

Program Name: South Florida Water Management District Invasive Species Management
Project Name: Invasive Exotic Plant Control in Terrestrial and Aquatic Natural Systems
Project ID: 2822
Lead Agency: SFWMD

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Species Strategic Action Framework Goal: 4

Measurable Output(s): Implementation of invasive species management plans as a coordinated program, including inter-agency collaboration; reduction of total acreage for all priority invasive plant species; attainment of maintenance control for invasive exotic plants such as melaleuca, Brazilian pepper, Australian pine, Old World climbing fern, water hyacinth, water lettuce, and other invasive species impacting natural resources or water delivery infrastructure.

Project Synopsis:

Several decades of integrated management by the SFWMD, FWC, NPS, FWS and other partner agencies have substantially reduced the abundance of melaleuca in the Everglades Protection Area (EPA). The remaining dense stands within the EPA are limited to the northern reaches of the Arthur R. Marshall Loxahatchee National Wildlife Refuge (Refuge) and the East Coast Buffer acquisition lands. The decline in melaleuca was achieved through an integrated approach using aerial and ground-based herbicide applications, mechanical removal, biological control, and strategic use of prescribed fire. Recovery of melaleuca continues, especially in areas once dominated by the plant. However, recruitment rates are much lower and are explained by lower propagule pressure and suppression of small plants from biological controls. Continued low-level control in these areas is planned to prevent full recovery of melaleuca in these areas. Maintenance control has also been achieved for melaleuca within many acquisition areas in the Florida Keys, Lake Okeechobee, and most natural areas in the Treasure Coast and Kissimmee River regions.

Old World climbing fern remains problematic on many SFWMD-managed lands. The SFWMD continues to search for and remove outlier populations of Old World climbing fern in WCA-3A and WCA-3B tree islands. While not visibly expanding in abundance or distribution, annual herbicide work is necessary to control persistent regrowth. Newly established isolated occurrences in Southern Glades tree islands are monitored and treated annually. The expansion of laurel wilt disease – a recently introduced lethal pathogen of the swamp bay (*Persea palustris*) – has a potential to promote expansion of Old World Climbing fern and Brazilian pepper in the WCAs through widespread canopy disturbance. Old World climbing fern remains abundant throughout much of the Refuge and has expanded considerably since 2011 in the central Kissimmee River basin. Management resources (e.g., herbicide control funding) remain far below what is needed to reduce populations and minimize the spread of this highly invasive plant. Continued implementation of control programs consistent with the Old World Climbing Fern Management Plan (written by members of the Lygodium Task Force formed by FLEPPC), increased financial resources in problem areas, as well as continued progress with management-related research and biological control initiatives are needed.

The SFWMD continues to maintain water lettuce and water hyacinth at maintenance control levels in most natural water bodies under its jurisdiction. Other species, including hydrilla, West Indian marsh grass, torpedograss, limpgrass, and Wright's nut rush remain problematic in the Kissimmee Chain of Lakes region. In addition, large-flowered primrose-willow and Cuban bulrush have become priorities for

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control in the Kissimmee River basin. The SFWMD continues control efforts for most of these species in collaboration with FWC. The SFWMD also continues to focus on locally-problematic species such as downy rose myrtle (pinelands in the northeastern region and recently established populations in the southwest region), shoebutton ardisia (eastern Everglades), and South American water grass (Lake Okeechobee).

Current Status: Regional, coordinated efforts have yielded an Everglades Protection Area with few significant melaleuca infestations. However, recent colorizations of melaleuca underscore the need for continued monitoring and treatment. Follow-up maintenance control of melaleuca in previously treated areas remains a long-term priority for the SFWMD in order to keep management costs and environmental impacts at the lowest feasible level. Much of the remaining dense populations of melaleuca are now found on private lands. SFWMD and FWC continue to focus on removal of Old World climbing fern and Brazilian pepper throughout the Water Conservation Areas as well as other SFWMD-managed conservation lands.

Beginning in 2014, the SFWMD and FWC initiated a new collaboration with the USFWS to increase much-needed control efforts in the Refuge. FWC is funding and SFWMD is implementing herbicide control of melaleuca and Old World climbing fern in the Refuge to augment the FWS invasive plant management program. This effort is continuing in its fourth year (FY17) and much progress has been made. Since current funding levels are still insufficient to establish complete maintenance control for the entire Refuge, the strategy will be to achieve and maintain control of the largest contiguous portion of the Refuge as possible. If additional funding becomes available, the interagency team will expand treatments over a larger area within the Refuge.

Project Schedule:

Start Date: 2007
 Finish Date: TBD

Detailed Project Budget Information (\$1000) / Expenditures to Date

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Federal	135*										135
SFWMD**	10,862	9,038	9,186	7,253	5,706	5,191	5,635	6,339**	6,469**	7,317	71,232
Total	10,997	9,038	9,186	7,253	5,706	5,191	5,635	6,339	6,469	7,317	71,367

*USDA grant funds (TAME)

**SFWMD: Expenditures to date per fiscal year; does not include expenditures for vegetation management supporting flood control system (e.g. canal/levee vegetation), Stormwater Treatment Areas, or salaries. Includes FWC allocated funding for melaleuca program and other invasive plant control operations.

Contact: LeRoy Rodgers, SFWMD



The area in the left side of the photo had previously been infested with ardisia. The portion on the right side of the photo will be treated in FY17. Cutler Bay, FL (LeRoy Rodgers, SFWMD).



Targeted Old World climbing fern treatment in Loxahatchee Refuge. (photo by Ellen Allen, SFWMD)