

Japanese climbing fern - *Lygodium japonicum*

Identification

Japanese climbing fern is a perennial climbing fern with fronds that can reach lengths of 90 feet. Vines (rachises) are thin and wiry, and die back in winter (it remains evergreen in central and south Florida). The leaflets (pinnae) are compound and finely dissected. The overall leaflet has a triangular shape and is 3 to 6 inches in length (Figure 54). Spores occur on the fertile leaflets as a double row of dots under the margins (Figure 55). It is one of the few “vine-like” ferns that occur in the United States. It can be easily distinguished from the native American climbing fern (*Lygodium palmatum*) by leaflet (pinnae) shape. American climbing fern is palmately lobed, whereas Japanese climbing fern is pinnately compound.

Habitat and Distribution

Japanese climbing fern is native to eastern Asia and was first introduced into America during the early 1900s for ornamental purposes. Japanese climbing fern invades disturbed areas such as open forests, pine plantations, savannas, swamps, coastal hammocks, forest edges, streamsides, ditches, rights-of-way, and roadsides. It can grow in a wide range of light and moisture levels but cannot tolerate extreme drought or flooding. Fire appears to promote Japanese climbing fern abundance. While Japanese climbing fern readily invades after disturbance, it doesn't require any type disturbance before invading, and has been found in high-quality, undisturbed environments. Currently, it can be found throughout the Coastal Plain and lower Piedmont regions of the Southeastern United States. Japanese climbing fern appears to be currently expanding its range northward.

Impact

Japanese climbing fern forms dense tangled mats, which cover the ground and shrubs, shading and killing understory vegetation and tree seedlings. It can also form “walls” of fern which block any available sunlight, reducing biodiversity (Figure 56). The winter-killed vegetation creates fuel ladders, which can intensify and carry fires into the tree crowns (Figure 57). The minute spores can spread, undetected, by wind and on contaminated equipment and plant material. Contaminated pine straw bales are a major avenue of spread, causing some states to regulate the industry (Figure 58).



Figure 54



Figure 55

Response to Disturbance

Promoted by soil disturbance
 Promoted by fire
 Re-grows well after being cut
 Readily invades disturbed areas
 Does not require disturbance before
 invading

Reproduction

Primary means – spore
 Has the ability to self pollinate
 Long spore viability

Spore dispersal

Human, wind, water, and animal dispersed
 Pine straw is a major method of dispersal

Growth Habits

Vine/fern
 Shade tolerant
 Flood tolerant
 Drought intolerant
 Can grow in varied habitat types
 Not cold hardy
 Evergreen/semi-evergreen

Response to Prescribed Fire

Not a control option
 Fire hazard
 Rapid re-growth after fire



Figure 56



Figure 57



Figure 58

Control Recommendations

Thoroughly wet all leaves with one of the following herbicides in water with a surfactant (July to October): Escort XP at 1 to 2 ounces per acre in water (0.3 to 0.6 dry ounces per 3-gallon mix) OR Arsenal AC as a 1-percent solution (4 ounces per 3-gallon mix) OR Garlon 3A, Garlon 4, or a glyphosate herbicide as a 2-percent solution (8 ounces per 3-gallon mix)

(See Herbicide Quick Reference page 40-42)