



# MISC

**MAUI INVASIVE SPECIES COMMITTEE**

Quarterly Report to the MISC Committee

*FY 2011, Second Quarter*

*October 1 to December 31, 2010*

## Manager's Report

This quarter marked one year since the little fire ant was detected on Maui. In October 2010, the Hawai'i Department of Agriculture announced that the single infestation had apparently been eradicated. This remarkable achievement had multiple contributing factors: an educated public, early detection, rapid response, relevant expertise, effective tools, and strong landowner support. MISC was able to assist with surveys, but HDOA deserves the lion's share of kudos for this accomplishment. The development of new ways to get ant bait into trees, by State Ant Specialist Cas Vanderwoude, was critical to the successful control. It also was gratifying to learn of the connection to our Hō'ike curriculum: the landowner learned about the little fire ant from a student whose class had done the Hō'ike LFA survey activity. She knew she should report the unusual stinging ant.



Given the constant threat of reintroduction from the Big Island, public awareness of the problem is critical. This quarter also brought the opportunity to make progress on the little fire ant video by incorporating footage about the ant's impact on farmers, businesses, and hotel operators in Tahiti. The video crew received a warm welcome from the Tahitian government, where we worked closely with the LFA coordinator and met with the Minister of the Environment. We planned the trip to coordinate with a UH research project in Tahiti on the economic impacts of LFA. Most compelling were the stories from a farmer and a subsistence landowner. One Tahitian woman has had to stop growing flowers for sale, she puts barriers around fruit trees so her *keiki* won't climb the trees, and she doesn't put her smallest child on the ground outside. The rest of her extended *'ohana* has moved off the family land and they no longer have family gatherings on the site. The farmer we visited told us that his overall crop production is down and he spends a lot of his income on pesticides. The government uses helicopters to drop pesticides in some areas. We left inspired by the generosity of the Tahitian people and even more motivated to make sure the little fire ant does not become established on Maui. We also gained a greater sense of the connectedness of our Pacific Islands and a commitment to strengthening our collective efforts on invasive species.

# Employee of the Quarter



Congratulations to Abe Vandenberg, MISC's "Employee of the Quarter." Abe joined the vertebrate crew in 2005 and has since become MISC's Renaissance man. In addition to the daunting day-to-day field work involved in controlling coqui frogs, Abe is often called upon to assist with public relations projects, data processing and management, photo documentation of field activities, and preparing work plans for the vertebrate crew. Recently he wrote an article about coqui frogs for Maui Time – an opportunity he created by casually promoting MISC's mission with newspaper staff. He does an exceptional job of fostering relationships (his patience with off-the-wall phone calls is amazing) and coming up with pragmatic solutions to complex problems. And, of course, where would we be without Abe's

environmental conscience? Somehow Abe maintains a positive, personal demeanor even when barraged with all of these requests for his time. Never one to back away from a challenge, Abe excels on many fronts – another one of MISC's highly valued employees. Way to go Abe!

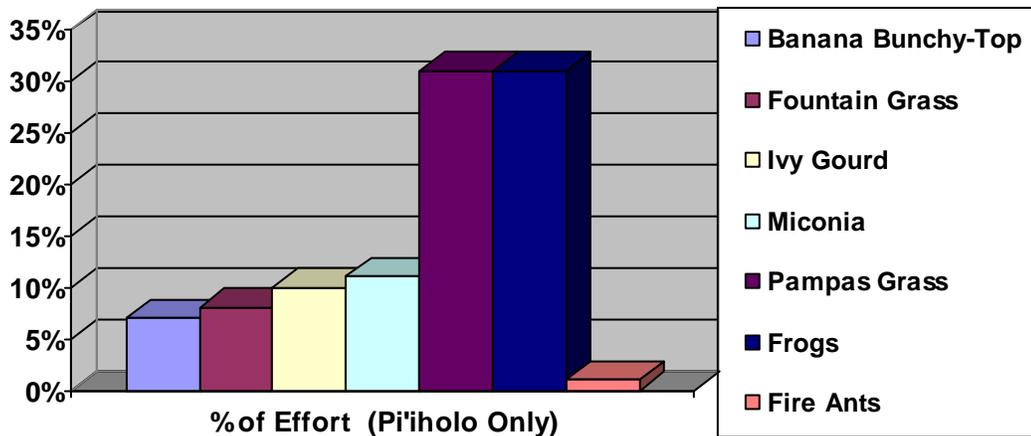
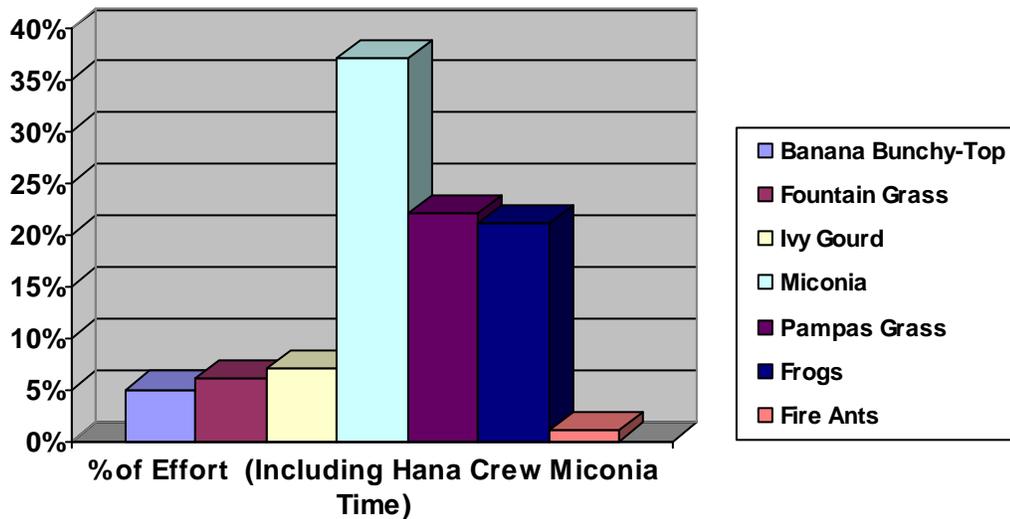
# Quarterly Highlights

## ACTIVITY HIGHLIGHTS

- Oct 1-3: Maui County Fair
- Oct 5-8: Crew to Honomanū for pampas control
- Oct 6-7: CPR/1st Aid Refreshers, all staff
- Oct 6: Adam attends MCA Vertebrate Working Group meeting
- Oct 11: Dog Self Defense training, all Pi'iholo staff
- Oct 12: Teya, Adam & Lori attend CGAPS Early Detection/Rapid Response workshop on O'ahu
- Oct 13: Teya attends NREM Program meeting at UH Maui College
- Oct 14: Hō'ike Steering Committee meeting
- Oct 18-19: Management staff retreat at Ke'anae
- Oct 20: Teya & Adam attend Maui Conservation Alliance meeting
- Oct 21-22: Adam provides rappelling training refresher for EMWP staff
- Oct 22: Teya facilitates Deer Working Group meeting at HC&S
- Oct 21: Teya & Lissa attend Public Outreach Working Group meeting & Legislative Workshop on O'ahu
- Oct 22: Lissa attends Hawai'i Environmental Education Alliance meeting on O'ahu
- Oct 29: Coqui summer temporary crew pau
- Oct 30: Teya & Lissa to Tahiti to work on little fire ant video project

- Nov 3-5: Crew to Lānaʻi for ivy gourd control  
Crew to Kauaʻula for pampas control
- Nov 4: Adam provides rappelling training refresher for WMMWP staff  
Aja Early joins the coqui crew as a regular hire  
MoMISC quarterly meeting
- Nov 9: Adam attends CGAPS meeting on Oʻahu
- Nov 12: Seabury senior class service trip to Waikamoi
- Nov 15-19: Adam attends NPS heli-manager and water ditching training
- Nov 16-17: Crew closes Honomanū field camp for the season
- Nov 18: Teya & Eliz attend Haleakalā volunteer recognition event at Maui  
Tropical Plantation
- Nov 19: Meeting with Ian Ballantyne at MISC re: miconia
- Nov 22: Miconia operations meeting
- Nov 29-Dec 2: Plant crew to Lānaʻi for fountain grass control
  
- Dec 1: Adam attends MCA Vertebrate Working Group meeting
- Dec 3: MISC meeting – vertebrates
- Dec 4: Presentation of the annual Mālama i ka ʻĀina award at the MALP  
Lawn & Garden Fair
- Dec 6-7: MISC all staff meeting and retreat at Olowalu
- Dec 9: Teya attends Maui Conservation Alliance meeting
- Dec 12-14: Teya, Adam, Brooke, Lori, & Kama attend ISC Data Hui on Kauaʻi





## PR & Education News

### MISC IN THE NEWS

Maui Invasive Species Committee's efforts and activities were discussed in nine articles during the last three months of 2010. Several articles focused on the Mālama i ka 'Āina award, soliciting nominations and announcing the winner of the annual award to recognize efforts to prevent the spread of invasive species through work in the landscape community. Ads for the award ran over four days in the Maui News, and announcements soliciting nominations appeared in both the Maui News and Hawai'i Landscape, a statewide publication of the Landscape Industry of Hawai'i.

Mentions of MISC in the Maui News were found in an article announcing the eradication of the little fire infestation on Maui, a news brief about Haleakalā National Park's ceremony honoring partners/volunteers, an article discussing the National Parks' plans for a recently purchased parcel of land above Nu'u Bay, and a letter to the editor written in response to a report of *Calotropsis procera* in Wailuku.

Abe Vandenberg, of frog crew fame, was interviewed by Maui Time, a free weekly publication, for an article that appeared in the November 18 edition. The interview discussed coqui frogs on Maui and the efforts by MISC to control the infestation. Through our Kia'i Moku column in the Maui News, MISC presented information on the invasive nature of albizia, the threat of *Rauvolfia vomitoria*, and an update on the status of veiled chameleons with an emphasis on public reporting.

### REACHING OUT TO THE COMMUNITY

The last quarter of the year is typically filled with community events and this year was no exception. October began with the Maui County Fair and parade. This year's display focused on little fire ants and featured a quiz wheel with information about the little fire ant. There was also a face photo cut-out board where visitors could be a little fire ant, the guy at the beach, or the girl at the beach. Email addresses were collected from the people who had their pictures taken in the cut-out board and their photos were sent to them after the fair. Over the four-day fair we talked with just over 1,000 people, handing out LFA detection kits, MISC key chains, and newsletters.



Two more events concluded the year: the November 6th Arbor Day Hawaiian Tree Giveaway at Maui Nui Botanical Garden and the December 4<sup>th</sup> MALP Lawn & Garden Fair. Through those events we talked to about 120 people.



In association with the Maui Association of Landscape Professionals and the County of Maui, MISC presented the annual Mālama i ka 'Āina award in a ceremony December 4th at the MALP Lawn & Garden Fair. This year's recipient was Mach Fukada, currently an entomology instructor at UH Maui College. Mach spent many years working for the Hawai'i Department of Agriculture. He was recognized for his many "early detections" of invasive species in Maui County.

### MISC IN (& OUT OF) THE CLASSROOM

Ants, art, sand, and rain forests in boxes - classroom visits based on Hō'ike activities continued. Classes reached included students at Hai'kū Elementary, Makawao Elementary, Kihei Community Center upper elementary, 'Iao Intermediate 6<sup>th</sup> grade physics class, Lahaina Intermediate, Montessori Hale o Keiki, and UH Maui College. Lissa and Wendy collaborated on an Early Detection presentation and Hō'ike ant lab for a Field Biology course, and Wendy partnered with Allison Wiest from East Maui Watershed Partnership to lead an after-school science club activity at Maui Waena. Wendy Swee and Chuck Chimera also served as judges for science fair projects at 'Iao Intermediate School.



After the Hō'ike Professional Development workshop, conducted earlier in the year, five teachers turned in portfolios reflecting on implementation of the curriculum in their classrooms. While classroom visits help to promote Hō'ike goals, training teachers to use the curriculum expands its use exponentially; at least 30 Hō'ike lessons were taught by teachers participating in the workshop.

MISC staff helped facilitate opportunities for local students to see native rain forests. This quarter MISC worked with East Maui Watershed Partnership to lead three days of hikes into Waikamoi for Kihei Charter School students through the Jungle to Jungle project. Also, with the guidance of Pat Bily from The Nature Conservancy, MISC brought 75 Seabury High School seniors out to pull pine trees along the upper Waikamoi border in coordination with Haleakalā National Park. Students also worked with Haleakalā National Park staff assisting with tasks in the native plant nursery.

## Plant Updates

### PAMPAS GRASS

This quarter the MISC pampas grass operations slowed down as we completed our final overnight trip into Honomanū until next season. The data show that our efforts in Honomanū are paying off and the Honomanū pampas grass population is in decline. The crew found very few plants again this quarter. Pampas grass helicopter operations have also slowed down for the season. Several hard to reach plants on West Maui were controlled during a window of beautiful fall weather.



The crews have been surveying known sites on Haleakalā Ranch and in Polipoli State Park. The majority of plants controlled on these parcels have been immature. A lot of work was also done this quarter on the area around the Waikamoi Flume. A majority of the pampas plants controlled were immature (363) with only 21 mature plants found. The crew found and controlled pampas grass at six of the 15 residential sites surveyed this quarter.



### IVY GOURD

Field crew efforts continue to control established *Coccinia grandis* sites on Maui. There was an increase in the number of ivy gourd plants controlled this past quarter with a new site located in Kihei at Elleair Golf Course. One visit was made to the Mānele golf course ivy gourd site on Lāna'i this quarter. Ten mature (non- fruiting) plants were controlled. There was a significant decrease in the number of immature plants controlled compared to the previous quarter.

### RUBBER VINE

No new plants were found this quarter. Permission issues remain for known sites in the Central Maui area.

### ARUNDO

No new plants were found this past quarter.

## FOUNTAIN GRASS

In December, Art Medeiros controlled a mature fountain grass plant on the side of the road next to the Auwahi gate. MISC Field crew did a search around the area a week later and no additional fountain grass plants were found. Nine fountain grass plants were controlled at two Maui County water tanks sites this past quarter and two plants were controlled in December at the Kahakuloa rappel site.



Control efforts continue at all known fountain grass populations on Lānaʻi. Fountain grass plant numbers displayed a significant decrease in both mature (down by 20 plants) and immature (a decrease of 59) plants found/controlled this quarter. Mos Masicampo from the Lānaʻihale Forest and Watershed Project found a new fountain grass site in Lānaʻi City while he was deer hunting in mid-December. The MISC field crew has not yet been to the site, but will check it out at the end of February.

## OTHER PLANTS

Surveys for *Silybum marianum* resumed when the rainy season began. Ten immature rosettes were controlled. *Maclura pomifera* (Osage orange) root suckers continue to be controlled systematically at the only known location on Maui. Five immature *Macaranga tanarius* (parasol leaf) plants were controlled growing as “weeds” at one nursery plant staging area and 67 plants were controlled at a nursery in Waikapū. MISC monitors nurseries for the potential of plant movement in landscape containers. One mature *Verbascum thapsus* plant was found in December at a known site during a re-visit. Ownership of this property has changed and the new resident has given MISC permission for access and control.

## MICONIA

During the final months of 2010, ground sweeps for miconia were concentrated in the Hāna area with some follow-up visits to Nāhiku and Keʻanae in response to specific miconia reports from community members.



The vast majority of ground-based effort for the close-out of 2010 was performed mauka of Hāna Ranch in a series of management units around Puʻu Ki, spanning from Kawaipapa stream east to Moʻomoʻonui. The Puʻu Ki units have been ongoing for several months and will require at least several more months to complete. Few mature miconia are being located. Progress seems slower than the last series of sweeps a few years ago due to prolific recruitment and invasion by clidemia. Clidemia has capitalized on areas opened up by the rose apple die-off that has progressed over the past few years.

Since work in the Puʻu Ki area is highly dependent on weather, several other areas received ground coverage when conditions were too wet to access areas above Hāna Ranch. Some work was completed along roads in the Hāna Core population, as well as follow-up work mauka of Nāhiku, makai of Honolulu Nui, and in Wailua. Work continued on the development of experimental herbicide application techniques with Dr. James Leary from the University of Hawaiʻi.

There were 29 helicopter flight days scheduled this quarter, but several were lost due to scheduling conflicts and weather delays. The overall weather was generally favorable. There was a shift in focus away from reconnaissance and more effort in treating outlier populations. As a result of serious budget constraints, aerial efforts in the Hāna Core were essentially curtailed after the October mission and will continue to receive little attention until additional funding is obtained. Additionally, reconnaissance efforts will receive reduced effort in 2011, as part of an attempt to maintain adequate aerial control of known outlier infestations.

**PLANT DATA OCTOBER 1 TO DECEMBER 31, 2010**

**Maui**

Target Species	Plants Controlled		Total	Acres Inventoried
	Mature	Immature		
<i>Arundo donax</i>	0	0	0	3.43
<i>Coccinia grandis</i>	14	442	456	829.26
<i>Cortaderia</i>	104	595	699	5,620.43
<i>Cryptostegia grandiflora</i>	0	0	0	15.17
<i>Miconia calvescens</i>	421	8,392	8,813	9,277.53
<i>Pennisetum setaceum</i>	3	6	9	238.89
<i>Silybum marianum</i>	0	10	10	17.18
<i>Caesalpinia decapetala</i>	2	6	8	2.56
<i>Macaranga tanarius</i>	2	70	72	124.26
<i>Maclura pomifera</i>	0	19	19	1.91
<i>Pittosporum viridiflorum</i>	0	5	5	26.48
<i>Verbascum thapsus</i>	1	0	1	4.31
<b>Grand Totals:</b>	<b>547</b>	<b>9,545</b>	<b>10,092</b>	<b>16,161.41</b>

**PLANT DATA OCTOBER 1 TO DECEMBER 31, 2010**

**Lanai**

Target Species	Plants Controlled		Total	Acres Inventoried
	Mature	Immature		
<i>Coccinia grandis</i>	1	9	10	128.50
<i>Pennisetum setaceum</i>	0	9	9	426.40
<b>Grand Totals:</b>	<b>1</b>	<b>18</b>	<b>19</b>	<b>554.90</b>

**LITTLE FIRE ANTS**

This quarter 85 sites were surveyed for LFA and 1,229 samples were collected. Samples included four mailed in by the public and 60 samples by students participating in Hō'ike curriculum activities. The remaining samples were taken by MISC staff and Forest & Kim Starr. Surveys continued to focus on high risk businesses that regularly receive shipments from the Big Island. MISC staff will be meeting with Cas Vanderwoude in early February to evaluate our sampling and determine the next steps to be taken.

## BANANA BUNCHY TOP VIRUS



As MISC nears the end of another year of involvement in banana bunchy top virus survey and suppression, it is appropriate to step back and take a critical look at the program and our accomplishments. In 2003, MISC began working cooperatively with HDOA to suppress banana bunchy top virus (BBTV). On Maui at that time, BBTV was only known to be in Pukalani. Since then, the virus has been found in Makawao (2004), Kihei (2004), Kula (2005), Lahaina (2006), Kahului (2006), Huelo (2008), Ha'ikū (2009), and Wailuku (2010). Although these new finds are not encouraging, they are not surprising. BBTV dispersal can be compared to chaos theory - It is nearly impossible to predict where the aphid vector may be or go, especially with Maui's variable wind patterns. Consequently, early detection and adequate suppression have been the strategies to date.

MISC staff and partners have surveyed communities well beyond the known boundaries of the infested areas (as far as Hāna, Kahakuloa and Kēōkea). We also continue to rely heavily on public reporting of suspect plants. Several new infestations have been discovered as the result of public reports. Our data suggests that overall we have been quite successful at suppressing the virus in known infested areas. Presently the areas of greatest concern are Kihei, where BBTV continues to be found with increasing frequency, and Ha'ikū (not included in the graph due to limited data). BBTV was found in Ha'ikū in 2009 and the true extent was only recently revealed (35 of 324 properties surveyed had BBTV).

Specifically this quarter, 995 properties were accessed on Maui. Of the 36 Maui sites that were found to have bunchy top, 15 were treated. The remaining sites will be treated next quarter pending resident / owner permission. The following table summarizes the number of sites accessed this quarter and sites with BBTV by region.

	<i>Sites Accessed</i>	<i>Sites With BBTV</i>
Ha'ikū	3	3
Kihei	18	11
Makawao	898	18
Pukalani	4	2
Kula	65	2
Wailuku	2	0
Kahului	5	0
Total	995	36

*Note: Many of the sites surveyed this period have been known to have BBTV in the past. Thus, not all sites with BBTV are new locations.*

# Vertebrate Status

## COQUI FROGS

This quarter coqui control efforts focused on maintaining areas of Māliko Gulch that were aggressively treated last quarter with the help of the temporary summer crew and on ramping up efforts at the other active sites. Intensified efforts at five non-Māliko population centers reflect MISC's focus of achieving "no frogs heard" status in these locations by summer 2011. Very few frogs (<15) have been heard at these locations recently. The vertebrate crew assisted Mr. Francis Benevides with his testing of sound pressure level monitoring tools for coqui this quarter.

MISC is also exploring creative solutions to address landowner concerns about citric acid - specifically phytotoxicity, potential damage to high-value building exteriors, and noise produced by sprayers. One alternative includes hot water or hot air.



Arnold Hara (UH College of Tropical Agriculture & Human Resources) and others (see the International Journal of Pest Management, 56:3, 255-263) believe that heat is an effective treatment for coqui if the infested area can be adequately enclosed. MISC is hoping to try enclosing some of the smaller infested areas with tents / tarps and heating the areas to the recommended temperature (109°F) this spring.

- Crews made 127 separate visits to 73 frog-infested areas or suspect locations.
- Twenty-nine new reports were received and all had follow-up.
- MISC crews spent 481 hours at a variety of locations working on frog control this quarter.
- 14,994 lbs. of citric acid was used this quarter, mostly in Māliko Gulch.

## VEILED CHAMELEONS

No veiled chameleon activity occurred this quarter.

## MITRED CONURES

No conure control activity occurred this quarter.

## OTHER VERTEBRATES

The vertebrate crew responded to a report of loose rabbits upcountry and worked with the owners to recover the animals.

# MoMISC Activities

During this quarter MoMISC continued maintenance and monitoring of five priority species: rubber vine, Australian tree fern, Barbados gooseberry, New Zealand flax, and tumbleweed. Activity on other species included wood rose, rosa, fireweed (survey), and palm grass. Aerial surveys for miconia were conducted this quarter. Over 10,486 acres were surveyed and no miconia plants were found.



MoMISC responded to a public report of an unidentified weed. The plant was identified as devil's horsewhip. It is not a MoMISC target. The homeowner was advised to contact NRCS to see if they could get assistance in controlling the weed. Staff also responded to a call from Young Brothers to pick up a gecko. The contact was used as an opportunity to thank Young Brothers for their continued support on all Islands. MoMISC participated in TNC's service project to

clear sourbush from a spring in Kiowea Park in December and Lori helped with oversight of endangered species during the 'Ilio Point dump cleanup sponsored by the Coast Guard. Kamalani assisted with banding shearwaters at Mo'omomi in October.

Other activities this quarter included:

- MoMISC staff attended the TNC Board of Directors Dinner on Moloka'i in October.
- Lori attended a Department of Hawaiian Homelands planning meeting in October.
- A presentation was given at TNC's Moloka'i Advisory Board meeting in December.
- Lori attended the Maui County General Community Plan update meeting for Moloka'i.
- MoMISC staff completed a WebEx training for ARC GIS 10 in November.
- Lori participated in the Moloka'i 'Aha Kiole Council meetings.
- Lori attended the TNC/MoMISC Coordinators meetings.
- Lori attended a meeting with DOT and DLNR regarding wharf and ferry developments to advocate for invasive species awareness.

## PLANT DATA OCTOBER 1 TO DECEMBER 31, 2010

### Moloka'i

Target Species	Plants Controlled		Total	Acres Inventoried
	Mature	Immature		
<i>Achyranthes aspera</i>	0	0	0	4.23
<i>Cryptostegia madagascariensis</i>	2	18	20	24.33
<i>Cyathea cooperi</i>	1	0	1	4.84
<i>Merremia tuberosa</i>	2	15	17	2.10
<i>Miconia calvescens</i>	0	0	0	10,486.23
<i>Pereskia aculeata</i>	0	34	34	18.45
<i>Phormium tenax</i>	12	51	63	17.22
<i>Rosa multiflora</i>	0	0	0	3.28
<i>Salsola kali</i>	181	24	205	42.00
<i>Senecio madagascariensis</i>	0	0	0	45.92
<i>Setaria palmifolia</i>	1	16	17	1.97
<b>Grand Totals:</b>	<b>199</b>	<b>158</b>	<b>357</b>	<b>10,650.57</b>