



Invasive Species Management Plans for Florida

Sword Fern

Nephrolepis cordifolia (L.) Dryopteridaceae

INTRODUCTION

Florida is host to many non-native species, both plant and animal in origin. *Nephrolepis cordifolia*, or sword fern, is a plant that was introduced most likely for its ornamental attributes. In 23 counties from the Gainesville area south, specimens of sword fern have been found and documented. Now considered a Category I invasive species, sword fern has made its presence known and continues to spread across Florida.

DESCRIPTION

Nephrolepis cordifolia is a wood fern that typically grows in woodland areas. Both fertile and sterile fronds are pinnate, up to 3 feet in length and 2.8 inches wide. There are many leaflets, or pinnae, ranging from 40-100 on each side of rachis. Each pinna is oblong to lanceolate with an auricle that overlaps rachis. Rhizomes are orange/brown to pale brown with linear scales having hair like tips. Stolons are straw colored and produce small underground tubers. The presence of tubers distinguishes sword fern from the native *Nephrolepis exaltata* fern. Numerous sori (spore containing structures) are also produced between the leaflet midvein and margin. Dispersal occurs via spores and through the movement of stolons, tubers, and rhizomes.

IMPACTS

The sword fern poses a threat on native species. Through its aggressive spread, sword fern is able to form dense stands and quickly displace native vegetation. Because it is a true fern, it reproduces via spores. Thousands of spores can be produced by one plant and these can be dispersed by wind and water. Spore production occurs year-round in south Florida.

MANAGEMENT

Preventative: The first step in preventative control of sword fern is to limit planting and removal of existing plants within the landscape. If possible, removal should occur before spores are produced.

Cultural: Plant native or non-invasive alternatives. Inform the public to refrain from purchasing, propagating, or planting sword fern due to its ability to escape from cultivation. Avoid transport of spores from one area to the next via people, vehicles and other equipment.

Mechanical: Hand pulling can be used to remove some of the fern plants, but the plants will break off, leaving plant parts in the ground from which regrowth will occur. Be sure to dispose of plants properly.

Biological: There are no known biological agents for the control of sword fern.

Chemical: Plants can be killed with herbicides containing glyphosate. A foliar application of a 1.5% solution provides good control. Follow-up applications are necessary to control plants regrowing from rhizomes and tubers.

REFERENCES AND USEFUL LINKS:

University of Florida's Cooperative Extension Electronic Data Information Source:
<http://edis.ifas.ufl.edu/index.html>

Langeland, K.A. and K. Craddock Burks. 1998. Identification and Biology of Non-Native Plants in Florida's Natural Areas. IFAS Publication SP 257. University of Florida, Gainesville. 165 pp.

The Plant Conservation Alliance's Alien Plant Working Group. Weeds Gone Wild: Alien Plant Invaders of Natural Areas: <http://www.nps.gov/plants/alien/index.htm>

Pacific Island Ecosystems at Risk (PIER). Plant Threats to Pacific Ecosystems:
<http://www.hear.org/pier/threats.htm>

Invasive Plants of the Eastern United States: <http://www.invasive.org>

USDA Natural Resources Conservation Service. Plants Database: <http://plants.usda.gov>

Langeland, K. A. 2001. Natural Area Weeds: Distinguishing Native and Non-Native "Boston Ferns" and "Sword Ferns" (*Nephrolepis* spp.). EDIS Publication SS-AGR-22. Agronomy Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, Florida.

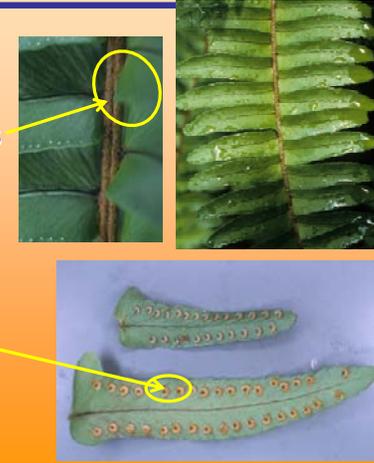
Mature Plant

- Fronds grow up to 3 feet in height
- Both sterile and fertile (spore producing) fronds



Leaves

- Over 100 leaflets (pinnae) per frond
- Auricle overlaps rachis
- Sori (spore containing structures) produced between midvein and margin



Rhizomes & Stolons

- Rhizomes are orange-brown with hair-like scales
- Stolons form small underground tubers - distinguishes this fern from native ferns

