

ENDANGERED SPECIES Cooley's Water-Willow

By Libby Hopkins



Cooley's water-willow or *Justicia cooleyi* as its known by its scientific name, is a rhizomatous perennial herb with upright stems that grow about 16 in tall. The lavender-rose flowers, which resemble small snapdragons, appear from August to December on forked, zigzag branches. The petals are fused into a two-lipped corolla. The slightly longer lower lip is mottled lavender and white; the upper lip is bright lavender-rose.

Cooley's Water-Willow grows only in Hernando, Citrus, and Sumter Counties in Florida. It can be very abundant in one area, and completely absent in an adjacent area, though habitat conditions appear similar. Understanding what specific habitat features it needs can help guide biologists in management of state forest lands to best support the existing populations and can help in the selection of new areas to introduce new populations.

Cooley's water-willow was first collected in 1924 in a hardwood forest near Mascotte in Lake County. Until recently it was only found in Hernando County; one population was discovered in the early 1990s in Sumter County.

Along with the Brooksville bell-flower, it occurs on federal property at an Agriculture Department research station. Other populations on public lands include those at the Chinsegut Nature Center, managed by the Florida Game and Fresh Water Fish Commission; along a state highway right-of-way; and at a Soil Conservation Service plant materials center. The Nature Conservancy also manages a preserve for Cooley's water-willow.

Nine of the ten known Cooley's water-willow populations are found in one of the fastest growing counties in the nation. From 1980 to 1986 Hernando County grew by 74.8 percent. The U.S. Census Bureau dubbed it the nation's fastest growing county. Figures from the 1990 Census confirmed that the trend continues; the proposed Sun Coast Corridor toll road, part of a Tampa-Jacksonville corridor, would pass near Brooksville and encourage further population growth in the county. This rapid development has brought about greatly increased conversion of hardwood forest habitat to agricultural use, quarries and residential housing.

A number of the known populations of Cooley's water-willow are on protected federal and state lands. The agricultural research station, which conducts beef cattle research, has not harmed the plant with its pasture management. The U. S. Fish



and Wildlife Service (FWS) will continue to monitor the station's pasture management and consult on any proposal to clear additional forest.

Managers of all state and federal land with Cooley's water-willow populations have been notified of its presence. In addition, The Nature Conservancy operates a private landholder notification program for this and other rare Florida plants.

The 1994 recovery plan from the FWS, which describes necessary efforts to restore both the Cooley's water-willow and the Brooksville Bellflower, notes that the primary objective for the plan is the eventual delisting of both species. The plan notes, however, that there is a fundamental lack of basic biological (i.e., distributional, ecological, reproductive, and systemic) knowledge about these species, which makes it difficult to set criteria to determine the time-frame or ultimate likelihood of delisting. Still, the plan states that delisting of both species should become feasible as habitat is protected and new populations are (re)established.

According to the 1994 plan, plausible criteria for recovery might include securing at least 15 viable and self-sustaining populations of Cooley's water-willow, totaling at least 10,000 individuals. The major recovery actions outlined in the plan include the development of management and protection criteria for populations on current managed areas; the acquisition of additional habitat, or protection of habitat through conservation easements and/or regulation; the completion of additional surveys to locate new populations; the augmentation of existing cultivated populations, including the establishment of a germ plasm bank; and the development of plans for possible (re)introduction of plants into sustainable habitat.

