

Recommendations that we were able to make to the Zapata Melaleuca Management Plan include:

- Given the current limited availability of herbicides and the large number of seedlings surrounding the large heads, land managers should consider hand pulling as many of the seedlings as possible. This would accomplish two things: the current infestation is contained and the seedlings are prevented from flowering.
- Land managers should consider searching (on foot) along the edges of where they think melaleuca occurs and pull “outlier” seedlings in a quarantine-type strategy. Melaleuca management is most effective when it works inward from the areas where the trees are young and sparse to areas where the trees are mature and dense.
- When pulling seedlings, pile them in one area, with the seedlings stacked on top of each other to concentrate any possible re-rooting.
- Since water levels are somewhat predictable in the watershed, timing of control could play an important role in reducing post-treatment germination. Land managers should consider timing the control of large trees so that water levels are high following the operation. This will result in fewer seedlings the following year.
- Follow up monitoring and management is the most important component to consider. As we have learned in Florida, melaleuca

control is a perpetual process for land managers, and “one time” control programs often lead to worse infestations. As someone once said, “Kill a melaleuca and 10,000 seedlings will show up for the funeral.”

Summary

The Zapata Swamp is a unique area important not only to Cuba and its endemic species, but to additional species worldwide that use the wetlands during migration. Melaleuca, as it does in the Everglades, poses a serious threat to the health and function of the Zapata. The task of controlling melaleuca infestations in the Zapata Swamp and elsewhere in Cuba will be a difficult one. The Cubans have a limited number of tools and resources available, but they are highly motivated and keenly aware of the importance of invasive plant management. We were glad to have been able to share information we’ve learned from years of working with melaleuca in south Florida. We hope to continue our involvement with the Zapata Melaleuca Management Program because cooperation and the sharing of knowledge will bring us all that much closer to controlling this invasive pest worldwide.

Contact Amy Ferriter, Boise State University, Geosciences Department, 1910 University Drive, Boise, ID 83725; amyferriter@boisestate.edu

Comparing Our Weeds

By Ken Langeland, University of Florida

Brazilian pepper (*Schinus terebinthifolius*), by consensus one of Florida’s worst invasive plants, was conspicuous by its absence in Cuba. When we asked about this, we were informed that Brazilian pepper is grown in yards, and plant parts are used for medicinal purposes, but it does not cause problems. We could come up with no explanation for this and could only speculate; perhaps the harvest of berries limits spread, or vectors are not as prevalent (e.g., migrating flocks of robins in Florida). Another trip will be needed to try to answer this question.

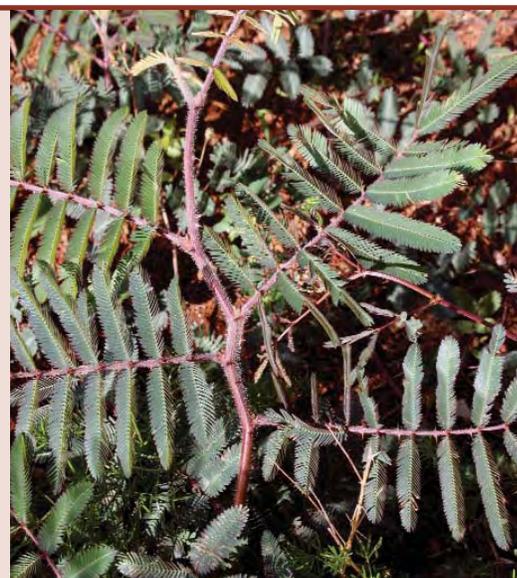
Water hyacinth (*Eichhornia crassipes*) and water lettuce (*Pistia stratiotes*), while considered invasive because of their growth potential, do not appear to reach the problem levels they do in the southeastern United States. Again, we can only speculate on reasons, such as lower nutrient loads in Cuban waters or lack of the microsporidian disease of the *Neochetina* biological control weevils, which limits

their performance in Florida (another reason for another trip).

The aquatic plant of greatest concern in Cuba is *Myriophyllum pinna-tum*, considered native to both Cuba and the southeastern United States. *Myriophyllum pinnatum* proliferated in canals of la Ciénaga de Zapata following drought years and may be the result of natural environmental changes. In Florida, the species can be a problem in ponds.

Dichrostachys cineria, called marabu in Cuba, is probably the worst weed in the country. It is mostly a problem in abandoned agricultural fields but also threatens natural areas. While it has been reported in Florida, it has not reached problem proportions.

Catclaw mimosa (*Mimosa pigra*) was introduced to Florida before 1953 and has been the target of maintenance control ever since. It is native in Cuba but considered one of the worst weeds in the country. In relatively undisturbed



Mimosa pigra

habitats, it exists in only moderate populations but quickly colonizes and forms dense thickets following disturbance. It is also a weed in cultivated areas. In Cuba, it is called Weyler, relating it to a ruthless military general.

Contact Ken Langeland, University of Florida / IFAS, Center for Aquatic and Invasive Plants, 7922 NW 71st Street, Gainesville, FL 32653; 352/392-9614, kalangeland@ifas.ufl.edu

KEN LANGELAND