

# WATER.

That one word describes what could become the golf course superintendent's No. 1 concern. A GCSAA panel of experts recently hashed over the intricacies of water usage. Here's what was said.

by Jerry Roche, editor

**W**ater, water, everywhere—and not a drop to drink," goes the old saying.

But water, in this day and age, is decidedly *not* everywhere. Yes, there may be enough to drink. But it's getting tougher to justify large amounts of water to irrigate golf courses. As a matter of fact, it's getting so difficult that the Golf Course Superintendents Association of America recently spent half a day hashing over the problem.

At the GCSAA Mid-Year Turfgrass Conference and Show last September, a panel discussion on "Management Response on Water Crisis" was held. Nine water experts shared the podium.

"This natural resource is decreasing, and we definitely need a plan to stay in business," said moderator Gerald Faubel, of the Saginaw (Mich.) Country Club.

## Five factors

Edward Horton of Westchester Country Club, Port Chester, N.Y., observed that water availability is reaching crisis stage because of five factors:

- the "suburban sprawl" has increased demand for water and pollution;
- money allocation is going toward anti-pollution research rather than availability;
- water facilities, on the whole, across the country, are old;
- costs of making water more readily available are high, thus a lack of incentive for new investments; and
- because of opposition from environmentalists, there is a general lack of incentive.

Horton, who serves with the Westchester County Drought Emergency Service, added, "Sources of water are the single most important problem I've been involved with since entering the industry in 1967."

Dr. William Thomas of the American Bar Foundation noted another problem affecting water availability: 50 percent of all public drinking water

comes from groundwater, and groundwater legislation "is in disarray." Thomas, a member of the National Water Alliance, stressed the fact that the golf course superintendent has to "know more about hydrology than the local hydrologist," to work on educating the public and to support research on drought-resistant turf.

## A groundwater 'code'

Katherine Jacobs of the Arizona Department of Water Resources described that state's Groundwater Code, which has been instituted to cut water use.



"One of the first ideas we're using is reducing the amount of turf and uncut roughs of native grass on golf courses," she said. "Taken a step further, you get into the concept of 'target golf.'"

Jacobs, a former Olympic ice-dancer, added that golf course superintendents are asked to: minimize the surfaces of lakes and ponds and lime them; reduce areas of overseeding (just tees and greens); control cart traffic; use proper mowing techniques and wetting agents; and—most importantly—oversee the proper installation and maintenance

of irrigation systems.

She has received excellent cooperation from superintendents. "Working with them in our area has been a phenomenally positive experience," she concluded.

## Reducing usage

Dr. James Watson of the Toro Co. offered some ways water usage can be reduced:

- Select plants that use and survive with less water.
- Support research that will introduce such plant species. "We believe researchers will produce more drought and heat-tolerant species within 10 years."
- Design new golf courses with reduced acreage of plants that need water.
- Use more mulch, "a tremendous adjunct to the conservation of water."
- Cultivate turf to ensure the infiltration of water.
- Use soil modification techniques to maximize the use of water.
- Closely monitor the irrigation system's efficiency.

"We need to know more about mowing," Dr. Watson surmised. "We need to know more about height of cut, frequency, and how it impacts on the various types of cultivars."

"It's gratifying to see the efforts being made to use effluent water. And I see a bright future for the use of saline and brackish waters."

## Researchers speak up

Dr. James Beard of Texas A&M University, perhaps the foremost expert on turf water usage in the nation, was sitting in the audience. He was asked his thoughts.

"We have a long way to go," Dr. Beard said. "The objectives of 50 percent reduction (in water usage) are very realistic. I'm thinking 60 to 70 percent in the back of my mind as being achievable."

Dr. William Daniel of Purdue University, co-inventor of the Prescription



The panel giving their observations on water usage problems in the green industry is shown here. Left to right, are: Paul Dermott, Jonathon Scott, Bruce Cadenelli, Ted Horton, Gerald Faubel, Dr. Jim Watson, Katharine Jacobs, Dr. William Thomas and John Ausen.

Athletic Turf (P.A.T.) system, was also called upon. He noted that home lawns should be designed to have moisture storage systems, and that improved rooting systems are the key. He also said that growth regulators may have some future effect on the efforts to reduce water use, and that "increasing reservoir systems is a possibility to go

with increased water needs."

#### About legislation

John Ausen of Hyperion Field Club, Johnston, Iowa, and Bruce Cadenelli of Hollywood Golf Club, Deal, N.J., attacked the question of government legislation as it pertains to water usage.

"Some of our state meetings are

raising an awareness that there could be a potential problem," said Ausen. "So we're trying to develop a conservation program of our own. And we've put together a survey showing that were not frivolous.

"The GCSAA is probably the group that will pull this all together."

Cadenelli said that water restric-

## Turf water use rates found by Texas A&M

Researchers at Texas A&M University have determined water use rates of several types of turfgrass, by species, according to Dr. James Beard.

The turfgrasses were divided into cool-season and warm-season for purposes of the experiments. They were ranked "very low," "low," "medium," "high," and "very high." The experiment was conducted in an environmental chamber under non-limiting moisture conditions. Here is how Texas A&M ranked the grasses:

#### Warm-season

VERY LOW: buffalograss

LOW: bermudagrass hybrids, centipedegrass, bermudagrass, zoysiagrass, blue brama

MEDIUM: bahiagrass, seashore paspalum, St. Augustinegrass, zoysiagrass hybrids

HIGH: none

VERY HIGH: none

#### Cool-season

VERY LOW: none

LOW: none

MEDIUM: fine fescue, chewing fescue, red fescue

HIGH: perennial ryegrass

VERY HIGH: tall fescue, creeping bentgrass, annual bluegrass, Kentucky bluegrass, Italian ryegrass

"The biggest thing facing us is the water problem," Dr. Beard says. "Most improvements in hardiness to environmental stress have been purely by chance in the past. In the future, however, we hope to be able to help the breeder.

conservation, reduced mowing, more efficient use of fertilizer, fewer poa annua problems, fewer disease problems, reduced soil management problems, better playing surfaces and reduced maintenance costs. □

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tions in New Jersey this summer affected nearly 50 percent of all golf courses. The government told superintendents that no watering of fairways was allowed, and that they could syringe for just 10 minutes in the evening.

"The state made no differentiation among turfgrass uses," he said. "We've got to make our state officials aware of the differences in turfgrasses. And we've got to take a more active role in creating legislation that is kind to golf.

"Most of us have said that we could live with a 25 percent reduction (in water usage) and not adversely affect the turfgrass. We haven't made much headway in four years," Cadenelli concluded.

Though he was the first speaker, one of Horton's comments aptly summed up the entire session:

Golf course superintendents must prepare for the future. We are better equipped to get involved than our modesty sometimes allows us to admit."

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