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Evil weevil may meet its match

Someone released a couple of handfuls of flies Friday morning at the Loxahatchee National Wildlife Refuge in Palm Beach County.

Big deal, you say; what does this have to do with me?

Well, if everything works out, the *Lixadmontia franki* will feast on the *Metamasius callizona* that have been devouring the state's prized *Tillandsia utriculata*. And ultimately, the interaction will help maintain the biological diversity that makes Florida such an appealing place to live.

Of course, no one knows the end to this story.

The beginning, on the other hand, was written in 1989, when *Metamasius callizona*, also known as the Mexican weevil or the evil weevil, crossed the border from Central America and appeared at a plant nursery in Fort Lauderdale.

Like most of the world's 40,000 weevil species, the Mexican weevil is a finicky eater. Unfortunately, it happened to like the state's native bromeliads, particularly *Tillandsia utriculata*, a giant air plant that grows high in the trees.

Uninhibited by the predators that held it in check in its home range, the new weevil started chomping down. In 18 years, spread primarily by the wind, the weevil has decimated native populations of bromeliads in 21 Florida counties, including Charlotte, DeSoto, Manatee and Sarasota.

Epiphytic bromeliads, plants that derive their nutrients from the air, serve a vital function. They store water and organic material. In effect, they create specialized ecosystems for insects, amphibians and even mammals. So, loss of these plants to a weevil infestation is undoubtedly taking a biological toll, one we may not fully realize.

There are no easy antidotes. While bromeliad nurseries control weevils with insecticides, it would be too costly and impractical to attempt spraying in the wild.

Enter entomologist Howard Frank and a team of researchers from the Institute of

Food and Agricultural Sciences at the University of Florida.

For nearly as long as the evil weevil has lived in Florida, Frank has sought a biological control for it. His search took him to Honduras, where he found a parasitic fly whose larvae feed naturally on the weevil.

As if to illustrate the pioneering element of this type of work, the fly turned out to be a member of an unnamed genus. It later was dubbed *Lixadmontia*, and in honor of Frank's efforts and despite his protests, the species was classified *franki*.

Naming the insect was the least of the problems. Frank had to figure out a way to raise the flies in Florida, which meant he had to find a way to raise their food source, the weevils, in captivity. And to get permits to release the flies, he had to prove they would not attack any of the state's native, beneficial weevils, or cause any other biological disruptions.

Raising the flies turned out to be the trickiest business. "I was discouraged," Frank admits. "I failed, and failed again, and failed again." The breakthrough came after one team member spent two years in Honduras doing nothing but working with flies.

Now, fly production at the Hayslip Biological Control Research and Containment Laboratory near Fort Pierce has reached a stage where Frank has a surplus.

He released the first batch on June 29 at Lake Rogers Park in Hillsborough County. Friday's release was the sixth.

They come not a moment too soon. Frank intended the first release for Myakka River State Park in Sarasota County, which used to teem with bromeliads. However, the weevil damage there has been so extensive that his team could not find a concentration of plants great enough to warrant using any of the precious flies.

Initial follow-ups have shown the flies are reproducing, although Frank still does not know how many have to be released at each site to control the weevils.

If this becomes a success story, it will be accomplished on the cheap, financially. To continue, the research team has cobbled together grants here and there, as well as stipends from the Florida Council of Bromeliad Societies.

Frank estimates yearly costs at \$50,000 or so, a bargain by research standards. He does not expect a windfall any time soon.

"We are not coming up with a marketable product," he says. "We're trying to save something in the environment."

"How do you put a figure on saving the environment?"

Given how easy it has been to overlook the disappearance of the bromeliads, so-called biodiversity amplifiers on which other species depend, it is a question we may find ourselves asking more frequently.

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