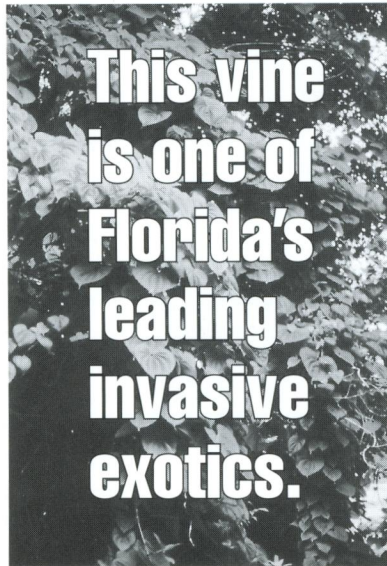


# Florida EPPC 1999 Symposium Highlight

Those who attended the 1999 FLEPPC Annual Symposium in Gainesville had the opportunity to hear an outstanding presentation by James Argento. James was the top student in environmental science in the 1999 Florida Junior Academy of Science Annual Competition. It was a pleasure to see the next generation, who hopefully will be working in the area of invasive plant science. Below is the abstract of James' paper. A copy of his entire paper can be obtained by contacting the IFAS Aquatic, Wetland, and Invasive Plant Information Office. — Ken Langeland



## ABSTRACT

### Analysis of *D. bulbifera*, the Invasive Air Potato

The objective of this research was to increase knowledge about why air potato, *Dioscorea bulbifera*, is so intrusive. This vine is one of Florida's leading invasive exotics. It destroys the natural balances of ecosystems by obstructing native plant growth.

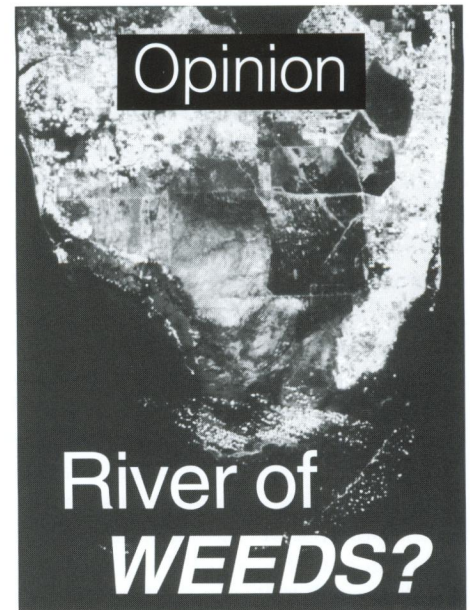
A major effort is underway to halt air potato from ruining parks and forests. Individuals have tried to remove it from Sheridan Oak Forest, but to no avail. A greater understanding of why it is so intrusive will help lead to more cost efficient, time saving, and effective methods of stopping it. This information will be helpful in preventing the plant from overtaking Sheridan Oak Forest and other lands.

Air potato comes from, and is supplied energy by, a bulbil. The vine later produces new bulbils for

next year's crop. In one experiment, bulbils were separated into 2 categories: 15 grams and above, and under 15 grams. After being left alone, all the bulbils in both groups grew vines. This shows that despite size, bulbils can sprout, meaning that even the smallest ones can grow vines.

In another experiment, 100 germinating bulbils were weighed and weighed again in a month. The differences and original masses were compared to see a correlation. None was visible. To statistically confirm the result, those numbers were analyzed by Regression Analysis. A C.O.R. of 0.159 resulted, meaning that there is no relation between bulbil mass and how much of the bulbil is used up during germination. Therefore, a large bulbil can stay under the soil and produce vines for a long time with out being used up quickly.

In further testing, sprouting bulbils had the area where they fell from the vine face up in one tray, and down in another. All bulbils in each tray continued to sprout, meaning that bulbils can grow vines despite which position they land. Additional endeavors featured vines being severed from bulbils. All bulbils regrew vines. In addition, all the severed vines died, displaying that they can't survive without the bulbils. This final test could be useful because maybe disconnecting the vine from the bulbil right before the vine is ready to produce new bulbils will stop it from doing so, thus controlling next year's crop.



The Everglades are in serious trouble. They face a multitude of problems including hydrologic alteration, nutrient runoff, urban encroachment, and the insidious spread of exotic pest plants. Many efforts over the past several decades have been directed at "saving" the Everglades.

The newest restoration initiative, the "South Florida Ecosystem Restoration Program" appears to finally have the political clout—hopefully the will as well—and resources to be able to do the job. Over the past two years, Vice President Al Gore, past Governor Lawton Chiles, and recently our new Governor Jeb Bush have announced plans to spend \$8-10 billion to "restore" the Everglades. The vast majority of this money is to be spent on Land Acquisition and water-works. This colossal figure acknowledges the environmental failure of past governmental land-use policies in southern Florida. These earliest policies of drainage for development were concurrent with the first introductions of exotic plants - one of the stated goals of melaleuca introduction included helping dry up the swamp.

Billions of dollars are to be spent on land acquisition—most of these lands are already infested with exotic invasive plants—and billions more on water works. What will be the final outcome if the threat of exotic invasive plants is not met with resources commensurate with the threat they pose to restoration? It will be another very expensive water