

Scientists: Threats of drought loom in future



IN HIS GRIP CO-AUTHOR SPEAKING AT PRAYER BREAKFAST

NEW ORLEANS - Dr. Jim Sheard, co-author of In His Grip and Playing the Game, will speak at the annual Prayer Breakfast at the International Golf Course Conference and Show here at 7 a.m. Sunday, Feb. 20. Sheard, who wrote the books with former PGA Tour player Wally Armstrong, has written a third book, A Champion's Heart, which identifies the essential character qualities for success in life and sport. A former senior vice president for human resources and president with Federated Insurance Cos., and a former executive vice president with Personnel Decisions International, Sheard is co-founder of In His Grip Resources, headquartered in Owatonna, Minn.

LAKE CITY STUDENTS FIRST IN IA

ORLANDO, Fla. — Steven King, irrigation instructor at Lake City Community College, and students recently attended the 20th Annual Irrigation



Association Conference & Show here. The LCCC students and King were recognized as the first student chapter in the United States of the

Irrigation Association. The newly formed Irrigation Association student chapter at LCCC recently elected officers for the 1999-2000 school year, including President Todd McMahon. He is joined by Vice President Rick Helbling, Treasurer Mike Mcvickers, and Secretary Richard Adams.

TURF SCHOLARSHIP AWARDED

Brian Lentz of the Central Florida Golf Course Superintendents Association has presented Ricky Craig of Center Hill, Fla., with a \$1,500 Danny Burgess Memorial Scholarship at a ceremony at Windermere CC. Craig will attend the Golf Course Operations program at Lake City Community Col-



lege to pursue a career in golf turf management. Craig work-ed last year at Disney's Magnolia and Palm courses and was nominated for

the scholarship by Disney superintendent Scott Welder. Each year the Central Florida Superintendents Chapter holds the Danny Burgess Memorial Tournament at Windermere CC in memory of that club's former superintendent who died in 1994.

drought may want to institute a

By GARY BURCHFIELD

long-range management plan that includes the possibility of extended dry weather.

 OLUMBIA, Mo. — Golf course superintendents not prepared for

Climate models developed by researchers at the University of Missouri, Columbia, indicate a good probability of extremely dry conditions in the next four or five years, especially in the country's mid-section.

The past four years already have seen major droughts across Texas, Oklahoma and the Southern plains, much of the eastern Corn Belt and along the Eastern seaboard. Southwestern states suffered drought effects in 1996, 1998 and into 1999. Forest fires ravaged parts of Florida in 1997.

Across South Carolina, 1999 rainfall

\$2 MILLION IN PROJECTS FUNDED



was 16 to 20 inches below normal. Farmers in several areas have suffered major crop losses. Lawns and golf courses have seen their share of stress in several regions. Now, forecasters are predicting a high probability of more dry weather ahead.

The Missouri scientists studied precipi-Continued on page 30

Drought-proofing a golf course

As the old saying goes, "You can't control the weather. But you can be prepared for the possibilities."

Here are some tips to counteract drought effects, or at least lessen their impact on a golf course.

√ Long-range, consider finding an effluent water source for irrigation. According to Roch Gaussoin, Extension turfgrass specialist at the University of Nebraska, using wastewater to irrigate a golf course usually means the course will not have **Continued on page 32**

USGA's new financing eyes owls to turfgrasses

By MARK LESLIE

FAR HILLS, N.J. — The United States Golf Association (USGA) has continued its 17-year-old financial commitment to scientific research, to the point where it has "maxed out" its manpower resources.

The USGA Green Section Research Committee has doled out another \$848,763 for 17 new turfgrass and environmental research projects. Combined with some 72 other continuing projects, the donations total \$1,998,241 in 2000.

In the meantime, Director of Research Dr. Michael Kenna said: "Our commitment to research is not a problem. If this [research] committee wanted to go after more funding, we could probably get it. But I personally have reached a point where we can't add any projects."

The problem is finding the manpower and time to oversee the research and process the findings:

"We get 900 pages of research reports," Kenna said from his office in Stillwater, Okla. "When I came aboard in 1990 we had 23 projects, compared to 89 now."

That number took a leap when the USGA Green Section added an environmental focus. Several years ago, it began its support of the Audubon Cooperative Sanctuary Sys-



tem and created Wildlife Links, which deals with wildlife habitat issues regarding species that live on and are affected by golf courses.

The mostly highly funded new projects each obtained approximately \$75,000. They are:

• Development of gray leaf spotresistant perennial ryegrass through breeding and biotechnological approaches, by Mark Faman at the University of Kentucky.

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Pellrene: Canada's best likes the old, loves the new

By PETER BLAIS

VANCOUVER, British Columbia, Canada — He's built new courses that went on to host Canadian championships. He's refurbished classics that legends A.W. Tillinghast and Stanley Thompson would still be proud to call their own.

Whether it be ringing in the new or restoring the old, Canadian Superintendent of the Year Dennis Pellrene (as recognized by the Canadian Golf Superintendents Association) is the man for the job.

"New construction is always exciting because there are so many things that come up that you have to solve," Pellrene said. "But being involved with an old course is exciting, too."

Pellrene started his career in 1960 on a nine-hole, oiledsand greens course in Camrose, Alberta. He converted the greens to turfgrass and was named greenkeeper during his four-year tenure.

He moved east with stops at St. Catharines Golf & Country Club and Erie Downs Golf Club in Fort Erie, Ontario, before Reg Acomb, general manager at Toronto's Glen Abbey Golf Club, approached him about building the Jack Nicklaus-designed course that eventually became the home of the Canadian Open. Glen Abbey opened in 1976 and held the first of four Opens under Pellrene's watch in 1977.

The two people Pellrene said had the greatest effect on his professional development entered his life during his Glen Abbey years — Ed Etchells and Jack Eggens.





Dennis Pellrene at Capilano Golf & Country Club near Vancouver.



Scientists warn of drought possibilities

Continued from page 29

tation patterns for the period 1885-1996 and determined that precipitation has followed an approximate 20-year cycle of wet and dry periods. The driest periods occurred in 1895-1900, 1915-20, 1935-40, 1955-60 and, most recently, in the late 1970s.

The most severe droughts were those of the 1930s and 1950s, and they extended over most of the contiguous United States. About 65 percent of the country was in "severe to extreme drought" during the 1930s. The Central Plains hasnnot had a widespread severe drought for several years, but it may be due.

In fact, data compiled by the National Drought Mitigation Center, which is housed at the University of Nebraska, shows that severe drought conditions at the end of 1999 were present across a wide area of northeast Nebraska and northwest Iowa; across central Texas into Louisiana; and from eastern Missouri through Illinois, Indiana and much of Ohio and Kentucky. Year-to-date rainfall totals were 74 percent of normal at Little Rock, Ark., 67 percent at Lake Charles, La., and 63 percent in Houston.

Lincoln, Neb., recently experienced 49 days without precipitation — the fourthlongest dry spell in the city's history — and the warmest November in 113 years of record-keeping.

Dr. Qi "Steve" Hu, assistant professor and agricultural climatologist at the University of Nebraska, analyzed historical climate data from weather stations across the Central Plains for the period 1895-1995. The data shows a significant 20-year precipitation cycle. Formerly at Missouri, Hu and his collaborators there found this 20-year precipitation cycle is related to similar 20-year cycles in the North Atlantic region.

"It seems that global circulation patterns are influenced by variations in seasurface temperatures and sealevel pressure in the North Atlantic Ocean," Hu said. "These variations directly affect the intensity and circulation of the anticyclone (jet stream) across the midsection of the country."

DROUGHT CENTER PROVIDES ADVANCE WARNING

Climatologists for several years have been pushing for more advance planning on steps to deal with drought conditions. States and localities typically have disaster plans for hurricanes, blizzards, floods, tornadoes, power outages, nuclear accidents almost every type of disaster except drought.

While 29 states do have drought plans, most of these are response-oriented rather than mitigation-type plans that are aimed at reducing risk before drought occurs. That is beginning to change, though, and it may be just in time.

Texas is developing a more comprehensive droughtmitigation plan. Nebraska is revising its drought plan (originally developed in 1986) to place more emphasis on mitigation. New Mexico recently developed a mitigation plan.

As a result of the widespread 1996 drought, the U.S. Congress passed the National Drought Policy Act in 1998 and set up a commission, which is to provide Congress and the President with recommendations on an integrated national drought policy by April. "It's a question of risk

management vs. crisis manage-

ment," said Dr. Don Wilhite, director of the National Drought Mitigation Center (NDMC). "Because drought is often a local phenomenon or within a limited area, it's not always major 'news.' But for the past 100 years, an average of 15 percent of the U.S. every year has suffered some type of drought condition. California and Nevada suffered seven

Continued on next page



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Droughts worse centuries ago

Drought conditions actually have moderated compared to past times. Scientists at the University of Minnesota have studied long-term climate changes over the past 2,300 years by studying layered sediments. Droughts worse than the 1930s Dust Bowl were common before AD 1200.

The most pronounced drought periods were AD 200-370, AD 700-850 and AD 1000-1200. Drought conditions in past centuries have per-

sisted longer in the Great Plains region than in other areas of the country.

It is due to the region's continental location, where differing air masses tend to collide, such as warm dry air from the Pacific, cold dry air from the Arctic and moist tropical air from the Gulf of Mexico.

Will long-term droughts reoccur? Perhaps. But governments and organizations will have advance notice and better information available to help counter drought effects, thanks to the National Drought Mitigation Center.

Scientists warn of droughts

Continued from previous page consecutive drought years from the late 1980s through the early 1990s, but it seldom made the national headlines because droughts are 'nonstructural,' compared to earthquakes, floods, tornadoes, etc.'

The NDMC was established



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pre-emergence application. And there has never been any indication of weed resistance to RONSTAR: Plus, unlike DNA herbicides, RONSTAR® does not inhibit new root growth. So, there's

nothing to prevent your turf from growing fuller, lusher and stronger throughout the season. Remember, when it comes to weed control, it pays to play it safe with the time-proven performance of CHIPCO* RONSTAR:



in 1995, with support from the U.S. Department of Agriculture. Now, the center is partnering with USDA and NOAA's Climate Prediction Center to track developing drought conditions anywhere in the country. The most visible result is the weekly Drought Monitor, which was unveiled at the White House in Washington last July and is available to anyone via the Internet.

The map provides an up-todate summary of current drought areas across the 50 states, Puerto Rico and the Pacific possessions. It incorporates information from many sources at state, regional and national levels. Besides current conditions, it provides an outlook on where drought is likely to develop or worsen in the months ahead. The **Drought Monitor classifies** drought by severity levels.

"It's designed to provide a 'big picture,' so the general public, media, government officials and others can see what is happening around the country," Wilhite said. The map, updated weekly, is not designed to depict local conditions or replace drought warnings and watches issued by local or regional government entities, he said. "Local situations can be better interpreted by officials in the area.

"What it is designed to do is highlight emerging trouble spots to help state and federal agencies address potential problems earlier," he added. The idea is to enable agencies to coordinate planning and response efforts so they can implement mitigation programs to lessen drought impacts."

Wilhite said there is no universal drought definition, so the NDMC uses several indices to compile the Drought Monitor map, which shows where drought is emerging and where it is lingering across the United States. The monitor also shows how drought is affecting agriculture, wildfire danger and water supplies.

"It's designed for drought and water planners and policymakers," said Wilhite. "But many people find the information interesting. And, it's as easy to understand as the Weather Channel's travel advisory service."

The Drought Monitor and drought index maps can be accessed on the World Wide Web at http://enso.unl.edu/ monitor or

<http://enso.unl.edu/monitor>