



MISC

MAUI INVASIVE SPECIES COMMITTEE

Quarterly Report to the MISC Committee

FY 2010, First Quarter

July 1 to September 30, 2009

Manager's Report

Our Committee members have long feared the arrival of the little fire ant (*Wasmannia auropunctata*) on Maui. So it was very disappointing, but not a huge surprise, when we received word of the infestation on a Waihe'e farm. Because the ant is becoming more and more established on the island of Hawai'i, MISC had requested funding from the U.S. Fish & Wildlife Service to conduct more LFA surveys on Maui. Fortunately, that work is slated to begin in November, by Forest & Kim Starr, just a month after the initial detection of the ant on Maui. We need to know whether the LFA is established elsewhere on Maui.



As I have learned more about the little fire ant and the situation on the Big Island, I have become even more alarmed about the potential for this single species to wreak havoc with our native species, quality of life, agriculture, health, and economy. As a result, the discovery of LFA has intensified work to retain Maui's HDOA entomologist and noxious weed specialist. These efforts come on the heels of community outreach and collaborations with the agricultural community to preserve HDOA inspector positions. MISC is also actively participating in efforts to ramp up outreach on the ant and to assist with surveys and data management. More than ever, we need all the available resources and expertise to tackle this problem.

As should be obvious from this report, our plates are already more than full with our current targets. Our field staff are doing back-to-back weeks away from home to cover miconia, pampas grass, and work on Lāna'i. Outreach and education activities have us working at nights and on weekends. And at the same time, we are realizing that the coqui infestation in Mālika is pushing its way out of the gulch. All at a time when shrinking governmental budgets are hitting conservation agencies hard. Yikes!

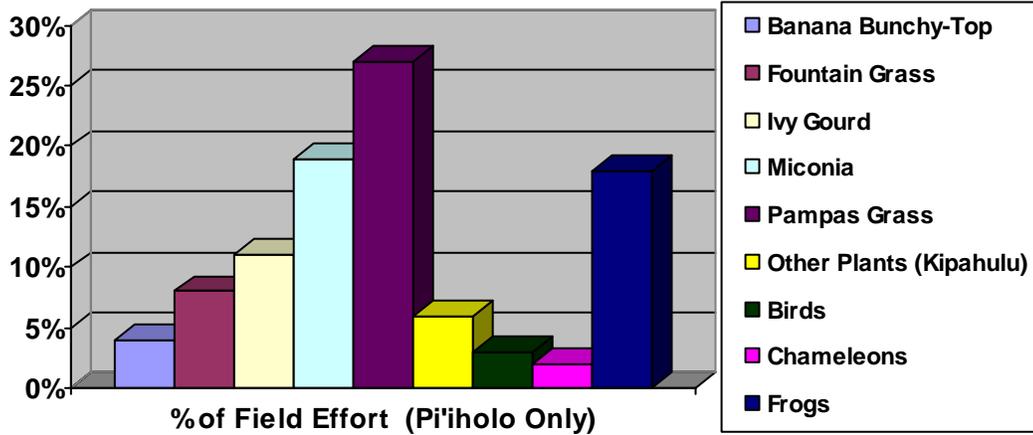
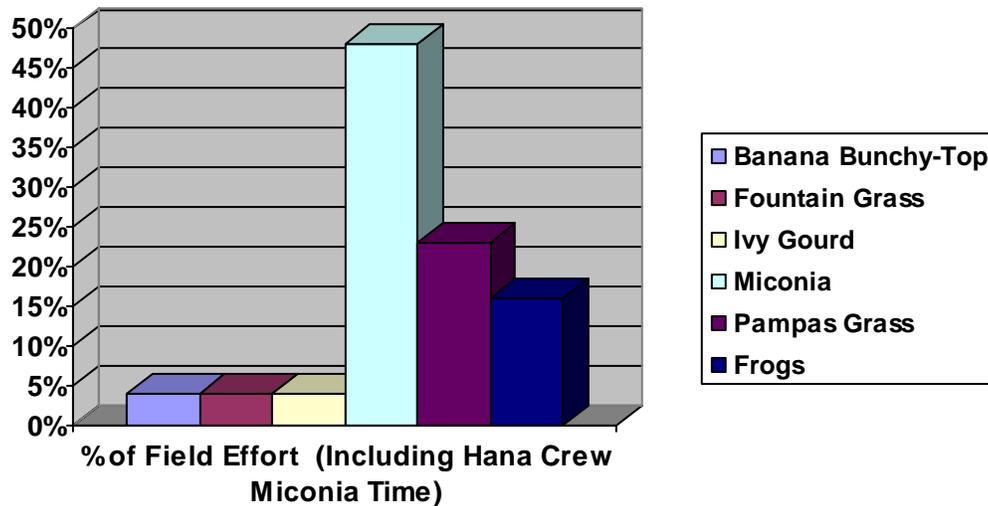
The arrival of the little fire ant and increasing reports of coqui frogs brings into focus another stark reality: our quarantine system is not working to stop the transfer of pests from one island to another. Unless it is fixed, we have little hope of stopping the repeated introductions of frogs and ants. In short, we continue to have our work cut out for us. Thank you for having the commitment, vision, and dedication to keep this vital work going.

Quarterly Highlights

ACTIVITY HIGHLIGHTS

- July 4: Paniolo Parade in Makawao
July 16: Teya attends Maui Conservation Managers meeting
July 20: Sling Load training for new staff
July 21-24: Crew to Honomanū for pampas control
July 27: Adam to rappelling meetings on O‘ahu
July 28-30: Hawai‘i Conservation Conference
July 27: Teya & Lissa attend CGAPS meeting on O‘ahu
July 27-30: DLNR interns work with Hāna crew
- Aug 4-6: Ke‘anae heli drops for remote area miconia surveys
Aug 13: Uncle Sam retires from the Hāna crew
Aug 17-20: Crew to Honomanū for pampas control
Aug 20: Hō‘ike Outreach Workshop for other island outreach professionals
Aug 21-22: Hō‘ike Teacher Workshop
Aug 24-27: Both Pi‘iholo based crews to Lāna‘i for fountain grass & BBTV
Aug 24: Teya attends statewide funding meeting on O‘ahu
Aug 27: MISC and Maui County host meeting re: HDOA inspector layoffs
Aug 28: MISC Meeting – Moloka‘i, Lāna‘i, Kaho‘olawe
- Sept 1-4: Crew to Honomanū for pampas control
Sept 2: Junior class from Hāna High joins miconia crew for the day
Sept 4: Miconia operations meeting
Sept 9: Summer YCC intern Ashley Aquino joins MISC crew in part-time position
Sept 10-11: Adam R. provides rappelling training for EMWP
Sept 10: Teya testifies at ad hoc Senate Committee Hearing on HDOA & funding
Sept 14-17: Interagency pampas grass sweeps on the slopes of Haleakalā
Sept 14: Lissa attends Public Outreach Working Group Meeting on O‘ahu
Teya attends HISC meetings on O‘ahu
Sept 15: Teya participates in Kihei Community Assoc. panel re: HDOA & funding
Sept 17-18: Teya attends HISC meetings on O‘ahu & meets with Maui Legislators
Sept 23-25: Brooke attends GIS training/conference on O‘ahu
Sept 23: RYCC intern Adam Barker begins work at MISC
Teya attends budget hearings Upcountry
Sept 24: Teya part of HDOA panel on KAOI Don Couch radio show
Sept 24-25: CPR training – all staff
Sept 27: Educational exhibit at ‘Ulupalakua Cares event
Sept 28: Lissa attends Public Outreach Working Group Meeting on O‘ahu
Hāna staff attend budget hearings in Hāna
Sept 28-30: Adam R. assists rappelling training for O‘ahu Army Environmental project





PR & Education News

MISC IN THE NEWS

“Kia’i Moku,” MISC’s monthly Maui News column, featured articles by several guest writers this quarter: committee member Lloyd Loope and AmericaCorps Hawai’i intern Adia White co-authored an article highlighting the International Miconia Conference for the July column. In August, Chuck Chimera, Weed Risk Assesment Specialist with HISC, cautioned readers about potential invasiveness of biofuel crops and the September article discussed impacts from the establishment of the Western yellow jacket and the work HDOA does to prevent further pest introductions. These submissions and archived articles can be accessed online at www.hear.org/misc/mauinews/.

MISC manager Teya Penniman was quoted in several news stories spurred by the proposed layoff of HDOA inspectors on neighbor islands. The August 30, 2009 front page Maui News article covered the community meeting about impacts from the layoffs that was hosted by MISC and the County of Maui. Articles appearing in the September 5th and 25th editions of the Maui News regarding HDOA cuts also quoted Teya.

REACHING OUT TO THE COMMUNITY



Data technician Brooke Mahnken lent his creative talent as well as engineering skills in the design of the MISC float for this year's Paniolo Parade, held as part of the 4th of July festivities in Makawao. Unanimously declared by crew as MISC's best float to date, Brooke's design featured a giant brown tree snake that wrapped around the truck. An 8' tall head bent down from the bed of the truck to attack a 5' tall i'iwi (costume worn by crew member Dave McPherson)

following the truck in a custom-built trailer-sized-nest. Approximately 1,500 people attend the annual parade. We also participated in the 'Ulupalakua Cares event on September 27, 2009.

In response to proposed layoffs of HDOA inspectors, MISC and the County of Maui hosted a community meeting on August 27th. The event attracted approximately 120 people from the agriculture and conservation community as well as several politicians and legislators. Teya also testified about inspector layoffs and shortfalls in funding for invasive species response at an ad hoc Senate Committee Hearing held September 10th. Approximately 120 people were present.

We continue to have a display at the Kahului Airport. The display was changed in late September to focus on the little fire ant.

MISC IN (AND OUT OF) THE CLASSROOM

Our education program, built around the Hō'ike o Haleakalā curriculum, has been continually evolving over the last five years. This quarter, with funding from HISC, we



were able to provide the eight participants in the fall teacher development workshop with game kits to facilitate use of the curriculum in the classroom. HISC also provided travel funds to bring seven outreach professionals from across the state to Maui to observe the workshop and learn how to partner with the Hawai'i Department of Education to provide workshops on their own islands. We've continued with classroom visits, giving presentations to 180 students this quarter.

The Junior Class of Hāna High School turned out in full force to help remove miconia on September 2nd. This year's class had the highest level of participation yet, with 22 students joining the Hāna crew for the day.

EYES & EARS EARLY DETECTION PROGRAM

With the help of Elizabeth Speith of USGS-PBIN we were able to reach several of the high-priority groups targeted for early detection programs. Trainings were done with staff at the Kahului Harbor as well as the Maui County Parks & Recreation staff.

Plant Updates

PAMPAS GRASS

Pampas season is in full swing and MISC ground crews were busy controlling and surveying for pampas grass in East Maui this quarter. Crews made four trips into the Honomanū platform camp, for a total of ten working days on the ground in Honomanū. On these trips, 51 mature plants and 485 immature plants were controlled. Two important differences can be noted when comparing our data from this summer with the data from July to Sept 2008. The total number of plants controlled is fewer (1,975 in 2008, 536 in 2009), but also the proportion of mature plants has decreased since last season (25% in 2008, 10% in 2009). Acreage between the two years is comparable, with 47 acres surveyed in 2008 and 42 acres surveyed in 2009. These trends seem to indicate that we are making progress with the Honomanū population. We hope to see this trend continue!



The annual front-country sweeps on the slopes of Haleakalā in September also boosted our efforts on East Maui. This interagency event provides an opportunity for fellow conservation groups to learn about and participate in pampas grass survey and control work. During four days of work, 1,163 acres were surveyed on the slopes of Haleakalā and two mature and 38 immature plants were controlled. An average of 22 people attended each day, with no fewer than twenty on any day. These folks contributed their time for a total combined effort of 754 hours.



In West Maui, due to very difficult terrain and access, we have been controlling pampas grass solely through helicopter spray operations. The majority of our time was spent with the populations in Kaua'ula, Waikapū, and 'Īao Valleys. During this quarter, 416 mature and 169 immature plants were aerially sprayed.

FOUNTAIN GRASS

Field crew surveyed all known sites on Maui with no plants discovered. The existing site near the Mākena waste water treatment center is now the source for rock fill at two Mākena area construction sites. MISC field crew interviewed the project Superintendent to determine the locations of the construction sites so they can be monitored for fountain grass in the future. There have been no new fountain grass locations discovered for the past five quarters. The last fountain grass plant found at the Kahakuloa site was in January of 2009. This site continues to be a challenge to monitor due to the need to rappel.

Fountain grass work in the Kānepu‘u area was again augmented by the Castle & Cooke Conservation crew and the Lāna‘ihale Forest & Watershed crew this past quarter. Control efforts continued at the Honopū fountain grass population. Field crew extended the search area and controlled plants in all phenology classes including one flowering plant. Control efforts at this site currently focus on decreasing the potential future spread by eliminating seedlings. As this control effort continues, the amount of new acreage surveyed increases and crew continue to find additional satellite plants. Mature fountain grass plant numbers continue to be on a steady decline at the Kō‘ele Golf Course.

IVY GOURD

Field crew efforts continued to eliminate established *Coccinia grandis*. Coincidentally twelve mature ivy gourd plants were found this past quarter and twelve mature plants were found last quarter. Two new sites in Kihei and a new site in Kahului were found by Forest & Kim Starr during their latest Maui road survey. These sites were subsequently controlled by MISC field crew.

With two visits to Lāna‘i this past quarter for ivy gourd control, a decrease was seen in mature plant numbers controlled. No fruiting plants were found during field surveys at all known locations at the golf course and surrounding areas. There was also a decrease in the number of seedlings controlled. The seed bank definitely is showing signs of depletion. Immature plant numbers are significantly lower (by about in half) when compared to control numbers for last quarter’s efforts. There were 42 mature ivy gourd plants found on Lāna‘i this past quarter. MISC’s control efforts for ivy gourd on Lāna‘i continue to benefit from the assistance of the Lāna‘ihale Forest & Watershed crew.

MICONIA

The miconia program experienced a significant change in August resulting from the retirement of Crew Leader Sam Akoi. Uncle Sam began working on miconia in 1997 on a crew run by the Dept. of Land and Natural Resources. Over the 12 years of his miconia career, Uncle Sam weathered significant program developments such as the Emergency Environmental Workforce in 2001, a changeover to management by MISC from DLNR in 2003, stop-gap emergency funding by the NPS Exotic Plant Management Team in 2003, and his promotion to supervisor in 2004. Sam’s invaluable contribution and service to the cause of controlling miconia on Maui is greatly appreciated. He leaves a strong legacy.



The retirement of Sam Akoi necessitated a transition in leadership for the Hāna crew. Hāna’s own Imi Nelson has been designated the interim crew leader. Imi has several years of field experience, a strong work ethic, and the backing of his peers on the Hāna crew to help him succeed.

Ground crew sweeps in the Ke‘anae area continued to be challenging due to periodic construction and road closures during the past quarter. As a result, more time was spent in the Nāhiku and Hāna areas to efficiently utilize crew commute time. In Nāhiku, efforts focused primarily on infestations mauka of Hāna highway in the ‘Ula‘ino, Kawakoe and Honomā‘ele areas. Crews were flown into remote areas above the Ke‘anae Arboretum and dropped for day-long surveys over a three-day period in August.



In Hāna, work continued in buffer units around the core infestation. The reentry interval for these units will be more frequent than most other areas to prevent seedling trees from reaching maturity. The crew focused on controlling mature and nearly mature trees, so that they can cover ground acres more quickly.

Aerial missions totaled 29 helicopter flight days for reconnaissance and spray work. Some productivity was lost due to scheduling conflicts and weather delays. Follow-up work in some lower Nāhiku populations was completed. There are still areas of hau intermixed with large miconia in Lower Nāhiku needing initial treatment.

RUBBER VINE

A rubber vine plant was discovered in Lahaina by Forest & Kim Starr during their Maui road survey this past quarter. The plant was subsequently controlled by MISC field crew. Surveys of all known rubber vine sites have yielded no new plants found. Permission issues still remain with known sites in the Central Maui area.

ERADICABLE SPECIES

Field crew monitored the Spanish heath site on Haleakalā Ranch and found no recruitment in the initial suppression area. Staff monitored *Silybum marianum* at the known locations along Makawao Ave. for signs of germination. This plant is most easily controlled when small. Control efforts last growing season were hampered by the larger plants being armed with needle-like spikes.

A Castle & Cooke conservation field staff member reported a *Macaranga mappia* plant on Lānaʻi this quarter. He had taken a photo of this plant during a hunting trip and noted that it was “different” than other plants in the area. The site was in a forested area above the Kōʻele Golf Course and was controlled by MISC staff during our August visit to Lānaʻi.

PLANT DATA JULY 1 TO SEPTEMBER 30, 2009

Maui

Target Species	Plants Controlled			Acres Inventoried
	Mature	Immature	Total	
<i>Miconia calvescens</i>	112	23,717	23,829	8,593.4
<i>Cortaderia spp.</i>	635	1,200	1,835	11,644.1
<i>Pennisetum setaceum</i>	0	0	0	83.7
<i>Coccinia grandis</i>	12	390	402	536.6
<i>Cryptostegia grandiflora</i>	1	0	1	17.1
<i>Pittosporum undulatum</i>	0	53	53	6.8
<i>Pittosporum viridiflorum</i>	0	1	1	0.3
<i>Macaranga mappia</i>	0	4	4	21.2
<i>Macaranga tanarius</i>	0	0	0	15.2
<i>Maclura pomifera</i>	0	40	40	1.9
<i>Erica lusitanica</i>	0	0	0	0.3
<i>Silybum marianum</i>	50	0	50	14.7
Grand Totals:	810	25,405	26,215	20,935.3

Lānaʻi

Priority Target Species	Plants Controlled			Acres
	Mature	Immature	Total	Inventoried
<i>Pennisetum setaceum</i>	15	200	215	222.2
<i>Coccinia grandis</i>	42	234	276	265.8
<i>Macaranga mapp</i>	1	0	1	9.9
Grand Totals:	58	434	492	497.9

BANANA BUNCHY TOP VIRUS

Efforts to suppress banana bunchy top virus in Maui County this quarter highlighted the effectiveness of our control, as well as the hurdles we've yet to overcome. In Lahaina, MISC has found no BBTV since June 2008 and Lānaʻi remains BBTV free. However, we continue to see the infested-area footprint expand in Kīhei, Kahului, and Kula. The expansion does not seem to indicate a greater quantity of BBTV at any one time, but that a greater total area is affected. MISC plans to use existing expansion data and ArcGIS tools to help guide our efforts to best address the expansion. A comprehensive survey of Lānaʻi occurred this quarter and was completed in record time. Six hundred and fifty-one properties were surveyed in one day with the help of our Lānaʻi partners, all of the MISC Piʻiholo-based field staff, and Lānaʻi residents



Amazingly, no BBTV was found in the Kula Agricultural Park this quarter. Historically, the Park was considered a point source for BBTV in Kula. Since removing several thousand mats of plants and treating for the aphid vector at the beginning of this year no BBTV has been found in the Park. MISC plans to continue aggressive treatment of known infested areas, working with area residents and local businesses to provide compensation for plant removal through our banana and native plant replacement programs. We are working with the Hawaiʻi Department of Agriculture and the Mayor's Office to find ways to deal with recalcitrant residents.

This quarter 360 crew hours were spent visiting 2,002 properties in Maui County. Of 21 sites that were found to have bunchy top this quarter, 17 were treated. The remaining sites 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>
Kahului	146	2
Kīhei	3	4
Makawao	470	5
Pukalani	2	2
Lahaina	19	0
Kula	134	6
Haʻikū	27	2
Total	801	21

Note. Many of the sites surveyed this period have been known to have BBTV in the past. Therefore, not all sites with BBTV are new locations. Driving surveys are also not reflected in these numbers (driving surveys covered most of Lahaina-town)

Vertebrate Status

This quarter saw the addition of one new coqui population, the official eradication of two populations, and the beginning of control efforts deep in Māliko Gulch. The new coqui population in Wailea covers a small area (<1 acre) and has been treated several times already. A few tenacious coqui remain. A farm in the Waihe'e area and Calasa's Junkyard are now officially coqui-free. The junkyard in particular is a huge success and highlights the effectiveness of habitat reduction, systematic spraying, and a persistent effort.



Control efforts throughout Māliko Gulch ramped up this quarter with on-the-ground drench applications, sprinkler trials, and habitat work. Although these efforts have been effective in certain pockets of the gulch, coqui frogs now appear to be present throughout the entire >3.5-mile-long gulch and some spillover is occurring into the neighboring community. New, creative solutions to controlling frogs in the gulch are being explored and will be integrated into our multi-pronged approach over the winter. Options being evaluated include helicopter use, PVC fixed-line spray/sprinkler systems, wet foggers, and more.

MISC's large-volume sprinkler system was put into action this quarter and efficacy was analyzed using control and treatment plots. Control and treatment plots were monitored pre- and post-treatment physically as well as with audio recorders. Results were positive with nearly 75% fewer frogs observed by searchers post-treatment. Unfortunately, pockets remain in the broader treated areas due to slope and vegetation variables. These pockets will require a different approach.

The coqui-free program continues with 29 businesses now certified coqui-free. A study to determine interest and impacts of the program also concluded this quarter. Final results of the study revealed that the program has value and the designation as a coqui-free business is meaningful. Ninety-four percent (94%) of participating business owner/managers responded that the program was worthwhile, with many independently adding the adjective "absolutely." MISC plans to continue the program indefinitely and to solicit broader industry recognition and professional endorsements.



Scores for pre- and post-program consumer surveys ($N = 303$) conducted as part of the coqui-free program suggest no significant change in consumer behavior as a result of the program. Respondents' strong feelings that coqui frogs are an issue in Hawai'i (68%), that the issue is important to them (56%), and that they would seek out a coqui-free certification program if available (79%), indicate that with appropriate outreach the program may be very successful at influencing consumer behavior. MISC plans to improve consumer awareness of the program through upcoming outreach activities. More information about the coqui-free program and more detailed research results can be seen at www.coquifreemaui.org.

- Crews made 89 visits to 46 frog-infested areas or suspect locations this quarter.
- MISC crews spent 551 hours at a variety of locations working on frog control.
- 33,354 lbs. of citric acid were used this quarter, nearly all in Māliko Gulch.

VEILED CHAMELEONS

No veiled chameleons were reported or found this quarter. Our next bi-annual search is scheduled for October. To date, 206 veiled chameleons have been recovered on Maui - the first 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.

MITRED CONURES

Conure control efforts continued this quarter. A total of six conures were controlled during six outings; five from Waipi'o Bay and one from Huelo Point. An estimated ten conures remain at the Waipi'o Bay location and nine at the Huelo Point location.

OTHER VERTEBRATES

The crew received several reports of lovebirds and other parrot-like birds this quarter in the Maui Meadows area and is following up appropriately.

MoMISC Activities

MoMISC continued work on priority target species this quarter. No giant reed was detected this quarter. Over 30 acres were surveyed for rubber vine with two mature and 18 immature plants controlled. Australian tree fern surveys over 1.5 acres yielded one immature fern that was manually removed. Seventy-four mature and 1,000 immature albizia were treated and 34 acres surveyed. Fountain grass surveys covered over 67 acres and no fountain grass was detected. One immature tumbleweed plant was controlled during surveys of over 42 acres.

Other pest work included assisting with a black buck (*Antilope cervicapra*) survey in order to determine the presence of the animal on Moloka'i. Over 66 acres were surveyed and the presence of black buck was confirmed. MoMISC continued to survey for and control banana bunchy top virus - 50 banana plants were treated for BBTV. MoMISC manually removed a single pampas grass clump from a residence in Kualapu'u. The homeowner started the plant from seed that was purchased through the mail. This was the first pampas grass detection on Moloka'i in eight years. MoMISC followed up on a red-vented bulbul report, but none were found. MoMISC also initiated a community service project to remove mangrove growing on a break-wall at the Kaunakakai harbor. Partners from TNC and two community volunteers contributed 112 hours to the project. MoMISC continued to assist with data collection for the stinging nettle caterpillar (HDOA), light brown apple moth (USDA) and upside down jelly fish (DLNR-DAR).