



MISC

MAUI INVASIVE SPECIES COMMITTEE

Quarterly Report to the MISC Committee

FY 2014, Second Quarter

October 1 to December 31, 2013

Manager's Report

He iki huna lepo mai kēia e pula ai ka maka.

A small speck of dust that causes a roughness in the eye.

One may be small but can still cause distress.

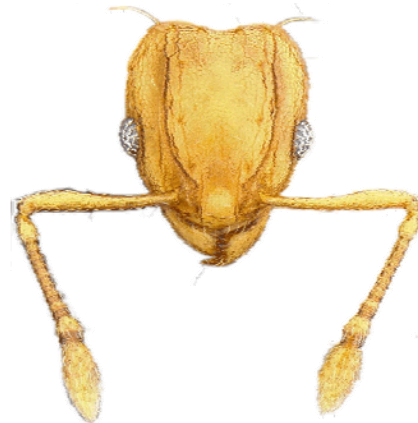
"I think I have the little fire ants," Masako said over the phone. It was two days before Christmas. Two days before I was scheduled to leave for a mainland trip. And little more than two weeks before the premiere of the film we'd been working on for nearly three years – a film about the little fire ant and how we didn't want them on Maui. "There are a number of small reddish ants," I said, trying to calm her. "It might not be the little fire ant."

Masako Cordray is a farmer and flower grower extraordinaire. She is also an amazing photographer and director. She is passionate about protecting Maui from invasive species. When I first heard about the 2009 infestation in Waihe'e, I immediately thought of Masako. It wasn't long after the Waihe'e discovery that we started working on a video project to share our sense of urgency about stopping the spread of this tiny, devastating pest.

We met the next morning at my house over ants, a high-powered microscope, and an online key for the species of concern, *Wasmannia auropunctata*. We worked our way through the key. Petiole and post-petiole present? Check. Spiny protuberance at the end of the trunk? Check. Grooves in the head where the antennae fold into? Check. I'm not an ant expert but Forest and Kim Starr have looked at thousands of specimens over the years, hoping to not find this species on Maui. I called to report my suspicions. "How many segments in the antennal club, two or three?" "Two," I answer, thinking the little fire ant has three." A pause. They have two. "How about the body, hairy or smooth?" "Hairy, long hairs." "We're coming down," Forest says, even though it's Kim's birthday and the day before Christmas.

I'd say that the rest is history, but it's a story that is still unfolding. As a result of Masako's find and HDOA's detective work, the ant was subsequently discovered at several big box stores on Maui and O'ahu; the level of infestation on O'ahu appears to be more serious than first thought. This is also a story that is particularly frustrating. We have suspected, known really, that the ants were moving and that inadequate resources were available to protect our islands from its spread. And now here we are. Is it too late for O'ahu? If the little fire ant becomes widely established there, is there hope for Maui?

Maui has led the way on many fronts related to invasive species. The challenge in this instance is enormous, but so are the stakes. Even before this latest discovery, we knew that completion of the film was really just a beginning. We just didn't expect it to be so huge so soon. Hope you're "in." We're going to need everyone's kōkua.



Staff Spotlight



Lissa first started work at MISC in 2004, slogging through the rainforests of East Maui with the Hāna crew, pulling and treating miconia and working to ensure field information made it into the database system. She switched to the Pi'iholo plant crew and worked her way to becoming MISC's first "pampas queen," covering a lot of ground by air as the lead pampas spotter during heliops missions. She traded forests, fatigues and boots for classrooms and ant kits when she started working part-time on the Hō'ike o Haleakalā project. From there, it was a natural segueway to becoming MISC's full time Public Relations and Outreach Specialist, which she's done since 2008. Lissa's ability to adapt to new and changing circumstances has been critical to MISC's plunge into the world of stopping the spread of little fire ants. Whether she's

directing a giant little fire ant, showing *keiki* how to shoot felt ants off a painted tree, writing articles for local media, or managing logistics for shooting, advertising, broadcasting, and premiering MISC's LFA video, her calm, thorough approach has been a huge plus. Mahalo nui, Lissa, for all your many hats and positive energy. We're lucky to have you at MISC!

Quarterly Highlights

- Oct 1: Adam provides rappelling training refresher for WMMWP
- Oct 2: Teya & Kanalu attend Maui Deer Working Group meeting
- Oct 3-6: Maui County Fair
- Oct 16: Teya gives presentation to Maui County Council
- Oct 18: Teya to O'ahu for CGAPS Meeting
- Oct 22: Miconia Operations Meeting
- Oct 23: DWS grant management training at MISC with Tri-Isle & PCSU staff
- Oct 24: Teya & Adam attend Maui Conservation Alliance meeting
Teya, Adam, & James Leary meet with Senators Ige, Ruderman, & English in Hāna and tour miconia acreage via helicopter
- Oct 30: Teya to O'ahu for ISC Managers meeting
- Oct 31: Teya attends HISC co-chairs meeting on O'ahu

- Nov 1: Seabury Hall Community Day: student group assists with nursery clean-up
- Nov 2: Maui Nui Botanical Garden Arbor Day event
- Nov 4: Teya attends MoMISC meeting
- Nov 6: Teya attends CGAPS tabletop exercise meeting on O'ahu
- Nov 9: Maui Association of Landscape Professionals Lawn & Garden Fair

Nov 12: Adam provides rappelling training refresher for EMWP
 Nov 19: Teya, Adam & Kanalu attend Maui Deer Working Group meeting
 Nov 22: Field Supervisors/Crew Leaders attend training on OSHA Hazard Communications Standards changes

Dec 2-3: Staff meeting at Olowalu & Service Project at Maui Nui Botanical Garden

Dec 3-4: Teya attends HCA annual retreat on O'ahu

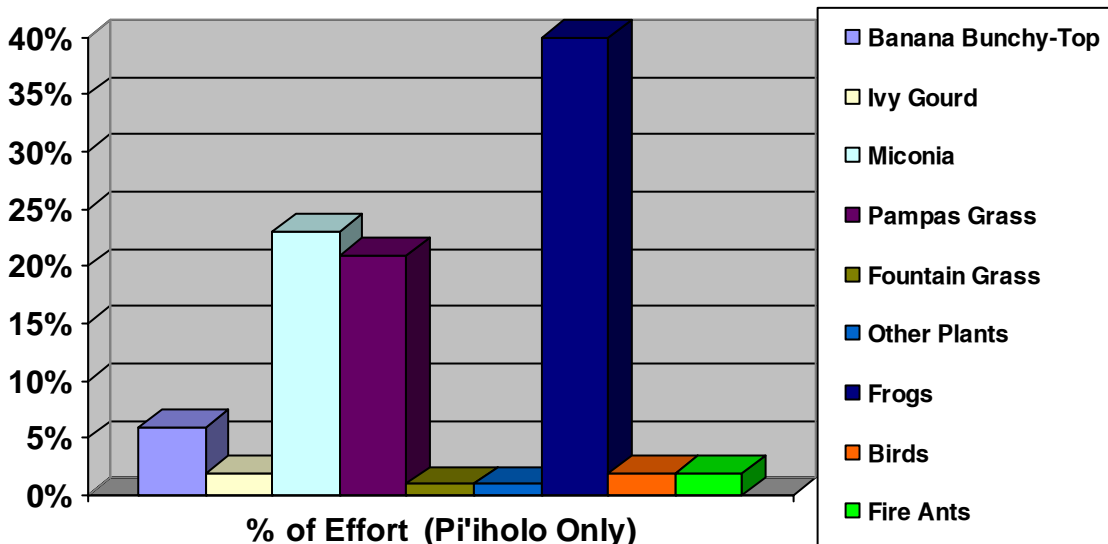
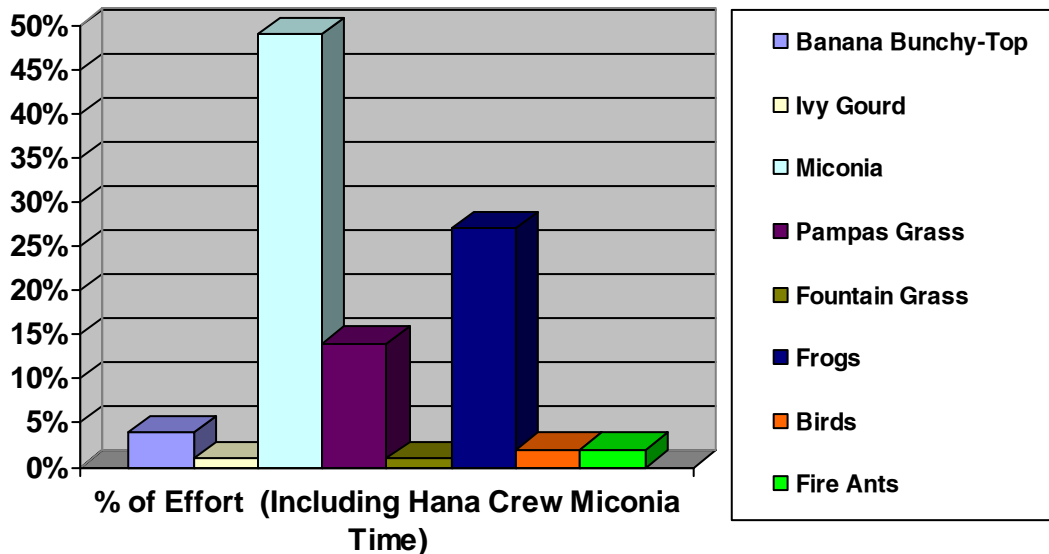
Dec 5: Drug Free Workplace training

Dec 6: MISC meeting – Vertebrates

Dec 11: Teya, Adam, & Elizabeth meet with new Hāna Ranch Operations Manager, Josh Daniel

Dec 12: Miconia Operations Meeting

Dec 20: Miconia flyover with Josh Daniel from Hāna Ranch



PR & Education News

MISC IN THE NEWS

Coqui frogs and the coqui-free certification program were featured in the “Ask the Mayor” column of the Maui News. Articles covered in MISC’s monthly Kia’i Moku column discussed how the arrival of a pollinator transformed a benign ornamental tree into an invasive species (bo tree), the threat and status of the coffee berry borer beetle, and the use of native collector urchins for control of invasive algae.

Article Date	Article Name	Topics Discussed	Audience Reached
October 21	Maui News: Ask the Mayor	Coqui frogs, coqui-free certification program	16,000 Maui News
Kia’i Moku	Article Name	Topics Discussed	Audience Reached
October 13	With the arrival of pollinator wasp, bo tree can reproduce	Early detection-Moloka’i	22,000 Maui News
November 10	Tiny bark beetle threatens coffee industry across the state	Coffee Berry Borer	22,000 Maui News
December 8	Hawaiian urchins have an appetite for invasive algae	Biocontrol	22,000 Maui News

EVENTS & PRESENTATIONS

The quarter began with our biggest outreach event of the year, the Maui County Fair. The display this year was a large map of Maui showing control points for all of our major targets, demonstrating the breadth of MISC’s work in the community. Visitors to the table asked a number of questions about the map and MISC’s work. This same display was used at the Maui Nui Botanical Garden Arbor Day event and at the MALP Lawn & Garden Fair. Information about our coqui frog certification program and little fire ants was available as well. A total of approximately 1,200 people on Maui were reached through public events this quarter.



MISC continued work on the Maui Mauka Conservation Awareness Training Program in cooperation with the East Maui Watershed Partnership and Maui Forest Bird Recovery Project. The actual training portion of the program was implemented in November and December with a series of seven training sessions. Tour guides and managers from various visitor industries, including zipline, bike tour, helicopter tour, and hiking guide companies, attended the one hour training. MISC’s portion of the program presented five facts about invasive species in Hawai’i and highlighted those of particular concern to tourism: little fire ants and coqui frogs.

Date	Event	Topics	Audience Reached
October 3 - 6	Maui County Fair	Banana bunchy-top, coqui frogs, coqui-free certification program, fountain grass, ivy gourd, little fire ants, miconia, pampas grass	1,078
November 2	Arbor Day at Maui Nui Botanical Garden	Banana bunchy-top, coqui frogs, coqui-free certification program, fountain grass, ivy gourd, little fire ants, miconia, pampas grass	54
November 9	MALP Lawn & Garden Fair	Banana bunchy-top, coqui frogs, coqui-free certification program, fountain grass, ivy gourd, little fire ants, miconia, pampas grass	65
Total:			1,197 Maui residents and visitors



Date	Presentation	Topics	Audience Reached
November 4	Tour Operator Trainings-Maui Mauka Conservation Awareness	Coqui frogs, early detection, little fire ants, pampas grass	9
November 6	Tour Operator Trainings-Maui Mauka Conservation Awareness	Coqui frogs, early detection, little fire ants, pampas grass	11
November 7	Tour Operator Trainings-Maui Mauka Conservation Awareness	Coqui frogs, early detection, little fire ants, pampas grass	10
November 18	Tour Operator Trainings-Maui Mauka Conservation Awareness	Coqui frogs, early detection, little fire ants, pampas grass	5
November 19	Tour Operator Trainings-Maui Mauka Conservation Awareness	Coqui frogs, early detection, little fire ants, pampas grass	3
November 20	Tour Operator Trainings-Maui Mauka Conservation Awareness	Coqui frogs, early detection, little fire ants, pampas grass	5
December 5	Tour Operator Trainings-Maui Mauka Conservation Awareness Training + Hike	Coqui frogs, early detection, little fire ants, pampas grass	7
Total:			55 attendees

MEDIA

The little fire ant PSAs as well as a miconia PSA continued airing on the Maui County public access station, Akakū, regularly throughout the quarter. Additionally, the radio PSAs created as part of the “Spot the Ant/Stop the Ant” contest from spring 2013 ran on KPOA and KISS stations over four weeks in November and December.

Date	Media	Topics	Audience Reached
October 1- December 31	LFA PSAs Akakū	Little fire ants	52,600 cable subscribers
November 3 - December 1	LFA PSAs on Pacific Media Group stations KISS and KPOA	Little fire ants	3,698 listeners
		Total:	55,698 Maui residents

The little fire ant video team continued to fine-tune the 30-minute little fire ant video and prepare for the January premiere to be held at the Maui Arts and Cultural Center. Preparations also include developing advertising for the premiere, making plans for showings on Maui, O’ahu, Kaua’i, and the Big Island, and purchasing little fire ant outreach products.

INTERNET

There were a total of 8,766 page/post views through seven MISC sponsored and maintained websites. Of note was growth this quarter on the hoikecurriculum.org site. The number of unique visitors increased 48% from the previous quarter. The Hawai’i plant and insect identification sites on Flickr continued to be active with 68 plants and 26 insects identified this quarter.

Website	Topics	Page/Post Views
MISC YouTube Channel	Coqui, miconia, pampas, little fire ant	602
Facebook Fan Page	Coqui, miconia, pampas, little fire ant	167
mauisc.org	General MISC information	1,024
lfa-hawaii.org	Little fire ant	1,122
coquifreemaui.com	Coqui	143
hoikecurriculum.org	Environmental education	2,703
MauiInvasive.org (Blog)	General MISC information	3,005
		Total: 8,766 page/post views on 7 sites

MISC IN THE CLASSROOM

A big mahalo goes out to the Seabury Hall senior class for their help during their Community Day service trip. Thanks to their efforts removing plastic pots that provided haven for coqui and eggs, the coqui crew has been able to successfully increase the area under control at a heavily infested nursery. The quarter concluded with another much-needed infusion of help from the Hāna High School Senior class when they volunteered for a day of miconia control.



Watershed talks were a focus of classroom visits this quarter with presentations at Kamehameha Schools, Ha'ikū Elementary School, Kalama Intermediate School, Seabury Hall, and the Hui Malama Learning Center.

MISC reached 359 Maui students through 16 school activities this quarter. MoMISC worked with Maui Community College's botany class on November 6, 2014.

Date	School/Group Visited	Topic	Participants Reached
October 15	Seabury Hall: Coqui Frog Presentation	Coqui frogs, native animals	75
October 21	Kamehameha 4th grade: Ho'ike Watersheds and Raindrops	Ho'ike- Invasive Species Module, miconia, MISC - general info, watersheds	50
October 22	Ha'ikū School 4th grade: Ho'ike Watersheds and Raindrops	Ho'ike - Invasive Species Module, miconia, MISC - general info, watersheds	65
October 28	Kalama Intermediate 7th grade: Ho'ike Watersheds and Raindrops	Ho'ike - Invasive Species Module, miconia, MISC - general info, watersheds	126
November 1	Seabury Hall Community Day-Coqui Habitat Control at Nursery	Coqui frogs	75 (repeat from Oct. 15)
November 5	Seabury Hall: Ho'ike 'Oh, Deer' Lesson	Ho'ike -Invasive Species Module, axis deer, watersheds	14
November 7	Hui Malama Learning Center	Little fire ants, watersheds	24
November 15	Hāna High with Miconia Crew	Miconia	10
	Total:	16 activities/class periods	359 participants

Plant Updates

MICONIA (*Miconia calvescens*)

Hāna miconia crew spent most of this quarter working in the Lower Nāhiku area. It is a large area with a variety of obstacles including steep drop offs, 80 foot waterfalls, and thick rose apple. Helicopter support is needed to cover some sections and is tentatively scheduled for next quarter. A total of 48 mature plants were controlled this quarter. An additional 3,188 immature plants were also removed. Over 200 acres were surveyed.

Five days of helicopter work occurred this quarter. Herbicide ballistic technology efforts were focused on outlier infestations, including work near Waimoku Falls and coverage of likely habitat outside of heavily infested areas. Long-line spray ball efforts were focused on the transition zones between heavily infested areas and less inundated lands. A total of 151 mature plants were controlled this quarter, nearly all via spray ball. An additional 649 immature plants were removed. Over 900 acres were flown.

PAMPAS GRASS (*Cortaderia jubata* and *C. selloana*)

In the Upcountry area of Maui, field crews visited 53 *C. jubata* residential sites and controlled eight immature plants at two of those sites. There were also two mature *C. selloana* plants that were reported and subsequently controlled at two new residential sites in the Ha'ikū area. Six residences in the Kula area were surveyed with no new finds.

The crew worked for 11 days on backcountry sweeps, which concentrated in and around Haleakalā Ranch property. During these surveys, 55 immature pampas plants were controlled along with two mature plants. A small crew collaborated with the East Maui Watershed Partnership for a day in the Honomanū area looking for pig sign as well as pampas grass. No *Cortaderia* plants were found.

In addition to the work completed on the ground, there were nine days of helicopter survey and control work during this quarter. In West Maui, there was one reconnaissance flight and five spray missions with a total of 174 immature pampas plants and 192 mature plants controlled. On East Maui, there were two reconnaissance flights and three spray missions with a total of 16 immature pampas plants and 23 mature plants controlled.



FOUNTAIN GRASS (*Pennisetum setaceum*)

Surveys continued at the Pukalani site with six immature plants found and controlled and no mature plants found. A new site at the property next door had one small, flowering fountain grass plant that was controlled. Two immature plants were controlled at the Waiehu Terrace site and one immature plant at the Kanaio-Auwahi site. No other plants were found at any known sites during surveys covering 55 acres.

IVY GOURD (*Coccinia grandis*)

Maui Meadows continues to be the most active management unit for ivy gourd. Crews continue to focus on eliminating the seed banks. Out of 154 active sites on Maui, 43 were visited this quarter and 24 plants were found and controlled at eight sites. Two plants were mature.

OTHER PLANTS

- Spanish heath (*Erica lusitanica*): surveys covered nine acres with no plants found.
- Giant reed (*Arundo donax*): two plants were removed on Kahului Beach Road.
- Wax myrtle (*Morella cerifera*): fifteen root suckers were controlled at the Awalau Road site in Ha'ikū.
- Woolly mullein (*Verbascum thapsus*): one immature plant was controlled at a new protea farm site.

EARLY DETECTION

Early detection work focused on flora and fauna surveys in Haleakalā National Park. During surveys for the Advanced Technology Solar Telescope (ATST) construction, surveys were conducted along the Haleakalā National Park road and around Haleakalā Observatories to look for any new invasive plant or animal species.



Sites in Haleakalā where previous control work was done were revisited. The *Matricaria discoidea* (wild chamomile), which was found at the summit parking lot at 10,000 feet, has not returned. However, *Galium sp.* (bedstraw) is beginning to take hold on the margin of the Haleakalā Visitor Center parking lot.

SUMMARY OF PLANT WORK ON MAUI

October - December 2013

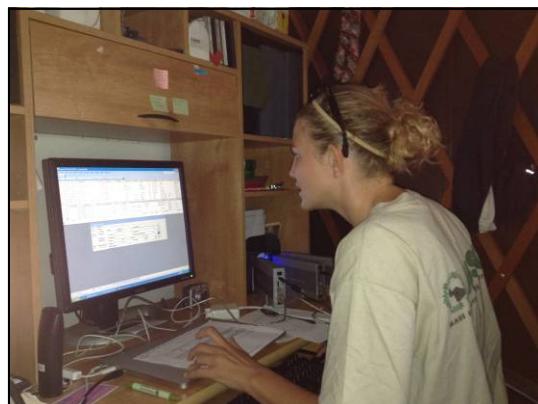
Common Name	Mature Plants Controlled	Total Plants Controlled	Acres Surveyed
Miconia	199	4,036	1,137
Pampas grass	219	472	6,650
Ivy gourd	2	24	44
Fountain grass	1	10	55
Giant reed	2	2	5
Spanish heath	0	0	9
Mexican feather grass	0	0	1
Wax myrtle	0	15	2
Common mullein	0	1	45
Total	423	4,560	7,948

BANANA BUNCHY TOP VIRUS (BBTV)

This quarter 67 properties were visited on Maui and 37 of these were surveyed. Of the 19 that were found to have bunchy top, 15 were treated. The remaining sites will be treated next quarter pending resident/owner permission. Two hundred and nine hours were spent on banana bunchy top virus suppression.

LITTLE FIRE ANTS

A total of 121 baited vials were set and collected from 18 sites on Maui this quarter. The majority of the collections were from high risk sites as a response to the discovery of LFA at two Maui nurseries in December. LFA survey efforts will ramp up next quarter to address the recent discovery of LFA on Maui.



Vertebrate Status

COQUI FROGS

This quarter MISC staff utilized people power to consolidate thousands of coqui-friendly pots in a hot, sunny area of an infested nursery. The abandoned pots were scattered throughout the nursery and have been hindering control efforts for years. With the help of 70 Seabury Hall students and five teachers, the pots were moved in less than a day. Consolidating the pots in an inhospitable area has made control much more effective. An uncountable number of frogs were present prior to the clean up with an estimated 15 present at the last visit. Interestingly, no coqui have been heard in the area where the pots were moved to. It seems likely that they abandoned the pots and moved back to more ideal habitat after consolidation.



The coqui-free program continues to recognize the proactive effort of plant related businesses to prevent the spread of coqui frogs. There are 30 coqui-free businesses on Maui and one on Moloka'i.

This quarter:

- Crews made 110 separate visits to 75 frog-infested areas, suspect locations, or coqui-free participant businesses.
- Twenty-one new reports and 30 updates from residents in or near population centers were received and all had follow-up.
- MISC staff worked at two nurseries to remove coqui frogs
- MISC staff spent 472 hours and volunteers spent 471 hours working on the coqui project.
- 10,982 lbs. of citric acid were used this quarter. One hundred and twenty pounds of citric acid were given to three Mālika area residents who wanted to help control coqui.
- Crews treated thirty-six acres of infested area on Maui, mostly at small population centers in Central and South Maui.
- On Moloka'i, MoMISC continued to monitor plant nursery imports for the coqui frog with no detections.



CONURES

Eight visits to the Huelo area occurred but no birds were removed by MISC staff. One bird was removed by a local resident. Approximately 15 birds were seen in the Huelo area during onsite field work (31 hours by MISC staff and 29 hours by partners). Control and survey efforts benefited greatly this quarter from renewed assistance by DLNR-DOFAW.

MoMISC Activities

Little plant work occurred on Moloka'i because the staff of two was off or on sick leave for most of the quarter. One of MoMISC's crewmembers was out due to injury; the other worked closely with partners and planned for work next year.

- The Department of Forestry & Wildlife assisted MoMISC with surveys for Australian tree fern (*Cyathea cooperi*) and mule's foot fern (*Agiopteris evecta*) in the Moloka'i Forest Reserve.
- MoMISC treated one mature bo tree (*Ficus religiosa*) trunk/stump in Kaunakakai that was under contract to be cut down.
- MoMISC surveyed for saltbush (*Atriplex lentiformis*) in Kalamaula for future control considerations.
- MoMISC surveyed abandoned Kaunakakai corn fields for fireweed (*Senecio madagascariensis*).

