

Ice Damage on Turf

By Dr. Wayne R. Kussow Department of Soil Science University of Wisconsin-Madison

December rains have left many putting greens and tees in southern Wisconsin covered with two or more inches of solid ice. This, unfortunately, is not unusual and has led to the same questions that surface every time this happens. How long can I leave the ice intact before the turf is damaged? What's the most effective way to remove the ice? If I completely remove the ice, do I need to cover the turf?

Merely the fact that these same questions keep arising indicates that there are no definitive answers. Perhaps more concise answers will come out of next year's Wisconsin Golf Turf Symposium where the topic will be winter injury. In the meantime, let me share with you what is known about ice sheet damage and offer suggestions for dealing with the problem.

Research conducted by Dr. J. B. Beard nearly 30 years ago still remains as the most extensive body of knowledge regarding ice damage on turf. His findings allow me to address the question of how long ice sheets can remain in place before significant damage occurs. The answer depends to a large degree on the grasses you're dealing with. Improved creeping bentgrass varieties appear capable of surviving 150 days or more of continuous ice cover. Older varieties such as Washington and Seaside generally

display damage after only 90 days. Least tolerant and of greatest concern on putting greens and tees is *Poa annua*. It starts to succumb after as few as 45 days under ice. Research with winter wheat suggests that these time limits are extended if sunlight is able to penetrate the ice. How much time is gained and whether or not the same is true for turfgrasses remains to be determined.

Should the ice be underlain by an inch or so of snow, then turfgrass survival times increase because the rate of accumulation of carbon dioxide, ethanol and toxic gasses is slowed. The period of time a snow layer adds to the survival time of bentgrasses is not clearly defined, but amounts to only about 15 days for annual bluegrass.

It is an observation of mine and one of my colleagues that the survival times given above vary depending on when in the season the ice sheets form. Damage seems to be much greater when the ice cover forms in late January or February than in November or December. I'm not sure why, but suspect it has to do with the prevalent view that ice *per se* is far less damaging than is turfgrass crown hydration and subsequent freezing during freeze-thaw cycles. Early ice sheeting frequently receives some type of remedial action such as

removal or partial melting. When ice forms in February, the tendency is to "wait it out" since spring is not too far away. The net result may be more standing water and more crown hydration during thaws from late rather than early ice covers. Another possibility is that early ice is more likely to be covered with an insulating blanket of snow that prevents temporary thawing. Finally, turfgrass susceptibility to ice damage may well vary with time of winter. It is a well established fact that storage carbohydrate reserves decline very rapidly in turfgrass after December. It is conceivable that this markedly increases susceptibility to winter damage.

Once the decision is made to remove ice, the options for doing so are well established. Complete removal by mechanical means is one. A snow layer beneath the ice greatly enhances chances of doing so without damaging the turf. To me, complete removal is the preferred method of dealing with ice sheets. It removes a major source of water that forms during freeze-thaw cycles and reduces the potential for turfgrass crown hydration.

When turfgrass is completely encased in ice, mechanical removal of the ice without severely damaging the turf becomes very difficult. In this case the second option for dealing with ice needs to be considered. This is the practice of spreading a dark material on the exposed ice surface to absorb solar radiation and melt cavities in the ice. Any dark material will serve this purpose and the darker the better. Milorganite has long been used but materials such as charcoal and dry compost or highly decomposed peat will work as well.

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Application of dark materials to ice surfaces has a lower success rate than does mechanical removal of the ice. One reason is that success is weather dependent. Unless application of the material is followed by two or more days of sunny days with temperatures in the high 20's or low 30's, chances of creating cavities that extend to the turf surface are not great. The success of this practice relies upon formation of cavities to the turf surface that allow for diffusion of gasses to and from the turfgrass. Another reason why mechanical removal of ice is favored over over selective melting is that the latter, by not removing the ice, does not significantly reduce the potential for turfgrass loss by way of crown hydration and freezing during freeze-thaw

If the ice thickness is an inch or less, a third option that has been used with success is breaking up the ice and not removing it. This can often be accomplished with minimal damage to the tee or green by removing any snow cover for a day or two and then driving

a vehicle back and forth over the ice. Choosing a time when air temperatures are near freezing and putting tire chains on the vehicle is often helpful.

Finally, the answer to question #3. Yes, turf should never be left exposed for more than a day or two to dry winter winds. Covering of turf from which ice has been removed is essential. Where there is snow under the ice. simply leaving the snow in place will suffice. Otherwise, some type of cover needs to be applied. An inch or so of uncompacted snow make an excellent cover. Covering greens with snow can certainly be an arduous task, but can often be greatly simplified through the use of a lightweight snow thrower. Blow snow onto the center of the green first. Rake the snow to a uniform depth, taking care not to walk on the snow. Continue to work outward from the center of the green until the job is completed.

Covers other than snow can be used when available. Dry organic residues such as pine needles, chopped straw (winter wheat straw is preferred because it contains less weed seeds)

or marsh hay are examples. These covers have to be removed in spring before growth of the turfgrass resumes. Fabric or mat covers may also be used, but present the problem of removal on warm days and replacement at night until the threat of night-time temperatures below about 28 degrees passes.

Can ice sheet formation be avoided? Not entirely. Rain that freezes upon contact with cold turf will form ice sheets virtually anywhere. The problem can, however, often be lessened through improvement of surface drainage. More importantly, good surface drainage is vital if turfgrass crown hydration in winter is to be avoided. It seems to me that golf course architects have to be more aware of this need in our climate and factor it into their design of greens and tees. Efforts to improve turfgrass survival under ice through changes in late season mowing practices or heavy, late season potassium applications have had mixed results. They do not eliminate the need for ice removal or selective melting.

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The Flame Of Obsession

By Pat Norton

Ah, winter! That cold, quiet time of the year when we all have too much time on our hands. Golf courses in Wisconsin are much too quiet this time of year. My shop telephone may sit for hours without ringing, while the home telephone rings constantly. It rings for others—my sole function is to answer it and pass the telephone over to Sue or the kids. Even at home these days I have way too much idle time on my hands!

Either at home or at the shop, winter is the time for thinking and pondering the future. As we all paint, sharpen and repair our way through the winter months, we think and ponder. We consider our personal and professional situations, and wonder to ourselves just what it is that the future will bring.

Every time that a seemingly juicy career opportunity pops up, the flame of obsession burns brightly inside of me for awhile. As I consider the possibilities, I realize that it's no longer a simple question of "What do I want" or "Where do I want my career to be headed?"

Now there are many more people involved in the decision-making process—a school-aged family, employers that must be treated honorably, and co-workers that will be left behind. Also to be considered are the supposedly greener pastures that beckon to a superintendent. I have jumped the fence into those greener pastures only to find myself landing in thistles!

It only takes a few of these landings before the flame of obsession begins to cool rapidly. As one acquires age, maturity and a bit of wisdom, hot opportunities are coolly analyzed and given time to mellow. The negative aspects of a career change become more prominent, while the positives of one's current situation become a comfort factor.

What it boils down to is a matter of goals. If you are obsessed with the goal of being a hotshot superintendent at the most exclusive club possible, then go for it. Go for the new job, the new club, new community, new church,

new neighbors, new schools and all new friends for your children! Just be sure, pal, that it is indeed a greener pasture that your obsession has led you into.

My obsession, or goal, is along those lines, but is a little bit different. Anymore I do not care about having the hottest superintendent job at the hottest club in the state or region. Superintendent openings that cross my desk interest me little or not at all.

I see too many reasons to stay put, and too few reasons to relocate as a superintendent. I also see too many limitations to long-term success in this profession.

It seems that the higher that one climbs in this business, the hotter the club politics can become. And I, like most others, absolutely detest the petty politics that are part of this business. We all have seen peers and colleagues disappear from the golf scene. Sometimes there is just cause for dismissal, but there are also those instances when a change is made primarily at the whim of some green committee or governing board. The fact is that we are all replaceable employees thrust into sometimes very political situations. That's a very real part of this business.

I believe that by the age of thirtyfive a superintendent should have a strategy for long-term success. This long range obsession should be selfdictated, provide for a healthy family environment, education for one's children and ultimately leave a guy in a great position for retirement.

I am obsessed with the fear of not being prepared to send children to college. I am also obsessed with the fear of not setting aside enough money for a happy retirement. Those fears help keep my obsession flaming brightly!

The ideal future that we all hope for can be achieved by us all but probably not by working our prime years away for someone else as a golf course superintendent.

This profession has its limitations. It is definitely a young person's business, has some income limitations.

and generally does not extend strong retirement benefits to those of us in the business. Depending on the loftiness of your goals or the intensity of your obsession, this line of work may not allow you to make sufficient progress toward your goals by the time that your prime years are behind you.

The flame of obsession burns brightly within me when I think of the future and my strategy for reaching our goals. The superintendent business has given us all the golden opportunity to be involved with golf at a time when golf is really a hot sport. It is now up to each of us individually to decide which path to take to insure a successful future.

Each of us must spark and fan a flame of obsession within us as we go through the years. If we keep the flame burning brightly, then real goals and accomplishments will be reached sooner than you think possible.

Fuel for the flame comes more readily to me during the long winter months—there is more time to think about the future. Sometimes the flame burns hot, sometimes it cools to just a flicker.

But it never goes out. It is never extinguished. It is always there.

It is always there.

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VINCENT

By Monroe S. Miller

We've had early morning coffee together thousands of times over the past twenty years, sorting out the recent news, exchanging thoughts about the weather and usually agreeing about the sad state of some part of American agriculture.

For half of those years, he was here nearly everyday day; the past decade—his "retirement" years—I've had to do without Vincent during the winter season. His return is one of the big reasons I look forward to opening day each spring.

The rugged, leathery, weather-worn face on the cover is known, I'd guess, to far more readers of this journal than its owner would believe. And there are some who have asked me about the man I have mentioned in passing in other stories in *THE GRASS ROOTS* over the years or talked about in conversations. So although he's not a celebrity, he is familiar to many in our business in Wisconsin.

Almost always when young people leave our employment after graduation from the University, they say to me, "when I get my own golf course I am going to hire someone just like Vincent Noltner."

Of course, they never do and never will be able to do that. There is only one of this guy and I'm making sure he doesn't leave my side.

We all have fellow workers who we enjoy enormously, who we learn from and who we trust. So it is with Vincent and me. From the time we first met and shook hands at the edge of the 15th green at Blackhawk in the fall of 1972, we have had a strong bond between us.

For me, the base of that bond and emotional tie has been respect. I have respected what he knows; his mind is like a steel trap, keeping in endless experiences for later reference.

It seems I have spent much of my life around highly educated people—ties to the University of Wisconsin and its great faculty, a club membership from a university town, and friends

who have traveled the same path of learning I have traveled are the main reasons. And yet, I've not met anyone any "smarter" than Vince, a man who only made it through mid-grades before having to return to the home farm to work.

Many times, for example, I've heard him carry on conversations in German; you wonder what his native tongue is because he has no accent in either German or English! Every once in a while he will slip and sign his name and use the very German **Vinct** spelling.

Always, there is a lesson in it, although days might pass before that lesson dawns on me. I've relished all of these stories

Robert Gard spent his career as a professor at the University of Wisconsin-Madison where he directed programs and wrote profusely about the lore and legend of rural Wisconsin and her people. Professor Gard should have met Vincent Noltner. His stories would have filled one of Professor Gard's books.

When I started my career here, I was a young man and Vince was well into his middle years. Now that I have the perspective offered only by a middle-aged person, I fully realize how perfectly he has handled the potentially difficult situation involved in dealing with a younger boss. The lessons I've learned from him will suit me well as I reach the station when the same situation will undoubtedly face me.

I considered using the title "In Praise of Older Workers" for these lines. That would have legitimatized their appearance here in the eyes of a few.

But that isn't what I've written about.

Grant me a wish and I'd wish for a memory like his. He can tell you when they cut the first crop of hay in 1938 or what a particular cow brought at market in 1954. Ask him when ice left Lake Mendota two years ago and he'll probably know. Sadly, I cannot remember what I ate for supper last night!

The man has a keen sense of humor, telling real life stories that are funny. He enjoys playing practical jokes on those he works with. He laughs easily and often. His humor is of the country—rural Wisconsin—and is likely to be robust and earthy.

But make no mistake about this: his sense of humor never got in the way of his tough and no nonsense approach to work.

Vincent has the virtue of consistency; he sees life steadily and sees it whole and so many times puts isolated events —disasters to me—in perspective.

I believe people like him who have a calm and happy nature are those who feel the pressure of aging the least of all. He is still putting in a good day of work at 78 years.

He often makes me feel like a boring, mundane person. Every day we've worked together, I heard a story from the past that I'd never heard before. That word "respect" comes up again. Despite my youth, Vince respected the position I held. He was patient and careful to understand my intentions; he helped enormously with the methods best suited to meet those intentions. What's more, I cannot recall even once when we have argued.

And although he respected my plans and decisions, he has never even once been condescending. Whenever he's told me something, I've always known that it was exactly what he thought. There are no hidden agendas with this man.

That, I've learned, is consistent with him. He knew the famous Wisconsin senator, Robert LaFollete, not as leader of the Progressive Party or as a U.S. Senator or as a presidential candidate, but rather as a dairyman. LaFollete owned a farm near Vincent, and he has told me that LaFollete wasn't much of a dairyman!

My two favorite Wisconsin authors are Hamlin Garland and August Derleth. Imagine my surprise when one time while we were working together he mentioned something about "Augie" Derleth.

To me, Derleth was one of the best writers I've read, a great Wisconsin

storyteller from Sauk City. To Vince, "Augie" was a mere acquaintance. He was always a gentleman and would often treat Vincent and his mother to ice cream when they saw him in the village. Vince did mention that he thought Augie wrote a column in the Sauk weekly paper. The rest didn't matter much and certainly didn't overwhelm him like it did me.

I've seen this retired farmer hold college professor and bank president, businessman and famous athlete in rapt attention while sharing a story, explaining a job or commenting about the golf course.

While he is holding court with such people or with the crew or with me, one thing you'd be sure to notice: he says more with fewer words than anyone you'll meet. He is a true practitioner of the "keep it short and simple" philosophy.

After twenty years at the same golf club, I have acquired quite a long roster of former employees. When they call or when they visit, ALWAYS it is "how's Vincent" or "can I take a Cushman out to see Vince?" When Jim Love stops by in the summertime, he never leaves until he has spent some

time to visit with Vince. They've done that for twenty years, too.

I have watched Vincent in conversation with gals who play on our golf course. They seek him out—for which we tease him unmercifully at times—and always there is a tip of his hat. An old-fashioned gentleman he is. It is truly refreshing to witness.

Never again can I hope to work with someone and share the commonality we do. That shared background of farm life will become more and more unlikely. We have mutual understanding of the value system of rural communities and have experienced the pleasure of close neighbors. We both revere the home scene and families. Religion is important to both of us.

For all those reasons, Vince is going to have to keep working until he is about a hundred years old.

I considered using the title "In Praise of Older Workers" for these lines. That would have legitimatized their appearance here in the eyes of a few. But that isn't what I've written about.

True, he is older. True, the smart golf course superintendent will make room for those proud and able people who just happen to be older and maybe retired. Vince reminds me a lot of Francis Bacon's line from hundreds of years ago: "Age appears best in four things—old wood is the best to burn, old wine is the best to drink, old friends are the best to trust and old authors are the best to read."

To that I'd add a fifth that gets better with age—Vincent Noltner.

These words here have been about a valued friend, counselor and, in many ways, a surrogate parent. What a pleasure it has been to work with someone who is always helpful and never envious, who is enthusiastic and wise, who rarely complains and never gossips.

I'd guess there is a subconscious desire on my part that wants Vince to know how important he has been to me for all these years. I want to be certain he is aware of the value I place on friendship and how much I plan on continuing to learn from him for years to come.

And yet, somehow, I know that he already knows. Some things don't need to be spoken or written for him to figure out.

His wisdom probably told him years ago.



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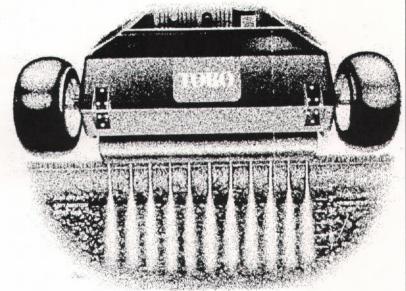
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Country Clubs, Pride & The Bottom Line

By Dean Musbach

Like many superintendents, I enjoy my job immensely. One might even say that being a superintendent is in my blood. After all, I am a third generation superintendent and I'm proud of it. My grandfather Frank was a superintendent for fifty years and my father Bob has been a superintendent for thirty-five years. I literally was born and raised on a golf course. I have many fond memories of riding in the back of a F-10 fairway mower, playing in flooded sand traps after a rainstorm and climbing on the big Milorganite pile in the storage building. Throughout my life. I've spent many hours on the golf course. This is where I witnessed what commitment, pride and work ethic are all about.

Both my grandfather and my father worked at private country clubs. Like many superintendents, they had extremely high standards and they were willing to do whatever possible to achieve their goals. Pride and self motivation drove them to give the members high quality playing conditions. As times changed, it became increasingly more difficult to satisfy the membership's desires.

Today, club members continue to want more. Thanks to television. Augusta National has become the standard. But what most members don't realize is that Augusta has an openended budget to prepare the course for two weeks of the year. The affluent clubs think they can buy perfect playing conditions, so they infuse massive amounts of money into the maintenance budget. Because most superintendents are self-motivated competitors, they try to attain perfection; unfortunately, perfection is unattainable. To be successful, the superintendent must give realistic appraisal of the situation, and then he must do whatever is needed to attain the goal.

Private equity clubs are different from other golf operations because the bottom line isn't the first priority. They do not exist to make money, they exist strictly for pleasure.

What does all of this have to do with

me? Timber Ridge C.C. is a privately owned non-equity club. Prior to my employment at Timber Ridge, all my experience was with private equity clubs. Upon hiring, the owners of Timber Ridge told me that they wanted their course to be the best. I approached the proposition as my father and grandfather would, with hard work and money.

The maintenance budget nearly doubled within my first two years. Although the owners were pleased with the progress of the course, reality set in. The bottom line was not good and the club was losing money, so the owners needed to reevaluate their expectations for the course.

The problem wasn't the course. Memberships were up and total golf course revenues increased. The problem was with the clubhouse; its inconsistent food quality and service caused members to eat elsewhere. As a result, the clubhouse incurred huge losses and Timber Ridge needed to cut expenses, including golf course maintenance expenses.

This was difficult to accept and I resisted the change. Moving backwards was difficult for me, especially when my past experience was quality oriented. I felt the course was a reflection of me and that any slip in quality would tarnish my reputation with the members.

During the following two years, the golf course budget didn't really decrease: it remained stable. The small amount of fat that was in the budget was cut, tree maintenance and planting were discontinued, and the small tools budget was cut. It was difficult to differentiate the fat from the meat, until I looked at this situation from the owners' perspective. The only unaffected areas were turf supplies, irrigation repair and equipment maintenance, but despite this effort, the club still continued to lose money.

Although the club was doing better, the owners decided that holding the line was not good enough. It was time to cut back, but another cut in materials was not feasible, so I decided that the cut had to be in labor. Every superintendent knows that when labor is cut, management practices have to change.

This proposition of cutting expenses was not simple because the owners also wanted a satisfied membership. I didn't guarantee anything; as a matter of fact, I thought the membership would be in an uproar. Despite my feelings, I developed a priority plan for different areas of the golf course. The golf course was prioritized as follows:

1. Greens-The program for putting

greens did not change.

Tees, Approaches & Fairways— Regular mowing remained the same and a strict IPM program was implemented. Previously these areas were aerated as frequently as three times a year to correct a thatch problem. Aeration was cut back to once per season.

Green & Tee Surrounds—Mowing was cut in half and weeds were

spot treated only.

4. Rough—Roughs were allowed to grow much longer than before. A twenty-five foot intermediate rough was established to pacify members. Trimming around trees and fences was deceased by two thirds.

Bunkers—Previously, bunker bottoms were raked every day and edges were raked three days a week. This changed to raking bottoms three days a week and edge raking was discontinued. Also, annual edging was discontinued.

In addition to the priority plan, all capital expenditures were canceled and any other course repair projects were put on hold.

When the plan was presented, I made the owners well aware of the possible consequences. I reiterated my concerns several times to the owners because I didn't want them holding me responsible for complaints.

To my amazement the complaints never came. In fact, the consensus of the membership was that the course was as good as ever. At times I had to bite my tongue because I thought the (Continued on page 19)

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course was in the poorest condition in four years. It was then when I realized that I was my biggest critic and worst enemy. I was striving for the course to be Augusta National on a shoestring budget, and this was not realistic. My country club experience had blurred my vision.

All in all, the plan was a success. As a result, the labor expenditures were cut by twenty percent. I eliminated two crew positions and cut labor hours from forty to thirty hours per week for seasonal employees. This amounted to a net loss of four employees. The total budget expenditure was equal to the 1989 budget.

Despite the success in cost control, the restaurant, while improved, continues to struggle. As a result, the bottom line still isn't to the owner's liking, and this program will be continued for another year. Because the new manager and chef are very competent, I am very optimistic that the program will be successful this year.

There are two lessons to be learned

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9305 Oak Creek Ct. Franklin, WI 53132 here. First, with the exception of private equity clubs, golf courses are a business and the bottom line is the first priority. As a superintendent, you have a responsibility to act in the best interest of the company, even when those actions make your job more difficult or are in conflict with your maintenance philosophy.

The second lesson is, don't be so damn hard on yourself. Whether you realize it or not, you are your toughest critic and your golf course is probably in better shape than you realize. Next time you are disgusted with the condition of your course, take time to view it from someone else's perspective.



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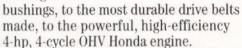
Exceptional side-to-side, front-to-rear balance and a more compact roller base help accentuate your greens' details, rather than your mower's limitations.

Our new 11-blade, electronically balanced reel delivers an unbelievably smooth cut, even down to 5/64." Plus, our exclusive Turf Groomer® option simply produces faster, truer, healthier greens than any imitator.

Clutch performer.

No other walking greens mower can touch the 422 for reliability. Our all-new clutch has been tested out to the equivalent of 70 years of operation, without any adjustment or lubrication.

The same eye for quality extends throughout this unique machine from our spaceage, long-life bearings and



With features like drop out drive drum, reel and bedknife, and easy, slide-apart traction roller with built-in differential, the Greens King 422 cuts maintenance time as neatly as it cuts grass.

See for yourself why it's a whole new ballgame, ask your Jacobsen distributor for a complete demonstration.

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Jacobsen Division of Textron, Inc.

IT'S A WHOLE NEW BALLGAME.

WISCONSIN TURF EQUIPMENT CORP.

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