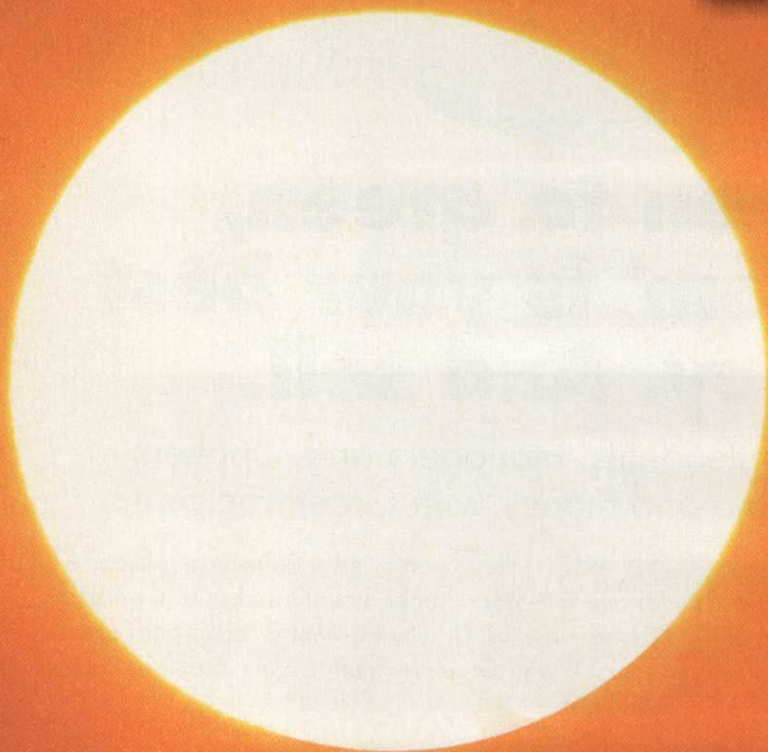


High and Dry?



You can learn from those who endured the dreadful drought of 1999

BY BRUCE ALLAR

Try as you might to erase them, but memories of last year's drought blaze in the mind like the hot summer sun. Catch wind of any superintendent's "desert storm" war stories, and the travails of the summer of 1999 blast back to the surface — along with fears that the pain will be repeated this summer.

You certainly can't help but feel Trent Inman's pain. The second-year superintendent at Royce Brook GC in Somerville, N.J., says "we basically ran out of water July 8" when the course's wet well underwent an emergency shutdown because the water level in the reservoir dipped too low. Inman went waterless for nearly a month before some pumping capacity returned.

During that desiccated July, when less than one-tenth inch of rain fell in the region, 75 acres of bentgrass fairways at Royce Brook "pretty much got torched," Inman says. "It's something I don't ever want to see again — that much bentgrass going cardboard brown," he adds.

Inman closed 18 of the course's 36 holes and pleaded for understanding from his general manager and his golfers. Is there a happy ending to this torrid tragedy? Not really. While Inman saved his tees, greens and approaches with selective watering during the summer, he encountered another ironic misfortune on the fairways. After he reseeded the dead fairways in August, he watched his efforts wash away in torrents of runoff water during heavy September rains that accompanied Hurricane Floyd.

However, Inman triple-aerified and re-seeded in October and is finally on his way to recovery — if the weather cooperates. "The biggest thing I'm worried about is having this many seeds going in as far as having disease pressure later in the year," Inman says.

The climate has been a superintendent's tyrant in recent years. And those who believe

in global warming and human-induced climate change are saying that the cruelty will not end.

Many superintendents, whether they trust the global warming doomsayers or not, are bracing for another dry season this summer. In fact, the National Oceanic and Atmospheric Administration reports that the United States is currently experiencing a worsening drought after recording the warmest winter in 105 years.

This time around, however, superintendents can learn from the harsh lessons from drought '99 to improve their chances of keeping courses playable.

Survival skills

Few of us require reminders of the tinderbox conditions that settled over the Northeast and Middle Atlantic states during the past few years, the Dust Bowl-like siege in Texas, and the moisture deficit in Kentucky, Ohio and other areas of the Southeast and Midwest.

The good news, says Stan Zontek, mid-Atlantic director of the USGA's green section, is turf managers saw how resilient grass can be.

"Most superintendents learned that grass is a lot tougher than we give it credit for," Zontek says. "Grass has a very efficient dormancy cycle, and we forget that."

Those who survived the scorching, according to Zontek, took these basic steps to do so:

- restricted cart traffic to paths and off of dormant fairways;
- raised mowing heights;
- hand-watered fairways;
- moderated fertility; and
- aerated to control thatch.

"You need to aerate in anticipation of a dry period almost as preventive maintenance," Zontek adds. "That lets what rainfall you do get soak in."

Aerification also allows deeper roots to develop to pull moisture from a greater depth, Zontek notes. He also warns that too much fertilizer makes grass softer, lusher and there-

Continued on page 32

High and Dry?

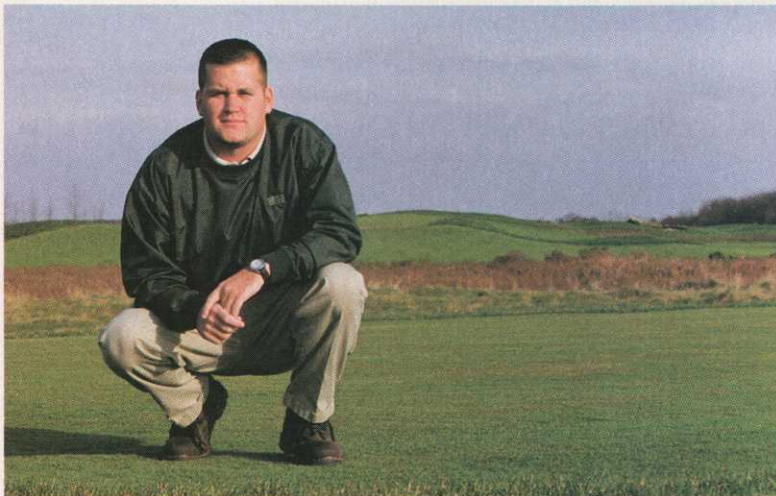
Continued from page 31

fore thirstier. "You don't want lush turf going into a period when you can't water it," he says.

Tim Cunningham, superintendent at The Country Clubs of Fox Meadow in Medina, Ohio, plans to do more flushing of his turf during the next dry spell. With heavy and infrequent watering, rather than daily and light sprinklings, he hopes to keep the roots deeper.

"Light watering tends to bring root systems to the top and moisture dissipates before (the turf) gets the full effect," Cunningham says.

Tom Kastler, superintendent at the Club at Runaway Bay in northwestern Texas, survived



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— Trent Inman

last year's dry heat, but his water source, nearby Lake Bridgeport, was 16 feet below the normal level in the spring. Kastler received notice in April from local officials that a water restriction contingency plan will be implemented should the drought continue since Runaway Bay's water source is also a source for the city of Fort Worth.

With wall-to-wall irrigation, Runaway Bay hasn't lost any patches of its SR 10-20 bentgrass greens since they were seeded four years ago. But Kastler inspects them for trouble spots as carefully as a parent bathing an infant. He also checks them for morning dew.

"The greens have severe undulations," he says, explaining that if dew is uniform across the greens it means they were watered correctly the previous day. "If (the dew) is thin or nonexistent on the crests or undulations then I know not enough moisture was put down," he adds.

Kastler assigns two workers to the greens, one for each nine. They're armed daily with syringe hoses and pitchforks.

They also roll the greens every Monday

with spiker reels to open up the oxygen and water exchanges.

Water wisdom

Experts warn that overreacting to initial dry conditions with excess water can cause more problems down the road. But Kastler doesn't fear overwatering. "Never let anybody say you're putting too much water on unless your (greens) are just soupy," he explains.

Kastler was forced to commit another worker to a 500-gallon tanker truck to hand-spray older trees outside of irrigation boundaries. The 50-plus-year-old oaks, set in rocky soil, were suffering. The trees were supplemented with a biological product so they could feed themselves, but they were put on a diet during the hottest months with lightly granulated fertilizer and light rates of foliar.

"In spring, you fatten 'em up like a cow going to slaughter because that's what the poor devils are fixing to hit when it's 100 degrees in July," Kastler says. "I run 'em lean and mean in the summer."

Bill Spence, superintendent at The Country Club at Brookline, Mass., also has a drought mentality about summer course management. So much stress is placed on grass to accommodate golfers' demands (for faster greens) that crews already are "doing a sort of controlled drought" to keep greens hard and dry, he says. That mindset served Spence well going into last year's Ryder Cup at The Country Club. "As long as I can irrigate," he says, "I'd rather have dry."

It helped, of course, to have abundant resources. Spence faced no water restrictions (he was able to purchase water from the city when needed), and he had an extra half-dozen staff members to prepare the course. Even so, he pinpointed his efforts on the 18 competition holes, letting the club's other nine suffer, and he concentrated on the areas that would be inside the gallery ropes. There he remained in complete control of soil moisture.

Hand-watering fairways became a priority, particularly in the rocky-soiled Northeast, where the stones below the surface tend to heat ground temperatures and speed turf dormancy.

Interestingly, Spence's biggest problem near Ryder Cup time occurred because of a sudden burst of moisture — 9 1/2 inches of rain during the week before the tournament. Japanese

Continued on page 35

High and Dry?

Continued from page 32

grub beetles, which had burrowed deep into the soil beyond the reach of insecticides, surfaced after the cloudbursts. Crows and squirrels tore up tees and other areas while hunting the grubs, which called for emergency repairs. "We had one plan in place for lack of water and one for excess water," Spence says.

Less staffed but also successful at combating the lack of moisture was Joe Lyons, the superintendent at Kearney Hill Golf Links, a public course in Lexington, Ky. This Pete Dye-designed, links-style facility is owned by the city of Lexington, which supplied the course with backup water for a fee during the biggest crunch times.

"I dry out a lot more quickly than other courses," Lyons says of his links layout. Yet with a (seasonal) crew of only 20, he survived — in large part because of the excellent Dye superstructure. Two lakes, one 15 acres and the other 14, fed the irrigation system, and a super-efficient drainage design collected what replenishments were available. "If you get an inch of rain, whatever gets into the ground will get into the drain tiles and back into my lakes," Lyons says.

He also pumped from two wells on the course. Nonetheless, during last summer's drought, one well dried up and the other dropped from about 60 gallons per minute to 20. Water reservoir levels reached a nadir, with only two or three feet left in the second lake

at one point. The city restricted watering and allowed it only during certain times of night.

The Kearney Hill crew syringed greens during the day to cool them down and used wetting agents to maximize moisture. "As you go along with these droughts, you get more efficient with watering," Lyons notes.

He has learned, for instance, that when the wind blows over his treeless course, he can water an entire fairway from one side, letting the air handle dispersion. He also keeps mowing equipment out of grass bunkers to protect turf health.

This former stop on the senior's tour (the Bank One Senior Golf Classic left Lexington in 1997) is planted with Penncross bentgrass fairways and tees, Penn Links bentgrass greens and rye bluegrass, with some fescues in the rough.

The rough suffered badly, says Lyons, who has been substituting warm-season grasses in his deepest bentgrass bunkers for added durability.

Inman learned his own lessons the hard way last summer in New Jersey. Next time, he'll be more prepared because he has increased the capacity of his irrigation system. Inman offers advice to other superintendents.

"Really look at other courses with similar-size properties, climate and species," he says. "Make sure you've got at least as much water as they do." ■

Allar is a free-lance writer from Floyds Knobs, Ind.

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Thinking Globally

Is global warming fact or fantasy? Superintendents give varying degrees of credence to theories of human-induced climate change.

At one polar extreme, guys like Tom Kastler of the Club at Runaway Bay in northwestern Texas, pooh-pooh the thesis that we've altered our weather mainly through emissions of fossil fuels leading to a greenhouse effect.

"Absolute hogwash," Kastler says. "We're just going into a blip. Two hundred years in a hydrologic or geologic cycle isn't even a quarter of a blink of an eye."

Trent Inman, superintendent at Somerville, N.J.-based Royce Brook GC echoes Kastler's opinion. "Eventually, things are going to balance out," he says.

But others like Tim Cunningham of The Country Clubs of Fox Meadow in Medina, Ohio, observe changes in weather patterns,

explainable or not. He describes the current cycle as "intermittent drought seasons" and is frustrated by excessive wet followed by excessive dry. "I don't even know what normal is anymore," he says.

And Joe Lyons, superintendent at Kearney Hill in Lexington, Ky., confirms the climatological data with his own observation. "It's gotten a little warmer," the 20-plus-year turf veteran says. Incidentally, play at Kearney Hill was up 50 percent in March and put added stress on his grass.

Mike Kenna, director of green section research for USGA, says he's convinced by the data. "But when you talk to professional meteorologists and they can't tell you what it's going to mean, it's a little bit frustrating," he adds.

Those researchers predict more severe thunderstorms and hurricanes will accompany more frequent drought during the greenhouse era. But that type of weather

occurred in the 1920s as well, so how do you explain it, Kenna asks.

If you truly want something to worry about, Kenna notes, consider that the quantity of water available per person is already going down, climate change or no, because of population increases. Also declining is the quality of the water used to irrigate golf courses, which must rely more on recycled or waste sources. So the grasses of the future will likely be forced to survive on less plentiful, less clean water.

Bermudagrass requires less water than rye, and some course managers, particularly in the transition zone, may need to confront that during a future crisis, according to Kenna. But, don't believe the gloom and doom that golf is going to disappear, he says.

"We're going to have golf," Kennis says. "There might be bermuda greens, not bentgrass greens, but there's going to be golf."