

BRIEFS



TWEDT CITED FOR STEWARDSHIP

DES MOINES, Iowa — Ottumwa Country Club superintendent Gary Twedt has been honored with the Environmental Stewardship Award by the Iowa Alliance of Environmental Concerns (Ia AE). It was presented during the 64th Iowa Turfgrass Conference and Trade Show here Jan. 27. Twedt was given the award for his environmental sound management practices and public participation in educating people about turfgrass and the industry.

USGA SETS PHOENIX CONCLAVE

PHOENIX — The United States Golf Association (USGA) Green Section is conducting a regional conference at Phoenix Country Club on March 18, focusing on a variety of topics from rye-grass and bentgrass to water irrigation surveys, water quality and greens committees. The 7:30 a.m. to 3:15 p.m. conference will feature talks by USGA Construction Education Director Jim Moore and Regional Affairs Manager Ron Readl USGA Foundation Fellow Tea Dixon, Dr. Joe Duich of Penn State University; International Sees' Craig Edminster; Center for Irrigation Technology Director David Zoldoske; and Arizona Country Club Green Chairman Dr. Paul Rowe.



SPEAKERS PROGRAM EXPANDS

WASHINGTON, D.C. — The Golf Course Superintendents Association of America, Professional Lawn Care Association of America and RISE (Responsible Industry for a Sound Environment) report that their Ambassador Speakers Program has expanded into four Northeastern states. The joint outreach program motivates and prepares industry representatives to educate the public about the green industry's environmental benefits and to address consumer concerns.

BROWN HEADS ROCKY MOUNTAIN

The Rocky Mountain Golf Course Superintendents Association has elected a new board of directors, headed by President Dave Brown of Flatirons Golf Course (GC). Vice President is John Fitzgibbons of Meadows GC, and Secretary-Treasurer is Jim Wilkins of Arvada GC. On the board are Lee Terry of Pinehurst Country Club (CC), Mike Brennan of LaPlata Investments, Bobby Murtaugh of Perry Park CC, Rusty Oetker of Soil Horizons, Doug Jones of the city of Grant Junction, Gregg Blew of Wellshire GC and Doug DeVries of Montrose GC.

Seawall woes keep Pebble Beach busy

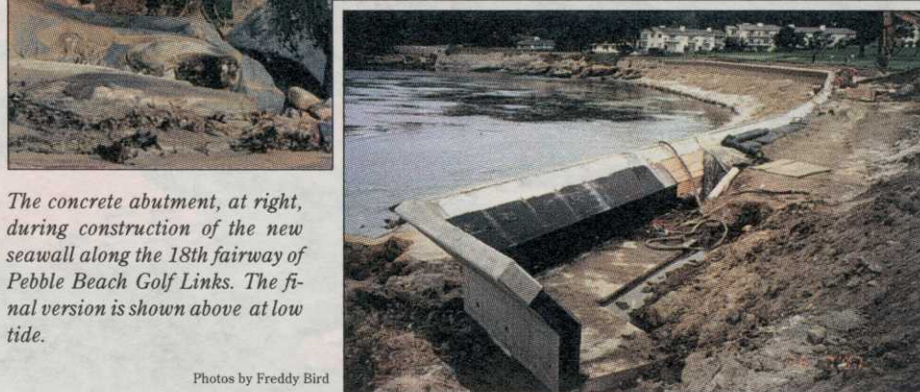
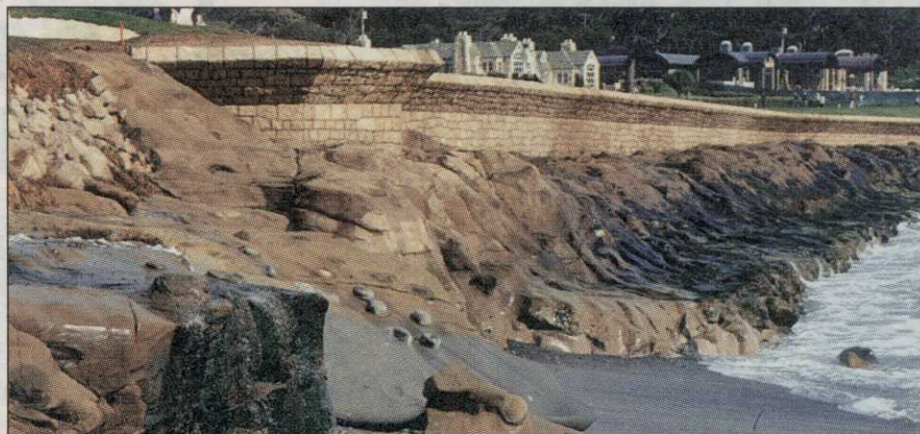
By DOUG SAUNDERS

PEBBLE BEACH, Calif. — Pebble Beach Golf Links is considered one of the greatest golf courses in the world and a strong part of its lure is its proximity to the turbulent Pacific Ocean. Golf holes literally cling to the cliffs overlooking the blue waters while the pounding surf adds to the mystique of the course.

The same relentless sea, meanwhile, works hard to eat away this golfing treasure. In the last year the Pebble Beach Company has begun a series of projects to not only determine the threat to the coastal links but also rectify the actions of nature where possible.

The first project, the construction of a formidable sea wall along the 18th fairway, was completed last fall and has already been tested dramatically by the El Nino weather that has plagued the Central California coastline for the last two months. The wall also received notoriety during the recent AT&T Pebble Beach National Pro Am as the heavy surf sent waves over the wall and on to the fairway.

Television cameras and commentators focused on the new wall as waves spilled over the wall and flooded the bunker 110 yards from the green. Competitors that hit their second shots near the coast had to be careful not to



The concrete abutment, at right, during construction of the new seawall along the 18th fairway of Pebble Beach Golf Links. The final version is shown above at low tide.

Photos by Freddy Bird

get splashed by the surf that occasionally slobbered over the wall. The wall itself accentuated the normal wave action lending itself to dramatic camera views and many questions as to the effectiveness of the wall itself.

"We hired a firm to make a comprehensive study of the erosion of land along the nearly two miles of coastline that Pebble Beach sits on. Their findings showed that we lose on the average 4

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Fla. law sends researchers rushing for nematode cure

By MARK LESLIE

NAPLES, Fla. — Turf-killing nematodes are a problem for golf course superintendents in the South and, in Florida, where the government has drastically reduced application of the major remedy, it appears nobody has the answer for the pest.

"There are a lot of claims, and we try them all," said Gary Grigg, superintendent at Royal Poinciana Golf Club here. "But none of them work since the state cut back on the label for Nematicur."

Bayer Corp.'s Nematicur has been the mainstay in the ongoing battle against nematodes, microscopic roundworms that attack plant roots. But a major fish kill at a golf course on the East Coast of Florida changed all that. After the accident — from misapplication of the highly toxic Nematicur — the state cut in half the

application rate, greatly reduced when and how many acres could be treated at once, and forbid people from re-entering a treated area for 24 hours.

Many companies have introduced products to replace Nematicur, but the search for success is still on.

"Unfortunately, there have been no silver bullets," said Dr. Robin Giblin-Davis, an entomologist and nematologist at the University of Florida at Ft. Lauderdale. "We've evaluated a lot of different materials that people claim have anti-nematode effects and we have not seen anything that works effectively."

"The more we look, the more chance we have of finding the Achilles heel. But,



in the final analysis, I am not encouraged."

Grigg said DuPont's Telone is showing "some effectiveness," and he has found "a quick response from a couple of products, but the nematode population doesn't stay knocked back. In two or three weeks the nematodes are back."

"I have 36 holes and spent \$40,000 last year on nematode control and felt I had bad results all the way around," he said.

"We treat every Monday. The soil temperatures this time of year [winter] are cool and they're not so much a problem. They're worse in early summer, coming out of the winter. May is a bad month."

As effective as Nematicur was at its origi-

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Role of digital mapping expected to grow

By KEVIN P. CORBLEY

In this final article on the uses of Geographic Information System (GIS) and Global Positioning System (GPS) technologies on the golf course, we look into the future of digital mapping applica-

LAST OF 3 PARTS

tions. GPS, GIS and other digital mapping technologies are now commonly used in numerous land management businesses, and golf course management will be no different. Larry Rodgers, president of Larry Rodgers Design in

Lakewood, Colo., expects digital mapping will boom on golf courses in the next several years.

"These mapping techniques have already been proven to improve worker

efficiency and enhance revenues in major industries such as agriculture," said Rodgers. "Look for course superintendents to start borrowing technologies from the farmer."

To facilitate his irrigation design business, Rodgers has been using GPS

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GPS technology a time- and money-saver for progressives

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to map course features and GIS to collect information about those features for more than a year. As a courtesy, he leaves the digital maps created from the GPS/GIS data for his clients to use in course operation. Many of them now contact Rodgers just to map their courses.

Course managers are finding

'These technologies have the potential to remove many of the time-consuming hassles associated with personnel and government regulations.'

— Larry Rodgers

that a digital map enables them to keep an updated database of course conditions and features which they can view graphically

on a map-like computer screen. For instance, the GIS database can display all the elm trees on the course, show which fairways

are due for fertilizer this week, or visualize proposed changes to the course layout.

"It's great for operational efficiency to have the GIS show the real-time locations of all golf carts on the course," said Rodgers, "but the real payoff with this technology will be in daily maintenance."

As evidence Rodgers cites the

uses of GPS and GIS in farming. Currently, farmers use GPS to plot the locations of irregularities in their fields, such as areas that need more water, less pesticide or an extra slug of fertilizer. They load this digital information into a GIS map of their field, which helps them devise a customized application strategy.

This tailored plan for application of water or treatments is programmed into a small computer in the farmer's combine which is equipped with what is called variable rate technology (VRT). VRT is a computerized application system that automatically applies a prescribed dose of fertilizer or water to specific areas as the GPS-equipped combine is driven through the field. The GPS tells the VRT where it is in the field at any given time, so the VRT knows exactly where to apply the chemical doses.

This system is sometimes referred to as "prescription farming" because of the precise dosages applied, but the technology is not expected to stay on the farm for long.

"Turf manufacturers are developing similar equipment for their vehicles," said Rodgers "They are working on computerized spray devices that can be connected to a GIS map and automatically apply extra chemicals as directed to certain parts of the fairway or shut the machine down to avoid spraying the pond or wetland."

And one of the biggest advantages of designing and carrying out chemical application programs on a GIS is that a digital record of every project is maintained for easy reporting to EPA and other government agencies.

Rodgers predicts golf course managers will begin seeing variable rate technology linked to GIS and GPS in the next two to three years. A few more years down the road, he sees another new technology accessing GIS on the course — robotics.

"Once a digital GIS map of the course is made, it can be linked to just about any other digital technology," said Rodgers.

He envisions GIS maps being loaded into the memories of robot-controlled mowing equipment on the course. GPS will guide the mowers up and down the fairways at night, avoiding greens, water hazards, shrubs, bunkers and any other course features contained in the map database. This will dramatically improve the efficiency of maintenance crews and reduce some personnel problems.

"The bottom line is efficiency and cost savings," said Rodgers. "These technologies have the potential to remove many of the time-consuming hassles associated with personnel and government regulations, which will let the manager focus on the land — the reason he got into this business in the first place."

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