Firming Up the Fairways

Siphon system helps Florida course solve fairway drainage woes

BY LARRY AYLWARD, EDITOR

The Turf Drain Siphon System doesn't require pipe to be graded so it can transport water at a higher elevation than it's collected.

Problem

South Florida rains caused major flooding on the fairways of the Seminole GC. Standing water and soggy fairways did not equal a fine golfing experience.

Solution

Seminole superintendent Hal Hicks turned to a drainage system that siphons water from fairways without grading pipe.

Architect Donald Ross has been praised for his routing of Seminole GC, built in 1929 in North Palm Beach, Fla. It's a spectacular layout that plays along impressive sand dunes separating the Atlantic Ocean and the course's perimeter. But the dunes, while adding greatly to the course's character, have posed challenges to Seminole's superintendents, especially when it comes to drainage. Some of the dunes are as high as 40 feet above sea level. So when it rains, and it pours in south Florida in the summer, the water flows to the middle of the course. "The course has a bathtub effect," says Hal Hicks, Seminole's superintendent since 1989.

The problem

Hicks recalls a storm that dumped more than 20 inches of rain in 24 hours. Occasionally, water has been up to Hicks' waist on some fairways after heavy rains. The water drains slowly after such storms. "We've had to shut down the course for up to a week," Hicks says.

The heavy rain and standing water created a twofold problem:

- How to get the water off the fairways quickly so the course doesn't have to shut down?
- After the water is removed, how to firm up the soggy fairways so the course returns to the playability its members expect?

In the early '90s, Seminole GC installed a drainage system with a series of interconnected concrete drain lines that led to a sump. The system did a decent job of draining the water after a hard rain, but it didn't help solve the problem of soggy turf. "The ground was still soft, and golfers' balls still plugged," Hicks says.

Hicks knew he needed to find a way to firm up the fairways quickly to satisfy members, who prefer the course to play hard and fast.

The solution

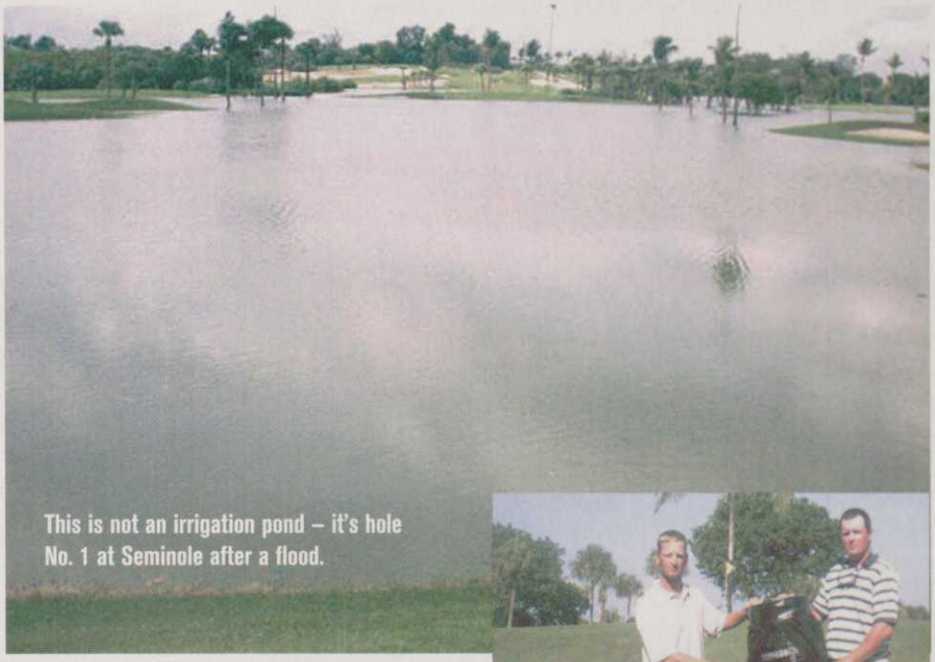
In 1995, Hicks met Dennis Hurley, president of the Marrero, La.-based Turf Drainage Co. of America. Hurley told Hicks about his company's Turf Drain Siphon System, and Hicks decided to test it on his course.

Seminole presents a huge challenge from a drainage standpoint, Hurley says, citing five potential problems:

- the proximity of the ocean;
- the high water table;
- difficult digging conditions; and
- a layer of rock below the surface.

The Turf Drain Siphon System siphons water from fairways and can be installed without grading pipe. The system makes sense for flat courses with little elevation change or any course where it's difficult to grade pipe, such as Seminole.

The system is a transportation system for water collected by any means — open inlet or seepage. It works the same way you would siphon gasoline out of a car. Once the system is primed by



This is not an irrigation pond – it's hole No. 1 at Seminole after a flood.

PHOTOS COURTESY OF SEMINOLE GC

using a normally closed valve installed in the irrigation system, the system will transport water over or around mounds and obstacles that are higher than the collection point, and then release the water in an area that is level with or lower than the collection elevation. What's important, however, is not how it works, but what it does. It allows water to be collected at a deeper depth throughout the drainage area — thus giving the soil more storage capacity for future rains.

"On a property such as Seminole, we create an adequate relief with a pump," Hurley says. "What is different with our system is once we've created one pumped area, we can replicate that area with siphons. So if there are 50 siphons going to one pumped elevation, it's like having 50 pumps. But only one pump and one electrical point have to be maintained."

Hicks opted to test the Turf Drain Siphon System in the summer of 1995. He picked the third hole — the worst draining area on the course — as the guinea pig for the system. The hole is part of the lowest area on the course and is bordered by a sand dune that runs parallel to the fairway. The constant seepage out of the dune down to the lower elevation of the No. 3 fairway was a factor in the fairway being particularly wet.

The fairway drained well and dried quickly after installation of the system. Hence, Hicks decided he wanted to install separate systems on other holes. The course has been adding systems to a few holes every year.

The original siphons installed in 1995 and 1996 featured 2-inch systems. While the systems were adequate to harden fairways after surface water drained, Hicks asked Hurley if he could make a 4-inch system to remove surface water faster. Hurley agreed, and the first 4-inch system was first installed at Seminole in 1997.

(Left) Seminole assistant superintendents Alan Brown (left) and Chris Deariso display a siphon basin used in the system. (Below) A basin installed in the ground.

While the Turf Drain Siphon System easily handles surface water, Hicks is especially impressed with the system's ability to firm up soggy fairways rapidly. Not only can members get on the course quickly after a heavy rain, they're playing on firm fairways where their balls don't plug.

Outlook

Seminole's members have been receptive to the drainage improvements. "We've explained to them what we're doing, and they can see the difference the system has made," Hicks says.

So can Hicks, who says the Turf Drain Siphon System has helped cure Seminole's drainage woes.

"We're not closed for as many days [because of hard rains], and members are able to get out and play," Hicks says. ■

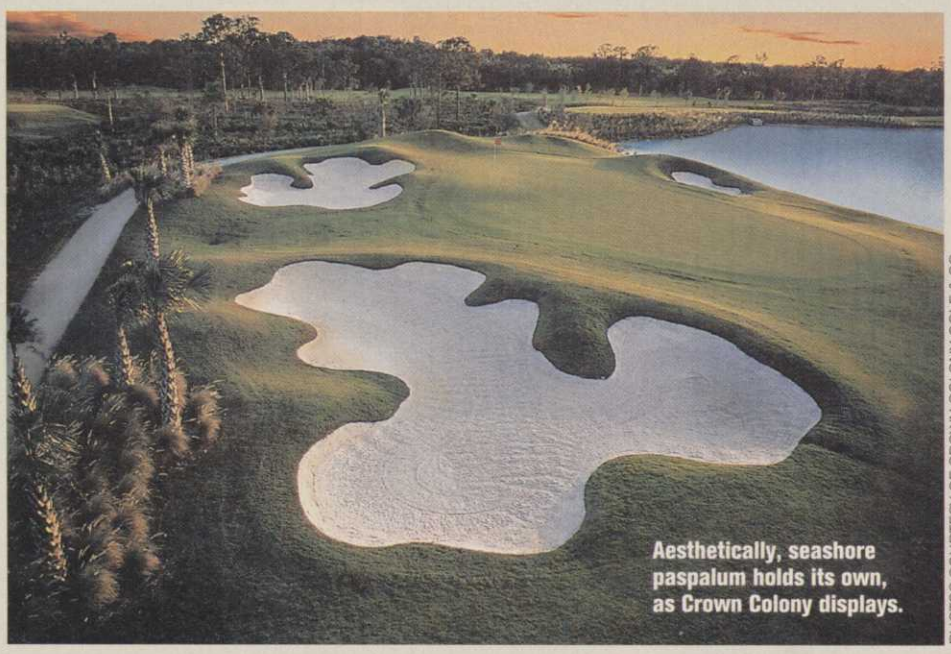
You can reach Aylward, the author of this story, at laylward@advanstar.com.

Read another **Real-Life Solutions** on page 72

Sure About Seashore

Florida course is the first U.S. track to combine use of the SeaIsle 1 and SeaDwarf varieties of the turf. So far, so good

BY SHANE SHARP



Aesthetically, seashore paspalum holds its own, as Crown Colony displays.

PHOTOS COURTESY OF CROWN COLONY GOLF & CC

Is seashore paspalum the next "New Coke" or the answer to the Southeast's potable water shortage? That's the question the Crown Colony Golf and CC in Fort Meyers, Fla., seeks to answer. In the years to come, the course will be a living experiment for the new turf that can be irrigated with effluent, brackish and even salt water.

Seashore paspalum has raised the eyebrows of golf course owners and superintendents in South Carolina, Georgia and Florida ever since University of Georgia turf scientists Ronny Duncan and Robert Carrow penned *Seashore Paspalum: The Environmental Turfgrass* in 2000, and world-famous course designer Pete Dye used it on his Caso de Campo golf course in the Dominican Republic five years ago. Dye proclaimed paspalum to be the savior of golf in the Caribbean.

What to Do?

Steve Spaugh lost sleep over his decision to use two varieties of seashore paspalum at the Crown Colony Golf & CC in Fort Meyers, Fla.

The Right Call

Spaugh says the turfgrass has performed wonderfully. He wonders why more Florida courses haven't turned to the hearty turf.

Picking paspalum

What's good enough for the islands could turn out to be good enough for the mainland. Seashore paspalum is already in use at a select number of courses in the Southeastern United States, including the Old Collier GC in Naples, Fla. But Crown Colony is the first course in the country to combine use of the SeaIsle 1 and SeaDwarf varieties of seashore paspalum. It's also the first facility to use seashore paspalum by choice instead of necessity.

When Crown Colony was being built last year, the water available to former Crown Colony superintendent Steve Spaugh for irrigating the course contained 1,800 parts per million of salt. A hearty stand of bermudagrass would tolerate this salinity, but Spaugh considered using seashore paspalum, even though the turf is so new and untested in the industry.

"I lost sleep over the decision," Spaugh says. "They had to use [seashore paspalum] at Old Collier. We had a decision to make here, but I had enough input and support from our owners to go for it."

When he decided to use seashore paspalum after exhaustive research, Spaugh used it everywhere — on tees, fairways and greens. Spaugh also discovered seashore paspalum was superior to bermudagrass aesthetically, and could easily be mistaken for the stunning bluegrasses and ryes of the North and Midwest. He found the turf was slightly thatchier than bermuda, but needed significantly less fertilizer to survive.

"The problem wasn't that we didn't have a choice," Spaugh says. "The problem is the risks associated with using a turfgrass variety that doesn't have a long track record. We're not sure how it will fare in the long run."

Lakeland, Fla.-based architect Ron Garl, who designed Crown Colony, says the future of golf in warm climates with potable water issues lies with seashore paspalum. "Some courses

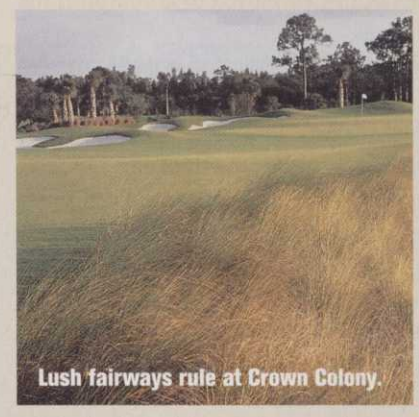
have to take the lead when it comes to new technology," he adds.

They like it

Spaugh elected to try SeaIsle 1 on the fairways and tee boxes, and Sea Dwarf on the greens. Club agronomist Tim Daniels says the course requires 30 percent to 50 percent less fertilizer, and has proven to be drought-tolerant. SeaIsle 1 has also suppressed weed growth.

The maintenance staff currently irrigates the turf with effluent and brackish water. The crew also flushes the course periodically with fresh water to prevent salt and mineral buildup.

Crown Colony held its official grand opening last February. Spaugh is no longer superintendent at Crown Colony — his business card now reads vice president — so he must have done something right when he chose seashore paspalum for the course. Also, player response to the grass has also been over-



Lush fairways rule at Crown Colony.

whelmingly positive, as the grass looks better than bermuda and actually provides better lies from the rough.

"It reminds me of grass you might see up North, and the ball sits up in the rough because it's so thick," says Joe Bruno, a Florida-based golf writer.

As a semiprivate facility, Crown Colony will host thousands more rounds than its exclusively private neighbor Old Collier. But with fairways as lush as you'll find in Southwest Florida, as well as nearly flawless greens cut to one-eighth inch, Spaugh is hardly worried.

"My question, after the grass came in, was: Why doesn't everyone use it?" Spaugh says. "The answer is: The industry is slow to change.

"Most people would say, 'Bermudagrass isn't broken, so why fix it?' Admittedly, there's an added initial cost because [seashore paspalum] is a new technology, but we may recoup the costs in a year because of the savings in maintenance." ■

Sharp is a free-lance writer from Charlotte, N.C.