

Getting Private
Landowners
Involved in Invasive
Species
Management:

A Nature Conservancy Pilot Project

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The Nature Conservancy has identified invasive, non-native species as one of the three most serious threats to native habitats, along with development and altered hydrology. The problem of invasive, non-native species infestations is especially severe in South Florida. The climate in South Florida is suitable for growing semi-tropical and many tropical species, allowing many non-native plants to proliferate if left unchecked. South Florida has been a center for trade with

much of Central and South America as well as the Caribbean for decades, allowing for the introduction of numerous non-native species. Furthermore, the landscaping and nursery industries are important components of the South Florida economy. Lastly, South Florida's multi-cultural population enjoys growing many species of plants that are either found in or are similar to those in their countries of origin. All these factors combine to make South Florida a "hot-spot" for invasive species introduction, and place the viability of native habitats at risk.

Tropical hardwood hammocks were once an extensive component of the coastal landscape in South Florida, covering approximately 12,000 acres of the Miami Rock Ridge, a rocky outcropping of limestone that extends

from Miami to Homestead and represents some of the highest elevations in the area. Today, due to extensive urban development of the coastal ridge, only about 775 acres (less than 7% of the original extent) of this community type remains in Miami-Dade County. The occurrence of these hammocks in Miami-Dade County is now limited to several large protected areas and some smaller private holdings. Although the extent of the hammocks has been seriously reduced, they are still ecologically important, and provide habitat for many rare and endangered plants and animals, some which are found

Inset: Tropical hardwood hammock understory. Sewer vine (*Paederia cruddasiana*), photo taken 100 yards from hammock pictured in inset



nowhere else in the United States. A remaining threat to these remnant maritime hammocks is invasion by invasive, non-native plant species. (Miami-Dade County Parks and Recreation Department, Natural Areas Management)

While control efforts are underway on the publicly protected lands, long-term success is compromised due to reinfestations from adjacent private lands where invasive, non-native species control is limited or non-existent. Long-term protection of the hammocks' viability could be vastly improved if invasive, non-native species were adequately controlled on these lands. To this end, The Nature Conservancy has implemented an outreach and education pilot project to inform private landowners in the vicinity of these natural areas about the importance of the natural habitat, and how they can help protect it through invasive species management on their lands. As part of its statewide invasive species initiative, The Nature Conservancy has implemented three pilot projects in South Florida to develop outreach methods that can later be applied on a larger scale. This particular project in Miami-Dade County uses education of private landowners and other stakeholders to motivate them into managing invasive, non-native species in an effort to protect important natural habitats. We hope not only to educate the homeowners, but also involve those interested homeowners and other stakeholders in a forum that would continue working after completion of the pilot project to find ways to address the issue of invasive, non-native species.

Getting Started

In preparation for the outreach phase, project staff identified the invasive, non-native plant species most responsible for impacting the tropical hardwood hammocks in the project area. These species are included in the FLEPPC Category I and II lists. The twenty-one species identified are found extensively on private lands throughout the project area, as well as on the publicly protected sites (Fig. 1).

As visual aides, we developed a slide presentation and a color handout that describes the importance of the

native tropical hardwood hammock, explains the impacts caused by invasive, non-native plants, identifies plants most responsible for impacting tropical hardwood hammocks in the project area, and describes how the private landowner can help in managing these species.

Outreach

To date, we have held four meetings with private landowners. A total of 115 people attended the four meetings. During the meetings, project staff collected input via questionnaires from the attendees to determine their level of awareness of the problems associated with invasive, non-native species, and their willingness to take action in managing these problems.

Involving the landscape industry in invasive, non-native plant management is crucial since many of the area's residents hire professional landscaping services. A vital component of the pilot project is the training of landscape professionals in invasive, non-native species management.

The Nature Conservancy, in partner-

ship with the University of Florida/ Miami-Dade Cooperative Extension Service, and the Miami-Dade County Parks Department and Department of Environmental Resources Management, is holding training workshops on invasive, non-native plant identification and management for landscape service professionals. The workshops include presentations on the importance of controlling invasive, non-native plant species in order to protect the native habitat, reproductive strategies of invasive plants, identification and control techniques. The workshops also include a tour of the natural areas impacted by these species. With the help of the Cooperative Extension Service, attendants of the workshops are able to receive Continuing Education Credits that are a requirement for renewal of their operational licenses, and this factored heavily into the great turnout the workshops have had.

Results of meetings with private homeowners

Of the homeowners that attended the meetings and completed the ques-

tionnaire:

- 64% said they have at least one of the plant species on their properties;
- more than 90% of those with these species claim the plants grew on their own rather than being planted by the homeowner;
- more than 50% said they have paid to have these plants removed from their properties; and
- 72% say they are willing to remove these invasive species.

When asked what would keep them from removing these species, the most prevalent response was cost to the homeowner and a lack of experience in the identification and removal of these species. Almost all the attendees stated that they would be willing to share the information gained from the meetings with their neighbors, and in several instances identified the occurrence of some of these invasive, non-native species on their neighbors' properties. When asked if they would be willing to get more involved in the management of invasive, non-native species, other than just on their own property, 44% responded they would

Fig. 1. Species impacting the protected lands in the project area:

1. Air Potato	<i>Dioscorea bulbifera</i>
2. Australian Pine	<i>Casuarina equisetifolia</i>
3. Beach Naupaka	<i>Scaevola sericea</i>
4. Bishopwood	<i>Bischofia javanica</i>
5. Brazilian Jasmine	<i>Jasminum fluminense</i>
6. Brazilian Pepper	<i>Schinus terebinthifolius</i>
7. Burma Reed	<i>Neyraudia reynaudiana</i>
8. Castor Bean	<i>Ricinus communis</i>
9. Gold Coast Jasmine	<i>Jasminum dichotomum</i>
10. Lather Leaf	<i>Colubrina asiatica</i>
11. Lead Tree	<i>Leucaena leucocephala</i>
12. Melaleuca	<i>Melaleuca quinqueneroia</i>
13. Napier Grass	<i>Pennisetum purpureum</i>
14. Orchid Tree	<i>Bauhinia variegata</i>
15. Oyster Plant	<i>Tradescantia spathacea</i>
16. Pothos	<i>Epipremnum pinnatum</i>
17. Queensland Umbrella	<i>Schefflera actinophylla</i>
18. Shoebuttan Ardisia	<i>Ardisia elliptica</i>
19. Snake Plant	<i>Sansevieria hyacinthoides</i>
20. Wedelia	<i>Wedelia trilobata</i>
21. Woman's Tongue	<i>Albizia lebbek</i>

be interested in attending volunteer work days on public lands, and 31% stated an interest in participating in a stakeholder forum that would meet regularly to address the problem of invasive, non-native species.

Some attendees expressed concerns over the costs of removing these species on their properties and of finding replacement plants. They suggested incentive programs to assist with the cost of removal and the cost of new, non-invasive plants. The attendees also stated that while they are willing to remove invasive, non-native species and understand the need to protect the natural habitat, they lacked the experience to identify and remove these plants effectively, especially since most of them hire professionals for their landscaping needs.

One problem facing the success of this project, and one that could present an impediment to similar projects in other areas, is the degree of non-native plant infestations on nearby public lands. Many of the private landowners have expressed concerns about the degree of infestations on public lands, and are reluctant to take steps to control invasives on their properties until the public lands are cleared.

Results of workshops for landscape professionals

Over 90% of the landscape professionals stated that they are aware of the environmental problems caused by invasive, non-native plants, and all of them recognized the plants in the presentation. About half have been asked by homeowners in the past to remove some of these species from their properties, and 55% are involved in the removal of

invasive, non-native species on a regular basis. Almost all of the landscape professionals said they are willing to tell homeowners about these species if they observe them in the private landscape.

When asked the best way to motivate the private landowners to remove invasive, non-native species from their properties, 48% of the landscape professionals suggested increased education and public awareness, while 20% suggested an incentive program and 10% suggested more regulation. On the usefulness of the workshop, 73% found the quality of the presentations excellent, 71% found the information gained useful, 83% said the knowledge gained was substantial, and 27% said they would change much of their practices, while 39% would change some.

Strategy for Success

The most effective way to meet with private landowners is to be placed on the agenda of their regularly scheduled homeowner association meetings. Not only is the attendance much higher, but the audience seems to be more interested in the subject matter if they feel this is part of the association's agenda. One particularly successful part of the project involved a homeowner

association that invited project staff to present at their annual meeting. After the meeting, the president of the association requested copies of the project handout to use as part of a package that will be given to residents buying homes in the area so they understand the importance of habitat protection and invasive species management. Additionally, project staff members have been contacted by several residents who attended the meetings and who wish to remove the invasive, non-native species present on their properties.

The most successful part of the project so far has been the workshops for the landscape industry representatives. Not only did attendance exceed expectations, but participants' input indicated that the workshop was very informative. Furthermore, many of the participants stated the need for similar workshops on a regular basis.

An ongoing effort

Project staff continues to contact homeowner associations and other groups in the project area in an effort to schedule additional meetings with private landowners. Further project assessment will encompass contacting the private landowners that participated in the meetings to see if they have taken steps to remove and/or manage these invasive, non-native species on their properties. Project staff members are currently exploring methods for holding a workshop for private landowners similar to the ones for landscape professionals, and also are working on a strategy for engaging the nurseries within or near the project area.

As this project goes forward, we not only are taking an important message to private landowners and landscapers, but also are learning strategies that could be applied in similar projects on a larger scale. As many of the attendees of our workshops and meetings have stated, the first and most important step in managing invasive species is educating the public. The Nature Conservancy is excited about the results of this pilot project so far, and we look forward to taking these results to a new level, one that will help address the problem of invasive, non-native species throughout the entire state.