

Saving Zoller's Dollars

A unique method to reduce bunker contamination.

by LARRY GILHULY

THE SCENE: Match tied on the 18th hole and both players are in the same greenside bunker.

The Lies: One player's ball lies directly in front of a large stone. The other player's ball lies in the lowest point where excess silt and clay have caused wet sand.

The Players' Attitudes: Both blame the golf course superintendent for their bad lies.

The Players' Answer: Take a playing lesson to avoid bunkers!

The Superintendent's Answer: Reduce or eliminate the bunker contamination problem.

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While this scene is not played out at every course in the U.S., it is often viewed in wet climates at courses that use power bunker rakes, have limited budgets, or have excessive amounts of rock under the bunker sand. Although careful attention to detail during construction, an adequate budget, and hand raking will reduce this problem, it can continue to be a headache despite the best efforts of the maintenance staff. If bunker contamination persists, the next step is often geotextile fabrics. However, these can deter drainage and pose a problem when thin sand exposes the fabric to players or, worse yet, to power bunker rakes that pull the fabric to the surface. The question is then, "Is there a technique that can provide the positive attributes of geotextile fabrics without the negatives?" The answer is yes, if you and the golfers have one key ingredient — patience!

During the construction of a golf course in the early 1980s, construction superintendent John Zoller faced the dilemma of controlling excessive rock from entering the new bunker sand. Rather than use costly geotextile fabrics, his answer was the use of grass grown in the bunker cavities to act as a filter and stabilize the rock. From this initial success, Mr. Zoller transferred this idea to the City of Portland, where he has been the Director of Golf for the past 15 years. Drawing upon his positive experience and exercising patience to assure the long-term results



After the grass inside the bunker receives a non-selective herbicide application, it remains as a natural barrier between the bunker sand and the soil below.

would be positive, Mr. Zoller directed Steve Hoiland, golf course superintendent at the Eastmoreland Golf Course, to start a bunker renovation program in 1993. This successful process of bunker renovation while addressing contamination concerns continues today, with 36 bunkers completed using the following technique:

1. Complete bunker reconstruction.

This work generally is completed during the growing season, with final shaping to avoid rainfall and take advantage of warmer temperatures.

2. Bunker complex seeding. After the entire complex has received final grading, it is seeded with perennial ryegrass at a rate of 10 lbs./1,000 sq. ft. along with appropriate starter fertilizer. Drainage is installed before seeding in extreme situations; however, it generally is included after the perennial ryegrass has matured.

3. Turf maturation. The key to success with this method is allowing the perennial ryegrass time to mature and develop a root system into the soil. These roots anchor rocks more securely and are part of the filter between the soil and bunker sand. At least six weeks is allowed to pass before the next step in the operation. In some cases, the bunkers were used as grass bunkers and opened for play.

4. Drainage installation. If drainage is not completed during the initial construction, it is installed after the turf has grown and is placed in the areas where drainage obviously is needed. With permeable soil, dry

wells are acceptable, while heavier soil requires extended lines out of the bunkers.

5. Establish bunker edges. A sod cutter is used to establish the bunker edges. Generally, two passes with the sod cutter are needed, set at a depth of one to two inches.

6. Elimination of the turf inside the bunker. Once the perennial ryegrass has matured and the edges have been established, the remaining grass can be eliminated with a non-selective herbicide, such as Roundup or Finale. The dead grass remains to provide an organic barrier between the soil and sand.

7. Sand installation. After the herbicide has been given time to enter the plant and the grass shows signs of decline (several days), sand is installed over the bunker to a depth of four to six inches. Players are strictly kept from the bunkers prior to the sand installation phase to avoid herbicide tracking; however, Bivert can be added to reduce this problem.

For the past six years, Mr. Hoiland has had complete success using this method of addressing bunker contamination. He reports that even if the bunkers suffer from washouts during heavy rainfall, the underlying soil does not pose a contamination problem due to the thin organic layer provided by the perennial ryegrass. In addition, when the raking teeth of the power bunker rake enter this area, the mixing of soil into the sand is minimal. He also reports that the annoying task of cleaning rocks from the bunkers is now a thing of the past!

While this method of reducing bunker contamination may not fit every situation, it offers a far less expensive and more practical method to reduce rock and soil contamination. It has saved Mr. Zoller many dollars — it could for you, too!

LARRY GILHULY has been saving golf courses many dollars throughout the western portion of the United States during the past 15 years as the Director of the Western Region and as the current Director of the Northwest Region.