

Old World Climbing Fern (*Lygodium microphyllum*)

Old World climbing fern is a non-native vine that is rapidly invading flatwoods, and hardwood and cypress swamps of southern and central Florida, and it is moving north. Since 1993, the area infested in Florida has grown to nearly 210,000 acres. (A related species, Japanese climbing fern - *Lygodium japonicum*- is spreading south into central Florida, from the north.) Old World climbing fern smothers plants, including understory and canopy trees, and it creates thick mats of plant material on the ground. It is flammable and carries fire into the canopy and across wetlands. Land managers and property owners should be vigilant for these weeds. Early detection and elimination can significantly reduce control costs and efforts.



Lygodium microphyllum plant growing up the base of a small tree (the portion shown is about 2' high).

Find it . . .

How to Identify Old World Climbing Fern: Ferns never have flowers; they reproduce by spores. Fern spores are nearly invisible and easily spread by wind. When the plant is fertile, the spores are on some of the leaflets, which means that at different times a plant can have two leaflet forms: “sterile” and fertile. When fertile (at left on the picture below), the edges of the leaflets are fringed with tiny lobes of in-rolled leaf tissue that cover the spore-containing structures. When sterile, the leaflets are oblong or lance-shaped, and slightly heart-shaped at the base where the stalk connects. Many leaflets make up a leaf, which is 2-5 inches long, and many leaves make up the “frond.” A

frond can grow and twine to 120 feet long. The above-ground stem is dark brown and wiry, and quickly forms thick horizontal and vertical mats.

Where to Look: Old World climbing fern most commonly occurs in moist habitats, but also grows in shallow water and dry areas. Cypress wetlands, tree islands, floodplains, wet prairies, marshes, hammocks, edges of waterways, roadside ditches, and disturbed corridors are common habitats. Old World climbing fern has been found in Hillsborough, Polk, Lake, Seminole, and Volusia Counties, and south to the Keys. Because it produces millions of spores that spread by wind, water, and even animals, people and equipment, new infestations can arise great distances from existing populations.

Lygodium microphyllum leaflets—on the left are the fertile ones; the spores are along the edges.



. . . Report it . . .

If you think you have this plant on your property, please contact the Central Florida Lygodium Strategy (CFLS) or the University of Florida's Institute of Food and Agricultural Sciences (UF/IFAS). **For CFLS**, call Rosalind Rowe at 863.635.7506 or email rrowe@tnc.org, or go to www.nature.org/centralfloridainvasives. **For UF/IFAS**, call their Center for Aquatic & Invasive Plants at 352.392.1799, or go to plants.ifas.ufl.edu/education/whatisit.html.



... Kill it.

The application of herbicide is the most common method of controlling Old World climbing fern. Cutting vines will result in death of the vines above the cut location, but will not kill the rooted portion of the plant. Regrowth will generally occur from roots, even after burning. Flooding does not kill established vines but seems to prevent germination of spores.

For small vines or low-growing patches: Pull out by the root, if possible, and dispose (see *Disposal* explained below), or spray the leaves until wet with a herbicide (see *Herbicides* instructions below).

For large patches climbing into trees: Cut the plant at waist height (“poodle cut”), using a stick to pull vines away from underlying vegetation that you

do not want to damage. Cut enough of the plant so that you leave a gap of 10-12 inches between the upper and lower portions of the vine. The plant will die above the cut, although it may still release spores. Treat the remaining rooted portion of the plant with a herbicide as described below.

Herbicides: Spot treatments are usually made with a backpack sprayer or other hand-held sprayer. For best results, apply herbicides when plants are actively growing and not stressed by environmental conditions such as drought, flood or frost. Treat as much of the green parts of the plant as you can, spraying the leaves until wet. Use a herbicide that contains the active ingredient glyphosate (3-4 lb active ingredient per gallon) or metsulfuron methyl. Glyphosate products are usually applied at a concentration of 2.0% (volume of herbicide/volume of diluent). Metsulfuron methyl is applied at an equivalent of 2 oz of product (60% active ingredient) per 100 gal (0.6 g/gal). The two herbicides are also often applied together. Plants treated with glyphosate alone will begin dying within three weeks, while plants treated with metsulfuron methyl may take several months. If the ferns are in water or near water—where herbicide may end up directly in the water—you must use a product that is registered for use in aquatic sites.

In all cases, several treatments probably will be necessary. Whether you pull out the weed or treat it with herbicide, you will need to monitor for re-sprouts or new growth.

Remember: Federal law requires that anyone who applies a herbicide reads the entire label first and follows the label instructions. Also, most herbicides are not selective, so be careful to keep herbicide only on target plants!

Herbicides available at retail garden supply or agricultural supply stores

Products*	Active Ingredient	Dry Areas Only	Water Areas OK
Roundup Pro, GlyPro Plus, Glyphos	Glyphosate, 3lb/gal	X	
Touchdown Pro	Glyphosate, 3lb/gal		X
Rodeo, Accord, AquaMaster, GlyPro	Glyphosate, 4lb/gal		X
Excort XP	Metsulfuron methyl, 60% flowable powder	X	

*This is a sample, incomplete list of products available and reflects no preferences, guarantees or warranties for the items named.

Disposal: Remove fern material from your equipment and your shoes, and then bag clothing until it can be washed. Bag all pulled fern material prior to transport and seal tightly. Never use fern material for mulching or composting because spores may remain viable. Never discard Old World climbing fern in natural areas.

This flyer was paid for by a grant from the Florida Exotic Pest Plant Council (FLEPPC)
Kathy Craddock Burks Education and Outreach Fund.

Other resources for photos and plant information include: 1) www.fleppc.org (and click *Plant Lists*); 2) www.plantatlas.usf.edu (and type *Lygodium* in the Search box); and 3) <http://edis.ifas.ufl.edu/AG122> for the publication “Natural Area Weeds: Old World Climbing Fern (*Lygodium microphyllum*)” by Kenneth A. Langeland