

Plow or Cover

Clearing Snow and Proper Covering Aid Northern Greens

By **BOB LABBANCE**
Golf Editor/Turf Magazine

By this time all but the most devastating winter turf problems have been solved and the golfers who frequent your course are once again happy campers. In March, as the snow and ice slowly dissipate and the mystery of how your grass survived conditions it should never have to put up with is revealed, it can be quite a different story.

The Case for Plowing

When snow and ice stand atop fragile bentgrasses for more than 75 days, turf managers start to worry. When its still there after 100 days they panic. When Mother Nature fails you, the easiest solution may be to remove the snow mechanically. Plowing the snow off the greens in March is not new. Manny Francis, the dean of New England superintendents began doing just that at Vesper Country Club in the 1940s.

It is possible for ice to get under the cover and become trapped. At the time, his contemporaries thought he was nuts. They figured he'd do more damage by running the old Willy's jeep with the plow attachment over the putting surfaces than if he just let nature take its course. Francis proved them wrong and established a practice of clearing down to the ice layer that resulted in Vesper's greens being ready for play earlier and healthier throughout the season than greens at many of the surrounding courses.

Today, many supers in the North Country have come to the same conclusion that dawned on Francis half a century ago. "We've been plowing since 1988," notes Ken Lallier, CGCS, of the 36-hole Quechee Club in Vermont. "Not necessarily every year, it depends on conditions. In the winter of 1987-88 we got really clobbered with ice damage and then hammered with snow. We had a heavy rain storm in early December and then followed by a cold snap and snow behind that, and we never saw the ground again until April. We had a good layer of ice under there and it basically smoked the bent and the poa. We had damage on 26 of the 36 greens. They were partially or totally dead."

Recovering from such an experience is time-consuming, expensive and frustrating. Prevention efforts are worth every dollar and every minute you can expend on them.

"After that experience we decided that we were going to clear them every year from then on," says Lallier. "But since then I've tempered that; every year is different. What we do now is monitor the ice under the snow cover. Figure out when we had the ice formation and start counting days from there and if we still have a pretty good snow with ice

underneath that in March, and its been there since early January or December, then its a no-brainer—we clear them."

Part of the challenge with covers is figuring out when to take them off.

Take Cover

The practice of clearing greens has been gaining favor with greenkeepers from Maine to upstate New York in the 1990s, especially with the recent surfeit of storms that start as snow and change to rain or sleet cementing an ice layer in the middle of the snow pack. The only other defense is covering greens, but that can be even more time consuming and risky, and mostly recommended for sites where desiccation from wind damage is a factor.

"All the greens are covered with Evergreen poly," says Mike Keohan at the windy, hilltop Country Club of Vermont in Waterbury. "First thing in the spring we pull the covers off, let the green cavity warm up, then before the end of the day we put the cover back on. We do nine holes at a time, then we keep the covers on those nine holes for the next full day. Obviously it's very labor intensive. There's a misconception that the greens covers are going to warm the green cavity for you. You have to get the heat inside it before it will insulate it for you. With the sun beating down on that cover, of course its going to warm up some, but what you want to do is get the cover off, let the greens cavity warm up a little bit and then trap that heat in and not let it escape during the night."

The problem with covers is that you may need to destroy them to break up the ice that will form on top of them, or at the very least they limit your options of how to deal with the snow pack. Superintendents in Canada, including Blake McMaster at Royal Montreal, have come up with an innovative solution that may work in some climates.

"They put six inches of straw on the greens first, then they lay the Evergreen cover on top of that," recalls Lallier. "Its not impervious, it lets water go through on top of the straw, but he swears this keeps the ice off the crown of the plant. They don't have any ice problems, but they've got a clean-up problem in the spring."

Pushing the snow banks far from the green will prevent the melting snow from re-freezing on the green. Lallier would rather have the labor crunch in March, when there aren't as many other time pressures to prepare the grounds, and he...All ice is not created equal.

(Continued on Page 10)

Plow or Cover-

(Continued from Page 9)

Lallier has become expert at recognizing the varying conditions of the ice as well as the techniques that will most successfully accomplish its removal.

"There's different kinds of ice, too. If you have snow cover and you get water through the snow pack that ends up sitting on the bottom and turns to ice, that's kind of a whitish milky ice with a lot of air pockets in it. That's not as bad as the stuff you can see right through." Clear, solid ice is the most worrisome.

"The worst thing about that is you get absolutely no gas exchange," says Lallier. "It locks up the exchange of gas. The turf is still respiring a little bit under that ice, and what its giving off is toxic gases and those are just trapped there and that's what actually kills the turf. If it's the milky ice there are some pore spaces in there, and especially if you open it up and get some material on it that melts down, you can get some gas exchange to go through the ice."

Most superintendents will spread Milorganite on the surface of the ice. The black granules work as mini-heat sinks, absorbing sunlight and creating holes in the ice that will eventually bore all the way down to the grass, allowing the turf to breathe. Once you've made it that far, you should be on the road to recovery, unless you've made another critical error.

"The key to clearing greens off is to get the snow banks way off the greens so that when they melt, they run away from the greens—you don't want them to melt and run back on to the green, or you'll have water on greens that will puddle up and freeze and cause problems as well. We try to dump a lot of the snow in the bunkers. They have drainage in them but more importantly where ever you put your snow banks you've got a potential snow mold situation under the snow banks. You put a snow bank on the surrounds that takes until mid-April to melt and you've got perfect conditions for snow mold right off the green. You don't have to worry about snow mold in the trap."

Sometimes you need to bring in the heavy equipment.

The Quechee Club, which also operates a small ski area for members, has the correct equipment to do the job, but when the snow is deep it may also be difficult to get the

machinery to the site.

"We have a four-wheel drive back hoe with a front loader and we have two other four-wheel drive tractors with bucket loaders that we'll put out there," notes Lallier. They also have another tractor with an eight-foot-wide snow thrower on the back, but unless the snow is uniform and without a mid-layer of ice, it may not be very effective.

Similar to the realization that snow can't be just pushed on to the surrounds, Lallier offers a few other helpful hints that he has picked up through his own decade of experience. "We have some greens where we only get one or two inches of mushy ice and if the guy gets real aggressive with the bucket he may take some of the contours out of the green for you. It's real important to get the snow off the surrounds, but you have to be careful not to dig up your surrounding mounds, also."

Timing is Everything

The timing is also critical. "If you push them off too early and get that turf exposed and then you have some sub-zero weather after the plants have hydrated you're going to kill them off that way," notes Lallier. Like any timing call in greenkeeping, "It's not an easy decision."

A great deal depends on knowing your own little micro-climate and how that affects the springtime freeze and thaw cycle. "The micro-climates mean a lot and people don't understand that," notes Lallier. Up in Bangor, Maine, where they know about snow and ice, superintendent Austin Kelly once said, "Something you do one year doesn't work the next, or one thing works for you and two miles away it doesn't work for the next guy." Just part of the fun of the job, isn't it?

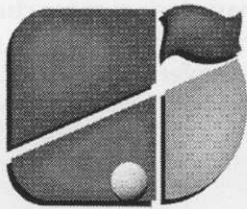
(Editor's Note: Bob Labbanca is Turf's Golf Editor. He resides in Montpelier, Vt.)

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