



Quarterly Report to the MISC Committee

FY 2008, Second Quarter

October 1 to December 31, 2007

Manager's Report

*E lauhoe mai na wa'a; i ke kā, i ka hoe;
i ka hoe, i ke kā; pae aku i ka 'āina.*

Everybody paddle together; bail and paddle; paddle and bail; and the shore is reached.

We know, just from our name, that MISC is more than one. And we know from our experience that the "Committee" part of our name hardly does justice to the importance of partnerships to our effort. Working together, we are protecting Maui Nui from some of the worst invasive species. This last quarter we have seen the importance of partnerships through a number of activities.

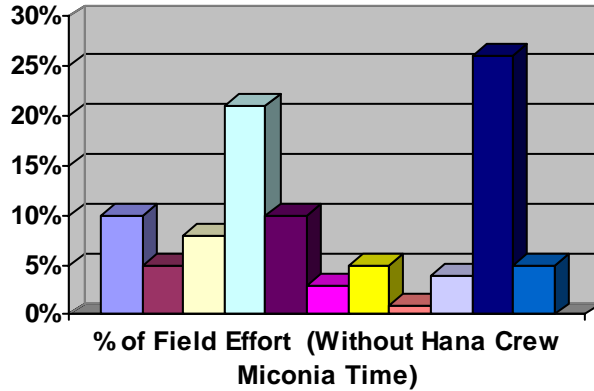
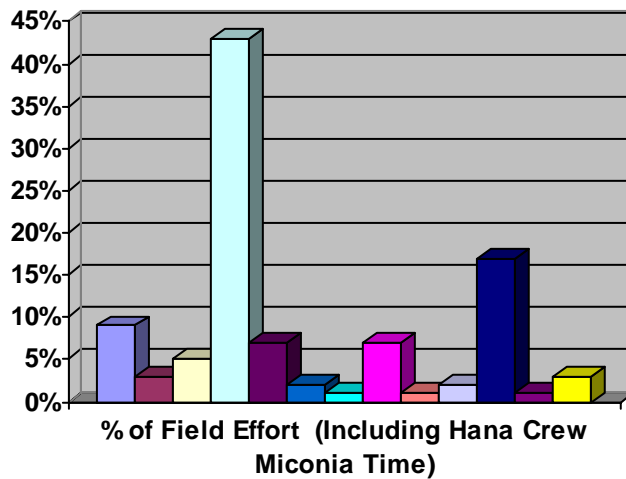
Adam provided rappelling training to the West Maui Mountains Watershed Partnership and Kaua'i Invasive Species Committee, which enhanced their abilities to reach hard-to-access areas. Three of our field staff (Scott, Willie, and Adam) participated in rare plant surveys in East Maui, which not only supported that effort, but also provided a unique botanical-skills training opportunity for them. Field staff did outplantings of *Plantago princeps*, *Pittosporum confertiflorum*, *Viola chamissoniana*, and some other cool plants during a Haleakalā Crater trip and also helped control bocconia with the NARS boys in Kanaio. It is hard to overstate the value of getting our field staff into the areas we are working to protect. Mike spent two days on the island of Hawai'i, working with BIISC in an effort to ensure consistency among the ISCs in basic operations. Bob Hobdy and I participated in surveys on Moloka'i, to help identify some unusual forestry plantings (yes, that would be Bob doing the identification). Some staff members were up to their waists in East Maui waters as they participated in stream surveys and also looked for our target species. MISC began collaborating on a guava removal project on the island of Lāna'i, in an effort to restore habitat for the endangered 'ua'u (Hawaiian petrel). And the vertebrate crew checked nettle caterpillar traps across a 13-mile square grid system in Ha'ikū in collaboration with the Hawai'i Department of Agriculture.

Amazingly, we managed to get the rest of our work done. Because of MISC's staffing levels, it's easy for our partners to look to us for support. We must be careful that we don't stray too far from our mission or that our partnership efforts don't detract from the work we want to do and are obligated by contract to do. At the same time, we also must remember that our work is getting done only with the support of our partners, some of whom are right there in the field with us. It seems that so far we have managed to strike the right balance.

While we might not have gotten to the shore just yet, by working together, we're on our way. Mahalo for joining us in the canoe.

Quarterly Highlights

MISC FIELD TIME SUMMARY



ACTIVITY HIGHLIGHTS

- Oct 2-4: Adam provides rappelling training for KISC
- Oct 12: MISC meeting – Early Detection
- Oct 19: Miconia operations meeting
- Oct 19: Teya meets with Nelson Sakamoto on position management
- Oct 20: Lissa to O’ahu for Hawai’i Science Teachers Association Meeting
- Oct 22: Hawai’i Superferry Hearing on Maui
- Oct 22-26: Crew to Lāna’i for fountain grass control
- Oct 23-26: Scott joins TNC for East Maui rare plant survey
- Oct 23-24: Teya attends Conflict Management Workshop
- Oct 24-25: Adam provide rappelling training for WMMWP
- Oct 25-26: Teya attends CGAPS & ISCs meetings on O’ahu

- Nov 3: Lawn & Garden Fair, Tree Giveaway at Maui Nui Botanical Garden
Mālama I ka 'Āina Award presented
- Nov 6: Teya attends Environmental Justice Meeting
- Nov 7-8: Both crews assist with bocconia control in Kanaio
- Nov 7: Teya attends MoMISC meeting
- Nov 8: Teya & Bob Hobdy assist with Moloka'i plant survey
- Nov 9: Elizabeth attends RCUH policy update
- Nov 13: Mike to Lāna'i to assess guava control in petrel habitat
- Nov 14: Teya attends Maui Conservation Managers meeting
- Nov 14: Teya attends Olinda Community Association meeting
- Nov 19: Brooke attends ESRI meeting
- Nov 26-30: Nine crewmembers assist with native plant restoration in Haleakalā Crater
- Nov 27-30: Adam joins TNC for East Maui rare plant survey
- Nov 28: Fern give invasive species presentation at the Whale Sanctuary
- Nov 29: Teya participates in cruise ship tour

- Dec 7: MISC meeting – Miconia
- Dec 10: MISC all-staff meeting in Hāna
- Dec 11-14: Willie joins TNC for East Maui rare plant survey
- Dec 14: Joylynn's last day as PR/Education Specialist
- Dec 17-18: Mike conducts safety walk-through for BIISC
- Dec 19-21: Crew to Lāna'i for ivy gourd control



PR & Education News

FIFTH ANNUAL MĀLAMA I KA 'ĀINA AWARD



Every fall, we take the time to honor an individual or business for their efforts to keep Maui County safe from invasive species. This year, David and Martha Vockrodt Moran and the Friends of D.T. Fleming Arboretum (FOFA) were presented with the Fifth Annual Mālama i ka 'Āina Award on November 3rd at the Maui Association of Landscape Professionals and Maui Nui Botanical Garden Lawn & Garden Fair and Hawaiian Tree Giveaway. MISC would like to congratulate the Moran

family and FOFA for their tireless work. On a visit to the arboretum you may find them on the tractor, battling the aggressive, fire-loving black wattle, or on their knees, hand-pulling fireweed even though the surrounding properties are a yellow sea of the toxic flowers, or along the hog wire fence, tools in hand, to make sure the feral pigs and cattle keep their distance from the precious native plants protected within the enclosure. MISC also had an educational booth at the fair with approximately 300 people stopping by to talk story.



MISC IN THE NEWS

MISC's monthly Kia'i Moku column in the Maui News continued to spotlight our work and targets this quarter. The column appears in the "Currents" section of the paper on the second Sunday of each month. In October, the column highlighted HDOA and MISC's efforts to combat one of the newest invasive pests to our island – the stinging nettle caterpillar. November's column featured the brown tree snake with an emphasis on the devastation that they've caused in Guam and the collaboration between partner agencies to rapidly respond to snake reports. The year culminated with a spotlight on how invasive species can hitchhike their way from abroad to the islands during this gift-giving season. In December, MISC made the front page of the Sunday Maui News with an article about coqui frogs. Chris Hamilton, Maui News staff writer, did a great story on MISC's battle with coqui and coqui warrior, Bob Flint.



REACHING OUT TO THE COMMUNITY

We will continue to have a display at the Kahului airport through February. In November, the display was relocated from the Hawaiian Airlines terminal to the main upstairs area of the airport, on the way to the Aloha Airlines terminal. The display features ways that invasives are brought into Maui County as well as some of our early detection species. We have been invited to develop another airport display for the future.

ENVIRONMENTAL EDUCATION



Lissa attended the Hawai'i Science Teachers Association Fall Conference in Honolulu in October. With over 200 attendees from all over the state, it was excellent exposure for the Hō'ike Curriculum. Many neighbor island teachers expressed interest in the material.

Although the fall Hō'ike teacher workshop was canceled due to poor registration, the workshop publicity resulted in many requests for class visits. In October and November, Lissa visited five schools/fourteen classes and talked to 372 students. Lessons ranged from identification of the little fire ant to the impacts of invasive species in watersheds. Some presentations were done jointly in cooperation with Kat Lui of the East Maui Watershed Partnership.

Preparations are underway for the rescheduled Hō'ike Teacher Workshop that will be held in late January/early February. Demand for the workshop is looking good. The workshop will introduce teachers to the curriculum by having them actively do the lessons as though they were students. Guest speakers from USGS, Hawaiian Ecosystems at Risk, Maui Forest Bird Recovery Project, Haleakalā National Park, and the East Maui Watershed Partnership will provide background information.

VOLUNTEERS

Two school groups worked with MISC this fall. Aubrey Matsuura, who did an internship with MISC in the summer, organized a group of 22 seniors from Kamehameha Schools for two nights of coqui frog work. Aubrey decided to make coqui awareness and control her senior project. Aubrey's efforts and the vertebrate crew were featured in the November issue of the Kamehameha Schools newsletter. The entire senior class of Hāna High School joined the miconia crew in Hāna for two days in December.

Plant Updates

PAMPAS GRASS

Great weather and an enthusiastic helicopter pilot helped bump up our fall pampas grass numbers. Two Kona-weather days in early November and unanticipated helicopter availability gave us the very rare opportunity to spray plants low in Waikapū Valley on West Maui. We were able to spray hard-to-access plants on East Maui in the calm weather before the storm in mid-December. In total, four days of helicopter spraying and three days of reconnaissance gave us 2,164 aerial acres covered and 332 pampas plants that will not be flowering next year!

Ground work for the fall included surveys of several gulches off the Waiakoa Trail in Polipoli and a major new population found on a residential property in upper Kula. The subsequent control work on a total of 28 sites over 179 acres resulted in 210 plants controlled, of which only 17 were mature.

Work is underway to obtain materials to build a dedicated MISC pampas sprayer for use in helicopter control work. We are modeling the sprayer on a light-weight tank built by a helicopter pilot on Hawai'i Island. Mike was able to see the prototype tank and get photographs when he visited BIISC in December.

IVY GOURD



The number of mature ivy gourd plants found continues to decline island-wide on Maui. Of 185 sites visited this quarter, only eight had flowering plants. The revisit interval for Maui ivy gourd sites will continue to be lengthened as no control work is required. A test plot in Kihei was planted in January 2007 to evaluate seed viability and gain information on time from germination to flowering. The test area has finally sprouted a few keiki. The first cotyledon was observed on December 4, 2007.

Timely, regular visits to Lāna'i have had a major impact on the amount of mature ivy gourd found there. There were both non-flowering and flowering plants controlled on Lāna'i this quarter; however, no fruiting plants were found during field surveys.

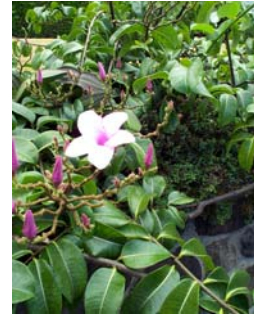
FOUNTAIN GRASS

Heavy winter rainfall over the past few months has resulted in an increased number of plant finds at known fountain grass areas. Plants were found at the Mākena Golf Course, Mokulele Highway, Maui Lani water tank, Wai'ehu water tank and Wai'ehu dunes sites. No plants were found during our last two visits to the Kahakuloa rappel site (the last plant was found in June of 2007) and no plants were found at the Pukalani or Waipoli Road sites this quarter.

Fifty-one mature fountain grass plants were controlled at the Kō'ele Golf Course site during our October visit. This is roughly the same number as controlled in June of 2007. A fountain grass site along a power-line road continues to yield large numbers of immature plants. This is the proposed area for construction of a photo-voltaic farm. The Kānepu'u fountain grass area was swept during our October visit with three mature plants controlled. The total number of plants in this area continues to decline.

RUBBER VINE & ARUNDO

A recent survey of all known rubber vine sites yielded no new plants. Eradication efforts continue to be hampered by permission issues at several central Maui sites. Control work on arundo was completed at three North Shore locations this quarter.



PITTOSPORUM UNDULATUM

We are continuing to seek control permissions for *Pittosporum undulatum* sites. During control work, new locations were discovered that were not found during the initial survey. Control work has been performed at known sites with additional control work to come in the next quarter.

MICONIA

Miconia ground work this quarter was concentrated primarily in Ka'elekū area - a continuation of efforts that were begun six months ago to the west and makai of the Hāna Core. The area is generally known as the "Buffer Zone" and should be completed by the end of January 2008. Sweeps in the Buffer Zone primarily target larger plants and require a more frequent reentry interval than outlier areas to ensure optimal timeliness of treatment. By sweeping the area via ground, we are providing nearby residents with an expanded buffer from helicopter operations that concentrate on the core population. Large numbers of mature and near-mature plants have been treated in the Buffer Zone sweeps.

The first round of rappelling efforts have been completed in the area of Hanawī stream. Rappelling operations have focused on miconia that can not be reached via air in areas of vertical terrain or in close proximity to power lines. Numerous 3-6 meter plants and one mature plant were treated. The area required a vertical descent of nearly 250 feet to reach all the plants beneath the power line. The project required complex rope rigging and belay techniques that are not normally employed in miconia rappelling operations.



Other ground efforts continued in areas mauka of the highway in Nāhiku, including sites that are currently on the reentry schedule because they have not been visited in several years. Some mature plants were treated. New ownership of some of the larger properties has slowed work due to delays in contacting and gaining landowner permission for follow-up control work.

Aerial operations this quarter concentrated on both the core infestation and outlier sites. A total of eight days with two aircraft, totaling 16 helicopter days, were conducted during the reporting period. Inclement weather had a significant negative impact on efficiency and effectiveness of aerial operations, resulting in numerous late starts and several cancellations due to rain. We hope to get more beneficial weather windows during potential winter Kona conditions next quarter.

PLANT DATA OCTOBER 1 TO DECEMBER 31, 2007

Maui

| | <i>Plants Controlled</i> | | | <i>Acres</i> |
|-----------------------------------|--------------------------|-----------------|---------------|--------------------|
| | Mature | Immature | Total | Inventoried |
| Priority Target Species | | | | |
| <i>Miconia calvescens</i> | 252 | 23,243 | 23,485 | 5,047.20 |
| <i>Cortaderia spp.</i> | 250 | 312 | 562 | 3,593.22 |
| <i>Pennisetum setaceum</i> | 4 | 7 | 11 | 87.46 |
| <i>Coccinia grandis</i> | 41 | 117 | 158 | 396.81 |
| <i>Arundo donax</i> | 15 | 0 | 15 | 38.06 |
| <i>Cryptostegia grandiflora</i> | 0 | 0 | 0 | 4.34 |
| Eradicable Species Project | | | | |
| <i>Pittosporum undulatum</i> | 38 | 80 | 118 | 91.11 |
| <i>Pittosporum viridiflorum</i> | 0 | 0 | 0 | 3.74 |
| Grand Totals: | 600 | 23,759 | 24,349 | 9,261.94 |

Lānaʻi

| | <i>Plants Controlled</i> | | | <i>Acres</i> |
|--------------------------------|--------------------------|-----------------|--------------|--------------------|
| | Mature | Immature | Total | Inventoried |
| Priority Target Species | | | | |
| <i>Pennisetum setaceum</i> | 69 | 593 | 662 | 137.72 |
| <i>Coccinia grandis</i> | 15 | 4,493 | 4,508 | 181.98 |
| Grand Totals: | 85 | 5,086 | 5,171 | 319.87 |

BANANA BUNCHY TOP VIRUS

Our BBTV focus is changing from survey and control to outreach and education, increased public reporting, and management of the most infested areas. We have begun training more searchers, including most of our Hāna-based crew, in identification and control methods. Imi Nelson, from the Hāna miconia crew, has been spearheading our East Maui surveys and reports that no bunchy top has been found. Imi is steadily making his way from Kīpahulu towards Hāna. Posters, brochures and symptom identification information has been distributed to 18 stores, libraries and nursery locations on Maui.



- This quarter MISC crews visited 2,286 properties.
- A total of 70 sites on Maui were found to have bunchy top this quarter. Fifty-nine of these sites have been treated.

Vertebrate Status

COQUI FROGS

A new coqui frog population was found in Waiehu this quarter. The site was treated soon after its discovery and results of initial suppression efforts seem positive. Of the fourteen known population centers on Maui, four are considered eradicated. Two additional sites are nearing the one-year mark with no coqui frogs heard and will be considered eradicated by the end of next quarter if there is no activity. Work at the remaining coqui locations is going very well and all but Māliko Gulch are considered contained. The progress of MISC's coqui program can be measured by looking at the change in infested acreage. In 2004, when MISC first completed comprehensive surveys of all known and suspect areas, the infested acreage on Maui totaled 161 acres. Now, even though one additional location has been added, the acreage totals 129. Of these acres, 127 comprise the Māliko Gulch infestation.



Adam's visit to Kua'i in October helped solidify some ideas and equipment recommendations for control in Māliko as the KISC crew has successfully been dealing with a large-scale control effort for some time now. Plans for control in the gulch are ongoing and materials for those efforts have begun to arrive. Two Matson containers full of 1,760 bags of citric acid were unloaded at the Māliko field station in October and five 1,000 gallon mixing containers were received in December. Installation of control equipment and trails should be finished this spring.

Several coqui specimens were sent to Shenandoah Marr at UH-CTAHR for morphological and possible bio-control study. Coqui specimens from four locations and Maui-wide distribution data were sent to Karen Beard at the University of Utah to assist with her study of genetics and morphology on the coqui across the Hawaiian Islands. Spatial data for coqui frogs on Maui was also sent to Sarah Glavan at the University of La Verne in California for her efforts to model future distributions of *E. coqui* and to predict either niche conservation or niche divergence between the Hawaiian coqui and the Puerto Rican coqui.

- This quarter MISC received 17 new frog-related reports and all have had appropriate follow-up.
- Crews made 115 separate visits to 55 frog-infested areas and/or suspect locations.
- MISC crews spent 371 hours at a variety of locations working on frog control.
- 5,309.5 lbs. of citric acid were used this quarter. The amount of citric acid used is down because of a reduction in coqui activity at most sites. 300 lbs. of citric acid were donated to Bob Flint, who lives in the heart of the Māliko infestation. He ramped up his efforts to control coqui near his home and on nearby trails built by MISC crews.

VEILED CHAMELEONS

MISC crews are almost finished with surveys of potential habitat for veiled chameleons in Makawao and we continue to narrow our focus on our known hotspots. The exercise of searching suspect locations resulted in identification of several new hotspots. These areas have been integrated into our core search efforts. A public outreach campaign and wrap-up of suspect-area surveys is planned for this spring, after which we will re-evaluate our program and search methods to best use our limited resources.

- During our October search, 26 properties were searched over three nights. Seventeen of these properties were new.
- During our December search, 13 properties were searched on one night. The second and third nights of searching were cancelled due to foul weather. Seven of the areas searched were new properties.
- No veiled chameleons were found during our searches this quarter.

MITRED CONURES AND PARROT-LIKE BIRDS

Inclement weather proved to be an obstacle for conure control activities this quarter. Observations indicate that roughly 20 birds remain at the Huelo Point location and there are an estimated 24 conures in Waipio Bay to the west. 124 birds have been removed from the population to date due to cooperative control efforts by DOFAW.

OTHER VERTEBRATES AND INVERTEBRATES

The vertebrate crew continued assisting HDOA with nettle caterpillar surveys in Ha'ikū this quarter. MISC began assisting HDOA with a comprehensive survey of Ha'ikū in late September. Forty-six pheromone traps were placed in sixteen square-mile grids and have been checked weekly for moths. These observations should conclude by the beginning of February.

MoMISC Activities

This quarter MoMISC spent time monitoring or treating the following target species: giant reed, cat's claw, rubber vine, Australian tree fern, coqui frog, Barbados gooseberry, flax, and long-thorn kiawe. TNC staff assisted MoMISC with surveys for Australian tree fern and rubber vine control. MoMISC has been helping to familiarize the new full-time USDA-PPQ officer (Ms. Chevy Levasa) with invasive species response in Hawai'i and with Moloka'i targets. Chevy is from the mainland and is very eager to learn about invasive species work in Hawai'i. MoMISC is very pleased to have Chevy working on Moloka'i!

MoMISC hosted a workshop for Maui County workers this quarter. HDOA did a risk assessment for Molokai in late December and we are anxiously awaiting the results. Kamalani helped TNC with base-yard improvements including fencing and cement pouring. Lori also assisted with PR for the Moloka'i rat eradication project.