

BASF Means Better Results...Which Means

**better
TURF™**



(And everybody loves better turf.)

If you get a group of superintendents together and ask what they want, they'll tell you plenty (trust us, we did just that). But one thing that really stood out was "effective results." Lucky for us, we provide that every day. Through intensive research, field trials and university studies across the country, we vigorously test BASF products to make sure they'll deliver better results — results that mean your turf will pass the most important test: your golfers.

Find out more: turffacts.com

Find a distributor: 800-545-9525

**We Don't Make The Turf.
We Make It Better.™**

 **BASF**

The Chemical Company

Always read and follow label directions.
We Don't Make The Turf. We Make It Better. is a trademark of BASF.
© 2006 BASF Corporation. All rights reserved.

WATER Tight

Colorado golf
courses face
complex rules
and regulations
dating back many
years when it
comes to
irrigation
privileges



BY ANTHONY PLOPPI
CONTRIBUTING EDITOR

For nearly 150 years, the arid and semi-arid states that make up the mountain region of the United States have thrived and died on one thing — *water*.

Since the Colorado gold rush of 1859, water has been the lifeblood of all existence in an area of the country that can see average rainfall anywhere from 9 inches to 15 inches a year. Out there, as the saying goes, “Whiskey is for drinking, water is for fighting.”

Since then water has proved to be the linchpin in deciding where any sort of development from towns to farms to industry can survive. An intricate set of rules and regulations dating back to the gold rush days determines how much water an entity receives — 80 percent of which comes from the snow pack in the nearby Rocky Mountains and 20 percent from rainfall.

But that hasn't stopped development on both sides of the

Rockies, known as the western slope and the eastern slope. To make matters worse, the west has the water — namely in the Colorado River — and the east has the population that's centered by the city of Denver. The result is that obtaining water in the Denver area can reach astronomical costs. In one suburb the cost for a new home to attach to the municipal water system is more than \$24,000. The price to drill a residential well is between \$10,000 and \$20,000.

"Water is gold and king out here," said Mark Krick, superintendent at The Homestead in Edgewater, Colo.

The biggest problem faced by Colorado and other states in similar situations is that demand exceeds supply in many areas and has as far back as the 1850s. In Colorado a series of often times confounding laws and regulations has been implemented to deal with the partitioning out of water, all overseen by the Colorado Division of Water Resources (CDWR).

Understanding the guidelines is a daunting task. One paper, *Water 101*, put out by the CDWR to explain the basics to residents, is 28 pages. Another pamphlet that defines well permits and water rights is 20 pages.

"It's a different game out here," Krick says.

According to Dick Wolf, an assistant engineer with the CDWR, the water rights stem from the Doctrine of Prior Appropriation, which was made into law in 1876 and is often known by the term, "First in Time, First in Right."

According to the doctrine, whatever landowner first established rights to water, often dating back to the 1850s, subsequent owners of that land inherit and maintain those rights. All subsequent water users have access to the water in the order that their water rights were established, known as senior rights and junior rights.

Not only is the order established but also the amount that can be drawn by each user. That amount is not just calculated by the

amount drawn from the water source, such as a well, river or surface runoff, but also by the amount of water that subsequently makes its way back to the water supply.

In other words, if a golf course developer purchases land from a farmer on which he used 100 million gallons a year and the state calculated 50 percent returned to the water supply, the golf course can't exceed usage or fall short on the amount of water returned to the aquifer or surface areas such as streams or lakes. Even if water is available to a landowner through a well, river or surface runoff, he may not have access to it if other users with more seniority are affected by his drawing off the exiting supply.

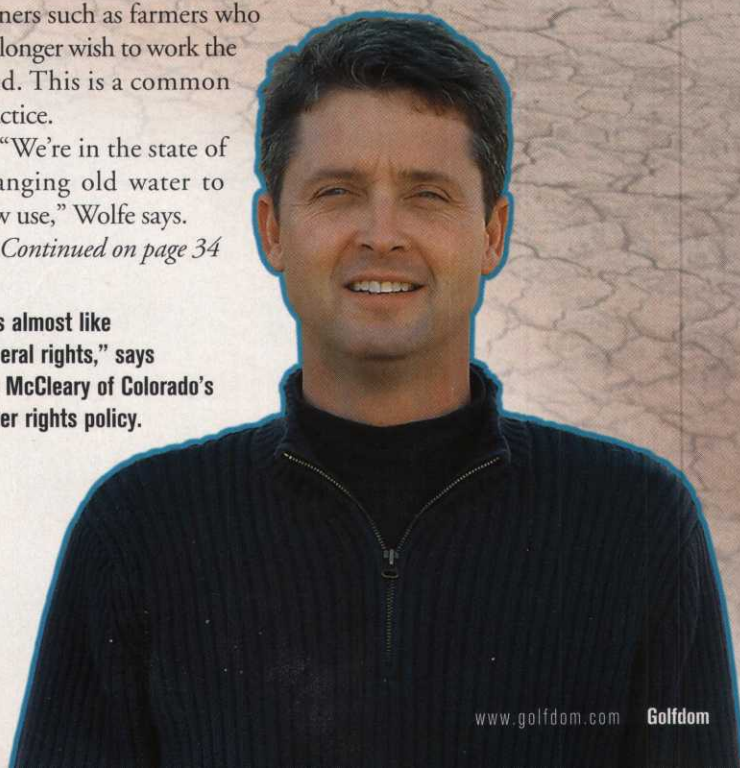
"It's almost like mineral rights," says Joe McCleary, certified superintendent of Saddle Rock Golf Course, owned by the city of Aurora and located just east of Denver.

There is always the option of buying other water rights to increase water availability. Since the rights are transferable, a golf course developer can purchase them, including the seniority in obtaining water, from owners such as farmers who no longer wish to work the land. This is a common practice.

"We're in the state of changing old water to new use," Wolfe says.

Continued on page 34

"It's almost like mineral rights," says Joe McCleary of Colorado's water rights policy.



ONE SUPERINTENDENT'S FLIGHT

Scott Phelps could be the poster boy for the confusing and often times frustrating world of Colorado water regulations in his tenure as certified superintendent of two courses in the town of Littleton, located in the foothills of the Rocky Mountains.

In 2002, while at Deer Creek Village Golf Club, Phelps came face to face with a serious drought. A stream running through the property was the course's major source of water but not a guarantee. A water user some 20 miles downstream had a higher priority or more senior water rights. That meant Phelps could only watch as water that he was not allowed to use flowed through the course.

According to regulations established by the Colorado Division of Water Resources, if it was determined the water would evaporate or seep into the stream banks before reaching the other user, Phelps' course could take the water through what is known as a "futile call." But the 2002 drought was so severe and

water flow from the minimal snow pack in the Rockies was so low that there was not even enough for Phelps' course from which to draw.

"We knew by May we would not have enough water," he said. By mid summer the creek was dry.

Phelps stopped irrigating fairways and roughs to make sure he had enough water for tees and greens. He expected heavy rains would fill up his on-course ponds, but they never came that year and much of his course burned out.

Phelps is now at Arrowhead Golf Club, also in Littleton. Arrowhead has a different setup from Deer Creek — it purchases some of its water from the municipality of Aurora, about 20 miles away, and some from a mine in the Rockies. The lease with Aurora runs through 2022, but Arrowhead has been on a water restriction implemented by the municipality since the drought of 2002. Because of that, the course pur-

chases 300-acre feet (an acre foot is roughly 326,000 gallons) from the mine. That water is pumped not to the golf course but to a reservoir owned by Aurora.

Aurora then supplies Arrowhead with the same amount of water from another reservoir it owns, but that water is much closer to the course. The exchange, though, is not for the 300 acre feet. The state has determined that 35 acre feet is lost to evaporation during the 100-mile trip down the mountain so Arrowhead ends up with 265 acre feet a year.

This year Phelps hopes water restrictions might be lifted and he and everyone else can breath a sigh of relief.

— Anthony Pioppi

Scott Phelps, certified superintendent of Arrowhead Golf Club, knows all about Colorado water regulations.



Continued from page 33

Water is moved from the mountains to users through an intricate series of ditches, canals, pipes and, in the case of getting water from the Western Slope to the Eastern Slope, tunnels cut through mountains.

Until water gets to the users, the state keeps an eye on flow to prevent theft by using satellite monitors overseen by water commissioners. Once the water makes its way onto private land where a number of purchasers can use it for myriad reasons, persons known as ditch riders, who are hired by the private entities, monitor the water consumption.

"It's a crude system but effective," Krick says.

Although it seems like a daunting task to keep an eye on all of that water, Wolfe says the best policing is often performed by neighbors who report unscrupulous users.

One way for courses to get around the water issue is to use reclaimed water. But demand for effluent is so high that there

Continued on page 36

EWING
Irrigation & Golf & Industrial

Turf and Irrigation Experts
for all your needs.

Featuring:

- Erosion Control
- Seed / Fertilizer / Pesticides
- Fountains
- Drainage Pipe and Fittings
- **Hunter**
- Irrigation Supplies

800.343.9464 | www.ewing1.com

Over 150 Locations
est. 1922



TEST EQUIPMENT FOR YOUR COURSE **ON OUR COURSE.**

With over 60% of America's public and private golf courses within a day's drive of Louisville, it makes perfect sense to attend the International Lawn, Garden & Power Equipment Exposition, October 6-8, 2006.

A superintendent attending EXPO said, "Besides equipment, there's so much more — parts, attachments, utility carts. I even found a better source for trimmer line." All exhibitors will be under one roof, just steps from the 20-acre demo area.

EXPO 2006 offers you a chance to:

- Try out equipment in the Outdoor Demo Area all 3 days
- See new products and technologies
- Network with suppliers
- Swap success stories with other superintendents
- Attend seminars
- Enjoy free concerts sponsored by Ariens and Briggs & Stratton
- Party at the new 4th Street Live entertainment district
- Visit Caesar's Riverboat Casino and more

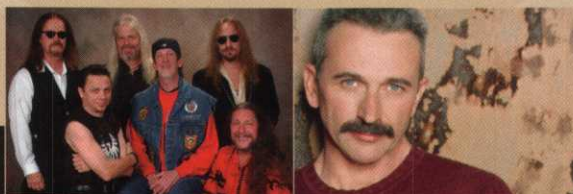
Get a jump on next year's season. Get to EXPO 2006.

October 6-8, 2006

Louisville, Kentucky



POWER. KNOWLEDGE. GROWTH.



AMERICA'S GOLF COURSES

Louisville is at the center of the golf industry.

**REGISTER TODAY
ONLINE AT
EXPO.MOW.ORG
OR CALL
(800) 558-8767**

SEE THE MARSHALL TUCKER BAND, FREE FRIDAY!

SEE AARON TIPPIN, FREE SATURDAY!



TURF TIP

Replacing turf?
If you're seeding,
sodding, or
using a divot mix
- Milorganite's
nitrogen and
phosphorus will
give you quick
and consistent
results.

For Better Results.
Naturally.

Milorganite®

1-800-287-9645

www.milorganite.com

06-061-1

Water Tight

Continued from page 34

is only enough of it in Aurora to handle the needs of six of the eight courses owned by the city, McCleary says.

Water issues on the eastern slope (where 80 percent of the population lives) have residents of the western slope (where 80 percent of the snow pack is found) worried as more and more water is diverted to the metro Denver area and away from their needs.

Andy Nikkari, who has been superintendent of The Golf Club at Redlands Mesa in Grand Junction on the western slope since 2001, says plenty of water has been available every year, even in the drought of 2003, when he received only three-tenths of an inch of rain over 3.5 months. However, there is concern that could change as the population in Denver area continues to rise dramatically.

Even though water has always been plentiful, Nikkari says he has reduced water usage every year.

"We do our best to not over-water. We make adjustments every day," he says. "You don't need a weather station. It's hot and dry every day."

For Nikkari and others in the area, that means temperatures more than 100 degrees Fahrenheit, humidity at 5 percent or less and less than 9 inches of rain annually.


The water for his course comes in through a canal owned by the city of Grand Junction. He pays a flat monthly fee for the service.

Colorado and much of the mountain region is in the midst of what has been


termed a "multi-year, chronic regional drought." In 2002 and 2003, sections on the eastern slope were hit with severe water restrictions that in many cases are still in effect. Some homeowners who built during that time are still forbidden from landscaping their property.

Not surprisingly, golf came under intense scrutiny for its water use. As a

result the Rocky Mountain Golf Course Superintendents Association, along with The Colorado Golf Association, Colorado Women's Golf Association, Colorado Chapter of the Golf Course Owners Association and the Colorado Section PGA, sponsored a study by the Colorado State University Department of Agricultural and Resource Economics titled, "The Economic Contribution of Golf Industry: Environmental Aspects of Golf in Colorado." One of the most telling results



Colorado and much
of the mountain
region is in the midst
of what has been
termed a 'multi-year,
chronic regional
drought.'



was the fact that golf courses use less than one-third of 1 percent of all water used in Colorado.

The study also determined that nearly half of all golf course water used in 2000 was recycled and that the average square foot of maintained turf on a golf course uses 15 gallons of water a year where the average square foot of a bluegrass lawn requires 18 gallons a year.

The only good result of the drought might just be the public's awareness of how efficiently golf courses use water.

"The drought really put the magnifying glass on the green industry," McCleary says. "It really forced us to prove our mettle." ■



Go the Distance on Pythium Control.



Drive Pythium off your course with Terrazole® 35WP fungicide. Terrazole can be used on newly seeded areas or on established turf where it works with both preventative and curative control. And after years of on-course experience on tees and greens, no resistance has ever been reported. Ask your chemical supplier for Terrazole – Pythium control that goes the distance.

Terrazole®
FUNGICIDE



Always read and follow label directions.
Terrazole is a registered trademark of Chemtura Corporation.
©2006 Chemtura Corporation TZ-ad01-0206 CCP-11206

www.chemtura.com

Here in the United States, golf course superintendents usually unite in common concerns about reducing chemical usage or protecting water resources. In Great Britain and most of Europe, the controversial issue within the profession is golf course sustainability. Having visited Great Britain recently, the “sustainable” issue has divided many golf course managers and superintendents.

The Royal and Ancient Society of St. Andrews (R&A), the ruling body for golf outside of North America, has declared that golf courses should become sustainable. The concept is that golf courses should strive to be naturally sustainable, requiring reduced energy inputs (fertilizers, pesticides, water). Interestingly, coastal courses left to “sustain” themselves would eventually succumb to natural succession and become scrub and trees. However, the debate whether correctly or mistakenly has boiled down to one primary issue — the use of fescues and fescue mixes for greens, tees and fairways and the supposedly associated lower management intensities required for these varieties.

The classic coastal courses of Great Britain were originally fescue or established to fescue since the earliest days of golf. Fine fescues were well adapted to droughty sandy soils and a mild moist temperate climate common to Great Britain’s coastal regions. They thrived when coupled with low-intensity cultural programs and little traffic.

Unfortunately, not all golf courses in Great Britain and Europe were built on well-drained sands under mild climatic conditions. Clay soils that stayed wet during the winter and spring and dried out and cracked in the summer were not conducive to maintaining fescues. Combined with climatic differences and higher cultural intensity requirements on many golf courses, a definite conflict arose.

The difficulty with the one-grass-fits-all concept is it avoids ecological community principles such as niche and turfgrass competition, which define adaptability. Turfgrass species have specific resource and conditional requirements. For example, resources such as light, nutrients and water help define the species niche, along with

A Controversy That Is Unsustainable

BY KARL DANNEBERGER



THE DIFFICULTY
WITH THE ONE-
GRASS-FITS-ALL
CONCEPT IS IT
AVOIDS ECOLOGICAL
COMMUNITY
PRINCIPLES

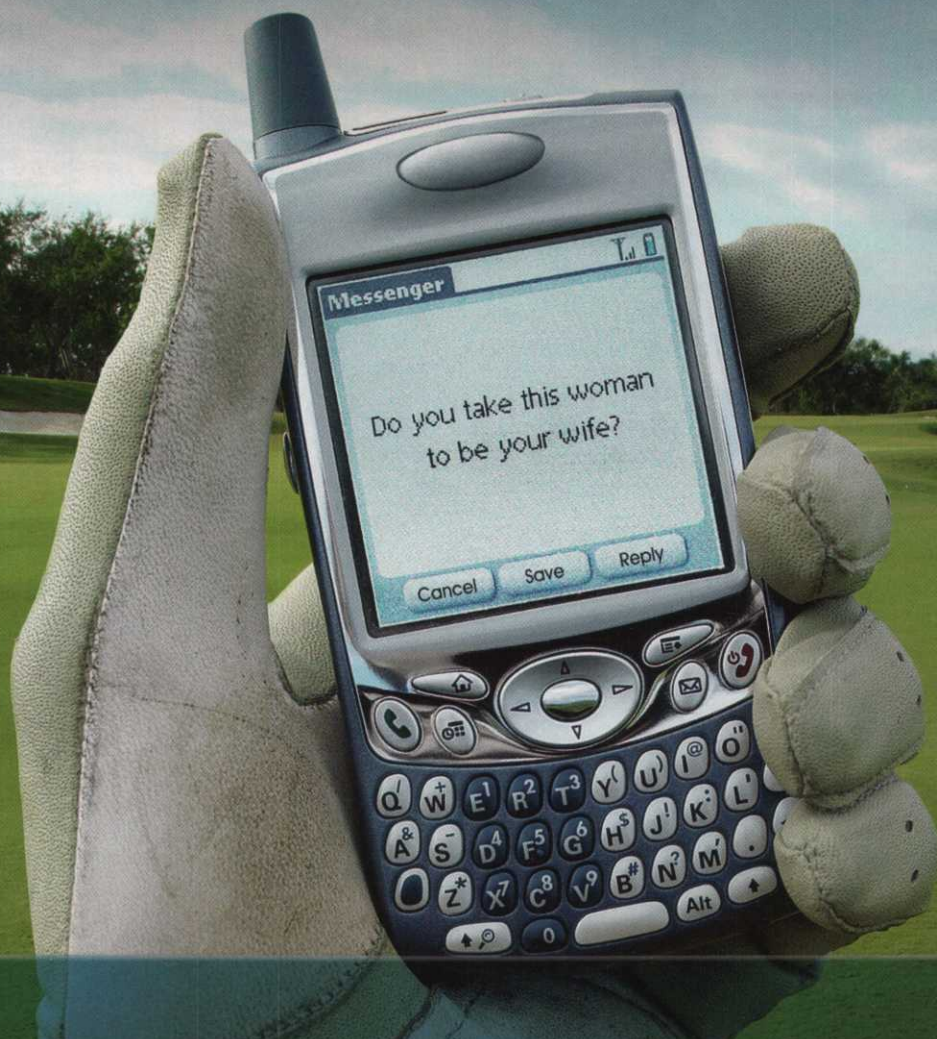
the soil type, degree of compaction and soil pH. In addition, management conditions such as mowing height and irrigation influence turfgrass survivability. Once competing species are introduced, the competitive intensity is a result of niche overlap. In the face of competing species, the actual niche “size” of the desirable turfgrass species may shrink to the point that the desired species may be driven to extinction.

The major competitor of links-type fescues, as well as other cool-season turfgrasses, is *Poa annua*. On traditional links golf courses in Great Britain, management practices favor the fescue over the *Poa*. Minimal fertilization, reduced irrigation and higher mowing heights, coupled with favorable soil and climatic conditions and a lack of wear or traffic, can favor fescue. However, fescues become less suitable and succumb to *Poa annua* invasion in situations where climatic conditions are stressful, soils become more compacted, wear injury increases and management practices are more intensive.

Influencing management decisions are golfers’ expectations. What they pay to play shapes their perceptions. Ignoring a golfer’s wishes is unsustainable economically.

Managing a turfgrass species in a situation that’s not suited or where competition exists from other species is like forcing a square peg into a round hole. The management inputs necessary become prohibitive or useless in the face of species more adapted for the given situation. There are a few fairway and green situations where fescue may succeed. However, like the controversy itself, the assumption that one turfgrass is adaptable to all conditions is unsustainable.

Contact Karl Danneberger, Ph.D., *Golfdom*’s science editor and a turfgrass professor from The Ohio State University, at danneberger.1@osu.edu.



Conditions worthy of devotion.

How do you measure playability? By the lush appearance, the smooth play, or a golfer's commitment to forsake all others for one more round. A Primo MAXX® treated course has that kind of effect on golfers. This premier plant growth regulator makes turf thicker and stronger for the ultimate in play. Not only that, it preconditions turf and strengthens the root system. Both greens and fairways require fewer mowings, saving fuel and maintenance costs — it's practically liquid labor.

Turf that's consistent and yet provides crisper play, that's a golfer's dream. At Syngenta, we help make that dream a reality.





Safe

Florida superintendent Chuck Calhoun has implemented a strict program to keep his employees out of the danger zone

By Larry Aylward, Editor in Chief

Keeping

Got safety? Chuck Calhoun does. And the golf course superintendent of John's Island Club in Vero Beach, Fla., is proud of it. He should be. The club's safety program is the major reason the maintenance crew hasn't experienced an accident in more than two years.

"And that's remarkable considering we had to clean up from three hurricanes ... and a myriad of other related problems," Calhoun says.

Calhoun has a list of safety programs that are strictly enforced. Safety begins inside the maintenance facility, where the maintenance crew has restricted access to all areas where equipment is serviced and repaired.

"Only the mechanics and supervisors are allowed in these areas," Calhoun says. "This helps to avoid slipping on floors and the many other hazards in this area."

Calhoun also has implemented a written and enforced personal protective equipment policy for all machinery that crew members must follow. It covers everything from weed eaters to backhoes.

In addition, Calhoun screens a monthly safety video program for crew members. Attendance is mandatory and a test is given after the screening.

Calhoun's safety program has zero tolerance for employees who use headphones and cell phones while working on the course. "These devices may prevent an employee from hearing a problem with his or her machine and take away the full attention needed to operate [it]," he says.

The safety program also includes a written hazard communication program that's

reviewed in its entirety every six months. "We have one of the employees read the program word for word to his and her peers to stress the importance of realizing the hazards not only in the workplace but even in the home," Calhoun says.

The most important part of any safety program is teamwork, says Calhoun, who stresses to his employees, "When in doubt, get help."

"It's very important to let your employees know that asking for help in any situation, whether it involves lifting or trying to free a piece of equipment that may have failed or is stuck, is encouraged to avoid over-exertion," Calhoun says.

Golfdom asked other superintendents to think about their maintenance operations for a moment in regard to safety and then to answer these two questions:

1. What are the most important products for worker safety that you and your crew use day in and day out?

2. What new safety products would you like to see introduced to the golf industry and why?

Jim Nicol, certified superintendent for Hazeltine National Golf Club in Chaska, Minn., said eyeglasses and ear protection are the most important products he and his crew use.

As far as new safety products go, Nicol

said he would like to see a more user-friendly and more comfortable respirator introduced to the market.

Steve Numbers, superintendent of Westfield Group Country Club in Westfield Center, Ohio, said an insurance company owns his club so "everything related to worker safety is important." Numbers cited eye and ear protection and also said hard hats and sunscreen are important products as are gloves, respirators, spray suits and other heavy-duty apparel, such as chaps for tree-maintenance projects.

Numbers doesn't have any requests for new safety equipment, but that doesn't mean he wouldn't like to see some items improved. "I do think that improving comfort is important," Numbers said. "People will then complain less."

Hard hats that cover the ears from the sun and include liners that help keep workers' heads cool in the heat would be solid improvements, he noted.

Michelle L. Frazier-Feher, certified superintendent of Boston Hills Country Club in Hudson, Ohio, also stressed that earplugs and safety goggles are products her crew doesn't do without. She also cited safety switches on equipment as integral to her course's operation.

As far as new safety products, Frazier-Feher said "a far-fetched idea would be warning devices for staff and golfers [to detect] errant golf balls."

Makes good safety sense. ■

