MAUI INVASIVE SPECIES COMMITTEE

Quarterly Report to the MISC Committee
FY 2007, Second Quarter
October 1 to December 31, 2006

Manager's Report

E ʻau mālie i ke kai papaʻu, o pakī ka wai ā pula ka maka.
Swim quietly in a shallow sea, lest it splash into the eye.
Hawaiian Dictionary, Pukui & Elbert

Although MISC's work hasn't taken us into the water yet, the Hawaiian proverb admonishing one to "be careful" certainly applies to our work on the land. There is no doubt that our work is hazardous. Our crews hack their way through clidemia, ginger and inkberry across some of the most irregular terrain in the world, hours away from paved roads. Pampas grass spotters crane their bodies out the sides of helicopters hovering over sheer cliffs. Coqui frog crew members shoot citric acid spray into matted grass while navigating their way among rusty vehicles. Miconia workers hang from ropes to control plants that can't otherwise be reached. Even the seemingly safe task of controlling ivy gourd in a residential area brings with it the hazards of snarling dogs and the occasional irate landowner.

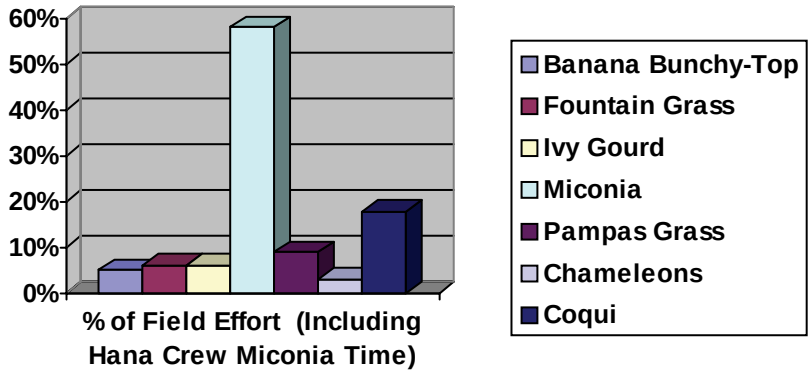
We believe that the work we do is incredibly important but should not require risk to life or limb. A major accident this quarter underscored both the risks associated with our work and the importance of good training for mounting a quick response. Most of our crew had completed a course in Wilderness First Aid earlier in the year. That training was effectively put to use in treating an injury that required an airlift evacuation.

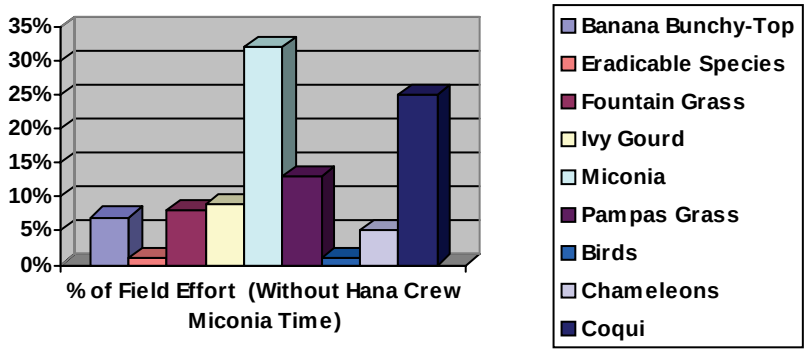
Safety has always been a primary concern for MISC, but we are working even harder to improve our awareness of safety issues. Each crew covers at least one safety topic during meetings at the beginning of the week. Safety briefings occur before starting any unfamiliar task or entering new terrain. We are working to develop a series of training videos, with input and direction from crew members, and we carefully review any incident or near miss to take corrective action.

It may be hard to swim quietly when you are as dedicated as the MISC crew, but it's definitely worth the effort. We are open to any suggestions Committee members might have based on their own considerable experience of working in the field in Hawaiʻi. In the meantime - take care - and know we're doing our best to make MISC a safe workplace.

Quarterly Highlights

MISC FIELD TIME SUMMARY





ACTIVITY HIGHLIGHTS

Sep 28-Oct 1:	Maui County Fair booth
Oct 2:	Presentation to Maui County Council Committee on Parks and Economic Development by Teya & Adam
Oct 4:	Teya attends Mayor's budget hearings in Hāna
Oct 11:	Teya, Joy, & Adam attend banana bunchy top virus meeting at HDOA
Oct 12:	Presentation to East Maui Watershed Partnership by Teya and Jeremy
Oct 13:	MISC annual priority setting meeting
Oct 16:	Teya attends Mayor's budget hearings in Kīhei
Oct 25:	Teya, Randy, & Lori attend Governor Lingle's Listening Session on O'ahu
Oct 25	Adam & Elizabeth attend Small Business Safety and Health Workshop
Oct 30:	Joy attends HISC PR/Outreach Working Group meeting on O'ahu

Nov 1-2:	Teya & Lori attend CGAPS meeting & Teya attends Superferry meeting on Oʻahu
Nov 2-3:	Aaron works with Jeff from KISC on statewide data issues
Nov 4:	Arbor Day booth at Maui Nui Botanical Garden
Nov 8:	Teya & Adam attend conure meeting with DOFAW staff
Nov 11:	Maui Lawn & Garden Fair, Mālama i ka ʻĀina Award presentation
Nov 13:	MoMISC meeting
Nov 16:	Teya attends Olinda Community Association meeting
Nov 16-20:	Mike's crew to Lānaʻi for fountain grass recon & control
Nov 17	Teya attends Hawaiʻi Superferry meeting
Nov 27:	Teya attends CGAPS Steering Committee & Superferry meetings on Oʻahu
Nov 28:	Mike's crew to Lānaʻi for ivy gourd control
Nov 30:	Joy attends HISC PR/Outreach Working Group meeting on Oʻahu
Dec 7:	Presentation to Maui Board of Realtors by Teya & Joy
Dec 8:	MISC meeting
Dec 14:	Teya meets with County Councilmember Bill Medeiros

PR & Education News

MISC IN THE NEWS

MISC's monthly "Kiaʻi 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 explored the difficulties of working with pampas grass in rough terrain and inclement weather and highlighted how easily pampas spreads. November's column featured downy rose myrtle. The year culminated with a spotlight on fountain grass, emphasizing its potential to become a fire hazard on Maui if it proliferates here as it has on the Island of Hawaiʻi.

FOURTH ANNUAL MĀLAMA I KA ʻĀINA AWARD

Every fall, we take the time to honor an individual or business for their efforts in keeping Maui County safe from invasive species. This year, William Jacintho was presented the Fourth Annual Mālama i ka ʻĀina Award on November 12 at the Maui Association of Landscape Professional's (MALP) Lawn & Garden Fair. William was honored for his efforts to educate Maui Community College students about pest species and for the actions he and his family take to keep invasive species out of their nursery and cattle operations.

Jacintho is a fourth-generation farmer who has seen the devastation that invasive species such as fireweed and pampas grass cause to our agricultural economy. He and his family own Beef and Blooms, a split certified organic cattle operation and nursery. Their family company keeps current lists of invasive species and makes every effort to keep pests out of their operations. As a specialist with MCC's agriculture program, Jacintho has a passion for teaching students to be good stewards of the land. He emphasizes the importance of planting the right tree in the right place and avoiding planting invasive species in landscaping projects. Senator Kalani English, Maui Mayor Alan Arakawa, Maui Association of Landscape Professionals President Jeff Bantilan and MISC's Joylynn Paman presented the award to William Jacintho and his 'ohana. The Mālama i ka 'Āina Award is sponsored by the Maui Invasive Species Committee, Maui Association of Landscape Professionals and the County of Maui.

REACHING OUT TO THE COMMUNITY

MISC's first newsletter, Kia'i Nā Moku O Maui Nui (Guardians of the County of Maui) is now available on-line at www.hear.org/misc. If you or someone you know would like a copy of this and future newsletters, please e-mail Joylynn Paman at miscpr@hawaii.edu. Please indicate whether you prefer a printed or electronic copy.

This quarter MISC staffed educational displays at the Maui County Fair, Maui Nui Botanical Garden's Arbor Day Event and MALP's Lawn and Garden Fair. During these events, we met with over 1,385 people. We distributed our newsletter at each event.

Joylynn and Teya have been meeting with members of the Legislature and County Council. Informal presentations include a brief introduction to MISC (if needed), a summary of MISC's progress and successes, and information about our miconia and coqui frog operations. In the process we have learned that MISC is well-known and appreciated by nearly all of our elected officials.

ENVIRONMENTAL EDUCATION

This fall, Maui students were busy tackling "Weed Warriors" activities drawn from the Hō'ike o Haleakalā curriculum. Classes at Kula Elementary, Kamehameha Intermediate and Lahainaluna High School took on "What Makes a Plant Invasive" as well as "Managing Invasives on Survivor Island." Students brought in plant specimens to learn about weedy characteristics and produced terrific artwork illustrating aspects of control work such as field workers dousing pampas with blue herbicide (dressed in proper PPE, of course). Baldwin students helped clear invasive plants during a field trip to Honokowai Valley. Kalama Intermediate students completed invasive species control work at the Maui Coastal Land Trust site in Waihe'e, in addition to surveying the dunes for little fire ant (LFA). Island-wide, ten seventh grade classes conducted fire ant surveys this semester. Joylynn gave a presentation to Montessori of Makawao students. Overall, we educated 534 students this quarter.

Five of the 15 teachers who attended the August teacher's workshop handed in portfolios for professional development credit. The portfolios detail the educators' experience with the curriculum over the past four months and reflect a high level of commitment to assimilating the activities into daily teaching. The Hō'ike Steering Committee explored the possibility of redesigning the Hō'ike website. New pages are in development, with Philip Thomas providing guidance.

Plant Updates

PAMPAS GRASS

Our ramped up pampas grass control efforts continued through this quarter. MISC field staff completed over 600 hours of pampas related work from September through December, 2006. On West Maui, inaccessible pampas plants within the Kaukauna drainage were controlled in an October heli-spray operation. Discussion with cooperating agencies is ongoing to determine how to best stage a ground operation in this area. Other West Maui pampas targets were controlled by air.

Several outlier flowering pampas plants were controlled within the East Maui Honomanū area during November and December heli-spray operations. Ground efforts have been hampered by uncooperative weather conditions. We plan to construct a temporary camping platform that will be in close proximity to the core of the Honomanū pampas population. This will give crew members a dry staging/camping area. As time permits, we continue to survey and control pampas plants found in several front-country locations. We have had positive results with residential land owners who have been cooperating with our control efforts this quarter.

IVY GOURD

Four field crew members responded to an ivy gourd site reported by Hank Oppenheimer on Lānaʻi. The population turned out to be more extensive than expected - spread out over half a kilometer surrounding the golf course area near Mānele Bay. Some control work was completed along with a survey of the visible extent of the population. Control options are being evaluated. The area may prove to be a good site for biocontrol. On Maui, ivy gourd data clean-up continues for residential areas, which is helping to streamline MISC's efforts to control plants on so many different properties. As in the past, the more we look, the more ivy gourd we find.

FOUNTAIN GRASS

Bob Hobdy discovered and began control work on a new population of fountain grass growing on an excavation mound above Mākena Golf Course. Bob secured access permission for MISC and accompanied the field crew to the site the following day. We will attempt some pre-emergent control and closely monitor this site. This particular excavation mound (300'Lx100'Wx40'H) has been purchased and is slated for removal sometime in the near future. We will be in contact with the seller and buyer to ensure we know how, when, and where the mound moves. This new fountain grass location is the most active known site on Maui - there were large seeding plants and keiki found.

On Lānaʻi, we are seeing significantly fewer flowering plants at all known fountain grass locations. Control efforts this quarter were hampered by heavy rain. All Kōʻele Golf Course locations were visited during our November trip to Lānaʻi as well as some locations within the Kānepuʻu management area. Hank Oppenheimer reported two new Lānaʻi fountain grass sites. One is off of Kuamoʻo Road (east of Kānepuʻu) and the other site is near the airport exit. It looks like MISC will be doing more fountain grass survey work on Lānaʻi in the near future.

PERIPHERAL MICONIA SWEEPS
Surveys of peripheral areas for miconia continued this quarter as often as the weather would permit. No new miconia plants were found. Gaining property access continues to be a stumbling block in the Huelo/Kailua area. Quite a few of the parcels are State of Hawai‘i/EMI controlled but have right-of-way issues with other tenants.

HĀNA MICONIA
The Pi‘iholo field crew members assisted in miconia fieldwork in areas around Hāna Ranch for six weeks this quarter. The ground crew has been focusing the majority of its recent effort in the Ka‘elekū area of Hāna, revisiting areas that were swept approximately three years ago. Trail cutting and sweeps continue in upper elevations of the Mo‘omo‘onui area directly above Hāna Ranch. This particular area has exceptionally rugged terrain with many hazards. During an October sweep in this area, Field Crew Supervisor Mike Ade slipped off an uluhe-covered ledge sustaining a significant leg injury. Mike is making good use of his time while he is on light duty to help resolve data issues.

One of the objectives of trail cutting operations at Mo‘omo‘onui was to create temporary helicopter landing areas around the 2,200’ elevation to facilitate heli-drop operations for field staff performing ridge and drainage sweeps down to open pasture areas. These temporary landing zones will increase field efficiency by reducing the time spent hiking to upper elevations which takes up much of the day. One heli-drop exercise was performed in November.

Aerial missions were completed in October, November and December for a total of 15 flight days with two aircraft. The 2006 National Park Service helicopter contract was completed in late November with the 2007 contract being brought online immediately thereafter. The 2007 contract will be operational through the end of April 2007.

A single fruiting tree was located in ‘Ōpana Gulch adjacent to Twin Falls and Ha‘ikū during annual aerial reconnaissance in the area, raising concerns about long distance vectoring from the Huelo population. The new location is within one kilometer of a single seeding individual that was located near Twin Falls several years ago. Intensive follow-up aerial reconnaissance of the area did not locate any other miconia plants. It is thought that this plant could be the “mystery miconia” that was reported in the Ha‘ikū area several years ago by a pilot from Windward Aviation. Recon crews were not able to locate the plant when it was first reported.

Aerial reconnaissance located a population in the Wailua drainage approximately two kilometers from the Kīpahulu boundary of Haleakalā National Park during aerial surveys in December. All individuals were treated immediately. This represents a “new” source population at the doorstep to Kīpahulu Valley. The effectiveness of previous reconnaissance in the area was likely hampered by the rugged terrain and less than ideal flight conditions in the steep-walled valley. The site is now on a regular revisit schedule for aerial control. It is not possible to deploy ground crews in the area due to the terrain.

BANANA BUNCHY TOP VIRUS

Last quarter, Adam and Joy attended the 37th Annual Hawai'i Banana Industry Association Conference where information was presented about the spatial and temporal spread of BBTV. MISC used that information to help improve our BBTV suppression efforts. Using a model that assumes a 30-meter spread every three months, we created buffers around three known BBTV occurrences in Kīhei. Within two of the three buffer zones, banana plant tissue was collected from all properties containing bananas. The third zone was much larger because BBTV had been present longer, so plant tissue was collected from randomly selected properties. This project was done In cooperation with Shanoa Miller, a King Kekaulike High School student, who was particularly interested in using the polymerase chain reaction (PCR) technique to indicate the presence or absence of BBTV. This approach can provide indication of searcher efficacy and the value of random selection to get a sense of what may be found in a "suspect" community. A considerable amount of BBTV was found and suppressed during this project.

We plan to increase our efforts to finish surveying all known infested areas and integrate the distribution equation into our survey efforts. All infestations discovered prior to November 2006 have been treated with the assistance of HDOA. A few new sites need treatment.

- Crews surveyed 386 properties on Maui, encompassing over 108 acres. It took 621 visits to survey, treat, revisit and retreat all 386 properties.
- A total of 16 sites in Pukalani and Makawao had infected banana plants, of which 14 were treated.
- A total of 19 sites in Kīhei had infected banana plants, of which 14 were treated.

MISC is working closely with HDOA to treat all infested parcels and work with uncoop-

Vertebrate Status

COQUI FROGS

Coqui control continues at a steady pace. Two temporary summer hires completed their assignments or moved on, and we retained one person from the temporary crew as a regular full-time employee. The addition has brought the permanent "frog squad" up to six people. We continue to observe reductions in coqui population densities and infested acreage including a noticeable reduction in the residential area of Māliko Gulch. Of Maui's 13 infestations, one infestation is considered eradicated, four are in a monitoring phase with no coqui heard in over six months, and eight sites continue to warrant systematic suppression efforts. Of the eight "active" sites one is expected to move into a monitoring phase after our next visit and several others are expected to follow suit in the near future. Our last and greatest hurdle, Māliko Gulch, remains with little or no suppression efforts conducted to date.

Another major accomplishment this quarter has been a reduction in the number of historic frog reports needing follow-up. Our protocol of following up on valid reports three or more times to confirm the presence of coqui frogs has been extremely time consuming. With fewer old reports to revisit, our crew has been able to respond to new reports more quickly and begin investigating highly suspect areas. A burn permit for the Honopou Valley coqui frog infestation was successfully put to use on November 8 and 10, 2006. Burning debris in the area greatly reduced coqui friendly habitat and made the area much safer for night work.

- This quarter MISC received 27 new frog reports and followed up on an additional 48 historic reports - up substantially from the last few quarters reflecting an increased effort to finish our follow-up of old reports.
- MISC crews made 149 separate visits to 73 frog-infested sites or suspect locations.
- 7,718 lbs. of citric acid were used this quarter and 100 lbs. of citric acid were prepared and distributed to volunteers to assist with their control efforts.

VEILED CHAMELEONS

MISC's veiled chameleon research project focused on development of an experimental trap and baits. Brooke Mahnken, a MISC crew member who has taken the lead on the chameleon project, has invented an experimental trap that relies on decoy veiled or Jackson's chameleons to draw unsuspecting veileds into the trap. Testing of the new trap will commence in 2007. Experiments will also include the effect of different types and colors of lights on searcher efficacy.

- This quarter 15 properties were searched over six nights.
- One male and two females were recovered during the surveys - all on the same property.

MITRED CONURES AND OTHER PARROT LIKE BIRDS

No control activities occurred this quarter. Field observations support previous counts of roughly 40 to 50 remaining birds in the original flock. This quarter a separate flock of approximately 25 birds was confirmed to the west of the original flock. Surveys are planned for later this spring when the conures are more likely to remain near the cliffs as breeding season begins.

MoMISC Activities

During this quarter MoMISC did control work and monitoring on the following target species: pampas grass, rubber vine, Australian tree fern, fountain grass, gorse, long-thorn kiawe, and banana bunchy top virus (BBTV). Work also occurred on three other species (gold-dust day gecko, woodrose, and tumbleweed) that are not current targets but are being assessed for inclusion on our list. MoMISC assisted The Nature Conservancy (TNC) with aerial weed assessment of TNC and East Molokaʻi watershed areas. MoMISC staff also met with the invasive aquatic response team to discuss potential survey areas on Molokaʻi.

Staff from the University of Hawaiʻi College of Tropical Agriculture and Human Resources (CTHAR) and U.S. Department of Agriculture - Plant Protection and Quarantine (USDA-PPQ) assisted with surveys for BBTV. USDA-PPQ, Department of Land and Natural Resources - Division of Forestry and Wildlife (DOFAW), and TNC helped search for Australian tree fern. Approximately 150 residences were surveyed in the Kalae-Palaʻau (upper) districts for Australian tree fern and more plants were found. Tree fern fliers were handed out while the area was canvassed. USDA-PPQ distributed Australian tree fern fliers at community boards throughout the island.

MoMISC investigated reports of a snake (blind snake), infestations of *Jatropha* and plumeria mealy bugs, a spotted morning gecko, and a small flock of blue birds. Fern Duvall and Jay Penniman, from DOFAW, assisted with the bird report and survey.

On the public relations front, an invasive species workshop was conducted for Young Brothers employees with Priscilla Billig from CGAPS assisting and a USDA-PPQ officer attending. MoMISC also did an invasive species workshop/class for a Maui Community College Hawaiian botany class. MoMISC put up an invasive species information board at the Kaunakakai pier on the Young Brothers trailer and an invasive species holiday display at the airport kiosk called "Don't Bring These Presents to Molokaʻi."