


DECEMBER 2010  
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## ARE CHAPTERS DYING?

MONROE MILLER ON HOW LOCAL  
ASSOCIATIONS ARE FIGHTING TO SURVIVE



**INSIDE:**

Green drainage, p. 26

Jeff Brauer: The Feds wants  
to regulate your water, p. 32

Bunker liners, p. 33





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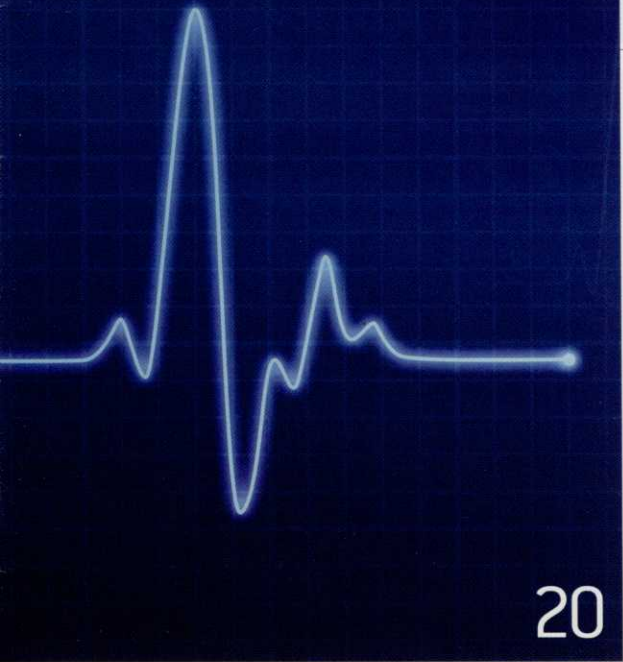
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## MY FAVE FIVE

Last week, in a desperate attempt to create a believable premise for this column, I decided to keep a log to document just how much time I spend wrapped up in my only little digital world.

(You might be thinking, "Jonesy, you have no life and will do anything to get yet another column done." Well, you are right – and I hate you for knowing me so well.)

So I put sticky notes on my laptop and my now beloved iPad and made a little hash mark on them for every hour I sat in front of the magic glowing screen.

(I found out later there are a number of free computer programs to track the time you spend on your computer. Ironically stupid, eh?)

Anyway, I did the math over the weekend and discovered I averaged nine hours a day in front of a magic glowing screen. Nine frickin' hours a day, kids! More than half of my waking life, I am doing what I'm doing now: tapping away furiously at a keyboard, toggling between e-mail, Word, Excel, PowerPoint, several customized programs and, lest we forget, visiting the wondrous land of the Internet.

(Let me pause to pay tribute to the late Senator Ted Stevens of Alaska, the man who brought you the "Bridge to Nowhere," who once said: "The Internet is not something that you just dump something on. It's not a big truck. It's a series of tubes. And if you don't understand, those tubes can be filled and if they are filled, when you put your message in, it gets in line and it's going to be delayed by anyone that puts into that tube enormous amounts of material." He went on to suggest Al Gore be impeached for inventing those damned tubes. But I digress...)

Anyway, in my continuing examination of my own computer usage habits, I also gulped hard and counted the number of Internet bookmarks I maintain. The total was 122.

(And no, none of them are porn links, at least as far as my IT manager knows. I just hope he never opens the folder named "Serious Important Business Stuff and Not Hot MILF Sites or Anything Inappropriate Like That.")

While I was looking at my list of totally porn-free bookmarks, I started to consider

which websites I liked and visited the most and decided to share them with you:

- Facebook: The American public is divided about whether Facebook is an utter waste of time, a playground that encourages people to post stupid things that bore or amuse others or the greatest source of personal connectivity every created. The American public is right on all three counts. Facebook is redefining how a chunk of the world relates to the rest of the world. It sounds crazy, but it's a serious social revolution too often hidden behind "Mafia Wars," "Farmville" and videos of cute kittens stuck in tissue boxes.

- Wikipedia: Go to Wikipedia and do a search for the Colbert-ism "truthiness" and you will know everything you need to know about Wikipedia. If you're looking for quick, sort-of-right answers, this is the place for you.

- iGoogle: All your crap in one place. Just go to the plain old Google homepage, click on iGoogle and start building your own little information universe. If you want to know more, the doorway to the great and powerful Oz of search engines is right there on the same page. Magnificent efficiency that proves why the guys who built it are gozillionaires.

- Progressbook: If you have kids, you probably have this online service or something like it. It's a password-protected site that lets you keep nearly real-time tabs on your children's grades, attendance and behavior. Absolutely wonderful tool for dad and mom. Sucks hard for kids.

- Epicurious: My second-favorite iPad app (besides GCI's). It's a wonderful searchable database of unbelievable recipes rated by quality, ease of preparation and popularity. It's an endless source of entertainment and food orgasms.

Those are my five. Love to hear yours. But, before you shoot off your e-mail with your list, wait a few weeks and check out GCI's newly redesigned, revamped and redunkulously cool new site. Same URL, same great original content but way more slick stuff designed to keep you glued to your computer for nine frickin' hours a day. Enjoy! **GCI**



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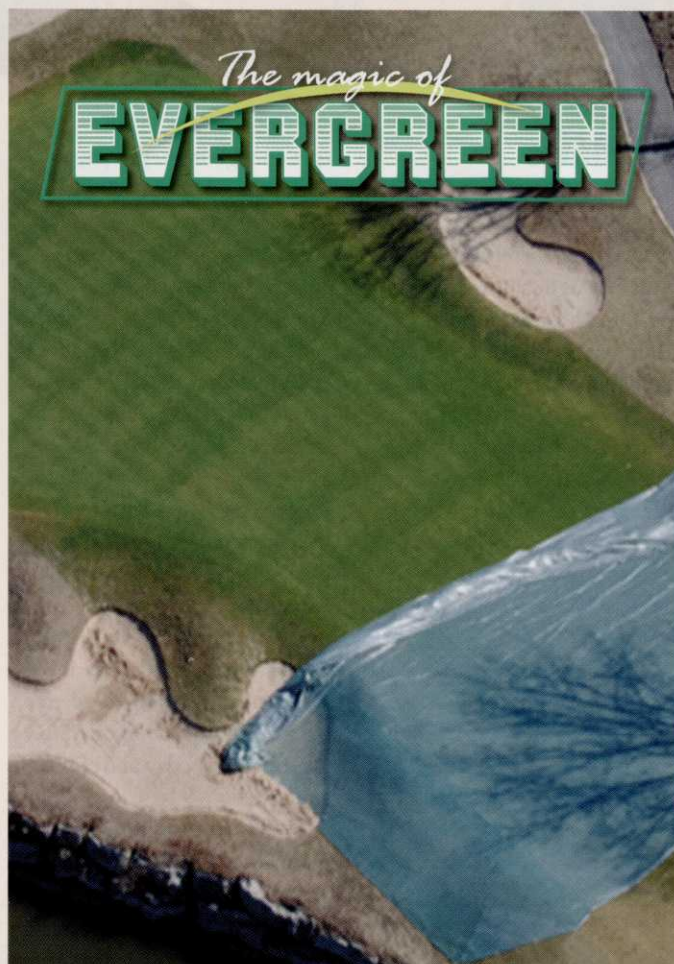
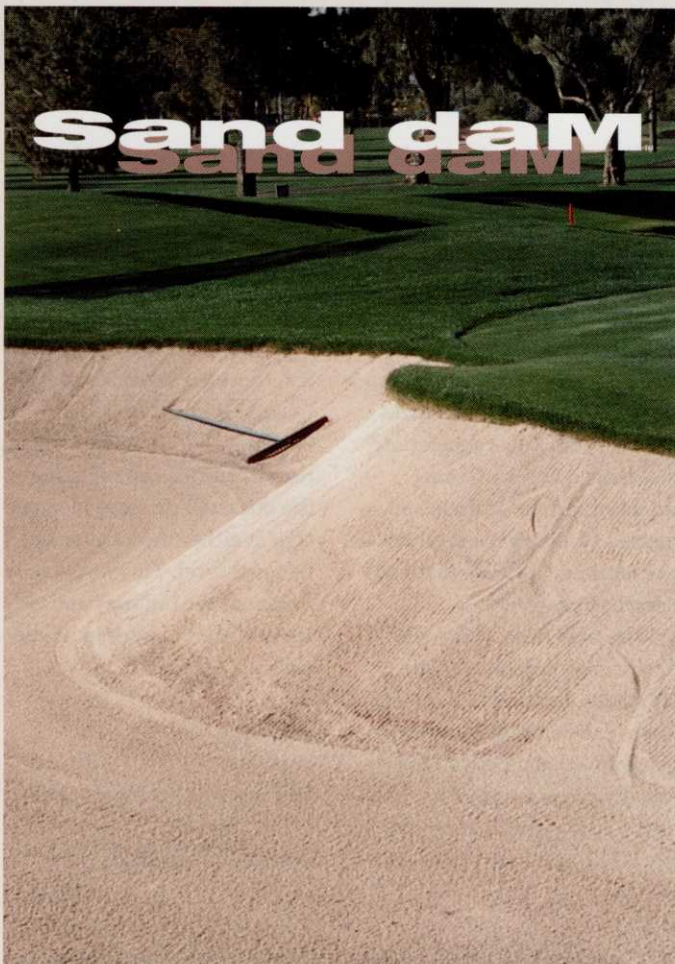
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## Five flaws

"Truth & Consequences" (October 2010, page 50) certainly addresses the current situation we all face as businesses and organization leaders. However, the unsaid conclusion that people would join a local affiliate if they didn't have to join the national organization has many flaws.

**The first flaw.** I haven't heard many people say, "I am not getting my money's worth out of this association and affiliation; therefore I am not paying my dues."

And I have heard, "I can't afford to belong right now. There

isn't enough money to pay my dues."

The effects of the recession and oversupply are the real culprits here. Would this still be a problem if everyone's revenues were at pre-recession levels?

**The second flaw.** Because we have affiliation agreements, the supplier side of our industry has a clear understanding of who they need to work with to meet their own objectives. This supplier side provides tremendous amount of funds for infrastructure support of both the local and national groups. Can anyone really imagine trying to operate a statewide affiliation on \$50 or \$100 dues today and still be effective?

**The third flaw.** As affiliated groups we become the voice of

golf, representing thousands of courses, owners, superintendents, professionals, employees and golfers. Could we be as effective in unaffiliated groups?

**The fourth flaw.** The affiliation between local and national groups has led to more cooperative efforts with the organizations in golf. This cooperation has helped foster a "we are in this together" attitude and helped eliminate some of the "us versus them" attitude that had long been in place.

**The fifth flaw.** This could be the most important. The affiliation has helped to provide more and better informational, educational and networking opportunities for all of us. This is the active part of membership. The more active you are –

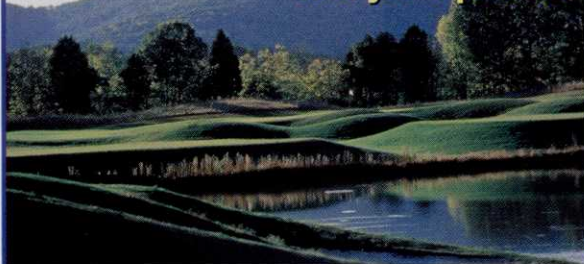
whether you are on the Internet searching through the organizations Websites or attending workshops and conferences – the more opportunity you have to become better at what you do.

While this is an extensive list, there are probably some items that could be added. However, I don't think breaking the affiliations and reducing the dues will increase membership at either the local or the national level. This would only fragment the industry and create obstacles to both local and national objectives.

Jeff Hoag  
President  
Golf Systems Inc./Scott Lake  
Country Club  
Comstock Park, Mich.

**Want to access this article?**  
Enter <http://tinyurl.com/3ah6x8n> into your Web browser to read "Truth & Consequences."

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## Social media

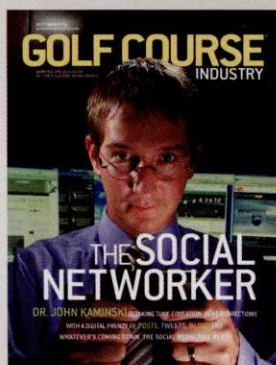
Congratulations on keeping us in the field updated and keeping Golf Course Industry alive and well.

I really enjoy any piece you do about the digital age like "The Social Networker" (October, page 24). This is the way things are going and we have to embrace it.

Eric J. von Hofen  
Director of agronomy and building maintenance  
Riviera Country Club  
Coral Gables, Fla.

### Want to access this article?

Enter <http://tinyurl.com/29ua2d3> into your Web browser to read "The Social Networker."



## Figure it out

Good article ("Truth and Consequences") concerning required reciprocity. We have struggled with this issue at our chapter. I was not and still not supportive of it.

Also, I have brought up many times at meetings (some in the GCSAA HQ just down the road from me) the use of a sliding membership dues structure based on a maintenance budget ratio. Should the superintendent of Flinthills National (a friend of mine) with a budget from God in the seven-figure range pay the same amount as me with my five-figure budget? I have a landscape business, too, and used to be a member of the American Association of Nurseryman and there sliding scale was great for the mom-and-pop nursery. I have a feeling the GCSAA maybe more conducive to this approach in these times.

Kevin Fateley  
President  
Kansas Golf Course Superintendents  
Association  
Wildcat Creek Golf and Fitness

## Hard times

"Truth and Consequences" was right on target. The genesis of GCSAA was from a local group of greenskeepers right here in Rocky River, Ohio. The health of the local chapters is and always has been the strength of the national organization. Take care of the locals and you will have a strong national.

The requirement of belonging to GCSAA if you belong to the local sounded good at the time except for the fact that the cost of

multiple memberships got pricey – the 1st and 2nd assistant superintendents plus the superintendent is a major expense even for a high-budget club. It's good to have the assistants as members of the local, but it's not necessary that they belong to the GCSAA as long as there is one GCSAA member from that organization.

These are tough times and clubs/courses are looking for every way to conserve dollars. This idea may cut a few assistants for the membership rolls of GCSAA now, but I think it would promote their joining once they became a superintendent.

Frank Dobie  
Superintendent and general manager  
Sharon Golf Club  
Sharon Center, Ohio

## "Catharsis"

Have been meaning to tell you what a great article you wrote ("Catharsis," August 2010, page 4)! Your experience mirrors my brother's adventure almost to a tee (pardon the golf term). Like you, he has taken the steps to right the ship and is back on the road to success. Congratulations and thanks for the courage to share your story.

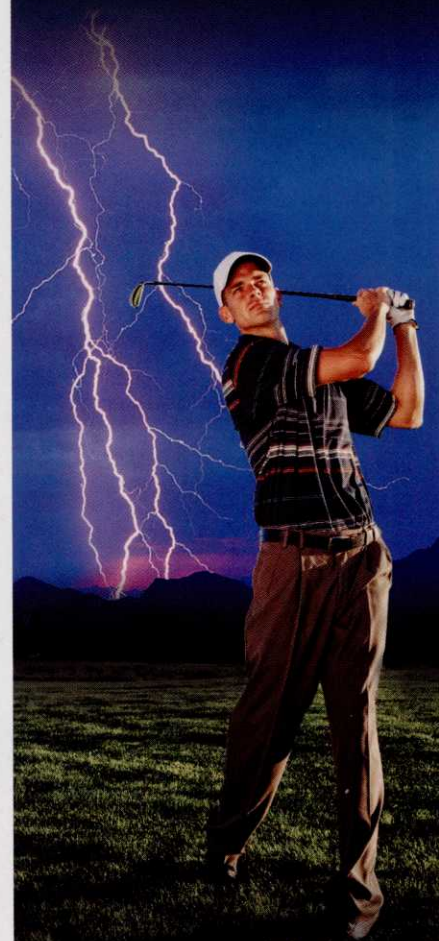
*Editor's Note: Due to the sensitive nature of this feedback, the name has been withheld for privacy reasons. Readers seeking info about alcoholism and addiction can find out more at the Alcoholics Anonymous site: [www.aa.org](http://www.aa.org).*

### Want to access this article?

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# The Oakland Hunt

GCI's man about the Carolinas, Trent Bouts, files this dispatch from November's hunt at the Oakland Plantation Turf Farm.

Each fall, general manager Rick Neisler III and the folks at Oakland Plantation Turf Farm stage several hunts for clients and other industry members across three tracts that make up the roughly 10,000-acre property. Golf course superintendents in the Carolinas prize a place on the invitation-only hunts like they do a

turfgrass professor at North Carolina State University, did a bit of nail-biting in his stand because one bear flatly refused to give up the corn pile he or she was gorging on down below. After considerable thought - that's what professors do after all - Miller, took a few steps down his ladder and swinging by one arm, combined yelling and flashlight glare, managed to scare off the beast.

Later that night, hunters including Carolinas Golf Course Superintendents Association executive director, Tim Kreger, found themselves stranded in a different fashion - stuck on a conked out pontoon boat on the Cape Fear River.

"We were juggling for catfish when the engine gave out," he says. "Fortunately we were one of two boats and the others found us and towed us in. There were a lot of jokes flying back and forth. It's dark and cold and you're not pulling in any fish but it's great, you can't buy laughs like that."

For all the good humor, golf course superintendents rarely leave their work far behind. For years now, Avery and fellow veteran, Butch Sheffield, CGCS from North Ridge Country Club in Raleigh, N.C. have made sure to bunk in the same cabin.

"I've got to admit there's a lot of turf talk that goes on," Avery says. "In its own way it's nearly as educational as some of the formal seminars and conferences out there. It's a great environment to check in with guys about how their year has been, what they've tried, what's worked and what hasn't."



70-degree day in August.

"I don't even think for a second when my invitation arrives," says Ray Avery, the veteran superintendent at Longview Club in Charlotte, N.C. "I don't bat an eyelid. I just pick up the phone and say 'OK, I'm in.' Then I worry about how I'm going to make it work"

It turns out that Avery is as sharp with a shotgun as he is as a superintendent. Since his first Oakland hunt in the early '90s, he has fired his gun 19 times and brought in 18 deer.

But it's the camaraderie, the stories traded around the bonfire and the simple fact of sharing an experience, that he values most of all. "Rick (Neisler) is the hunt master and he is very serious about every aspect of the hunt itself and taking care of the property, but once you're done it's all about relaxing and winding down," Avery says.

For example, Grady Miller, a

## CUT THE MUSTARD



Our condiment correspondents forwarded this dipatch into GCI's intergalactic HQ, apparently the grounds crew over at Winnetka Golf Course, Winnetka, Ill., recently put the call out for more mustard.

No, they're not training to beat the world hot dog eating record (58 franks in 12 minutes).

Instead, these guys are requesting any and all empty French's Mustard bottles 14 ounces or larger. Apparently, they use these condiment containers to carry a sand-seed mixture to fill divots and ball marks.

And while all yellow mustard may seem the same, the bottles are not, says Super Henry Michna.

Super Henry Michna recently told The Chicago Tribune that while French's Mustard may be good, their bottles outrank all others. "Because of the nozzle," he says. "The sand's able to come out quickly enough and it's got that nice curvature to the bottle. It's good ergonomics."

Michna reports he was prepared to go buy several bottles of mustard and empty out their contents, but decided to ask the community for help. He posted the request ("Wanted Dead or Alive... mustard containers that is!!!") on his blog, wgcsuperintendent.blogspot.com.

So, if you have an empty French's mustard bottle that is 14-ounces or larger, you can forward it to the Winnetka Golf Course clubhouse, 1300 Oak St., Winnetka, IL 60093.

## QUOTABLES

**"You could put him on the moon and you'd still have a great golf course."**

— Georgia GCSA president Anthony Williams, CGCS, about the expertise of William Shirley, the association's 2010 Superintendent of the Year.



## ROLL CALL

Coppinwood Golf Club (Goodwood, Ont.) appointed **Thom Charters** its new director of golf course operations.

**William Shirley**, CGCS, Peachtree Golf Club in Atlanta, was named the Georgia Golf Course Superintendents Association's Superintendent of the Year in late October. The Distinguished Service Award went to University of Georgia turfgrass professor, **Dr. Keith Karnok**. **Anthony Williams**, CGCS, honored **Mike Crawford**, CGCS, TPC Sugarloaf, with the President's Award.

The Nebraska Golf Course Superintendents Association recognized **Nate Pehrson**, Indian Trails Country Club, as its Superintendent of the Year.

**Gary Roush**, owner and superintendent of Riverside Golf Club, received the Lifetime Achievement Award from the West Virginia Golf Course Superintendents Association in early November.

**Tyson Cline**, assistant superintendent at Jefferson Country Club, Blacklick, Ohio, won an Apple iPad courtesy of Jacobsen.

Yamaha Golf-Car Co. announced the hiring of **Brooks West** as district sales manager for Tennessee, Northern Alabama and Northern Mississippi.

After 36 years, Palmer Hills Golf Course (Bettendorf, Iowa) superintendent **Brad Peterson** has retired. **Tim Johansen** was promoted from assistant superintendent to fill the position.

The United States Golf Association appointed **Thomas C. Pagel** director, rules of golf.

## Industry loses Aquatrols' founder Robert A. Moore; superintendent Mike Pock.

The golf course and turf maintenance industry marked the passing of two individuals this past week.

### Aquatrols' founder dies

**Robert A. Moore**, the man who founded Aquatrols Corp. more than a half-century ago and introduced the concept of wetting agents to the golf market, died Nov. 3.

Moore was a chemical engineer who became fascinated with the concept of water movement in soils. He patented and introduced the first commercially available soil wetting agent – AquaGro – in the 1950s. At the time, it was an entirely new product category in turfgrass maintenance and agriculture.

GCI's Pat Jones, who served with Moore on the Aquatrols board of directors for six years, said, "Even late in his life, he was an amazing visionary who never stopped thinking about how the technology he brought to life could be a better tool for superintendents and even a part of the solution for the worldwide water crisis. He was also just a wonderful energetic guy with a warm, impish sense of humor and a deep fondness for sharing funny stories over a dry martini. I'll really miss him."

Moore is survived by his three children – Tracy Jarman, Andy Moore and Demie Moore – who continue to run the Aquatrols corporation today.

### Mike Pock passes

**Mike Pock**, former superintendent at Grayhawk GC, passed away last week surrounded by family, friends and memories of a great life in golf. GCI's Pat Jones wrote about Mike in his column "Bon Voyage," September 2010. Type <http://tinyurl.com/28ceoad> into your Web browser to read that column.

## CLEAR YOUR SCHEDULES and MARK YOUR CALENDARS!

Back by popular demand, GCI's crew of columnists and personalities will be holding office hours at the *Golf Course Industry* booth at the 2011 Golf Industry Show in Orlando.

Stop by Booth #901 and spend some time with all of your favorites:



Pat Jones



Tim Moraghan



Monroe Miller



Jeff Bauer



Brian Vinchesi



Terry Buchen

Stay tuned for more details on specific times.





## CONSUMER RESEARCH

A glimpse of how golfers' behavior affects the business of golf facility maintenance and management.



# Golf's economic impact

## A state-by-state comparison

Here's an overview of golf's direct economic impact in a few states around the U.S., according to [wearegolf.org](http://wearegolf.org).

"Direct Economic Output" is defined as the size of the golf industry cluster within the state economy in terms of revenues. "Total Economic Output" is defined as the direct economic output combined with the indirect economic output, as well as the induced economic output – including the economic impact from employees directly employed by the golf sector.

### THE ECONOMIC IMPACT OF GOLF: STATE BY STATE

STATE	NUMBER OF COURSES	DIRECT ECONOMIC OUTPUT	TOTAL ECONOMIC OUTPUT	TOTAL JOBS	TOTAL WAGE INCOME
Arizona	338	\$806 million	\$1.4 billion	19,481	\$342 million
California	926	\$6.9 billion	\$15.1 billion	160,000	\$4.8 billion
Florida	1,128	\$7.5 billion	\$13.8 billion	167,377	\$4.6 billion
Hawaii	83	\$1.4 billion	\$2.5 billion	30,187	\$1.3 billion
Illinois	683	\$2.1 billion	\$4.8 billion	50,000	\$1.5 billion
Massachusetts	375	\$1.6 billion	\$3.3 billion	31,685	\$950 million
Michigan	265	\$2.2 billion	\$4.2 billion	56,977	\$1.4 billion
North Carolina	558	\$2.6 billion	\$5.3 billion	68,667	\$1.7 billion
Texas	907	\$3.4 billion	\$7.4 billion	98,859	\$2.4 billion





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**Tim Moraghan**, Principal, ASPIRE Golf [tmoraghan@aspire-golf.com]. Follow Tim's blog, Golf Course Confidential at <http://www.aspire-golf.com/buzz.html> or on Twitter @TimMoraghan

## A LITTLE JOB SECURITY

During a recent round of golf, I watched with wonder as 20-year superintendent Frank Tichnor of The Forest Hill Field Club (Bloomfield, N.J.) grabbed his iPad to either scribble notes or take pictures. What he was using this device for? “A little job security” Frank’s responded. Subsequently, I learned Frank was using the information gathered to add to his year-old golf course maintenance blog that he linked to his club’s Website.

### WHY DID YOU EMBRACE SOCIAL MEDIA?

Dissenters and naysayers who settle in the back room and spread rumors about what is going on out on the golf course do not serve any value. I wanted to prevent misinformation regarding the condition of the golf course or what we were trying to accomplish. A blog serves two purposes: a form of self-preservation, if you will; and to communicate an accurate story. Many times those who create rumors sway other members into believing their stories and not mine. The blog improves my communication efforts.

### WHY ATTACH IT TO YOUR CLUB'S SITE?

New members are younger and they spend time glued to their phones and PDA's, so I felt I would send the message via a medium through which they are comfortable. The Internet allows instant information to be communicated about the golf course. The blog allows maintenance updates to be literally “at their fingertips” and it has assisted in the accurate portrayal of our version of operations and responses to issues. Furthermore, the blog increased my communication to our members without them having to search me out when I was on the grounds.

Social media beats the club newsletter or locker room postings. We

now put all newsletters and updates online so members can check from their homes, offices or cars.

### WHAT PROMPTED YOUR INTEREST AND HOW DID YOU EVOLVE TO THIS LEVEL?

I am active in all our industry Websites, chat rooms and blogs. So I thought I could do the same for the club’s membership who frequent Twitter, Facebook or LinkedIn by sending quick notes and updates.

Social media can reduce the “aloofness” or intimidation felt by members trying to communicate with their superintendent. Using pictures is a visible and honest way

You’ll also need a reliable camera to uplink photos to the iPad.

You want to start slowly and do a professional job on your iPad and eventually your blog. I would suggest the Key-Note app which is the Apple Power Point app for slide shows, graphs and any form of data. We haven’t reached our potential yet and you still have about five years left with current technology.

### WHAT DO YOUR MEMBERS LEARN FROM THE BLOG?

Members have instant access to the following:

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“Many times those who create rumors sway other members into **believing their stories** and not mine.” — Frank Tichnor, *The Forest Hill Field Club*

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to reduce the technical aspects and explanations of our profession. The blog helped me speak directly to my audience and visually show them what we are doing, when and why. When the opportunity came along to link the blog to the club’s site I embraced it.

Eventually the member who volunteered to do the site grew weary of the task and turned it over to me. There was a learning curve, but it didn’t take long to master.

### WHAT EQUIPMENT IS NEEDED?

I do everything from my iPad which is now part of my on-course equipment package. The iPad is small, lightweight and pretty sturdy when traveling across the course. And with the number of available applications, especially turfgrass related, I can visually explain each aspect of our job.

- Maintenance practices. Have you ever attempted to explain aeration without visual aids?
- Training videos for ball mark repair, divot replacement and bunker raking.
- Video updates for projects such as drainage and tree removal.
- Spreading the word about frost delays, storm/rain event updates, whether a course is open or closed, communicating golf cart access parameters on any given day or whether walking is permitted.
- Disease issues and why, when and how we are treating for them and when it is safe to be back on the golf course.
- Q&A sessions and surveys regarding club operations.
- We’ve included an opinion section so members may express their interests. **GCI**





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(just an)  
**Ordinary, average guy**

Keith Noxon might be the “typical” superintendent – if there is such a thing – but scratch the surface and there’s nothing average about him.





Noxon: "I got no problem with being average... I produce a good product with an average budget, average staff and average resources. I'm fine with it. I think there are a ton of guys like me out there."

CHRIS LANG PHOTOGRAPHY

A few weeks ago, I was wracking my brain trying to decide who to interview next for our Q&A series. Should I call Ben Crenshaw or try again for Bill Murray or maybe go after one of the high-profile superintendents who lost a job last summer. Stumped, I told a colleague about my frustration and he had a simple suggestion: Why don't you interview an "average" superintendent for once. Just a guy who goes to work every day and does his job and fits the average demographic profile for most superintendents?

Great idea, but a problem remained: Where would I find Mr. Average?

The next week, I was at the Carolinas GCSA meeting in Myrtle Beach at an event for Green Resources, a big area distributor, when I met Keith Noxon. I quizzed him about his background and his course and he eventually just said, "I'm just an average working superintendent."

Problem solved.

Noxon has been superintendent at Pine Valley CC in Wilmington, N.C., for seven years – just about the average tenure for most supers. He's 47 – a little older than average but he got a late start in the business after serving in the military and working briefly in the warehousing business in New York and North Carolina.

As is often typical, he met a guy in the business who changed his career path. He got to know Dan Gurganus, who was superintendent at Bald Head Golf Club in the mid-1980s. Noxon hated being cooped up in a sweltering warehouse in the summer and Gurganus suggested he try golf course work.

"The next thing I knew I was taking a ferry to work every day and learning about turf," he says. "It was romantic...

I absolutely fell in love with it. I asked Dan if you could make a living doing this and he said, 'Sure, if you get a degree.' I remember laughing at that. 'A degree? To grow grass?'"

At 26, Noxon's father died ("He was only 52... it was a kick in the butt.") and he got serious about life. He enrolled in North Carolina State's two-year turf program and started grinding away at his degree while also working at Carolina CC under Bob Rogers. "Bob showed me the camaraderie aspect of the business and I was really hooked."

He graduated in 1992 and worked as an assistant at several area clubs until he landed his first superintendent job at the Players Club at St. James Plantation in Southport, N.C., where he was reunited with Gurganus who, at the time, ran the facility's members club.

"It was a good place for a first-timer because there was such a good support system in place," he says. "There were two other courses on the property – each with a good super – and I could do my thing but had backup. I learned what not to do – like leaving your irrigation system on at night in December and coming in to find frozen greens in the morning."

In 2003, he moved to Pine Valley and became our Mr. Average. And – as is typical of every good superintendent – he credits his wife for his stability and success: "Kelly was a big part of me making it through school. We had just gotten married and she worked three jobs while I was in school and working. Any guy in this business who's married knows what a good wife and family means. She always says she was a single mom from March to October... and she's right. She's the best."

So, what does average look like in today's industry? Here's what we found out.





Noxon: "I always felt like I could be a superintendent anywhere, but Pine Valley is reality for me. I'm at a private club and doing my job, I'm a golf course superintendent maintaining a budget, a staff and a golf course. It's just that simple."

#### **Tell us about your facility**

Pine Valley – which is obviously NOT the one in New Jersey – was built in 1955. We didn't really have an architect. It was designed and built by some local folks who owned the property and wanted a course that emulated some of the local Donald Ross courses. The course is about 6,400 yards from the tips and it defends par well because of the small greens – we only have about 100,000 square feet of putting surface – and it's walking friendly. We also have a really nice tennis facility that gets a lot of use and a very active pool in the summer. Our swim team is awesome.

#### **Membership?**

Our membership is about 550

but we have eight different categories. We're struggling a bit right now like every other club, so we're trying to watch the budget numbers and keep our head above water. We're facing the same difficulties as everyone else.

#### **What's your turf situation?**

We have G6 bent on the greens, but we're getting ready to transition to an ultradwarf. The greens were ready for a new surface and, after this summer, we started pushing to go with the ultra. We recently signed a deal with Champion to do a no-till renovation with their Bermuda.

#### **Why the change?**

I love bentgrass and I've always been successful with it,

but this past summer was the worst I've ever had in my career and I'm looking forward to that Bermuda. We have push-up greens with native soil and I saw guys with newer USGA sand greens really struggle, so you can imagine what it was like for us.

#### **What's special about your "average" facility?**

The members really care. When we aerify, I'll get 20 or 30 members volunteering to help with plugs and sweeping. It's such a good experience. I really dig that about Pine Valley. Some guys at other clubs with average budgets should try to engage their members more. It's incredibly valuable in a bunch of ways.

#### **How about your budget?**

Our budget is \$550,000 including lease payments on equipment. We have well water, so that's free except for pumping

costs and we're not doing any big capital stuff except for the greens regrassing. We replaced all the old equipment when I got here. Leasing was a great solution for us. I gave them a presentation on how much more efficient we could be with updated mowing equipment and the conditions changed so much in a year! We got so much faster at mowing and weren't spending all of our time fixing stuff. We were able to stay ahead of play to mow tees and approaches first thing. We'd get done in four hours instead of a full day or day and a half. I also hired a part-time guy to mow fairways three days a week and he's still on our team.

#### **How big is the staff?**

My full-time staff is six plus me, one assistant and an hourly mechanic. Our only seasonal guy is our part-time fairway mowing guy. I'm battling to hold on to



every one of them. Changing over the greens next year will save us money in the long run, so we'll see. I want to keep my guys in place.

**How is the reality of your situation different from what you thought your career would be like when you started?**

It's not a whole lot different than what I thought. I always felt like I could be a superintendent anywhere, but Pine Valley is reality for me. I'm at a private club and doing my job, I'm a golf course superintendent maintaining a budget, a staff and a golf course. It's just that simple.

I always felt like wherever I was going to go, I was going to do a good job no matter how much money they gave me. I never had big grandiose plans of being at Pinehurst or Augusta. I'm also not one of those guys who wanted to bounce around. I like stability. I have two kids I want to get through high school and college. My reality was that I didn't have any fantasy version of what I wanted life to be like.

**What parts of your program have changed over the past few years because of the economy or other factors?**

We've actually done some things that cost money up front but save in the long run. We started a much better pre-emergence program, which was more expensive, but saves a lot on labor and product on post-emergence. We were in a constant battle with post-emerge weeds when I first got here. The golf course is a lot cleaner and we don't have to spend all that time and effort on post. My budget has actually risen from less than \$400,000 to over \$500,000, but a lot of that was new equipment and getting the right labor mix. We're getting to the point where we can find that right spending level and keep it there. We're hitting the wall because of the economy but we're already

close to where we want to be.

**How else are you being frugal?**

One thing I have done is to get to zero overtime, particularly this time of year. The members are looking at me to cut some, but we're already pretty bare bones. I am also using Quali-Pro products and generic alternatives because my experience has been as good as with traditional products. I know that's not true for everybody, but they're working for me. There are also lots of guys selling liquid greens fertilizers, so I shop that out, too. I've used several different things to see if there's a big difference and they seem fairly equal.

The bottom line is I really am price sensitive and I haven't seen any detrimental effects with generics. I feel bad because I know the big companies support the Carolinas (chapter) and such, but a guy like me just can't afford to spend the extra money. I'm a past president of the local turf association and I really understand what they do, but I just can't automatically buy the more expensive product.

**How about labor?**

The biggest thing is my (member) volunteers helping during aerification. We've never had the hurricane thing here – knock on wood – and that would be an absolute mess, but we did have a pretty good storm the first year I was here. I was amazed at the volunteerism and the can-do attitude of the members. I'm so lucky to have a membership that's passionate about their course.

**How do you communicate with members and how do they respond?**

I try to eat lunch at the clubhouse as much as possible. This summer, I could have stayed away and hidden as bad as it was, but that wouldn't have helped, so I was up there to take the heat. We

do have a website and our green chairman writes articles with input from me. We put schedule stuff up there for aerification, etc. I also have direct contact with members through e-mail and we'll do e-mails to members for projects.

The only problem I have is my Internet access is a bit sporadic. I'm on dial-up because my shop is in the middle of the course. My wife and teenagers commandeer my laptop at home, but I'll also work in the clubhouse. I also have a real basic cell phone. I haven't done the smart phone thing yet. There's a cost for that and better Internet and everything else. We're looking at it, but we weigh costs for EVERYTHING.

I try to be as high-tech as I can, but I was bummed out about the Green Section Record (going 100-percent electronic). I like having a print magazine. You can't take a laptop to the bathroom with you. But our club doesn't print a newsletter anymore, so I get why they did it.

**If money was no object, what things would you do to the course?**

I think I'd probably renovate if the members bought into it. It's a hidden gem... it's a mowable course but I'd like to see bigger tee boxes, walk-mow greens to improve greens surrounds, etc. I'd love to have USGA-spec green but not with an ultradwarf. It would be nice to renovate to have a clean, smooth canvas to work with. I'd clean up the woods more than we can now and do all the detail stuff. I wouldn't want to blow the course up, just clean it up. I definitely wouldn't want to make it too difficult. People don't want to get their butt kicked everyday on their course.

**What are your expectations over the next five years?**

I'm not the kind of guy that likes to bounce around. I want to stay here and keep stewarding this

place... and get my kids through school! I like to be a good employee, I like to manage things carefully on their behalf and I really like the membership here. But, the next five years scare me as far as the industry goes. I talk to a lot of guys who are worried about lower budgets and how that will impact quality and how members will respond to reduced quality. Not every board is going to support supers in that position.

I'm not scared, but I honestly hope to just have my job here and be able to do what we're doing now. We just need to hang in there and produce the best product we can.

**What advice would you give to a young person just coming into the business?**

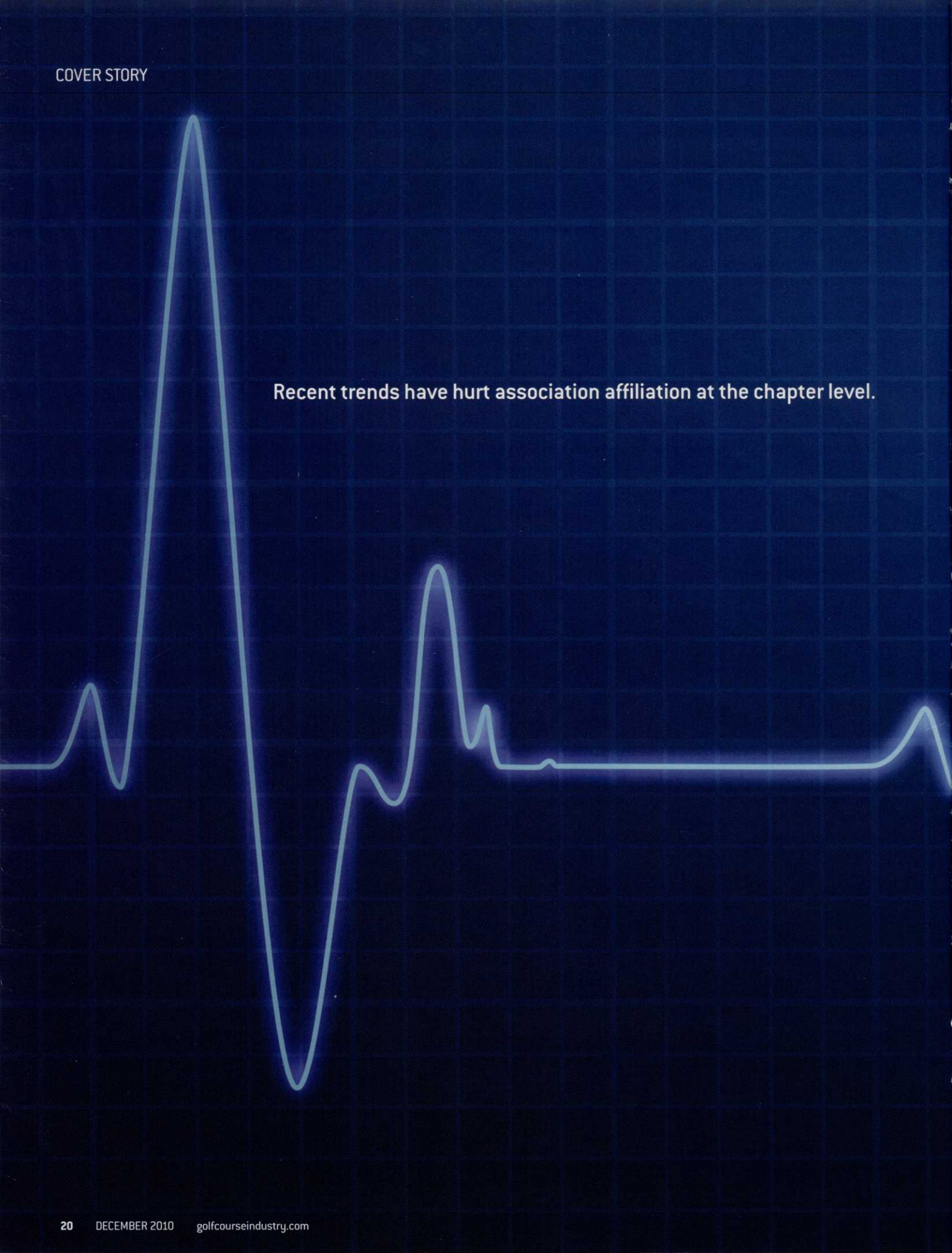
Be absolutely sure this is what you want to do for a living. It's not the late '80s or '90s anymore. The business is shrinking. Be patient. Investigate where you're going to work and work for reputable guys that get it. Opportunities will come, but they need to be patient. Learn everything you can learn and get involved in your local associations as soon as you're able. If you're working for a guy who won't let you that might not be such a good situation.

**Final thoughts?**

I got no problem with being average. We're using that term loosely, but I produce a good product with an average budget, average staff and average resources. I'm fine with it. I think there are a ton of guys like me out there. I love where I work. My budget is adequate. As my brother Bob says, "Average is good, because less than average obviously isn't good." I have a good job, I'm raising a family and I'm doing something I like. If that's average, I'm good with it. GCI


*Pat Jones is GCI's publisher and editorial director.*





Recent trends have hurt association affiliation at the chapter level.





Once the backbone of a superintendent's professional life, can chapters cope and remain relevant in golf's new age?

GCI Columnist Monroe Miller provides his analysis.

## ARE CHAPTERS DYING?

**T**ime marches on, trends appear and all things change.

So it should come as a no surprise to anyone that the industry's 80-plus GCSAA-affiliated chapters would be not be insulated from the economic, cultural and political influences that have shaped our world in recent years. All across the country chapters face many questions. True, they might differ in degree and detail, but all deal with a common denominator – rapid change.

Brett Grams, during a conversation this past fall, brought many of these issues into focus. As executive director of the Wisconsin GCSA chapter, Grams is stewing over the costs of his association's annual golf turf symposium. Rooms, meals and speakers – it all adds up. He wonders when attendance will take a hit. Factor in dicey off-season weather and his fears escalate.

Grams also laments about the chapter's annual autumn golf and dinner-dance weekend, a long-standing tradition. It has gone from a robust event in years past to one attended by just seven couples this year. Brett and the chapter officers wonder if they should keep it going.



One veteran chapter director tells of planning the annual family picnic, and the only ones who attended were him and his wife.

Conversations with execs from a broad cross section of chapters – large and small, metro and rural – all reveal that national trends have influenced their successes and shortcomings.

For example, consider the cultural changes that have altered the dynamic of the American family. Today, it's not unusual for both parents to have careers, and daycare is a part of life. Men play a more active role in child rearing. As a result, many younger members don't attend chapter meetings. Instead, you're more likely find them at the local soccer fields, at band practices or shuttling someone to swimming lessons.

Something has to give, and at the chapter level it has been participation. For a superintendent it's extra time versus attending chapter meetings. Recent generations chose the latter, but at a cost. Today's superintendents are keenly aware of these burdens because they make accommodations for their workers.

**TRICKLE DOWN.** Recent trends have not been kind to the golf course industry. Because golf is a discretionary item for many consumers, the trickle-down effect seeps into the local chapters. Economic disasters the likes of which haven't been seen since the Great Depression have resulted in fewer rounds played, depleted rosters at private clubs, more golf deals and lower fees. The result: decreased facility income. Budgets get slashed, workers get laid off and fewer and fewer turf stewards remain in the golf industry and support their local association chapters.

For some reason, the first place sought out for spending reductions is the golf course budget. It also seems the largest reductions are in the golf course expense lines. And within the framework of the operational budgets, travel/dues/education accounts have been easy targets. The

logic is that you have to have fuel, you need fertilizer and you must have staff to operate. But does the golf course superintendent really need to play golf out of town every month, or absolutely have to attend the Golf Industry Show 2,000 miles away in San Diego or Orlando? These questions are answered by owners and boards, and the result is reduced or eliminated accounts.

It has been the perfect storm between golf and the economy.

Conduct a simple straw poll among superintendents in your market and most say these changes are here to stay. Some believe we have seen golf's zenith and many have worked in the best of times of the game. We aren't going to be going back to the time when golf leaders declared, "We need to open a new course every day if we want to keep up with demand."

Heck, we will be lucky if we don't have to close one course a week before the economy and our industry experience some serious recovery.

**CHAPTERS SCOPE.** So, how are local golf course superintendent chapters dealing with these profound changes?

Two obvious issues requiring immediate attention are declining memberships and lax participation at chapter events.

Chapter execs say they are facing these problems with optimism and determination. They remain confident that members still value their association with their local chapters.

One particularly positive chapter manager suggested that stretched golf course budgets might actually benefit local chapters. The logic is that reduced travel and education budgets encourage local events be-

cause they are less expensive and less travel is involved.

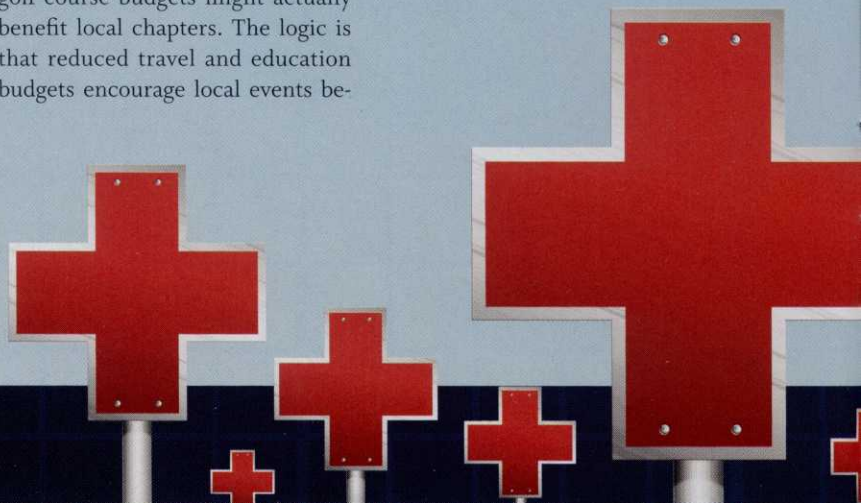
Many wonder if GCSAA membership is an issue and, if clubs or courses won't fund dues, does the dual membership come into play?

Some people mention the dual membership requirement as one of the factors in lower chapter membership. However, most chapter executives do not feel it is significant. Some propose a suspension of dual membership – an affiliate holiday, if you will – during these difficult economic times, but a GCSAA committee has ruled it doesn't hinder chapter membership.

A wealth of ideas are under consideration by chapters to boost their activities. Foremost might be the recognition that there may be too many events. Chapters need to refocus and eliminate poorly attended events. Initially, it may be an unpopular move with some members, but this needs to happen.

In addition, there need to be more efforts to create greater value for meetings, attempting to make as many of them as possible "can't miss" or "afraid to miss" educational events for members.

Some managers say they are considering a more regional approach, especially in states where travel times play a significant factor. Others are considering multi-day, high-quality events that could make long travel times worthwhile. More effort is being made to move chapter events around the states to make travel time equitable.





Every chapter is exploring ways to keep their costs down. Venue selection, local or regional speakers – such as university and extension personnel, as well as superintendents – and even Web-based meetings may all find a place in chapter planning.

However, competition remains from commercial members – primarily distributors – and the educational meetings they occasionally host – typically in the off-season – are issues mentioned with a fair amount of frequency and is causing frustration at the local level. They have resources chapters do not have to choose exciting sites and invite well-known national speakers. In addition, they are able to offer superintendents GCSAA CEUs that apply toward PDI requirements, just as chapters do. These meetings are popular with chapter members and unpopular with many chapter executives who believe the uneven field is unfair. Many question whether GCSAA fully appreciates this conflict.

There are no easy answers, though.

A few years ago, for example, I attended, at no cost other than transportation, one of the finest educational meetings in my long career. LESCO had assembled faculty turf pathologists from Wisconsin, Michigan State, Chicago District Golf/University of Illinois and Purdue. The venue was a new Jack Nicklaus golf course in eastern Wisconsin and the meeting was held in the off-season. It was packed. The gratis lunch was superb. It was great to see colleagues and network. There wasn't a superintendent who didn't leave grateful, making it difficult to argue against these educational meetings. Some suggest we shouldn't even try.

Local distributors often put together great meetings, especially in the slow season. Our local Toro distributor organizes a huge show and conference every other year. In the alternate year, small educational meetings are held in all quarters of the state in the winter and they are well attended. The cost for the big

show is minimal and the small meetings are free. They are popular and offer real value to superintendents. Thus the dilemma to chapter execs concerned about chapter activities.

It should be noted, though, that there has been some pullback from commercial members in membership, and chapters realize they have to keep their needs in mind during this change process, as well.

**MAKING PROGRESS.** There is an acute awareness that networking is the most important feature and function of a gathering of golf course superintendents, and anything they can do to facilitate and encourage it works to everyone's advantage.

Organized phone call trees, e-blasts, newsletters, chapter publications, Websites and special invitations are all used to communicate with members. Execs, officers and directors are more carefully planning calendars to eliminate conflicts. They recognize the need to get calendars to members early to better accommodate individual travel and attendance schedules. No one wants last-minute surprises to negatively affect attendance.

Chapters are also increasing their overall value by broadening their importance to those on golf course staffs – assistants, spray techs and equipment managers, for example – and subsequent overall increased value to superintendents. Some chapter managers see that down the road services like travel assistance through an agency, credit card endorsements and insurance company promotions may have a place in adding to their bottom lines.

GCSAA obviously recognizes the value of affiliated chapters and has developed tools and programs to help them. Seminars for chapter execs and a pilot program for regional offices and field staff to assist chapters with programming are two prime examples. GCSAA has also responded to its own reduced membership and declining GIS attendance by reduc-

ing its staff and controlling costs.

The 15 percent decline in membership over the last few years has led to very open reductions in personnel, many of them familiar long-time employees, in addition to programing elimination. Even turfgrass research support has taken a well publicized hit.

Superintendents have never been busier, and that isn't going to change any time soon. Neither will the pressure felt by many: "What disaster can happen at the golf course when I am gone?" And despite cell phones and Blackberrys, their comfort zones have diminished, usually due to some economic reasons.

However, the fact remains that there has always been a core group of chapter members who show up for everything, serve committees and chairs and in offices. They are the ones who strongly believe in the cause of their chapters, regardless of good times or bad, and will lead the way through the changing circumstances facing golf.

One of the most inspiring stories of a person stepping in at a critical time is that of Leo Feser. Namesake of the annual GCSAA Leo Feser Award, Leo, a founder of the Minnesota Greenkeepers Association and its longtime secretary, is honored yet today for his efforts to keep GCM magazine's forerunner – Greenkeepers' Reporter – alive and relevant almost single-handedly during a tough three-year period in the 1930s.

Many of us could look into our crystal balls and see individuals taking a page out of Leo's book by doing the same thing for their home chapters and specific programs.

Regardless of the challenges facing this industry, many are convinced the local chapters will come through this transition time looking different than they do now, and ready to become even more relevant to their members. **GCI**

*Monroe Miller is a columnist and frequent contributor to GCI.*





**Monroe Miller** is a retired golf course superintendent. He spent 36 years as superintendent at Blackhawk Country Club in Madison, Wis. Miller can be reached at [groots@charter.net](mailto:groots@charter.net).

## CHAPTER MEMORIES

In my career as a superintendent, it was rare for me to miss a Wisconsin GCSA chapter meeting. I might not have played golf, but I didn't miss a chance to see close friends and learn something in the process. And as an added bonus, I was able to see a good many of our state's golf courses.

One of my most memorable chapter meetings took place on a tractor drawn hayrack. We convened at a course under construction in Madison, and there was extreme interest in the grassing of the putting greens – they were stolonized.

The stolons were trucked in from an out-of-state nursery, spread, compacted, topdressed and watered. Although it was a method in use then, I have never seen a turf established this way since that meeting back in the mid-1960s. We toured the new course with our legs dangling over the edge of the wagon. Needless to say, there was no golf that day.

There was no golf the day our chapter saw Wisconsin's first automatic golf course irrigation system, either. The meeting, also in the mid-1960s, was called to order at lunch and we spent the afternoon listening to installation details and a demonstration of what was a technological wonder as we walked the course. We all went home totally impressed.

Chapter meetings that didn't involve golf were fairly common during my college years, too. Rather than having a speaker or golf, the meeting might convene in a new shop, giving the WGCSA members a chance to see what a colleague had planned and executed. The concept lost favor sometime in the 1970s. It wasn't until the summer of 1996 that Michael Lee invited us to the construction site of the new Pete Dye designed Kohler golf course named Whistling Straits.

Years ago our chapter occasionally

had a dual meeting with another state chapter at a course near the state line, giving members the chance to make new friends and learn about their problems. Old photos of chapter meetings from the 1930s and 1940s are fun to study. White shirts and ties were the norm, a tradition we resurrected in the 1980s for a while.

In fact, when compared to today, that period was really something. Today, the meeting format usually is a lunch buffet, a short speaker program, golf, hors d'oeuvres, golf prizes and an early departure. In the 1980s we would have lunch, golf, a sit-down dinner with members dressed in coats and ties and an after-dinner speaker. If we attempted that today, nobody would attend.

Our state chapter has always put emphasis on turf students and scholar-

sin's only five star hotel. Our roster of speakers over nearly five decades rivals any other state program.

Not all has been smooth over the past 45 years. There was modest controversy when some of us wanted to name it the Wisconsin Golf Course Managers Association. In the end, a close call went to tradition.

The issue of forced dual membership in our chapter and GCSAA was not pleasant to deal with. The proposal really chapped my backside, pitting the haves against the have-nots. I always side with the little guy, but we lost. It occasionally comes up in the discussion of declining membership, albeit in an anecdotal way. The satisfying part is knowing that no superintendent is really denied access to his state chapter, even if it is with a wink and a nod. But I have to confess

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### The proposal really chapped my backside, pitting the haves against the have-nots.

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ship, offering internship options and financial help. I won't forget riding with Professor Love to attend a chapter meeting at Wausau CC in late fall with another turf student to receive a GCSAA scholarship. We drove up late in the day, had dinner and stayed through the program that included us. What an experience. In the years since then scores of scholarships have been given to students in Wisconsin's turf program, most who, like me, went on to a career in golf course management.

When I was an undergrad, the WGCSA and Milorganite teamed up to present America's only true golf turf symposium to honor the late O. J. Noer. Initially held in Milwaukee's historic old German hotel – the Phister – it is still going strong today, only in Kohler at the American Club, Wisconsin's

aggravation every time I receive snail mail from my chapter – big, black, bold GCSAA on the return address and "Wisconsin Chapter" in tiny letters.

Not everyone in a state chapter is able to attend GCSAA conferences, seminars and the GIS show, but the WGCSA has filled the social, educational and professional needs in an exceptional way.

Chapter meetings have been essential to our prosperity over the years, a comfortable venue where advice is easily sought and freely given. And there is no better place for networking. For all of us, the overwhelming emotions that result from our chapter participation are pride, gratitude and loyalty, along with some great memories.

Plus, I must say it has been a whole lot of fun. **GCI**



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Proper drainage is one of the fundamentals for good greens.



# Don't lose out to POOR DRAINAGE

Green drainage is a critical part of any long-range plan.

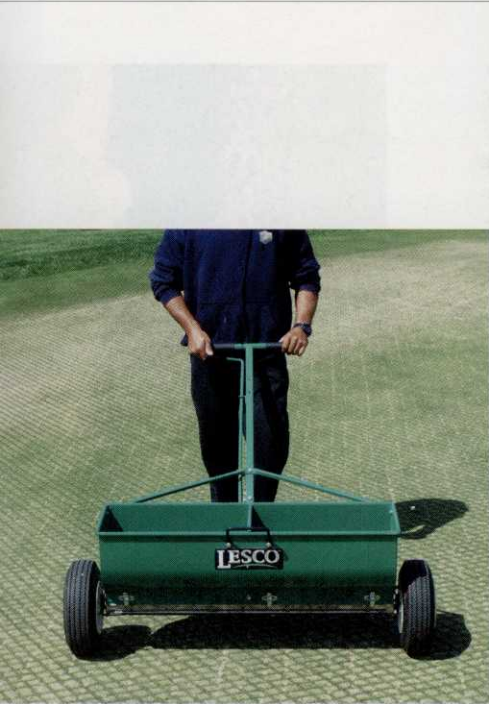
By David McPherson

Putting greens with poor drainage are prone to problems when heavy rain and hot weather combine. Poorly drained greens tend to have poor soil oxygen, which is crucial for root health. As Al Schwemler, property manager, Toronto Golf Club, likes to say: “Drainage is one of the fundamentals for good greens.”

Toronto Golf Club, designed by Harry S. Colt, is North America's third oldest club (1876). It recently underwent a complete renovation. As part of the long-range plan, the club added new subsurface green drainage to all 18 holes, plus the practice green. Like many of the tracks built in the late 1800s and early 20th century, it features old pushup greens, which were built with little consideration for drainage.

“We had good surface drainage on these old Colt greens, but there was no subsurface drainage,” Schwemler says. “When doing our long-range plan, green drainage wasn't initially part





The greens drainage installation project underway at North Shore Country Club.

NORTH SHORE CC



of the project, but I threw this in from an agronomic standpoint. It was going to be a \$200,000-plus job though, so the club put it on hold. Then, when the whole project came in under budget, they put it back in.”

In 2009, Toronto Golf Club literally rebuilt its course – from new tee decks and bunkers to new grass in the rough, green expansions and a brand new irrigation system to name a few of the many changes the historic property made. It was the perfect time to install new green drainage as the course was closed from July 2009 to May 2010. The club hired TDI Golf and its XGD (Existing Greens Drainage) division, to install a subsurface drainage system to remove surface water more

Each green is unique. Therefore, design a drainage pattern using the green's natural contour to catch as much surface and ground water as possible.





rapidly and lower the water table, thereby improving turf growth. The procedure has gained a lot of recognition and popularity in the turf industry as an excellent method of improving the subsurface drainage of existing greens without rebuilding them.

"Conventional golf drainage theories rely on surface water as the primary focus, but this is absolutely false," explains Mark Luckhardt, vice-president, XGD, who helped develop and perfect TDI's XGD process more than 18 years ago. "We need to look at groundwater table issues first and foremost. XGD drainage is based on similar farm drainage practices which relies 99 per cent of the time on groundwater table lowering, and very few open surface inlets or catch basins. Every single mile of this simple, yet effective, drainage installation relies on controlling the subsurface groundwater table down to a manageable level out of the crop root zone."

This was the first time XGD had done an entire course. Schwemler says what was most interesting for them, because Toronto Golf Club has a sandy soil profile on the property, is that XGD backfilled the club's green drainage with their native soil. "If you put a blend of sand/peat back in the trenches, when you get hot, dry conditions, you can start to see those trenches," Schwemler says.

After only one season, Schwemler says he doesn't have any scientific proof as to the effectiveness of the new drainage, but he does have a superintendent's feel. "They are working great," he says. "Our soils drain significantly quicker and our greens are firming up faster after a series of rain events. It's also bringing more oxygen down to the soils, which should help reduce diseases and make the turf healthier in the long run."

The greens drainage project cost about \$230,000 for all 19 greens. The work was spread out among the entire renovation project with each green taking approximately five days to complete.

"The XGD system is a permanent solution to poorly drained and compacted greens, leading to increased aeration and the removal of excess moisture," Schwemler says. "The result is a revived green without the need for expensive and disruptive reconstruction. No other system minimizes the disruption to the green as XGD does, which ensures the surface is back in play as soon as possible. It was a great investment for our club."

intendents, Garrett Luck's budget is tight these days. The greenkeeper at North Shore Country Club in Mequon, Wis., recently developed a master plan to renovate the entire course. Part of his long-range plan included a complete rebuild of North Shore's greens.

But during the course of interviewing architects, the club decided they weren't willing

to spend the money needed to rebuild the greens. "Our members were happy with the conditions and subtleties of these old push-up greens," he explains. "But, we had about four inches of top dressing on top of a mucky soil, so our greens drained poorly ... we still needed to address this issue."

Since a complete greens rebuild to USGA

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specs was out of the question due to the cost, Luck looked for alternatives. That's when he discovered Golf Preservations, who the club hired to install green drainage on all 27 of its holes.

"At the onset, I thought it would be an improvement, but not nearly to the level that a complete rebuild would be," Luck says. "It has been a dramatic improvement, surpassing

our expectations in the ability of the greens to drain. For example, after a hard rain, we used to have standing water on 30 per cent of the greens. Since Golf Preservations installed the new drainage, now, within 20 minutes, the green surfaces are completely clear."

Luck used the opportunity of the greens being out of play to reseed them with a high-quality bentgrass; their consulting architect

also added some subtle contours to give the greens a little more interest on a select number of holes. "The members are very pleased," says Luck. "The balls don't plug now and they roll more smoothly. And, we can now mow and roll more quickly following rain events."

Samson Bailey, Golf Preservations' president, says the key to any green drainage project is choosing the right sand mix. "I recommend guys keep a sand mix that matches as closely as possible to their top three to four inches of aerifying mix. Most of the time, I tell clients to stay between two to four inches an hour on their sand mix. A lot of guys in the earlier days went sandy and now they have problems with their drainage lines showing up."

The first thing Bailey's crews perform is a survey to understand each green's topography. "Each green is unique," he explains. "We design a drainage pattern by using the natural contour of the green; then, we try to catch as much surface and ground water as we can. After we've used lasers to get the topography, we design a specific drainage layout for each green."

After the topography is determined, Bailey says the next step is to install six-foot centers to provide consistent drainage throughout the green.

This is followed by hand removing the sod in seven inch by 15 inch strips and placing plywood before trenching, Bailey says. The grade is then checked before installing two-inch perforated pipe with micro-slits to a depth of between 15 and 16 inches. The pipe is covered with a 6-2-2 greens mix to help direct the water into the system, he adds.

"After the mix is hand tamped in place, the sod is returned to its exact location to prevent shrinkage," says Bailey. "The sod is tamped level, the green is cleaned with blowers, and the green is immediately ready to roll, mow and play."

So, don't let Mother Nature wreak more havoc on your course than is necessary following a heavy storm. Take preventative measures now to tackle any subsurface greens issues your facility may have and make sure surface water drains away, rather than remains on the green.

Your members will thank you. **GCI**

*David McPherson is a freelance writer based in Toronto.*

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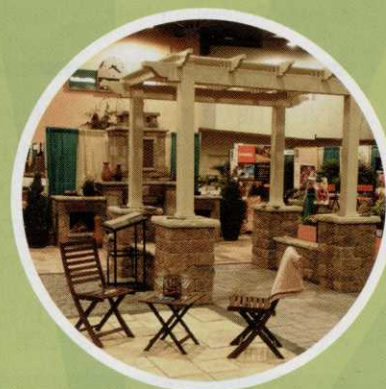
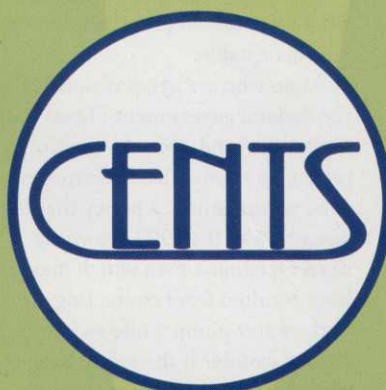
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**Jeffrey D. Brauer** is a licensed golf course architect and president of GolfScapes, a golf course design firm in Arlington, Texas. Brauer, a past president of the American Society of Golf Course Architects, can be reached at [jeff@jeffreymbrauer.com](mailto:jeff@jeffreymbrauer.com).

## WHERE'S MY WATER?

Irrigation systems are said to be the heartbeat of the golf course. In reality, it's the water in them that's so important, and in some areas of the country we have been expecting future limitations on that water.

In Texas, the future may be now. The Ft. Worth Division of the Army Corps of Engineers is the first regional Corps office to implement a national directive to eliminate submersible pumps in "Waters of the U.S." Most lakes, streams and even intermittent streams fall under the definition of "Waters of the U.S." and thus, control of the Corps.

In June, the Ft. Worth Division sent letters to permitted water users stating that "utilization of submersible pumps in marine environments where swimmers and waders could be present is a safety hazard and therefore these types of pumps must be removed immediately," adding that, "Our overall goal is to reduce the potential for accidents at our area lakes." Pumps can remain if they are be rated at 220 volts or less, Underwriters Laboratory (UL) certified for boaters and swimmers, installed and wired in accordance with manufacturer's recommendations and the National Electrical Code for wet locations. They also noted that water intake lines can remain.

The new regulation prompted questions and concerns. Negative reaction stems more from the ruling's timing and the "immediate" pump removal requirement than its intent. The immediate enforcement forced many golf courses, municipal water supplies, homeowners and others to re-evaluate their pump systems to avoid losing their existing water sources. The problem lay in the need

to work quickly in the heat of Texas summer and the lack of flexibility in what solutions were initially considered acceptable.

Some who are generally critical of the Federal government (Texas has its share) wondered why the Corps picked an economically distressed time to implement a policy that is a reaction to the 1993 drowning of an Oklahoma man which may have resulted from contacting an underwater pump while swimming. Others wonder if the safety issue is really a guise, with the real intent of more Federal control of water re-

ently none is UL certified or meets the stringent Corps safety goals. It is possible – but not economically feasible – for individual users to pay for the UL studies to gain certification. One golf course prepared five water withdrawal options. The only one meeting the strict criteria will cost over \$400,000, which could put them out of business.

Initially, representatives of the Corps seemed untroubled by closed or dead golf courses. Having worked with the Ft. Worth Division of the ACOE in obtaining construction permits, I know they are reasonable

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**"Negative reaction stems more from the ruling's timing and the 'immediate' pump removal requirement than its intent. The immediate enforcement forced many golf courses, municipal water supplies, homeowners and others to re-evaluate their pump systems to avoid losing their existing water sources."**

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sources, and if the cost-benefit ratio of this regulation has been carefully considered.

While the number of golf courses (and municipalities, businesses and homeowners) taking water directly from regulated water bodies may be relatively small, many courses will be affected by this ruling as other divisions of the Army Corps begin enforcing it. Depending on elevation changes and other aspects of the existing pumps, some users will find alternative ways to pump water easily, others will not.

The problem is, while safer underwater pumps do exist, appar-

people, and they did schedule a town meeting with affected users to hear their concerns. The result of that meeting was to allow more time to study options that are more acceptable to water users legally permitted to draw water out of lakes.

However, these regulations will eventually be enforced in some form across the country, to better ensure the safety of boaters and swimmers. If you access water from a Corps of Engineers body of water then you more than likely will be affected by this policy. If you are in that situation, it might pay to begin studying your alternatives now. **GCI**





Fabric liners that are stapled into the bunker face and rest underneath the sand.

# Help for your HAZARDS

Bunker liners can hold sand in place and improve drainage.

By Frank H. Andorka Jr.

**A**n old golfing adage holds that if you don't like the condition of the bunkers, don't hit your ball into them. The real problem with bunkers is that they are, like the rest of the golf course, ever-changing entities. Even with the best drainage systems, bunkers can succumb to soil contamination and washed out sand during hard rains.

Bunker liners are growing in popularity as a potential remedy for some of the worst problems bunkers suffer. Here are some pointers and tips on how to use them most effectively.

**DO YOUR HOMEWORK.** Mike Hurdzan, principal at Hurdzan/Fry Design in Columbus, Ohio, says it's critical for superintendents to do their homework before deciding which bunker liner is best for their conditions. He recommends digging test bunkers and applying the different products and sands to ensure the proper product is used.

"You have to do a proper cost-benefit analysis of bunker liners because if you don't, you'll be sorry," Hurdzan says. "So many factors come into play when evaluating these products. It pays

in the long run to do a thorough investigation."

There are a number of factors to consider, including weather conditions – freezing and thawing can affect the way bunker liners perform – irrigation water quality, number of bunkers, maintenance labor, installation cost and sand quality and shape.

Bunker liners are most effective when they are added as a drainage aid. Hurdzan says, "What you're hoping to do is channel the water during hard rains into the drainage system



“If you’re not having to send crews out to put the sand back into bunkers, they can be doing other things like squeegeeing greens or picking debris off fairways. **The amount you save on labor can be huge.**”

— Chuck Hutton, SandTrapper

to keep puddles from forming in the bottom of your bunkers,” he says.

Chuck Hutton, sales representative for SandTrapper, says sand inconsistency is one of the most common complaints about bunkers. Bunker liners, because of their drainage capabilities, offer superintendents a chance to take that off golfers’ lists, he says.

“When the bunker drains more quickly, the sand is more consistent,” Hutton says. “You can offer golfers the same shot values from a bunker because the sand will have the same moisture content throughout.”

**GEOTEXTILES.** There are primarily two different types of liners on the market today – geotextile fabrics (such as those produced by SandMat and SandTrapper) and polyurethane sprays that bind the soil substrate together (manufactured by companies like Klingstone).

Geotextile liners, fabric liners that are stapled into the bunker face and rest underneath the sand, are designed to hold sand in place, channel water into the drainage systems and prevent sand erosion, says Ted Fist, product manager for SandMat, a geotextile liner. Superintendents installing geotextile liners will have more labor costs during installation, he says, but will have

less labor in putting bunkers back together after it rains.

“Our goal is to keep the water from crashing through the sand during an intense rainstorm and dislodging the substrate and contaminating the sand,” Fist says. “It keeps the drainage system cleaner and prevents catastrophic breakdowns that are hugely expensive to fix. The extra money they spend on installation on the front end will save them money down the road.”

Chuck Barber, superintendent at Indian Lakes Resort in Bloomington, Ill., sees the advantage to using geotextile fabrics as liners. He uses the SandMat 400. The bunker liners he uses keep the sand in place and improve drainage, a critical consideration in the Midwest where rains can sometimes wreak havoc with the sand in bunkers, he says.

“If you put the bunker liner into the face of your bunkers, you can create a direct channel into the drain tiles,” Barber says. “We have high-flashed bunkers, and we couldn’t keep sand on those slopes if we didn’t have bunker liners in place.”

Liners also help golf courses return the golf course to playability more quickly after a heavy rain, giving owners the opportunity to earn more money, Hutton says. “If you’re not having to send crews out to put the sand back

into bunkers, they can be doing other things like squeegeeing greens or picking debris off fairways,” he says. “The amount you save on labor can be huge.”

Barber recommends choosing the proper staples to install the fabrics. Otherwise, freezing and thawing conditions can pull the staples out of the ground.

“If you’re going to use the geotextiles, you absolutely need to install the number of staples recommended by the manufacturer,” Hurdzan says. “I’ve seen superintendents scrimp on the number of staples and the amount of fabric they use. They always end up paying for it later.”

Superintendents will have to change the way they care for bunkers. “When you install a geotextile, it does require superintendents to groom the bunkers,” Fist adds.

Geotextile liners all but eliminate mechanical raking, Barber says. “You have to take into account the additional labor you will need so that you don’t tear or damage the liner,” he says. “But if you take care of the sand and the liner, you will save yourself money in the long run.”

**POLYURETHANE.** The first objection Bob McCormick, general manager of Klingstone, will hear about his product – a polyure-



SANDMAT



part of the course to maintain  
is the bunker," Jordan says.  
"Anything we can do to help  
do to help bring down the cost  
is worth it."

tract better the further out you  
go, he says.  
In the end, superintendents  
will have to decide for them-  
selves if bunker liners are worth  
the cost for their specific course.

can't win on the rate," Jordan  
says. "You will have problems if  
you do."  
Sometimes it's difficult to sell  
a bunker liner to a superintendent.

those bunker liners that provide  
will reduce the amount of water  
it from running - in the long  
run. "We understand your role as  
a superintendent is to keep the  
course in the best possible con-

A bunker liner keeps the drainage system cleaner and prevents catastrophic breakdowns that are expensive to fix.





thane bunker liner that binds the soil substrate together to prevent it from moving – is the cost.

“We understand going into a discussion with a superintendent that the first thing we’ll hear is that our system costs a lot more than other bunker liner systems,” McCormick says. “And it’s true. You will not get an instantaneous savings. But in the long run, you will save money.”

A spray-on polyurethane bunker liner costs superintendents about \$1.20 per square foot to install, whereas a geotextile liner will cost anywhere from 20 cents to 50 cents per square foot (not including labor). But McCormick argues the extra costs are worth it because of the polyurethane’s durability and ease of installation.

Tim Johnson, superintendent of Spring Hill Golf Club in Wayzata, Minn., first installed Klingstone’s product in his bunkers 13 years ago during a renovation. He is currently the company’s longest-standing customer, and he says the extra cost up front is worth it.

“The only failures we’ve had are places where we didn’t install it properly in the first place,” Johnson says. “We decided to go with permanent liners because weather conditions here in Minnesota can get pretty nasty in the winter.”

Johnson doesn’t have to replace sand after a heavy rains because the polyurethane bunker liners do a solid job of channeling the water into the drainage systems. He adds it’s also a labor savings during the installation.

“It’s easy to install,” Johnson says. “You can send a two-man crew out to install it, and it’s no harder than spraying for weeds. Once you put it on, you’re good for the next 10 years.”

Johnson can’t stress strongly enough how important it is to calculate the proper rate of the product before installation. “You

can’t skimp on the rate,” Johnson says. “You will have problems if you do.”

Sometimes it’s difficult to sell a greens committee or board of directors on the initial cost, so superintendents have to convince them to look down the road 10 or 15 years, Johnson says. The bottom-line for the product looks

much better the further out you go, he says.

In the end, superintendents will have to decide for themselves if bunker liners are appropriate for their specific courses conditions, Hurdzan says.

“When superintendents do an in-depth cost analysis, they’ll discover that the most expensive

part of the course to maintain is the bunkers,” Hurdzan says. “Anything superintendents can do to help bring down those costs is worth it.” **GCI**

*Frank Andoraka Jr. is a freelance writer based in South Euclid, Ohio.*



## Liner Notes

**B**unker work, like with any type of construction or renovation project at your facility, is a strategic financial investment meant to improve the playing experience for the golfer, as well as assist the superintendent and his team in their maintenance routine.

However, to fully realize the return on that investment it pays to do the project the right way, says Craig Porovne, vice president at Professional Turf Products.

Provone offers these liner notes to consider when embarking a bunker project.

- To accommodate cuts and waste, be sure to always add about 10 percent to your total square footage of liner.
- When determining sand, it’s a sound practice to add an extra inch for depth because sand will invariably infiltrate the liner.
- Cover the entire bunker, drains, etc. Failure to do this will result in drainage gravel being mixed in with your sand.
- If you’re covering the face of bunker and plan on laying sod on top of the liner, it makes sense to add 2-3 inches of soil and rub it into the liner for the turf’s roots to take hold of.
- An important, an often overlooked, practice is to use Liquid Nails or another construction adhesive on all seams.
- Most importantly, if you’re hiring a contractor to do the work, then make sure he is a certified builder from the GCBA list.



# Carrier water quality and pesticide stability

By Dara Park, PhD and Juang-Horng 'J.C.' Chong, PhD Clemson University

**T**ank-mixing pesticides and fertilizers is a convenient and cost effective way to apply two or more chemicals at once. When done appropriately, tank-mixing can reduce labor and equipment costs, and save time and energy.

Carrier water is the water you put in the tank to dilute your chemicals and to apply them with. Carrier water makes up about 95 percent of what you are applying. Certain water chemistry can potentially react with, and change the efficacy of, pesticides in both positive and negative ways.

This article examines the origins of water chemistry, and how to take a water sample and determine the water quality. This article also discuss the influence of and the remedies for common problematic water components.

## ORIGINS OF WATER CHEMISTRY

The chemical and physical properties of minerals and weathering influence water chemistry. Weathering is the decomposition process of rocks, minerals and soils by physical – for example, degradation by microorganisms and cracking by ice formation – and chemical – such as reactions between water and minerals – processes. Weathering results in different compounds as solutes and or particulates within the water column.

Here is an example of how mineralogy and weathering may influence water chemistry. Along

the south eastern coast of the U.S. limestone, composed of mainly calcium carbonate ( $\text{CaCO}_3$ ), is the underlying bedrock along coastal South Carolina.

During each rain event, water combines with carbon dioxide in the atmosphere to form a weak acid called carbonic acid. As rain water passes over and through the limestone, the acid combines with the calcium carbonate to form calcium bicarbonate ( $\text{Ca}(\text{HCO}_3)_2$ ), which is dissolved in the water.

Calcium carbonate and calcium bicarbonate are the two principal causes of hard water. Water chemistry is also influenced by the sources of water. Saline aquifers, tidally influenced streams and rivers and reclaimed storm-water runoff and wastewater all have a considerable amount of salts and other particulates.

## TESTING WATER SOURCES

Use opaque plastic containers to collect your water sample. Rinse out the bottle three times with the water you will be sampling before you take the actual water sample. Place your name, location, and date on the sample bottle with a permanent marker. Place the water sample in a cooler or refrigerator until delivering to the laboratory.

Make sure to submit the sample within 24 hours of collection. Regardless of which laboratory you send the sample to, you should receive an inter-

pretation of results as part of your report. Some water components can be determined on site with relatively little expense and will be discussed in the following sections.

## COMMON PROBLEMATIC WATER COMPONENTS

pH or Potential of hydrogen is the measure of the concentration of hydrogen ions ( $\text{H}^+$ ) and hydroxide ions ( $\text{OH}^-$ ) in a solution. It is measured on a logarithmic scale of 1-14 with 1 = acidic (dominated by  $\text{H}^+$  ion), 7 = neutral, and 14 = alkaline (dominated by  $\text{OH}^-$  ions). Water pH fluctuates diurnally (from photosynthesis and aerobic respiration) and seasonally (from increased rainfall, leaf litter, etc.). Over long periods of time, water pH tends to become more alkaline.

How does pH influence pesticide efficacy?

Certain pesticides undergo chemical breakdown in alkaline water (pH more than 7). The reaction is termed alkaline hydrolysis and the severity and speed in which it occurs is dependent on the pesticide, the alkalinity of the water, the length of time the pesticide is in contact with the water and the water temperature.

Insecticides, particularly organophosphates and carbamates, are susceptible to alkaline hydrolysis than other pesticides. In comparison, sulfonyleurea herbicides are more susceptible to acid hydrolysis at pH less than 6.0.

So how do you keep it from becoming a problem?

Since pH is always changing, it is important to check it every time you mix up a pesticide. You can add buffering agents to carrier water whenever necessary.

A pocket pH meter is relatively inexpensive and easy to operate. Test the water pH before adding any chemicals.

Always read the pesticide label and check the pesticide MSDS for the recommended pH range. If correction is needed, add a buffering or acidifying agent before adding the pesticide. The acidifying agent may include acid forming nitrogen fertilizers, straight acids and may or may not be used in conjunction with surfactants. Always apply the tank mixture as soon as possible. Buffering agents should not be mixed with fixed copper and lime fungicides; otherwise, plant damage will occur.

## SALINITY

Salinity is the concentration of mineral salts –  $\text{MgSO}_4$ ,  $\text{MgCl}$ ,  $\text{CaCl}$ ,  $\text{NaHCO}_3$ ,  $\text{NaCl}$ ,  $\text{KCl}$  – dissolved in water. It is measured by electrical conductance (EC) and is commonly reported in either  $\text{dS/m}$  or  $\text{mmhos/cm}$ .

So, how does it influence pesticide efficacy?

Salty water is alkaline and more resistant to pH changes, making adjustments with acids more difficult. Salinity of over  $0.75 \text{ dS/m}$  can stress sensitive



**Table 1.** Recommendations on the uses of selected fungicides, herbicides and insecticides in carrier water of problematic quality. The effects of water hardness and salinity on fungicides and insecticides are poorly studied; thus, the compatibility should be tested before mixing.

Common Names	Brand Names*	Water Quality				
		Acidic (pH < 6)	Alkaline (pH > 8)	Muddy	Hard	Saline
<b>Fungicides:</b>						
azoxystrobin	Heritage	✓	X	NR		
chlorothalonil	Daconil	✓	✓	Test		
ethazole	Terrazole	✓	✓	Test		
fenarimol	Rubigan	✓	✓	✓		
Fosetyl Al	Aliette	✓	✓	X		
mancozeb	Manzate	NR	NR	Test		
mefenoxam	Subdue Maxx	✓	Test	Test		
PCNB	Terracolr	✓	Test	NR		
propiconazole	Banner Maxx	✓	✓	Test		
thiophanate methyl	Cleary3336	Test	X	Test		
trifloxystrobin	Compass	Test	Test	NR		
<b>Herbicides:</b>						
2,4-D amine	2,4-D amine	Test	NR	✓	X	✓
atrazine	AAtrex	NR	X	Test	✓	X
chlorsulfuron	Corsair	X	✓	✓	✓	✓
clopyralid	Lontrel	Test	X	✓	X	✓
dicamba	Vanquish	✓	NR	✓	NR	✓
diquat (& paraquat)	Reward	✓	✓	X	✓	✓
glyphosate	RoundUp	✓	Test	X	X	✓
halosulfuron methyl	SedgeHammer	X	✓	✓	✓	✓
MCPA	MCPA	Test	NR	✓	X	X
metsulfuron	Manor	NR	X	✓	✓	✓
sethoxydim	Vantage	✓	✓	✓	✓	✓
simazine	Princep	Test	NR	✓	✓	X
<b>Insecticides:</b>						
acephate	Orthene	✓	X	✓		
bifenthrin	Talstar	✓	✓	X		
carbaryl	Sevin	✓	X	NR		
chlorpyrifos	Dursban	✓	X	X		
clothianidin	Arena	✓	✓	✓		
fipronil	TopChoice	✓	✓	NR		
imidacloprid	Merit	✓	Test	✓		
indoxacarb	Provaunt	✓	X	Test		
λ-cyhalothrin	Scimitar	✓	X	X		
spinosad	Conserve	✓	Test	Test		
thiamethoxam	Meridian	✓	Test	✓		
Trichlorfon	Dylox	✓	X	✓		

\*Brand names are provided as examples. Mentioning of any products should not be considered as an endorsement.  
Key: ✓ = OK. X = Do not use. NR = Not recommended but use soon after mixing if there is no alternative. Test = Test for compatibility.



plants and reduce absorption of systemic pesticides through plant roots.

Besides what has been mentioned, not much is known about how salinity influences pesticide efficacy, or if it does at all. However, we are aware of instances in which a pesticide failed and the only water problem possible was salinity. If you have a similar problem, please have your county extension agent contact us immediately.

To keep this from becoming a problem, check the salinity in your carrier water if you use water from reclaimed or tidally influenced sources.

Pocket EC meters are inexpensive and easy to use. Combination Temperature/pH/EC pocket meters are slightly more expensive but still reasonable. Always read the pesticide label and check the pesticide MSDS to see if any precautions should be taken. Sometimes salinity is reported as total dissolved salts (TDS). Most pocket EC meters will give you the option for either an EC or TDS readout.

If a saline water source is used, an alternative water source should be identified for permanent use or for blending with the saline water. Agitators and injection tanks can be installed for water treatment with calcium or sulfur.

Contact your university extension agent or a professional to discuss the best options.

### WATER HARDNESS

Hard water contains a high concentration of magnesium ( $Mg^{2+}$ ), calcium ( $Ca^{2+}$ ), and Ferric ions ( $Fe^{3+}$ ). Water hardness is reported in ppm of  $CaCO_3$  equivalent. Water <50 ppm is considered "soft", 50-100 ppm is considered "medium hard" and 100 - 2000 ppm is considered "hard".

So how does it influence pesticide efficacy?

The cations in hard water bind with the pesticide molecules (one

cation can bind more than two susceptible pesticide molecules) to form insoluble salts and precipitate out of solution. 2,4-D, dicamba, glyphosate and clopyralid are susceptible to binding with minerals in hard water.

Hard water can also reduce the efficacy of some surfactants and agents added to clear turbid water. Precipitates and scales formed in the sprayer can also clog the nozzles and filters resulting in lower pesticide rates applied than expected and or non-uniform spray coverage.

To keep it from becoming a problem you will have to submit a water sample to a laboratory to test for hardness. Always read the pesticide label and check the pesticide MSDS for any precautions. If correction of water hardness is needed, add an agent such as those containing sulfate, organic acids and non-ionic surfactants. Sulfate ( $SO_4$ ) and organic acids are often used to bind with the hard minerals.

Non-ionic surfactants are commonly used to enhance herbicide efficacy but it should be noted that these will not correct the problem, and another agent still needs to be used. The agent should be mixed with the carrier water before adding the pesticide.

Other options are to decrease the volume of carrier water and to use a higher label rate. Spray the tank mixture immediately.

### PARTICULATES

Particulates of clay, silt, organic matter and algae that are found within the water column naturally or from agitation.

Large particulates may eventually settle to the bottom but small particulates can suspend in the water column. Collectively, the total amount of particulates is known as turbidity and is commonly reported in Nephelometric Turbidity Units (NTU). The small particles that remain suspended are referred to as *total*

*suspended solids* and are reported in mg/l.

These particles are both a chemical and physical nuisance and can influence pesticide efficacy. Clay and silt can bind with pesticide molecules. The organic particles not only bind with pesticides but also harbor microbes that naturally degrade pesticides. These particulates can clog filters and nozzles.

To keep it from becoming a problem a water sample will have to be submitted to a laboratory to get an actual value of turbidity. The easiest way to test for a problem is to drop a quarter at the bottom of 5 gallon bucket of the water. If you cannot see the coin, then the water must be treated.

Glyphosate is an example of a herbicide that is degraded by soil. Always read the pesticide label and check the pesticide MSDS for any precautions on using dirty water.

An inline filter can be installed to remove suspended solids. If the pump is within a surface water body, make sure that the location of the intake is in the middle of the water column and not at the very bottom or close to the top of the water column. Locate an alternative water source for permanent use or to blend with turbid/muddy water.

Additionally, agents can be added to help precipitate and clear the water.

### IRON

Iron is the sixth most abundant element in the universe and is the fourth most abundant element in the earth's crust, although not commonly found in the free metal form.

Iron is dissolved as water passes through the underlying rocks. The concentration of iron is reported in mg/l.

Iron doesn't directly influence pesticide chemistry. However, in air or aerobic water, iron reacts with oxygen to form rust - oxide

and hydroxide forms of iron. It forms faster in the presence of salt, as in certain pesticides or within the carrier water.

The rust can cause reddish-brown staining. Iron also combines with organic materials and bacteria to produce slimes. Rust flakes and slimes can clog nozzles, filters and lines which may result in applying less pesticide than expected.

To keep it from becoming a problem a water sample will have to be submitted to a laboratory to get an actual value of iron concentration.

Stains can appear at concentration as low as 0.3 mg/l.

Treatment for excessive iron depends on the problem that exists (stains, deposits, or slimes). The most common techniques include aeration followed by filtration, the use of a water softener (caution: these usually use sodium), and the use of potassium permanganate and chlorination followed by filtration. Contact your university extension agent or a professional to help decide which is best for you.

### TAKE PRECAUTIONS

Always check your pesticide label and MSDS for recommendations and guidance. If you still have a question, contact the company representatives or county extension agents. Table 1 (page 38) summarizes the effect of water quality on the most commonly used and more recent pesticides.

If the irrigation source exhibits one of the above-mentioned water problems, and the pesticide requires water-in after application, the irrigation water should be treated as well. This can be done by installing inline injection tanks. **GC1**

*Dara Park, Ph.D., and Juang-Hong 'J.C.' Chong, Ph.D., are assistant professors at Clemson University's Pee Dee Research and Education Center in Florence, S.C.*





**Brian Vinchesi**, the 2009 EPA WaterSense Irrigation Partner of the Year, is President of Irrigation Consulting Inc., a golf course irrigation design and consulting firm headquartered in Pepperell, Mass., that designs irrigation systems throughout the world. He can be reached at [bvinchesi@irrigationconsulting.com](mailto:bvinchesi@irrigationconsulting.com) or 978/433-8972.

## TRACKING WATER USE

**D**o you manage your irrigation water supply? Do you know how much water your irrigation system uses? Do you measure your irrigation water use? Do you know how much water your irrigation system uses per cycle, weekly, monthly or annually? Do you believe it's important to know how much water your system is using?

Many superintendents are aware of their water use by default. Most pump stations have a flow meter that is part of the logic process and determines when pumps should turn on and off. The amount of water being pumped is automatically recorded. Of course, if you never reset the totalizer or write down the use you still don't know how much water you're using.

As we all know, water is more and more of an issue in many parts of the country. It is not just a problem in the West, but in many other places, including areas that are considered water rich. In areas of the country, especially in the west, there is no requirement to measure or report how much water a golf course is using. In most eastern states, however, to pull water from the ground or from surface water, a water withdrawal permit is required. These permits are usually for diversions of 100,000 gallons or more on an average daily basis, which an irrigated golf course easily exceeds. Some states base their withdrawal permits on daily maximums or quantities lower than 100,000 gallons per day. For example, Connecticut requires a diversion permit for any

use more than 50,000 gallons on any given day. As part of the withdrawal permit the amount of water used each month is reported either on a yearly or quarterly basis. Usually the state provides a form to report your use to them.

If you're not, then start monitoring your water use. Why? At some point you will be required to, no matter where your golf course is located. It's easier to

water. There are some, though, most notably the Susquehanna River Basin Commission (SRBC), which impacts golf courses in New York, Pennsylvania and Maryland. Eventually, whether it is in five years or 50 years, there will be a cost associated with using ground and/or surface water in many other areas of the country.

When enacted, water withdrawal permit requirements are

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**“If you're not monitoring your water use you should start. Why? At some point you will be required to, no matter where your golf course is located.”**

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demonstrate how much water your system has been using over time than it is to have some regulatory authority tell you how much water you can use. Measuring and monitoring your water use is also the responsible thing to do. If you monitor your usage, you can tell when something has gone wrong or something is going wrong. If your water usage jumps up or your water use significantly decreases, it's a sign something in the irrigation system has changed. So monitoring water use can be used as a troubleshooting tool, as well.

Some superintendents believe how much water their irrigation system uses is nobody's business. Others are concerned if they report, their water will be cut or they will be charged for it. Currently, very few places charge for ground or surface

similar from state-to-state. In addition to a reporting requirement, they will require the calibration – on a one or two-year basis – of the meter or meters measuring the water to make sure they are reading accurately. On golf courses with multiple water sources, multiple meters will be required. Groundwater wells will need to be individually monitored, and in some extreme cases stream levels – either on the property or coming in and out of the property – will need to be measured with weirs, too. In simple cases, only the amount of water pumped is monitored.

You may not like the idea of measuring and reporting your water use, but the time will come. The better idea you have now of how much water your system uses the better off you'll be in the future. **GCI**



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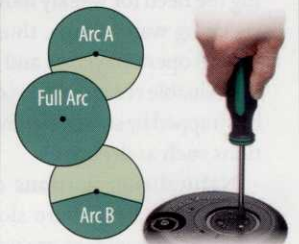
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# GONE NATIVE

How do you effectively control native areas that have gone wild? Is it time to bring back burning?

By John Torsiello

**B**eyond enhancing a golf course's aesthetics and imbuing a routing with added challenge for golfers, natural/native areas can prove a help to superintendents battling the bottom line.

Naturalized rough areas reduce the total acreage that must be maintained on an ongoing basis, eliminating the need for weekly mowing and reducing water usage, thus cutting overall operating costs and conserving valuable resources that can often be strapped by severe weather conditions such as drought.

Naturalizing portions of a golf course that has severe slopes, are rocky in character or are near water features also greatly reduces a superintendent's labor and stress levels.

Native areas, often quite pleasing to the eye and bursting with flora and fauna, show golf courses and superintendents to be what they truly are, good neighbors and stewards of the land, respectively.

While native areas are consider-

ably easier to maintain than the general playing surface, any good superintendent realizes you can't just make a portion of a golf course natural in character and then not pay any attention at all to it. Natural or native areas still need to be maintained to prevent them from quite literally going out of control with unwanted growth, or from invasive plant species and pests that can have damaging effects not only on the natural areas themselves but even, perhaps, the golf course as whole.

The Sagamore Club in Noblesville, Ind., has nearly 77 acres of natural areas that were seeded with a dunes mix that was predominately fine fescue, says Gary Myers, CGCS. Myers claims native areas are really no different than taking care of primary rough. The only difference is that the native areas are not irrigated and are not fertilized, which, he says, results in a significant cost savings.

"We still treat all 77 acres with a pre-emergent in the spring. We also apply post-emergent applications



ALL IMAGES: PETE DYE RIVER COURSE



Native areas, often quite pleasing to the eye and bursting with flora and fauna, show golf courses and superintendents to be what they truly are, good neighbors and stewards of the land, respectively.





Pete Dye River Course's Mark Cote, pictured below with Pete Dye, mows his native areas two times a year, in the spring and fall. He also treats the areas with a broadleaf weed control.



two to three times throughout the year. The main difference in controlling native area weeds compared to primary rough is the type of weeds you are trying to control.”

Myers' biggest weed problems in native areas are thistle, milkweed and annual grasses, such as foxtail.

“We are trying many different approaches this upcoming year in trying to control foxtail. We will be applying a barricade in the fall and coming back in the spring with a second application to hopefully help control this grass. This past year we tried to control foxtail with a post-emergent product that worked but was costly and you could still see the decaying plant in the native areas.”

Myers sprays all liquids in his course's native areas with two sprayers. “Even with all this effort, I believe that the native areas are not only important to the playability and toughness of the golf course but do save on money,” he says.

Jim Van Herwynen, CGCS, South Hills Country Club in Franksville, Wis., says of his course's 45 acres of native area, “Anyone who says they are maintenance free is a liar. They do require attention yearly for weed encroachment, noxious weeds, such as Canada thistle and garlic mustard, and also buckthorn.”

Yet, he reports, native areas “are a cost savings because we have minimal inputs – one or two herbicide applications per year and fuel for cutting them down to about 4 to 6 inches

in the late fall. The fuel savings of not cutting them once a week if we were to cut them as rough is substantial.”

He adds, “We typically do not fertilize them on an annual basis due to reduced budget numbers, however the edges along our rough do get fertilized once or twice a year and that probably gets in about 20 to 25 feet. We apply any leftover fertilizer at the end of the year to the areas that appear to be weaker than others.”

Van Herwynen shaves the areas down once a year in late fall with one employee using a brush cutter and tractor combo for about a week. “Weed control is essential as it can get out of control very quickly,” he says. “We have had problems with Canada thistle, so you have to get them sprayed with an herbicide once the thistles pop. We have had a few ant hills form in them as well that we try to bait periodically.”

Primland Resort's Highland Course was built on top of a ridge in the Blue Ridge Mountains area of southwestern Virginia in Stuart and has several significantly steep slopes. Creating native areas was an easy way to minimize mowing these areas, according to superintendent Brian Kearns.

“These areas are fairly difficult to maintain, but there is a cost savings from a fuel and fertilizer perspective,” he says.

Kearns and his staff mow the native areas once a year in September or October.

“One half pound of nitrogen is put out in these areas per year along with a crabgrass pre-emergent herbicide,” he says. “We use several post herbicides for the many broadleaves and saplings that are constantly popping up. We also use weedeaters, brush blades, and even hand pull the many weeds in these areas. We spot treat with insecticides to fight grub, cutworm, and chinch bug damage. We have some re-seeding to do each year due to insect damage.”

Kearns believes there are some misconceptions pertaining to natural areas.

“Our goal is to keep these areas having the tall, wispy, clean look, while keeping them lean and golfer-friendly (tall but thin enough to find a golf ball),” he says. “We are still trying to achieve this goal. Native areas are constantly trying to re-forest. Weeds and insects have made our task extremely difficult. We treat a few of these areas preventatively, but we mostly scout and treat curatively.”

Maintaining natural areas is not labor intensive, Kearns adds.

“We are not using a lot of labor mowing, he says. “Instead, we are using about half of the labor removing weeds, scouting and treating insects. Every year something new comes along and we find ourselves scratching our heads once again. We are constantly learning and thinking of new methods of maintaining these ‘low maintenance areas.’”

Glendon Junkin, superintendent at Turtle



Point Yacht and Country Club in Killen Ala., has about 35 acres of natural area on his course.

"We decided to plant many of the areas that were out of play in fescue and let it go natural," Junkin says. "This helped save money, gave some character to many of the holes, and provided wild life habitat for our Audubon certification. I Bush Hog the areas every September. That's it. I have 35 acres less to mow per week now than I did before, so there is fertilizer savings, labor savings, and fuel savings."

Mark Cote, superintendent at the Pete Dye River Course in Radford, Va., mows his native areas two times a year, in the spring and fall. "These areas also have to be treated with broadleaf weed control so that they are uniform and serve an aesthetic purpose as well as a design feature," Cote says. "The border/out of bounds areas are mowed three to four times a year in order to keep the woody plants from invading from the wood line. Our natural areas along the riverbank are mostly

manually maintained throughout the year to keep from becoming overgrown and thus losing their ability to filter any runoff."

Scott Roche, superintendent at Newport National Golf Club in Middleton, R.I., say his course's ownership and management views natural areas as vital to the facility.

"The areas are quite important to the overall aesthetics," Roche says. "Our golf course is wide open and flat without many trees, so they are a major feature."

He says maintenance practices in the native areas varies from year to year.

"Weeds are our biggest challenge and require mechanical removal and spot chemical application," Roche says. "If there were nothing done to maintain them, they would be cost saving. Natural areas are only as difficult to maintain as the budget allows them to be."

Roche mows Newport National's natural areas each fall and does not fertilize the areas. "We keep natural area margins away from known 'landing areas' as to not slow play," he says. "I would recommend to anyone looking to create naturalized areas to choose a seeding rate carefully and use entophyte-enhanced seed if possible."

He adds, "Natural areas may not be the cost saving areas that they are perceived to be. And the phrase 'naturalized area' can mean different things to different people. Every club is different and every budget is different, so depending on budget/labor and golfer expectations, they can be as cheap or expensive as one wants them to be to maintain."

What about burning as a means to manage natural areas?

The practice was once viewed as a low-cost,

**"Burning can help but it also may be an opportunity for weeds to come in. It also must be done carefully and in coordination with local authorities, obviously."** — Mark Cote, Pete Dye River Course



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effective way to control such areas and is still practiced by some. Burning is often initiated during spring as a way to control weeds and remove excessive organic material from grassland areas. Fire can stimulate seed germination, warm the soil and make nutrients more available.

Of course, the use of fire to control native areas must be approached with caution and planning. Burning may not be allowed in certain areas of the country and most municipalities require permits to burn, which may be difficult to obtain if the course is located

even somewhat close to residential or commercial property.

"A controlled burn could be an option," Roche says. "One would still need to quantify the cost/benefit to this practice in addition to adhering to the local laws."

Burning can help, Cote says, but it also may be an opportunity for weeds to come in. "It also must be done carefully and in coordination with local authorities, obviously," he adds

Van Herwynen would like to use fire to control his course's native areas but can't.

"Burning would definitely be the way to go in the fall due to the tremendous biomass that is produced yearly," he says. "But we cannot burn because we are in the city limits and surrounded by homes."

Kearns also considers burning an option, but probably not at Primland.

"Burning is a good solution in assisting with unwanted species," he says. "Unfortunately, our resort is on 12,000 acres of forest and burning scares me a bit. The wind always blows on the mountain top."

Establishing native areas on a new or exist-

Cote: "Our natural areas along the riverbank are mostly manually maintained throughout the year to keep from becoming overgrown and thus losing their ability to filter any runoff."





ing course can have significant benefits, but like issues pertaining to most turfgrass management it is not cut-and-dried.

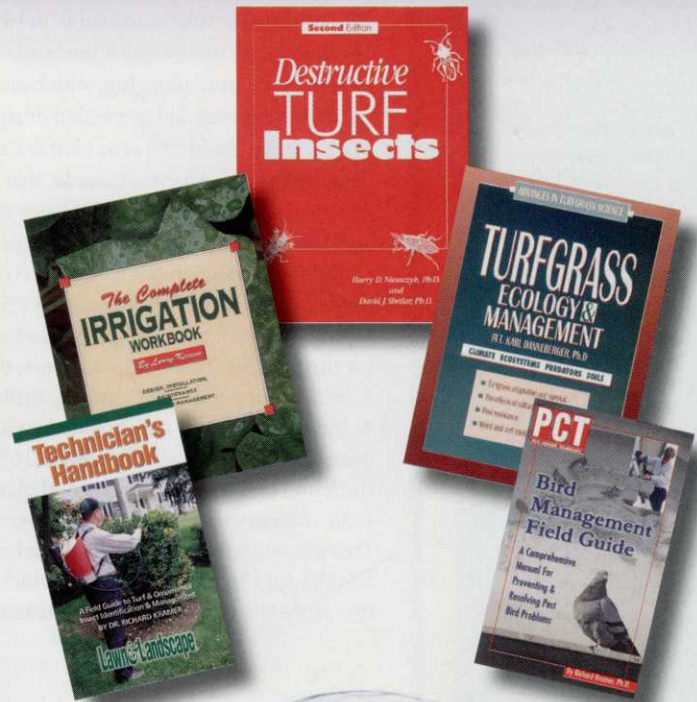
The misconception about native areas is that they require little to no yearly maintenance, Myers says. "If you do not keep up with weed control, native areas can soon become out of control," he says. "They then become more of a chore to have them looking kept. A lot depends on the expectations of your membership. The other misconception is that it takes little money to maintain once established. Again this depends on your membership. But we spend about \$7,000 to \$10,000 year maintaining our native areas. Still, there is a considerable savings considering if you had to spray, mow and irrigate the 77 naturalized acres we have." GCI

John Torsiello is a Torington, Conn.-based freelance writer.



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**Terry Buchen**, CGCS, MG, is president of Golf Agronomy International. He's a 41-year, life member of the GCSAA. He can be reached at 757-561-7777 or [terrybuchen@earthlink.net](mailto:terrybuchen@earthlink.net).

## Travels With Terry

Globetrotting consulting agronomist Terry Buchen visits many golf courses annually with his digital camera in hand. He shares helpful ideas relating to maintenance equipment from the golf course superintendents he visits – as well as a few ideas of his own – with timely photos and captions that explore the changing world of golf course management.

### BUNKER SLOPES ROLLER

These bunker rollers, available in two size widths, are used to pack the bunker faces to prevent balls from plugging, which are initially used in the spring and as-needed during the season at the Priddis Greens Golf & Country Club in Calgary, Alberta, Canada, that were designed and built in-house by Peter Kavanagh and James Beebe, golf course manager.

The 9-inch-wide roller used in the corners of the bunkers are made from used 1.5" square tubing from golf cart canopy support uprights for the handles, two 4" slip couplers, two 4"-x-2" reducers and a 2" end cap drilled out 3/4-inch diameter for the threaded rods, and a 4-inch-wide aluminum top plate 3/16<sup>th</sup>-inch-thick and two triangle-shaped end plates the same thickness that were welded together. There is one handle for the 9" model and two handles for the 18"-wide model, which also has two more slip couplers and a T-bar handle.



### LIGHT IT UP

Jeff Jamnik, equipment manager, at the Great S/W Golf Club in Grand Prairie, Texas, got tired of using a flashlight or a corded light with magnet to see better while operating their 2006 Foley Accu-Pro Model #6320930 Reel Grinder. Jamnik purchased three Ulitech 34 3/4" T5 Florescent light fixtures from Home Depot and installed them on the top of the frame on both sides and one below the doors facing upwards. They are linked-together and plug right into the grinder light plug supplied by Foley which is located behind the control panel, which are turned on and off automatically when the machine is being used or turned off. The lights are attached with double stick tape and the wires are placed inside of a black plastic loom, which are attached with plastic clips and tape sized to the clips. The cost for materials was about \$150 and the labor time was about three hours. **GCI**





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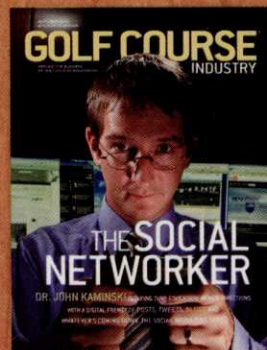
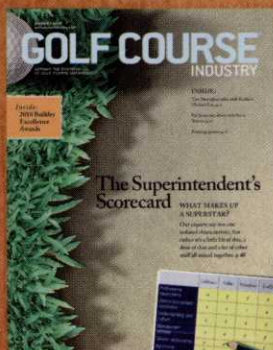
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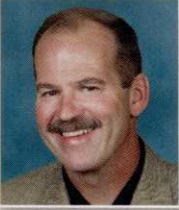
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## IS IT PAYDAY YET?

**A**t the risk of being a Scrooge right before Christmas, I think we need to talk about money for a bit.

No, I'm not referring to that bunker renovation you've been delaying until the drapes in the clubhouse are paid off. I'm talking about personal income.

According to the American Payroll Association, 72 percent of U.S. households live paycheck to paycheck. I'll let that sink in: nearly three-quarters of us can't pay our next round of bills until we get paid ourselves. That's a stunning revelation in the world's richest nation.

I not ashamed to say I live like that. I'm pretty good at a few things (writing, talking and pissing off GCSAA), but personal financial management has never been one of them. I've always had good jobs, but I've either lived beyond my means or didn't have the means to live the way I'd like.

Sound familiar?

I'm pretty sure most of you reading this are in better financial shape than me, but there are probably plenty of you sitting their thinking, "Hey, I guess I'm not alone in worrying about payday." Credit cards have been the Devil's toys for many of us. I cringe every time I see one of those Chase commercials showing cluelessly happy people essentially saying, "I need that widget now and I don't care if I'll be paying for it for 20 years!" Been there, done that, got the single-digit credit rating to prove it.

Then there's the failure to save. My investment portfolio largely consists of carefully bundled stacks of priceless, mint-condition Pokeman cards and boxes upon boxes of \$50 video cartridges that my boys absolutely had to have for gaming systems that have since gone the way of the dodo. In short, I tended to lavish useless plastic crap on my kids rather than teaching them that saving a little and eventually going to college someday was a wee bit more important than the newest version of Super Mario Brothers.

But, our financial situations – good or bad – are one thing. Consider the plight of your crew for a minute.

They are very likely part of that vast majority who are living hand-to-mouth. Yes, you pay them a good wage for a solid day's work, but no one is going to get ahead at \$12 an hour. And a salary of \$36,000 a year for an assistant isn't terrible if you're 24 years old and single, but not so much if you're 30 and married with a kid at home.

Let's face it: very few facilities are in a position to do much more than cost-of-living increases and even those are rare these days. Did you get an in-

interaction for three solid days. Even more amazing – no Syngenta product pitches, no speeches about sticking with proprietary brands and no sales guys working the meals and breaks. It was business school, not business development.)

Among the simple things that help motivate when money is tight:

- Communicate: Talk and listen more actively and frequently than normal. Engage them to find out how they would make little changes to improve procedures and the workplace. Interact face-to-face as much as you can.
- Have some fun: Playing blower-

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I've always had good jobs, but I've either lived beyond my means or didn't have the means to live the way I'd like.

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crease in the past few years? Bet most of you are saying, "Hell no!" right now.

So, whatever your salary issues might be, you definitely can't just wave a magic wand and make your employees' financial challenges go away. But there are ways to try to keep employees engaged and motivated when raises just aren't an option.

During the Syngenta Business Institute at Wake Forest University late last month, some very smart professors from the school's MBA program, helped 28 superintendents from around the nation examine that very problem. Motivating employees was just part of the remarkable curriculum Syngenta put together for a group selected from a pool of very qualified applicants.

(By the way, being a big Syngenta customer was not one of the key qualifications. Instead, the selection process focused more on finding superintendents who could truly benefit from management, leadership and financial education at a high level. I sat amazed at the quality of the teaching and the

ball (think soccer with back-pack blowers) or throwing some burgers on the barbecue doesn't cost much.

- Give little attaboys: There are few things more powerful than a simple, hand-written note on an employee's birthday, work anniversary or in recognition of a job well done. This one rang home with me because I've been preaching it for years.

- Break out gift cards: Surprising good employees with something as cheap and simple as a \$10 gift card to McDonalds or Starbucks goes a heckuva lot farther than just \$10.

Living from paycheck to paycheck is no longer the exception to the rule. But, you can make it a rule to find ways to keep your people motivated and focused until payday rolls around. It's good for them and good for you.

So, here's my challenge: This holiday, find one special low-cost thing for your team, then drop us a note to tell us how it was received and we'll highlight your idea for everyone. Your small thing might be a big idea for your peers around the nation. **GCI**



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