

Maui Invasive Species Committee (MISC): Highlights

The Maui Invasive Species Committee detected and controlled invasive plants and animals across the islands of Maui and Lānaʻi, while also providing administrative oversight to work on Molokaʻi. Strong partnerships and a supportive community provided the foundation for successful efforts during FY2009.

MISC's work focused on achieving the Response & Control goals and objectives of the Hawai'i Invasive Species Council's Strategic Plan. The Committee is highly engaged and held six meetings throughout the period to set and review priorities for the control of pests in Maui County. An annual priority-setting meeting helped focus limited resources on incipient pests and established pests that cause the greatest harm and are feasible to control. MISC's partners, especially at the county and federal level, helped bring significant funding to MISC's efforts, making state dollars provided to Maui County the most highly leveraged of all counties. Staff from partner agencies also worked side-by-side with MISC staff in the field during pampas grass sweeps, on aerial control missions, and during vertebrate control operations.

Response and Control: Measures of Effectiveness

Number of species detected and evaluated for feasibility of eradication:

Early detection and rapid response to incipient invasive species included roadside surveys and surveys at a select number of landing zones on Maui. Committee members and staff also reported on newly discovered plant species.

- A repeat of the roadside surveys first conducted in 2000 for Maui was initiated using a target list of 100 species. Two botanists drove an estimated 850 miles of roads. Specimens from 17 species were collected, including 2 new state records, 7 new records of naturalization, 3 new island records, 2 range extensions, and 3 unknown species. A total of 14 species have been identified as potential candidates for eradication.
- Trained botanists also conducted surveys for incipient plant species at 18 landing zones to assess whether conservation workers might be inadvertently vectoring seeds into high-value natural areas. To date, no major problems have been detected at the sites surveyed.

Number and area of priority invasive species eradicated and/or controlled:

Control and eradication efforts centered on 23 plant species, two vertebrate species (coqui frog (*Eleutherodactylus coqui*) & veiled chameleon (*Chamaeleo calytratus*), and one plant disease (banana bunchy top virus).

- Efforts concentrated on keeping miconia (*Miconia calvenscens*) out of the native rainforests of East Maui, controlling pampas grass (*Cortaderia jubata* and *C. selloana*) in both East and West Maui Watersheds, and eradicating coqui frog populations across the island of Maui.
- Over 26,000 acres were searched for miconia during ground and aerial operations, which also controlled 115,407 plants, of which 1,569 were mature. The efficiency of pampas grass operations was greatly improved by the establishment of a remote camping platform in a wet area of East Maui.



*Pampas grass in
Haleakalā National Park*

- Opportunistic discoveries of new plant species included Spanish heath (*Erica lusitanica*) and milk thistle (*Silybum marianum*). Eradication efforts were undertaken and initial results look promising. An infestation of milk thistle was described by Charles Darwin in 1833 as “impenetrable to man or beast” and “[o]ver the undulating plains, where these great beds occur, nothing else can now live.” The roadside surveys noted above did not turn up any new locations of milk thistle or Spanish heath.
- No detections of the veiled chameleon were made during searches of 53 properties in suspect areas over 9 different nights. While it would be unrealistic to claim eradication of this species, which is capable of preying on small forest birds, it appears to have been effectively limited to a single area on Maui.
- Efforts to control banana bunchy top virus took place across the island. Recent surveys indicate good success in Lahaina and at the County Agricultural Farm in upcountry Maui. No BBTV has ever been detected during the annual survey of over 300 properties on Lāna‘i.
- Additional efforts on Lāna‘i focused on two target plant species: the smothering ivy gourd (*Coccinia grandis*) and the fire-loving fountain grass (*Pennisetum setaceum*). A total of 1,212 fountain grass plants were removed, including 177 mature plants.

Prioritization processes identified and in place:

Each year, MISC conducts an annual prioritization meeting to review progress on the current list of target species. This process follows the general prioritization protocols established in New Zealand. It is adaptive, allowing MISC to add new species on the fly if available information indicates that immediate action would help prevent costly containment in the future.

Implementation of the priority response and control actions of plans for the coqui frog, West Nile Virus & Avian Influenza:

MISC participates in regular review of the statewide management plan for the coqui frog.

- MISC has successfully eradicated coqui frogs at eleven population centers and contained frogs at five other areas. Three nurseries are categorized as “revolving door” sites, underscoring the need for improved inter-island quarantine.
- Work in the challenging Māliko Gulch has included deployment of a high-volume citric acid sprinkler system, creation of access trails, continued surveys to delimit the extent of the infestation, and intensive work with local landowners to ensure cooperation. Much of the infestation in the gulch is on state land.
- On Maui, MISC staff developed and implemented a coqui-free certification program to help stop the spread of frogs across the island. This project was initially funded by a HISC Research & Technology Grant. A total of 28 nurseries on Maui are now certified as coqui-free and have received relevant marketing materials. A list of coqui-free nurseries is published on a website maintained by MISC to promote the program: www.coquifreemaui.org.
- Responded to reports of dead birds and dead feral chickens and submitted them for testing for West Nile Virus and Avian Influenza.



Number and names of species, habitats, ecosystems, agricultural, and managed areas protected because of control efforts:

- Target species are chosen for the threat that they pose to Maui County’s high-value natural areas or to agricultural production. The island of Maui has 79 federally-listed threatened and endangered plant species and at least as many additional candidate species and species of concern. The island of Lāna‘i has 37 endangered or threatened plant species.

- MISC's work occurs in residential areas where many introduced species first become established, but also involves ground and aerial surveys over the remote inaccessible areas of the East and West Maui Watersheds. MISC's work also helps protect the unique resources of Haleakala National Park, the only intact summit-to-the-sea reserve in the State of Hawai'i.
- Work on banana bunchy top virus is helping to protect both agricultural and domestic production, and also preserve the diverse numbers of Polynesian varieties that are found on Maui.

Other activities:

Additional activities also helped achieve HISC objectives.

Capacity development: Four additional field workers were hired with support from the National Park Service, helping to offset reductions associated with decreased state funding. Staff capacity was enhanced by planning and implementing the following training events: certification as a rappelling instructor, rappelling training, pesticide and fish & wildlife resources workshop, botany workshop, and ArcGIS training. MISC staff also participated in a joint exercise with other Invasive Species Committees on the island of Kauai, which helped develop the overall statewide capacity of the ISCs.



Botany training workshop

Infrastructure improvements: Infrastructure improvements included the development and deployment of a high-volume citric acid sprayer to control coqui frogs in the most heavily infested area of Māliko Gulch. Because of the high densities of frogs in the gulch, these spray stations are likely to be used over several years.

Biocontrol: MISC worked to create positive public perceptions about the use of biocontrol by including biocontrol messages in monthly articles in the *Maui News*. Staff helped arrange and host a public meeting on the issue of strawberry guava biocontrol agents and also participated in the release of *Eurytoma erythrinae*, a biocontrol agent for the wiliwili gall wasp (*Quadrastichus erythrinae*). Committee and staff members helped draft and support a Maui County resolution in support of biocontrol for forest pests, which was passed unanimously by the Maui County Council.

Snake Response: All staff from MISC's 5-person vertebrate crew attended a four-day training on O'ahu, further strengthening the on-island capacity to respond to snake sightings.