

# Stop Bunker Face Erosion!

*Perimeter drain lines can reduce bunker face erosion and maintenance.*

by BRIAN MALOY

ONE OF THE most controversial questions asked by Green Committees is, "What should be the most appropriate playing condition for the bunkers?" At the root of the issue is the fact that golfers seldom have similar views regarding the conditioning of the bunkers. For example, some report that they would like the bunkers to be maintained with a firm playing condition so they can bounce the club off the sand and easily extract the ball from the hazard with plenty of backspin. Others prefer a somewhat softer playing condition so they can get their club underneath the ball to extract it from the hazard, with backspin being a secondary objective.

If there is solid middle ground to be found regarding the issue of what is an appropriate playing condition for bunkers, it is that most golfers can agree that they want consistency, a uniform depth of sand, good drainage, and visual appeal. To this end, superinten-

dents dedicate numerous man-hours to raking and redistributing sand on a daily basis. Some even report spending more time manicuring the bunkers than caring for the greens!

In trying to meet the agreed-upon objectives of consistency and uniform depth, golf course crews spend the greatest amount of their time working on steep bunker faces. The reason for this is that sand placed on a steep slope has a gravitational tendency to migrate downhill and, therefore, it must be constantly shoveled back up onto the bunker face. During this endless process the sand is in essence tilled and becomes so soft underfoot that golf balls bury in their own pitch mark after impact. Sound familiar?

One primary force causing the downward migration of sand on a steep bunker face is erosion. When erosion occurs on a repeated basis, the sand also becomes contaminated with sub-grade soil that in turn clogs the

drainage system and reduces the visual appeal of the sand. To reduce bunker face erosion, John Hilton, Superintendent, Prestonwood Country Club in Cary, North Carolina, has fortified the drainage system underneath the sand.

A typical drainage system usually consists of a herringbone pattern of drain lines in the sub-grade of the bunker. Mr. Hilton's new technique takes bunker drainage one step further. When John's crew renovates a bunker, they install an extra drain line along the perimeter to prevent excess water from flowing down the bunker face.

The trench for the extra drain line must be dug manually because steep bunker faces make the use of a mechanical trencher impossible. The trench is dug eight to ten inches deep under the upper edge of the bunker face. After the new drain line is installed and connected to the existing drainage system, the trench is back-filled to the top with pea gravel. Finally, the sand is redistributed in the bunker to a uniform depth of four to five inches using a large material handler, such as the Ty-Crop MH-400.

By immediately capturing the water flowing into the bunker face from the surrounding turfed areas, the sand never becomes completely saturated and the extent of erosion is significantly reduced. John indicates that the installation of extra drain lines has reduced the potential for erosion by as much as 75 percent. Even after heavy downpours, he reports that only a minimal amount of manpower is needed to shovel the sand back up onto the faces of the bunkers.

Golfers will always be disgruntled after they hit their golf ball into a hazard. Installing perimeter drain lines, however, can help minimize the fried-egg lies that prompt players to complain to the Green Committee about the maintenance of the bunkers. This keeps everyone but the wayward golfer smiling after a challenging round of golf.



*Installing a perimeter drain line under the edge of steep bunker faces can prevent erosion. During a heavy rain the extra drain line captures water from surrounding turf areas and prevents the sand from becoming saturated.*

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