



SFWMD Invasive Species Management

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Florida Grazing Lands Coalition, March 2, 2011

Florida's Non-Native Species

- 1200 Plant
- 1150 Insect
- 196 Bird
- 47 Reptile
- 43 Fish
- 30 Mammal
- 4 Amphibian
- ? Marine



The Problem with Invasive Species

- **Endangerment to 42% of listed species in US**
- **Severe alteration to wildlife habitat**
- **Infestation on ~2 million ac. of Florida's natural areas**
- **Impacts to District operations**
- **Damage to District infrastructure**
- **Human health & safety concerns**

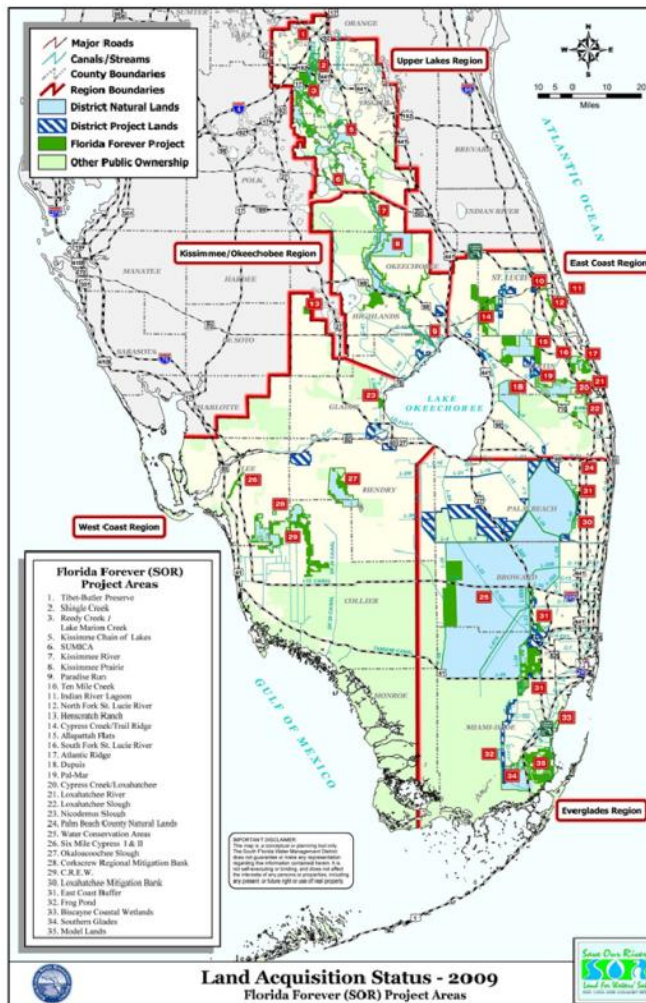


Vegetation & Land Management Department



- **Manages nuisance/invasive vegetation throughout the District.**
 - **Canals/levees**
 - **Public lakes and rivers**
 - **Water Conservation Areas**
 - **Stormwater Treatment Areas**
 - **Interim & public conservation lands.**
- **Ensures continued use and function of the region's water resources and preservation of South Florida's conservation lands.**

District-Managed Lands and Water Bodies



District Lands



NATURAL LANDS		
•District as Lead Manager	188,788 ac	22 management areas
•Partner as Lead Manager	367,190 ac	24 management areas
PROJECT LANDS & WATER BODIES		
•Commercial/Agricultural Leases	55,096 ac	41 leases
•Vacant Lands	34,660 ac	
•Under Construction or Completed Projects	85,312 ac	
•Water Management Canals/Levees	2,600 miles	

Vegetation Management Approach



Herbicidal Control

Mechanical Control

Cultural Control

+ Biological control

Integrated Pest Management



Priority Weeds

TERRESTRIAL

- Australian pine
- Brazilian pepper
- Cogongrass
- Downy rosemyrtle
- Melaleuca
- Old World climbing fern
- Shoebuttton ardisia

AQUATIC

- Hydrilla
- Hygrophila
- Torpedograss
- Tropical American watergrass
- Water lettuce
- Water hyacinth



Hydrilla

- Rooted submersed plant that forms dense vegetation mats
- Occupies more than 140,000 acres of public lakes and rivers
- Management primarily dependent on herbicides and mechanical removal
- Resistance to commonly used systemic herbicides
- No effective biological control
- Federal Noxious Weed & Florida Prohibited Aquatic Plant



Floating Aquatic Plants

- Numerous invasive floating aquatic plant species occur throughout District
 - Water lettuce, water hyacinth
- Major impacts to flood control operations, navigation, and native plant communities
- Easily controlled with herbicide, but frequent retreatment required



Torpedograss

- Rhizomatous grass that forms dense, single-species stands
- Aggressively displaces native plant communities
- Found throughout Florida -- Infests 9,000 acres on Lake Okeechobee
- Control limited to herbicides
- Herbicide efficacy variable
- No federal or state prohibitions



Brazilian Pepper

- Aggressive large shrub found throughout SFWMD (approx. 700,000 acres)
- Establishes disturbed areas then expands into adjacent natural areas
- Reduces plant and animal diversity
- Florida Noxious Weed and Florida Prohibited Aquatic Plant
- Herbicide controls well-established; biological controls being developed



Melaleuca

- **Fast growing tree found throughout SFWMD (273,00 acres)**
- **Aggressively displaces wetland plant & animal species**
- **Agency control efforts are reducing melaleuca region-wide**
- **Herbicide, cultural, and biological controls well developed**
- **Federal Noxious Weed, Florida Noxious Weed, and Florida Prohibited Aquatic Plant**



Old World Climbing Fern

- Aggressive climbing fern found throughout SFWMD (approx. 160,000 acres)
- Displaces native plant and animal species; alters ecosystem processes (e.g. fire)
- Control difficult – herbicides provide some control but very costly; biological controls being developed
- Federal Noxious Weed and Florida Noxious Weed



Australian Pine

- Fast-growing large tree
- Colonizes coastal and inland habitats
- Thick litter mat and compounds inhibit native plant species.
- 207,197 acres within SFWMD
- Two species designated as Florida Noxious Weeds.
- Herbicide controls well-established; No biological controls.



Cogongrass

- **Fast-growing perennial grass**
- **Among top 10 worst weeds internationally.**
- **Widely planted for forage – now infests over one million in Florida**
- **Aggressively invades pine flatwoods, disturbed sites, and marshes**
- **Difficult to control --requires judicious implementation of integrated controls (herbicide, mechanical, fire)**



Downy Rosemyrtle

- Fast-growing, ornamental shrub
- Aggressively overtakes pine flatwoods
- Distribution and extent poorly understood
- Mechanical and herbicide controls effective, but costly; no biological controls
- Florida Noxious weed



Project (Interim) Lands

- Acquisition lands for CERP and other restoration projects
 - Lands are “inactive” until project construction
 - But the weeds won’t wait!
- Interim vegetation management strategies often hinge on long-term objectives
- Challenges
 - Awareness of new acquisitions
 - Changing project objectives/schedules
 - Ensuring vegetation management funding



Conservation Lands

- Acquired and managed to restore, protect natural areas
- Invasive species control a critical component of stewardship
- Challenges
 - Limited funding
 - No invasive animal funding
 - Limited data on pest locations
 - Sometimes patchwork and surrounded by urbanization



Mitigation Program

- **Wetland restoration projects to offset regional wetland losses**
- **Permits require invasive plant control**
- **Loxahatchee Mitigation Bank in Palm Beach Co. and Corkscrew Regional Mitigation Bank in Lee Co.**



District-Wide Expenditures FY09



Invasive Plant	Control Costs (\$)
Brazilian pepper	2,455,002
Melaleuca	1,807,057
Old World climbing fern	1,160,668
Torpedograss	908,657
Water hyacinth	460,118
Hydrilla	332,979
Downy rose myrtle	330,816
Water lettuce	242,711
Shoebuttan ardisia	217,407
Australian pine	126,686
Cogongrass	68,786

Thank You

SFWMD

- Questions?

