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Wishing you and yours a Happy New Year from the Lake Omigosh Golf Club here in central Florida. This is always a time

to reflect on our past challenges and accomplishments, but, more importantly, it's a time to rejuvenate and prepare to face the coming year with cautious or abundant optimism — depending on your view of the world.

To illustrate my point, I've been scribbling out the rough draft for this column in the club's 19th Hole and Whine Bar while alternately drinking diet sodas and vodka tonics. On the one hand, I'm all set to make some sacrifices to improve my health and well-being. On the other hand, I'm dreading the battle with the Environmental Protection Agency over its national WaterSense policy and a pending "Florida only" pilot program to dictate nutrient limits in our state's waterways.

The genesis of the nutrient policy is part of a settlement of a lawsuit against EPA by some environmental groups that think turfgrass, in general, is an unnecessary nuisance and who want to restrict the use of fertilizers in the state. The big problem is EPA isn't even considering the past 10 years of work done at the state level by our Department of Environmental Protection to engage the agriculture and green industries in best management practices to reduce potentially negative environmental inputs. Once again, scientific evidence is trumped by political expediency.

The EPA is coming up with basically arbitrary numbers that will spell disaster not only for the green industries, but also for the county and city governments that don't meet those magic numbers. Who knows more about Florida weather, soils, crops, water tables, rainfall patterns and watersheds — Washington bureaucrats or Floridians?

Remember, this is a pilot program, and you're next. But we all get to share the burden of the WaterSense program where EPA will dictate your turfgrass use and irrigation frequency. So whatever you do, don't have a

Never a Better Time to Stand United

BY JOEL JACKSON



YOU MUST
PARTICIPATE, WRITE
LETTERS AND VENT.
IF NOT, YOU'LL
WONDER WHERE
YOUR INDUSTRY
WENT

drought in your area. Washington knows best when to water from Seattle to St. Petersburg, right?

So, my brothers and sisters across the land, it's time to unite and make a stand. Time to join and to volunteer. Time to work harder to save your career. You must participate, write letters and vent. If not, you'll wonder where your industry went. You know the agronomic A-B-C's, so why not join Audubon Cooperative Sanctuary program and use BMPs.

While brown is not beautiful, it's tolerable. And we *can* learn to do more while using less. Also, nature means healthy and green, which is the best way to keep our waters clean.

All of golf needs to take up the struggle, and there are too many issues for just the superintendents to juggle. United we stand, divided we fall. The entire golf industry must heed the call. Get it together and make it all for one. If you don't, my friends, golf as we know it just may be done.

Get out that blank piece of paper and make some resolutions. Promise to be not part of the problems, but rather the solutions. Ask others to help and pick up the phone. Recruit your crew and golfers — you don't have to go it alone. Support your local and national associations. Working together we can find a way.

So long from Lake Omigosh, where the superintendent renewed his membership and has resolved to attend more meetings in 2010; the crew is working on a list of ways to improve efficiency; and the members are beginning to attend local county commissioner meetings and write letters to their local, state and national legislators about the issues affecting golf.

Certified Superintendent Joel Jackson is Executive Director of the Florida GCSA.

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When Performance Matters.™

Intermittent ice formation on golf course greens and fairways is a common event in the North. Ice cover is often considered part of winter injury caused directly by a continuous ice cover or as part of freeze injury (low temperature kill).

The first type of ice injury is the direct result of a continuous ice cover often referred to as freeze smothering.

In the early to mid 1960s, renowned turfgrass researcher Jim Beard conducted controlled laboratory studies where he looked at the survival rate of three cool-season turfgrasses — one under a continuous ice cover and two under field conditions. He found that creeping bentgrass could survive 120 days of continuous ice cover, while *Poa annua* loss occurred after 60 days with substantial loss around 75 days.

In a more recent Canadian field study, *Poa annua* and creeping bentgrass turf was subjected to 45 days of continuous ice cover and then the ice was removed. Seventy-five days after initiating the study and 30 days after removing the ice cover, the creeping bentgrass still maintained its cold hardiness, while the annual bluegrass was dead. It would appear from this study that annual bluegrass under a continuous ice cover needs to be removed prior to 45 days.

The reasons commonly proposed for ice injury are the buildup of toxic gases and/or the development of anoxic conditions and the loss of cold hardiness. It appears that carbon dioxide (CO₂) accumulation under ice cover is a major contributor to the death of herbaceous plants. Intermittent thawing helped eliminate the CO₂ buildup, and injury to the plants in this study didn't occur.

The loss of cold hardiness under ice cover occurs and varies among turfgrass species. Under continuous ice cover, *Poa annua* loses its cold hardiness, while creeping bentgrass is not affected. The loss of cold hardiness in *Poa annua* is likely because of the anoxia (lack of oxygen) conditions that develop under ice cover.

Copin' with Cold, as in Ice Injury

BY KARL DANNEBERGER



In areas where continuous ice cover for more than 45 days is unlikely because of intermittent periods of thawing, ice formation can play a role in freeze injury. Under this scenario, a rapid drop in temperature resulting in freezing water around the growing point during late winter or early spring can cause freeze injury primarily to *Poa annua*.

The critical precursor to freeze injury is the loss of cold hardiness through dehardening and subsequent rehydration of the *Poa annua* crown region. Continuous ice cover as previously mentioned contributes to the decline in cold hardiness.

However, the most important factor regulating dehardening is temperature. In *Poa annua*, the dehardening process can occur quickly when soil temperatures exceed 46 degrees Fahrenheit for 48 hours.

What cultural practices can be instituted to minimize ice injury and/or freeze injury? Some key points include:

- Produce a healthy plant going into the winter. A weak *Poa annua* plant with low carbohydrate storage is not going to tolerate ice cover or be resistant to freeze injury as a healthy plant. Shaded areas are more prone to freeze injury than sunny areas, probably due to the carbohydrate status of *Poa annua*.

- Eliminate poorly drained areas, like *Poa annua* growing in areas where water accumulates and is at high risk for rapid freezing during freeze/thaw cycles.

Here's to making it through the winter if you live with the ice.

REASONS FOR
ICE INJURY ARE
BUILDUP OF TOXIC
GASES AND/OR
THE DEVELOPMENT
OF ANOXIC
CONDITIONS AND
LOSS OF COLD
HARDINESS

Karl Danneberger, Ph.D., *Golfdom's* science editor and a turfgrass professor from The Ohio State University, can be reached at danneberger.1@osu.edu.



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Every now and then, I come across something I really want to share with other people. This is one of those times. So I'm asking for your indulgence as I share this story.

Recently, I was reading a well-respected national newspaper when I came across an interesting article below the fold on page 34 — not exactly the most-read position in a daily newspaper. The article focused on the drug Tamiflu.

If you've contracted the flu in recent years, you know this is the popular flu-fighting drug that helps suppress the virus and reduces its symptoms because you were likely written a prescription for it.

The active ingredient in Tamiflu is oseltamivir carboxylate (OC). According to the article, recent studies have found that after people take Tamiflu, they excrete a large portion of OC through their urine, which ends up at the local sewage treatment plant. Makes sense to me.

However, the problem is the sewage plants aren't filtering the OC out of the discharged water. While these plants are designed to remove germs and solids from household wastewater, the active ingredients from many medical drugs aren't removed. OC is one of those that goes completely unfiltered.

It gets worse. Sewage plants typically discharge warm water that, during colder months — flu-season months — is particularly attractive to water fowl and birds. The OC in the water represents a serious threat for both birds and people. Birds act as natural carriers of many flu-causing viruses, most notably, the avian flu.

Another research study measured the actual levels of OC in sewage plant discharge water to conclude if they were high enough to present a medical concern. The study's author, Gopal Ghosh, determined that drug levels found in the water are "high enough to lead to antiviral resistance."

You see, if a bird ingests water polluted with OC, that bird will be able to fight off the types of flu that Tamiflu treats. But the consequences are that new viruses may start to de-

Stories Like This Make Me Sick

BY CHRISTOPHER S. GRAY SR.



WHAT IF THIS
ARTICLE WASN'T
ABOUT TAMIFLU BUT
WAS ABOUT ANY
NORMAL CHEMICAL
APPLIED TO A
GOLF COURSE?

velop in the bird because viruses are constantly evolving and changing in order to survive. So once a drug-resistant virus grows in the bird, the bird can simply pass it on to other animals. Now, this new and stronger virus can move on and start infecting people. This is potentially troubling, since Tamiflu will not help fight against this stronger virus.

So to summarize the article, we're creating newer and stronger viruses that possess the potential to be completely untreatable simply by going to the bathroom and flushing our toilets.

I told you this story so I could ask you this question: What if this article wasn't about Tamiflu but was about any normal chemical applied to a golf course?

If someone even speculated that using chlorothalonil or propiconazole somehow affected the natural fungus-fighting capabilities of our golfers and threatened to lead to rampant and unchecked cases of athlete's foot across the globe, with no known treatments, there would be Senate subcommittees held on the subject with immediate bans put on these potentially harmful chemicals.

It's all a matter of perspective. The health care industry often gets a pass on issues where it's evident potentially hazardous effects on humans are likely. The golf course industry, however, doesn't receive such a benefit.

I don't know to what extent our industry would be demonized for a similar discovery like the Tamiflu contamination. But I do know I wouldn't have had to wait until below the fold on page 34 to read about it.

Gray Sr. is golf course superintendent and general manager of Marvel Golf Club in Benton, Ky. His column specializes in environmental issues.

THE CHOICE OF CHAMPIONS



I purchased the 7316 Verti-Drain about 3 years ago to replace an older model which had provided good results and reliability for over 10 years. As I write this, the 7316 is out on the course aerating greens and tees as part of the course preparations for the 2008

British Open Championship.

*Chris Whittle, Course Manager
Royal Birkdale Golf Club*

In addition to hosting this year's PGA Championship, Oakland Hills CC South Course also receives about 30,000 rounds of golf annually. The stress we experience on our fairways from this level of traffic has been reduced because of the use of the Verti-Drain 7120. Our fairway turf has improved and the disruption to our members is minimal.

*Steve Cook, CGCS
Oakland Hills CC*

Some members call me "Punch" and my crew thinks that "my cure all" is aerification. Adding oxygen to our soil is one of the most important practices we do as Turf Managers. The Verti-Drain 7120 Aerifier is helping Valhalla Golf Club prepare for the Ryder Cup.

*Mark Wilson, CGCS
Valhalla Country Club*



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If you're the GCSAA's **Mark Woodward**, there's only one way to get through these dreary times.

You just gotta

Tough It Out

MARK WOODWARD HAS BEEN around for a few recessions and economic pitfalls during his 57 years. But the CEO of the Golf Course Superintendents Association of America has never seen anything like the economic debacle that has come to be known as the Great Recession of 2009.

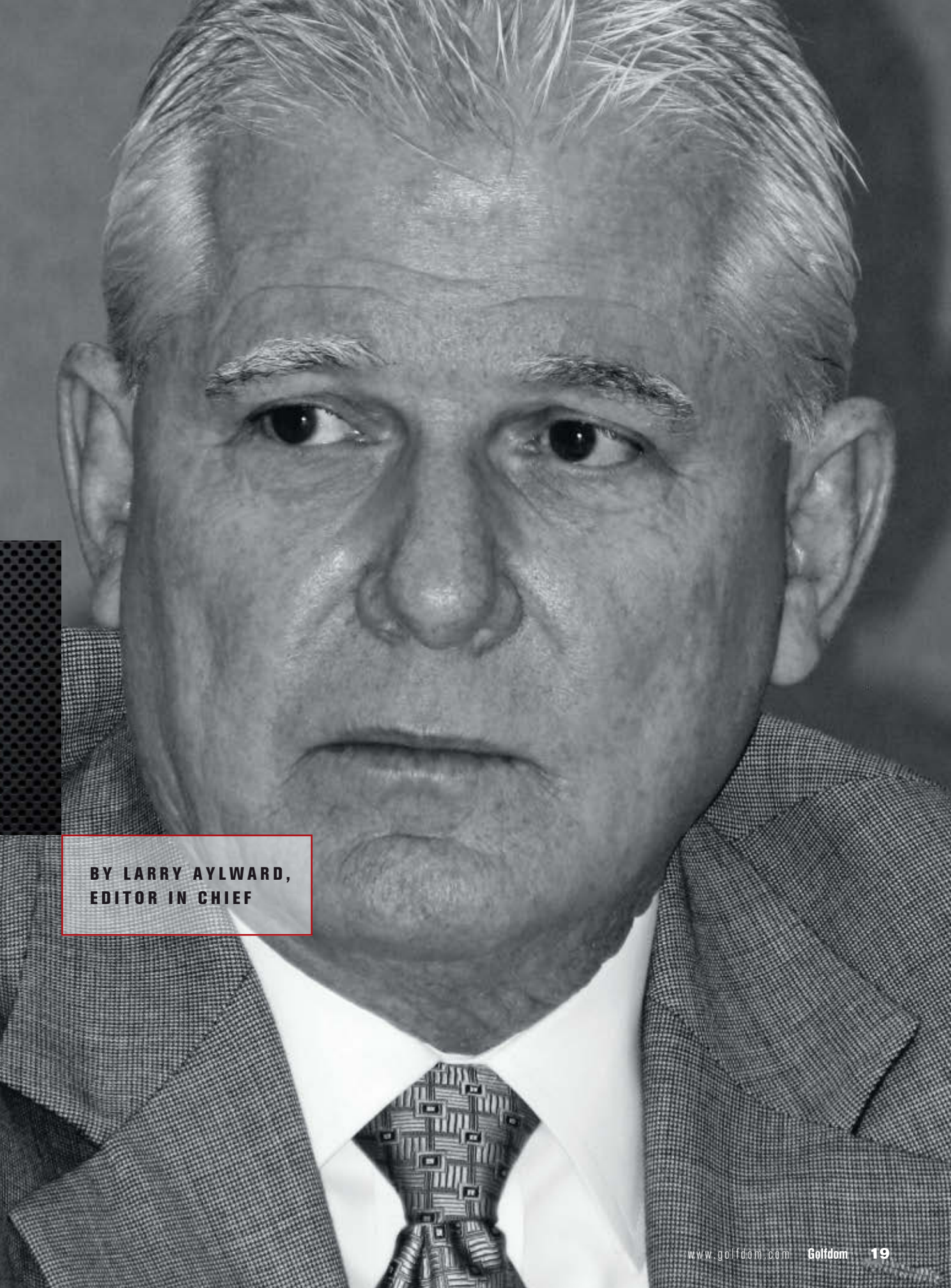
"There have been ups and downs over the years, but there's no doubt this has been the worst," he says.

And Woodward, who has spent his entire career in the golf industry, says this is the worst he's ever seen the golf economy, what with rounds flat and revenues down, and U.S. golf course construction at a near standstill.

But Woodward isn't about to shout, "We're doomed; we'll never make it," a la the pessimistic character Glum from the late 1960s cartoon, "The Adventures of Gulliver." Like he's been doing the past year, Woodward just wants to see this thing through.

Woodward is a cup-half-full kind of guy. He realizes he must be positive in his role. So don't expect him to be wearing a sullen look on his face when you see him walking around the trade-show floor at the Golf Industry Show next month in San Diego.

"All the bad news ... it wears on you after awhile," Woodward says. "Even though it's
Continued on page 20



**BY LARRY AYLWARD,
EDITOR IN CHIEF**

Tough It Out

Continued from page 18

a tough time for all of us, we still need to enjoy what we're doing."

Woodward has been on the job about 18 months. The economy tanked soon after he took over in July 2008. It didn't take long for the GCSAA to feel the pain.

"It has been extremely challenging to say the least," Woodward says. "We've had to reduce operating expenses here, which means we've had to reduce staff. That's not fun at all, no matter who you are or what line of work you're in."

Woodward has had to lay off some longtime employees. Others took pay cuts. "We're trying our best to keep morale high," he says.

The GCSAA staff has decreased from 122 employees in 2007 to 90 today.

Woodward also implemented an employee furlough during Thanksgiving week and the week between Christmas and New Year's Day. Employees, himself included, received seven days off without pay. The GCSAA also reduced the company match for 401(k) benefits.

Additionally, the GCSAA tightened its belt by reducing staff travel and staff programs for professional development. It also cut superintendent educational programs that weren't economically viable, such as regional seminars.

"We've looked at everything we can look at [to trim costs]," Woodward says.

Woodward says the association's revenues will be off 25 percent from 2008 through 2010. "If you put that into numbers, we were a \$20 million organization in 2007, and we'll be a \$15.7 million organization in 2010."

The numbers sound astounding, but they're not when you consider myriad businesses in the golf industry and other industries are off just as much or more. Woodward says some of GCSAA's partners are down 35 percent to 40 percent in sales, which translates into reduced marketing dollars for such things as booth size at the Golf Industry Show.

"They have to do the same things we

have to do," Woodward says. "And we understand that fully."

Woodward says he presented a break-even budget for 2010 to the association's board of directors in December.

"That means we have to live within our means and do what we can to continue to provide members with high-level service but with fewer people and resources," he says.

Woodward reaffirms the GCSAA is in good financial shape, mainly because it owns its building and has a \$6 million reserve fund. And Woodward also stresses the association's mindset is not just about cutting costs.

"We're also looking at every way we can generate new revenue," he says.

The GCSAA experienced small membership growth in 2008, but that growth dipped about 3 percent in 2009. That's not bad, all things considered. "We're proud of that," Woodward says, adding the association's retention rate for professional members has been 93 percent.

Considering the tightened budgets at many golf courses, Woodward might sound crazy when he says there has never been a better time to join the GCSAA. But he makes a good point. Many superintendents are searching for answers to deal with the difficult economic climate, and GCSAA professionals can help provide those answers, he says.

Woodward has heard the tough-luck stories from superintendents who wonder how they're going to get things done when their budgets have been slashed 20 percent. "The phone has been ringing here quite a bit," Woodward says.

While many superintendents have had their budgets cut, their courses' golfers still expect top conditions. It's the same with the GCSAA, Woodward says. Even though the association is operating with fewer resources, its members still expect top service.

"Even though we have fewer staff members, we still have to serve our members at a very high level," he says.

Woodward believes most GCSAA

members are glad a former superintendent is leading the association. That's because they believe Woodward can empathize with their plight.

"Obviously, there are people out there who thought I was the wrong person for this position," Woodward says. "But I can hang in any conversation because I've been there and done that. As each day goes by, I'm getting further removed from the day-to-day operations on a golf course, but that doesn't mean I've forgotten what I've learned for 35 years before that."

Woodward's aim is to prepare the association for better days, which he believes are coming.

"It will get better — there's no doubt about it," he says of the golf economy. "And we'll be in a position where we've reset the organization to the point where we'll be very strong on the other side of this thing. And as things get better, we'll be able to grow

It's been a tough year to be CEO of the GCSAA, but Mark Woodward (right) has had some fun. He met baseball great Mike Schmidt at last year's show during a reception by Syngenta Professional Products.

