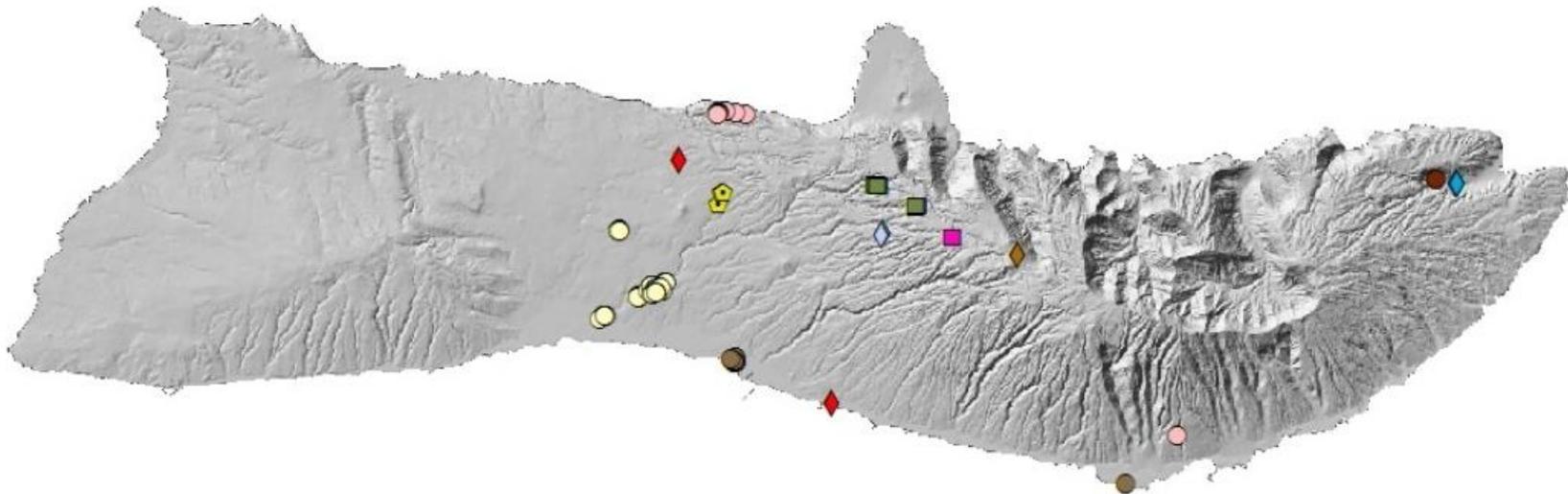
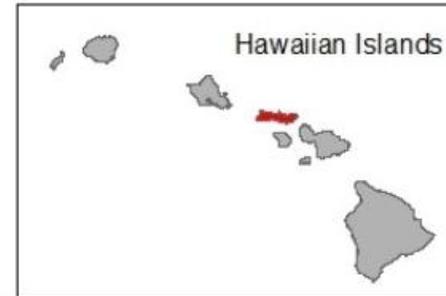


Maui Invasive Species Committee  
Projection: NAD83 UTM Zone 4N meters  
4/27/2015 BVM

Figure 1

# MoMISC Target Species Control Activity

January 1, 2015 - March 31, 2015



## Plants

- |                        |               |
|------------------------|---------------|
| ◆ Australian tree fern | ◆ Palm grass  |
| ◆ Barbados gooseberry  | ● Quail bush  |
| ○ Fireweed             | ◆ Rubber vine |
| ● Gourka               | ○ Tumbleweed  |
| ■ Mules foot fern      | ◆ Wood rose   |

## Plant Pests

- |                           |
|---------------------------|
| ⬠ Banana bunchy top virus |
|---------------------------|

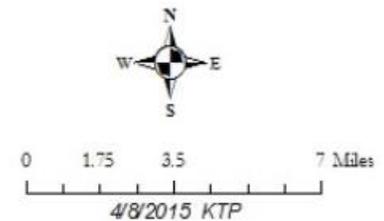


Figure 2

## Location of Sites Surveyed and Sites with BBTV January through March 2015

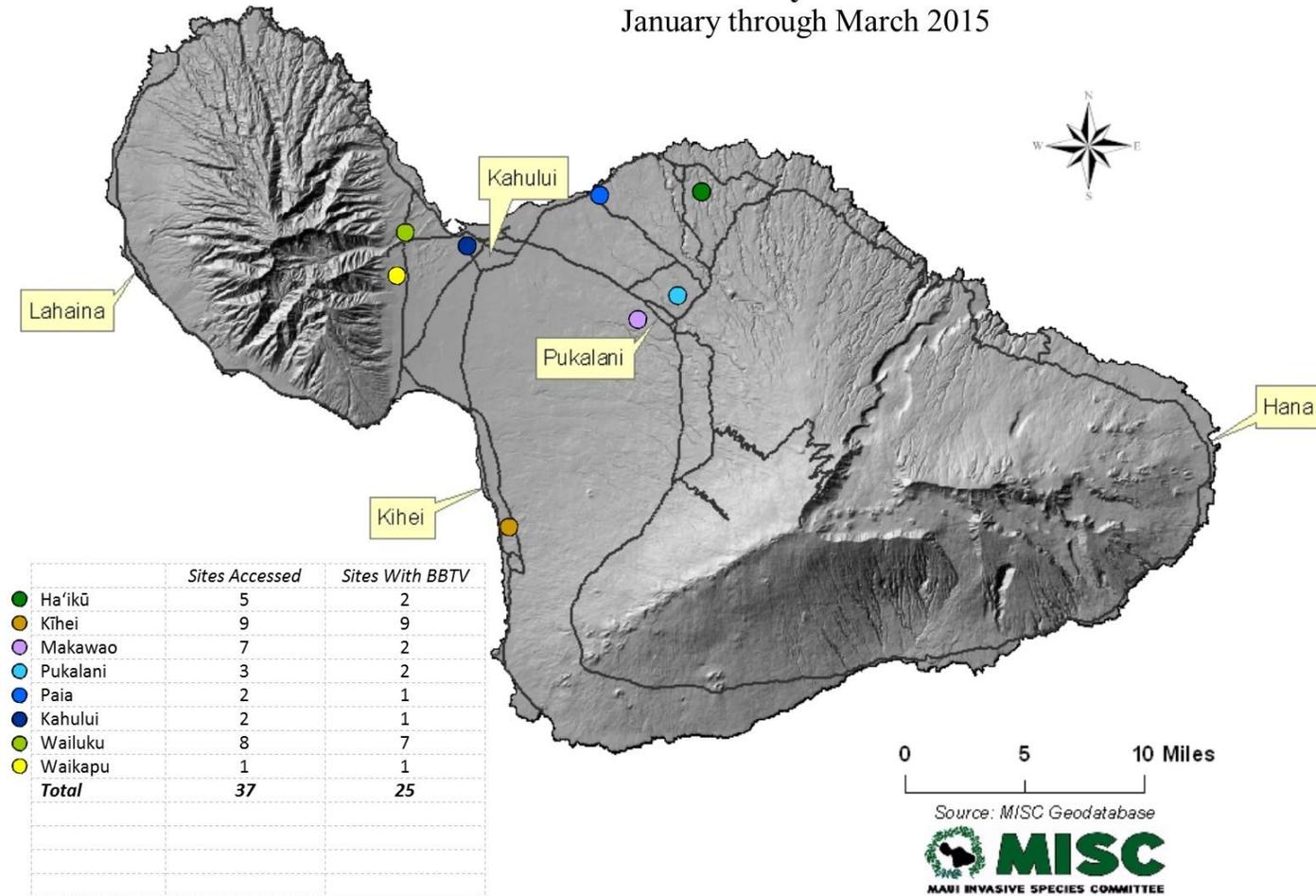


Figure 3

