

Invasive Plant Species

Edwin R. Duke and Samuel E. Hand, Jr.



FLORIDA A&M UNIVERSITY
**COOPERATIVE
EXTENSION**
COLLEGE OF AGRICULTURE AND FOOD SCIENCES

Over 10,000 species of plants are found growing in the state of Florida. About 3,000 of these are native. About 10 percent of those native species are endemic to specific habitats.

Defining Invasive

According to the Florida Invasive Species Partnership (FISP), an invasive species is defined as an organism (plant, animal fungus or bacterium) that is not native and, importantly, has negative effects on our economy, environment, or health. Another recently proposed definition (Iannone, et al., 2021) narrows invasives to species that are: a) non native to a specific geographic area, b) introduced by humans, whether intentionally or non-intentionally, and c) does or can cause environmental or economic harm.

Because Florida's climate is so hospitable, invasive species cause more of a crisis here than anywhere else in the continental United States.

Categories of Invasiveness

The non-governmental and non-regulatory Florida Invasive Species Council (formerly the Florida Exotic Plant Pest Council), has divided invasive plants into two categories. Category I includes plants that have been demonstrated to alter native plant communities, changing community structure or ecological functions. Some have been shown to hybridize with native species. The definition relies on documented ecological damage and does not rely on the severity of economic impact.

Category II plants are those that have been found with increased abundance or frequency but have not yet been demonstrated to alter Florida native plant communities or ecosystems. The FISC recommends

monitoring these Category II species and moving them to Category I if ecological damage is demonstrated.

The FISC categorization is by plant species only. It does not take into account cultivar or category differences which may make a plant suitable or unsuitable.

How did they get here?

The majority of plant species which have proven invasive in Florida were intentionally or unintentionally introduced by man. The horticultural industry has purposely introduced thousands of species and cultivars of plants to satisfy the demand for 'new and different' species or cultivars by plant enthusiasts. Other plant species have been brought into Florida unintentionally as a result of increased global travel and trade. The U.S. Department of Agriculture Animal and Plant Health Inspection Service (APHIS) is tasked with the almost impossible task of policing the movement of plants and animals into and out of the United States.

Some plant species have arrived here due to changing migration patterns and changing weather patterns. Tropical cyclones passing through the Caribbean have introduced a few species by bringing in seeds and/or plant parts.

Some introduced species proved almost immediately that they were problematic. Kudzu (*Pueraria montana* var. *lobata*) (Figure 1) instantly comes to mind as a prime example. Kudzu was exhibited in 1876 at the Philadelphia Centennial Exhibition. It was touted as a fast-growing, ornamental vine for shading porches and courtyards and an inexpensive forage for livestock. The Federal government provided subsidies for planting kudzu

Edwin R. Duke, Associate Professor, College of Agriculture and Food Sciences; FAMU Cooperative Extension, Tallahassee, FL 32307. Samuel E. Hand, Jr., Associate Professor and Director of Industry Credentialing Training Programs, FAMU Cooperative Extension, Tallahassee, FL 32307.

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and, during the Great Depression of the 1920s and 30s, members of the Civilian Conservation Corps planted kudzu on public lands. Today, kudzu covers an estimated 7.4 million acres of land across America, and attempts at control have cost millions of dollars.



Figure 1. Kudzu (*Pueraria montana*) covering trees and shrubs along a roadside in North Florida.

A perusal of Florida gardening books from the 1950s and 1960s includes recommendations of many species now listed as invasive. A common North Florida landscape plant palate of the 1960s might include Mimosa, (*Albizia julibrissin*), Coral Ardisia (*Ardisia crenata*) Heavenly Bamboo (*Nandina domestica*), Chinese Privet (*Ligustrum sinense*), Chinese Tallowtree (*Triadica sebifera* [formerly *Sapium sebiferum*]) and Chinese Wisteria (*Wisteria sinensis*). All are now Category I plants according to the FISP. It is important to note that research has developed cultivars of both *Nandina* and Chinese Privet which do appear to be invasive.

Where are they found?

Invasive plant species are found in every area and ecosystem of Florida. Many of Florida's invasive species are limited by climate. Many plants which have proven problematic in South Florida's frost-free environment can't survive the freezes of North

Florida. However, shifting climatic conditions have allowed some of these species to move further north in the state.

Florida's waterways are especially sensitive to invasive species. Hydrilla (*Hydrilla verticillata*), a plant used in aquariums, was introduced into Florida in the 1950s from southeast Asia. It has spread throughout Florida and the southeastern US and is found in freshwater lakes, rivers, reservoirs ponds, canals and ditches.

Today, the Aquatic Plant Management Program of the Florida Fish and Wildlife Conservation Commission (FWC) coordinates invasive nonnative aquatic plant control efforts.

What can be done about them?

Three broad categories cover most invasive plant control: 1) mechanical, 2) chemical and 3) biological. Mechanical involves physical removal of the plant from the environment. Chemical requires the use of herbicides to kill plants or inhibit growth. Biological control depends on the use of other biological species – insects, bacteria, fungi, as predators on the invasive species.

Eradication of a pest species is almost impossible. The goal is to reduce the pest to a level that can be tolerated and causes the least amount of economical and/or ecological damage.

References

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