



Hawai'i Invasive Species Council

“Protecting Hawai'i with Biocontrol”

HDOA
Biocontrol

Biocontrol
in Hawai'i

DoD Natural
Resources

HISC eNews
Archives

HISC eNews
Un/Subscribe

HISC eNews, Vol. 4, No. 5

May 2010

Invasive species introductions cause harm to our health, economy and environment. These pests usually arrive without their natural predators. In the hospitable Hawai'i environment, these pests flourish, overrun native habitats and compete with native species. For many of the most wide spread invasive species in Hawai'i, manual or chemical control can't contain the damage they cause.



The *Erythrina* gall wasp is now being controlled by a natural predator. —photo by M. Tremblay/UH-CTAHR

Biocontrol uses a natural predator as a tool to manage widespread pests that damage agriculture and the environment in Hawai'i. It is a cost-effective, sustainable method that has been successfully used in Hawai'i and across the globe for longterm management of the world's worst pests. Biocontrol helps protect the natural and cultural resources of Hawai'i from the ever-increasing damage caused by spreading invasive species.

Research and technology grants sponsored by the Hawai'i Invasive Species Council have supported biocontrol research for miconia and wiliwili gall wasp. Local state and federal scientists are also involved in off-site exploration and screening for high impact natural predators targeting established invasive species already present in the state, such as miconia, ivy gourd, fountain grass, banana bunchy top virus, the wiliwili gall wasp, nettle caterpillar and fireweed.

HISC helps support the Hawai'i Department of Agriculture, which maintains a Plant Pest Control Branch housing specialized expertise and equipment needed for an effective biocontrol program. Screening and testing protocols have evolved over many decades, creating technological advances in the field of biocontrol. Methods and technologies used include a rigorous, step-by-step process and follow stringent regulations, permitting, and assessments to ensure that each selected natural predator will be effective against the invader and not become a pest themselves. Since 1975 the host specificity (preying on its intended host only) of the 51 released biocontrol agents has been 100%.

Foreign exploration often takes researchers to an invasive species' native home range into the forests and jungles of China, Costa Rica, Brazil, Africa and Mexico where they search out a pest's natural predators. Often wrought with personal risk, these explorations have at times found researches held at gunpoint and even briefly jailed.

A recent success story is the release of the tiny *Eurytoma* parasitic wasp. This natural predator feeds on the larvae and pupae of the *Erythrina* gall wasp, which in 2005 wiped out most wiliwili trees across Hawai'i almost to the point of extinction.

The fast-growing coral tree was a popular windbreak along many roads and farms, as well as a landscape ornamental that was one of the first victims of the invasive gall wasp. HDOA sent an entomologist to Africa to seek out the gall wasp's natural predators, bringing back the most promising for rigorous quarantine testing. In late 2008, the *Eurytoma* parasitic wasp was released. Today, coral trees can grow and the beautiful native wiliwili tree is on its way to recovery.

Federal approval is pending for field release of a parasitic wasp, *Aroplectrus dimerus*, for biological control of the stinging nettle caterpillar, which has been found feeding on more than 45 species of plants, including palms and coffee. The inch-long, spike-covered white caterpillar with a long stripe running down its back packs a painful sting when it comes in contact with the skin. Infestations impact local nurseries as this pest defoliates ornamental nursery stock. Also pending approval for release is an African moth whose larva eats fireweed, a yellow daisy-like weed that is toxic to livestock.



Call the Pest Hotline to report invasive pests.