

The Palmetto

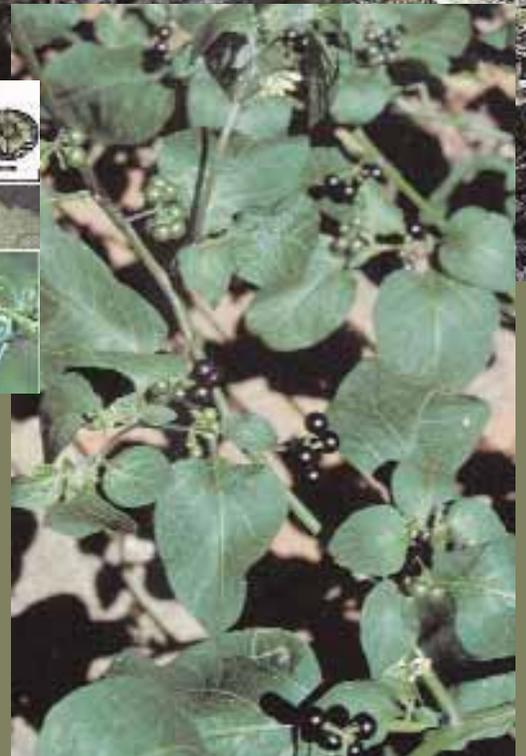
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A view of the Fowler's Prairie bog in April. Bogs are one of Florida's increasingly rare natural communities. Most have disappeared due to the drainage required to create roads, subdivisions, and various types of croplands, including pine plantations. And surprising as it may seem for a wet habitat, fire is important in maintaining a bog. Fire eliminates competitive woody species that can change the light regime and result in increased transpiration, thus lowering the water table and enabling even more plant species invasions.

Photos by
Paul

Southern club-moss,
Lycopodiella appressa,
grows nearly straight up
in the muck.



Active management of bog lands is necessary to control the encroachment of woody plant species that over time, transform the area into an entirely different type of plant community. At left, an area being taken over by loblolly bay (*Gordonia lasianthus*) and below by blooming titi (*Cyrilla racemiflora*) and wax myrtle (*Myrica cerifera*).



A Bog by the Highway

A Unique Flora Faces an Uncertain Future

By Paul Corogin and Francis E. Putz, University of Florida

WE COULD FEEL THE WHOOSH OF PASSING TRUCKS ON FLORIDA STATE ROAD 20 AS WE CRAWLED THROUGH THE THICKET of catbrier vines (*Smilax laurifolia*), blackberry canes (*Rubus argutus*), and sweetspire shrubs (*Itea virginica*) hiding the pitcher plant bog at Fowler's Prairie. After a few minutes of soggy, scratchy struggle, we emerged into the bright May sunlight to behold a flooded landscape highlighted

by a profusion of hooded pitcher plants (*Sarracenia minor*) and rose pogonias (*Pogonia ophioglossoides*). The pitcher plants were in full bloom, their curious nodding yellow flowers shining in the sun among clumps of young pitchers rising from the frost-burned wreckage of last year's growth. Erect stems of bright-green club-mosses (*Lycopodiella appressa*) poked up everywhere from the muck, among bushy tufts of yellow-eyed grass (*Xyris spp.*), bog buttons (*Syngonanthus flavidulus*), water-lily pads (*Nymphaea sp.*) and emerging equitant-leaved Carolina redroot (*Lachnanthes caroliniana*). The elegant, tiny yellow and purple flowers of carnivorous bladderworts (*Utricularia spp.*) were unavoidably underfoot, and chest-high St. John's wort (*Hypericum brachyphyllum*) brushed our sleeves as we slogged about. Dense clumps of shrubs and small trees dotted the open expanse and a wall of woody plants crowded in upon it from the edges.

Bogs like the one at Fowler's Prairie were once a common sight across the southeastern coastal plain, especially in the "bog belt" bordering the Gulf of Mexico, but now they are rare and vanishing due to drainage, overgrazing, and fire suppression. All such bogs are special, but this one is particularly so because of the extraordinary heights of the pitchers (up to 65 cm tall, big for *S. minor*) and due to its location well south of the bog belt. And most urgently, this bog calls out for attention because it is adjacent to a main thoroughfare scheduled for widening. So as we waded about the bog, marveling at its

botanical treasures, we wondered, with some consternation, what would become of it.

Although they are called "pitcher plant bogs" after their most striking botanical inhabitants, these fascinating wetlands are actually home to quite a number of uniquely adapted plants that have evolved to tolerate the extremely stressful conditions created by long-term flooding, low nutrient availability, and bright sunlight. While they tolerate some physiological stresses very adeptly, these plants are fragile, succumbing rapidly to hydrological changes (either drainage or impoundment). And having solved some of their nutrient access problems through insectivory, the sundews (*Drosera spp.*), pitcher plants, bladderworts, and butterworts (*Pinguicula spp.*) are particularly sensitive to the fertilization effect of increased runoff such as might result from a road-widening project. Also, these

plants will not grow well in the shade of shrubs and trees that slowly encroach when fires are suppressed. A recent study in Florida state parks, for example, revealed that many pitcher plant bogs are in poor condition and pitcher plant populations are declining due to altered hydrology and invasion of woody species due to fire suppression (Johnson 2001).

Indiscriminate plant collecting can also spell doom for many of the more showy bog species, particularly pitcher plants and orchids. The current lack of a path into the bog at Fowler's Prairie and its abundance of orchids suggest that illegal collecting has not yet been a problem. Fortunately, drivers roaring down Route 20 currently cannot see into this fantastic bog. We draw attention to it with trepidation, but in recognition that



***Sarracenia minor*, hooded pitcher plant, a bog resident. Five of Florida's six pitcher plant species are state listed as threatened or endangered.**

Photos by Paul

Flowers and new pitchers rising from frost-burned wreckage of the previous year's growth.



it needs help if it is to survive for much longer, with or without road widening. Some public attention is needed, but not of the wrong kind.

Fowler's Prairie, a wet-prairie ecosystem, covers approximately 1100 acres near the border of Putnam and Alachua Counties in north central Florida, but only the southernmost 60-100 acres still has an intact bog flora. Before Route 20 was built through it in 1910, it is likely that the bog flora covered a much greater area than it does today. Years of heavy cattle grazing on the prairie north of the road could be the reason why we saw no pitcher plants, orchids, bog buttons, or sundews there. Ironically, it might be the highway itself that protected the bog that remains. Although the remnant bog is still glorious, it is badly in need of management, particularly the resumption of frequent fires that would restrain the encroachment of shrubs and trees. Loblolly bay (*Gordonia lasianthus*), red maple (*Acer rubrum*), wax myrtle (*Myrica cerifera*), fetterbush (*Lyonia lucida*), titi (*Cyrilla racemiflora*), and dahoon holly (*Ilex cassine*), not to mention tangles of smilax vines, are steadily claiming the open space. Many of the clumps of pitcher plants are already noticeably suffering in the shade of these encroaching woody invaders.

Our concern over the fate of the bog at Fowler's Prairie motivated us to call Pete Southall, environmental scientist with the Florida Department of Transportation (FDOT). He assured us that SR 20 is planned to be widened only to the north, where there are currently no pitcher plants. FDOT was alerted to the bog's existence some years ago and the threatened status of *S. minor* mandates that it be protected whenever possible. Interestingly, it was the presence of the threatened spoonleaf sundew (*Drosera intermedia*), which we have not yet seen there, that originally drew their attention to the site. But whether or not FDOT expands the road in such a way that

there are no direct effects on Fowler's Bog, the pitcher plants, sundews, and orchids will not persist much longer without some active management. Bogs like this are worth saving not only because of their odd carnivorous botanical denizens, but because many scientific lessons in ecology and evolutionary biology can be learned by studying them. Finally, bogs are part of Florida's natural heritage; future generations of Floridians deserve opportunities to enjoy them.

Perhaps we should have kept the secret of Fowler's Bog, but wouldn't it be wonderful if the widening of SR 20 became an opportunity rather than a risk? That's how representatives of Plum Creek Timber, the current owners, view the situation. They share our concern about the welfare of the bog and want to be sure that it is well managed. Management of the small remnant bog to the south of the road will clearly involve hardwood control and maintenance burns, but what about the much larger expanse of former bog to the north? Could bog vegetation be restored and fireproof boardwalks and interpretive signs installed? Can plant collectors be dissuaded from doing damage to this precious place? Road widening is still a few years off, so there is yet time to make some plans and save this bog by the highway. ✱

USEFUL REFERENCES

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