Understanding Frost Delays

Presented by the GCSAA

As winter starts to give way to spring-like temperatures, the desire to hit the golf course intensifies. It also signals a change in golf course management activities that can affect one's game and the conditions found on the course.

In many regions of the country, golfers occasionally face frost delays in the spring, thus pushing back starting tee times. When frost is present golf course superintendents delay play until the frost has melted. This is done to prevent damage that affects the quality of the playing surface and could potentially be very expensive to repair.

Frost is basically frozen dew that has crystallized on the grass, making it hard and brittle. A grass blade is actually 90 percent water, therefore it also freezes. Because of the short mowing height (sometimes as low as 1/8 inch) and fragile nature of the turf, putting greens are most affected by frost. Walking on frost-covered greens causes the plant to break and cell walls to rupture, thereby losing its ability to function normally. When the membrane is broken, much like an egg, it cannot be put back together.

Golfers who ignore frost delays will not see immediate damage. The proof generally comes 48-72 hours later as the plant leaves turn brown and die. The result is a thinning of the putting surface and a weakening of the plant. The greens in turn become more susceptible to disease and weeds. While it may not appear to be much of an issue if a foursome begins play early on frost covered greens, consider the number of footprints that may occur on any given hole by one person is approximately 60. Multiply that by 18 holes with an average of 200 rounds per day and the result is 216,000 footprints on greens in a day or 6,480,000 in a month.

As golf enthusiasts superintendents do not like to delay play, but they are more concerned about turf damage and the quality if conditions for the golfer. Frost also creates a hardship on a golf facility's staff as all course preparations are put to a halt until thawing occurs. Golf carts can cause considerable damage, therefore personnel cannot maneuver around the course to mow, change cup positions, collect range balls, etc.

One technique employed to reduce possible frost damage is to raise the cutting height of mowers to create a hardier surface. It may also be possible to reroute play to holes where the frost melts more quickly. But regardless of these methods, the best medicine is for all to understand the hows and whys of the delay and in turn gain a greater appreciation for the golf course. It would also be wise to give the course a phone call before heading out to play to see if tee times have been pushed back due to frost.

Tough Turf

By PAM CHARBONNEAU
Turfgrass Specialist, Ontario Ministry of Agriculture Food and World Affairs

Winter kill (a.k.a. winter injury) is a much-discussed topic among golf superintendents in Canada come spring. Often we talk about it as though it were one thing. It is not. When you consider the length and breadth of Canada and the differences in the types of winter weather experienced from coast to coast, it becomes even more complex.

Add the fact there are no two golf greens that are identical, let alone any two winters, and the complexity of the situation quickly multiplies. Further, while a lot is known about turfgrass winter injury, there is just as much that is unknown. Luckily, there are two very good research teams (Agriculture and Agri-food Canada, Que., and AIds College, Alta.) that have added immensely to the knowledge of winter injury, its causes and how to prevent it.

So what exactly is winter injury? There is agreement amongst turfgrass researchers that winter kill can be caused by desiccation, crown hydration, freeze injury, anoxia and snow moulds (Beard and alien, 1963). For the purpose of this article, I am only going to focus on the abiotic causes of winter injury-snow moulds will not be discussed. Knowing which type of injury you are most likely to encounter in your area is the key to prevention

Desiccation

Desiccation is defined as the process of extracting water. Turf can suffer from dessiccation during the winter months. Injury occurs when water loss from turf plants exceeds uptake and transport from the roots. Desiccation can only occur in the absence of snow cover. It can be a result of soil drought or atmospheric drought.

Desiccation from soil drought occurs when there is minimal soil moisture due to a lack of precipitation, sloped areas with high incidence of surface runoff or elevated areas exposed to prevailing winds. Desiccation can also occur when there is adequate soil moisture. This is considered atmospheric drought and occurs when water is removed from parts of the grass plant that are above ground, through evapo-transpiration. The roots are unable to replace the water because the soil water is frozen.

Desiccation is a common problem on golf greens and other course turf in the Prairie provinces and B.C.'s Lower Mainland.

In general, annual bluegrass is more susceptible to desiccation than creeping bentgrass. Greens in full sun are also more susceptible. It can take as little as several days of high winds and low relative humidity in the absence of snow cover to cause desiccation.

Desiccation Prevention

Fortunately, there are several methods available to help golf course superintendents prevent winter desiccation. They include:

- irrigating turf prior to freeze up or before snow cover;
- installing windbreaks or snow fencing to reduce wind or to encourage snow cover;
- applying mulch or light topdressing on greens;
- covering greens with a synthetic permeable cover; • watering greens in the winter;
- minimizing thatch; and • maximizing creeping bentgrass populations.

Freeze Injury/Crown Hydration

Freeze injury occurs when plants are subjected to extremely cold temperatures or a severe rapid drop in temperature. This causes water inside and around the plant cells to freeze. Ice crystals can damage the cell membranes, resulting in the death of plant cells.

Crown hydration occurs when ice crystals form outside the plant cell (extracellular) of the turfgrass crown tissue. As these ice crystals form and enlarge, they pull water out of the cell, which results in dehydration. This type of injury is also called crown dehydration.

Another property of water is that it likes to move from a high to a low concentration. The solutes (mainly sugars) in a plant cell give the cell solution a higher concentration than the ice crystals outside the cell. This further increases the movement of water outside of the cell. At some point a dehydrated cell and cell membrane stop functioning and the result is cell death. If enough of the cells in the crown of the turf grass plant die, so too will the entire crown (Rossi, 1996).

Conditions Favoring Freeze Injury/Crown Hydration

Crown hydration is a complex phenomenon involving many .

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Turfgrass plants are most susceptible to crown hydration in the transition period between winter and spring. At this point in the season the carbohydrates the turf plant has stored in the fall to help withstand intercellular freezing have fallen to their lowest levels. At this time, the plants are also dehardening and taking up water (Tompkins et al., 2000).

Micro-environmental factors that contribute to crown hydration injury include areas with poor surface drainage where water collects and goes through freeze/thaw cycles. Compaction will also exacerbate this. The most serious injury occurs when the warm temperatures are followed by a rapid decrease in temperature. A rapid drop in temperature has been shown to be more damaging than a more gradual one. The length of the freeze cycle also influences the amount of damage.

Shaded turf is also more vulnerable. This may be due to the fact annual bluegrass often dominates greens in the shade. In addition, shaded greens may not produce as much carbohydrate to provide maximum winter hardiness.

Undoubtedly, turfgrass species is the most important factor determining whether there is a potential for crown hydration. Annual bluegrass is much more susceptible to such injury than creeping bentgrass. One of the main reasons is because annual bluegrass is the most susceptible to dehardening.

Research has shown that a rise in temperature to 8 C (46 F) for 48 hours is sufficient to deharden annual bluegrass (Tompkins and Ross, 1997). It is also known annual bluegrass comes out of dormancy earlier than creeping bentgrass and the crown tissues become hydrated, which also contributes to annual bluegrass susceptibility. It has been demonstrated there is a range in hardiness amongst annual bluegrass biotypes (Dionne et al.,2001), but as a species they are by far the most susceptible.

Freeze Injury/Crown Hydration Prevention

Maximizing cold hardness can help reduce the risk of crown hydration injury. Management practices that help the hardening process are:

- late fall fertilization;
- increased mowing height in the fall.

Other factors that help prevent crown hydration are:

- maximizing creeping bentgrass populations;
- providing adequate surface drainage and minimizing soil compaction;
- minimizing shade;
- controlling thatch.

Protective covers are used in many areas to prevent freeze injury and crown hydration. Different covers or cover combinations are recommended depending on location, the amount of snowfall and the type of injury prevalent. For instance, in the Quebec City area, where adequate insulating snow cover is predictable, impermeable covers alone are recommended. In the Montreal area, where the amount of snow each winter varies, a system of a permeable cover, an insulating layer (usually straw) and an impermeable cover is recommended.

Permeable covers can also be used in the spring when winter protective covers are removed (Dionne, 2000). Dionne also recommends temperature under the protective covers be monitored throughout the winter.

To further the art and science of protective cover use, the University of Massachusetts and the United States Golf Association (USGA) Green Section, in cooperation with golf superintendents from the northeast United States region, are involved in a research project in which they are monitoring the temperature underneath a variety of different covers.

Anoxia

Anoxia, defined as lack of oxygen, is a condition that can occur under an ice cover or winter protective cover and can kill turf. Under covers, turf plants use up oxygen while other toxic gases such as carbon dioxide (C02) can build up. During the winter, under snow, ice or covers, turfgrass plants respire. In this process, organic sugars within the plant are mobilized in the presence of oxygen to provide energy to keep the plant alive. The equation for respiration is as follows: C6H1206 (hexose sugar) + 602 (oxygen) 6C02 (carbon dioxide) + 6H20 (water) + energy

In a closed system where there is no gas exchange, under anoxic conditions, this process or reaction can not occur. If this happens, the plant will run out of energy and eventually die. The other aspect of respiration in a closed system is that as oxygen is depleted, carbon dioxide builds up with potentially phytotoxic effects.

In addition to respiration from turfgrass plants under covers, there are also soil bacteria that are respiring. This further contributes to the oxygen depletion and the carbon dioxide buildup. Factors that affect the rate of respiration of plants and soil bacteria are temperature, soil water content, degree of plant dormancy and soil organic matter content. Usually anoxia can be detected by the foul smell that emanates from a green when it is uncovered in the spring. The smell is a result of the build-up of gases under the cover and is usually accompanied by turf injury.

Factors Affecting Anoxia

Again, as with all other forms of winter injury, the species type has a big impact on whether or not anoxia will result in turf injury. Research conducted at Olds College in Alberta (Tompkins et al., 2004) found ice-encased annual bluegrass plants were all dead after 45 days while creeping bentgrass plants could withstand 90 days.

In the Quebec City area, many golf courses have been using winter protective covers consisting of a permeable cover, straw and an impermeable cover. There were some greens that recurrently came out of winter with dead turf, in spite of being covered. The death of the turf could not be attributed to freezing stress, excess water or snow mould.

Rochette et al. (2006) set up an experiment with greens that had recurrent damage under covers and those that overwintered successfully with covers. They measured temperature, O2 and CO2 levels under the covers throughout the winter.

What they found was the greens that had recurrent damage had anoxic conditions by day 90, where the greens that overwintered successfully had sufficient O2 levels up to the end of the winter (day 130).

The greens with recurrent damage also had high levels of CO2 by day 90 and the other set of greens that overwintered well had equal amounts of O2 and CO2, The greens that suffered recurrent damage under cover had a 69 per cent higher respiration rate on average than the greens that overwintered successfully.

These two sets of greens were annual bluegrass, so the differences in respiration could not be attributed to the species. The difference in respiration, and hence oxygen depletion, were due to the soil biological activity. The greens with recurrent damage had significantly higher total nitrogen and total organic carbon. To verify these results, researchers tested the respiration rates of soil-based greens vs. USGAspecification greens. They found the soil-based greens consistently had higher respiration rates than the USGA specification greens.

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Ice Encasement, Ice Cover and Winter Hardiness

Separate from the issue of how ice covers affect the 02 and CO2 levels, research has shown ice cover and ice encasement lowers turfgrass winter hardiness levels. Tompkins et al. (2004) conducted research to determine whether or not it is beneficial to remove an ice sheet from a putting green. To determine this they looked at cold hardiness levels of annual bluegrass and creeping bentgrass under ice cover or ice encasement for various lengths of time in a laboratory and in the field.

In the laboratory study, plants in the ice cover treatment were covered with a 2.5-cm (I-in.) thick layer of ice, which was formed gradually by spraying the surface of the turf with a mist bottle in a freezer. Ice encasement was accomplished by completely saturating the soil of a turf grass plug and then adding the 2.5-cm layer of ice as described above for the ice cover treatment. The control treatments had a thick layer of snow cover maintained throughout the experiment.

Snow-covered treatments maintained cold hardiness for the longest period of time and ice encasement produced the most rapid loss of cold hardiness. The differences were greater for annual bluegrass than creeping bentgrass. At 90 days after treatment, snow-covered annual bluegrass had cold hardiness levels of -18 C (-0.4 F), while the ice-covered plants had cold hardiness levels of -4 C (25 F) and ice-encased annual bluegrass plants were dead.

Ice-covered annual bluegrass had a rapid loss of hardiness between 75-90 days after treatment, and ice-encased annual bluegrass rapidly lost hardiness between 45-60 days after encasement. By contrast, creeping bentgrass began to lose hardiness 90 days after treatment in both ice treatments, but retained moderate hardiness levels for 150 days. In the field study, annual bluegrass had a more rapid loss of hardiness than in the lab. Annual bluegrass plants subjected to ice encasement lost cold hardiness between day 45 and 60.

In addition to the potential for development of anoxia under ice cover, there is also a loss of cold hardiness. In fact, they may be related to one another. High respiration rates under the ice covers may use up the plant's stored energy, leaving it more susceptible to the cold. High respiration rates could also contribute to the buildup of toxic gases that injure plants.

Anoxia Prevention

In the case of annual bluegrass putting greens with ice encasement, the study conducted by Tompkins et. al. (2004) showed all were dead after 45 days of ice encasement. It would be advisable to attempts to remove ice before the 45-day mark to prevent anoxic conditions from killing turfgrass plants. This can be accomplished through the use ofdark-colored topdressing materials that absorb heat. These can range from natural organic fertilizers to colored topdressing sands, inorganic amendments, etc. These products honeycomb the ice layer allowing for gaseous exchange.

In the case of soil-based greens with high organic matter under straw and impermeable covers, it is recommended they be vented using perforated drainpipe under the impermeable covers. These pipes must vent to the outside of the greens covers without letting water in under the covers. The optimum spacing of these pipes is not known, but many superintendents are experimenting on venting methods and venting spacing.

Recommendations for Successful Overwintering

There are many agronomic practices that can help prepare turf for the onslaught of the various winter stresses Mother Nature has up her sleeve. Regardless of the type of winter injury, the following sound turf management practices should be followed:

- raise the mowing height in the fall;
- fertilize with nitrogen and potashin the fall to increase winter hardiness levels;
- provide adequate surface drainage;
- maximize creeping bentgrass populations;
- minimize shade;
- minimize thatch;
- alleviate soil compaction.

Specific factors contributing to each type of winter injury and prevention methods are summarized in Table 1.Winter injury is a complex physiological phenomenon and may occur as a result of and interaction between the plant, soil, the micro-environment and the climate. More than one type of winter injury may be involved. We continue to learn more each year due to research into winter injury and there are many factors we can control. Ultimately, though, we are at the mercy of the weather and a great deal of luck is involved.

TABLE 1: Winter Injury—Contributing Factors and Prevention

Winter Injury	Contributing Factors	Prevention
Desiccation	• annual bluegrass more susceptible than creeping bentgrass • lack of snow cover • soil drought • dry winds when soil is frozen more prevalent on sloped and elevated areas	• irrigate prior to freeze up • install windbreaks and/or snow fencing • apply mulch or light topdressing • winter watering • cover greens with permeable covers • maximized creeping bentgrass populations
Freeze injury/ Crown hydration	• annual bluegrass more susceptible than creeping bentgrass • rapid and severe drop in temperature • poor surface drainage • shade • low carbohydrate reserves • freeze/thaw cycles in late winter	• supply adequate surface drainage • minimize thatch • supply adequate nitrogen (N) and potassium (K) • maximize creeping bentgrass populations • cover greens with permeable covers, insulation and impermeable covers
Anoxia	• annual bluegrass more susceptible than creeping bentgrass • presence of ice cover longer than 45 days • high soil carbon under impermeable covers • high temperatures under impermeable covers	• maximize creeping bentgrass populations • vent impermeable covers on soil-based greens • melt ice with dark-coloured topdressing materials • mechanical disruption of ice covers

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Spring Valley Golf Course
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Choosing the Right Life Insurance Policy

By JIM WAHL
Principal Financial Group

Life insurance can be confusing and confounding to many people. The concept is easy enough to understand – providing a death benefit for one's heirs in the event of an unexpected death – but the ways to provide that death benefit can be complicated and, sometimes, mysterious. In fact according to a recent study by the Life Insurance Marketing and Research Association (LIMRA), more than 80 percent of people who say they need more life insurance list difficulty in deciding the type to buy as a reason they have not yet purchased it.

Several factors may play into the ideal type of coverage for a particular person's needs, and that is the reason so many policy types exist. Factors such as your age, your ability to afford the premiums, your risk tolerance, the length of time the death benefit will be needed and your desire to recoup your premiums or even enjoy an opportunity for a gain in cash accumulation, all go into a decision that may be best made with the help of a trusted insurance professional. I have attempted to summarize the various kinds of life insurance on the market today and help position the purposes of each.

Annual Renewable Term

A term insurance policy with low initial cost. Premiums increase, usually on each policy anniversary. ART may be the ideal solution for short-term needs, such as a one- to five-year debt obligation. Summary: Lowest initial cost death benefit protection available Ten- to Thirty-Year Term: Term insurance policies in which premiums are guaranteed to remain level for all or part of the life of the policy. They generally renew at rates that increase annually after the initial term of the policy expires. They are ideal for fixed needs of mid-range duration. Longer needs may be more cost-effectively addressed with cash value insurance, though the size of the premiums may ultimately affect your decision. For example, if low cost is your primary goal a twenty- or thirty-year term policy may offer low premiums, but after the initial guaranteed premium period ends, the premium is likely to go up substantially. Summary: Fixed cost death benefit for a fixed period of time.

Universal Life (in general)

Universal life insurance is a cash value policy, which offers flexible premiums, within minimum and maximum guidelines. The death benefit can also be adjusted, within limits. The portion of the premium in excess of that required to pay the policy costs, is accumulated tax-deferred at interest rates that are reset regularly. A minimum interest-crediting rate is guaranteed in the policy. The cash value then pays the mortality and rider costs (if any) and may be accessed through partial surrenders and/or loans to use for emergencies, college funding, opportunities or to supplement retirement income.

Summary: Cash-value life insurance with premium and death-benefit flexibility.

Universal Life (with secondary guarantees)

Secondary guarantees offer the insured the ability to guarantee the death benefit, up to lifetime, by paying a premium that matches the Lapse Protection requirement for that age. It should be noted that varying the premium or the death benefit, or surrendering or borrowing from a policy with a secondary guarantee, will likely void the guarantee.

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Life Insurance-

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Summary: Guaranteed death benefit protection at a fixed price for a mid- to long-range time period up to lifetime.

Universal Life (without secondary guarantees)

This type of insurance policy offers no death benefit protection unless cash value is maintained within the policy. Usually lower costs within this type policy offer more opportunity for cash accumulation than in a universal life policy with secondary guarantees. It can be used for low-cost protection or cash-value growth with moderate risk. Summary: Low cost, mid- to long-term death benefit protection with opportunity for cash accumulation.

Variable Universal Life

Another form of universal life insurance, in which the portion of the premium in excess of that required to pay the policy costs, is allocated to separate accounts much like mutual funds.

The mortality and rider costs (if any) are deducted from the separate accounts monthly. Money can be accessed from the separate accounts through partial surrenders and/or loans to use for emergencies, college funding, opportunities or to supplement retirement income. Secondary guarantees may be available for a stipulated premium, which offers the insured a guarantee the death benefit will not expire even if the separate accounts run out of money. These guarantees may be for a number of years or to a certain age, often up to age 100.

Summary: Mid- to long-term death benefit protection with opportunity for cash accumulation and/or tax advantaged retirement income commensurate with increased risk.

Whole Life

Another form of permanent life insurance, whole life provides a fixed level premium and a fixed level death benefit for life (in most cases to age 100). The policy's guaranteed cash value typically grows at a rate that will enable it to equal (endow) the specified death benefit at age 100.

Some insurance companies offer "participating" policies in which a portion of the premium may be returned to the client as a dividend. The dividends, if paid, may be used to increase the cash value and death benefit of the policy, reduce the premium, or be taken in cash. Dividends are not guaranteed and are paid at the discretion of the issuing company.

Summary: Long term death benefit protection, with a fixed premium and with opportunity for cash accumulation.

Survivorship Life

A life insurance policy designed to pay the death benefit at the time of the death of the second covered insured. These policies may be either whole life, universal life or variable universal life in design. The purpose of these policies is most often to provide the money to pay for the estate taxes due at the death of last surviving spouse of a couple with significant personal or business assets.

Summary: Long-term death benefit protection payable upon the second insured's death.

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"Bernhard and Company has opened my eyes to the golf course industry in England and the similar challenges they have to face every day. There are so many valuable tips that I learned from this trip that have had an immediate impact on the way that I operate my golf course, that I would never have known about if I didn't make the trip."

Register now at http://www.bernhard.co.uk/gcsaa-registration.0.html or call (888) 474-6348.

(Editor's Note: For more information about Bernhard and Company, visit www.expressdual.com. For more information about BIGGA, visit www.bigga.org.uk, and for more information about BTME, visit http://www.harrogateweek.org.uk/).

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MGCSA Membership Report

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- Respectfully submitted
by Brian Brown
MGCSA Membership Chair

In Bounds: Complacency

By JOHN "JACK" MacKENZIE, CGCS
North Oaks Golf Club

(Editors note: The following column is an oldie but goodie brought back from the archives. A friend of mine encouraged me to reprint this article on complacency.)

A few years back I was visiting with a fellow tenured superintendent regarding the plight of one of our peers who had been let go. While counting our blessings he mentioned to me that, in our business, most often the demise of a superintendent was self-induced, or as he put it, "complacency equals the front door." Wow, what sobering words of wisdom.

According to the Merriam-Webster dictionary, complacency is the noun of complacent which means to be self-satisfied and smug. In the above-mentioned quote, complacency is interpreted as being self-satisfied to the point of taking a position for granted. In this case, and in many, the superintendent had assumed that what he was doing was good enough because he was satisfied with his product. Unfortunately for him he failed to regard the demands of his players and thus failed to counter issues that demanded his attention.

Many in our business would consider my daily regime of cutting cups personally a bit retentive. However, how else am I going to really see the course from both an agronomic and player perspective? Of course someone else could be trained in the art of pin locations, but by doing this simple chore I am forced to visit every green, tee, fairway and rough complex on the course every twenty-four hours.

In the afternoon I am again out on the course with pen in hand or hand-held recorder to compile my "list." You know, the ever-changing assortment of big and little projects that need to be prioritized and then implemented. Sure, I could rely upon my capable assistants to do the task; however, it forces me to be in my member's faces as I travel the course with an open mind. Along the way I ask questions, give answers and monitor the ever-changing conditions of the course. My membership is my greatest ally when it comes to limiting complacency. If I miss a step they let me know and you can be sure that I am quick to get back into line. But there is no contact if I am holed up in my office.

Other complacency busters include having my staff wipe down the benches, tee signs and ball washers every day. There is no better way to spot damage or chipped paint. And as crazy as it may seem, we Armor All the plastic wastebaskets monthly and the bunker rake handles mid-summer as well as during the off-season. And every day we paint a beauty ring around our cups. You can imagine the look on the player's faces when they witness these finishing touches. Pampered? You bet. Over the top? Perhaps, but it goes a long way to prevent the perception of "taken for grantedness."

The complacency concept can be applied to all aspects of an individual's life from the job place to the home front and even into personal issues such as health, both mental and physical. At work, rest or play, individuals have to be mindful of their surroundings so as not to become overly satisfied.

Reflecting upon my first marriage I can see that it was very easy to take my home life for granted. My mind set was that if I labored hard and did a good enough job at the club I would be rewarded at home. And work hard I did, putting in 70 plus hours each week in the quest to create perfect playing conditions for my players. Unfortunately I became complacent in my family relations and suffered the consequences.

When was the last time you brought flowers home for your spouse? How many school-sponsored field trips did you attend during the off season? Have you sat down and visited with your parents recently? Does your dog get enough hugs? And when did you take time out and effectively RELAX, alone? Besides maintaining a close tie with loved ones, an individual must take care of himself or herself.

Out of college I weighed in at 155 pounds. A lean, mean, grass-growing machine! Eight years and 70 pounds later my body threw in the towel and demanded attention. Not just physical either. Besides becoming complacent with my muscles, my mind had deteriorated as well. Thankfully I committed myself to some serious mental consultation and changed my life from disarray and randomness to a focused purpose. Through exercise, sobriety and inner reflection I was able to really "clean up" my act.

Now I'm not attempting to lecture anyone on how to live their lives, but from a professional and personal perspective I have seen many great people slip and slide down the slope toward complacency. Attentiveness takes dedication. Awareness requires close observation. Responsiveness necessitates the reflection upon the whole picture, not just a second in time. To ride the crest in our profession, especially in this day and age of greater and higher expectations, golf course superintendents cannot afford complacency.

Whether with my wife and children, on the job, meditating or relaxing with a good book or fishing rod, my goal is to maintain awareness and truly be the best that I can be (to coin a phrase from the Army). I let my family know how much I love them every day. My employer gets 100 percent of my vocational attention. And when I take time to enjoy the gifts that life has to offer, I truly take a moment or two or ten or one hundred. My whole life is too short to be complacent. - JM