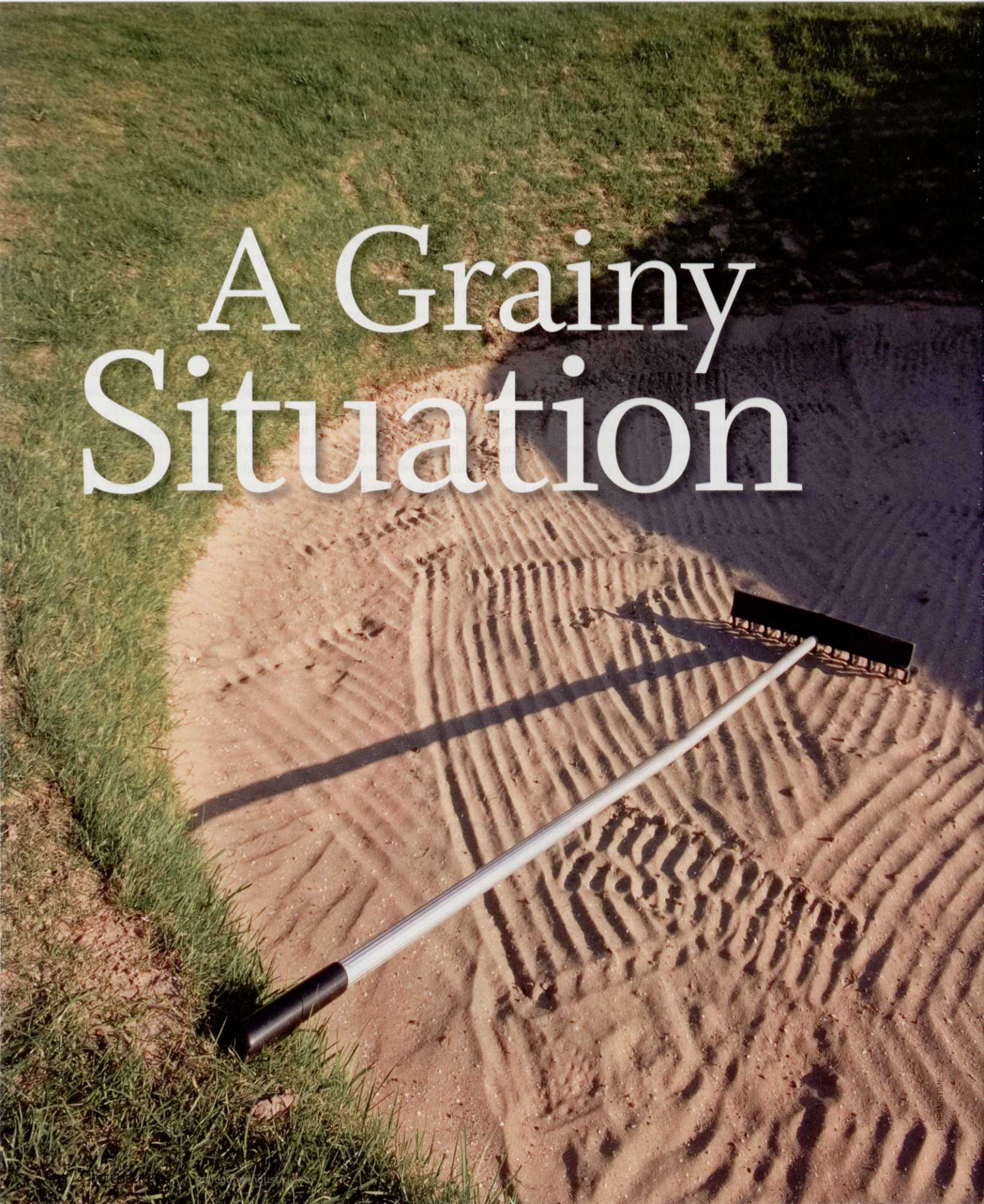


# A Grainy Situation





by Jason Stahl

## Selecting sand for your bunkers is a highly subjective and difficult process, but there are some guidelines to help... if you want them.

**S**o you've been pondering what kind of sand you should use in the bunkers on your course.

Well, you could visit the USGA's Greens Section ([www.usga.org](http://www.usga.org)) where there are literally hundreds of articles on bunkers. But even if you ignored all that advice, including the seven factors you should consider before deciding on your sand (particle size, particle shape and penetrometer value, crusting potential, chemical reaction and hardness, infiltration rate, color and overall playing quality), you wouldn't offend Jim Moore.

"The reason is because there is absolutely no decision made on a golf course that is more subjective than selecting sand for bunkers," says director of the USGA Green Section's Construction Education Program, "All golfers are absolutely crazy when it comes to bunkers. What one guy likes, the next guy hates. It's the most difficult issue our staff deals with when it comes to getting golfers what they want. And as a result, it's the most difficult issue superintendents deal with, too. It's like art: what you think looks good, I think looks like someone scribbled a crayon. That's the issue."

The other reason Moore doesn't mind if superintendents don't follow

all his tips on choosing bunker sand is because, unlike green construction, it's not as big a deal if they don't follow them to a tee.

"If you look at the specifications, they're very wide, and that's on purpose," he says. "A lot of people will read an article like that and say, 'Well, if it doesn't fall within what the USGA says, we can't use it.' That's not the case when it comes to bunker sand. People use sand well outside those guidelines all the time and love it. Then there are people who follow those guidelines that then absolutely hate the end product."

The easiest way for superintendents to avoid all this subjectivity is to simply

says. "Maybe I'm biased because I'm a decent player and it's an advantage for me. But I think one of the most boring things on TV now is bunker shots because, on the courses the pros play, all bunkers are 100 percent uniform and manicured."

The only way to achieve such consistency and help golfers avoid the dreaded "fried egg" lie, Moore says, is through an inordinate amount of labor and spending a fortune on sand. Over the last six to eight years, Moore says the most popular sand choice has been manufactured sand, or sand that's run through a mechanical crusher to make it less rounded and more angular so it locks

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— Jim Moore, USGA Green Section

select the sand that the course owner and/or membership desires, which Moore says is usually what happens.

But there is a disturbing trend going on, he says: the militant pursuit of consistency in bunkers, which he feels defeats the purpose of having these penalizing hazards.

"Every hazard is different on the course I play, and that's okay because they're supposed to be a hazard," he

together. Problem is, sometimes that kind of sand is not available through a local supplier, so superintendents are forced to seek it out-of-state. Not only is the manufactured sand double the cost of regular sand due to the energy it takes to crush it, trucking it in from out-of-state tacks on more cost. In the end, it costs five times more. Granted, manufactured sand has become more readily available throughout the country



## COURSE CONDITIONS

due to its popularity, but it still can be looked at as cost-prohibitive.

"It's not uncommon at all for me to see courses spending more money per ton for sand in bunkers than they do for greens," says Moore. "That's just as crazy as it is to spend more on maintaining bunkers than maintaining greens."

This aside, superintendents still have to pick the sand they feel is right for their courses. Moore says the first step would be to make sure it falls within the limited guidelines the USGA has. Once they find two to three potential types, then it becomes a matter of getting member feedback. He advises that they create test bunkers for each type of sand they feel meets their physical and agronomic needs and have members vote on which they like best. But there is still potential for dispute.

"If one-third of your membership likes Sand A, one-third likes Sand B, and one-third

likes Sand C, and you pick Sand B, you still upset two-thirds of your membership," he says.

Did you hear that word, "agronomic?" Yes, there is an agronomic discussion here when it comes to sand selection. As superintendents know, a lot of bunker sand ends up getting thrown onto a green. If it drains more slowly than the sand in the greens, then it can seal off the top of the green and cause drainage problems.

"If the owner tells the superintendent that that's the type of sand he or she wants, then I would make an extra pass or two with my aerator on that portion of the green and pull as much of that sand out as I could, then backfill the holes with sand that drains better," says Moore.

Playability seems to be the main concern for most superintendents when it comes to choosing bunker sand.

"Price is always a consideration, but playability always wins out at the end of the day,"

says Pat Gradoville, director of golf course and grounds at Palos Verdes Golf Club in Palos Verdes Estates, Calif. "The sand reacts differently with each season. We rely on irrigation for most of the year, but we use much less water from November through April. During those months, the sand tends to play much drier, and member comments are much more positive. But during the summer when irrigation runs almost every night, we hear the sand is always wet and difficult to play from."

The issue with moisture levels in bunkers, Moore says, ties into maintaining them with the goal of avoiding the fried egg lie.

"In order to get a one-inch layer of sand on a face that might have a 45-degree angle, somebody has to fill the sand there and pack it down pretty much on a daily basis. But then on the bottom, you want the sand to be deeper," says Moore. "Irrigation systems are designed to apply water evenly to turfgrass, not bunkers, and one inch of sand holds a lot

### 5 tips for sand selection

- Select sand that the course owner and/or membership desire.
- Create test bunkers and have members vote on their favorite variety.
- Consider the impact on playability throughout the year.
- Consult USGA sand recommendations.
- Don't forget particle size, particle shape and penetrometer value, crusting potential, chemical reaction and hardness, infiltration rate, color and overall playing quality.





less water than six inches ... but it holds it much closer to the surface. Therefore, you will have varying moisture levels in bunkers.”

Gary Myers, manager of golf course maintenance operations at Walt Disney World Resort in Orlando, Fla., echoed Gradoville's comments that pricing is a consideration but playability is king.

“Playability is the main component, and a supply that isn't going away,” Myers says.

Myers says his choice of sand is guided by neither the ownership nor membership but rather the USGA recommendations. When he started working at his multi-course facility, different courses were using different sands. Two of the courses had changed from the original sand, but after some testing, he concluded that the original sand was the best product, so those two courses reverted back to the original sand.

In Gradoville's case, the membership was the primary driver of the sand decision. Several clubs in his area had had good success with sand that was 50 percent crushed marble and 50 percent desert tan.

“The sand plays well, and we tried it in a few bunkers. Our members liked the way it played, so we installed it in all 75 of our bunkers,” he says.

Gradoville often hears from members that “the sand across town is better than ours,” and Moore says that's not uncommon. In fact, it's evidence that you just can't please everyone.

“You're the owner and you play somewhere else and you like their sand and you come back and say, 'I want their sand.' The end user golfer bases their decision not on technical data but on the sand they played somewhere else,” says Moore. “But when sand goes into a bunker, it evolves. It will play differently that day than it will a month later or six months later or two to three years later. It gets contaminated with stuff from the air, mixes with the underlying soil, etc. So it's almost impossible to buy exactly the same sand someone else has unless you buy it a few months after they did.”

Still, Gradoville lends a respectful ear to members and tries to adjust his maintenance based on their comments.

“Many times, it's just a matter of moving sand or adding new sand to high-play areas,” he says. “The bottom line is that we normally hear that the sand across town is better than ours, and when the members of those other courses across town play our course, they like our sand better than their own.” **GCI**

## CONSIDERING SAND COST

By Bob Lohmann



**T**o flash or not to flash, that is the question. Whether 'tis aesthetically pleasing enough to show golfers some sand, when every superintendent knows that it'll mean more work, especially after a rain event.

More and more, we're seeing superintendents address this question not exclusively via bunker design, or even bunker-lining products like Klingstone or Sportcrete, but with the sand itself. Spending money on sand with enough angularity to hold its shape, to hold its place better on the bunker face, even after a downpour, is ultimately a time-and-money-saver, especially if you've made the aesthetic decision to flash golfers a bit of sand.

We just redid the bunkers at Indian Creek Golf Club in Elkhorn, Neb., where superintendent Jim Nedrow and his owners spent top dollar on some high-angularity sand from Arkansas. This stuff is quite white, though color was a secondary consideration; they wanted to mitigate clean-up after rains. Well, Jim and his team couldn't be happier with the results. He reports no clean-up at all after big rains, whereas pushing the old sand (a less-angular local sand) back up would have taken them a couple days each time.

Chalk up some of that to the Sandtrapper lining, but Jim feels the sand upgrade has also had a huge impact. He hasn't run the numbers yet to see if the cost of the sand will ultimately be paid for by the savings in sand-pushing labor. The new bunker style requires more handwork on the banks, after all, and one must factor in the cost of the liners and transport from Arkansas. But it's been a huge time-saver, and here's an interesting addendum: Jim used to send two guys out, one on a machine and one with a rake, as part of their regular bunker-raking rounds. Now he sends two guys out with rakes only and

it takes them less time. They only rake the top half-inch, to keep the sand firm.

And there is an aesthetic payoff: the new bunkers are great-looking and Jim feels the white sand really does set Indian Creek apart from the competition in Greater Omaha.

Different situation at Mt. Hawley Country Club in Peoria, Illinois, where we renovated the bunkers about 7 years ago. We made a conscious decision to flash the sand up, so that golfers could see the bunkers on their approach and tee shots. At the time, the USGA had recommended a variety of sand where the angularity better held itself in place. But Mt. Hawley was not in the position to foot that bill, according to superintendent Pete Clarno, CGCS.

“We actually placed four different types of sand in a test bunker, so that members could give us their feedback,” Pete recalls. “Ultimately, the board went with the more economical sand and it's been okay. It's increased our bunker-repair time after rains. Part of me thinks, if we did it again, it would be more economical to roll down the faces on the bunkers and then use the cheaper sand.”

I'm not in the habit of quoting people as they paraphrase my own thoughts, but I'll make an exception for Pete: “It's like you've always said, Bob — whatever new sand you put in there, the members seem to hate it. When the silt builds up and the new sand firms up, they love it! Then, over time you get too much silt, they don't drain properly, the bunkers get mucky and they hate it again.”

Ain't that the truth.

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