

# Evil Weevil Found in Fakahatchee

by Olan Ray Creel

It didn't sink in until I reached home. I had just completed a 30-year long round-trip. A trip that began with inspiration and ended with frustration.

In the early 70s, the Fakahatchee and nearby wilderness areas sparked within me a life-long love affair with native airplants. The first time I saw an airplant, I had no idea what it was. Dumbstruck by plants

that grew on other plants, I bought a still treasured little book entitled *Orchids and other Airplants of Everglades National Park*, written by Frank Craighead. I just had to know what those strange plants were.

In 1990, I was living in a little condo complex in Broward County. The buildings were carefully carved out of an old cypress strand and every tree was jam packed with wild native bromeliads.

## The Value of Bromeliads

adapted from <http://savebromeliads.ifas.ufl.edu>

Native bromeliads are a valuable component of Florida's unique ecosystems, and their loss would be significant, not only in ecological terms, but also in terms of the loss of educational opportunities and the aesthetic pleasure that native epiphytes provide to visitors of natural areas.

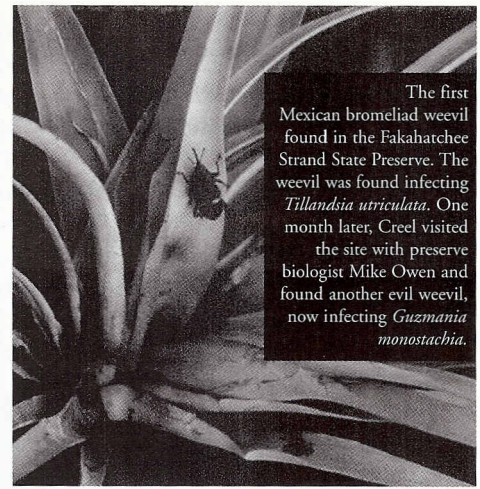
Bromeliads are life-supporting components of the ecosystems in which they are found. Water accumulates between the leaf axils, especially in the larger tank bromeliads, and many small animals live in what to them are like ponds. The base of large leaf axils of mature *Tillandsia utriculata* may contain water throughout the year in South Florida, and up to 1.3 liters of water have been measured from large plants of this species in the state. Several insect and worm species depend on bromeliads in Florida for their survival, and larger animals such as frogs, snakes, and salamanders use these plants for protection and as a water source.

Even non-tank bromeliads provide protection for a number of insect and other invertebrate species. Dozens of spiders and insects hide within masses of Spanish moss and ball moss. Two species of bats (red bats and pipistrellas) use Spanish moss as resting sites during the day. Spanish moss also constitutes a significant portion of the nests of several bird species (e.g., northern parula warbler (*Parula americana*) and orchard oriole (*Icterus spurius*)). Owls may also nest occasionally in some bromeliad species—the great horned owl (*Bubo virginianus*) has been observed nesting on top of clumps of *Tillandsia fasciculata* in Florida.

In addition to their important ecological roles, Florida's bromeliads are an aesthetic addition to the state's parks and natural

areas. The Florida State Park Service received a National Gold Medal State Park Award for Excellence, designating the Florida Park System as "America's Best Parks." During 1999-2000, there were 16.7 million visitors to Florida's state parks, which are the No. 2 destination for air visitors to Florida. The overall direct economic impact of the state park system on local economies was nearly \$464 million in 1999-2000. Bromeliads adorn most of the national, state, and county parks in Florida, contributing substantially to the unique natural features that attract so many visitors each year. Their conservation is of consequence to the growing trend of ecotourism activities in the state.

Finally, epiphytic bromeliads provide an exceptional opportunity for teaching about many biological and environmental themes. In addition to analyzing such concepts as how epiphytic plants can survive in treetops without soil and how the water they collect serves as a home to different kinds of animals, students can appreciate some of the natural treasures of their state and come to understand how easily they can be lost forever. Teachers from elementary to college level and local environmental educators have been bringing groups to Myakka River State Park for hands-on experiences with these distinctive plants and to see the threats they are facing. Opportunities exist for similar programs at other bromeliad-rich parks. Conservation of the state's bromeliads ensures that teachers and environmental educators have continued access to this valuable resource when using parks for hands-on education.



It was the year those airplants began to fall dead by the thousands. Few remain today.

It was the year that some fellow members of the Bromeliad Society of Broward County told me about a newly arrived invasive species, a weevil.

Not long after, I learned that an entomologist at the University of Florida was desperately tracking this weevil. His name was J. Howard Frank.

Howard Frank saw early on what was at stake—the survival of one of Florida's greatest natural treasures. He hasn't taken a break since. Just a few months ago, at a Bromeliad Weevil symposium at Highlands Hammock State Park, (gratefully conceived by a dedicated Park Ranger there named Dorothy Harris) I listened to Howard's latest presentation. He spoke of extinction. Not only of our native bromeliads but also of the known and unknown life forms they harbor or support. He hinted at the subject of time—and time wasted. Time spent looking for and wondering about the paucity of funding for something so important. Money long needed to make an all-out push to perfect a biological control for the Mexican bromeliad weevil.

Thirty years is a long time too. Two years out of high school and I was being inspired by airplants in the Fakahatchee. On March 20th, 2002, I was there again. I was looking for the half-inch-long weevil that I knew, because I'd seen it happen in so many places, could destroy most of those plants that have surely inspired so many others since.

I wasn't all that surprised when I did find it. The "evil-weevil," *Metamasius callizona*, with its official new common name, the Mexican bromeliad weevil, had been found by Howard three years earlier about




15 miles north of where I was. Near my present home in St. Lucie County, I had watched the weevil spread twice that far in the same amount of time.

Maybe I just happened upon the initial arrival point or maybe the weevil is already entrenched in the Fakahatchee. A little time will tell. Thirteen years to spread throughout Florida, unchallenged by humans or

natural predators — time has been the weevil's greatest ally.

What may, and very likely now will occur in the Fakahatchee, and all of those immense connected ecosystems, is something a lot of people just don't want to imagine.

Imagine the Fakahatchee without bromeliads. 

## How You Can Help

**T**ime is running out for our bromeliads. The Florida Council of Bromeliad Societies (FCBS), the University of Florida (UF), and the Florida Department of Agriculture and Consumer Services, Division of Plant Industry have been attempting with very limited funding to find a solution to the weevil problem. In the past couple of years, Dr. Howard Frank has been joined by Dr. Barbara Larson who has helped establish UF's Save Florida's Native Bromeliads program, coordinating activities in the following areas:

**Management of weevil populations through biological controls.** The current candidate biological control agent is a specialist parasitic fly from Honduras that attacks the immature stage of the weevil. Extensive testing is required to demonstrate that the fly will not attack native species of weevil. Funding is desperately needed to support this testing and research of alternative biological control agents.

**Seed collection from at-risk bromeliad species.** Save Florida's Native Bromeliads has developed procedures and instructional materials to support volunteer seed collection from private and public lands. Seeds will be germinated by volunteer growers and reintroduced to their respective places of collection once weevil populations are managed. Eleven species are targeted for seed conservation: *Catopsis berteroniana*, *C. floribunda*, *C. nutans*, *Guzmania monostachia*, *Tillandsia balbisiana*, *T. fasciculata*, *T. flexuosa*, *T. paucifolia*, *T. pruinosa*, *T. utriculata*, and *T. variabilis*. \* Volunteer seed collectors and growers are needed.

**Educational outreach.** The ultimate success of the project requires greater public understanding of the problem and support for its solution. Bromeliad and weevil fact sheets are available and a brochure and poster are being developed. Distribution assistance and funding are needed to produce and disseminate these materials.

(FNPS chapters and members should add these materials to their existing inventory.)

**Bromeliad and weevil monitoring.** Better information is needed on where important populations of bromeliads exist and the status and behavior of these populations. Sampling protocols have been developed to assist the monitoring process.\* Weevil sightings are also important to track the progression and reproductive cycle of the weevil.

**To make tax-deductible donations** to these efforts, please mail your check payable to FCBS Weevil Fund to:

Florida Council of Bromeliad Societies  
c/o Ed Hall  
1111 Glen Garry Cir  
Maitland FL 32751

**For additional information regarding financial contributions**, contact Ed Hall at 407-647-2039 or [Palmetbrom@aol.com](mailto:Palmetbrom@aol.com).

**To volunteer for seed collection**, bromeliad growing, or bromeliad or weevil watching, contact:

Dr. Barbara Larson  
Save Florida's Native Bromeliads  
University of Florida  
Phone: (352)392-1901 ext. 122  
Email: [bclarson@mail.ifas.ufl.edu](mailto:bclarson@mail.ifas.ufl.edu)

**For more information**, visit <http://save-bromeliads.ifas.ufl.edu>.

\*Note: Do not destroy or remove plants from any property without a permit.

**About the Authors:** For the past twelve plus years, Olan Ray Creel and Dr. J. Howard Frank have worked together on behalf of Florida's native bromeliads. Creel has faithfully, beautifully, and tragically documented the devastation caused by the evil weevil. Frank, an entomology professor at the University of Florida, works tirelessly to find a solution. So far, the weevil has had the advantage. Let's give Dr. Frank & Ray our wholehearted support. They're fighting for our plants.



## Evil Weevil Update

The Fakahatchee Strand State Preserve, a botanical wonderland internationally renowned for its diversity of rare and endangered native bromeliads, now faces an uncertain future.

### PHOTOS:

Typical large colony of *Tillandsia fasciculata* on cypress trees in the Big Cypress Preserve, just outside the Fakahatchee Strand State Preserve.

### INSET, UPPER RIGHT:

An adult Mexican bromeliad weevil on *Tillandsia smalliana*, a natural native hybrid of *Tillandsia fasciculata* and *Tillandsia balbisiana*. *T. smalliana* comes in many varying forms, the one shown here is a very large, bright red form eliminated from its small original habitat in east Broward County several years ago by the Mexican bromeliad weevil. RIGHT: *Tillandsia fasciculata*, in bloom, on a cypress tree in the Fakahatchee Strand State Preserve.

Photos by Olan Ray Creel



Two and a half years ago, The Palmetto (Vol. 19, No. 4) featured a collection of articles on native bromeliad destruction by the non-native *Metamasius callizona*, the Mexican bromeliad weevil then referred to only as the “evil weevil.” First found by agricultural inspectors at a nursery in Broward County, *Metamasius callizona* probably arrived in Florida in imported shipments of bromeliads from Mexico. Ten years later, distribution maps for *M. callizona* showed it thriving in 17 counties and perilously close to important natural areas such as the Fakahatchee, critical habitat for rare and endangered bromeliad species (including *Catopsis nutans*, *Guzmania monostachya*, *Tillandsia fasciculata*, and *Tillandsia pruinosa*). Now, the weevil is in the Fakahatchee. It was found there in March of this year by Olan Ray Creel.

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