

Florida Rosemary - An Endemic Native

By Elizabeth Gilmour

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

WILD AT HEART



Alligators - The Ultimate Lizards

By Craig Weyandt

Alligator is derived from the Spanish word "el lagarto," which means, "the lizard." The Florida alligator's primary habitat is freshwater swamps and marshes, but can also be found in rivers, lakes and smaller bodies of water. They can tolerate a reasonable degree of salinity for short periods of time, being occasionally found in brackish water around mangrove swamps, although they lack the buccal salt-secreting glands present in crocodiles. Little alligators eat small invertebrates such as insects, small fish and frogs. As they grow larger, their dietary range increases to include larger prey, which consist of fish, turtles, small mammals, birds and reptiles including small alligators. When left alone, alligators will stay away from humans and pose little threat. If humans feed alligators, this will encourage the alligators to approach humans aggressively expecting food, which in turn can be extremely dangerous.

So please do not feed the alligators!

After all, for the last 65 million years alligators have done a pretty good job of feeding themselves. Also, alligators do not feed during the cooler months. Studies have shown that alligators generally begin to lose their appetite below 27C (80F), and stop feeding altogether below 23C (73F). They can easily last the winter on their energy reserves.

Cool facts:

- Alligators are really lizards
- Alligators now occupy almost every body of water in Florida
- The sex of an alligator is determined in the egg by the temperature of the nest
- Alligators hibernate during the winter months
- Alligators have between 74 and 80 teeth

Stewardship Notes

Goal for 2004: Bring Every Course Into the Fold

By Shelly Foy

My New Year resolutions have not changed much over the past few years. I would like to spend more time with my children, start exercising regularly, be a better listener, etc. I do feel like I am making some progress each year, but always could do more.

I'm running out of time to spend more time with my children because Hunter and Elizabeth are both seniors in high school and hopefully will be off to college in 2004. Of course, since Thomas is five, we still have many years of T-ball, soccer and school plays. John and I have already determined that there will never be a day when we are alone because once Thomas is ready to go off to college we will more than likely be grandparents.

My 2004 goals for the ACSP are to reach out to each and every golf course in Florida that is not a member of the program and encourage them to join. The FGCSA and the USGA are working together to promote Audubon International's 50 in 5 Initiative, which is to have 50% of golf courses enrolled in the program in five years. Florida is leading this push and we can't afford to slack off now. We are planning a series of ACSP Workshops in Florida in 2004 and we encourage every golf course to make plans to attend one close by.

While you are in San Diego, don't forget to take advantage of the many education-

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al opportunities with the ACSP. Audubon International staff will be available at Booth S7609, directly across from the USGA. A special session titled, "The Business Value of Environmental Stewardship: An Environmental MBA for Superintendents," will be presented from 5-6 p.m. on Wednesday, Feb. 11. Audubon staff also will be teaching two seminars, "Wildlife Management and Habitat Conservation" Tuesday, Feb. 10, all day, and

"Integrated Environmental Management" all day Wednesday Feb. 11.

The winter season is a very good time to work on your Education and Outreach for ACSP certification. Over the years we have listed many ideas in the *Florida Green*, and I would encourage you to look through some past issues if you are searching for ways to promote environmental education.

We are always looking for tips and ideas to help you. Here's another very successful one: Craig Weyandt, golf course superintendent the Moorings Club in Vero Beach, has a regular column in the club newsletter that he calls "Wild at Heart." Craig always includes pictures, and he has had members tell him that since he has started writing "Wild at Heart," his article is the first thing they look for in the newsletter. They are so interesting; we will reprint them from time to time for possible use at your club.

I encourage you to make membership in the ACSP one of your New Year resolutions. All the best for a happy and prosperous 2004!

ACSP Year in Review

Florida Courses Joining in 2003

- Abacoa GC
 - Banyan GC
 - Boca Greens CC
 - Card Sound GC
 - Crown Colony G&CC
 - Fiddlesticks CC
 - Forest CC
 - Ft. Lauderdale CC
 - Ft. Walton Beach GC
 - Gator Creek GC
 - Glades CC
 - Gleneagles CC
 - Grey Oaks CC
 - Kelly Plantation GC
 - LPGA International GC
 - Longboat Key Club - Harbourside
 - Longboat Key Club - Islandside
 - Maple Leaf G&CC
 - Misty Creek CC
 - Outdoor Resort GC
 - Palencia GC
 - Red Stick GC
 - Riomar CC
 - Ritz Carlton GC, Grande Lakes
 - Ritz Carlton Golf Club & Spa, Jupiter
 - Seminole GC
 - Shadow Wood Preserve
 - Six Lakes CC
 - Sugar Mill CC
 - Vasari CC
 - WCI Renaissance GC
- ACSP Certified in 2003**
- Frenchman's Reserve
 - Hawk's Nest GC
 - Long Marsh GC
 - Pelican Sound GC
 - Sanctuary GC