



Quarterly Report to the MISC Committee

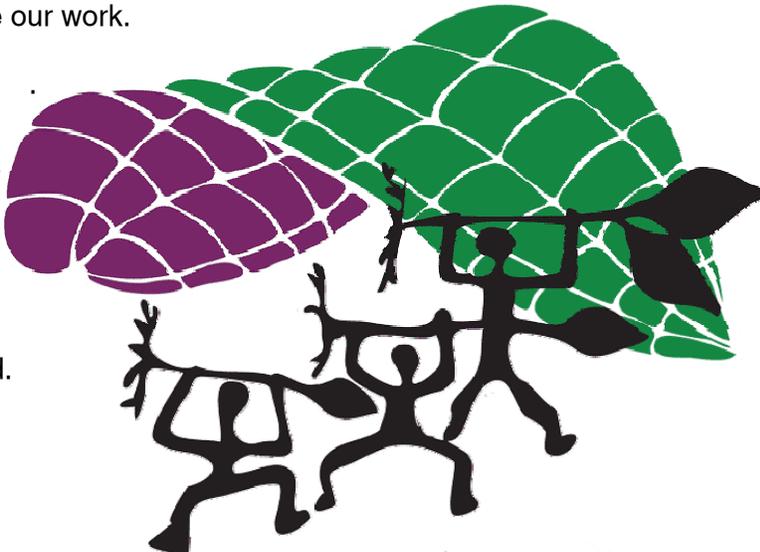
*FY 2009, Second Quarter
October 1 to December 31, 2008*

Manager's Report

It would seem that just keeping up with work on three islands – tackling over twenty different target species (plants, vertebrates & invertebrates) by air and ground, with and without ropes, keeping the funds flowing (in and out), processing data, and working with the public, from small kine to kupuna – would be enough. But as far as I can tell, MISC has always been about pushing the envelope. This last quarter was no different.

We devised and launched our own in-house botany training for all staff and it was great to see teams returning from a Pi'iholo scavenger hunt, with examples in hand of bi-pinnately compound leaves, drupes and opposite leaf arrangements. Kudos to Chuck Chimera and Brooke Mahnken for organizing and leading the training. Not to be daunted by lack of experience with the wide world of the Web, we had two other launches this quarter – the Coqui-free website and the Miconia Conference website. Lissa Fox embraced the challenge of learning how to design and upload website content, with grateful assistance from Philip Thomas and others. Check out the sites if you haven't already. Never hosted an international scientific conference? No worries – we'll get it done and no doubt with the distinctive stamp of MISC on it, given the unique location and participation of our able and creative conference committee members. Innovation and adaptation continue to define our work.

Given the task we have set for ourselves – stopping the spread of invasive species across the broad landscapes of Maui County – it's not just appropriate that we push the envelope: it's required. Thanks for being part of the flight. Please ensure your seat belt is securely fastened.



Quarterly Highlights

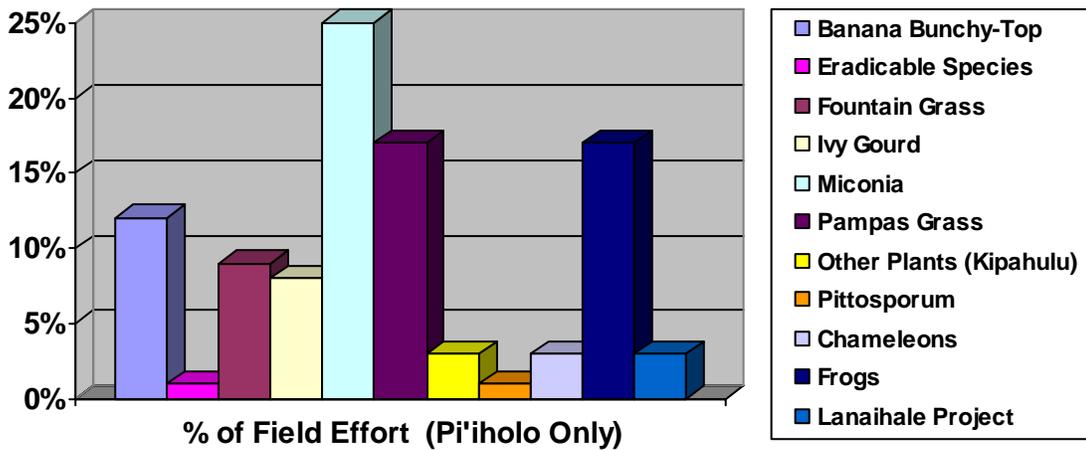
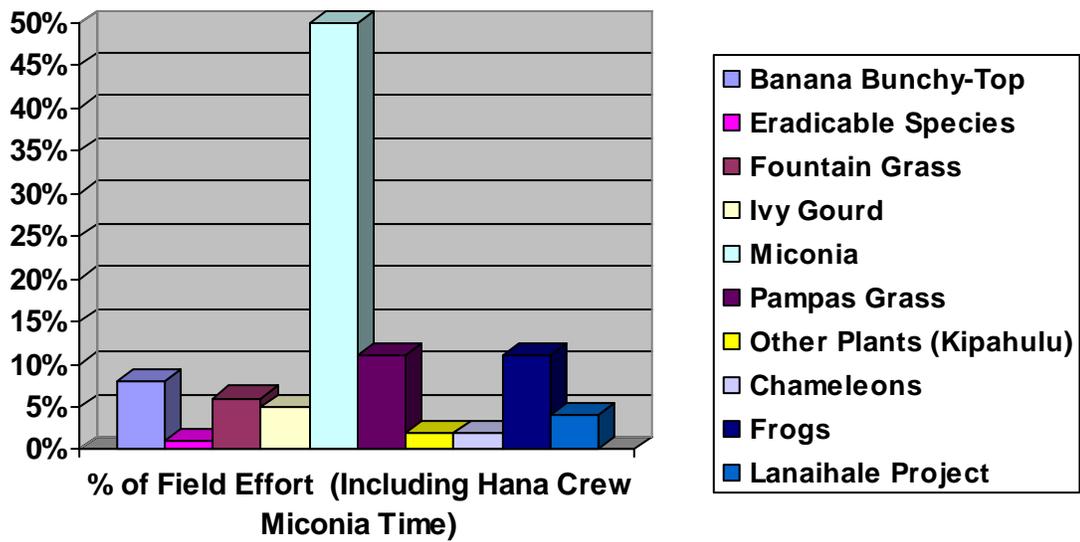
MISC FIELD TIME SUMMARY

- Oct 2-5: MISC exhibit at the Maui County Fair - the "Wheel of MISCFortune"
- Oct 2: Mapuana assists with "Career Day" on Lāna'i
- Oct 3: MISC annual Priority Setting Meeting
Lissa gives presentation at Maui Independent Schools Conference
- Oct 6: ArcGIS training for staff
- Oct 7-10: Crew to Honomanū for pampas grass control
- Oct 13-17: Dave & Adam K. to Lāna'i for ivy gourd control
- Oct 18: Booth at Princess Kai'ulani Festival in Kēōkea
- Oct 20-24: Crew to Kīpahulu Valley to assist NPS with weed control
- Oct 20-21: Rappelling training/refresher at Pi'iholo
- Oct 22: Miconia operations meeting
- Oct 23-24: Rappelling training/refresher in Hāna
- Oct 23: Teya gives presentation for HI Association of Watershed Partnerships
- Oct 27-30: Dave & Jared to Lāna'i for ivy gourd control
- Oct 29: Teya & Lissa to O'ahu for CGAPS & ISCs meetings
- Oct 29: Adam attends Maui County Council's Land Use Commission meeting
Brooke to Lāna'i to assist with Lāna'ihale project data
- Oct 31: Miconia conference planning meeting
Brooke assists with data collection on Alau Island
MISC staff field trip to Pu'u kukui

- Nov 3: Coqui-free website launch
- Nov 8: Mālama i ka 'Āina award presented at
Maui Nui Botanical Garden's Arbor Day celebration
- Nov 9: Scoping workshop for Hō'ike curriculum invasive species module
- Nov 10: Teya to O'ahu for NARF meeting
- Nov 12: Interviews for Outreach/Data position
- Nov 14: All staff botany training
- Nov 17: Teya attends Maui Conservation Managers meeting
- Nov 18: Teya to Moloka'i for MoMISC meeting
- Nov 19: Lissa to O'ahu for Public Outreach Working Group meeting
- Nov 21: Miconia conference planning meeting
- Nov 24: Teya, Brooke, & Lissa tour Pi'iholo Zipline re: educational exhibits
- Nov 25: Teya to O'ahu for NARF meeting



- Dec 1: Teya to O'ahu for meetings with the Legislature & NAR meeting
- Dec 2: Teya assists with CTAHR interviews
- Dec 5: MISC meeting – miconia and CTAHR presentation
- Dec 8: Miconia Conference website launch
Evening reception by Windward Aviation to launch "Maui Choppers"
- Dec 9: Brooke attends GIS meeting
- Dec 10: Wendy Swee joins MISC staff as PR/Outreach and Data Associate
- Dec 11: Teya to O'ahu for CGAPS Steering Committee meeting
- Dec 16: Lissa and Wendy attend *Erythrina* gall wasp biocontrol release
- Dec 18: Teya participates in "Island" conference call on invasives hosted by NISC
- Dec 23: Teya to O'ahu to meet with Senator Inouye's office & the Legislature
- Dec 27-28: Adam completes rappelling instructor recertification exam with American Mountain Guides Association in Joshua Tree, California



PR & Education News

MISC IN THE NEWS

MISC's October Kia'i Moku column, the second article in a two part series by Lloyd Loope, featured the use of biocontrol for strawberry guava. The November article, by Art Medeiros, expanded on the use of biocontrol as one of the few control options available for wide spread clidemia infestations. The December article, also by Lloyd, discussed the threat posed by 'ōhi'a rust and what can be done to mitigate that threat.

MISC circulated a press release in December following the capture of an African spurred tortoise found wandering the beach in Kihei. The press release was intended to caution people about the difficulty of keeping large tortoises as pets as well as to reunite the tortoise with its owner. Approximately 24 people responded to the press release calling either to claim the tortoise or offer it a home. The story was picked up statewide. Eventually the tortoise was reunited with its owner. The year concluded with a letter to the editor thanking MISC staff members Mike Ade, Mapuana Kowalski, and Brad Ogle for rescuing a lost dog in Kula during the course of their daily fieldwork.

REACHING OUT TO THE COMMUNITY

This quarter began with the biggest community event of the year - the 4-day Maui County Fair. MISC's exhibit, located outside the entrance to the agriculture building, had 1,150 visitors stop by. The "Wheel of MISCfortune," modeled after a similar game developed by KISC, was unveiled, encouraging a more interactive type of community outreach. MISC participated in the first Princess Ka'iulani Festival held in Keokea. The one-day event provided a venue for outreach to approximately 150 people in a community that can be difficult to reach.



The annual Mālama i ka 'Āina award was presented by the Maui Association of Landscape Professionals, the County of Maui, and MISC to Native Nursery owners Ethan Romanchak and Jonathan Keyser at the Arbor Day Lawn and Garden Fair & Hawaiian Tree Give-Away. At the same event, MISC received an award from the Maui Garden Club to support the 2009 International Miconia Conference. MISC's table at the event hosted approximately 225 visitors.

Two websites, developed by MISC and hosted by Hawaiian Ecosystems at Risk, were launched this quarter. The website for the Coqui-free Certification Program, www.coquifreemaui.org, was launched in early November. The website for the 2009 International Miconia Conference, www.hear.org/conferences/miconia2009/, was launched at the beginning of December. Mahalo to the folks at HEAR for all their support.

MISC IN THE CLASSROOM

Classroom visits this quarter provided an opportunity for outreach to approximately 130 students on Maui. Lissa talked with two classes at Horizons Academy about native ecosystems and the impact of invasive species. Information on what characteristics make a plant invasive were presented and the impact miconia has on a native rainforests and watersheds was demonstrated using the “Rainforest in a Box” activity from the Hō’ike curriculum. In a joint visit to Miki Kapisī’s 7th grade class at Kamehameha Schools, Kat Lui of the East Maui Watershed Partnership and Lissa discussed the impact of invasive species and used a simplified Hō’ike “Survivor Island” activity with students. After hearing background information on invasive species, students developed strategies for managing a fictitious miconia infestation. Two classes at Kihei Charter School did the Hoike “Little Fire Ant” activity. The facilities at the school were superb with plenty of computers and microscopes and students were able to key out their ant species with a fair degree of confidence.

HŌ’IKE INVASIVE SPECIES MODULE

Scoping began for the 5th module in the Hō’ike o Haleakalā Curriculum. The November 9th scoping session was very successful. Attendees developed unit topics and subject matter to be covered under each topic. Further scoping sessions will focus on specific lesson materials.

Plant Updates

PAMPAS GRASS



The pampas grass population in Kaua’ula gulch on West Maui was reduced by 585 plants in November thanks to a day of beautiful flying weather. Plans are underway to drop crew into Kaua’ula by helicopter to do ground work. This will be the first ground trip into the area and will help immensely in getting this population under control.

During our last drop of the season into Honomanū, 351 plants were controlled; 44 of these were mature. We usually don’t do pampas ground work in the backcountry this late in

the season; however, we made an interesting discovery during this trip. We noticed that a majority of the seed-heads that remain on mature plants had seedlings that were beginning to sprout. There were several pampas plants spotted in Haleakalā Crater near the Halemau’u trail. MISC controlled four mature and four immature plants.

And in residential pampas news, our secret weapon, Willie, made his final farewell to the island (he is moving to the mainland in January) by getting permission for control from one of our well-known recalcitrant landowners in Kula. We’re going to miss you Willie!



RUBBER VINE

Surveys of all known rubber vine sites yielded no new plants. Landowner permission issues remain for known sites in the Central Maui area.

FOUNTAIN GRASS

There have been no new fountain grass plants discovered for the past two quarters and no mature plants have been found for the past three quarters (exciting news!). All known locations require only monitoring at this point. We still have not been successful in finding out when the Mākena Golf Course site will be excavated. Field crews continue to monitor for seed bank germination at this site. There is always a chance that plants could still be found due to seed bank disturbance from ongoing earth moving activity. There has been no significant rainfall at this site since late summer and no sign of germination. The last fountain grass plant found at the Kahakuloa site was in April of 2008. Rappel survey work continues at this site and has been ongoing throughout the past year.

Control efforts continued at the Honopū fountain grass population on Lānaʻi. This new site was discovered in August of 2008. Field crew extended the search area and controlled two mature plants along with many seedlings. Mature fountain grass plant numbers have been on a steady decrease at the Kōʻele Golf Course. Castle & Cooke staff assisted MISC in October 2008 by supplying a heavy equipment operator and an immense articulating front-tend loader to remove a substantial amount of lantana from the area. Field time at this control site will decrease with the lantana removed.

IVY GOURD

There were no mature ivy gourd plants found on Maui this past quarter. Most known sites were experiencing drought conditions until late fall. Ivy gourd finds have been on a steady decline island-wide for the past two quarters.

Another two visits to Lānaʻi this past quarter yielded approximately the same number of mature plants as in the previous quarter. There was an increase in the number of seedlings controlled. The seed bank at some of the Lanaʻi sites is substantial.

ERADICABLE SPECIES

Macaranga mappa was reported in Wailea through the Report a Pest Network (Thanks Philip) and was verified and controlled. There were three plants (one mature) growing in a hau hedge along a parking lot. Surveys for *Pittosporum viridiflorum* along Kōheo Road in Kula yielded four mature and close to 50 immature plants. Three of the four mature plants were found hiding amongst macadamia nut trees (which look very similar).

LANAʻIHALE FOREST AND WATERSHED RESTORATION

MISC staff (three from Hāna and three from Piʻiholo) traveled to Lānaʻi in December to continue assisting with strawberry guava control in the Lānaʻihale petrel nesting area.



The work at the control site is proceeding nicely with approximately half of the project area completed. Bad weather shut down operations mid-week. A January revisit is scheduled. This DLNR-PCSU project is funded by Castle and Cooke as part of a Habitat Conservation Plan.

MICONIA

This quarter the Hāna miconia ground crew concentrated their efforts in the Hāna area, targeting the Olopawa Cinder Pit, which has high densities of miconia, and sweeping the Kawela area adjacent to the Cinder Pit. The ground crew also swept an area adjacent to



Wailua Nui, mauka of the Hāna Highway in the vicinity of Ke'anae. The ground crew initiated reconnaissance in the Maka'ala'e area, treating specific sites that were previously covered aerially. Several new ground management units were created to address the additional sweep areas. These units have been named: Pukuilua North, Pukuilua South, and Kapia.

Aerial missions during this quarter totaled twenty-two helicopter flight days. The helicopters treated core infestations and also numerous outlier populations from near Honomanū to Kīpahulu. Weather conditions varied from excellent to extremely poor; however, numerous days had adequate weather for reconnaissance flights. Areas that we do not expect have been invaded yet were searched. No significant new populations were detected. There are four months remaining in this 18 month re-entry cycle for aerially managed reconnaissance units.

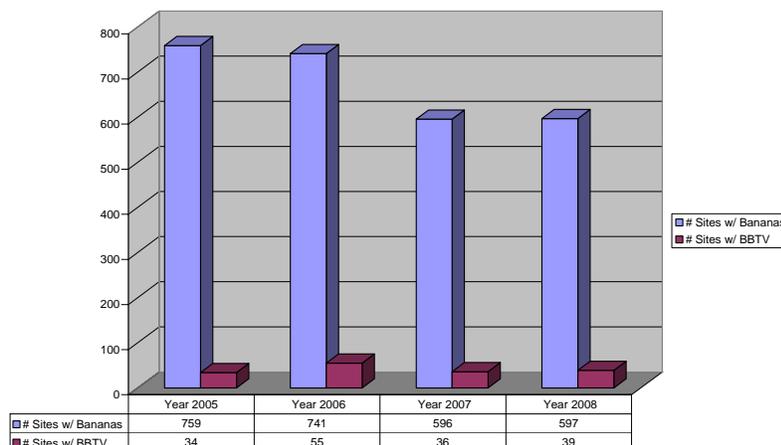


BANANA BUNCHY TOP

This quarter has been bittersweet in terms of successful suppression of BBTV in Maui County. Unfortunately, BBTV was found in North Kīhei and Huelo this quarter. Fortunately, quick reporting and removal of infected plant material seems to have yielded positive results. Subsequent surveys of the Huelo area indicate that only one site was infected. Anecdotal evidence also suggests that the infected plant material was recently brought from Kīhei.

All infested areas of Kīhei and Pukalani were surveyed this quarter. Although BBTV was found, our efforts seem to be having an impact. This appears to be particularly true in Pukalani where we have been working the longest. As can be seen in the following graph, the number of sites with BBTV does not appear to be declining, nor does it appear to be drastically increasing. This may be considered a success given the difficulties of suppressing a virus.

Pukalani BBTV Survey Results



PLANT DATA OCTOBER 1 TO DECEMBER 31, 2008

Maui

	<i>Plants Controlled</i>			<i>Acres</i>
	Mature	Immature	Total	Inventoried
Priority Target Species				
<i>Miconia calvenscens</i>	1,244	30,578	31,814	1,912.51
<i>Cortaderia spp.</i>	458	891	1,349	3,956.19
<i>Pennisetum setaceum</i>	0	0	0	65.65
<i>Coccinia grandis</i>	0	19	19	403.96
<i>Arundo donax</i>	0	0	0	4.18
<i>Cryptostegia grandiflora</i>	0	0	0	15.84
<i>Pittosporum undulatum</i>	0	371	371	49.66
<i>Pittosporum viridiflorum</i>	4	49	53	122.48
<i>Acacia podalyriifolia</i>	0	0	0	0.29
<i>Acacia retinoides</i>	0	0	0	0.29
<i>Macaranga mappa</i>	1	2	3	6.29
<i>Macaranga tanarius</i>	0	0	0	15.17
Grand Totals:	1,707	31,910	33,609	6,552.51

Lānaʻi

	<i>Plants Controlled</i>			<i>Acres</i>
	Mature	Immature	Total	Inventoried
Priority Target Species				
<i>Pennisetum setaceum</i>	30	186	216	196.39
<i>Coccinia grandis</i>	42	537	579	262.15
<i>Macaranga mappa</i>	0	0	0	3.27
<i>Senecio madagascariensis</i>	0	0	0	0.36
Grand Totals:	72	723	795	462.17

Vertebrate Status

COQUI FROGS

The “Coqui-free” nursery certification program is gaining popularity. Two additional businesses have asked to sign on since the program launch. The official launch of the program took place this quarter and outreach materials were made publicly available. These materials include a website (www.coquifreemaui.org), a radio PSA that was developed in-house by Abe Vandenberg and Lissa Fox and a press release. Other materials distributed include program banners, certificates of participation, stickers, and decals for certified businesses. Program fliers were also distributed throughout Maui.

To date, MISC has spent over 58 hours conducting site visits and inspections for the Coqui-free program. Staff also completed pre-program implementation interviews with all interested participants, surveyed 154 Maui residents to gauge the impact of the program on consumer behavior, and provided a variety of advertising materials for Coqui-free businesses. Of 32 interested Maui businesses, 26 have met the standards for certification and are now considered Coqui-free. MISC continues to work with the businesses that have not met the standards to help them become Coqui-free. Adam attended Maui County Council’s Land Use Commission meeting to speak positively about efforts by the Castleton family and Hula Girl Nursery. The testimony provided a great opportunity to highlight one of MISC’s successful coqui eradications and an ideal Coqui-free participant to several County Council members.



Currently, of the 14 known coqui population centers on Maui, seven are considered eradicated, meaning that no coqui calls have been heard for a year or more. Mop-up continues at four coqui population centers. These four locations have few to no coqui and we are hopeful that they will be on our eradication list soon. Unfortunately, reintroduction continues to be a major hurdle at two of the remaining seven sites even though they have expressed interest in the Coqui-free certification program.

Work in Māliko Gulch, our last and largest known infested area, expanded this quarter with a reconnaissance flight throughout the gulch to identify equipment drop locations and treatment options for inaccessible areas. We also conducted our first spot-spray of the bottom third of the gulch and ordered equipment for the experimental sprinkler system for the top third of the gulch. The MISC vertebrate crew also installed another coqui barrier in a common coqui corridor and loaned a small sprayer to a resident who wanted to become more active in control efforts. Finally, the vertebrate crew dropped off stickers, letters of thanks, and aerial photographs to some residents of Honopou Valley and Māliko Gulch.



- This quarter MISC received 16 new frog-related reports and all have had appropriate follow-up.
- Crews made 73 separate visits to 46 frog-infested areas and/or suspect locations this quarter.
- MISC crews spent 308 hours at a variety of locations working on frog control.
- 4,926 lbs. of citric acid were used this quarter.

VEILED CHAMELEONS

This quarter MISC crews focused our chameleon efforts in Makawao on the areas where veiled chameleons are most likely to be found. We continue to foster our cooperative relationship with area residents by tapering our search efforts to less frequent re-visits, more focused search efforts, and encouraging resident reporting. After our next search in March we may move toward a bi-annual revisit schedule if no animals are found. A bi-annual revisit schedule will help ensure that we maintain our relationship with area residents and monitor for any resurgence of the population. If we notice a population spike, our revisit frequency will increase accordingly.

- This quarter 31 properties were searched over the course of 3 evenings.
- No veiled chameleons were found during the 148 hours of effort.
- No veiled chameleons were turned in this quarter.
- To date, 206 veiled chameleons have been removed from the area.

MITRED CONURES

An estimated 13 conures remain at the Huelo Point location and 24 are believed to remain in a separate location to the west. Approximately 36–38 conures were spotted by MISC crews in late October, which is consistent with our cumulative estimates and suggests that the two nesting groups interact. No conure control occurred this quarter. To date, 143 conures have been removed from the area.

OTHER VERTEBRATES

The vertebrate crew followed up on a report of an iguana outside of the Maui Humane Society Office in October. No iguana was found or caught in a trap left on-site for three days.

MoMISC Activities

During the second quarter of FY09 MoMISC focused on four primary target species - arundo, rubber vine, Australian tree fern, and fountain grass. The Kaunakakai and Ho'olehua populations of arundo were monitored and no new plants were found. Native plants donated by the USDA Plant Materials Center and The Nature Conservancy (TNC) were planted at the Kaunakakai site for restoration and are doing well. MoMISC monitored the Ō'hi'a bridge site for rubber vine and 18 immature plants were treated. A short article was submitted to the TNC Newsflash on the success of rubber vine control work at the Kamalō Bridge site. A single mature Australian tree fern was controlled at a residence in Kualapu'u. While removing the tree fern, an immature fountain grass plant was observed growing on the property. The landowner purchased the plant via mail order and is reluctant to give it up. MoMISC is working with the landowner to gain permission for control.

MoMISC also worked on seven miscellaneous species this quarter including: cat's claw, mule's-foot fern, banana bunchy top virus (BBTV), nettle caterpillar, bo tree, long thorn kiawe, and palm grass. Several banana trees were treated for BBTV, 175 immature cat's claw plants were controlled in upper Kalama'ula, and 19 immature palm grass plants were manually removed at Pu'u Kauwā. A report of a long thorn kiawe at Kaunakakai ball park was investigated – no plants were found. Island-wide roadside surveys for bo tree were completed and points were taken for all known trees. A bo tree map was generated and the MoMISC Committee will decide if bo tree will be added to the MoMISC target list. MoMISC partnered with USDA and HDOA to set island-wide traps for the little brown apple moth and nettle caterpillar. USDA will monitor the traps. Invasive species information was provided for the Moloka'i airport kiosk. MoMISC's quarterly meeting was held on November 18, 2008.

