

Irrigation: It's a matter of control

Irrigation practices are controlled by permits, restrictions, water quality, soil conditions, course design and much more.

BY JOEL D. JACKSON, CGCS

From the cover story on Sailfish Point to the Legislative Updates in the "Official Business" section (see page 90), it is plain to see how important water is to our business. Water issues can be anything from a political time bomb to just a simple question of, "How much irrigation should I run tonight?"

Our ability to irrigate our golf courses is controlled by permits, water management district restrictions, water quality, soil conditions, course design and construction, pumping system capacities, controller capabilities, computer-controlled weather stations, system designs, wind and golfer expectations. Have I left anything out?

Turf research and consumptive use permits have taught us that we should and must learn to live with less water.

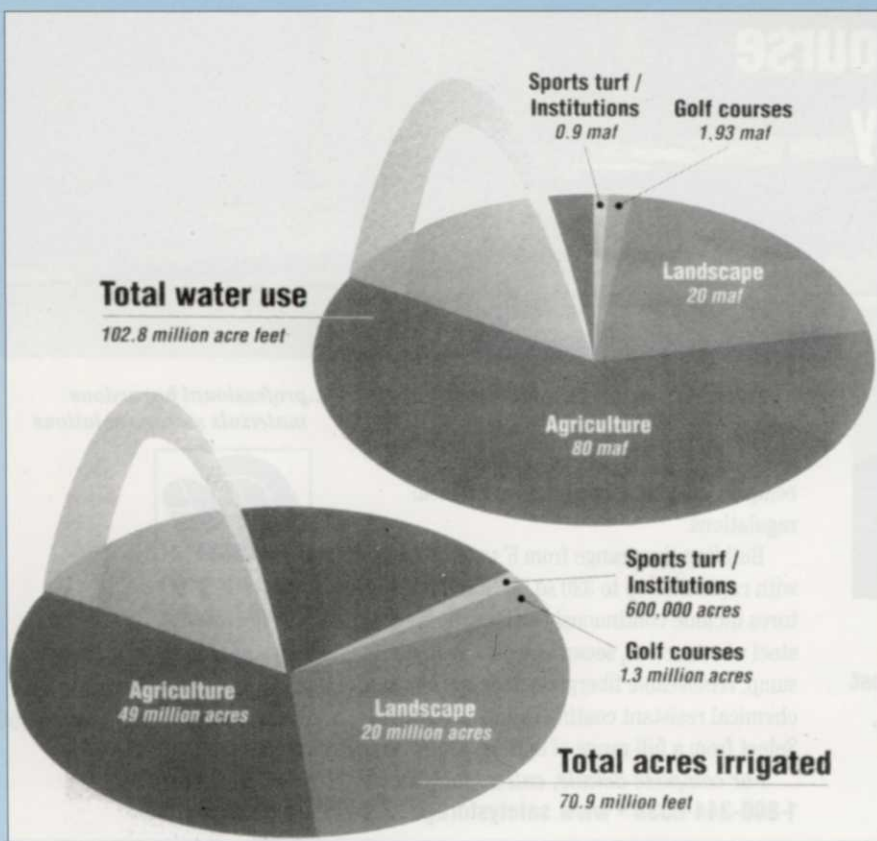
Users of higher saline water have begun to use more salt-tolerant grasses or inject diluted acid into their supply lines to modify the pH level of the water. Some courses along the coast are

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Hot spots by design?

Poor water distribution. Is it lack of head to head coverage or ineffective intermediate nozzle patterns creating the parched donut around the head? Or is it some other factor? There were about a dozen of these "donuts" scattered around the course in the early spring. After renovation and increased rainfall they have disappeared. Photos by Joel Jackson.



Who's actually using all of our water?

"Why do golf courses get to 'waste' so much water?"

That's what some casual observers are wondering out loud when they see an irrigation system at work on fairways, tees or greens. As with many things having to do with managing often scarce resources, people just driving by a golf course have a tendency to jump to conclusions — very often, the wrong ones.

These often well-meaning, but misinformed, citizens could do well to look at their own backyards, and those of their neighbors, before pointing an accusing finger. Residential and commercial (business places, industrial parks and corporate offices) irrigation has expanded more than 30 percent in the last 15 years and, according to the Irrigation Association of America, more than 20 million acres of residential and com

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mercial landscape are irrigated today. Golf courses account for only 1.3 million acres.

And these figures consider just the fairly sophisticated irrigation installations found in residential areas (albeit they may be do-it-yourself systems) and not the friendly neighbor with his lawn sprinkler and garden hose who puts as much water on driveway and sidewalk as he does the lawn.

Since 85 percent of this residential market gets its water from public or private water agencies, the cost of putting water on this property is substantial.

The association estimates that residential and commercial installations about 20 million acre feet of water each year. If an acre foot (325,000 gallons of water) costs \$400, the value of the water applied by these systems would be in the neighborhood of \$7 billion.

(According to the American Water Works Association, the average cost of

public water to residential users is \$572 per acre foot.)

By contrast, the golf course industry uses fewer than 2 million acre feet of water each year—less than 10 percent of what's used by homeowners.

And many golf courses draw irrigation water from wells on the property, or ponds and impoundments built just for that purpose. They don't rely on public water sources for irrigation.

Since the first automatic landscape irrigation systems were invented nearly a century ago, residential irrigation has often been considered a luxury rather than a necessity, but that's no longer the case for many people.

Next time a well-intended but short-sighted neighbor questions your "wasting" water, share some of these figures. Billions of dollars can be saved by homeowners and business owners making better use of irrigation technology—the kind of technology golf course superintendents use every day!

Credit: Minnesota Hole Notes.

Matter of control

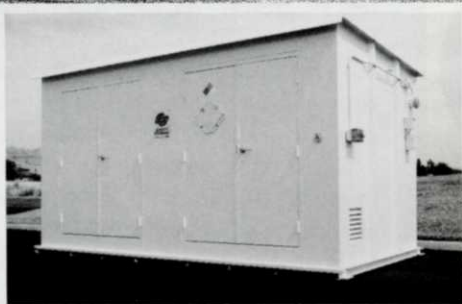
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already turning to desalination equipment to manufacture their own fresh water.

Irrigation delivery systems around the state range from a night water man using manual snap valves to radio-controlled, computer-managed systems with automatic remote weather station adjustments. No matter how primitive or sophisticated a system is, it still takes a human to evaluate conditions. A weather station doesn't know you applied a pesticide or a fertilizer that needs additional watering. Only humans know that the back left of No. 14 green will start drying out before anything else 24 hours after that half-inch rain yesterday.

The use of surfactants (wetting agents) to condition the soil is becoming more common. Dedicating more manpower and labor hours to spot-watering localized dry spots is a necessity for the conservation of water resources and the sound management of the surrounding turf. Putting good quality water where

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and when it's needed is the key and it's not always an easy thing to do. Some of your fellow superintendents share their irrigation stories on the following pages.

Water Water Everywhere

You can drive by the Grand Cypress golf course during a rain and see sprinklers running. The first reaction of most people would be to think the superintendent wasn't doing a very good job of monitoring his irrigation. They would be wrong.

Tom Alex gets 450,000 gallons of effluent from the Hyatt Regency hotel daily and must dispose of it. He has a system of perimeter heads that he must run daily to dispose of that gray water.

"We had a Varitime II control system originally, but we are upgrading to the latest Rain Bird computerized system and that has allowed us to disperse the water even better than before," Tom said. "The Grand Cypress site was once an orange

grove so we are fortunate to have good percolation and drainage since we are required to put out the water regardless of rainfall."

The newest of Orange County's golf courses, Orange County National, is being built on land in the western part of the county once used as an effluent spray field. The design calls for large ungrassed waste areas as percolation basins for the necessary disposal of effluent water. The addition of the golf course is a way to make the land double its value to the community by also providing a recreational facility.

All of the Disney golf courses are now on Reedy Creek Improvement District's effluent system. The Palm, Magnolia, Lake Buena Vista and Oak Trail courses have the pipeline tied directly into the irrigation system and boost the pressure with pump stations.

At Bonnet Creek, the Osprey Ridge and Eagle Pines courses store the effluent

in irrigation storage lakes and pump from them.

The Palm, Magnolia and Oak Trail courses currently have Buckner Legacy controllers and the Osprey, Eagle and LBV courses have Rain Bird Maxi V control systems with the LBV course undergoing an irrigation rehab recently. The 25-year-old block systems at the Palm and Magnolia are scheduled for redesign over the next two years.

While the above-mentioned courses are blessed with unlimited water resources for the immediate future, they are more the exception than the rule. Most golf courses have to ration their ground or surface water based on consumptive use permit limits.

Water resources continue to be a major concern in the legislature as our state continues to grow in population. Be sure and read the Legislative Update section elsewhere in this issue where Mike Goldie and Tom Benefield report on this year's water bills.

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