



# MISC

**MAUI INVASIVE SPECIES COMMITTEE**

Quarterly Report to the MISC Committee

*FY 2010, Second Quarter*

*October 1 to December 31, 2009*

## Manager's Report



This quarter included a major jolt to the MISC world: the passing of the torch from Randy Bartlett to Pat Bily as MISC Chair. The official transfer occurred at the MISC December meeting and was a direct result of the difficult economic times. Randy has been MISC's Chair "Pro Tem" since its official birth in 1999, but his leadership really dates to 1991 with the Melastome Action Committee. Randy reassured all of us that he plans to stay on the Committee, for which we are all grateful. We are fortunate that Pat has been willing to step up to the challenge. One side benefit to the change at MISC's helm is that it gave us all the opportunity to roast and mostly toast Randy for all of his efforts on behalf of MISC and Maui's natural resources over the years. As he often says, so well: "Mahalo nui loa no kou kokua," Randy!

## Employee of the Quarter

MISC is happy to announce the creation of a new section of our quarterly report: highlighting our Employee of the Quarter. In a unanimous decision by management staff, **Carl Martin** was chosen as the first recipient. Carl was chosen for all he does to keep our baseyards and vehicles in good working order. He keeps the trucks running and uses his many mechanical skills to make needed upgrades to our facilities, both in Hāna and at Pī'iholo. He was especially helpful in getting the new platform in Honomanū constructed. The most striking aspect of Carl is his good-naturedness and cheerful willingness to fill in wherever needed. We wonder what we did before he took over these duties. A big Mahalo to you, Carl!



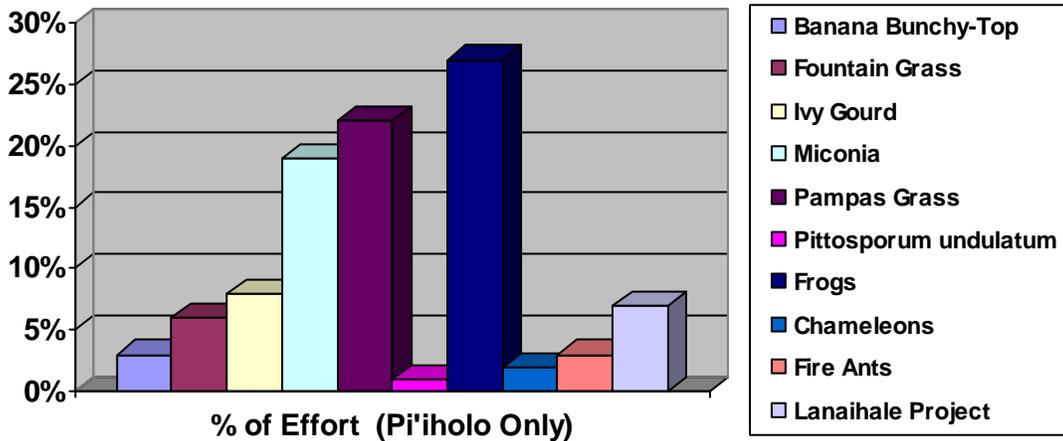
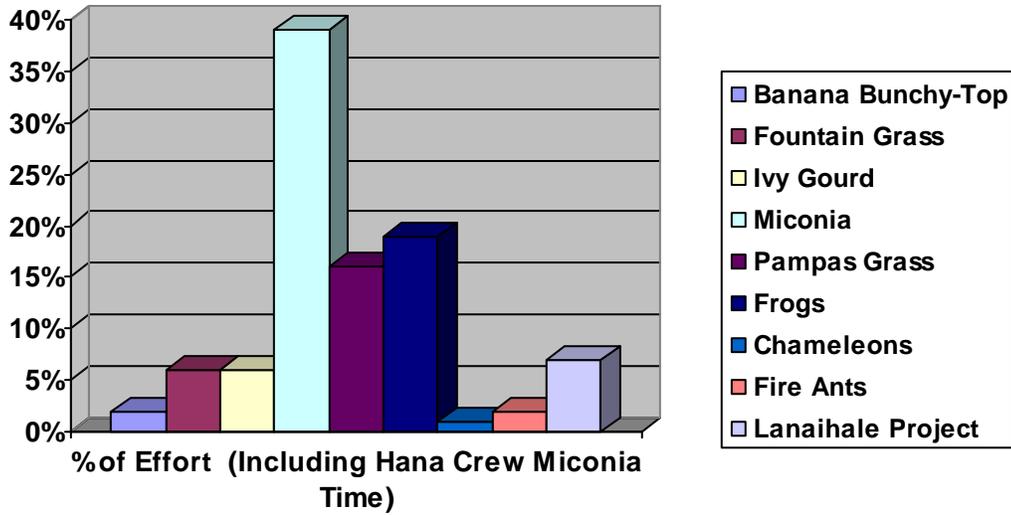
# Quarterly Highlights

## ACTIVITY HIGHLIGHTS

- Oct 1: Maui County Fair Parade  
Teya attends Maui Conservation Alliance Meeting
- Oct 1-4: Maui County Fair – educational booth
- Oct 5-6: Crew to Honomanū for pampas control
- Oct 6: Teya attends Kula Community Association Meeting
- Oct 9: MISC Meeting – vertebrates
- Oct 12: Teya attends Watershed Resolution Hearing at County Council
- Oct 12-15: Crew to Honomanū for pampas control
- Oct 13: Teya assists with HDOA tours
- Oct 14: Teya attends Maui County Arborist Committee meeting
- Oct 16: MISC management staff retreat
- Oct 17: Princess Ka'iulani Festival – educational booth
- Oct 20: MISC hosts rodenticide meeting  
Little fire ant (LFA) training with HDOA at  
Waihe'e site
- Oct 21: Teya & Lissa attend LFA PR meeting
- Oct 26: Brooke assists with seabird surveys on 'Ālau
- Oct 26-27: Teya to the Big Island to assist with BIISC Manager hiring
- Oct 26-28: Mike w/ WMMWP crew for backcountry pampas work
- Oct 29: Teya attends CGAPS & POWG planning meetings on O'ahu
- Nov 2-5: All staff trip to Lāna'i – guava, fountain grass, & ivy gourd control
- Nov 6: Teya attends Watershed Resolution Hearing at County Council
- Nov 7: Lawn & Garden Fair booth and presentation of Mālama i ka 'Āina Award
- Nov 9: Teya attends CGAPS meeting on O'ahu  
Adam provides rappelling training for WMMWP staff
- Nov 10: Teya on Akakū "Crossroads" program re: little fire ant
- Nov 13: MISC & TNC host volunteer group of 75 Seabury students at Haleakalā
- Nov 17: Teya attends Maui Cattlemen's Association meeting
- Nov 18: Mayor Tavares and Assistant County PIO tour Hāna miconia population  
via helicopter
- Nov 24: Teya & Lori meet with Council Members Victorino, Baisa, and Mateo
- Nov 28: Teya tours ASAP building with Neil Abercrombie
- Nov 30: Pampas Partners end of season meeting  
Miconia Operations meeting



- Dec 1: Lissa attends Public Outreach Working Group Meeting on O'ahu
- Dec 4: MISC Meeting – regulation and enforcement
- Dec 6-11: Mike to Guam for brown tree snake training refresher
- Dec 9: MISC all staff meeting at Ke'anae
- Dec 10: Little Fire Ant Meeting at MISC  
Lissa attends Waihe'e Community Association Meeting
- Dec 11: RCUH EEO/Sexual Harassment training for all staff
- Dec 15-16: Coqui control heliops in Māliko Gulch



# PR & Education News

## MISC IN THE NEWS

“Kia’i Moku,” MISC’s monthly Maui News column, featured articles on current topics in the news. In the face of staffing reductions at HDOA, we continued to highlight HDOA’s role in invasive species prevention in our October article, which featured the work done at the ASAP inspection facility at the Kahului Airport. The discovery of the little fire ant on Maui in early October instigated a November article on the impacts of little fire ant written by committee member Lloyd Loope. The December article concluded the year with a look at the invasiveness of plants in the Melastome family, including miconia and the Asian and red melastome families. These submissions and archived articles can be accessed online at [www.hear.org/misc/mauinews/](http://www.hear.org/misc/mauinews/).

Teya authored a Viewpoint in the Maui News about the timing of HDOA layoffs in the Pest Control branch in relation to the discovery of the little fire ant on Maui. Press surrounding the 2009 Mālama i ka ‘Āina Award included an advertisement and press release requesting nominations for the award in October. The December 6, 2009 edition of the Maui News featured an announcement of the winner (see below).

## REACHING OUT TO THE COMMUNITY



Our biggest outreach event of the year was in October - the Maui County Fair. This year we talked to approximately 1,115 people over the course of the 4-day event. Displays featured information about target species in the form of the “Wheel of MISCfortune” and a summary of biocontrol possibilities in our “Natural Enemies” display. We also participated in the Maui County Fair Parade, giving our brown tree snake and i’iwi another chance to parade about.

Other community events MISC participated in this fall included the Princess Ka’iulani Festival, an upcountry arts and crafts gathering/celebration held this year on the grounds of the Haleakalā Waldorf School on October 17th. MISC also participated in the annual Arbor Day Fair held November 7th at the Maui Nui Botanical Garden



where MISC (in partnership with the County of Maui and the Maui Association of Landscape Professionals) presented the Mālama i ka ‘Āina award to Ann Emmsley, Maui Community College agriculture professor.



## EYES & EARS EARLY DETECTION PROGRAM

The Early Detection Training program is a partnership program with USGS-PBIN. We conducted trainings with Elizabeth Speith for County road workers in Hāna, two trainings for USDA-APHIS employees who screen outgoing airport baggage, and for staff at the Pacific Whale Foundation. Eighty-three individuals attended training sessions this quarter. In light of the recent discovery of the little fire ant, every training featured information on detection, identification and reporting of little fire ant, as well as other target species.

## COMMUNITY PRESENTATIONS

Other community outreach efforts this fall included presentations in Lahaina and Waihe'e as part of the County of Maui's "Ag Roadshow." The program visits Community Associations to present information about agriculture and environmental issues in light of funding cutbacks to HDOA and detection of the little fire ant on Maui. Other participants have included Kuhea Paracuelles, AnnaMae Shishido, Warren Watanabe, and William Jacintho. Additionally, MISC visited the Upcountry Rotary Club to give a presentation about MISC, invasive species, and biocontrol.

## MISC IN (AND OUT OF) THE CLASSROOM

MISC's educational program this quarter expanded to field test lessons currently being developed for the Invasive Species Module of the Hō'ike Curriculum, specifically the "All in a Day's Work" activity. In combination with other classroom visits on characteristics of invasive species and identification of the little fire ant, MISC reached over 900 Maui students.

With the help of The Nature Conservancy's Pat Bily and Alison Cohan, MISC showed the junior class of Seabury High School what a native Hawaiian rain forest looks like. The Seabury students helped pull invasive plants in Waikamoi Preserve and volunteered time in the Haleakalā National Park nursery transplanting native plants.



The fall section of the Hō'ike curriculum teacher training program concluded in December. To receive credit towards professional development, six teachers completed portfolios reflecting on Hō'ike lessons they taught in their classrooms.

# Plant Updates

## IVY GOURD

Field crew efforts controlling *Coccinia grandis* continued this quarter. There were ten mature ivy gourd plants found during the first quarter of FY10 and eight mature plants found this past quarter. A new site in Waihe'e was found by Forest & Kim Starr during their latest Maui road survey. This fruiting site is now being controlled by MISC field crew.

Two visits were made to all known ivy gourd locations on Lāna'i this quarter. Results indicated, once again, a decrease in the number of mature plants controlled (10 this past quarter, 42 the previous quarter). No fruiting plants were found during field surveys. There was also a decrease in the number of immature plants controlled.

## PAMPAS GRASS



The MISC crew controlled over one thousand pampas grass plants this quarter using both aerial and on-the-ground tactics. In Honomanū there were 404 plants controlled on the ground and 187 via helicopter. Of these 591 plants controlled, 160 of them were mature. The West Maui weather was unusually cooperative this quarter allowing crews to cover more area by helicopter with a correlating increase in the number of plants found. Over 4,100 acres were surveyed by air in West Maui and 66 immature plants and 411 flowering plants were controlled. The crew also made follow-up visits to 95 residential sites.

## FOUNTAIN GRASS

Field crew surveyed all known fountain grass sites on Maui with no plants discovered this quarter. The substrate from the Mākena Waste Water Treatment Center site has now been relocated as crushed rock to two Mākena area construction sites. One of these sites has been landscaped and has an irrigation system. The superintendent of the Mākena Golf Course has given MISC permission to monitor for fountain grass at the construction sites. There have been no new fountain grass infestations discovered on Maui for the past six quarters. The fountain grass site at Kahakuloa has had no plants found since January of 2009. This site continues to be monitored via rappelling operations.

Fountain grass survey and control work on Lānaʻi was augmented again this quarter by the Castle & Cooke conservation crew and the Lānaʻihale crew. The entire MISC staff traveled to Lānaʻi in early November and spent several days expanding our survey efforts. Control continues at all known fountain grass populations. Mature fountain grass plant numbers have been on a steady decline since MISC's first suppression efforts began in 2005; however, we did see an increase in flowering plants during our November visit. Search areas were extended along the perimeter of existing sites. We are continuing to find additional peripheral plants. Control at the Kōʻele Golf Course will be aided again by additional lantana removal thanks to the Castle & Cooke heavy equipment operator. A new site (not verified yet) was reported in December of 2009 mauka of Shipwreck Beach. MISC crew will visit the suspect area at the beginning of February 2010.



## RUBBER VINE

No rubber vine plants were found during field surveys of all known locations. Permission issues remain for known sites in the Central Maui area.

## ERADICABLE SPECIES

Field crews began to survey in October for *Silybum marianum* (milk thistle) at the known Makawao locations. Control of emerging rosettes began in early November. We hope to reduce overall effort for control by hitting the plants before they become armed with thorns. The Osage orange "little sprouts" continue to be controlled systematically. MISC field crew controlled *Macaranga tanarius* at a nursery in Kihei growing among nursery stock. This nursery is an active ivy gourd control site as well.

## LĀNA'IALE FOREST AND WATERSHED RESTORATION

The entire MISC staff contributed two days of work controlling strawberry guava in the Lanaihole petrel nesting area the first week of November.



### MICONIA

The miconia program had a productive fall and early winter, with ground crews working in the Ke'anae, Nāhiku and Hāna areas. In the Ke'anae vicinity, Honomanū valley from the highway upstream to the first waterfall was swept to detect miconia as a follow-up from plants that were located many years ago. No plants were detected. Follow-up sweeps also occurred in the Wailua Nui area to complete work that was begun over the summer. Several days of rappelling work were performed in the Kaliae and "Rainbow Ridge" areas to remove miconia that were unreachable by helicopter due to the proximity of power lines and extreme topography. Follow-up aerial reconnaissance will confirm that all miconia plants underneath the power lines were treated.

In the Nāhiku vicinity, crews swept suspect terrain in the Honolulu Nui area. Some plants were treated. Other areas in Nāhiku were also swept, including portions of the eucalyptus plantation forest mauka of Hāna Highway, Ali'i Gardens, and near the Highway east of Ali'i Gardens.

In Hāna, sweeps were spread out from 'Ula'ino in the west to Maka'alaie in the east. Work, begun in May, continued in the Hāna Core. Completion of these areas should occur early in 2010. As a result of a pig hunter report, sweeps were initiated in the Maka'alaie area, resulting in several treated miconia plants. Ground sweeps in Hāna were also performed in Ka'elekū and the mauka Hāna Ranch areas.

Aerial missions totaled 24 helicopter flight days for reconnaissance and spray work during this quarter. The spray operations varied among outlier and core infestations with weather conditions defining available work areas. A significant portion of helicopter time was devoted to reconnaissance in low density areas, due to lighter than normal winds and timing of re-entry intervals for early detection priority zones. No flying occurred in December due to an administrative delay with the federal helicopter contract.

## PLANT DATA OCTOBER 1 TO DECEMBER 31, 2009

### Maui

Target Species	Plants Controlled			Acres Inventoried
	Mature	Immature	Total	
<i>Arundo donax</i>	0	0	0	0.46
<i>Coccinia grandis</i>	8	289	297	464.06
<i>Cortaderia</i>	664	1,533	2,197	6,651.93
<i>Cryptostegia grandiflora</i>	0	0	0	34.24
<i>Miconia calvescens</i>	252	14,278	14,530	10,717.65
<i>Pennisetum setaceum</i>	0	0	0	31.17
<i>Pittosporum undulatum</i>	2	1,284	1,286	25.11
<i>Rubus ellipticus</i>	0	1	1	3.89
<i>Silybum Marianum</i>	0	526	526	87.25
<i>Macaranga mappia</i>	0	0	0	6.44
<i>Macaranga tanarius</i>	0	0	0	78.90
<i>Maclura pomifera</i>	0	36	36	3.82
<i>Pittosporum viridiflorum</i>	0	10	10	90.84
<b>Grand Totals:</b>	<b>926</b>	<b>17,957</b>	<b>18,883</b>	<b>18,195.76</b>

**PLANT DATA OCTOBER 1 TO DECEMBER 31, 2009**

**Lanai**

Target Species	Plants Controlled		Total	Acres Inventoried
	Mature	Immature		
<i>Coccinia grandis</i>	10	161	171	256.99
<i>Pennisetum setaceum</i>	31	198	229	192.31
<b>Grand Totals:</b>	<b>41</b>	<b>359</b>	<b>400</b>	<b>449.30</b>

**BANANA BUNCHY TOP VIRUS**

MISC’s efforts to suppress banana bunchy top virus (BBTV) on Maui were focused primarily in Ha’ikū this quarter. There has always been a concern that BBTV would be found in the wetter, lush areas of the island someday and that day has come. BBTV has now been found on three properties in Ha’ikū and one in Huelo. All infested plant material has been treated, but the fact that the disease has been found in multiple locations with no clear human vector is a concern. Fortunately, a large portion of Ha’ikū, Huelo, Ke’anae, and Hāna have been surveyed and no additional sites have been found.



As an example of successful control, MISC has been informed that a Kula Farm previously devastated by BBTV is preparing to start planting bananas again. BBTV has not been detected in the area for nearly one year and managers of the farm are hoping to begin replanting from clean stock soon.

This quarter, 157 crew hours were spent visiting 282 properties in Maui County. Of 10 sites that were found to have bunchy top this quarter, 9 were treated. The remaining site will be treated next quarter pending resident/owner permission. The following table summarizes the number of sites surveyed and sites with BBTV by region this quarter.

	<i>Sites Surveyed</i>	<i>Sites With BBTV</i>
Lāna’i City	4	0
Ha’ikū	159	3
Hāli’imaile	54	0
Huelo	1	0
Kihei	6	5
Kula	45	1
Makawao	12	1
Pukalani	1	0
<b>Total</b>	<b>282</b>	<b>10</b>

**Vertebrate Status**

**VEILED CHAMELEONS**

Two days of veiled chameleon searches were conducted this quarter. Searches focused on 25 of the most suspect properties. Forty-six person hours were spent searching and no veiled chameleons were found or reported. Our next bi-annual search is scheduled for the spring. To date, 206 veiled chameleons have been recovered on Maui - the first of which was recovered in March of 2002 and the last in March of 2008. Thirty-one of these chameleons were reported or captured by area residents.

## COQUI FROGS



Traditional spot spray, hand capture, fire-hose drench, sprinkler drench, and helicopter operations were used to treat nearly 82 of 187 infested acres in Māliko Gulch this quarter. Hand capture and drench applications of citric acid have already been shown to be effective tools in the fight against coqui. The newest tool in our toolbox is the use of a helicopter as a delivery mechanism. Helicopter use on the Big Island was well documented by Tuttle, Beard, and Al-Chokhachy (*Wildlife Research*, 2008, 35, 676-683) and those efforts yielded positive results. MISC conducted two days of helicopter coqui control operations in Māliko Gulch during December. Our findings were quite encouraging as well. Pre- and post-treatment observations clearly indicated a reduction in population density. Very few coqui were heard during post-treatment surveys while an uncountable number were heard pre-treatment. Weather conditions were similar during both pre- and post-treatment surveys, so calling levels should not have been affected by the weather. Field staff observed citric acid residue on plants and on the ground during post-treatment surveys. These observations support our conclusion that helicopter use is an effective tool.



- Crews made 111 separate visits to 69 frog-infested areas or suspect locations this quarter.
- MISC crews spent 558 hours at a variety of locations working on frog control.
- 32,680 lbs. of citric acid were used this quarter, nearly all in Māliko Gulch.
- Several thousand gallons of water was provided to MISC staff by a Māliko area resident who has allowed us to tap into his catchment system.

## MITRED CONURES

No conure control activity occurred this quarter.

## MoMISC Activities

During this quarter MoMISC conducted maintenance and monitoring work on five of its seven priority target species: rubber vine, Australian tree fern, albizia, gooseberry, and New Zealand flax. Control or survey work was also done on BBTV, cat's claw, upside-down jelly fish, nettle caterpillar, coqui frog, wood rose, long thorn kiawe, rosa, and palm grass. MoMISC also assisted TNC field crews with control and survey work on tibouchina, kiawe removal/chipping, flax control, and rat baiting. MoMISC field worker Kama Pali assisted DOFAW with banding of shearwaters at the TNC Mo'omomi Preserve.

MoMISC staff supervised several work days with the Recovery Youth Conservation Corps interns and provides ongoing supervisory oversight on their timesheets and invasive species records. Lori held a legislative briefing for Speaker of the House Calvin Say and Finance and Budget Committee Chair Marcus Oshiro in October. Lori also briefed the Papahānaumokuākea Marine Sanctuary managers and staff on the MoMISC albizia control project.