



# Where golf courses are

*John's Island West Golf Course sits on one of the the highest dunes of the Indian River/ St. Lucie County area. Unlike other parts of Florida, the land is extremely well drained.*

*Photos by Kit Bradshaw*

BY KIT BRADSHAW

Consider this equation. One golf course equals one permanent habitat preserve. A single golf course becomes a locale where endangered plant life, or even endangered wildlife can thrive.

John Fitzpatrick, executive director of the Archbold Biological Station, near Lake Placid, sees this concept as reality because it's happening at a Vero Beach development called John's Island.

John's Island West Golf Course sits on one of the the highest dunes of the Indian River/ St. Lucie County area. Unlike other parts of Florida, the land is extremely well drained. This according to Fitzpatrick, makes John's Island West unique, with ties to ancient North America. He calls the property, "a spectacular example of a coastal scrub, plant and animal community unique to Florida."

He admits the property has changed. After all, there is a golf course there now. "But," he says, "the important thing is that Tom Fazio took a progressive, positive approach to golf course design. He built around the native landscape using its advantages. When you walk on the course, you are walking through what old Florida used to look like."

Tim Hiers, golf course manager at John's Island West, said that to preserve as much of the property as

possible, the construction centered around hand clearing a vast portion of the land. As a result of the careful preparation and the embellishment of wetlands, migratory and wading birds are abundant. Hiers said many other species of wildlife, such as otters and raccoons, call John's Island West home.

Fitzpatrick said the property is "one of the rarest habitats in North America. Every square meter is precious to wildlife. There is a fairly large number of endangered species at John's Island West, and it is now a permanent habitat preserve that also provides recreation and beauty... it is the best example of bridging these two goals together."

In its role as a permanent habitat preserve, John's Island West is part of the biological station's experimental program to save the endangered plant, Lakela's Mint.

"Lakela's Mint is one of the rarest plants on earth, and is native to the yellow sand scrub," Fitzpatrick said. "Unfortunately, most of this yellow sand area has been obliterated by construction along U.S. 1, with just a few small, struggling populations of the plant left in abandoned areas."

"We've brought more than 30 of these plants to John's Island West, hoping the course can become, in a small way, a model of how golf courses can contrib-





# designed for wildlife

ute to conservation of nearly extinct species. Our goal is to establish a thriving population of Lakela's Mint, which is becoming increasingly important as potential natural insect repellent."

Many golf courses in Florida, particularly in the agricultural area of Indian River County, are built on old citrus groves. On these properties, sensitive and environmentally aware developers have an opportunity to restore the land to a more natural state.

Fred Loherer, librarian for the biological station, said when a grove is planted, "they remove all the natural vegetation, cut and burn it and then root rake it, so there's no woody plants or shrubs that remain. The drainage is important when they put in a grove, so they create extensive ditches and lower the water table. This lowers the soil and the hydrology of the area. A citrus grove is pretty much as artificial as a lawn is."

Two other golf course communities in Vero Beach, Grand Harbor and the nearly-completed Windsor, are located primarily on extinct citrus groves. Here, the goal was not to maintain the existing landscape, but to restore a portion of the land to its pre-citrus condition.

Windsor will open in November. This Robert Trent Jones Jr. course is on a former grapefruit grove. Ac-

ording to designer Gary Linn, "We are trying to put the land back into better shape than it was before."

For Linn, this assignment provided two important aspects of course design.

When the grapefruit grove was created, a hammock area on this barrier island was virtually eliminated. There is a small triangular piece of hammock that remains, and the Jones design has incorporated this hammock into three of the holes.

"There was a commitment to restore the natural area here," Linn said, "and we are transplanting 60- to 70-foot live oaks, making the native dunes and putting in palm trees to recreate the areas that were denuded when they put in the grapefruit orchard. The environmentalists like it and it's pretty neat for golf use, because it gives instant maturity to the course."

Water retention and filtration are also part of the course design. Water on the property is captured in a series of large lakes, according to Linn, and then moves into the drainage ways with man-made shelves that have been planted. In this way, the plants at the water level of the lakes and along the drainage canals can filter the water before it's discharged into the Indian River.

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Grand Harbor course.

According to Ron Andrews, golf course manager for the complex, 712 acres of the original 895 were citrus groves, and 73 acres were part of a mosquito impoundment system.

To help restore the "old" Florida look to the property, some of the wetlands were preserved, some restored, and new wetlands were created. The mosquito impoundment areas were tied back into the Indian River, and now Andrews uses open-water marsh management to control the mosquito population.

"Historically, these impoundment areas were connected to the Indian River," Andrews said.

"What we did was to open these two impoundments back to the river, remove some of the agricultural sediments and make the areas a viable piece of the Indian River again. It's a new technique, and some of the people were not real sure it would work, but the Indian River Mosquito Control



*"There are a fairly large number of endangered species at John's Island West, and it is now a permanent habitat preserve that also provides recreation and beauty... it is the best example of bridging these two goals together." — John Fitzpatrick, biologist*

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District says it works about as well as it did when it was impounded. They don't have to use pesticides within the saltwater marshes to control mosquitos, any more than they did when it was impounded."

The open marsh water management system uses the the tidal influences of the Indian River to penetrate all the parts of the marsh, and to insure that there is no isolated puddling that will encourage mosquito propagation. "Then, if you can get the fish there, especially in the early life cycle of the mosquito," Andrews said, "the fish will eat the very young, small mosquito larvae."

Andrews adds, however, that not every impoundment area is a candidate for this type of program.

"For one thing, it is very expensive," he said. "For another, you need some place to put the fill that comes out of the berms that were part of the impoundment areas. In addition, there is a lot of research going on right now about mosquito impoundment areas. The mosquito control districts are looking into the possibility of opening some of these impoundments part of the year. So there are a lot of things to consider concerning mosquito impoundments."

In the process of creating two golf courses at Grand Harbor, 12 acres of wetlands were filled in. Andrews said the areas filled in were not pristine, but were heavily impacted wetlands.

"And," he added, "keep in mind that the citrus grove was not native land, and there was little wildlife on that portion of the property before construction." However, as part of the permitting, 48 acres of wetlands were created to offset the in-filling.

"Basically, we rehabilitated those 73 acres of salt marsh, except for the 12 we filled, created 48 more to add to that; and rehabilitated the whole thing. In addition, we created 74 acres of freshwater wetlands. Doing the wetlands work and integrating it with the golf courses were our biggest challenges."

The River Club course was built on citrus groves, and in creating it, 28 acres of upland lakes were built. At the Grand Harbor course, the impoundments were rehabilitated and freshwater lakes were constructed. All this work has created an environment that attracts fish and birds, Andrews said.

"We filled the marshes with fiddler crab,

snook and a lot of different fish," he said. "In our testing, we've collected a very high number of other fish. If you keep track of the fish, it's a very good way to see the success of a created marsh. Also, I can go out on the course and see a number of birds, such as tri-color herons, ibis, blue herons and wood storks. And there is other wildlife here, such as frogs, snakes, river otters, raccoons and bunnies—we're bunny huggers like everyone else."

"It is expensive to preserve, rehabilitate and create wetlands," Andrews said. "We probably had something in the neighborhood of \$2 million in the saltwater mitigation, and about \$400,000 alone in plants used in the freshwater. In addition, if you take 30 percent of a lake and make it marsh, you lose 30 percent of the fill that could come from the lake. So there is a hidden cost of mitigation, because it makes you use dirt from off the property. The only people who could afford this type of project is a developer. The value, however, is that it lets people know that mitigation can be done successfully."

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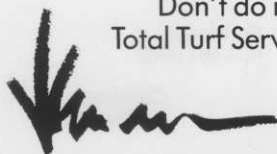
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The expense of either preserving wetlands and uplands or rehabilitating these properties is extensive, but Fitzpatrick believes that environmentally sensitive development can be valuable in the preservation or restoration of Florida’s lands.

“When outright preservation of the land is not possible, then the next best scenario is to work with golf courses — courses are open space by their nature — and with residential developers, because they can put money into preserving bits of the native ecosystem,” Fitzpatrick said.

“John’s Island West is clearly in the vanguard because they made a special effort to protect pieces of a native system exactly as it used to be. My genuine belief is that golf courses have a real potential for being ecologically important. They are important places for environmentally-minded people who decry any human use of the land. It is possible for development and the environment to live side by side.”

Andrews agrees. “Good golf course superintendents have always been environmentalists,” he said. “We spend a big part of our day on the golf courses. We’ve got to deal with the pests of nature, but we enjoy the good side of nature just as much as the next guy and we work hard to minimize the impact the golf course has. I think that often a golf course doesn’t get enough credit for the positive things it can do for the environment.”

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