

Evolution of a golf hole: the effects of *Poa annua*

by Ronald W. Fream

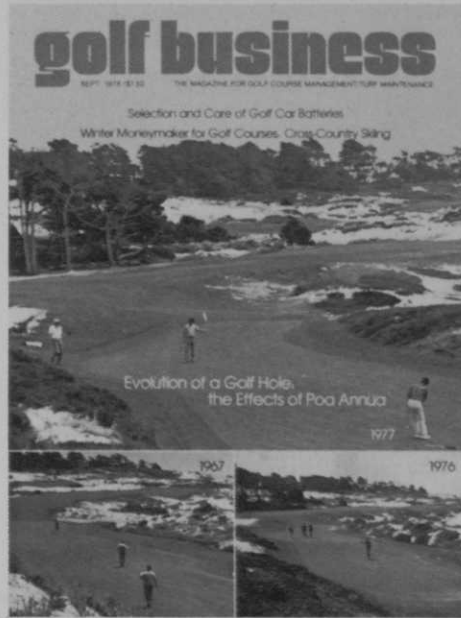
Golf courses, like people, age. The life cycle of a golf course can be rapid or long-term, partially depending upon the quality of the original construction, the amount of annual play, and the degree of maintenance received. Climate, local soil conditions, the clientele or use to which the golf course is primarily oriented also influence the rate of maturation.

The three photographs on the cover of this magazine show how a single golf hole, particularly a green, may be viewed as one example of this evolution.

All three were taken from the rear of the green and illustrate the fourth hole at Spyglass Hill Golf Course on the Monterey Peninsula at Pebble Beach, Calif. This par 4 hole, an abrupt dogleg left, (as the hole is played) was constructed among the natural sand dunes of the site. Such a true links style hole is quite a rarity to American golfers.

In photo 1, the color and appearance of the turfgrass on the green surface and the fairway area are quite typical of bentgrass on the green and a bentgrass-bluegrass mixture on the fairway. The grass at the time of this photograph, mid-June 1967, had been planted for slightly more than one year.

Photo 2 shows the same hole, photographed from approximately the same location, as the conditions existed in mid-June 1976. Nine years have



1. Three photos on this month's cover show how time and annual bluegrass changed the appearance of number 4 hole at Spyglass Hill. See text for detailed explanation.

indeed left their mark. Most dramatically, the rich green colors of the bentgrass and bluegrass have been replaced by the yellow-green color typical of that all pervasive intruder, *Poa annua* or annual bluegrass. Given compaction from heavy golfer usage and cool-moist climatic conditions, *Poa annua* will overcome the more desirable bentgrasses without an extensive and expensive chemical control program. On the fog-shrouded Monterey Peninsula, *Poa annua* can usually survive the infrequent periods of hot weather and does provide a suitable playing surface. Some of the off-color appearance of the *Poa* must be attributed to an insufficient quantity of nutrient fertilizer being available through the golf course maintenance program.

Careful examination of these two photographs also will show the expansion of turf into the sand dunes. The quantity of ice plant, which acts as a sand dune stabilizing medium, has also increased.

Photo 3 demonstrates the impact of

the drought western America in general and California in particular experienced during much of last year. Taken in mid-June of 1977, a decade after photo 1, this photograph illustrates both improved nutrient fertility levels with the *Poa annua* on the putting green and the impact of no water on the *Poa annua* of the fairways. During the drought, sufficient water was allocated to the golf course to permit only modest watering of the greensites and teeing areas. No watering of the fairways was permitted.

In the period of this drought, it has been demonstrated that most golf courses can survive — and even improve turfgrass conditions — under a 20 or 25 percent reduction in watering. When restrictions eliminate fairway watering, any turfgrass, but especially *Poa annua*, undergoes severe stress. The brown and dead fairways in this picture demonstrate the rapid result of no water upon *Poa annua*. Perennial varieties of bluegrass and the various bermudagrass varieties can easily withstand drought due to deep roots and underground stems or rhizomes. *Poa Annua* has no such underground stems and very shallow roots. Adequate water and fertilizer have resulted in the healthy putting surface while drought takes its toll of the fairway. The ice plant continues to overcome the dunes.

With the onset of winter rains, an overseeding program using perennial ryegrass will once again return the fairway to acceptable conditions.

From the three photographs, it is easy to observe that golf holes can and do evolve in appearance and playability in direct response to climate, usage, and maintenance practices. Frequently, it is only through such successive photographs that the changes can be easily noted. The transition from the desirable bentgrasses and bluegrasses to *Poa annua* is a progressive and degenerative affliction which neither golfer nor superintendent desire, but few can overcome. □

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