

# Rare Plants of South Florida:

Their History, Conservation, and Restoration



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The Institute for Regional Conservation



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Cover photos by George D. Gann: Top: mahogany mistletoe (*Phoradendron rubrum*), a tropical species that grows only on Key Largo, and one of South Florida's rarest species. Mahogany poachers and habitat loss in the 1970s brought this species to near extinction in South Florida. Bottom: fuzzywuzzy airplant (*Tillandsia pruinosa*), a tropical epiphyte that grows in several conservation areas in and around the Big Cypress Swamp. This and other rare epiphytes are threatened by poaching, hydrological change, and exotic pest plant invasions.

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## Executive Summary

South Florida is one of the most biologically diverse regions in North America, harboring over 1,400 species of native plants. Unfortunately, habitat destruction, collecting, hydrological modifications, fire suppression, and other human activities have heavily disturbed, if not critically imperiled, many of South Florida's ecosystems, thus threatening many native plant species. In response to what appeared to be an alarming loss of species, The Institute for Regional Conservation (IRC) launched the Floristic Inventory of South Florida (FISF) in 1994.

The FISF catalogs and assesses the conservation status of the native and naturalized plants of South Florida. The study area includes the ten southernmost counties in Florida, extending from the northern shores of Lake Okeechobee to the Florida Keys. IRC's efforts, while independent, benefited from the expertise of many botanists, field ecologists, and governmental and non-governmental land managers, all of whom share considerable knowledge of and concern for the ecological integrity of South Florida. This manual, created from the FISF, provides a regional view of rare plants in South Florida, their status in conservation areas, and the management efforts that will ensure their survival. Our intention is that this and subsequent publications will assist all who are charged with the task of managing the fragile and increasingly fragmented ecosystems of South Florida. The major goals of the FISF are:

- To determine the status of the South Florida flora.
- To determine how effectively the existing conservation area system and management practices protect rare plants.
- To determine the importance of small conservation areas in the protection of rare plants.
- To improve the conservation of rare plants.
- To identify opportunities to restore rare plant populations and their habitats.

The major findings of the FISF, elaborated in Chapter 2, are:

- There are over 2200 species of native and naturalized plants in South Florida.

- About 1/3 of the South Florida flora is comprised of escaped non-native plants.
- Over 100 species of native plants (8%) are apparently extirpated in the region.
- Another 244 species (17%) are critically imperiled using Natural Heritage Program criteria.
- Of these, nearly 100 species are protected in South Florida in a single conservation area.
- Small conservation areas are very important to the protection of the rarest plants in the region, protecting 205 of the 244 critically imperiled plants in South Florida.
- The largest conservation areas (Big Cypress National Preserve, Everglades National Park, and Everglades and Francis R. Taylor Wildlife Management Area) provide protection to only two out of every three native plant species.

Other pertinent findings of conservation concern are:

- Habitat destruction has been the major cause of plant extirpations, but other factors such as poaching and drainage also have been important.
- Plants have been extirpated from conservation areas (including Everglades National Park) due to poaching, management error, and other causes.
- Plants of tropical origin are more likely to be extirpated than plants of temperate origin.
- Epiphytes, including rare tropical orchids, ferns, and bromeliads, are more likely to be extirpated or critically imperiled than terrestrial plants.
- Ferns and their allies are more likely to be extirpated or critically imperiled than more advanced groups of plants.

In response to these findings, IRC embarked on the preparation of this manual, the first of several anticipated publications, which includes data on all of the regionally extinct and critically imperiled plant species in South Florida. For each of these species, information is provided on its history in South Florida and its conservation status. In addition, each conservation area for which floristic data are available is reviewed in terms of the rare plants that are present, or that have been historically recorded, at or near the site. In an effort to stop further losses of plant diversity in South Florida, as well as to restore the ecological diversity of the

region, a strategic framework has been developed to guide local, regional, and federal land managers, and private land owners in plant conservation and restoration efforts. These strategies, detailed in Chapter 3, include:

- Continuing floristic research.
- Protecting all critically imperiled native plant populations and preventing additional extirpations.
- Conducting research on the biology and management needs of rare plants.
- Restoring native plant populations and habitats.
- Improving the legal protection of rare plants.
- Creating awareness about rare plants, their conservation, and restoration.

In order to successfully implement these strategies, IRC has developed a series of specific actions needed to stop the loss of native plant species as well as to restore populations of rare plants in South Florida. These specific actions are presented in Chapter 3 and include:

- Conducting floristic inventories on conservation lands with little or no plant data.
- Conducting rare plant surveys on conservation lands and on private lands when access is granted.
- Mapping and monitoring rare plants.
- Acquiring sites with populations of critically imperiled plants.
- Developing conservation agreements with private landowners.
- Stopping avoidable losses of rare plant populations in conservation areas.
- Preventing poaching.
- Controlling exotic pest plants and feral animals.
- Developing and managing off-site collections of rare plants.
- Restoring key habitats for rare plants in South Florida.
- Restoring viable populations of critically imperiled plants.
- Educating the public and key policy makers about the importance of native plants and rare plant conservation.
- Improving funding for rare plant conservation and restoration.

What is clear from our work is that immediate action is needed if the people of South Florida want to continue living in one of the most biologically unique regions of North America. And we have a

lot to lose. Where else can you go to witness the commingling of tropical and temperate plants, alligators and crocodiles, freshwater and saltwater swamps? Nowhere on Earth. This is why the restoration of the Everglades is appealing to so many, but without a serious and sustained effort, one of the most unique features of the South Florida landscape will be lost forever.