



Quarterly Report to the MISC Committee
FY 2012, First Quarter
July 1 to September 30, 2011

Manager's Report

O ku'u wahi ʻōpū weuweu la, nou ia.
Let my little clump of grass be yours.

This Hawaiian ʻōlelo noʻeau is a humble way of offering one's grass house to a friend. In a way, that's what MISC did in September by helping "stickwork" artist, Patrick Dougherty, at the Hui Noʻeau in Makawao. The temporary sculpture is made of branches from strawberry guava, eucalyptus, and ash trees, all invasive plants, collected by the flat-bed load from different locations on the island, ably assisted by MISC staff on several days.

Dougherty calls the finished piece "On the Wild Side." The project drew together over 150 volunteers, who helped cut, haul, and painstakingly weave twigs and branches together into an open-roofed rambling cellular structure with door and window spaces, measuring almost 80 feet long, 20 feet tall, and 20 feet wide. Participating in a temporary art project is outside our normal everyday work, but there is no doubt that we made friends along the way and seized the opportunity to educate a different sector of the Maui community, both by direct participation in the event and through workshops, presentations, and displays at the Hui. If you're upcountry, stop by the Hui Noʻeau and take a look - the structure is expected to last two to three years. We suspect the bond that happens when you share your time and mana'o will last much longer.



Employee of the Quarter



We are pleased to recognize Dennis Green as our Employee of the Quarter. Dennis is MISC's Albert Einstein. Not only do they share the same haircut but they share the same ability to see things others don't, like fountain grass in Pukalani and downy rose myrtle on Lānaʻi. Like Albert, Dennis is also a thinker, a tinkerer, and an artist. He regularly offers creative solutions to complex problems, has developed several tools to help with coqui control, and is an accomplished photographer. His most recent photo-montage projects have resulted in several masterpieces and provide a welcome form of entertainment on camping trips. What really sets Dennis apart though is his good natured approach to work. Dennis often states: "I love my job." Well we love having you at MISC Dennis! Congratulations!

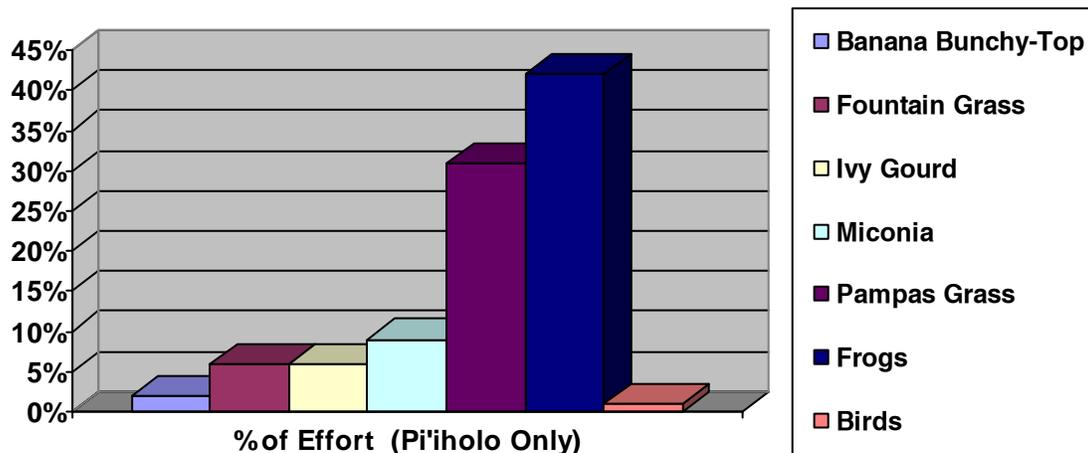
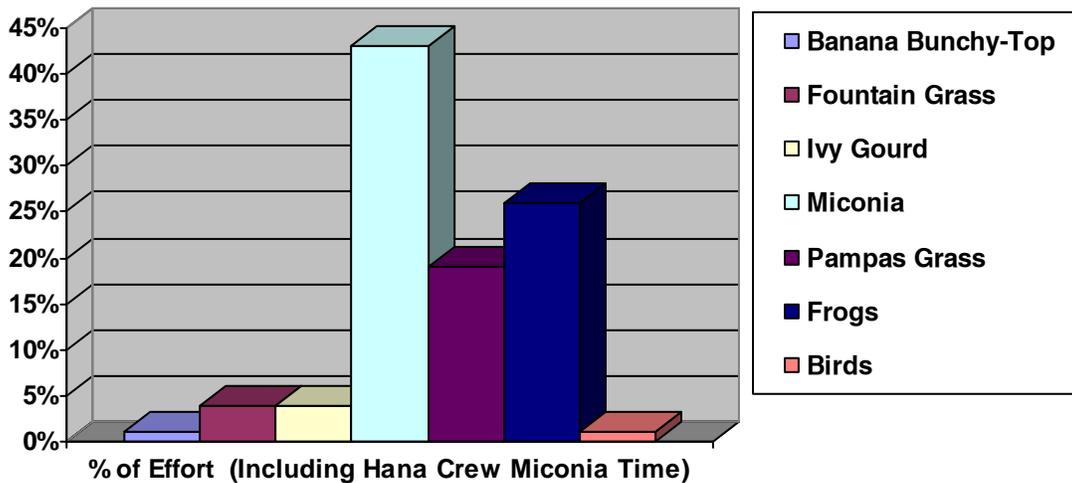
Quarterly Highlights

ACTIVITY HIGHLIGHTS

- July 6: Hāna AmeriCorps volunteer starts work
- July 8: Lissa attends Hawai'i Environmental Education Alliance meeting on O'ahu
- July 9: Keiki Jam Fest in Ke'anae
- July 11-15: Crew to Honomanū for pampas grass control
- July 14-15: Teya & Lori attend HISC prevention working group meeting on O'ahu
- July 12-14: Crew to Lāna'i for ivy gourd control
- July 15: Elizabeth attends scoping meeting for RCUH admin training
- July 20: Teya and Jeremy give presentation to East Maui Watershed Partnership
- July 25: Christian Visoria joins the Pi'iholo plant crew
- July 25-29: Crew to Honomanū for pampas grass control
- July 27: Teya attends Maui Deer Working Group meeting

- Aug 1: Teya & Lori attend CGAPS meeting on O'ahu
- Aug 2-4: Hawai'i Conservation Conference
- Aug 12: Teya & Lori attend MoMISC meeting
- Aug 15: Miconia Operations meeting
- Aug 16: Miconia overflight, Office of Economic Development, Teena Rasmussen
Abelardo Rojas Umana joins the Pi'iholo plant crew
- Aug 18: Teya & Lori attend HISC meeting on O'ahu
- Aug 22-26: Crew to Honomanū for pampas grass control
- Aug 29-Sept 2: Crew to Lāna'i for fountain grass control
- Aug 31: Adam & Teya attend Maui Deer Working Group meeting

- Sept 6: Teya attends Maui Deer Working Group meeting w/ Mayor Arakawa & Councilmember White
- Sept 6-7: Crew helps with Hui No'eau with plant material gathering
- Sept 6-8: MISC crew to Haipua'ena for pampas grass control
- Sept 6: Teya meets with the Mayor on axis deer
- Sept 11: 'Ulupalakua Cares event
- Sept 12-14: Crew to Lāna'i for ivy gourd control
- Sept 12-16: Crew to Haipua'ena for pampas grass control
- Sept 12-14: Teya attends Biocontrol Symposium in Kona
- Sept 15: Teya participates in panel discussion at the Hui No'eau
- Sept 16: Teya attends County Council Hearing
- Sept 19: Dinner honoring artist Patrick Dougherty
- Sept 19-23: Crew to Honomanū for pampas grass control
- Sept 21: Pampas grass operations meeting
- Sept 23: Elizabeth attends scoping meeting for RCUH admin training
Teya, Lissa & Abe attend sculpture opening event at the Hui No'eau
Thank-you event for Uncle Mel in Hāna
- Sept 24: Hawaiian Islands Land Trust Picnic
- Sept 27: Pi'iholo baseyard cleaning and maintenance day
- Sept 28: Teya & Adam attend Maui Conservation Alliance meeting
- Sept 29-Oct 2: Maui County Fair
- Sept 30: Teya & Lori attend HISC meeting on O'ahu



PR & Education News

MISC IN THE NEWS

A press release about the newest coqui-free certified nursery, located on Moloka'i, resulted in an article in the Maui News and the Moloka'i Dispatch.

Through the Kia'i Moku column in the Maui News this quarter, MISC provided the public with information on early detection of incipient wattle species, the role of invasive species in fueling wildfires in Hawai'i, and guidelines for using and consuming invasive species to help the environment. These articles, as well as all the articles written for the Kia'i Moku column, are available online at www.hear.org/misc/mauinews/. MISC continued the bi-monthly Maui Master Gardener newsletter column with an article on the little fire ant.

REACHING OUT TO THE COMMUNITY

Fall quarter is a busy time for special events, and this fall was no exception. In July, MISC had a booth at the 1st annual Keiki Jam Fest in Ke'anae, a fundraiser for a new school in Ke'anae. During the Hawai'i Conservation Conference in August on O'ahu, Abe Vandenberg and Shannon Wianecki had a table promoting the Hō'ike o Haleakalā Curriculum. Additionally, Adam Radford and Brooke Mahnken gave presentations at the conference on coqui and veiled chameleons, respectively.



MISC partnered with the Hui No'ea'u Visual Arts Center in Makawao during the building of a sculpture made from invasive plants by North Carolina-based artist, Patrick Dougherty. MISC assisted with collecting materials and acted as a resource for invasive species messages for various events, including assisting volunteers for two days gathering strawberry guava and eucalyptus, participating on a panel discussion with the artist, a community event to celebrate the exhibit opening, and giving presentations to students visiting the Hui as part of its educational program.



Additionally in September, MISC participated in the 'Ulupalakua Cares event, a Seabury Hall Community Service Fair, the Hawaiian Islands Land Trust picnic and, and finally the 2011 Maui County Fair. The fall quarter events helped us reach just over 2,000 people.

During the last two weeks of September, Oceanic Time Warner Cable aired public service announcements about the little fire ant (LFA). The PSAs have been aired statewide for a total of 144 airings and will be aired several more times before the end of the calendar year. With the help of Chris Reickert, one of the videographers involved in the filming, and Elizabeth Speith, of the organization formerly know as PBIN, MISC put together an LFA website to complement the PSAs. The website focuses on reporting - www.lfa-hawaii.org.

A local video production company, Just in the Nick of Time Productions, completed a public service announcement that features crew on the Hāna miconia team. The announcement will be aired on public access stations and through our website and the entire production was donated to MISC free of charge.

MISC has started a blog www.mauiinvasive.org, where we post information about our work and repost many of our newsletter and newspaper articles.

MISC IN THE CLASSROOM

The second group of interns working with the Poha'i Māile program at Haleakalā National Park spent the day with MISC in July learning about some of our target species and then joining a pampas grass survey.

Abe visited a Maui High summer school class with the new Invasive Species Module timeline activity and started off the school year with classroom visits about little fire ants and additional testing of the timeline activity at King Kekaulike High School.

Through our collaboration the Hui No'ēau Visual Arts Center we spoke with six classes of Montessori students about invasive species. This quarter MISC had 11 school group activities reaching 200 students.

Plant Updates

PAMPAS GRASS

Pampas season was in full swing and MISC ground crews were busy controlling and surveying for pampas grass in East Maui this quarter. Crews of three workers made four trips into the Honomanū camp for a total of 13 working days in the field. On these trips, we used the “bumble-bee” method which is a point-to-point survey method based on known plant locations. We controlled 104 immature plants and 12 mature plants.



Haipua'ena, just west of Honomanū Gulch, is another area where pampas grass has been colonizing. In the last few years we have been controlling plants in the area by air as well as by accessing hot-spots on the ground from the Waikamoi flume. This year we decided to hit it a little bit harder and, in addition to the day trips we have done in the past, we did two 3-4 day camping trips at a temporary field camp in Haipua'ena. During these two trips, crew controlled 211 immature plants and 27 mature plants. One additional trip is planned for this area before the end of the season.



In the Upcountry area of Maui, there were 59 residential sites visited with 17 immature plants and two mature plants controlled at two of those sites. During backcountry sweeps, which included parts of Polipoli State Park, Ka'ono'ulu Ranch, and the Makawao Forest Reserve, there were 47 plants controlled, five of which were mature.

The annual front-country sweeps on the slopes of Haleakalā were conducted this year by the MISC plant and vertebrate crews on September 26 and 28. Three mature plants and one immature plant were found and controlled.

In addition to the work completed on the ground, there were also a significant number of days worked and plants controlled by helicopter. On West Maui, we had four days of recon and six days of spraying, with a total of 888 immature plants and 228 mature plants controlled. On East Maui, we had ten days of recon and four days of spraying with a total of 92 immature plants and 65 mature plants controlled. There were a couple of new pampas sites discovered and subsequently controlled during a recon operation east of Kūhiwa Valley between 3,500-3,700 feet.

FOUNTAIN GRASS

All known locations of *Pennisetum setaceum* were monitored and no plants were found. Permission is still pending for the large infestation of fountain grass found last quarter on a private residence in Pukalani. Negotiations are in process. On Lāna'i, numbers of both mature and immature plants increased slightly this quarter.



IVY GOURD

Control efforts for *Coccinia grandis* continued with a decrease in the number of both mature and immature ivy gourd plants found on Maui. MISC crews visited Lāna'i twice to continue ivy gourd control work on the Mānele golf course. Very few plants were found, possibly due to the very dry weather. Four mature plants (no fruit) and 21 immature plants (non-flowering) were controlled. No seedlings were found.

ARUNDO

One re-growth plant was controlled at Spreckelsville.

OTHER PLANTS

- *Acacia retinoides* (water wattle): three saplings were controlled at a known location in Kula.
- *Macaranga tanarius* (parasol leaf tree): nine plants were controlled and crew continued to monitor nurseries for occurrence.
- *Maclura pomifera* (Osage orange): root suckers continue to be controlled systematically at the only known location on Maui.
- *Morella cerifera* (wax myrtle): control of the Ha'ikū population is ongoing because manual control is the only option allowed by the landowner. Removing these plants without the use of a basal or cut-stump herbicide treatment will likely result in root "suckering." Our preferred method would be a low-volume basal application.
- *Silybum marianum* (milk thistle): survey efforts continue and no plants were found.
- *Verbascum thapsus* (mullein): rosette stage recruitments (three plants) were controlled at a known Holopuni Road location.

EARLY DETECTION / RAPID RESPONSE

Forest & Kim Starr conducted early detection and rapid response activities this quarter focused on delimiting the extent of a number of invasive plant species, including Spanish heath, New Zealand tea tree, and tumbleweed (West Maui). They discovered that there are hundreds of mature Spanish heath plants over dozens of acres on an upcountry ranch. There are also large areas of similar habitat that have not yet been surveyed for this species. New Zealand tea tree seems to be restricted to an area on a steep road cut about 15m x 15m on Crater Road. There are large plantings of this in residential areas near this location.



A large patch of tumbleweed was also observed in the sand hills of Wailuku, a significant distance from previously known locations in Central Maui. Additionally, a lone plant was found and pulled at almost 4,000 feet elevation in Kula, along a gravel ranch road, the highest location it has yet been found on Maui. All this suggests we are far from delimiting this species, which continues to spread. The Starrs also did some monitoring work on broom snakeweed at its only known location in Hawai'i – the summit of Haleakalā.

The Starrs made four plant collections to document a new state record and a range extension, to gather better fertile material, to get identification for unknown specimens, and to help with an 'ōhi'a genetics project. They also submitted ant specimens to document what appear to be new island records from Maui and Moloka'i.

MICONIA

During the third quarter of 2011, ground crews completed their coverage of the Pu'u Ki units mauka of Hāna Ranch. In excess of 2,000 miconia were treated and over 105 acres swept in the final two management units in the Pu'u Ki complex. Terrain in the area is rugged and ground operations were hampered by the expanding *Clidemia* infestation.



After the Pu'u Ki area was completed, the bulk of ground activity shifted to the Olopawa and Ka'elekū areas, mauka of the Hāna airport, and the Kūhiwa area in Nāhiku. In August and September, almost 225 acres were swept by ground crews in these areas. The Olopawa area had high counts for miconia and also a robust number of seeding trees, suggesting that a more frequent reentry interval in the area is required for future operations. Other areas controlled during the summer of 2011 included portions of Nāhiku mauka of the Hāna Highway and Nu'uailua Valley in the vicinity of Ke'anae. A total of six mature and hundreds of immature plants were treated in the two areas.

Aerial operations continued in each of the three months this quarter, totaling 12 helicopter days. Operational goals continued to focus on maintaining control of known outlier sites, largely leaving the Hāna Core population untreated and not performing intensive aerial reconnaissance. Continued efforts to contain the Hāna core required about half of the aerial resources while the other half of the effort went to sweeping known outlier sites. Funding for aerial operations continues to represent a significant challenge, with federal sources going offline and other sources not yet operational. In the upcoming months, aerial operations will slow down with an anticipated surge in the spring of 2012.

PLANT DATA JULY 1 TO SEPTEMBER 30, 2011

Maui

Target Species	Plants Controlled		Total	Acres Inventoried
	Mature	Immature		
<i>Arundo donax</i>	1	0	1	6
<i>Coccinia grandis</i>	5	231	236	636
<i>Cortaderia spp.</i>	343	1,257	1,600	21,321
<i>Cryptostegia grandiflora</i>	0	0	0	1
<i>Miconia calvescens</i>	208	19,453	19,661	3,355
<i>Pennisetum setaceum</i>	0	0	0	108
<i>Pittosporum undulatum</i>	0	4	4	14
<i>Rubus ellipticus</i>	0	0	0	4
<i>Silybum marianum</i>	0	0	0	44
<i>Acacia retinoides</i>	0	3	3	1
<i>Caesalpinia decapetala</i>	0	8	8	3
<i>Macaranga tanarius</i>	0	0	0	58
<i>Maclura pomifera</i>	0	9	9	2
<i>Verbascum thapsus</i>	0	3	3	15
Grand Totals:	557	20,968	21,525	25,568

PLANT DATA JULY 1 TO SEPTEMBER 30, 2011

Lānaʻi

Target Species	Plants Controlled		Total	Acres Inventoried
	Mature	Immature		
<i>Coccinia grandis</i>	4	21	25	310
<i>Pennisetum setaceum</i>	8	56	64	335
<i>Rhodomlyrtus tomentosa</i>	0	0	0	3
Grand Totals:	12	77	89	648

BANANA BUNCHY TOP VIRUS

The focus of MISC's BBTv suppression efforts this quarter was on high-priority, low-infestation areas. These include Hai'kū, Waiehu, and Lahaina. Infestation levels in these communities have historically been very low and the proximity to uninfested areas, such as East Maui and the northern portion of West Maui, makes work in these areas a very high priority for MISC. New reports of BBTv also had follow-up this quarter.

By targeting areas known to have BBTv, MISC crews were able to find several new sites and treat newly infested banana plants at known locations. Targeted searches involve visiting known locations and the surrounding properties. If a new site is found, the properties surrounding that location are surveyed. One new site in Hai'kū was found while crew were working on a different invasive plant control project. This highlights the benefit of staff trained to recognize a variety of plant and animal pests as well as the broad geographic area covered by MISC.



This quarter, 53 properties were visited on Maui. Of the 23 Maui sites that were found to have bunchy top, 14 were treated. The remaining sites will be treated next quarter pending resident / owner permission.

LITTLE FIRE ANT & INVERTEBRATES

This quarter three sites on Maui were surveyed for little fire ant (LFA) and 185 baited vials were set and collected. Forest and Kim Staff check all vials for LFA; none were detected. A new priority list is under development to guide future survey efforts.

MISC assisted the Hawai'i Department of Agriculture by delivering some of the *Erythrina* gall wasp (wiliwili) biocontrol agent to a Hāna resident for release.

Vertebrate Status

Efforts from this summer highlighted the need for dedicated crews, vigilant monitoring, and repeated applications in order for citric treatments to be fully effective. Therefore, MISC staff decided to focus on treating, and often retreating, the upper and lower thirds of Māliko Gulch systemically prior to moving into the less accessible regions of the infestation. Crews also spent a substantial amount of time installing necessary infrastructure and access trails. An order of nearly 53,000 pounds of citric acid was received in September. Prior to the arrival of the order, MISC ran short on citric acid. Mahalo to KISC and BIISC for loaning us enough to keep our crew working. Two pumps and an agricultural sprayer were donated to MISC. Māliko area residents also donated several thousand gallons of water and loaned heavy equipment to help support the project.



Goals for the coming winter include: continuing to treat / monitor segments of the gulch that have received treatment on a four- to six-week revisit frequency, preventing coqui from spreading out of the gulch, which has happened in some areas, and removing all coqui from two of the five remaining populations outside of Māliko. The other three populations are nurseries that continue to have re-introductions. The goal for Māliko next year is to systematically treat the entire infested area at least once.



MISC's work in Māliko Gulch was the focus of a research project by Dr. Karen Beard from Utah State University, who has conducted many studies on the coqui frog. Preliminary results from the study indicate that citric acid treatment is a viable approach to controlling coqui populations in Māliko. Researchers observed substantial reductions of coqui in treated areas.

This quarter:

- Crews made 155 separate visits to 84 frog-infested areas or suspect locations.
- Ten new reports were received and all had follow-up.
- MISC crews spent 942 hours working on the coqui project. Sixty-six volunteer hours were also contributed by various volunteers.
- 38,597 lbs. of citric acid were used, mostly in Māliko Gulch.
- Crews treated 82 acres of infested area on Maui, mostly in Māliko Gulch.

VEILED CHAMELEONS

No veiled chameleon activity occurred this quarter. Our next search is scheduled for October.

MITRED CONURES

After well over one year of inactivity due to funding constraints, work on conures has resumed. It appears that roughly 18 birds remain at one location and possibly 20 at a location to the east.

MoMISC Activities

During this past quarter, MoMISC continued to do maintenance and monitoring on three priority species: New Zealand flax, tumbleweed, and tree daisy. Other species controlled or monitored included arundo, BBTv, mangrove jellyfish, coqui frog, long-thorn kiawe, mangrove, fireweed, palm grass and little fire ant.

Highlights this quarter included:

- MoMISC staff traveled to Hilo for little fire ant detection training. MoMISC conducted an islandwide survey on Molokaʻi for little fire ant. No LFA were detected.
- MoMISC partnered w/ Molokaʻi Land Trust to treat long-thorn kiawe in west Molokaʻi.
- MoMISC provided support to BIISC for axis deer training on Molokaʻi.
- MoMISC partnered with Kalaupapa NHP and Haleakalā NP to do weed control and restorative plantings on the north shore of Molokaʻi.
- MoMISC partnered with TNC to do weed control, weed surveys and fence repairs in Pelekunu Valley and Kamalō.

Lori Buchanan attended a variety of meetings this quarter including a DHHL planning meeting, Maui County General Community Plan updates for Molokaʻi, Molokaʻi ʻAha Kiʻole Council meetings, and TNC/MoMISC Coordinators meetings. MoMISC did a class presentation on invasive species issues/information for a UH-MCC Hawaiian botany class and Lori participated in DLNR's Learning Tree Project in September.