



Managing Invasive Plants to Protect Our Environment

The effective control of invasive plants is an important part of the South Florida Water Management District's (District) mission and our continued ability to protect South Florida's natural resources.

Invasive plants are damaging to South Florida's ecosystems. They often result in the loss of habitat for native flora and fauna, change how water flows across the landscape, shift natural fire conditions, and degrade public lands. Floating and submerged vegetation can also clog waterways and water control structures that move water for flood protection.



Controlled burn.

To protect communities from flooding and to preserve our natural ecology, the District works to manage nuisance and invasive species across South Florida.

Using an "integrated pest management" or IPM approach provides better results than any one method could achieve on its own.

The IPM approach includes:

- ◆ Prescribed burns
- ◆ Hydrologic restoration
- ◆ Physical (mechanical) removal
- ◆ Controlled herbicide application
- ◆ Natural predators (biocontrol)



District contractors mechanically reducing aquatic vegetation in STA-1W.

The District works to optimize each of our pest management methods and reduce the amount of herbicides used to manage invasive species at the lowest feasible level, a strategy known as maintenance control.

There are 94 species of non-native, invasive plants including Brazilian pepper, melaleuca trees and aquatic vegetation such as hydrilla and water hyacinth. Successfully combating these species is critically important to the District's strategic goals on advancing Everglades restoration and improving water quality.



Melaleuca removal along Tamiami Trail.

Taking Action

The District is taking a variety of proactive measures to reduce the use of herbicides on public lands. Some of the actions the District is taking include:

- ◆ Utilizing the latest technologies to improve efficiency
- ◆ Investing in additional weed barriers across canals to prevent the spread of invasive plants
- ◆ Chemically spot-treating invasive plants
- ◆ Using mechanical harvesting at weed barriers
- ◆ Utilizing sterile grass carp, which provide a low-cost, long-term, herbicide-free way of controlling nuisance plants, to reduce invasive vegetation in canals
- ◆ Conducting research to identify and produce more natural predators (biocontrols), including insects, that eat invasive plants
- ◆ Requiring local canal operators to take proactive measures to reduce the amount of vegetation entering District canals



Boom installed at the C-7 Canal in Miami-Dade County.



Removal of mechanically harvested vegetation.



Mechanical harvesting initially reduced the biomass by roughly 50%.



GPS tracker with airboat routes.

C-111 Canal Hydrilla Control

In FY2024, the District implemented an Integrated Pest Management strategy to control hydrilla in impacted canals in the Homestead area in Miami-Dade County.

Mechanical harvesting was employed to reduce the biomass at least 50% before any in-water herbicide treatments. This significantly reduced the amount of herbicide needed to achieve complete control. To help sustain control and reduce reliance on herbicides, 2,500 sterile grass carp were released, supplementing 1,000 that were released in 2023.

Ongoing monitoring and adaptive management which includes annual harvesting, spring herbicide applications, and additional carp releases, aim to maintain hydrilla at low levels and protect flood control infrastructure while reducing the long-term management costs.



Sterile grass carp being released into District canal.

Significant Progress

GPS TRACKERS

All watercraft used for aquatic herbicide applications are now equipped with GPS trackers, allowing real-time viewing of District-contracted boats. The system records precise herbicide application locations through a flow sensor linked to each GPS unit.

VEGETATION BARRIERS

Additional vegetation barriers have been installed to consolidate floating invasive plants for more efficient removal, reducing the need for herbicide applications. 13 barriers have been placed at strategic locations where floating vegetation commonly enters District canals.

VEGETATION HARVESTED FROM DISTRICT CANALS

Mechanical removal of aquatic vegetation remains a major component of the District's management program, with more than 180,000 cubic yards of vegetation harvested from District canals over the past five years.

HERBICIDE USE REDUCTION

The amount of herbicide applied per acre continues to decline as the District brings more lands under maintenance control through proactive invasive plant management.

There was a 42.6% reduction in herbicide products used per acre during the six-year period between 2019 (0.61 lbs./acre covered) and 2024 (0.35 lbs./acre covered).

Importantly, the District only uses herbicides that are specifically approved by the U.S. Environmental Protection Agency (EPA) for use in aquatic or sensitive upland environments.

The District is not in charge of aquatic spraying on Lake Okeechobee.

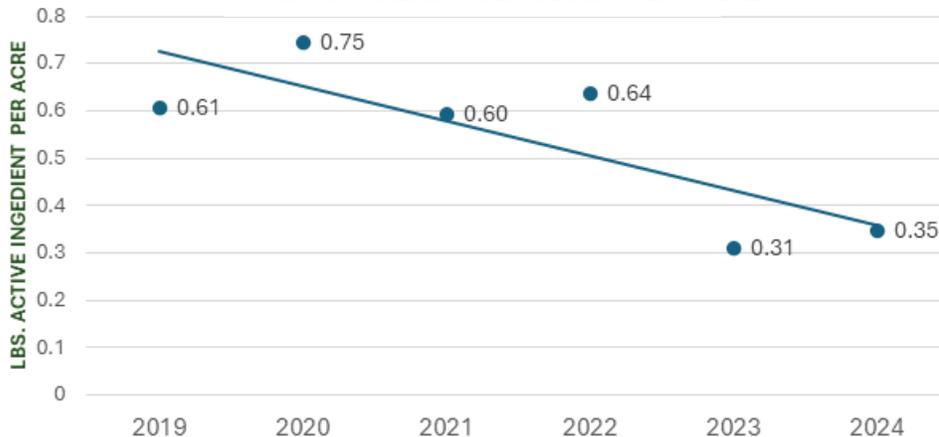
VEGETATION HARVESTED FROM DISTRICT CANALS

YEAR	CUBIC YARDS
2019	12,874
2020	41,124
2021	34,757
2022	40,341
2023	35,811
2024	16,582
Total	181,719



District scientist observing effects of the *Neomusotima* moth larva on *Lygodium* (old world climbing fern).

DISTRICT HERBICIDE USE FROM 2019-2024



INTEGRATED PEST MANAGEMENT PROVES EFFECTIVE AT MANAGING INVASIVE SPECIES: A CASE STUDY ON MELALEUCA

For over 30 years, the District's melaleuca management program has systemically cleared invasive melaleuca from Lake Okeechobee and the Everglades, and land managers are able to maintain these areas with very low melaleuca presence year after year.

The success of this program is largely attributed to sustained funding, close inter-agency coordination and a lot of dedication, all of which contribute to the sharing of new information and technology, improved regional strategic planning and increased public awareness to maintain and protect our public lands.



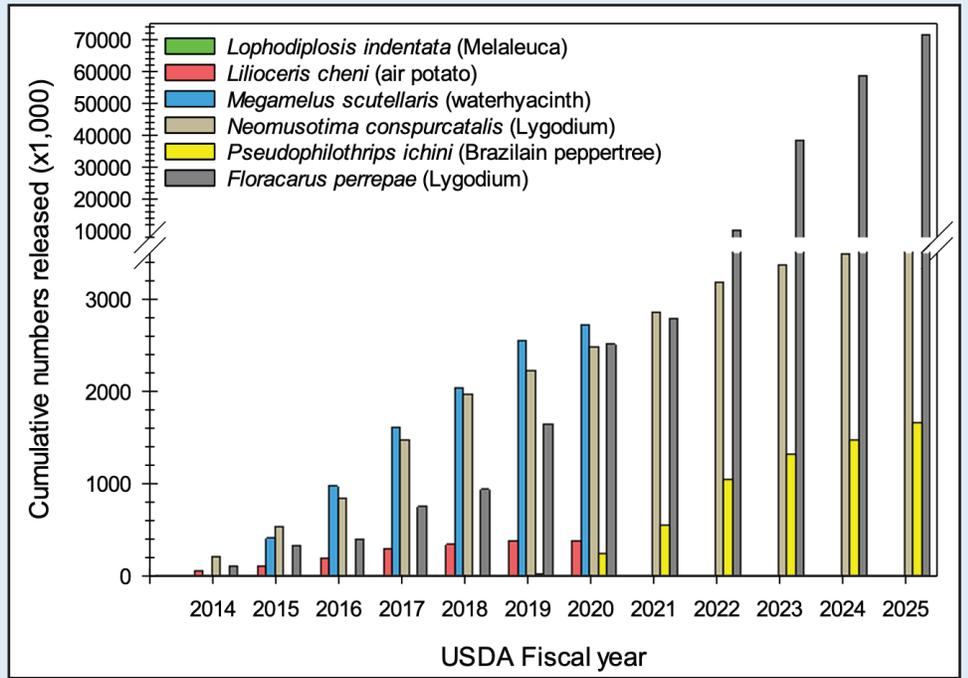
Melaleuca tree removal, Lake Okeechobee.

BIOLOGICAL CONTROL

Biological control of several invasive plants is showing promising outcomes. The Comprehensive Everglades Restoration Plan's (CERP) Biological Control Implementation Project continues rearing and releasing approved agents at the biological control laboratory in Davie, Florida.

During FY2024, the program continued releases of biological control agents for Old World climbing fern, Brazilian pepper, and melaleuca.

Tools such as thrips and brown lygodium moths greatly help efforts to achieve Everglades restoration goals.



Cumulative numbers of biological control agents released between December 2013 and July 2025 within CERP project footprints.

Invasive Plant Control is a Big Part of Everglades Restoration

The District has initiated several major restoration projects via removal of invasive plants including:

- ◆ Picayune Strand Restoration Project
- ◆ Loxahatchee National Wildlife Refuge
- ◆ Sam Jones - Abiaki Prairie Mitigation Project



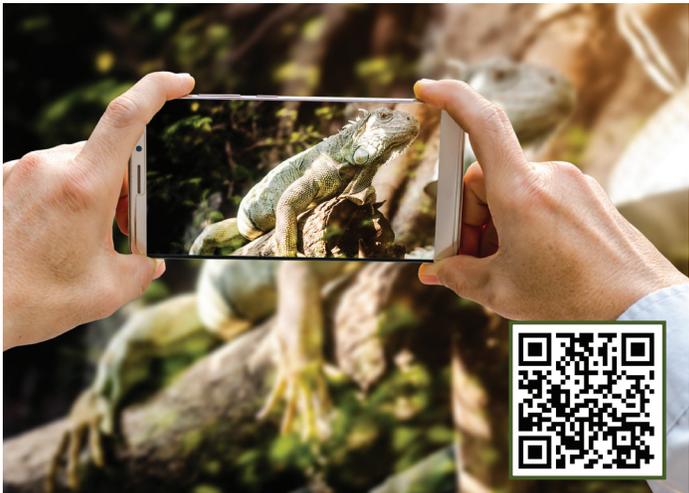
Picayune Strand Restoration Project.



Loxahatchee National Wildlife Refuge.



Sam Jones - Abiaki Prairie Mitigation Project.



How the Public Can Help

Invasive plants and animals are often introduced into our environment by people. Here are four ways you can help:

- ◆ Never dump unwanted pets or plants
- ◆ Remove invasive plants from your yard and consider landscaping the Florida-Friendly Way
- ◆ Understand local laws and regulations for owning plants and animals that may impact our environment
- ◆ If you come across an invasive species, call 888-Ive-Got1 (888-483-4681) or report it using the IveGot1 app