For more information on melaleuca and its management, visit the TAME Melaleuca Web site

http://tame.ifas.ufl.edu

Project Coordinator: Cressida Silvers
USDA-ARS Invasive Plant Research Laboratory
Ft. Lauderdale, FL
(954) 475-0541

USDA ars sfwmd.gov UNIVERSITY OF FLORIDA IFAS

February 2004

The Area-wide Management Evaluation of *Melaleuca quinquenervia*

Working Together to Provide a Long Term Solution for Melaleuca in Florida

http://tame.ifas.ufl.edu

Taming Melaleuca in Florida

Melaleuca symbolizes one of the most significant contemporary threats to biodiversity: the spread of aggressive, non-native plants into natural areas. Fourteen years ago the South Florida Water Management District and other members of the Florida Exotic Pest Plant Council began an aggressive campaign to lower melaleuca populations in South Florida using available mechanical, chemical, and cultural controls, and documented their approach in the Melaleuca Management Plan. As a result, melaleuca acreage on public lands has decreased dramatically, although it continues to spread on private properties. An even more comprehensive approach is now needed to increase the range of management efforts. In addition, another control option, biological control, is now available. In 2001 the USDA's Agricultural Research Service (ARS) created the TAME Melaleuca project to promote melaleuca management on both public and private lands, and to demonstrate effective inclusion of biological control in management strategies.

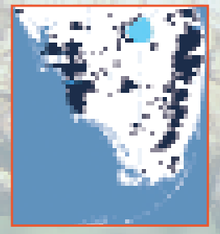
The Area-wide Management Evaluation of Melaleuca

What Is An "Area-wide" Project?

Area-wide pest management applies a combination of control tactics across affected ecological regions rather than on a site-by-site basis to achieve effective, long-term melaleuca management.

What Is "Integrated Pest Management" (IPM)?

IPM is an ecosystem-based strategy that focuses on long-term reduction of melaleuca through a combination of techniques such as herbicide application, mechanical removal, and biological control. Under IPM, an extensive knowledge of melaleuca's life cycle drives the selection and application of control methods that reduce existing infestations and prevent new ones, while minimizing risks to non-target organisms.



Melaleuca distribution in Florida

TAME Melaleuca Project Objectives:

- Demonstrate ecologically and economically sustainable melaleuca controls to public and private land managers.
- Promote adoption and integration of these sustainable controls throughout melaleuca infested regions.

Approach:

- Apply IPM tactics for melaleuca at demonstration sites across South Florida.
- Develop demonstration and outreach activities directed at land managers, extension personnel, government agencies, and the general public.

What Control Tactics Will Be Used?

Control techniques on TAME Melaleuca demonstration sites will include herbicidal control, mechanical control (removal with heavy equipment), and biological control, which uses a pest's natural enemies to reduce its competitive advantage.

Herbicide application

Mechanical clearing

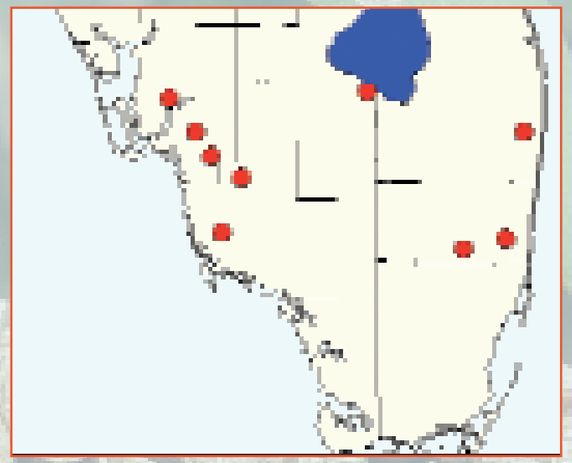
Currently, herbicide application is the primary method used for melaleuca control in South Florida. Mechanical control can be cost prohibitive and may damage environmentally sensitive areas. Biological control agents are proving to be successful complements to other melaleuca control methods, but many land managers are not yet familiar with their application.

Integrated Pest Management combines these different management tools to provide better melaleuca control than any one tool could achieve alone. Through IPM, TAME Melaleuca will produce and promote effective, affordable, and ecologically sustainable melaleuca control.

Biological control damage

Demonstration Sites

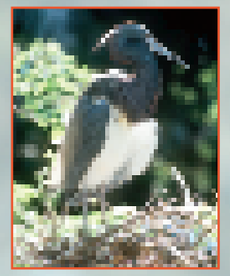
At demonstration sites across southern Florida, TAME Melaleuca will work with land managers to show implementation and efficacy of integrated melaleuca management practices.



Demonstration site locations

What About Everglades Restoration?

The overall objective of the Everglades Restoration Plan is to achieve restoration and sustainability of SouthFlorida's natural ecosystem. In addition to "getting the water right", improving native plant and animal abundance and diversity is a critical component of the Restoration Plan.



Tricolored heron

The control of invasive exotic plants such as melaleuca is essential to the proliferation of native plants and animals. While TAME Melaleuca focuses on one invasive exotic plant, it will provide an example for future integrated management of other invasive exotic plants in the Everglades.

Everglades landscape

Quick Facts about Melaleuca:

Melaleuca flower and seed capsules

- **Melaleuca was brought to Florida from Australia as an ornamental plant in the late 1800's.**
- **In the 1930's, melaleuca seeds were scattered by airplane over the Everglades in an effort to drain "useless swamps."**
- **Currently, melaleuca is found in 19 counties in southern Florida, the northernmost counties being Brevard, Orange and Hernando.**
- **Melaleuca has become abundant in wet pine flatwoods, sawgrass marshes and prairies, and cypress swamps. It prefers seasonally wet sites but also flourishes in standing water and well-drained uplands.**
- **Melaleuca quickly forms dense, impenetrable stands of tall trees (up to 100 feet) that completely shade out and displace native vegetation.**
- **Melaleuca can grow 3-6 feet per year and one tree can produce as many as 20 million seeds annually.**
- **Melaleuca is well adapted to fire. Fueled by oils in the leaves, melaleuca canopy fires burn extremely hot, which releases and disperses seeds.**