



MAUI INVASIVE SPECIES COMMITTEE

Quarterly Report to the MISC Committee

FY 2011, Fourth Quarter

April 1 to June 30, 2011

Manager's Report

*Lānaʻi i ke ʻehu o ke kai.
Lānaʻi stands among the sea sprays.*

About once a year, MISC tries to get all staff (including those usually chained to their desks), out on a work trip and Lānaʻi is usually a good option. We can pitch camp at Hulopoe Bay at no cost thanks to support from Castle and Cooke and play in the surf after hot dusty days looking for fountain grass. Super-long sweep lines make logistical sense across the open red-dirt slopes of Kanepuʻu – it's easy to see everyone and cover a lot of distance over just a few days. And it's a great opportunity to bring all the field crews and office staff together in a different setting.

This year's trip in May was one of the best. Everyone seemed in sync, with the load and laughter shared by all. Staff from Castle and Cooke and from Lānaʻi Native Species Recovery Program pitched in as well. Hardly any fountain grass was detected in the Kanepuʻu area, indicating that our strategy is working. Another strategy that seems to be working – training staff on multiple targets – was also in evidence. Vertebrate crew member, Dennis Green, brought the sweep line to a halt when he found a suspicious flowering plant. Lissa Fox immediately identified it as the elusive downy rose myrtle, a species previously reported as having been planted on Lānaʻi, but never before found. Although we didn't turn up any more, we now have a point from which to conduct future searches.

I'm not sure about the *kaona*, or hidden meaning, if there is one, of the Hawaiian proverb about Lānaʻi. But if I were to make up my own, I'd say that our staff stands tall among the sea sprays. Trips like our recent one to Lānaʻi help bring that image home.



Employee of the Quarter

Way to go! Floyd Helekahi is MISC'S Employee of the quarter. Floyd has been an asset to the miconia project in Hāna since he started over 6 years ago. Even though the work day in Hāna doesn't start until 7am, most likely you'll catch Floyd at the baseyard by 6:30am. Not only is he the first to arrive, he's always motivated and ready for whatever project the day may bring. From the smallest task to the biggest project, Floyd takes a lot of pride in his work and it shows. He is valued for everything from his handyman / construction skills to his musical talents. Floyd's attitude and numerous contributions have truly made him an example of a good work ethic and team player. Ask his co-workers what they think of Floyd and they will tell you that he's reliable, dependable, hard working and does it all with a big smile on his face.



Quarterly Highlights

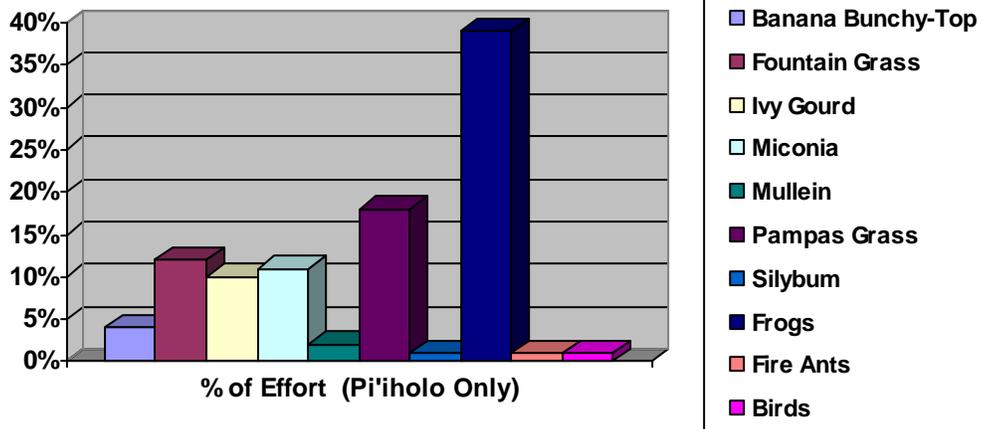
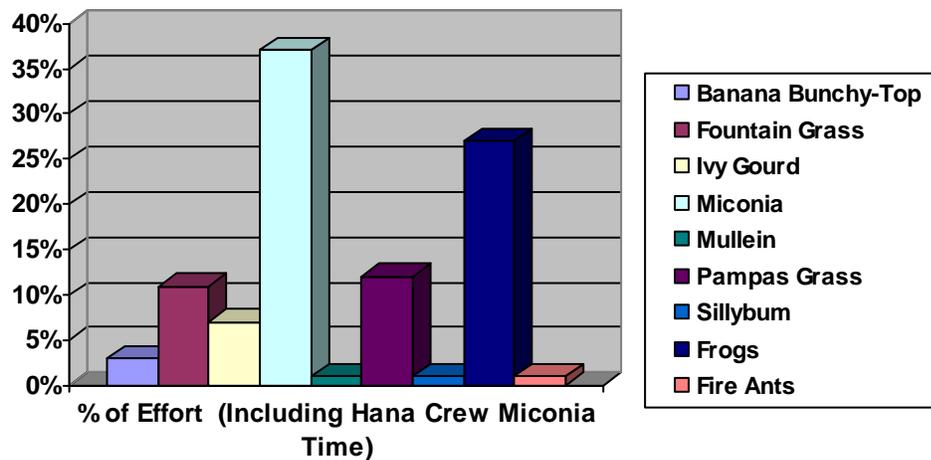
ACTIVITY HIGHLIGHTS

- April 2: Maui Agricultural Festival
- April 4: Crew cuts new trail in to the Haipuaena area of Honomanū
- April 5: Teya & Adam attend Deer Working Group meeting
- April 6: Teya & Adam attend Maui Conservation Alliance meeting
- April 7: Teya assists with interviews for the HISC Coordinator position
- April 12: Teya & Adam attend HI Assoc. of Watershed Partnerships symposium
- April 15: MISC Meeting – Technology & Invasive Species
- April 21: Mullein surveys near the summit of Haleakalā
- April 24: Teya attends County Council budget hearings
- April 27: Teya meets with Councilmember Riki Hokama
- April 30: Maui Taro Festival & Moloka'i Agricultural Festival

- May 2-6: Adam & Lissa assist with weed surveys in Kalaupapa
- May 4-5: Teya meets with Hau'oli Mau Loa Foundation & attends CGAPS meeting
- May 11-12: MISC management staff to 7 Habits of Highly Effective Managers training
- May 12: MoMISC quarterly meeting
- May 20: Teya, Adam, Mike, & Imi attend RCUH performance evaluation training
- May 23-27: All staff trip to Lāna'i – fountain grass, ivy gourd, BBTv, and LFA surveys
- May 27: Teya meets with DWS staff re: County funding



- June 1: Basic helicopter training for new/returning staff
- June 6-8: Crew to Hana'ula for pampas grass control
- June 6: Coqui temporary crew and AmeriCorps volunteers start work
- June 7-9: Crew to Kaua'ula for pampas grass control
- June 8: Teya & Adam attend Maui Conservation Alliance meeting
- June 9: Teya & Adam meet with OED Coordinator
- June 13-16: Ten crew members to Kaho'olawe
- June 13-15: Wilderness First Aid training
- June 17: Miconia Operations meeting
- June 20: Field Worker Interviews for Pi'iholo crew
- June 22-24: Wilderness First Aid training
- June 24: Teya & Elizabeth meet with Nelson Sakamoto
re: position structure
- June 27: Teya attends Deer Working Group meeting
Teya attends HISC Working Group meeting on O'ahu
- June 27: Brooke gives data presentation to NARS managers



PR & Education News

MISC IN THE NEWS

At times our reputation precedes us and April was one of those times: MISC was mentioned several times as being a partner in addressing a potential dengue fever outbreak, despite the fact that MISC was not aware of any partnership. However, one dengue-related article included an interview with Sam Akoi III about his experience contracting dengue. In the article, he was correctly identified as the former Hāna miconia crew leader for MISC.

Rats were the focus of our Kia'i Moku column in the Maui News. Articles this quarter discussed both the impacts of rats in Hawaiian ecosystems and control efforts. These articles, as well as all the articles written for the Kia'i Moku column, are available online at www.hear.org/misc/mauinews/.

In an effort to reach the gardening community, including individuals looking for new interesting plants, MISC is submitting a bi-monthly column to the Maui Master Gardener newsletter. The column for May alerted gardeners to the threats from banana bunchy top virus. Finally, a letter from MISC thanking Milagros' Food Company in Pā'ia for hosting a fundraiser was published in a May edition of the Maui News.

REACHING OUT TO THE COMMUNITY



The spring season for community events started off this year with the Agricultural Festival at the Maui Tropical Plantation. This increasingly popular event is put on by the Maui Farm Bureau and includes local celebrity chefs creating dishes that highlight Maui products. We talked with approximately 300 people over the course of the day. We concluded the month of April by participating in the Hāna Taro Festival. Just over 100 festival-goers visited with MISC staff.

A new video production group has offered to create a public service announcement on miconia for MISC. Lissa traveled with them to Hāna for preliminary filming and to scout locations.

Additionally, MISC will be working closely with the Hui No'eau Visual Arts Center in Makawao to create educational programs and community outreach efforts in anticipation of a September creation and installation by artist Patrick Dougherty. Dougherty creates large sculptures out of plant material and has chosen to work with strawberry guava. The installation will be up for two years, allowing for awareness about strawberry guava well past September

MISC IN (& OUT OF) THE CLASSROOM

The school year concluded with a series of classroom visits focused on testing lessons from the invasive species module of the Hō'ike curriculum. Abe tested a timeline activity in eight classes; students from junior high through high school learned about the rate of introduction of species in Hawai'i and how dramatically that rate has increased in the last 200 years. Additional lessons under testing include:

- An exciting activity using Google Earth to model the spread of the Erythrina gall wasp
- A lesson that covers economic impacts of invasive species by having students act out roles as managers of a hotel suffering from a coqui frog infestation
- A lab where students measure how leaf size affects the size of water droplets and develop hypotheses about how the size of leaves in a miconia forest impacts the watershed

To conclude the quarter, ten interns from the Pōhai Maile program at Haleakalā National Park spent the day learning about the work MISC does. Interns did a simulated snake search and then surveyed the County fairgrounds for little fire ant.

Plant Updates

PAMPAS GRASS

Pampas grass season is underway again. The crew started off the season with trips into three separate backcountry areas. The first trip was with a partner agency, West Maui Mountains Watershed Partnership, up to Hana'ula on West Maui. During the two day trip, 26 immature plants were found and controlled. This is an area visited yearly by ground as well as by air. Kaua'ula Valley on West Maui was also visited in June. During this two day trip the crew controlled 67 immature pampas grass plants and 21 mature plants, despite the less than ideal weather. On the east side of Maui there were two week-long trips to the Honomanū camp where 181 immature plants and three mature plants were controlled. During frontcountry work, the crew controlled 12 immature pampas plants on Haleakalā Ranch this quarter and 36 immature plants on Kaonoulu Ranch.



IVY GOURD

On Maui, there was a decrease in the number of ivy gourd plants found this past quarter. The new Kahului infestation, discovered by Pat Conant last quarter in the rear parking lot of Krispy Kreme, had no male plants present.

Crew visited Lāna'i twice this quarter to control ivy gourd in the Mānele golf course area. Fewer plants were found than on previous visits. The decrease is possibly the result of reduced rainfall during the reporting period. Field crew controlled 38 mature plants, 2 with fruit, 340 immature plants (non-flowering), and several seedlings.

FOUNTAIN GRASS



All known locations of *Pennisetum setaceum* on Maui were monitored and no new plants were found. During a banana bunchy top survey, the coqui crew discovered a new large infestation of fountain grass at a private residence in Pukalani. MISC has not been given permission to control this infestation to date, but the landowner is willing to control it himself. At another new location in North Kihei, three fountain grass plants were controlled.

On Lānaʻi, fountain grass numbers displayed a significant decrease this quarter for both mature and immature plants at all sites. In late May, the entire (almost) MISC staff swept known locations and expanded buffers on Lānaʻi for fountain grass with help from the Lānaʻihale Native Species Recovery Program and Castle & Cooke, Conservation staff.



RUBBER VINE

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

ARUNDO

Two re-growth plants were controlled on Kahului Beach Road.

OTHER PLANTS

Maclura pomifera (Osage orange) root suckers continue to be controlled systematically at the only known location on Maui. No *Macaranga tanarius* (parasol leaf) plants were found this quarter. MISC will continue to monitor nurseries for plant movement in landscape containers. The Haʻikū population of *Morella cerifera* (wax myrtle) is being manually controlled by MISC field crew. The current landowner will not allow herbicide use. Seven mature and one rosette stage *Silybum marianum* (milk thistle) plants were controlled this quarter. One of the mature plants had dispersed seed.

MISC staff joined forces with Leeward Haleakalā Watershed Partnership staff this quarter to survey for *Verbascum thapsus* (mullein) near the summit of Haleakalā. Two seedlings were discovered near the same location where Leeward staff had found seedlings before. Forest and Kim Starr did additional surveys in the Science City area.

On Lānaʻi, a mature *Rhodomyrtus tomentosa* (downy rose myrtle) plant was found by Dennis Green during fountain grass surveys mauka of Lānaʻi City. Two *Caesalpinia decapetala* (cat's claw) plants were controlled during a plant survey in Kapano Gulch just outside of Lānaʻi City.



MICONIA

During this quarter, ground sweeps continued to focus primarily on the Pu'u Ki units in the vicinity of Hāna, mauka of Hāna Ranch. The third and fourth management units were completed. The final Pu'u Ki unit will be completed in July 2011. Plant counts remained high for the sweeps, increasing as the crew moved closer to the Hāna Core infestation and also at lower elevations. Some seeding trees were located and treated, once again suggesting that a shorter interval between sweeps could have been beneficial. Wet weather has been a significant factor influencing field crew effectiveness and access to these units.

Crews initiated ground sweeps in Wailua, Honolulu Nui, Lower Nāhiku, and in Hāna Ranch near the cinder pit this quarter. These areas were used as backups when the weather in Pu'u Ki was too wet for ground operations. In Wailua, several large miconia were mechanically removed, with others treated with herbicide or hand-pulled. Honolulu Nui sweeps resulted in control of numerous small miconia plants and two fruiting trees. The terrain and vegetation in Honolulu Nui is more open and traversable than in other areas, so progress was relatively quick. Plant counts in the Hāna Ranch cinder pit area were high. Completion of this area is anticipated in early July. In lower Nāhiku, access and owner contacts continue to be a challenge, but some areas were successfully swept with owner permission. Relatively smaller work crews simplified gaining access and resulted in treatment of two sizeable, but not yet mature, miconia plants.

Aerial operations continued in April, May and June, with a total of 18 helicopter days. The priority continued to be on maintaining control of known outlier sites, largely leaving the Hāna Core population alone and not performing intensive reconnaissance in areas where miconia is not known to be established. Continued experimentation with the University of Hawai'i on novel Herbicide Ballistic Technology (HBT) ground and aerial application methodologies added to the growing base of knowledge to help streamline miconia control operations. It is becoming increasingly apparent that these new techniques will eventually result in more efficient and safe control on steep slopes, such as the walls of Ke'anae and Wailua Valleys.

PLANT DATA APRIL 1 TO JUNE 30, 2011

Maui

Target Species	Plants Controlled			Acres Inventoried
	Mature	Immature	Total	
<i>Arundo donax</i>	2	0	2	3.43
<i>Coccinia grandis</i>	18	269	285	1,157.80
<i>Cortaderia</i>	26	592	618	830.92
<i>Miconia calvescens</i>	107	10,468	10,575	2,474.16
<i>Pennisetum setaceum</i>	1	2	3	340.95
<i>Silybum Marianum</i>	7	1	8	31.98
<i>Acacia retinoides</i>	0	0	0	37.16
<i>Caesalpinia decapetala</i>	0	0	0	2.56
<i>Macaranga mappa</i>	0	0	0	2.10
<i>Macaranga tanarius</i>	0	0	0	72.73
<i>Verbascum thapsus</i>	0	2	2	245.79
Grand Totals:	161	11,334	11,493	5,199.58

PLANT DATA APRIL 1 TO JUNE 30, 2011

Lānaʻi

Target Species	Plants Controlled		Total	Acres Inventoried
	Mature	Immature		
<i>Coccinia grandis</i>	38	340	375	258.01
<i>Pennisetum setaceum</i>	5	20	25	490.79
<i>Rhodomirtus tomentosa</i>	1	0	1	7.10
Grand Totals:	44	360	401	755.90

BANANA BUNCHY TOP VIRUS



This quarter, MISC staff worked with Lānaʻihale Native Species Recovery Program, Castle and Cooke and Department of Land and Natural Resources staff to conduct our 6th round of comprehensive banana bunchy top (BBTV) surveys on Lānaʻi. These island-wide surveys occur annually and involve door-to-door inspection, road reconnaissance, and public outreach and educational activities. A substantial effort was also made to resurvey Pukalani for BBTV and treat / monitor known infestations in Haʻikū. Specifically this quarter, 799 properties were visited on Maui. Of the 43 Maui sites that were found to have bunchy top, 25 were treated. The remaining sites will be treated next quarter pending resident / owner permission.

LITTLE FIRE ANTS

This quarter 31 sites on Maui were surveyed for LFA and 1,306 samples were collected by MISC staff and Forest and Kim Starr. Surveys continued to focus on high risk businesses that regularly receive shipments from the Big Island. Samples this quarter were collected at several nurseries, botanical gardens / flower farms and at Hāna Bay. No LFA were found on Maui this quarter.

Ant samples were collected from several locations on Lānaʻi during comprehensive BBTV surveys in May. The samples were collected in places that seemed to be the most likely ports of entry (both harbors, the county nursery, etc.). No LFA were found. Two previously undocumented ants were collected during these surveys (*Monomorium destructor* at the Kaunalapau Harbor and *Tetramorium bicarinatum* - Mānele Harbor). The two specimens will be sent to Bishop Museum.



Vertebrate Status

VEILED CHAMELEONS

One veiled chameleon report was received this quarter. Fortunately, it turned out to be a false report.

MITRED CONURES

MISC staff began monitoring the conure population(s) in Huelo again this quarter. It appears that roughly thirty birds remain. Efforts to continue controlling the population are planned for later this summer.

COQUI FROGS

MISC's coqui control efforts are in full swing this summer. Two AmeriCorps interns and three temporary summer hires were added to the existing five person crew in early June. Doubling the crew size has allowed us to really ramp-up our efforts in Māliko Gulch. This quarter, the crew started systematically working through the gulch with the goal of treating the entire infestation by the end of the summer. If accomplished, this will be the first time the entire infested area has been treated.



To gauge the effectiveness of MISC's efforts in Māliko and evaluate different methods of control (e.g., ground sprays, aerial applications, etc.) researchers from Utah State University started working with MISC staff this quarter. The researchers set up over fifty monitoring plots throughout the gulch. They are planning to use three established methods for estimating coqui densities. These methods include: mark-recapture, distance sampling, and sound pressure level recordings. The vertebrate crew



participated in two days of coqui-control helicopter operations. This experimental method is still being tested by MISC staff and seems to be producing positive outcomes.

Also this quarter, MISC staff revisited all of our coqui-free nursery program participants. The coqui-free program encourages plant industry participants to take a proactive approach to preventing introductions of the frog and is guided by established codes of conduct. No coqui were detected during nighttime surveys and thirty-four Maui businesses continue to meet the requirements for certification. Two new participants are in the process of becoming certified.

This quarter:

- Crews made 111 separate visits to 52 frog-infested areas or suspect locations.
- Twenty-two new reports were received and all had follow-up.
- MISC crews spent 772 hours at a variety of locations working on frog control.
- 50,775 lbs. of citric acid was used, mostly in Māliko Gulch.

OTHER VERTEBRATES

One poison dart frog (*Dendrobates auratus*) and several wrinkled frogs (*Rana rugosa*) were recovered. The poison dart frog was found in Wailuku and the wrinkled frogs were captured by Maui Forest Bird Recovery Project staff in Hanawi.

MoMISC Activities

During the reporting period MoMISC continued to do maintenance and monitoring on seven priority species: rubber vine (*Cryptostegia madagascariensis*), Australian tree fern (*Cyathea cooperi*), albizia (*Falcataria moluccana*), tree daisy (*Montanoa hibiscifolia*), Barbados gooseberry (*Pereskia aculeata*), tumbleweed (*Salsola kali*) and fireweed (*Senecio madagascariensis*). Other species worked on this quarter included: banana bunchy top virus, cat's claw (*Caesalpinia decapetala*), coqui frog (*Eleutherodactylus coqui*) and palm grass (*Setaria palmifolia*). A total of 889 acres were surveyed, 1,134 pests controlled, and 22 hours contributed by partners.

Some highlights of control work included:

- MoMISC worked on BBTV, which is still confined to the Kualapu'u and Ho'olehua Districts. A total of 94 plants were treated.
- MoMISC conducted initial suppression of tree daisy. A total of 528 plants were treated and 6 acres surveyed.
- MoMISC treated 241 tumbleweed plants and surveyed 50 acres for tumbleweed.
- MoMISC is working with the new owner of a plant nursery to prevent coqui frogs from establishing on Moloka'i. The nursery owner is importing plants from the Big Island and is allowing MoMISC to check the plants upon arrival on Moloka'i. MoMISC helps unload the plants onto tarps laid out on the ground and the plants are watered to see if any coqui jump out. MoMISC listens for coqui calls for two nights after a shipment arrives. On the third day, the plants are released to the public with a card attached alerting the purchaser that the plants come from coqui infested areas and if they hear coqui to call MoMISC. On the most recent survey MoMISC baited two species of ants from the potted plants and had them identified by Forest and Kim Starr. One ant (*Tetramorium bicarinatum*) was already reported on Moloka'i and the other ant (*Tetramorium simillimum*) was not known from Moloka'i, but is widespread on other islands. No little fire ants were found.

At MoMISC's quarterly committee meeting on May 12, 2011 a new Chair was elected. Mr. Butch Haase, Manager of the Moloka'i Land Trust is the new Chair. MoMISC had an interactive game and informational booth at the Moloka'i Earth Day Celebration in April and also an informational booth at the Moloka'i Agricultural Fair in April. MoMISC staff also participated in a partnership work trip to Kalaupapa National Historical Park in May.

