



Quarterly Report to the MISC Committee
FY 2012, Second Quarter
October 1 to December 31, 2011

Manager's Report

Ko koā uka, ko koā kai.
Those of the upland, those of the shore.

Mary Kawena Pukui explains that this *‘ōlelo no‘eau* means that upland dwellers brought poi, taro, and other foods to the shore to share while shore dwellers gave fish and other seafoods. Once a year, all MISC staff gathers to share our *mana‘o* about our work, our food, and when possible, our labor with a partner agency.



This year “upland” staff from Makawao and “shore dwellers” from East Maui gathered again at Olowalu. We engaged in lively games of Jeopardy focused on MISC’s target species. We reviewed safety protocols and broke into small groups, tackling problems as diverse as fundraising, safety goggles, and landowner relations, bringing the results back to the larger group. And we shared our considerable person-power with the Olowalu Cultural Reserve, helping them clear vegetation from *lo‘i kalo* grounds.



Diversity usually means a more interesting feast. It certainly makes MISC a better place.



Employee of the Quarter



We like to say, “You can never leave MISC,” an adage proven true as numerous staff have returned to the fold after exploring other jobs, geographic locations, or even retirement. Carl Polk, who first worked on the miconia project during the Emergency Environmental Work Force days, is a good example. After the EEWf ended, he honed his skills working on phones and computers, but we managed to lure him back when an opening occurred on the Hāna crew in 2008. When he wanted to move “Outside” (from Hāna) for personal reasons, we found a spot for him on the Pi‘iholo plant crew, where we came to appreciate even more his energetic approach to

work, his willingness to camp in remote areas week after week, and a positive, can-do attitude. Carl is one of those employees who quietly go about getting the job done: he’s almost always early to work, busy getting the trucks and gear ready. He willingly put his abilities to work, helping solve electrical or phone problems at both the Hāna and Pi‘iholo baseyards. Carl also became one of our regulars on work trips to Lāna‘i. Apparently, Lāna‘i struck a chord with Carl as he is leaving MISC to live and work on Lāna‘i - with the Lāna‘i Native Species Recovery Program. Can we count his latest move as not really leaving MISC since he’ll be working as a partner on ivy gourd and fountain grass surveys? Either way, we’ll still miss you, Carl. Mahalo nui and we’ll be seeing you around.

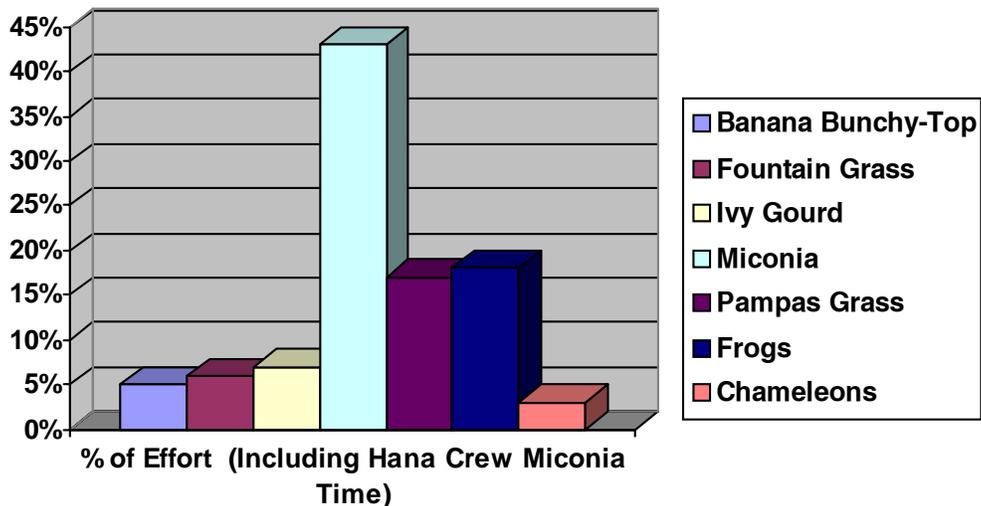
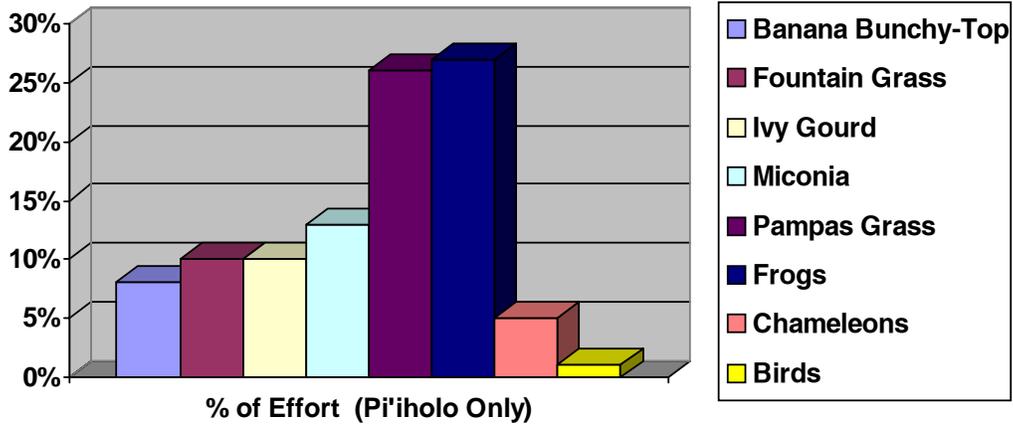
Quarterly Highlights

- Oct 3-7: Crew to Honomanū for pampas grass control
- Oct 4-5: Adam provides rappelling training to WMMWP
- Oct 6: Adam gives coqui protocols presentation at LICH trade show on O‘ahu
- Oct 13: Teya attends Maui Deer Working Group meeting
- Oct 13-14: MISC Field Worker interviews
- Oct 17-21: Crew to Haipua‘ena for pampas grass control
- Oct 25-27: Teya & Lissa to Hilo for little fire ant video filming
- Oct 27-28: Brooke attends GIS training on O‘ahu
- Oct 28: MISC meeting: vertebrates & biocontrol

- Nov 1: House Finance Committee tours Hāna miconia operation
- Nov 1-4: Adam attends human-wildlife conflict resolution training on the Big Island
- Nov 2-4: Teya & Lori give presentations at Society of American Foresters Conf.
- Nov 5: Educational booth at Arbor Day event
- Nov 10-11: Lissa attends ant education & outreach strategies workshop in Hilo
- Nov 12: MALP Lawn & Garden Fair, presentation of Mālama i ka ‘Āina award
- Nov 14-16: Veiled chameleon searches in Makawao
- Nov 14: Kona Ball & Matt Pratt join the MISC crew
- Nov 15: Teya attends Established Pests Working Group Meeting on O‘ahu
- Nov 16: Teya & Lissa attend CGAPS meeting on ‘Oahu

- Nov 17: All staff hike in Waikamoi with Pat Bily
- Nov 22: Hō'ike steering committee meeting
- Nov 29-30: Adam conducts rappelling training/ refresher for EMWP & MISC staff
- Nov 30: Teya attends Maui Deer Working Group meeting

- Dec 1: Teya attends Maui Conservation Alliance meeting
- Dec 1: Chuck & Abe judge 'Īao School science fair
- Dec 6-7: All staff retreat and work project at Olowalu
- Dec 7: Teya attends meeting with Department of Water Supply
- Dec 9: MISC meeting: early detection species assessments
- Dec 10-11: Adam attends recertification course for rope work instructors
- Dec 12-16: Crew to Lāna'i for fountain grass control



MISC IN THE NEWS

The Maui Invasive Species Committee and/or topics relating to our work were covered eight times in the Maui News during this quarter, appearing in announcements regarding presentations and events, as well as articles about the spread of the coqui frog to O'ahu and letters to the editor. Through the Kia'i Moku column in the Maui News, MISC had articles on 'ōhi'a rust and efforts to ban the import of myrtle species to stop its spread, the promising discovery of a potential natural enemy for miconia, and the history and spread of invasive pines in Hawai'i. These articles are available online at www.hear.org/misc/mauinews/. Articles in the Maui News helped us reach 22,000 readers in Maui County.

Article Date	Article Title	Topics Discussed
Oct. 2	Community News: Invasive Species Topic of Meeting	Miconia, little fire ant, strawberry guava
Oct. 5	Fun at the Wetlands	Miconia, little fire ant
Oct. 16	Sticking Together	Article highlighting sculptor Patrick Dougherty's work at the Hui No'eau, strawberry guava
Nov. 6	Lawn and Garden Fair held at Maui Mall	General announcement mentioning MISC
Dec. 4	Landscapers Honored for Work in Invasive Species Prevention	Announcement of recipient of Mālama i ka 'Āina award
Dec. 4	Thank you: Letter from Maui Nui Botanical Garden	MISC
Dec. 11	Letter to Editor: Work to Control Coqui Frog Problem Continues	MISC response to earlier letter about coqui control
Dec. 31	AP article: Tiny Frogs, Big Concerns for O'ahu	Coqui frogs
Kia'i Moku		
Oct. 9	Plans in the Pipeline to Protect 'Ōhi'a from 'Rust'	'Ōhi'a and proposed ban on import of myrtle species
Nov. 13	Miconia May Have Predator	Miconia biological control
Dec. 11	Polipoli Fire May Have Aided Pine Tree Spread into Crater	Invasive pines and their impact in Hawai'i
	Total:	11 articles/22,000 readers

REACHING OUT TO THE COMMUNITY

This quarter MISC reached 249 people through community events. The Maui Nui Botanical Garden had its annual Hawaiian Tree Giveaway Event for Arbor Day and the Maui Association of Landscape Professionals (MALP) held its Lawn and Garden Fair. In coordination with MALP and the County of Maui, MISC presented the Mālama i ka ‘Āina award to landscapers Elaine Malina and Sarge McBride at the MALP fair. The Mālama i ka ‘Āina Award is given annually to recognize professionals in the landscape industry working to prevent the establishment and spread of invasive species. About 20 people attended the presentation ceremony.



On October 3rd, MISC gave a presentation to 25 people at a meeting of the Upcountry Sustainability group focused on the impact of invasive species on sustainability. Specifically discussed were miconia, strawberry guava, biocontrol, and little fire ants. At the Maui Nui Botanical Garden’s (MNBG) Arbor Day Event, MISC gave a talk about the *Erythrina* Gall Wasp and biocontrol to approximately 30 people in anticipation of the Mayor planting a wiliwili tree.

Date	Event/Presentation	Topics	Audience
Oct. 3	Presentation: Upcountry Sustainability	Miconia, little fire ant, strawberry guava	30
Nov. 5	MNBG Hawaiian Tree Giveaway	Coqui frog, little fire ant, miconia	78
Nov. 5	Talk at MNBG	Biological control	25
Nov. 12	MALP Lawn and Garden Fair	Coqui frog, little fire ant, miconia	96
Nov. 12	Presentation of Mālama i ka ‘Āina Award at MALP Fair	BBTV, coqui frog	20
		Total:	249

MISC coordinated and assisted with several video projects this quarter. On October 11th, a crew visited Hāna to film miconia helicopter operations. The same crew returned November 15th to Hāna to film field operations with the miconia crew. The videographers interviewed Adam Radford, Jeremy Gooding, Lissa Fox Strohecker and members of the miconia crew. The footage will be used in a watershed documentary being produced by the Department of Land and Natural Resources as well as in segments on Cal Hiraï’s show “Outside Hawai’i” in March 2012.

There were a total of 4,130 pageviews of the following MISC sponsored and maintained Internet sites: mauiisc.org (primary website), mauiinvasive.org (blog), lfa-hawaii.org (little fire ant reporting site), coquifreemaui.org (coqui-free certification program for Maui County), and the Maui Invasive Species Committee page on Facebook.

Website	Topics	Pageviews
mauiisc.org	Miconia, fountain grass, pampas grass, coqui frog, little fire ant, BBTV	1,636
mauiinvasive.org	Fountain grass, coqui frog, pampas grass, miconia, little fire ant	1,324
lfa-hawaii.org	Little fire ant	417
coquifreemaui.org	Coqui frogs, coqui-free certification program	115
Facebook-MISC	Miconia, fountain grass, pampas grass, coqui frog, little fire ant, BBTV	638
	Total:	4,130

MISC IN THE CLASSROOM

MISC had six school group activities which reached 166 students and 130 community members.

Date	School/Group Visited	Topic	Audience
Oct. 25	Montessori School	Little fire ants	20
Nov. 4	Hāna High School Volunteer Day	Miconia	18
Nov. 8	Moloka'i High School	Little fire ants	50
Nov. 16	Cub Scouts	Little fire ants-invasive species jenga game	48
Nov. 18	Lokelani Intermediate School	Little fire ants	30
Nov. 30	Kihei Charter School-Community Panel	Little fire ants, miconia, general information about invasive species	130
		Total:	166/130

Plant Updates

MICONIA

During this quarter, four areas were actively swept by ground crews, with one management unit completed and another area swept completely for the first time. Two other units are in the process of being swept with completion anticipated in 2012.

In the Ke'anae area, 39 acres were swept mauka of Hāna highway in the vicinity of East Wailua iki stream. On this cycle, no miconia plants were found in terrain dominated by eucalyptus and large native koa trees. The ground crew also swept a 38 acre area makai of the Hāna highway in Wailua, adjacent to Wailua Nui stream. This area is not a formal management unit and has received only partial coverage in the past decade. As a result of reports from local residents sighting miconia, all walkable area that is not in taro cultivation was swept. A total of 10 plants were detected and removed, none of them seeding. Steep terrain hampers completing the area by ground, so helicopters and possibly rappelling will be used to clear it of miconia during future visits.

In the Hāna area, two management units were actively being swept during the close of 2011. Both are still in process and will be completed in 2012. Located northwest of Olopawa and the Hāna Core infestation, the Kawela units will be swept before ground crews proceed northwest to units closer to Nāhiku. In excess of 87 acres have been covered, treating 15 mature miconia plants and numerous immature ones. Ground efforts were challenging due to poor weather and thickening patches of clidemia.

Aerial operations occurred during October and November over 10 days. Surveys focused on maintaining control of outlier low-density infestations.

PAMPAS GRASS

Cortaderia efforts wound down for the winter with one last trip into Honomanū and one into Haipua'ena. Our efforts in Honomanū continued to pay off with a steady decline in plant numbers. During the last trip of the season, the crew controlled 22 immature plants and only one mature plant in Honomanū during a four day trip. Haipua'ena, on the other hand, is in the infancy stages of control and during our last four day trip of the season the crew controlled 119 immature and 20 mature *Cortaderia* plants. Our control efforts in these backcountry areas will ramp up again in the spring.



A small crew collaborated with the West Maui Mountains Watershed Partnership during a two day trip to the south rim of the Kaua'ula Valley where one mature and one immature pampas plant were controlled. This small population was previously only controlled by helicopter.

With camping activity slowing down this quarter, the crew was able to focus more of their efforts on searching Upcountry ranches and along the Waikamoi flume. Ten days of sweeps at known ranch sites produced 51 immature *Cortaderia* plants and one mature plant. During six days of surveys in the Waikamoi flume area there were 151 immature plants and 13 mature plants controlled. This is a high priority area where we will continue to focus our efforts.

In the Upcountry area of Maui, there were 65 visits to 57 residential sites. Thirty three of those sites were surveyed with no plants found and at 12 other sites a total of 41 immature and one mature plant were controlled. Sites that were not surveyed were due to homeowners not being home or permission issues. Plants were controlled at a quasi-residential site, a large open lot in Kula, where 762 immature plants and four mature plants were removed.



Aerial operations also slowed to a halt during this period. The last few missions of the quarter focused mostly on spray operations. Twenty-one immature plants and 68 mature plants were controlled on East Maui. On West Maui, the season ended with 252 immature and 131 mature plants controlled during spray operations. Of those 383 plants controlled on West Maui, 109 of them were controlled with Herbicide Ballistic Technology (HBT) in the back of Waihe'e Valley as part of a research project conducted with Dr. James Leary. The results of this initial treatment will be seen in the spring when helicopter operations resume.

FOUNTAIN GRASS



The large infestation of fountain grass found recently on a private residence in Pukalani was controlled after permission was secured to complete the initial suppression. A total of 618 plants were controlled at this one site (543 immature and 75 mature). All other known locations of *Pennisetum setaceum* were monitored with no plants found. On Lānaʻi, both mature and immature control numbers displayed a decrease this quarter.

IVY GOURD

Field crew efforts on *Coccinia grandis* continued with six mature and 72 immature plants controlled this quarter. No viable fruit was found. The field crew made one visit to Lānaʻi. There was a reduction in the number of plants controlled on Lānaʻi primarily due to a lack of rainfall. Two mature plants and five immature plants were found (non-flowering), but no seedlings.

OTHER PLANTS

- *Caesalpinia decapetala* (cat's claw): no seedlings or additional plant locations were found during a visit to 'Ulupalakua.
- *Cryptostegia grandiflora* (rubber vine): no new plants were reported or found. Permission issues remain for known sites in the central Maui area.
- *Macaranga tanarius* (parasol leaf tree): twenty three plants were controlled. Staff monitored nurseries for the potential of plant movement in landscape containers.
- *Silybum marianum* (milk thistle): surveys continued by field crew with no plants found.
- *Pittosporum viridiflorum* (Cape pittosporum) & *Sideroxylon persimile* (bully tree): no plants were found during surveys.
- *Rhodomyrtus tomentosa* (downy rose myrtle): no plants were found this quarter during surveys on Lānaʻi.



EARLY DETECTION / RAPID RESPONSE

Early detection and rapid response activities conducted by Forest & Kim Starr this quarter included delimiting surveys for *Salsola tragus* (tumbleweed) on West Maui. No tumbleweed was found at the single known site indicating that the control work by a local farmer is keeping it in check. No plants have been found at a second potential site, reported by a member of the public. During work on silverswords and fireweed, surveys were conducted in Haleakalā National Park and Polipoli for pines, pampas grass and *Verbascum thapsus* (mullein). No pampas or *Verbascum* were found and many pines were controlled.

The Starrs are cultivating a lone plant that is believed to be *Gutierrezia sarothrae* (broom snakeweed) in hopes of confirming the identification. This species is a bad rangeland pest that could have impacts similar to fireweed. A new island record, *Torilis arvensis* (spreading hedgeparsley), found on the summit of Haleakalā, was controlled. The immediate area was searched briefly and no additional plants were found. The plant had gone to seed so follow-up surveys will be required.

Initial assessments were completed on 300 potentially invasive plant species. A list of 100 was sent to MISC Committee members for comments on invasiveness, local distribution, and other issues that should be considered when contemplating

management actions. A presentation was given at the December 2011 MISC meeting about the assessment process and about 50 or so species were discussed by the Committee. At the February 2012 MISC meeting, the Committee will complete review of the species and decide which ones should receive additional work, whether that means more delimitation or actual control. Through a web-based identification service, the Starrs assisted members of the public and local conservation staff with 94 plant identifications and 109 insect identifications

SUMMARY OF WORK ON INVASIVE PLANT SPECIES OCTOBER - DECEMBER 2011

Maui

Target Species	Plants Controlled		Total	Acres Inventoried
	Mature	Immature		
<i>Caesalpinia decapetala</i>	0	0	0	3
<i>Coccinia grandis</i>	6	72	78	557
<i>Cortaderia spp.</i>	240	1,420	1,660	2,066
<i>Cryptostegia grandiflora</i>	0	0	0	1
<i>Macaranga tanarius</i>	0	23	23	88
<i>Miconia calvescens</i>	224	4,092	4,316	459
<i>Pennisetum setaceum</i>	75	543	618	170
<i>Pittosporum viridiflorum</i>	0	0	0	47
<i>Sideroxylon persimile</i>	0	0	0	10
<i>Silybum marianum</i>	0	0	0	9
Grand Totals:	545	6,150	6,695	3,410

Lānaʻi

Target Species	Plants Controlled		Total	Acres Inventoried
	Mature	Immature		
<i>Coccinia grandis</i>	0	5	5	129
<i>Pennisetum setaceum</i>	2	19	21	255
<i>Rhodomyrtus tomentosa</i>	0	0	0	3
Grand Totals:	2	24	26	387

Molokaʻi

Target Species	Plants Controlled		Total	Acres Inventoried
	Mature	Immature		
<i>Arundo donax</i>	0	0	0	1
<i>Caesalpinia decapetala</i>	1	1	2	8
<i>Cortaderia jubata</i>	0	0	0	2
<i>Cryptostegia madagascariensis</i>	6	10	16	26
<i>Cyathea cooperi</i>	1	3	4	27
<i>Falcataria moluccana</i>	0	0	0	14
<i>Ficus religiosa</i>	1	25	26	40
<i>Ficus virens</i>	3	0	3	1
<i>Macaranga tanarius</i>	0	1	1	1
<i>Merremia tuberosa</i>	0	2	2	2
<i>Montanoa hibiscifolia</i>	0	4	4	5
<i>Pereskia aculeata</i>	0	35	35	7
<i>Phormium tenax</i>	3	261	264	36
<i>Rosa multiflora</i>	0	6	6	3
<i>Salsola kali</i>	19	0	19	35
<i>Senecio madagascariensis</i>	0	0	0	110
<i>Setaria palmifolia</i>	0	19	19	1
<i>Ulex europaeus</i>	0	0	0	9
Grand Totals	34	367	401	328

BANANA BUNCHY TOP VIRUS

MISC crews expanded search efforts in Waihe'e, Waiehu and Wailuku this quarter due to recent BBTV finds in these areas. Expanded efforts included door-to-door surveys in communities with BBTV and surveys of areas likely to have BBTV but where it is not known to be present. Typically, crews search communities for BBTV well beyond the known extent of an infestation to ensure that it is contained. All new BBTV reports had follow-up this quarter.

A large effort to survey all of Pukalani, one of the first communities to have BBTV, was completed this quarter. Results were quite encouraging with BBTV found on only 2% of the properties surveyed. This is the lowest percentage in that community to date. This quarter, 1,341 properties were visited on Maui and 1,095 of these sites were accessed and surveyed. Of the 46 sites that were found to have bunchy top, 33 were treated. The remaining sites will be treated next quarter pending resident/owner permission.

Area	Sites Accessed	Sites With BBTV
Ha'ikū	85	21
Huelo	1	0
Kahului	9	2
Kihei	11	9
Makawao	20	4
Pukalani	490	2
Wailea	1	0
Wailuku	83	2
Waikapu	1	0
Waihe'e	330	5
Waiehu	14	1
Lahaina	50	0
Total:	1095	46

Vertebrate Status

COQUI FROGS

Coqui control efforts shifted this quarter to maintaining areas of Māliko that were treated during the summer ramp-up, keeping coqui-friendly habitat to a minimum, responding to new reports, and focusing on the five remaining (non-Māliko) sites. The status of those populations is as follows:

- Ha'ikū – None heard since July 2011
- Mākena – Fewer than five heard during each monthly visit since April 2011
- Wailea – Fewer than five heard during each monthly visit since July 2011
- South Maui Nursery – Fewer than five heard during each monthly visit since 2009
- Central Maui Nursery – Consistently high numbers of frogs

These results are generally very encouraging. The first three sites are expected to be in a monitoring phase or done by the end of this year. MISC crews monitor sites monthly for at least one year from the date the last frog is heard before considering a population eradicated. The last two sites are problematic. These sites continue to suffer from new introductions and it is unlikely that they will be frog free in the near future.



Planning for next summer's ramp up in Māliko began this quarter. During that process the need to streamline our efforts and reduce the time it takes to perform key functions (preparing citric acid solutions, maintaining frog-free habitat and access roads, and lifting/transporting fifty pound bags of citric acid) became apparent. It was decided that a tractor would be a useful tool to pump water, lift/move things, remove frog-friendly habitat, etc. Generously, the Omidyar 'Ohana Fund of the Hawai'i Community Foundation offered to help with a \$25,000 grant. The grant will be combined with other funds to purchase a tractor and necessary implements this spring.

This quarter:

- Crews made 101 separate visits to 66 frog-infested areas or suspect locations.
- Fifteen new reports were received and all had follow-up.
- MISC crews spent 455 hours working on the coqui project.
- 16,415 lbs. of citric acid were used, mostly in or near Māliko Gulch. One hundred seventy pounds of citric acid were also given to Māliko area residents who wanted to help control the coqui on their properties.
- Crews treated 9.7 acres of infested area on Maui, mostly in Māliko Gulch.

VEILED CHAMELEONS

Veiled chameleon searches occurred on three consecutive nights in November. One hundred twenty-five person hours were spent searching twenty-two properties. Searches were focused on properties where veiled chameleons had been most recently found, properties with suitable habitat (vegetated, not barren), and properties with historically high numbers of Jackson's chameleons. Three of the best searchers from the peak of veiled chameleon activity in previous years joined MISC staff for this round of searches.

MISC staff also visited over one hundred properties that have had veiled chameleons, are near those properties, or are along a natural corridor that runs through the historic "core" population. Staff spoke with residents and dropped off informational flyers in an effort to solicit reports. No valid reports were received and no veiled chameleons were found this quarter. The last veiled chameleon was found on March 19, 2008.

PARROTS AND PARROT-LIKE BIRDS

Two mitred conure control operations occurred this quarter. Although present, the birds were generally out of range. Twelve hours were spent at the site.

LITTLE FIRE ANTS

This quarter MISC surveyed 72 sites on Maui for little fire ants and 437 baited vials were set and collected. All vials were checked for LFA; none were detected. MISC worked with a Geographic Information System class at UH Maui College to conduct searches for the little fire ant in new developments in Wailuku. The 14 volunteers helped to survey 60 properties, distributing brochures and ant detection kits to homeowners in the process.

MISC continued to air public service announcements about little fire ants on Oceanic Time Warner Cable this quarter. A series of three LFA PSA's aired throughout the state from October 26 - 30 and again November 23 - December 4. The public service announcements focus on reporting unusual, small, stinging ants and direct people to the HDOA hotline (643-PEST) and the website www.lfa-hawaii.org. To view the PSAs go to <http://tinyurl.com/lfaPSAs>.



MISC staff traveled to Hilo in October and O'ahu in November with videographers Chris Reickert and Masako Cordray to continue interviews and filming for several LFA video products that are under production. Interviews were conducted with officials with the Hawai'i Department of Agriculture and with Big Island residents impacted by the LFA infestation. MISC outreach staff attended a two-day statewide workshop sponsored by the Hawai'i Department on Agriculture in Hilo in November. The workshop focused on ant education and outreach strategies.

MoMISC Activities

During this quarter MoMISC conducted survey or control work on: *Cryptostegia madagascariensis* (rubber vine), *Montanoa hibiscifolia* (tree daisy), *Pereskia aculeata* (Barbados gooseberry), *Phormium tenax* (New Zealand flax), *Salsola kali* (tumbleweed), *Senecio madagascariensis* (fireweed), *Caesalpinia decapetela* (cat's claw), *Ficus religiosa* (bo tree), *Merremia tuberosa* (woodrose), and *Rosa multiflora* (multiflora rose). MoMISC also worked on the following "Early Detection" species: *Arundo donax* (giant reed), *Cortaderia jubata* (pampas grass), *Ficus virens* (white fig), *Macaranga tanarius* (parasol leaf tree), and *Ulex europaeus* (gorse).

A member of the community turned in two peach-faced lovebirds that were in the wild and MoMISC surveyed the area for additional birds. MoMISC continued to monitor incoming shipments of plants for coqui frogs. A single mature calling frog that was believed to have "hitchhiked" on a pickup truck shipped from the Big Island was captured. Island-wide surveys continued for the little fire ant. No LFA were detected.

MoMISC conducted an invasive species outreach session for a UH-Maui College botany class. MoMISC also gave an invasive species presentation for Hawai'i and Samoa USDA District Managers in December and an albizia presentation with Flint Hughes at the Society of American Foresters Conference.