

Central Florida Lygodium Strategy:

A Regional Approach

by Kristina Serbesoff-King, The Nature Conservancy

The northward spread of Old World climbing fern and southward spread of Japanese climbing fern threaten to overwhelm central Florida's environment. A partnership, including The Nature Conservancy, other land management conservation groups, federal, state and local governmental agencies, and private landowners, has been developed to implement the Central Florida Lygodium Strategy (CFLS). The CFLS encompasses all or part of 12 counties in central Florida and was formed to

provide a cooperative, comprehensive approach to stop the spread of Old World climbing fern (*Lygodium microphyllum*) and Japanese climbing fern (*L. japonicum*) in central Florida.

We have estimated that about 850,000 acres of wetlands and forested habitats in central Florida, most of which are privately owned, are vulnerable to infestation.

Through the CFLS, The Nature Conservancy is working with public and private landowners throughout the region to implement an early detection and rapid response program that will keep these invaders from taking over central Florida's natural areas. Infestations of both climbing ferns have been found in central Florida, but at lower densities than are found south or north of this region. The CFLS strives to create a "lygodium-free" zone through a coordinated approach involving both public and private landowners and managers that includes: **mapping and assessment** in central Florida and in northern expansion zones; on-the-ground **control** projects on private lands; and **public education** about identification and control of the ferns.

This strategy of coordination across political and land ownership boundaries will provide an example of how private/public partnerships, agency coordination and early control efforts can result in long-term, cost-effective control of invasive plant species.

Mapping/Assessment

Northern Expansion Zone Aerial and Ground Surveys

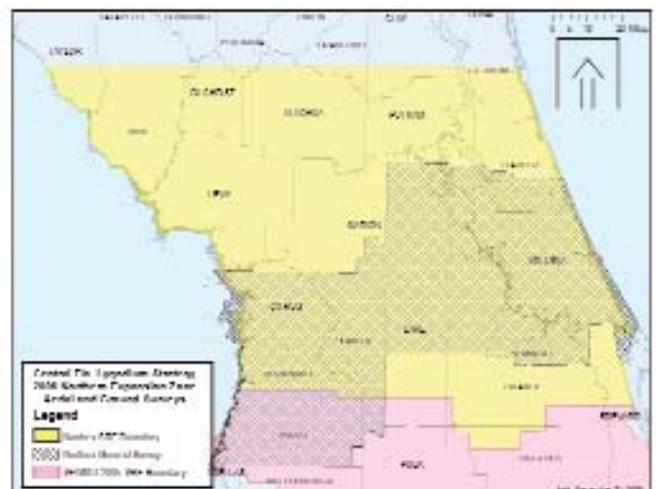
Starting in January 2006, aerial and ground surveys were conducted north of the CFLS zone to determine the northward spread of Old World climbing fern. Land managers expressed a need for these surveys with predictions that the active 2004 hurricane season, along with the plant's wind and water-dispersed

reproductive strategy, may have expanded the northern range of Old World climbing fern. These surveys were conducted through funding and support from the Florida Department of Agriculture and Consumer Services—Division of Forestry (DOF), Florida Department of Environmental Protection—Bureau of Invasive Plant Management (BIPM), South Florida Water Management District (SFWMD), Southwest Florida Water Management District, St. John's River Water Management District, US Department of Agriculture (USDA)—Agricultural Research Service, National Park Service, The Nature Conservancy and Florida Natural Areas Inventory (FNAI).

The aerial surveys built on data collected in spring of 2005 by the SFWMD, which conducted systematic reconnaissance flights (SRF) from the north rim of Lake Okeechobee north to Orlando. Using the same methodology (See *An Explosion in Slow Motion*—this issue), the CFLS northern expansion zone began at the northern edge of the area surveyed by the SFWMD and continued north another 100 miles, encompassing approximately 7.7 million acres.

The northern expansion zone SRFs were conducted during the last two weeks of January 2006 by the National Park Service. The primary focus of this survey was to observe infestations of climbing ferns (*Lygodium* spp.), and 5 additional species: skunk vine (*Paederia foetida*), Chinese tallow tree (*Sapium sebiferum*), melaleuca (*Melaleuca quinquenervia*), Brazilian pepper (*Schinus terebinthifolius*), cogon grass (*Imperata cylindrica*), and tropical soda apple (*Solanum viarum*). The analysis of this effort will be completed shortly, including ground validation of the flights by sharing the survey results with public land managers in the northern expansion zone and asking them to verify data collected on their properties.

Ground surveys to detect infestations of lygodium and the other five prioritized species also began in January and will continue through mid-March 2006. These surveys, conducted by FNAI, are collecting data starting at the northern CFLS boundary and heading north roughly 56 miles. Lands were selected as candidates



for ground surveying according to the following criteria: within 2 km of a public conservation land; containing wetland habitats (due to higher priority of observing climbing ferns); and under conservation easement or other type of private conservation land. Within this area, approximately 491,000 acres of wetland habitats were identified within 2 km of public conservation lands. The ground survey covers approximately 5% of these habitats (~25,000 acres).

Lake Wales Ridge Aerial Survey

In March 2004, a helicopter survey was conducted along the Lake Wales Ridge covering a 400,000-acre area. This survey documented 111 infestations of climbing ferns on both public and private lands in Polk and Highlands Counties. Of the 111 locations mapped, 85 infestations were on private lands and almost 50% were less than one acre. Over 90% of the infestations detected on public lands have received initial treatment.

This survey was repeated in February 2006. The analysis is not yet complete, but it will provide additional information on the spread of the climbing ferns along the ridge and the success of control projects on conservation lands. SFWMD provided the helicopter services and members of the Lake Wales Ridge Ecosystem Working Group (LWREWG) provided the surveyors.

Florida Natural Areas Inventory (FNAI) Invasive Plants Geodatabase

The overall scope of this multi-year project is to provide a geo-referenced inventory and tracking tool for occurrences of invasive exotic plants on Florida's public conservation lands. Tasks include development of a statewide easy-to-apply system, data collection to populate the system, analysis of results as the system builds, and collaboration with natural resource managers statewide in adding and updating data.



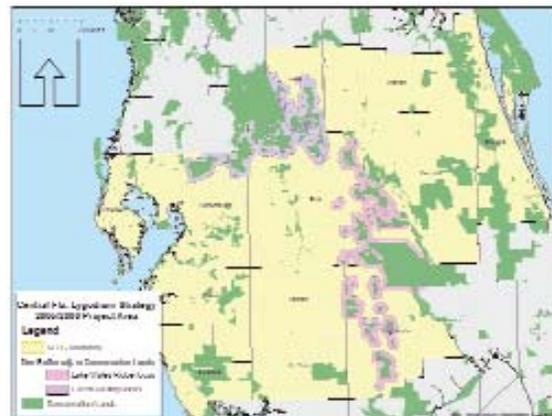
In addition, the project team has focused on collecting data for special management issues such as the spread of the highly invasive climbing ferns. They have completed initial data collection from public land managers in the CFLS zone and continue to collect new occurrence data of overlap areas of the two species. At present the northernmost known population of *L. microphyllum* is one found in early 2005 at Tomoka State Park in northeast Volusia County. The southernmost known population of *L. japonicum* was found in September 2005 at Picayune Strand State Forest in southwestern Collier County. The project is funded by the BIPM and co-sponsored by FLEPPC. For more on the GeoDatabase, visit the FNAI website, www.fnai.org.

Control

“Working Across the Fence Line”

The Nature Conservancy has begun a project to provide direct assistance to private landowners. Working with members of the Lake Wales Ridge Ecosystem Working Group and other regional land managers, two focus areas within the CFLS zone have been chosen for treatment in 2006: the Lake Wales Ridge and the southern region of the Green Swamp. We intend to expand on the efforts begun on conservation lands by “crossing the fence line” to work with neighboring private landowners. Professional contractors have been hired to conduct herbicide treatments of climbing ferns on private lands beginning in April 2006. Control work is on a voluntary basis and will be focused in wetland habitats on properties that are within 2 km of conservation lands in both focus areas. All treatment areas will be inspected 6 months post-treatment and misses and resprouts will be retreated as necessary. Ground control work areas will be assessed 1-year post treatment to guarantee a minimum of 95% control. Private landowners who participate in this project will be provided with herbicide control of both climbing fern species at 100% cost for this first year. Funds for this herbicide work have come primarily through the USDA Cooperative Forest Health Program grant administered by the DOF and through the US Fish and Wildlife Service (USFWS) Partners for Fish and Wildlife Program. Interested landowners can contact the Conservancy project team: Cheryl Millett 863-635-7506 or Kristina Serbesoff-King 561-262-9052.

As this strategy progresses, we will expand our work on private lands throughout the strategy zone. In 2006/2007, we will prioritize additional private lands for herbicide work based on the following factors: 1) infestations identified during the 2006 aerial and ground surveys; 2) remaining private properties in the Lake Wales Ridge and Green Swamp focus areas, and; 3) additional lands within the 12-county CFLS zone based on funding to expand east and west from the initial focus areas.



Public Education

Forging public/private partnerships is key to the success of the Central Florida Lygodium Strategy. As private landowners join our efforts in central Florida through the program described above, we will be building this partnership not only through direct support, but also by providing educational materials, local contacts and maintenance control information. In addition, these initial participants will be spreading the word to their neighbors, thereby creating the momentum necessary to carry these efforts across the landscape.

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In the spring of 2006, The Nature Conservancy, along with the Florida Exotic Pest Plant Council, the Florida Cattleman's Association, US Department of Agriculture Natural Resources Conservation Service (USDA NRCS), SFWMD and the University of Florida Institute of Food and Agriculture Sciences, developed and distributed a weed "identification deck" to landowners in central Florida that includes photos of invasive plants and instructions for removing them. Close to 10,000 weed decks have already been distributed. We also have begun working with other organizations to identify additional sources of funding for control work on private lands. Two prime examples of funding sources are the USDA-NRCS Farm Bill programs and the USFWS private lands programs.

Conclusion

The opportunities to build the Central Florida Lygodium Strategy into a regional success are endless. The public and private support that has already been generated through CFLS is truly exciting and this momentum will continue to drive forward our multi-year program. This type of coordinated, cross-jurisdictional, cross-boundary approach to address the threat of an invasive plant is crucial. Cooperative management of lygodium between both public and private land managers must include sharing of resources, treatment assistance, long-term sustained funding, and technical support (See *Resource Management Approach* in the attached CD-ROM 2006 Old World Climbing Fern Management Plan for Florida).

Contact the author at kserbesoffking@tnc.org

**NEWLY
AVAILABLE**

2006 OLD WORLD CLIMBING FERN (*LYGODIUM MICROPHYLLUM*) MANAGEMENT PLAN FOR FLORIDA



www.fleppc.org

The Florida Exotic Pest Plant Council Lygodium Task Force has completed the 2006 OLD WORLD CLIMBING FERN (*Lygodium microphyllum*) MANAGEMENT PLAN FOR FLORIDA. The management plan includes the most up-to-date information for integrated management of the highly invasive Old World climbing fern infesting natural areas in southern and central Florida.

Request free copies of the management plan on CD-ROM from:

LeRoy Rodgers,
South Florida Water
Management District,
3301 Gun Club Road,
West Palm Beach, FL 33406;
lrogers@sfwmd.gov or
from the FLEPPC website:

www.fleppc.org