South Florida Ecosystem Restoration Task Force

Invasive Exotic Species Strategic Action Framework

Long-term Management Case Study: Invasive Plant Coordination and Funding

Combatting established invasive plants requires achievement of maintenance control through sequential control efforts, long-term resource commitment, and extensive interagency coordination. Currently, there are 80 invasive plant species within the South Florida Ecosystem that are priorities for control (SFWMD 2020). Due to the complexities of implementing landscape-level control strategies across numerous jurisdictions, local, state, and federal agencies are working closely in the South Florida Ecosystem to coordinate efforts and improve our collective ability to achieve maintenance control of these priority invasive plants.

Maintenance Control

Management for widely established invasive plant species typically begins with controlling small incipient populations and then moves toward the most heavily infested habitats. As control efforts proceed, retreatment is invariably needed due to regrowth from seed banks and other propagule sources. As the number of sequential control efforts increases for an area, the slower the regrowth and spreading of the invasive plant. Control techniques are utilized in a coordinated manner on a continuous basis in order to maintain invasive plant populations at the lowest feasible level. This method of invasive plant management is known as maintenance control.

Challenges to Achieving Maintenance Control

Coordination and collaboration are critical for natural resource managers due to the large number of invasive plant species, vast and remote natural areas, and numerous jurisdictions within the South Florida Ecosystem. The maintenance control strategy, first described in Florida's Exotic Pest Plant Council's (FLEPPC) 1990 Melaleuca Management Plan, is used by most natural resource managers in Florida today. Ideally, this control process should progress across the landscape in a systematic manner, but varying resource availability for control across jurisdictions and untreated infestations on adjacent private lands present challenges. In addition, short term deviations from the strategy are sometimes necessary to protect critical natural resources (e.g., endangered species). Another obstacle to achieving maintenance control is simply the magnitude of infestations that cover thousands to tens of thousands of acres.

Planning for Maintenance Control

Most agencies in the South Florida Ecosystem have developed individual conceptual plans for their management areas and, through decades of collaboration, have developed statewide species-specific management plans for the most problematic invasive plant species. Basic principles for a sound strategy include:

- Reserve adequate resources for follow-up control at the most cost-effective interval;
- Follow a containment plan (i.e., systematic inward progress across the landscape);
- Address "triage" needs for rapidly expanding infestations that are not scheduled for treatment but threaten conservation priorities (e.g., threatened and endangered species); and
- Seek maximum efficiency through integrative management that combines chemical, mechanical, cultural, and biological control methods.

Every strategy should also consider how a specific infestation fits into the conservation landscape and what opportunities are available to collaborate with other agencies on a regional level. This regional approach encourages individual managers to cooperate on funding proposals that will provide multiple benefits. Through ongoing collaboration with the Florida Fish and Wildlife Conservation Commission's (FWC) Invasive Species Regional Working Groups, the Everglades Cooperative Invasive Species Management Area (ECISMA), FLEPPC, and other partnerships, agencies in south Florida coordinate invasive plant management activities such as:

- Developing integrated weed management techniques to ensure cost-effective and environmentally sound practices;
- Using innovative procurement specifications to improve cost-efficiency;

- Integrating an adaptive response to events such as wildfires, droughts, hurricanes, and extreme flooding; and,
- Funding research on effective and safe herbicides and biological control agents.

Consistent Funding for Maintenance Control

Despite advancements made toward achieving maintenance control statewide, many of South Florida's largest conservation lands have not reached the maintenance control phase for all 80 priority invasive plants. Several factors explain this deviation from the state-wide trend: large, inaccessible landscapes, aggressive subtropical invasive plants, and inconsistent or insufficient funding. While the large spatial scale faced by natural resource managers is unchangeable, strategies to address resource limitations have emerged. Past efforts relied on natural resource managers requesting funds for invasive plant management on individual sites, with the amount of money received determining what could be accomplished in a given year. This minimal, often non-recurring, funding model did not result in cost-effective or sustainable success. In the recent past, federal management funding continually decreased. State funding fluctuated, but to a lesser degree. Sustained funding, even when insufficient, allows development of a long-term treatment strategy. For large conservation lands where infestations are significant, landscape-level planning and continuous, sufficient funding are paramount.

One method to overcome the lack of sufficient recurring funds is to form cost- and resource-sharing cooperative agreements between land managing agencies. Such agreements can include the sharing of personnel, equipment, chemicals, biocontrol agents, computer technology, inventory and monitoring data, and educational materials. Cooperators also share the knowledge and skills of available experts and technicians, sponsor joint training, and convene technical workshops and informational meetings. Successful cooperative agreements also help to reduce parochial conflicts and institutional barriers that limit the most efficient use of public management resources.

In south Florida, federal, state, and regional agencies do cooperate and combine resources. The FWC, South Florida Water Management District (SFWMD), U.S. Fish and Wildlife Service, National Park Service, Florida Forest Service, and Florida Park Service have collaborated on operational management and funding of single and connected conservation lands. This collaboration has resulted in the successful maintenance control of millions of acres of invasive plant species.

Key Recommendations

Achieving maintenance control of priority invasive plant species is a priority for all agencies responsible for invasive species management in the South Florida Ecosystem. To that end, here are some key recommendations:

- Allocate sufficient resources to invasive plant programs to ensure agencies can achieve and maintain maintenance control rotations.
- Continue close coordination and technology exchange to maximize program optimization.
- Conduct research to improve control tools for natural area invasive plant management and maximize integrated pest management strategies. Key areas of research include herbicide evaluations and new biological controls.
- Review procurement strategies to ensure competitive pricing for contractual services while maintaining high standards for work in sensitive natural areas.
- Expand incentives for invasive plant management on private lands to reduce off-site sources of re-infestations on public lands.

Resources

FLEPPC Melaleuca Management Plan: https://www.fleppc.org/Manage_Plans/mplan.pdf

SFWMD 2020 South Florida Environmental Report: https://apps.sfwmd.gov/sfwmd/SFER/2020_sfer_final/v1/chapters/

This document is part of a series of case studies developed for the Invasive Exotic Species (IES) Strategic Action Framework. This particular case study highlights issues within the Long-term Management Phase of the IES Invasion Curve. **9/10/20**