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## The Women's Golf Market

The women's market is powerful and within reach for the golf industry. Karen Moraghan explains .......9



MUNGEAM HITS HIS STRIDE

Like many young architects, Mark Mungeam started his career in construction. In 1987 he joined Cornish and Silva. Eight years later he was made a full partner. GCN spends a few moments with this rising star. See Q&A page 27.

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## Audubon secures financial backers

### **BV MARK LESLIE**

SELKIRK, N.Y. - In its quest to develop perhaps 100 golf courses, the Audubon International Golf and the Environment Land Trust has found a number of individuals and two major federal government agencies offering land, and a partner has stepped forward to finance, develop and operate those facilities. Contracts could

be signed by the end of this year.

While the U.S. Army Corps of Engineers and the Bureau of Land Reclamation (BLR) are offering up tracts of land across the country, a newly created firm, The Golf Company, has stepped forward as Audubon International's (AI) colleague. The partnership promises to be the

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# Fertilizer may reduce runoff, improve water

By LARRY LENNERT MILWAUKEE — While

Americans for years have feared that turfgrass fertilization may harm

## **Diablo** es Grande

## By M. LEVANS

WEST STANISLAUS COUNTY, Calif. - When Jack Nicklaus and Gene Sarazen team up on a course design, you know there's something big happening.

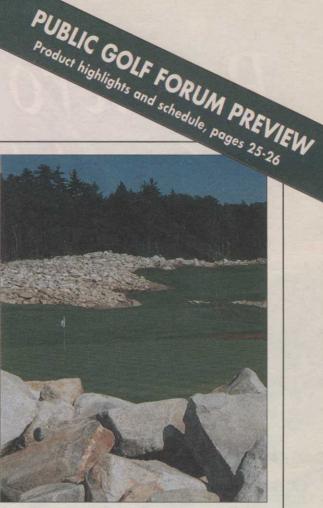
The two legends have put their heads together for the first time on the design of The Legends West Course, one of two courses in phase one of Diablo Grande development 20 miles outside of Modesto, Calif. The course is scheduled to open next month.

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groundwater, lakes and streams, groundbreaking new research shows that a dense, well-fertilized turf actually reduces nutrient runoff and may lead to im-

proved water quality. Prevailing wisdom has been that runoff during rains carried dissolved nitrogen and phosphorous from turf fertilizers into

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#### **ROCK ON, CLIVE**

Clive Clark had a blast integrating the boulders in the design at Belgrade Lakes Golf Course. See story page 27.

## Gagliardi highlights track By PETER BLAIS

OAKBROOK, Ill. - He's started his own business, but that just means any renovations to the golf courses he operates will be of even greater importance



to Gregg Gagliardi, one of the high-profile Management/Marketing Track speakers scheduled to take the podium during the 1997 Public Golf Forum, scheduled for October 27-28 at the Oak Brook Hills Hotel & Resort here.

Superintendents, owners, operators and developers from throughout the country will attend the Golf Course News-sponsored forum aimed at Continued on page 37



DON'T GO LEFT The 17th at Half Moon Bay was not designed for those who pull the ball. Natural land forms and the Pacific Ocean serve as the backdrop for this new Arthur Hills design. See story on page 31.



## Kussow study: No harm

#### Continued from page 1

streams, rivers and lakes. These excess nutrients were thought to cause algae blooms, which decrease oxygen levels and sometimes kill fish. Indeed, several municipalities across the country have banned phosphorous-containing lawn fertilizers in response to these fears.

But research by Dr. Wayne Kussow, a leading turf and soil expert from the University of Wisconsin-Madison, shows otherwise.

Kussow first began investigating runoff losses from turf in 1993. In 1995 and 1996, he developed test plots to study the effects of fertilization on turf runoff.

Similar plots of Kentucky bluegrass each underwent one of three different fertilization regimes:

· treatment with the organic fertilizer Milorganite:

• treatment with a synthetic fertilizer;

• no fertilization at all.

or

The fertilized plots each received four equal applications a year. Runoff water was collected from the plots after each rain, or snow melt to measure the amount of nitrogen and phosphorous present in the water. The results were startling.

Kussow observed that after a single year without fertilization, runoff from the unfertilized turf plots exceeded runoff from the fertilized turf plots by at least 30 percent. This, in turn, led to significantly more runoff losses of nitrogen and phosphorous from the unfertilized turf.

He also found that 60 percent of the nitrogen and 80 percent of the phosphorous in runoff water from the turf occurred when the soil was frozen. This indicates that most of the nutrients in runoff water actually come from the leaf tissue itself, and not from turf fertilizers.

Larry Lennert is manager of research and product development at Milorganite, produced by the Milorganite Division-MMSD in Milwaukee, Wis.

## **Beer retires**

LAKE LOTAWANA, Mo. - Carl Beer, superintendent at Mission Hills Country Club for 32 years and former president of the Heart of America Golf Course Superintendents Association (HAGCSA), retired Aug. 1.

Twice named by his Kansas peers as Superintendent of the Year (1981 and 1982), Beers not only served HAGCSA, but also was on the board of directors of the Mississippi Valley Turfgrass Association and the Kansas Turfgrass Foundation. He was the second superintendent to be certified in the state of Kansas

He was instrumental in establishing the Turf and Horticultural Department at Longview Community College, where he was a part-time instructor.

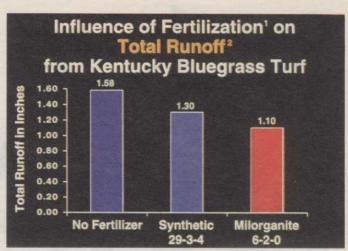
A graduate of the University of Massachusetts turfgrass school, where he was president of his class, Beer worked at Oakwood Country Club, then moved to Indian Hills Country Club. He was hired as assistant superintendent at Tomahawk Country Club and became superintendent there in 1960. He was hired as Mission Hills Country Club superintendent in 1965.

GOLF COURSE NEWS

Well-fertilized turf reduces runoff because increased turf density slows down water movement, giving the soil more time to absorb it. Failing to fertilize leads to a decline in turf density and increased runoff, since water can flow across a thin turf stand more rapidly. Because increased turf density significantly reduces runoff, it is essential to ensure that turf does not lose density due to nitrogen deficiency. Fertilizing is the best way to accomplish this objective.

Kussow has expanded his runoff study this year to examine several other nitrogen sources.

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