

# Florida Rosemary - An Endemic Native

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This is an environmental case study submitted as one of the requirements for becoming certified in the Audubon Cooperative Sanctuary Program.

*Project description: Give an overview of the project. Why did you choose it? What were conditions like before and after implementing the project?*

Unlike most case studies submitted to the Audubon Cooperative Sanctuary Program, this project was significantly based on research, observation, and conservation. The property at Frenchman's Reserve is graced by well over 50 acres of native Florida pine flatwoods, including sand pine scrub and oak-saw palmetto scrub. Intermixed among this treasured ecosystem is an endemic native plant, *Ceratiola ericoides*, also known as Florida rosemary,

wild rosemary, and/or sandhill rosemary. The purpose of this project was to educate ourselves, our members, and our residents about this curious plant and to discover the existence of an extraordinary population here at Frenchman's Reserve. Being an endemic plant, we thought it appropriate to learn as much as possible about Florida rosemary in order to maintain its natural population while allowing golfers to enjoy their game.

Before realizing that we had a treasure trove of Florida rosemary in our upland preserve between Holes 1 and 9, golfers were allowed to retrieve their balls without limitation and spray technicians applied herbicides to anything that looked out of the ordinary. The former and the latter had the same result: Florida rosemary seedlings were growing by the inch and dying by the golfer's foot or by RoundUp toxicity.

Frenchman's Reserve no longer allows

golfers to enter upland preserve areas along Holes 1 and 9. Additionally the Frenchman's Reserve staff now has been trained to recognize Florida rosemary seedlings and thereby adheres to the "NO SPRAY ZONE" requirements. Rosemary is coming back in full force and seedlings are breaking ground everywhere.

Mature Florida rosemary shrubs had been showing signs of decline. They simply did not look as vivacious as they once had. After much research, it was determined that several irrigation heads must be removed or adjusted in order to ensure the survival of mature groupings. Elimination of overhead irrigation is of utmost importance to the continued existence of Florida rosemary.

Success! Since the project's inception, Florida rosemary is growing like wildfire. Seedlings are no longer being stepped on or sprayed. Likewise, older clumps of the evergreen appear much healthier



*Mature stand of Florida Rosemary in the upland preserve area between the first and ninth holes. Photo by Elizabeth Gilmour.*





A young Florida or "sandhill" Rosemary plant. Photo by Elizabeth Gilmour.

since most of the overhead irrigation has been eliminated.

*Goals: Please list your goals for the project:*

- Educate staff, members, and residents about Florida rosemary, i.e. where it can be found, what it looks like, how it grows, etc.
- Enable the survival of Florida rosemary seedlings through proper training, identification, education, and conservation.
- Ensure the survival of mature groupings of Florida rosemary by reducing and/or eliminating overhead irrigation.

*Implementation and Maintenance: What specific steps did you take to implement it? What kind of on-going maintenance will it require? Please give sufficient detail so that someone interested in duplicating this project could do so.*

The first step in implementing this project was simple - identifying the problem.

After proper identification, research was our main goal. Through observation it was apparent that there were certain areas where Florida rosemary seedlings were being hardest hit. This end result had two root causes. The first was that golfers did not know about Florida rosemary. On top of this, golfers were not being properly informed that retrieving golf balls in preserve areas was not permitted. Thus, proper signage was installed along hole No. 1 and hole No. 9 clearly stating, "Environmentally Sensitive Area - Entering This Area Is Prohibited." In addition, we requested that the golf pro shop staff orally reinforce this rule with all golfers and members.

Secondly, it was observed that while

spraying for weeds along preserve perimeters and landscaped beds along the golf course, spray technicians were dousing Florida rosemary seedlings with herbicide. The herbicidal injury was evident. Proper training, education, and identification solved this problem immediately. Frenchman's Reserve spray technicians no longer apply herbicides near any preserve areas.

The golf course maintenance staff then noticed something else that proved to be worrisome. Several mature Florida rosemary groupings that once thrived along the outside perimeter of the preserve were showing noticeable signs of decline. Through our research we determined that the cause was too much irrigation. Florida rosemary typically grows in well-drained, dry, sandy soils. It simply cannot grow in wet areas. We then looked at the design and layout of our irrigation system. After eliminating several heads and limiting the rotation of several others, the plants that had been in decline appear to be recovering nicely.

The only on-going maintenance that will be required is follow-up. We need to continue talking with our members and their guests in order to let them know about rules, signage, and upland preserve areas. We must ensure that our signage is legible, functional, and placed in appropriate, visible areas. We must also perform periodic irrigation maintenance checks to verify that no overhead irrigation is entering the preserve.

*Results: Describe the results you achieved. What were the environmental benefits? Please be as specific as possible about any tangible results, e.g., number of acres naturalized, new species observed, increase in habitat acreage, number of birds fledged*

*from nest boxes, number of gallons of water saved, acres taken out of intensive management, increase or decrease in man-hours needed to maintain, increase or decrease in equipment wear and tear.*

As previously mentioned our results have been most successful. According to our head golf professional, Craig Voudren, members and their guests frequent the Audubon information table located in the golf pro shop where educational material on Florida rosemary is located. In part due to these educational materials and in part due to the signage placed along preserve areas, we are seeing much less foot traffic in these sensitive areas. Additionally, all herbicidal spraying has ceased. Ultimately our current population of young rosemary is well into the thousands. We are certainly proud of this conservation effort.

We have been able to salvage our mature groupings of Florida rosemary by eliminating or reducing overhead irrigation (and conserving water). Approximately a dozen groups had been showing signs of decline, i.e. leaf drop, little new growth, low seed production, etc. Now, three months after the project's inception, the Florida rosemary bushes appear remarkably healthier. These particular specimens are no longer showing signs of leaf drop, their overall color appears healthier, and they are growing much better.

*Golfer/Employee response: How did golfers respond to the project? How did you communicate about your actions?*

Most of Frenchman's Reserve members and golfers responded positively to the changes along holes No. 1 and No. 9. Some are concerned about losing their balls and not being able to retrieve them, but generally they understand the rule is in place for the better good of the environment. Since the Florida rosemary educational materials have been placed in a conspicuous area in the golf pro shop, many members have expressed an interest in better understanding Florida's unique ecosystems and the native plants within them. We plan on providing more educational materials in the future.

Our employees have responded just as well, if not better. Proper training and education only improve employee morale. Our employees now have a better understanding of the environment and how precious and fragile the Florida ecosystem really is.

*Perspective and Recommendations: What, if anything, would you do differently if you were to do the project again? What would you recommend to others implementing this project?*

The only thing we would have done differently would have been to implement this project sooner. Since the golf course is relatively new and young, we firmly believe that we nipped this problem in the bud. Keen observation was the key to saving our population of Florida rosemary.

*Economic Costs and Benefits:*

Cost to implement this project: \$1,678.15

Anticipated or actual financial savings: \$3,830.00