



Moloka'i/Maui Invasive Species Committee (MoMISC): Established Pests Working Group Highlights

Funds from HISC supported detection and control of established pests on the Island of Moloka'i. MoMISC continued its successful efforts toward eradicating eight priority target species: albizia, giant reed, Australian tree fern, Barbados gooseberry, fountain grass, New Zealand flax, rubber vine and tumbleweed. Field staff detected no giant reed or fountain grass during surveys. MoMISC will continue to prioritize maintenance and monitoring of target species towards eradication. MoMISC also prioritized responding to reports from the public, addressing a wide variety of pest issues affecting human health and the environment.

Response and Control: Measures of Effectiveness

Number of species detected and evaluated for feasibility of eradication:

Any considerations for adding a species to MoMISC's target list is determined through an evaluation process by the MoMISC committee.

- Fireweed (*Senecio madagascariensis*) was a recent and unwelcome discovery on Moloka'i. MoMISC detected four mature fireweed plants at four separate locations across the Island. These first detections were found in fairly remote areas that have limited access. MoMISC continues to investigate the possible pathway for fireweed and will work to continue early detection and control of this toxic weed.
- During a survey for Barbados gooseberry (*Pereskia aculeata*) in Hālawā Valley, a specimen from a large-leafed tree was collected and sent to Bishop Museum for identification. Botanists at the museum identified the plant as *Garcinia xanthochymus*, also known as gourka or false mangosteen. Consultation with plant experts supported controlling the trees. MoMISC cut down and treated approximately 25 trees and will monitor for re-growth.
- An introduction of the wasp specific to pollinating the bo tree (*Ficus religiosa*) is causing trees on Moloka'i to produce viable seeds, which are now being spread by birds. Roadside surveys for bo tree found a total of seven large mature trees in central and east Moloka'i. Three of the seven trees have been cut down and MoMISC is currently working to secure permission and funding to remove the four remaining trees.



Gourka specimen



Control of bo tree on private ranch with assistance from partners

- Investigation of a public report about water hyacinth turned out to be water lettuce (*Pistia stratiotes*) growing in stagnant water on the side of a highway. MoMISC removed a truckload of the water plants to deter the public from accessing it and spreading it to other waterways.

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

- Maintenance and monitoring work concentrated on eight priority species for eradication. Over 520 acres were surveyed for priority species and 3,543 priority plants were controlled. An additional 16 plant, plant pest, or animal species were also surveyed for or treated. Over 1,657 acres were surveyed for other pests and over 51,000 other pests were controlled.
- Monitoring continued for albizia (*Falcataria moluccana*). Of the 885 mature trees initially treated in 2009, only four trees needed re-treatment. Over 35 acres were surveyed and 130 seedlings were controlled.



DOFAW staff cuts trail through fallen albizia; MoMISC staff treats albizia on a slope.

- The numbers of rubber vine (*Cryptostegia madagascariensis*) plants continued to decline. Over 39 acres were surveyed and 89 immature plants were controlled. No fountain grass or giant reed was detected.

HISC RESPONSE AND CONTROL OF ESTABLISHED PESTS WORKING GROUP
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- Expanded surveys were conducted for Barbados gooseberry. Over 40 acres were surveyed and 12 mature and more than 2,500 immature plants were controlled.
- Over 17 acres were surveyed for New Zealand flax (*Phormium tenax*) and five mature and 23 immature plants were manually removed.
- Surveys and monitoring for Australian tree fern (*Cyathea cooperi*) continued. Over 326 acres were surveyed by air and ground. A single mature Australian tree fern was removed from a residence and another 10 immature trees from the core infestation site in north central Moloka'i.
- MoMISC secured permission to survey a working quarry where tumbleweed (*Salsola kali*) was suspected to be present. Over 49 acres were surveyed and 758 plants were detected and controlled.



MoMISC staff prepping for herbicide treatment

Prioritization processes identified and in place:

MoMISC holds quarterly meetings where updates are given to members on all current species being controlled. The MoMISC Field and Outreach Coordinator prepares reports to the Committee on any new species of concern. The Committee evaluates and directs MoMISC staff to target any new species considerable feasible to eradicate.

Implementation of the priority response and control actions of plans for Aquatic Invasive Species, West Nile Virus, coqui frog, and red imported fire ant:

- Staff monitored the designated swimming area at the Kaunakakai Harbor for upside-down mangrove jelly fish (*Cassiopea andromeda*). Reports from the public in 2009 of being stung by jelly fish-like organisms prompted MoMISC to take action to protect human health. A total of 140 mangrove jelly fish were removed from the Kaunakakai pier.
- MoMISC also assisted the DAR with removal and outreach for gorilla ogo (*Gracilaria salicornia*).
- MoMISC initiated a rapid response to a report from a business that a coqui frog (*Eleutherodactylus coqui*) jumped out of a potted fruit tree that had been shipped to Moloka'i with 180 other trees from the Big Island. MoMISC responded by spraying the entire shipment with citric acid. A single coqui frog was captured and controlled. The shipment was contained in a warehouse, observed for several days, and then released to the business to be sold to the public.
- A survey for little fire ant (*Wasmannia auropunctata*) was done for the shipment with the coqui frog and the business' property as well. There were no detections of red imported fire ant or little fire ant.

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

MoMISC applies a common-sense feasible response to protect the island's people, native forest, wetlands, ocean and agriculture.

- MoMISC partnered with TNC, DOFAW, and USDA's Plant Quarantine Branch to target pests that threaten the island's native forest. MoMISC controls a population of wood rose (*Merremia tuberosa*) and cat's claw (*Caesalpinia decapetala*) that border the state Forest Reserve. MoMISC also controls and surveys for New Zealand flax, multiflora rose (*Rosa multiflora*), Australian tree fern, mule's foot fern (*Angiopteris evecta*) and albizia in the Forest Reserve.
- To protect agriculture and horticulture, MoMISC records and tracks data for the early detection of light brown apple moth and nettle caterpillar. With help from MISC, MoMISC has been successful in keeping BBTV from spreading throughout the entire island by surveying for and treating infected trees. Approximately 2,000 properties were checked and over 1,264 acres surveyed. A total of 495 plants were controlled and 318 hours spent treating banana bunchy top disease.
- MoMISC's efforts against the upside-down jellyfish are keeping this pest species overrunning the area most frequented by recreational users. Work on rubber vine occurs in a wetland in East Moloka'i. After successful control of rubber vine in the area, native *akulikuli* (*Sesuvium portulacastrum*) has re-established itself and is flourishing and spreading throughout the areas cleared of the noxious vines.

Other activities:

MoMISC works to accomplish as much work as possible with the resources available. The need to convey invasive species information and establish strong working relationships is critical to success. Also important are MoMISC's connections to community, partners and funders. During this time period, MoMISC accomplished the following additional activities:

- Participated in meetings of the HISC Public Outreach Working Group, the Coordinating Group on Alien Pest Species, The Nature Conservancy - Moloka'i, the Invasive Species Committees, and MoMISC.
- Provided testimony to county budget hearings
- Supervised four interns from the Youth Conservation Corps.
- Attended the Hawai'i County of Planning Officials conference focusing on GIS applications.
- Provided invasive species briefings to the Hawai'i State Legislature.
- Maintained staff capacity through trainings for pesticide and CPR recertification.



Working with students from Nā Pua No'eau Program in Hālawala Valley