



MISC

MAUI INVASIVE SPECIES COMMITTEE

Quarterly Report to the MISC Committee

FY 2010, Fourth Quarter

April 1 to June 30, 2010

Manager's Report

I ka 'olelo no ke ola
I ka 'olelo no ke make

(In the language is life.)
(In the language is death.)

This Hawaiian saying speaks to the power of language, including its ability to both heal and destroy. Language helps deepen our connections to each other. In Hawai'i, the right words, coupled with patience can sometimes open doors that at first seemed resolutely closed. The lockset at the hardware store that doesn't exist may magically become available after 5-10 minutes of "talking story." A caller irate about helicopter noise can morph from foe to friend by taking the time to acknowledge concerns while also explaining why we use helicopters.

The power of language has been part of MISC since its inception. Early on, the Committee recognized that telling our story to the public was crucial to MISC's long term success. When our first PR person left to take on a statewide role with CGAPS, there was no hesitation in keeping a PR position on Maui as well. Even as statewide outreach capacity expanded, the Committee knew that we needed to continue crafting our own messages to maintain our connection with local residents and policy makers.

MISC has been blessed to have outstanding outreach and education staff, who have made our program highly successful, both on Maui and Moloka'i. A lot of outreach happens every day as field staff talk one-on-one with landowners and vendors. Our staff can be found at ho'olaule'a, classrooms, community associations, service clubs, and marching in parades. Each venue requires knowing your audience, identifying messages, and honing delivery. Developing monthly newspaper articles and putting out a high quality newsletter require finding the balance of words that engage, inform, acknowledge, and inspire. Our "language" includes more than just words. Photos (many taken by staff in the field), graphics, comics, video, and PowerPoint presentations; each has its place in helping reach our strategic goals for public outreach.

The power of language to destroy is not lost on us as we sometimes must confront those who would undo our efforts to protect Hawai'i from invasive species. No worries. "Talking story" requires trust, a willingness to listen, patience, and usually a dose of humor. Over the years I think we've demonstrated that our outreach & education program has those qualities and more. Mahalo to the Committee for the vision and kudos to our awesome staff for carrying it out!

Employee of the Quarter

Our latest “Employee of the Quarter” award goes to **Dave McPherson**, who has been with the plant crew since late 2007. Dave is one of those people who just see what needs to be done and either starts doing it or joins in. Case in point:



Dave set the standard for being the orange-tighted, snake-threatened ‘iwi in our parade floats. Over the last two years, Dave has taken on increased responsibility for managing ivy gourd and fountain grass control work on Lāna‘i. He has helped ensure consistency in our operations there and maintains a positive relationship with Castle & Cooke staff. He makes



sure the data collected is accurate and complete. Dave is also appreciated in remote field situations and after-hours for his cooking skills and for his ability to embrace all life has to offer. Awesome job, Dave!

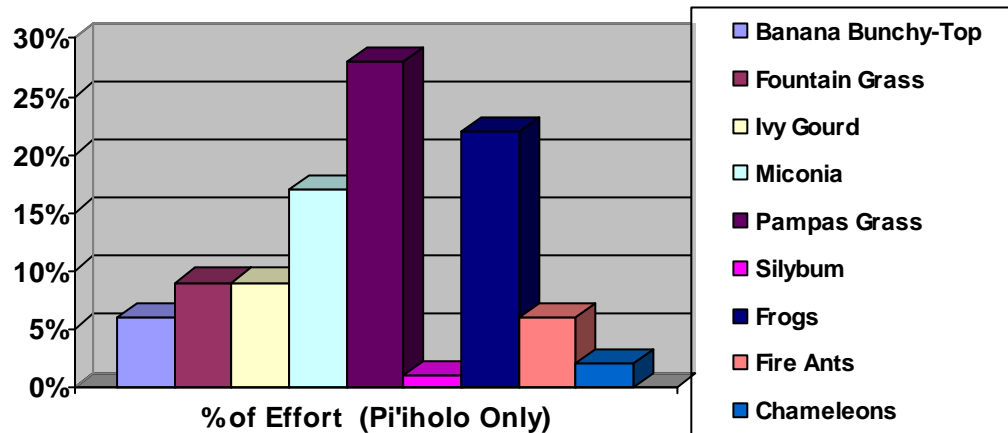
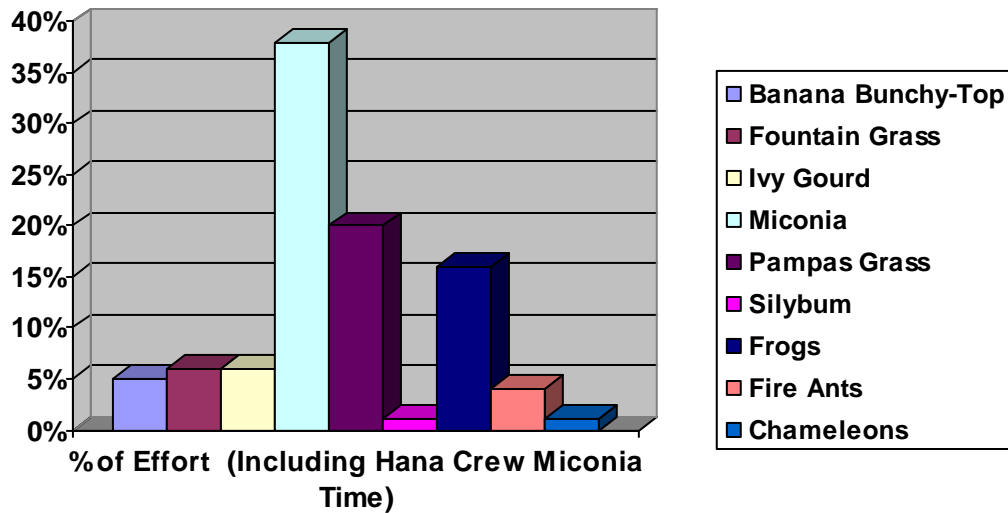
Quarterly Highlights

ACTIVITY HIGHLIGHTS

- Apr 6-9: Crew to Lāna‘i for ivy gourd control
- Apr 7: Lissa gives presentation to Kihei Rotary Club
Teya, Adam, & Imi attend RCUH Performance Evaluation Training
Teya & Adam attend Budget Hearing in Kahului
- Apr 8: Early Detection Training on Lāna‘i
Teya & Brooke attend Maui Conservation Alliance meeting
Teya attends Budget Hearing in Council Chambers
- Apr 9: MISC Meeting – Early Detection
- Apr 12: Sling load training refresher for all field staff
Teya attends RCUH Workplace Violence Training
- Apr 14-15: Teya to BIISC meeting
- Apr 20: Adam, Mike, Darrell, & Imi attend RCUH Workplace Violence Training
- Apr 22: Teya, Adam R., Elizabeth, & Lissa attend fundraising workshop
- Apr 24: Educational booth at Hāna Taro Festival
- Apr 26-30: Vertebrate & Hāna crews travel to Kaua‘i to assist KISC

May 1: Lissa assists MoMISC with Country Farm Fair on Moloka'i
 May 3-7: Plant crew & office staff travel to Kaua'i to assist KISC
 May 5: Teya & Adam attend CGAPS & ISCs meetings on O'ahu
 May 10-24: Crew to Lāna'i for fountain grass control
 May 15: Lissa attends Maui Sustainability Conference
 May 17-21: Crew to Honomanū for pampas control
 May 19: Lissa attends Public Outreach Working Group Meeting on O'ahu
 May 24-28: Crew to Honomanū for pampas control

June 1: Miconia Operations meeting
 June 1-4: Crew to Lāna'i for ivy gourd control
 June 4: MISC Meeting – plant priorities
 June 7-9: Teya & Lissa to Big Island for LFA video shoot
 June 7-10: Crew to Honomanū for pampas control
 June 7-8: Crew to Hana'ula for pampas control
 June 10: Teya attends Maui Conservation Alliance meeting
 June 14: Summer temp crew for coqui starts and Hāna/coqui AmeriCorps interns start
 June 15: Orientation for summer staff and interns
 June 14-18: Crew to Honomanū for pampas control
 June 17: Little Fire Ant update meeting with Cas Vanderwoude
 June 28-Jul 2: Crew to Honomanū for pampas control



PR & Education News

MISC IN THE NEWS

In April, our monthly column, “Kia’i Moku” in the Maui News presented information on the recovering wiliwili populations following the release of the biological control for the *Erythrina* gall wasp. The May article covered information on the concept of eradication based on information Teya garnered at the “Island Eradications” conference in New Zealand. The potential impacts of the naio thrip were discussed in the June article.

Teya was interviewed by Ben Markus of Hawai’i Public Radio about the increased effort to control coqui frogs in Māliko Gulch. The interview aired June 29th.

REACHING OUT TO THE COMMUNITY



The spring fair season began April 3rd with the Maui County Agriculture Festival put on by the Maui Farm Bureau. This year MISC’s display focused on Banana Bunchy Top Virus (BBTV) and little fire ants (LFA). April 24th was the Taro Festival in Hāna, where MISC had a table on BBTV and little fire ants as well as miconia. Expanding our outreach efforts with the help of MoMISC and Lori, Lissa attended the Moloka’i Country Farm Fair on May 1st with a display focusing on little fire ant detection. Two-hundred ant detection kits, consisting of a bait stick, plastic bag, label, and LFA brochure were handed out on Moloka’i. We reached 686 people through our participation in community events this spring.

Teya and Lissa traveled to Big Island in June with Masako Cordray and Chris Reickert to continue filming for the little fire ant video. The video will feature testimonials from people who have had to deal with the impact of little fire ant and highlight prevention and detection measures.



The Summer 2010 edition of the MISC Newsletter, Kia’i i Nā Moku o Maui Nui, covering information presented at the 2009 International Miconia Conference, was published and mailed to 430 people. The newsletter will be passed out at community events as well.

Other community outreach efforts this spring included a short presentation to the Kīhei Rotary Club and participation in a working group on invasive species for the Maui Sustainability Conference. A little over one year ago MISC staff worked on a restoration planting in The Nature Conservancy’s Waikamoi Preserve as part of a film project about sustainability on Maui. The film, developed by the Sustainable Living Institute of Maui, premiered at the Maui Film Festival on June 17th. The film featured interviews with MISC committee members, partners and staff.

MISC IN THE CLASSROOM

This quarter several classes learned about unique native Hawaiian species and invasive threats to their survival. Kula 1st graders acted out the parts of a rainforest while holding pictures of different plant species. Lahainaluna High School students learned evolution through a Hō'ike card game about honeycreepers. Elementary art students at the Kihei Community Center got to paint their favorite forest birds. Emmanuel Lutheran and Kamehameha School 4th grade classes helped demonstrate a "rainforest in a box" and then visited a real rainforest on field trips to the Waikamoi Preserve where they could see the difference between the native forest/watershed and one full of introduced species. A visiting high school marine biology class from Georgia got to imagine what a day in the life at environmental jobs in Hawai'i might entail.



In addition, we stepped up our little fire ant classroom visits to bring the early detection message to the following schools and organizations throughout Maui County: Lāna'i High, Kihei STEM Academy, Aka'ula School on Moloka'i, Maui High, Lokelani Intermediate School, Emmanuel Lutheran, and a Cub Scout troop in Makawao. We used a variety of methods to teach about LFA including team competitions, identification labs, a little fire ant dance, and ant collection training. Students turned in samples that included the first known records of four species for Lāna'i and Moloka'i. All told, 750 students learned interactively about native and invasive species this quarter.

EYES & EARS EARLY DETECTION PROGRAM

In partnership with Elizabeth Speith of USGS-PBIN, we continued our early detection training program with another presentation to members of the Lāna'i community and, for the third consecutive year, a presentation for Hawai'i state conservation crews. With funding from the Public Outreach Working Group of the Hawai'i Invasive Species Council, we printed 500 copies of an updated version of the Maui early detection field guide.

Plant Updates

IVY GOURD

There was a decrease in the number of ivy gourd plants controlled this past quarter. A new site in Lahaina in the Mala Wharf area was discovered and is now being controlled. The surrounding area will be surveyed.

This past quarter we visited Lāna'i twice for follow-up on the Mānele Golf Course ivy gourd population. This quarter there was a decrease in the number of mature plants controlled compared to the previous quarter; however, there was a significant increase in immature plants controlled. One fruiting plant (large-caliper female vine) was found in a landscaped (irrigated) site during surveys at an old known location.

PAMPAS GRASS



The crew was busy surveying for and controlling pampas grass this quarter with the main focus on our Honomanū backcountry site. The site has been divided into 1-2 acre plots that are being systematically swept and GPS'd by the ground crew. This is a slightly more focused strategy than has been used in the past and is yielding good results. Teams of three people spent 27 days working in the Honomanū area this last quarter. To date, there have been far fewer plants found than in past seasons. A little closer to home, but still wet and muddy, the crew has also been working

along the Waikamoi Flume controlling pampas. There have been several pockets of plants found by helicopter along the flume within 1,000 feet of the boardwalk.



Our helicopter operations got off to a slow start this quarter mostly due to uncooperative weather. We worked with several partner agencies in Honomanū, Hana'ula and on the west side in the Kahakuloa area. Unfortunately, a Hana'ula trip with West Maui

Mountains Watershed Partnership staff was cut short due to the wildfire that was in the immediate area.



When the crew wasn't slogging through the rain forest they were on the slopes of Haleakalā surveying for and controlling plants in the Polipoli area, and Ka'ono'ulu and the Zwaanstras Ranch. In the Kula and Olinda areas, 61 residential sites were visited and 8 plants controlled.

FOUNTAIN GRASS

Field crew revisited all fountain grass sites on Maui this quarter and found that two of the sites had flowering plants. One site was located in the Kahakuloa area and the other at a Maui County water tank near the Waiehu Terrace subdivision. Both sites remain challenging due to limited accessibility. The water tank area is fenced and the Kahakuloa site requires rappelling. Some of the water tank enclosures on Maui are maintained by mowing with power equipment and we are concerned that fountain grass may have been spread via contaminated equipment. We are working with the Department of Water Supply to identify which Maui County water tanks should be surveyed.

Control efforts continue at all known fountain grass populations on Lāna'i. There was an increase in both mature and immature plants controlled at Gary's Island this quarter.



OTHER PLANTS

Silybum marianum control continues to focus on eliminating rosettes. Eight immature plants and two single-flower mature plants were controlled. Field crew have been visiting the two known sites frequently to avoid the future possibility of handling large plants. A new *Erica lusitanica* site was found in an old nursery off of lower Crater Road and another site was discovered in December 2009 near the known population at Wai'ale Gulch (Haleakalā Ranch). Further surveys are needed to better delimit the population.

Maclura pomifera (Osage orange) root suckers continue to be controlled systematically at the only known location on Maui. Three mature *Macaranga tanarius* (parasol leaf) trees and one immature plant were controlled at Pua Nani Nursery growing as weeds in a nursery plant staging area.

MICONIA

During this quarter, the focus for miconia ground sweeps moved from Ke'anae to Hāna. Several areas that needed re-treatment were completed and follow-up was done on specific reports from the community.

In the Ke'anae area, sweeps were performed in the vicinity of the old school. Numerous plants were treated, ranging from seedling carpets to a few individual plants that were in excess of 3 meters tall. The sweeps were initiated due to a citizen report and required a minimal time investment of two crew days. Also in the general area of Ke'anae, reports of miconia adjacent to the Wailua lookout and the Wailua Road intersection resulted in treatment of several plants in difficult-to-reach steep terrain and hau thickets. Several of



the treated plants were mature. Work in the vicinity of the Ke'anae Arboretum cliffs was completed and should not require ground crew re-entry for several years. The terrain is steep and total plant count was fewer than 30 individuals.

In the Nāhiku area, ground crews completed sections of 'Ula'ino adjacent to "Skippy's" that were missed the previous quarter. Once again, ground crews reported far fewer seeding miconia than previous sweeps from several years ago and were impressed by the native plant understory. Work was also completed in Makapipi as a follow-up to miconia reported during a land clearing project by a local resident. Several large miconia and some immature plants were treated.

In the Hāna area, ground effort was focused in the Honomā'ele section. Crews spent time cutting trail and establishing an access network in areas that were previously treated exclusively by air. The local landowner has been supportive of increased ground presence on his extensive conservation-area acreage. Following the establishment of infrastructure, sweeps were initiated with completion in June. The terrain was rough and no seeding trees were reported. Also in the Hāna area, sweeps were completed in the Ka'elekū Makai management unit. One mature miconia that was missed in previous sweeps several years ago was treated and a number of smaller miconia were treated. Thick vegetation and rough terrain make sightability of miconia difficult in the area.

We added two AmeriCorps interns to the Hāna-based crew for the summer season. Edmund Oliveira is a returning hard worker and Chelsea Emmesly has joined the crew for the first time. Both are great assets to the miconia program and passionate about protecting the watershed and forests of East Maui.

Aerial operations for the quarter had 34 scheduled helicopter flight days, but several were lost due to scheduling conflicts and weather delays. Overall, weather was generally good with lighter than normal winds. Periodic reconnaissance of aerial management units where miconia densities are low to non-existent has progressed steadily for the past 10 months when we initiated a new cycle of reconnaissance. Aerial treatment of miconia focused heavily on outlier populations and from Kawaipapa drainage to Waiho'i Valley. Aerial operations will continue to focus on outliers before more aggressively targeting the Hāna core infestation this fall. Active work areas for aircraft will continue to be largely determined by weather conditions as well as appropriate re-entry intervals.

PLANT DATA APRIL1 TO JUNE 30, 2010

Maui

Target Species	Plants Controlled		Total	Acres Inventoried
	Mature	Immature		
<i>Arundo donax</i>	0	0	0	25
<i>Coccinia grandis</i>	10	182	192	804
<i>Cortaderia spp.</i>	90	771	861	2,451
<i>Cryptostegia grandiflora</i>	0	0	0	4
<i>Miconia calvescens</i>	116	4,900	5,016	11,151
<i>Pennisetum setaceum</i>	2	6	8	214
<i>Silybum marianum</i>	2	8	10	101
<i>Macaranga mappia</i>	0	0	0	2
<i>Macaranga tanarius</i>	3	1	4	94
<i>Maclura pomifera</i>	0	50	50	4
<i>Pittosporum viridiflorum</i>	0	0	0	18
Grand Totals:	223	5,918	6,141	14,867

PLANT DATA APRIL1 TO JUNE 30, 2010

Lāna'i

Target Species	Plants Controlled		Total	Acres Inventoried
	Mature	Immature		
<i>Coccinia grandis</i>	10	221	231	265
<i>Pennisetum setaceum</i>	49	152	201	295
Grand Totals:	59	373	432	559

LITTLE FIRE ANTS

Work on little fire ants focused on surveys at high-risk businesses, meaning those that regularly receive shipments of plants or mulch from the Big Island. Surveys involved placing peanut-butter baited vials on a property and collecting the vials after 45 minutes to an hour. MISC staff deployed 976 vials at 9 different sites this quarter. Staff also conducted a “rapid response” at one nursery in response to information from the Big Island suggesting that the nursery may have vectored LFA back to that island. A thorough survey was completed and no LFA detected; in fact, the nursery was very clean with very few ants. Forest & Kim Starr continued to identify all ants collected. No LFA were found. MISC staff and the Starrs met with the State Ant Specialist, Cas Vanderwoude, to review survey and data collection protocols.

BANANA BUNCHY TOP VIRUS



The highlight of this reporting period was the thorough survey of known banana bunchy top virus sites and high risk communities on Moloka'i. After 314 hours of searching, it appears that BBTV continues to be confined to the central Moloka'i area; no new regions were found to be infected. Over 2,000 properties were inspected during the annual survey, 21 of which were found to have BBTV. All 21 sites have been treated. Informational brochures, DVDs, and handouts were distributed to residents and farmers during the survey.

Other noteworthy efforts this quarter include comprehensive surveys of the four known Ha'ikū/Huelo bunchy top sites and surrounding properties, as well as an expanded survey of the Kula area. Fortunately, no bunchy top was found in Huelo and only three properties were found to have it in Ha'ikū. The three properties where the virus was found in Ha'ikū were previously known sites. In Kula, only six of the 353 properties visited (213 of which were surveyed) had BBTV. The number of properties surveyed vs. visited varies depending on presence of bananas and access.

This quarter 210 crew hours were spent visiting 484 properties on the island of Maui. Of 27 sites that were found to have bunchy top on Maui this quarter, 17 were treated. The remaining sites will be treated next quarter pending resident/owner permission. The following table summarizes the number of sites surveyed and sites with BBTV on Maui this quarter.

	<i>Sites Surveyed</i>	<i>Sites With BBTV</i>
Ha'ikū	47	3
Huelo	5	0
Kihei	8	10
Kula	213	6
Makawao	1	1
Pukalani	2	2
Wailea	23	5
Total	298	27

Note. Many of the sites surveyed this period have been known to have BBTV in the past. Thus, not all sites with BBTV are new locations. The low number of sites visited relative to sites with BBTV highlights our efforts to follow up on known infested areas. Driving surveys are also not reflected in these numbers.

Vertebrate Status

COQUI FROGS

Near the end of this quarter the vertebrate crew temporarily doubled in size! The expansion of effort was made possible by additional support from the Hawai'i Department of Land and Natural Resources and anticipated funding from the U.S. Fish and Wildlife Service. Previous successful control efforts have been essential in attracting more resources to tackle Māliko Gulch. The addition of five summer hires (three full-time and two part-time) and one AmeriCorps intern has already helped existing staff finish installing necessary infrastructure in Māliko Gulch, reduce frog friendly habitat in infested areas, follow-up on new reports, and treat known population centers. We are confident that with the help of the temporary crew we will be able to treat the entire Māliko Gulch infestation at least once by the end of this year.



The benefit of cooperative working relationships was also highlighted this quarter when a Māliko area resident volunteered to mow more than two acres of cane grass that had been known to harbor frogs. Once the frog-friendly habitat was removed, MISC staff were able to treat the entire area for the first time. Results were very encouraging. An uncountable number of coqui were heard at the beginning of the treatment week; none were heard by the end.

Suppression efforts at the five active coqui population centers continue to yield positive results. Very few coqui are being heard during routine surveys. However, reintroduction at three of these locations remains a problem. Finally, all six of our East Maui coqui-free participant businesses were surveyed this quarter and fortunately no coqui were heard or reported in the area. All six businesses will remain certified as coqui-free. Greenhouse frogs (*Eleutherodactylus planirostris*) appear to be quite common at many nurseries.

- Crews made 85 separate visits to 43 frog-infested areas or suspect locations this quarter. Ten of these visits were to 12 coqui-free participant nurseries.
- MISC crews spent 618 hours at a variety of locations working on frog control.
- 20,075 lbs. of citric acid was used this quarter, nearly all in Māliko Gulch.

VEILED CHAMELEONS

Three days of veiled chameleon searches were conducted this quarter. Searches focused on 22 of the most likely properties. Even though 171 person hours were spent looking, no veiled chameleons were found or reported. To date, 206 veiled chameleons have been recovered on Maui; the first of which was recovered in March of 2002 and the most recent in March of 2008. Thirty-one of these chameleons were reported or captured by area residents. MISC will be reassessing the veiled chameleon program during the December MISC meeting, which is focused on vertebrate work.

MoMISC Activities

For the report period MoMISC continued maintenance and monitoring of five priority target species including:

- Giant reed (*Arundo donax*): 1.7 acres surveyed, none found
- Australian tree fern (*Cyathea cooperi*): 309 acres surveyed by air and one acre on the ground)
- Albizia (*Falcataria moluccana*): retreated four mature trees and treated 130 seedlings
- Barbados gooseberry (*Pereskia aculeate*): treated 11 juveniles
- New Zealand flax (*Phormium tenax*): manually controlled two juveniles

Other work highlights included:

- Banana bunchy top virus: over 1,128 acres surveyed (roadside and ground) for BBTv by MoMISC and MISC crews. 83 mature and 299 juvenile trees were treated in known infested sites in Kualapu'u and Ho'olehua.
- Bo tree (*Ficus religiosa*): a single juvenile bo tree was treated in Kaunakakai. MoMISC is working to secure permission and funding to remove bo trees from Moloka'i.
- Gourka (*Garcinia xanthochymus*): an early detection control of five juvenile and 20 mature gourka (false mangosteen) was completed. The trees were detected during a Hālawa Valley survey for gooseberry. A specimen was sent to and identified by Bishop Museum.
- Fireweed (*Senecio madagascariensis*): 63 acres were surveyed by road and ground for fireweed after reports were made by landowners. Two mature and ten juvenile plants were manually controlled.

PLANT DATA APRIL 1 TO JUNE 30, 2010

Moloka'i

Target Species	Plants Controlled		Total	Acres Inventoried
	Mature	Immature		
<i>Arundo donax</i>	0	0	0	2
<i>Cyathea cooperi</i>	0	0	0	309
<i>Falcataria moluccana</i>	4	130	134	14
<i>Ficus religiosa</i>	1	0	1	0
<i>Garcinia xanthochymus</i>	5	20	25	13
<i>Merremia tuberosa</i>	0	41	41	2
<i>Pereskia aculeata</i>	0	11	11	19
<i>Phormium tenax</i>	0	2	2	10
<i>Prosopis juliflora</i>	0	0	0	124
<i>Rosa multiflora</i>	0	18	18	3
<i>Senecio madagascariensis</i>	2	10	12	63
<i>Setaria palmifolia</i>	0	41	41	1
Grand Totals:	12	273	285	560