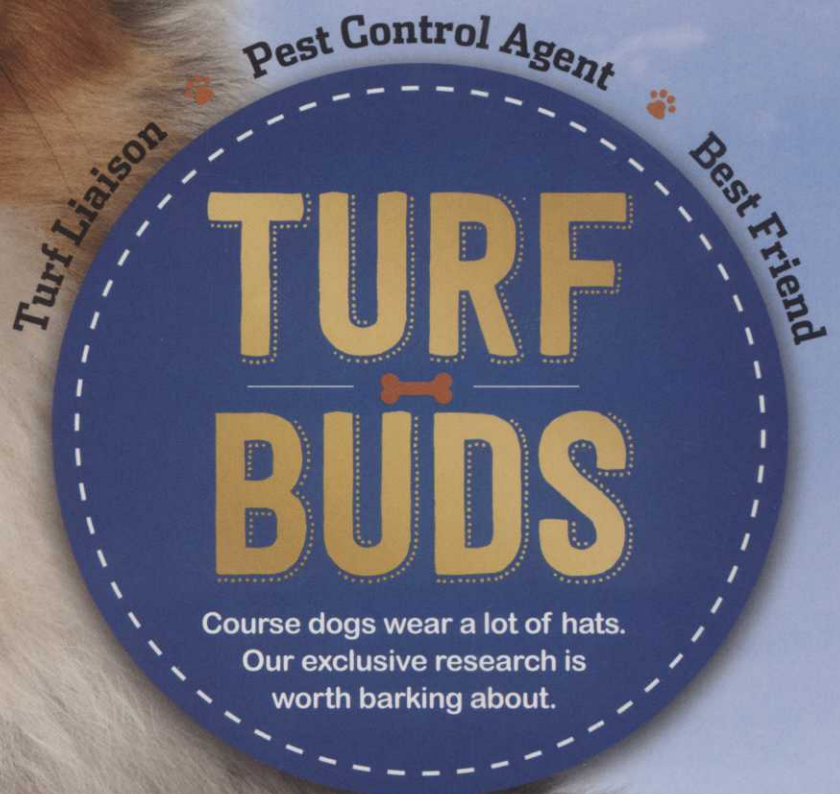


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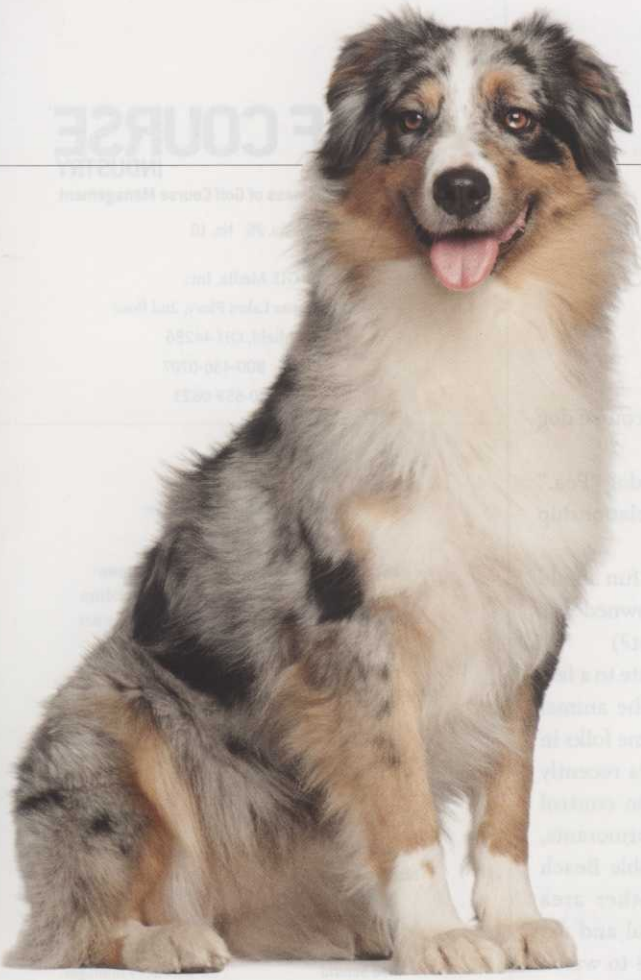


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DOGGONE IT

I'm not that much of a dog guy. I like 'em enough, but never had one growing up and they always seem to sense that I'm not going to be their new buddy. Lucas Lownes' dog at Muirfield Village GC actually bit me yesterday when I was down there for the President's Cup. I guess she didn't like something I wrote.

But, I understand the value that a good dog brings to your operations. First, as employee – chief goose chaser and executive wildlife manager. Second, as cultural icon for your facility – members and regular customers are often more likely to know the dog's name than yours. And third, companion to you and the crew – the day simply isn't the same without them.

The bottom line is that dogs go with golf courses like cats go with crazy old ladies.

We here at GCI have resisted jumping on the doggie calendar bandwagon. I admit I was very jealous when the folks from the old Superintendent News – now TurfNet – launched that brilliant concept years ago. Because I'm a big believer in R&D (Rip-off & Duplicate) we considered doing other calendars: hunting/fishing trophies, insect of the month, stupid crap golfers say, "turf porn" shots, etc. But, none of them had the sheer cuteness perfection of dogs.

So, we decided to do what we usually do: research it! So, in this issue, we're proud to have partnered with Jacobsen Turf for a completely unnecessary but really fun statistical look at the Dogs of Turf. A few interesting findings:

It costs more than \$1,000 per year to take care of these beasts but very few of you include doggie costs in your budgets. Fido is largely being maintained out of pocket.

You guys are not all that original when it comes to names (Bogey, Mulligan, etc.) but

one of you out there named your course dog "Miss Lacey Underalls." Nice.

Quite a few of you named your dog "Poa." Is it because you have a love/hate relationship with the pooch?

(To be honest, I shouldn't poke fun at odd dog names. The only dog I ever owned was named "Indy," as in Indiana. Get it?)

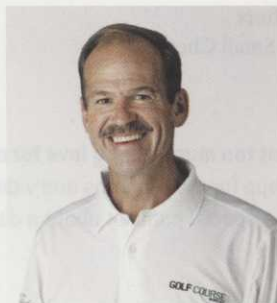
I'd be remiss by not paying tribute to a few other golf course workers from the animal kingdom. I met some folks in northern California recently who use falcons to control unwanted birds (cormorants, geese, etc.) at Pebble Beach Golf Links and other area facilities. Very cool and extremely impressive to watch a seagull explode into a giant pile of feathers when a raptor hits it at 140 mph.

Also, there are those adorable and hard-working goats.

Goats and golf have gone together since the days of Old Tom but had become forgotten until Pasatiempo GC popularized them again as a way to take down scrub and growth in rocky hillsides. I understand there's a waiting list for that herd on the west coast now.

But, leave it to our friends at the Trump organization to top that. Tyler Otero of Trump National GC at Bedminster not only has his own herd of weed-munching, PR-generating goats, but he recently and unexpectedly became the step-father to two new kids (the goat kind). We suggested naming them Donald and Melania, but Tyler wisely ignored that idea.

So, thanks again to the folks at Jacobsen Turf (who I'm told have lovely orange dog collars available upon request) for making this groundbreaking scientific study possible. And no, we still won't be doing a GCI doggie calendar. GCI



Pat Jones
Editorial director and publisher

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[REPORTER'S NOTEBOOK]

BASF INTRODUCES NEW FUNGICIDE CHEMISTRY

Xzemplar and Lexicon will feature fluxapyroxad, available to the turf market in April 2014.

BASF held a media debut in early October at Pinehurst Resort, site of the 2014 U.S. Open, to introduce fluxapyroxad, its new fungicide active ingredient.

Fluxapyroxad, a member of the carboxamide family, will be at the core of two new BASF products: Xzemplar, a solo high-end boutique fungicide, and Lexicon Intrinsic, which teams the AI up with the company's plant health chemistry, pyraclostrobin.

In a nutshell, BASF's new chemistry – pronounced “flux-a-py-rox-ad” – disrupts the energy supply and biosynthesis of essential building blocks within a number of fungal diseases that attack turf, primarily dollar spot and brown patch. The chemistry is absorbed into the grass leaf's waxy layer and transported throughout the plant. According to trial results, fluxapyroxad has shown 14-28 day control against dollar spot and brown patch, and it showed excellent results as both a preventative and curative measure against various turf fungal diseases and with better overall and residual control. In addition, the chemistry showed impressive results against large patch, gray and pink snow molds, summer patch and even

algae. In total, trials have shown fluxapyroxad effective against at least 26 fungal diseases.

Clemson's Dr. S. Bruce Martin, who conducted many of the initial field trials, says it's exciting to see some new chemistry effective against dollar spot and brown patch. “It gets dollar spot under control real fast,” he says, “and I test on Crenshaw Bent, which is a dollar spot magnet.”

BASF expects to officially launch the product in Orlando at the 2014 Golf Industry Show, and it's expected to be available for sale in April 2014. Pricing is not yet available. – **MIKE ZAWACKI**



Left: A sample of turf treated with Lexicon. Above: Lexicon – fluxapyroxad combined with BASF's pyraclostrobin – proved to have positive results on turfgrass root development in a laboratory setting.

New Kids on the Block

Trump National's Tyler Otero recently tweeted the new additions to this weed-munching herd of goats. He celebrated the birth of a pair of cute kids. As of deadline there were no names yet, but the new kids are doing fine and should be out munching weeds in no time.



From THE FEED



The GCI crew is always active via social media, but we've been riding the top of the update feed even more recently. October is a busy time in the golf industry, and we checked in from all over the map!

GCI Magazine@GCI Magazine

Hey GCI fans...many Tweepers today. Katie Tuttle is at Green Start Acad, @TurfRepublic at Hilton Head and Pat tweeting from HQ #confusedyet?

↑ **Jacobsen Turf@Jacobsenturf**
Who's on first?



Ciara Ahern@callincliffe

Busting out the heavy artillery @JohnDeere.



GCI Magazine@GCI Magazine

What a nice way to end the day
#GreenStartAcademy @BayerGolf

Turf Republic@TurfRepublic

Josh Heptig up next....did you know his property is a ZERO waste golf facility.
#sustainablegolf13



Turf Republic@TurfRepublic

Small group discussions. Gotta show some love to the Supers.
#sustainablegolf13



Join the conversation
on Twitter @GCI Magazine!



GOLF COURSE



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2013 Green Start Academy

GCI's Katie Tuttle headed down to North Carolina for this year's Green Start Academy. Here are a few things Katie took away from the event:

–Assistants want to be mentored. Don't keep the business side under wraps. Assistants are the future of the industry, and if none of them know how to create a budget and run a business, what's that going to mean for the future of golf courses?

–Network. A lot of assistants attending the event said it was an experience they didn't get to have often. They spend long hours on the course, meaning little time for them to get out and meet other assistants and superintendents.

–Everyone's different. At almost every panel and discussion, one of the speakers had a different opinion on something. At one of the panel discussions, the speaker said he would hire an assistant with a turf degree over an assistant with a business degree and turf experience. At the very next panel, the second speaker said he would hire the business degree. A common occurrence throughout the week was realizing there's no one way to get a superintendent job. Everyone has a different story.

–Sometimes it's hard for an assistant superintendent to follow and not lead. They may have different ideas than their superintendent, but are they're unable to implement them. It doesn't mean the superintendent is wrong, but the next time you're working on something, check in on your assistant to see if they have a suggestion.

–Learn to be uncomfortable. The more uncomfortable situations you put yourself in, the more you'll learn. If you hate public speaking, speak more. If you hate meeting new people, go to more networking events. You'll learn to make yourself better, and over time your fears and discomfort will diminish.



SUPERINTENDENT
R·A·D·I·O N·E·T·W·O·R·K

Podcast pick of the month

It's tough – but important – to keep a cool head under pressure and lead the crew when trouble hits on the golf course. Tom Vlach, superintendent at TPC Sawgrass, faced a rough situation when severe weather tore through his course just before the Players' Tournament this year. In August, he shared his story, and how he led his crew and his course through a disaster. Head to <http://bit.ly/GIQQT1> to hear it.

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GENERAL MANAGERS: FRIEND OR FOE?

There's no need for the often strained relationship.

Most of my speeches are to superintendents, but earlier this year I addressed club managers. Among the points I made was the need for them to show a little love to their supers and grounds crews.

My talk was met with good response, but more than one GM came to me afterward and said something like: "I'd be glad to be nicer to my super, but he makes it difficult because every time we talk, he makes it very obvious that he doesn't like the way our course/club is being run." Those comments hit a nerve because I remember how I felt when I was working at clubs and the often-strained relationship I had with management. Ever since, I've been trying to see the issue from both sides. Here's what I've learned.

WHAT SUPERINTENDENTS DON'T LIKE ABOUT GENERAL MANAGERS

- Management rarely understands what I do and how hard the job can be, particularly since it is governed by uncontrollable factors like the weather.
- The only time managers come to talk is when they want to cut the maintenance budget or "make me do more with less."
- It's common and necessary to bring in outside experts to review agronomics, architecture, irrigation, trees, and so on. But the manager is usually dismissive or disrespectful of consultants – that is, if this expense hasn't already been cut from the budget. This is very shortsighted as these experts often save the club money.
- One of the biggest enemies is time, but managers procrastinate when it comes to freeing funds to keep the course in its best possible shape. Many maintenance practices have to be done at specific times so stonewalling can cause real problems. Just because food and beverage business is down, don't take it out on the golf course.

- You don't like reporting to a general manager. In your mind, you should be the equal of the manager, since you are as responsible for the golf course as the manager is for the "house." Along with that, many supers resent the stature the manager enjoys with officers, committees, and members.

WHAT GENERAL MANAGERS DON'T LIKE ABOUT SUPERINTENDENTS

- It's not your money, it's the members' money, and the super doesn't realize the manager's most important job is to manage those funds wisely.
- There's a difference between "cutting costs" and "reducing expenses," and superintendents who don't understand that difference are asking for trouble. A superintendent and manager who work together will come up with smart ways to reduce costs without affecting maintenance. As with so much else, it's about communication.
- Speaking of communication, it has to be mutual. A smart manager wants to know what's going on out on the course so he can inform members, officials, and customers before there is a problem. In return, the manager should let the superintendent know where the course/club stands financially, as well as the board's philosophy, so an intelligent plan can be executed.
- Managers want to know why you always seem to be in a bad mood. It follows from the different natures of the jobs and the individuals who go into these lines of work. Managers tend to be outgoing, while superintendents spend their time worrying about less "human" concerns. It's a bit of a cliché, but I've observed countless superintendents who could help themselves enormously simply by smiling and waving when they see golfers out on the course. Asking members if they've noticed anything amiss out there, soliciting their opinions and questions

– these actions effect how the super is viewed and take pressure off the manager, who has to answer: "What's wrong with the super?"

Just as superintendents complain about managers who don't know anything about maintenance, managers say supers have no idea what it takes to run the club. I wrote in this space a few months ago that the superintendent and golf professional should work

"If you want the manager to put himself in your shoes, do the same for him."

closer together; the same is true of the super and the manager.

Trust me, the manager knows course quality is a top priority of members/players, which is why the GM is all over the superintendent about maintaining the level of conditioning. A top-quality course helps sell memberships, real estate, outings, and events.

General managers and superintendents serve the same masters. They are both on call 24/7 to deal with complaints, problems, or advice. While you're hearing about slow greens and faulty sprinkler heads, the GM is hearing about all that plus not enough shampoo in the showers, problems with the pool and tennis courts, poor lighting in the parking lot, not enough chicken in the Caesar Salad, and why the switch from chocolate-chip to oatmeal raisin at the halfway house?

If you want the manager to put himself in your shoes, do the same for him. Show that you want to understand and help solve his problems and he'll probably be more understanding when you say you need a new triplex mower. **GCI**

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Yes, we've finally gone to the dogs!

This summer we put together a research project that examined your best friend on your turf maintenance team, that furry companion riding shotgun in your golf car, that four-legged, varmint-control expert – your course dog.

First and foremost, we want to thank the good people at Jacobsen for sponsoring this course canine project. Jacobsen has a long history of supporting the dogs of turf through their collar give-away program.

So what did we learn?

You'll find the results of this research project on the following pages. In some cases we broke the numbers down further to see if there were any distinctions between private- and public-course dogs. Sometimes there were variances, but more times than not the numbers held fairly true across the demographics.

In addition, we did some follow-up reporting and collected anecdotal stories from superintendents about what made their mutts special, as well as personal stories that just seemed to best reflect the kind of buddy they are to you. Frankly, we were impressed with the volume and honesty in your stories, as well as overwhelmed by the generosity of pictures and videos many of you forwarded us. Those we couldn't share in this story will be available in this issue's app edition.

In a nutshell, you love your dogs unconditionally. In fact, if we would have asked, we half expect many of you would've ranked them near the top of the most valuable members of your maintenance team. Heck, most of you subsidize your dog's care and kibble out of your own wallets.

Lastly, as a research incentive we pledged to donate \$1 to the American Society for the Prevention of Cruelty to Animals (ASPCA) for every valid return. The ASPCA was the first humane society to be established in North America and is, today, one of the largest in the world. We're happy to report that we'll be making a \$500 pledge in care of GCI readers. – **THE EDITORS**

This research project was sponsored by



GONE TO THE DOGS



Do you have a course dog?

74% Yes

26% No

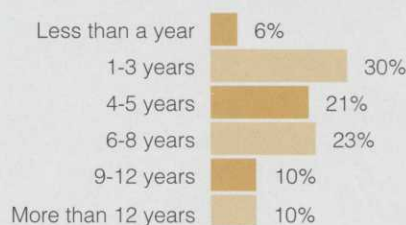


Is there more than one dog at your course?

73% No

27% Yes

How long have you had the dog?



What sex is it?

52% Female

48% Male

Pure bred or mutt?



Primary Role on the course?

45% Pest control

23% Turf maintenance mascot and liaison

20% He's just my buddy

12% Other

Editor's note: "Other" included "All of the above."



Does the course subsidize the dog's care?

84% No

16% Yes



Where does it spend the night?

96% Goes home with me

2% Stays at the course

2% It depends



KINGSTON, YELLOW LAB

I treat my dog as well as I treat my two kids. He means the world to me. I love him so much that I get a little anxious when he's not with me. We were driving down to the pump early one morning before the sun came up. He's 6 now, but he was only 2 years old at the time. There were some wild turkeys in a field that borders the 15th hole on our south course. I got him riled up, stopped the truck and let him get out to chase the turkeys. Well, he chased them deep into the woods. He usually responds to my call but he didn't return. So I went continued looking for him. After looking and calling for about 30 minutes, I started to get real nervous. I decided to return to the truck to grab my phone. Well, when I got back there, he was sitting shotgun like he usually does waiting for me. I have no idea how we didn't cross paths, but he amazed me. It was a big relief.

Jason VanBuskirk Superintendent 🐾 Stow Acres Country Club 🐾 Stow, Mass.

BASIL, AMERICAN STANDARD BOXER

Best thing a person can have with them daily is a dog. Hate it when she's not around. She helps with everything, most importantly mine, the crew's and our members' attitude. Hard not to smile and enjoy yourself when Baz is around. It was a stressful time one spring. We were in our morning meeting and everyone was on egg shells around the new boss who was making his presence felt and it was making things miserable. As we were delegating morning jobs he chimed in with a few choice words for some members of the crew and it soured everyone's mood further. Once he finished, Baz, just a few months old walked into the middle of the room and took a poop in the middle of the floor. Definitely lightened the mood and was the joke every morning for several weeks. The boss didn't like it, but it was exactly what the crew needed, something to laugh at together.

Trevor Morvay 🐾 Superintendent 🐾 Sawmill Creek Golf Resort and Spa 🐾 Camlachie, Ontario



POA, AUSTRALIAN SHEPHERD

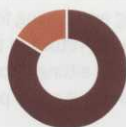
He's unbelievably loyal and too smart for his own good. He's by my side to say "Hi!" no matter how the day is going, and has been a wonderful companion for the 10 years (out of his 12) that I have been his caretaker. Poa would prefer me not share all his daydreams of heroic rescues and courageous adventures, and said to spare the stories of the numerous parades he's had on Main Street honoring his goose-chasing prowess. He's just been the perfect dog who hangs his head out the window on the highway – at the appropriate angle, of course, so you can hear his nostrils whistling – chases the cats at home to only be put in his place with a quick swat at his nose, greets visitors at home with a quick head shake and his distinctive multi-syllable "Awooooo-ooo-oooo" howl. He is nearly attached to my leg, following my every move (including from the couch to the recliner) and ready to please on whatever his next task is, even if it means to just "hang out." He loves everyone, lets my kids pull his hair and climb on him if needed, and REALLY gets the ladies' attention because he is utterly adorable. He is the best!

Jon Lobenstine 🐾 Director of agronomy 🐾 Falls Road Golf Course 🐾 Potomac, Md.



PRIVATE vs. NON-PRIVATE

Do you have a course dog?

**Non-private**

- 72% Has Dog
- 28% Doesn't Have Dog

**Private**

- 77% Has Dog
- 23% Doesn't Have Dog

Do you have more than one dog at your course?

**Non-private**

- 21% Yes
- 79% No

**Private**

- 35% Yes
- 65% No

Male vs. Female

**Non-private**

- 50% Female
- 50% Male

**Private**

- 56% Female
- 44% Male

Pure Bred Vs Mutt

**Non-private**

- 41% Mutt
- 59% Pure Bred

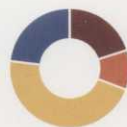
**Private**

- 23% Mutt
- 77% Pure Bred

Average Annual Cost



Primary Role

**Private**

- 20% He's just my buddy
- 11% Other (please specify)
- 46% Pest control (geese, rabbits, varmints, etc)
- 23% Turf maintenance mascot and liaison

**Non-Private**

- 20% He's just my buddy
- 13% Other (please specify)
- 44% Pest control (geese, rabbits, varmints, etc)
- 23% Turf maintenance mascot and liaison

JÄGER, BLACK LAB

Jäger has adopted the art of armadillo eradication. Since construction of our course in 2009 we have battled armadillos and the damage they do to the turf. Since 2009 Jäger has "removed" 93 of those 'lil varmints from the course. There are so many memories and stories of him hunting and chasing these critters that make me laugh. The members want to throw him a party when he hits the century mark!

Bryan Brinkman 🐾 Assistant superintendent 🐾 The Patriot Golf Club
Owasso, Okla.



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TORO

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OZZIE, AUSTRALIAN SHEPHERD

We have a female who had a litter of 10 puppies 4-and-a-half years ago. When they were just a few months old I began taking them to the course to become acclimated. After just a few visits to learn the 'ropes' from their mother, three of the puppies and I happened to be driving home when I saw a small flock of geese on the 1st fairway. Naturally, as we got closer I got the dogs pretty excited about their upcoming test. Needless to say, I was not disappointed. When I got close enough to open the door the dogs took off like thoroughbreds out of a starting gate. After the birds got airborne the dogs nearly overtook them and then continued to chase them for another 200 yards. It was quickly obvious they were going to enjoy their work. Not only do they provide a valuable service for our facility but I consider them family members. I can't imagine life without them.

Kevin Smith 🐾 Director of golf course maintenance 🐾
Bryan Park Golf & Conference Center 🐾 Browns Summit,
N.C.



MURPHY, BASENJI MIX

Murphy and Jasper are shelter-rescued family dogs who get to go to work every day. Murphy is an 8-year-old Basenji mix. Jasper is a 3-year-old mix of undetermined origin. Jasper was my son's big Christmas present a couple of years ago and both love to chase geese. Murphy might not be able to tell the difference between skunks and cats and tries to sniff the butts of skunks. He no longer gets to run the course free in the dark due to five such encounters in 10 days a few years ago. A couple years ago, he was tethered to the cart. I was moving tee markers on a tee in the dark. I heard a commotion and turned just in time to see a skunk walk up to the cart, spray Murphy, and start walking away. Murphy lunged so hard at the skunk that he broke the chain and landed on top of the skunk. They tangled briefly before I was able to call Murphy back and the skunk disappeared into the darkness.

Chris Thuer, CGCS 🐾 Bear Slide Golf Club 🐾 Cicero, Ind.



LADY, LAB/BLEU HEELER

Jim Ellison, the retired Bay Hill superintendent, was visiting my course as the senior agronomist with Palmer Golf. We were touring the course and, at the time, I was contemplating bringing Lady on full time. Jim and I were standing on No. 15 green looking back down the fairway when we see Lady coming out of the woods. It appeared she was carrying something. We drove down to check her out and she has a ground hog in her mouth. Jim looks at me and says, "You better bring that dog to work with you every day." Enough said. She's been by my side ever since.

Joe Wachter, CGCS 🐾 Managing director of grounds and landscapes 🐾 Glen Echo
Country Club 🐾 Normandy, Mo.



HERE, BOY!

Top 3 Golf Course Dog Names	Top Golf-Related Dog Names	Top Just Cool Dog Names	Obvious Penn State Reference
1 ROCKY	BIRDIE BOGEY DIVOT POA RYDER MULLIGAN CLOVER	MISS LACEY UNDERALLS HICCUP KINGSTON HOLLYWOOD GUZTAV LAZSLO PRINCESS SOPHIA ANN MARIE REECES	 NITTANY



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ROCKY, LAB

When Rocky was about 2 years old we had a terrible storm blow through our area. We were cleaning up around and in a lake, which had a lot of limbs in the water. We were getting what we could from the bank and I heard a splash. Rocky had jumped in the lake and started dragging limbs to the bank so we could put them in the back of the truckster. He wanted to help and he sure did. He has been the best dog/companion I have ever had. He follows me wherever I go – at work or at home. He sleeps at the foot of my bed, he rides in the front seat of my truck and is with me every step of the way on the course each day.

Tony Whitmer, CGCS 🐾 Golf course operations superintendent 🐾 CrossWinds Golf Course 🐾 Bowling Green, Ky.

MYLEE, GOLDEN RETRIEVER

Mylee is a big part of the golf course not only in the removal of the geese, but in the joy she brings to the workplace. When she is not here at the course patrons ask where she is and want to know if she is OK. Mylee is both a great friend to my family and my crew. Mylee really enjoys being out here at the golf course, she will get in and on just about any piece of equipment just to say hello. She will ride from hole to hole on a Triplex which is really funny to watch.

Greg Barnes 🐾 Assistant superintendent/mechanic 🐾 Wilmington Municipal Golf Course 🐾 Wilmington, N.C.



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CLOVER, YELLOW LAB/GOLDEN RETRIEVER

He means the world to me. He's my best animal friend and one of the family. Before I got the dog not too many golfers would talk to me. Clover has been the ice breaker I needed to meet and get people to talk to me.

Stephen Spontak 🐾 Superintendent 🐾 Beekman Golf Club 🐾 Hopewell Junction, N.Y.

MISS LACEY UNDERALLS, ENGLISH SETTER

She's a member of the family at work and at home. When we drive around the course, the ladies all say hello to Lacey and ignore me.

Steve Huffstutler, CGCS 🐾 Glen Eagle Golf and Country Club 🐾 Naples, Fla.



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Jeffrey D. Brauer is a veteran golf course architect responsible for more than 50 new courses and more than 100 renovations. A member and past president of the American Society of Golf Course Architects, he is president of Jeffrey D. Brauer/GolfScapes in Arlington, Texas. Reach him at jeff@jeffreymbrauer.com.

MY SUMMER READING LIST

Jeff provides a run down on what's worth reading and why.

Many decades past my school years, I still feel the need to report on "what I read this summer." I read as many golf architecture books as I can, and as more and more golf architecture books are showing up, and I am – or will be – enjoying them all.

First up on my summer reading list was the new release by Mark Leslie, called "The Design's the Thing!" This book is similar to "Secrets of the Golf Course Architects" but with sharper editing. While golf architects have great stories, they are often poor storytellers. Leslie uses his editing background (including a stint at this magazine's forerunner) to take stories from the road, philosophical quotes and humorous statements from my brethren, and edit them down to just the good stuff. It's a fun read.

He adds a few chapters from his other writings, covering subjects that have always rankled at least my feathers – such as potty parity laws. I mean, if women need more toilets because of small bladders, what about old men with large prostates?

Another new read is Bradley S. Klein's "Wide Open Fairways: A Journey across the Landscapes of Modern Golf." I have always admired Brad's writing, with its unique style, derived from the many subjects he's covered.

Brad is almost an accidental golf writer and he brings a more professorial tone to the proceedings. Case in point: His first chapter is called "A Sense of Place" – my very first lesson in landscape design school 40 years ago. This also mirrors one of my favorite college landscape architecture texts, "Reading the Landscape of America" (by May T. Watts, 1957), which explains the various landscapes of America (such as bogs, sand dunes and forests) to laypeople. Klein takes a similar approach, discussing golfing

landscapes, their meaning, and how we react to them as humans.

It's deep, but not too deep. He touches on the development of courses from New York (contrasting Donald Trump to Depression-era Bethpage), to Los Alamos, N.M., to the sand hills of Nebraskas. They are all woven into interesting stories and all will make you think about golf's place in the universe.

“He adds a few chapters from his other writings, covering subjects that have always rankled at least my feathers – such as **potty parity laws**. I mean, if women need more toilets because of small bladders, what about old men with large prostates?”

Leslie and Klein give us two different looks into golf courses – Leslie the quick read and Klein's a deeper look. Both are worthy of your time.

In perusing Amazon, I also noticed a few other books that I've purchased and now await arrival. I can review one – "Methods of Early Golf Architecture: The Selected Writings of Alister MacKenzie, H.S. Colt, and A.W. Tillinghast (Vol. 1)" – because I have well-worn copies of the books these selected writings came from. I learn much from reading "the old dead guys," and I am always struck by how similar the thought process has been over time, even if the products came out differently.

For those who missed out on the reprints of these classic architecture books offered a decade ago, or simply want a smaller cross section of Golden Age architecture thoughts, this book will fit nicely in many golfers libraries.

Three recently released books, in one way or another, speak to the

relationship between sand and golf courses.

"The Golden Age of Pinehurst: The Story of the Rebirth of No. 2" by veteran writer Lee Pace, covers the changes made last year by Coore and Crenshaw, and also has some background history of the resort set in the pine hills of North Carolina.

"Golf in the Nebraska Sand Hills: The Next Mecca for Golf" by Dean

Kratz was released late last year and is a mix of photos and a general overview of golf in the sand hills of Nebraska, not touching on much of anything in great depth. However, for those as interested in this region, it has value.

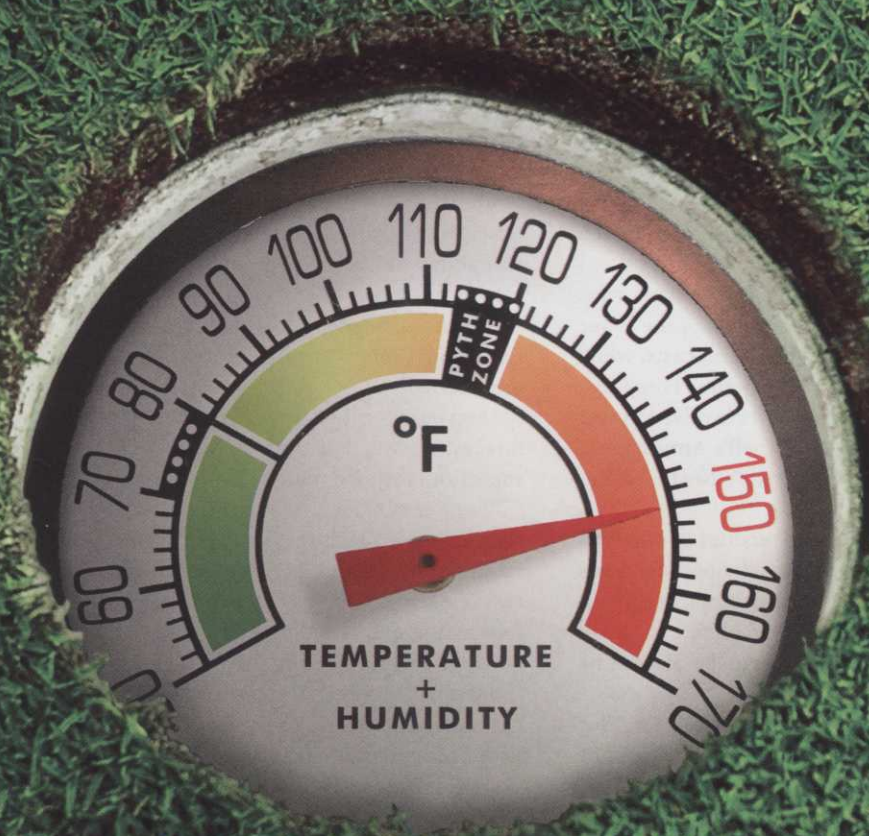
"Sand and Golf: How Terrain Shapes the Game" by George Waters will be released later this year, and it promises to explore what the relationship between golf course architecture and sandy terrain, which has existed since the inception of golf on the naturally occurring areas of short grass found among the coastal dunes of Scotland. For real students of golf architecture, this should be a great read.

While I try hard to be your single source of golf architectural knowledge, I encourage you to branch out and see what many others have to say on the subject. **GCI**



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BECOME A JUNIOR FORECASTER

by Richard Skelly

Weather modeling can help you better manage disease outbreaks.

Many superintendents would argue, managing disease outbreaks due to weather is like managing people. Both are unpredictable and one must be reactive instead of proactive.

But by keeping a close eye on weather patterns and forecasts and weather and turf-related websites offered by research institutions around the country, superintendents can plan for and avoid outbreaks of the most common turf diseases. The majority of these tend to be fungus, which depends on moisture for survival.

Dr. Rick Latin at Purdue University in Indiana runs Turfcast, a website that helps turf managers in the lower Midwest keep a better eye on long-range forecasts, while Dr. Art DeGaetano at Cornell University runs Fore Cast, a website for superintendents and others involved in turf care around the Northeast, out of Cornell's Atmospheric Sciences and Turf Team at the university's Northeast Regional Climate Center.

Similar websites likely exist at universities in other regions of the country, but the experts urged superintendents to take a multi-pronged approach to managing outbreaks of dollar spot, brown patch and pythium blight.

How can superintendents better manage disease by closely monitoring weather forecasts?

"It's difficult to give you a short answer," says Latin. "But these pathogenic fungi are active under certain types of environmental regimes," says Latin. "We can define those based on temperature and moisture."

The pathogen must be active and growing or there's no sense in applying fungicide, so one has to wait for the fungus to start growing before it can be killed quickly, he notes.

"The idea with the website is to identify those periods when the pathogens are growing," Latin says. "Then we

can schedule those fungicides most effectively and we can get more efficient control."

The fungus doesn't respond to the calendar, but it does respond to temperature and moisture. In Indiana in March, 2012, Latin says temperatures were well above 80 degrees for seven to 10 days, but in March of this year, temperatures never got above 40 degrees for the entire month. So the dollar spot pathogen was active in March 2012 but dormant in March this year.

So can one be proactive rather than reactive when it comes to something as fickle as the weather?

"Maybe we can improve our ability to forecast the weather, and if that's the case, supers can respond to that," Latin says.

"Supers can look at what's ahead and, knowing how much they've sprayed already, they'll know what to do. What we do at Turfcast is narrow that gray area between disease forecasting and scheduling application of fungicides," he adds. "There's a bit more certainty about a risk outbreak if you apply these models we have in Turfcast."

DeGaetano studied meteorology at New Jersey's Cook College at Rutgers University but for the last 15 years has been part of Cornell University's Turf Team, studying the relationship between weather and disease outbreaks.

"People use our site for any number of things," DeGaetano says. "One is irrigation: We have tools on the site that say should you be watering and how much water has evaporated from the turf and we also tie things to the forecast. If the



DISEASE MANAGEMENT

forecast is for a good chance of rain, you may wish to hedge your bets there. We've done the same type of thing for different diseases and weed control." De-Gaetano notes that one model that gets quite a bit of use early in the season is the application for dandelions.

"You could be wasting your money throwing herbicide down on dandelions. By waiting until a later part of the season, you can get 80 or 90 or 100 percent kill on the dandelions," he says.

Golf course supers and others in the turf care industry tend to do things by calendar.

"If it's April 15, I need to do this," and that might be OK under average weather conditions, but that time to do something could change by weeks, whether it's hot or cold or warm," he says.



<< Sensitive data

Anticipating disease pressure doesn't stop with weather forecasting. For the whole picture, superintendents need to consider soil condition data as well, says Carmen Magro, vice president and agronomist at Stevens Water Monitoring Services.

Stevens has an electronic handheld probe unit – the POGO – that features the company-patented sensor on the end that measures soil moisture, temperature and salinity (otherwise known as conductivity). The addition of these variables provides the superintendent with a mountain of data. In addition, the POGO sticks are also GPS and Wi-Fi enabled, so it logs the position of every reading it takes.

"It just got developed last year, but demand has been so high, we're now shipping it across the world. As soon as somebody hears about it, it seems, they want one."

Superintendents can use all this soil condition data in conjunction with temperature forecasts to predict turf decline, disease outbreaks, insect outbreaks and other potentially perilous conditions.

"The PGA has used moisture-only sensors for years now, and what they're realizing is it's not giving them the whole picture," Magro says. "What our POGOs now allow you to do is have [measurements] done much more efficiently and accurately by having reference points installed in the ground to monitor these things."

"You can send someone out every morning and take 10 or 15 samples per green, it takes you less than two minutes per green and you instantly know if you need to irrigate more or less, or if there is a developing salt problem that needs attention among other analyzed indications. It is also easy to determine if an apparent stress is a water-related problem at all."

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<< Check it out...

Access Purdue University's website by entering bit.ly/1aZrie6 into your browser. The Turfcaster site offers a wealth of data for superintendents in the lower Midwest to access and use in planning their applications of fungicides, insecticides and herbicides. Dr. Rick Latin and his associates at Purdue maintain the website and update it several times daily. It offers a daily summary of risk for dollar spot, pythium blight and brown patch.

"We use a variety of algorithms to assess the daily threat, and when threats accumulate over time, the site signals a high risk of disease outbreak," says Latin.

To access Cornell's Fore Cast, enter bit.ly/15cuqPY into your browser.

With Cornell's Fore Cast site, Dr. Art DeGaetano says: "The idea here is as a super you want to follow the weather but you don't want to have to crunch numbers. That's what our website is for. We take that data and translate it into the information a superintendent needs to help them make decisions about how much or whether to apply irrigation, fungicide or insecticide."

With Cornell's Fore Cast, Northeast superintendents have more flexibility in their disease management program. Knowing when disease pressure could hit allows superintendents to be selective with applications.

"Instead of saying I have to put down fungicide every seven to 10 days, now, I can see a period of time where risk is go-

ing to be very high, so I might want to apply it sooner," says DeGaetano. "Or if risk is going to be delayed for a few weeks, you might want to forgo an application."

Superintendents always want to be aware of the weather and how it affects the turf, DeGaetano says.

"We had a period in July, in

the 15 years I've been doing this, where disease was just off the charts, and we saw that in the models and we saw that in the reports we were getting from around the region," DeGaetano says.

"It's not only heat, but it's heat and humidity that are the two most important factors, and this summer was filled with far more

weather extremes," he says.

In the meantime, Latin at Purdue says it's his understanding that at some point in the near future there's going to be a big improvement in forecasting methods for dollar spot. **GCI**

Richard J. Skelly is a New Jersey-based writer and frequent GCI contributor.

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Water features

How well do you know your irrigation software? Here are some often overlooked features that can boost your efficiency. by Rob Thomas

Today's water management software comes loaded with myriad bells and whistles. But are superintendents leaving important cards on the table by overlooking some potentially useful applications?

Randy Mills, product manager, golf controls at Hunter Industries, says ET-based irrigation – with EvapoTranspiration being supplied by a weather station – and pick lists as a couple prime examples of technology not being utilized to its fullest.

“Weather stations are popular and watering by water depth is popular, but most people want to look at the weather station ET, then use their own number,” Mills says. “When properly configured, it is possible to allow an irrigation system to almost totally manage itself with the superintendent just confirming the value.”

The superintendent would probably need to make adjustments in some cases where ET is not the overriding factor in determining runtimes, Mills adds.

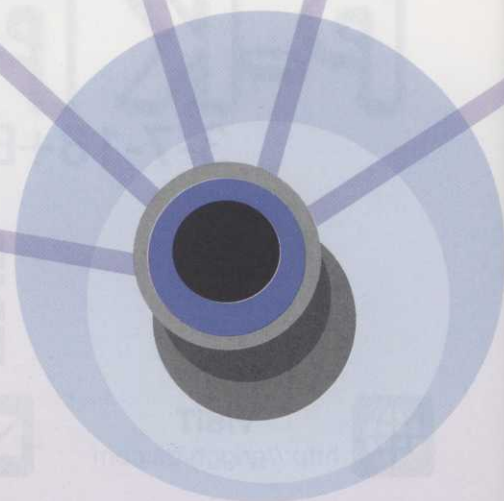
As for best using pick lists – a table containing a display of common runtime or ET adjustments – Mills considers this a time-saving feature in the software. After assigning entries to groups of stations, superintendents only need to change one number to apply a change to specific groups.

For example: Wind causes increased evaporation, therefore, moisture in that area is depleted more quickly than other areas, which is the same as saying the ET is higher. If a course has traditionally windy areas, a pick list value called “WINDY” can be created. Any sprinkler tagged as WINDY will automatically run 10 percent longer (110 percent) than the weather station says.

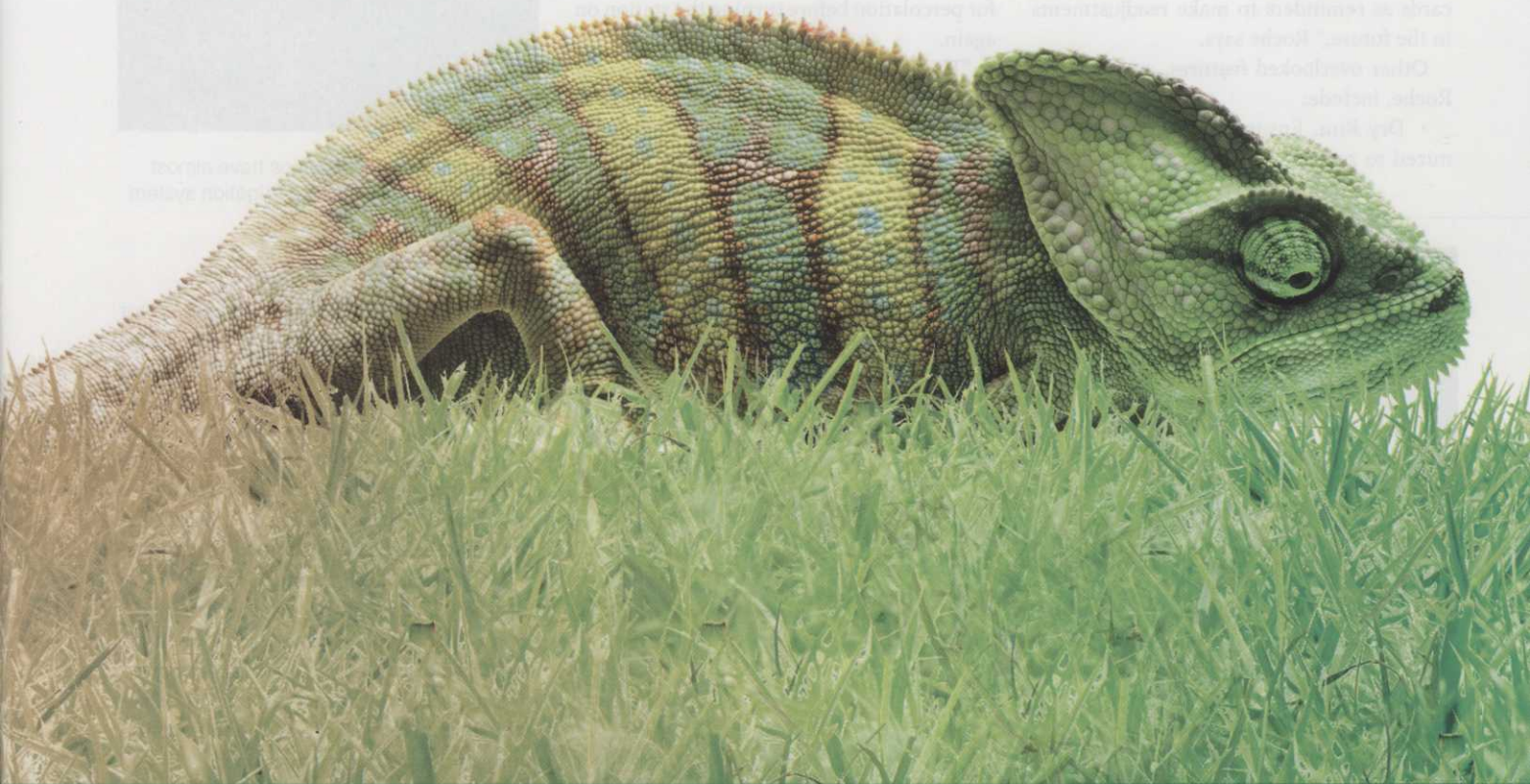
“The power of the pick list is that you may eventually have 30, 50 or more sprinklers identified as being in windy areas,” Mills explains. “If you decided 110 percent was too low and you wanted to increase the setting to 120 percent, it would take a long time to make the same change to 50 sprinklers. Instead, because the pick list was used, only the pick list value needs to be changed and instantly, all sprinklers identified as ‘windy’ will run 20 percent longer.

“Allowing your weather stations to have almost complete control over your irrigation system also saves time, but perhaps more importantly, it gives the superintendent extremely fine control over how wet or dry he keeps the course,” he adds. “Once the system is ‘tuned’ to the weather station, you can dry the course out by changing one or maybe a couple of numbers. When you want it a little wetter, the same thing is true.”

Paul Roche, national sales manager for golf at Rain Bird, points to “Temporary Station Adjust” as a key feature often overlooked in central controls. This allows a su-



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“We don’t see these [underutilized] functions becoming obsolete at all. These features have been asked for by irrigation system managers and adds to software at their request. We routinely see irrigation system managers **rediscover software functions** and incorporate them into their daily routines.”

– Paul Roche, Rain Bird

perintendent to identify areas and sprinklers that either require a little more or a little less water and adjust an irrigation program (runtime/application rate) for a predetermined period of time before defaulting back to their regular run time/application rate.

“Without this feature, adjustments were typically made on post-it notes and index cards as reminders to make readjustments in the future,” Roche says.

Other overlooked features, according to Roche, include:

- Dry Run. Ensures the system is optimized to reduce pump station cycling and

maximizes flow management;

- Pump station profiling. Setting maximum flow limits throughout the day to stay within utility company Demand Charge restrictions; and

- Cycle-Soak. Allows a superintendent to set the maximum runtime/application rate on an area, then wait a period of time for percolation before turning the station on again.

“This is ideal for sloped areas or heavy soils where runoff may occur, or on areas that sod or seed is being established, and the irrigation system manager wants to continually wet an



Letting your weather stations have almost complete control over your irrigation system will save you time.

area,” he says.

Lack of time and hectic schedules factor in many functions being overlooked, Roche says. The need to keep software updated when renewing central control system service plans also plays a role, he adds.

Mills stresses education, refuting the notion that allowing a weather station to automatically update sprinkler runtimes is underused because it is simply not trusted.

“I believe the real reason this capability is not used is because it is not well understood,” he says. “Weather stations and ET are both well understood, but what actually happens to turn an ET value into a runtime and especially, how to ‘tune’ your system in to match your golf course is not understood.

“Pick lists are not used because they are not well understood,” Mills adds. “They are not prominent enough in the software and we have not done a good enough job training people to use the feature.”

The use of pick lists are something that needs to be better emphasized when people are trained on the software, according to Mills, while an intermediate step is missing with weather stations/ET.

“Most superintendents water based on straight minutes of runtime,” he says. “After years of seeing the weather, picking runtimes and seeing the result, they become very good

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IRRIGATION

Use It or Lose It

Does an unused function become obsolete?

Both Hunter Industry's Randy Mills and Rain Bird's Paul Roche balk at the notion that certain functions have become so underutilized that they've become obsolete.

"We don't see these functions becoming obsolete at all," Roche says. "These features have been asked for by irrigation system managers and added to software at their request. We routinely see irrigation system managers rediscover software functions and incorporate them into their daily routines."

"To me, something becomes obsolete when it used to be used all the time and over time its use has gradually dropped until it stops being important," Mills adds. "The only things I can think of which fit into that category are features which support irrigation equipment which is rarely used nowadays. For example, there are features designed to help you work with fixed-drive pump stations. Fixed-drive pump stations are disappearing – they are being replaced with VFD (Variable Frequency Drive) pump stations. Eventually there won't be any more fixed drive systems, so those features will be unnecessary."

"Most underutilized features I can think of would truly benefit the superintendent," he adds. "Pick lists, for example, save a lot of time when adjustments are needed."

at choosing the correct runtimes, though they often tend to err on the side of too wet as opposed to too dry. Changing from minutes of runtime to inches of water is difficult, No. 1, because they are completely different kinds of units, so it is important for the software to have a way of showing sprinkler runtimes for a given ET. The second problem is most of the time, the way weather stations have been configured, calculated runtimes do not match the runtime the superintendent wants to use, causing distrust in the value.

"To address this problem, the software needs a way for the superintendent to enter the runtime he wants (which is usually very close to the correct one), then the software needs to calculate an adjustment factor to be applied to the weather station ET so the resulting runtimes are automatically adjusted to the minutes the superintendent expects," Mills says. "Over time, the superintendent will see that the weather station is automatically calculating runtimes that fit

his expectations and he will spend less and less time making changes to the computer."

At Rain Bird, staying current on a Global Service Plan (GSP) entitles users the latest version of software. Bulletins and updates are mailed and emailed to keep superintendents up to date on the latest features.

"Irrigation distributors are also a great resource to point out some of the latest and most used features," Roche says. "On the manufacturing side, annual software classes are offered around the country. It's always a good idea to attend every few years or attend a local distributor's workshop."

For those looking to better utilize their irrigation systems, Roche recommends education.

"We strongly suggest [superintendents] attend software workshops every few years to keep abreast of the latest technology and to rediscover some existing functionality they may not realize they have," he says. "Irrigation distributors are also

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“Pick lists are not used because they are not well understood. They are not prominent enough in the software and we have not done a good enough job training people to use the feature.”

– Randy Mills,
Hunter Industries



a great resource for how software is being used and what features other managers are using. Global Service Plan representatives are also available for software questions and to answer ‘how-to’ questions.”

Mills agrees that checking with the distributor or manufacturer is a good idea, but also suggests tinkering with the system when the opportunity arises.

“First, make sure you know exactly how to backup and restore your system database,” he says. “Then, find some time to play around with it a little. If you make a backup right before playing with it, you can try anything you want and there is no risk of messing anything up.” GCI

Rob Thomas is a Cleveland-based writer and frequent GCI contributor.

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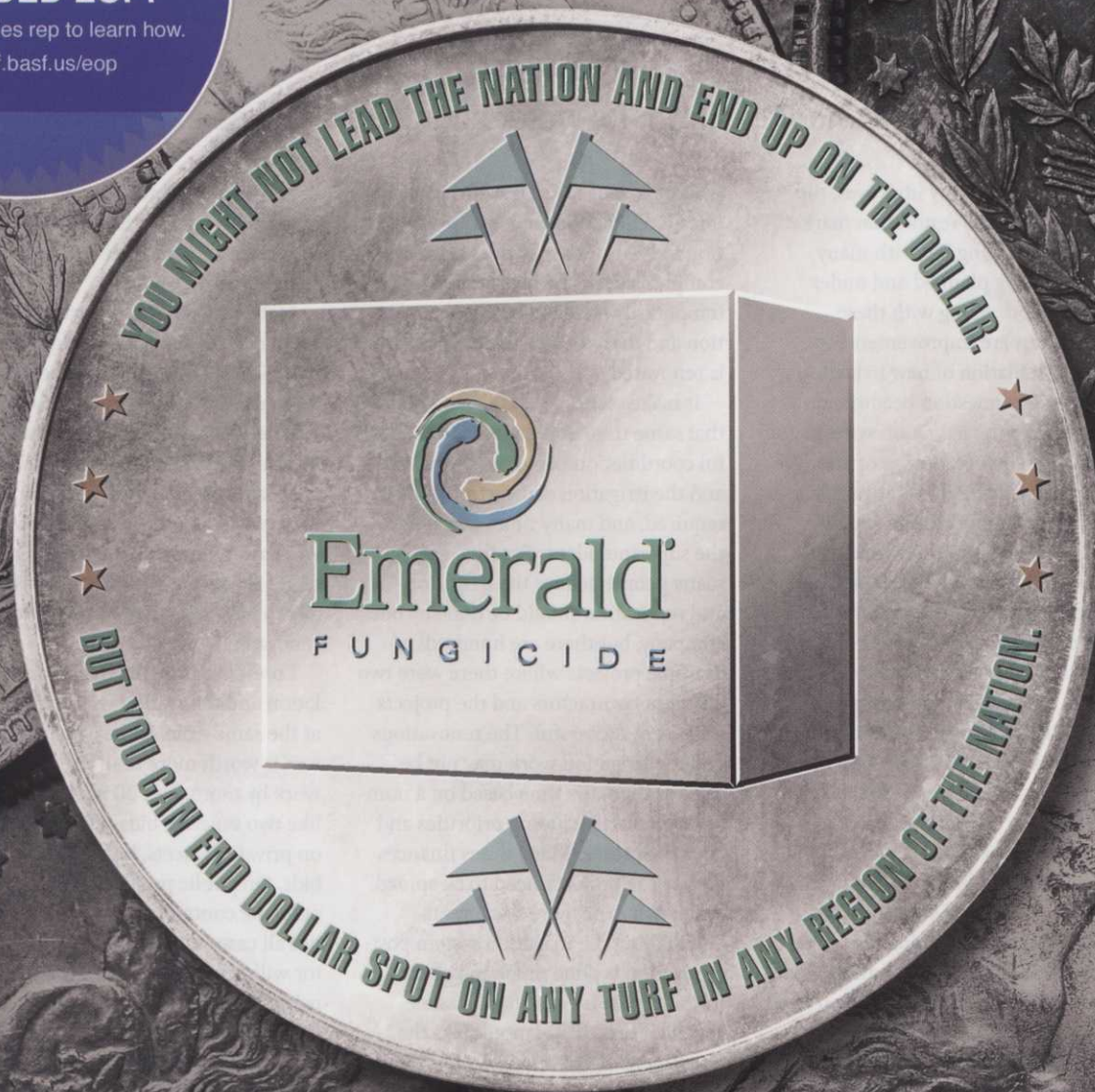
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Brian Vinchesi, the 2009 EPA WaterSense Irrigation Partner of the Year, is president of Irrigation Consulting Inc., a golf course irrigation design and consulting firm headquartered in Pepperell, Mass., that designs irrigation systems throughout the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

BEFORE, DURING OR AFTER

Why your course should go from its water source to one less expensive.

As the economy improves, the golf course restoration market is regaining life with many projects being planned and under construction. Along with these restorations are improvements to or the installation of new irrigation systems. The question becomes do you perform the irrigation system installation before, during or after the renovation? Each has its advantages and disadvantage, but the choice will be dependent on how much renovation work is being performed. On many projects, the irrigation work is worth more on a dollar-for-dollar basis than the renovation work. That said, is the project a new irrigation installation with some renovation work, or a renovation project with a new irrigation system? This not only dictates the philosophy of the project with the board, ownership or membership, but also dictates the contract holder and subcontractor.

The advantage of doing the irrigation work before the renovation is you have coverage in all the areas you need to regrow, which is probably not the case with the old system. This works well when the renovation is on a smaller scale, such as green regrassing or bunker and tee renovations. I've seen it done on large projects

where most of the irrigation system is installed first, and where major renovation are to be done, such as a green complex, when the new system is temporarily attached to the old irrigation and then replaced once the feature is renovated.

It makes sense to do the irrigation at that same time as the renovation. Careful coordination between the builder and the irrigation contractor needs is required, and many times this falls to the superintendent. For this reason, many people believe the irrigation and renovation should be done by one company, but there are hundreds of example projects where there were two different contractors and the projects were very successful. The renovations and the irrigation work may not be done at the same time based on a number of factors including priorities and course closures. Many times finances dictate the project's need to be spread out over two or more fiscal years.

Installing the irrigation system post-renovation is done much too often. Installing the irrigation after some period of time has elapsed risks the investment of the renovation. During the renovation there are areas that are sodded (bunker faces) or seeded and most likely there is no irrigation system to water it in. Large amounts of time

are spent hand watering and many areas may not grow in very well. It also lengthens the duration of construction, interfering with play.

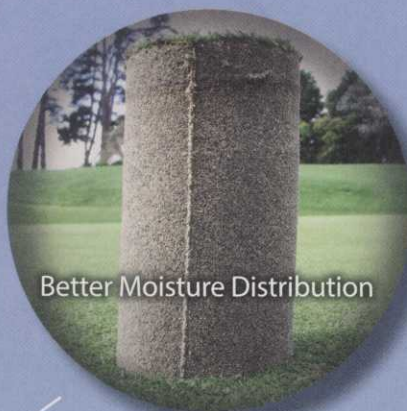
Unfortunately, the decision to sequence the renovation and irrigation work is rarely the superintendent's. You may give your opinion, but you will need to remind the powers that be that it will be harder to water the renovated areas and the grow-in results may not be as good as anticipated if you have no irrigation. You also need to get the renovation architect as an ally to have irrigation available for the renovated work.

I prefer to have the irrigation installation and renovation work performed at the same time. If the irrigation system is worth more than the renovation work by more than 20 percent, then I like two separate bids. This works well on private projects, but not on public bids. On public projects there will be only one contractor and in most, but not all cases, the renovation contractor will be the general contractor, no matter what the value of the irrigation improvements. Many good renovation contractors do not do their own irrigation while many of the larger builders do. When bidding two separate packages (renovation and irrigation) those contractors who also do irrigation will bid both parts of the project and there should be some economies of scale.

What works for one golf course does not necessarily work for another. All stakeholders need to be involved in the process, including the board, greens committee, golf committee, irrigation consultant, golf course architect and of course the superintendent. GCI

“The decision to **install irrigation improvements** or a new irrigation system before, during or after a renovation is one that requires a lot of thought and subsequent planning.”

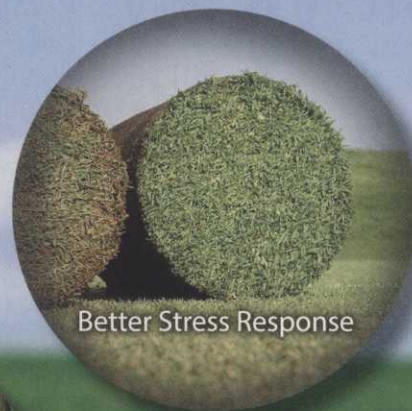
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Master Painter

Rob Vaughan pioneers fairways to heaven. by Trent Bouts

Rembrandt did pretty well for himself in the 17th century — and his legacy extended beyond his brushwork, thanks to a less-celebrated secondary career as a teacher. Rob Vaughan's best works may never grace the Louvre but like the Old Master, his influence, albeit as an advisor of a different kind, is spreading far. Vaughan, the golf course superintendent at Brunswick Plantation Golf Resort in Calabash, N.C., pioneered the art of fairway painting.

This fall, more courses than ever in the Southeast and elsewhere in the country will use turf colorants instead of ryegrass to give their dormant warm-season fairways the green that golfers love. They are saving tens of thousands of dollars in the process and greatly reducing interference that golfers endure when overseed is sown, grown and mown. Vaughan has helped many superintendents get their toes wet in paint, so to speak, by answering phone calls, emails, giving talks and even turning up on their doorstep to offer advice.

The USGA Green Section's Southeast region director, Pat O'Brien, projects within five years "maybe only a handful" of courses in resort areas like Myrtle Beach and Hilton Head will overseed. Some facilities that scrapped overseeding to save precious dollars during the recession are now digging deep for money to paint

with, excited by the prospect of attracting more play on green fairways in winter.

"I would call Rob Mr. Paint, or maybe Dr. Paint," O'Brien says of Vaughan's status as Rembrandt of the fairways. "He was the first. He's a rock star. He really is. This guy figured it out. The tough part was getting the colorant from the container and onto the fairway and that stuff wasn't intuitive for people. Not only that, he's been so generous sharing his knowledge and answering questions from all over the place."

Vaughan got his start in golf course maintenance in 1975 on the crew under the legendary Fred Meda, then at Raintree Country Club in Charlotte, N.C. When Meda left to join the Myrtle Beach National Company, Vaughan went to North Carolina State University to get a turfgrass degree. After graduating, he rejoined Meda and spent the next 15 years with him. Then he helped Bill Twigg during construction and grow-in of Man-O-War and The Wizard before a few years as superintendent at Buck Creek, now known as Aberdeen Country Club. In 1996, he moved to Brunswick Plantation and has been there ever since.

By his own admission, Vaughan was a little slow to adhere to the idea of painting turf which first took hold on Bermudagrass putting greens. Vaughan converted Brunswick Plantation's 27 holes to Champion in 2006 and



"Painting" dormant turf rather than overseeding with ryegrass is becoming more popular, especially in the southeast.



"I would call Rob Mr. Paint, or maybe Dr. Paint. He was the first. **He's a rock star. He really is.** This guy figured it out. The tough part was getting the colorant from the container and onto the fairway and that stuff wasn't intuitive for people. Not only that, he's been so generous sharing his knowledge and answering questions from all over the place."

—Pat O'Brien, *The USGA Green Section's Southeast region director*

overseeded without a second thought. One November, he sent assistant superintendent Dave Rickenbrode to a winter management seminar at the Carolinas GCSA Conference and Trade Show. There, Rickenbrode heard plenty to like about painting greens as an alternative source of winter color.

"Dave came back and basically said we messed up by overseeding," Vaughan recalls. "So I went to the same seminar the following year and I came back and told him, 'Yeah, you were right. We did mess up.'" Vaughan has used a turf colorant on his greens ever

since. Ironically, his epiphany came about a decade after he himself had dabbled with the painting idea at the suggestion of his general manager at Buck Creek in 1996. "He wanted to try painting our 328 with a latex paint so we mixed up a batch," Vaughan says, adding that the experiment was short-lived.

When the bottom fell out of the economy, Vaughan, like every other superintendent in the industry, was charged with reducing costs and getting more out of every dollar that was spent. He looked at what was being forked out on overseeding fairways and saw poten-

tial savings if he could successfully extrapolate what he was now doing on his greens.

He began mixing up different combinations of colorant and toyed with test plots. But he couldn't find a solution that didn't at some point turn the turf blue, which was far from ideal. As O'Brien says, "Golfers don't like the idea of playing on Boise State's football field." Enter Jennifer Seevers, from Geoponics Earth Chemistries.

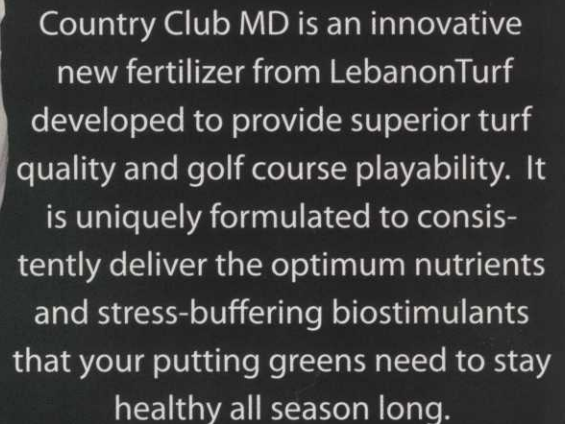
"She was standing in my office one day complaining that she couldn't make a living selling fertilizers in winter," Vaughan says. "By then I had about 60 different paint samples I'd worked up so I told her to take them and see what she could do. Then - it was October 1, 2010 - she came back out and said she thought she had something. As soon as that thing hit the ground I said, 'This is it!'"

Vaughan went to his owners and said, "How about giving me nine holes? And they said if we are gonna do nine we might as well do all 27. They're wonderful people to work



Robert Vaughan

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Vaughan estimates he saves about \$75,000 annually by painting.

for and they trust what I tell them. So then I got a little nervous.”

Generally speaking, superintendents are rarely encouraged to take risks. The stakes for failed experiments are often considered too high for the facility, let alone the superintendent whose job is on the line. Most superintendents are limited to tinkering around with tests on a nursery green or some out of play area of the golf course, which makes Vaughan's nerves entirely understandable. It's not like he could hide 27 holes of fairway if things went wrong.

“That first time, every hole was an experiment,” Vaughan recalls of tweaking nozzle types, pressures, concentrations and more. “But I felt like by the 26th hole we finally got it dialed in.” People noticed. Within no time Vaughan had a visit from Bob Farren, CGCS, and Kevin Robinson, CGCS, from Pinehurst. With the resort engaged in a major push towards sustainability, not to mention men's

and women's U.S. Opens next year, the combined environmental and financial benefits of painting held a lot of appeal. Of course, there was also the fact that Bermudagrass fairways transition so much better if they don't have to compete with overseed. “The next day they were buying paint,” Vaughan says.

He recalls one event at Brunswick Plantation where he heard a fellow superintendent telling another that the “overseed looks awesome.” “When he found out it was paint, not ryegrass, he had to go and sit on a fairway and he was immediately on the phone to his GM,” Vaughan laughs. The laughing extends all the way to the bank. Vaughan estimates that he saves about \$75,000 a year in labor, fuel, fertilizer, fungicide and so on, by using a turf colorant instead of overseeding.

It is harder to measure any new revenue, although Vaughan is convinced it exists. With the Bermudagrass in better shape earlier—paint can keep soil beneath dormant fairways as much as 10 degrees warmer—and fairways no longer being worked on to establish overseed before the real cold hits, he says his Bermudagrass has gone from being in great golfing shape three months of the year to more nearly 10. Consider, on top of that, O'Brien's estimate that most daily fee facilities “usually need only five or 10 extra golfers a day to cover the cost of painting.”

They don't have to be new golfers. Happy customers tend to be repeat customers in any business. O'Brien says turf colorants greatly increase the likelihood of golfer satisfaction. “Fall golf is totally changed for the better,” he says. “Without wet fairways, mud balls and carts on paths, it's much more enjoyable. And you have better fairways so much sooner in the spring. What are the negatives? Well,

really, they are hard to come up with. And Rob is the guy who got us there. He really is some guy.” GCI

Editor's Note

This article originally appeared in the September-October 2013 issue of *Carolinian Green*. It is reprinted with permission.

Trent Bouts is the editor of *Carolinian Green* and is a frequent GCI contributor.



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Henry DeLozier is a principal in the Global Golf Advisors consultancy. DeLozier joined Global Golf Advisors in 2008 after nine years as the vice president of golf for Pulte Homes. He is a past president of the National Golf Course Owners Association's board of directors and serves on the PGA of America's Employers Advisory Council.

GET OFF YOUR DUFF!

Three action steps for increasing revenues that are scalable to every golf course.

“Buy your straw hat in the winter.” That was the advice Bernard Baruch, the financial wizard of Wall Street, gave following The Great Depression. His point wasn't really about hats, of course. It was about opportunity. And, in the wake of the most serious economic downturn of our lifetimes, we might remember the wisdom of Bernard Baruch, especially when it comes to revenues.

Don't wait for the economic climate to change for the better before putting a revenue-building plan in place. The best time to seek new revenue sources is often when others are focused on cost savings.

Here are three action steps for increasing revenues that are scalable to every golf course.

GO VIRAL

Turn your golfers into your sales department by encouraging them to bring players to the course and then rewarding them for their efforts. For example:

- My Best Friend promotions are the brainchild of Jim Karras, PGA professional and club manager extraordinaire. These events empower your regular customers and members to invite friends to play at your place. The one who invites plays for free and the guest pays regular price. It's a simple two-for-one promotion, which works even better as a three-for-four when three friends play with one host.

- Reciprocate with other clubs and professional networks. Coordinate an aggressive program that allows your golfers to try friendly area courses and invite other courses to share their golfers with you. Keep track of the sharing to make sure the arrangement is equally rewarding. Reciprocation can turn visitors into regulars at your course.

- Create high-profile and noticeable

recognition for frequent players. Give an attractive and highly noticeable bag tag to every golfer after their fifth and 10th rounds. Give them a reason to show off your logo and to brag about their favorite golf course. Help your best customers become your raving fans.

IMPROVE YIELD FROM YOUR TEE SHEET

Measure the utilization of your realistic capacity, and increase the use of the course by using a market-pricing strategy. Market pricing is simply adjusting your prices based on demand, charging full price for your most desirable tee times and finding the right price for your off-peak inventory. Set clearly stated goals, monitor results and adjust as needed. Here are three tips to get the most from a market-pricing strategy:

- Sell your least desirable tee times first. Preferred tee times on Fridays and Saturdays will sell themselves. Focus on selling the weak inventory to achieve incremental revenue growth. Two tactics that will sell off-peak tee times: 1) bundling off-peak with preferred tee times and 2) facilitating

different teams with university of conference loyalties. During football season, have different foursomes represent different schools that represent natural rivalries. Encourage players to get decked out in their school colors. Then stand back and listen to the good-natured trash talking.

- Give rain checks. In fact, give two rain checks to golfers who play on rainy days. Make the second rain check redeemable during off-peak times.

CONNECT THE DOTS

Integrate your profit centers to make sure increased play on the course is rippling through to improved food-and-beverage and golf shop sales. These two tactics are sure to increase revenue:

- Focus prizes on food-and-beverage activity after the round. Put the entry fee – the amount above the price of green and cart fees – into a beer pot that all players can enjoy. Make it fun and social. Everyone enjoys being part of a fun group. Post the results on the club website and promote, promote, promote!

“Don't wait for the economic climate to change for the better before putting a revenue-building plan in place. The best time to seek new revenue sources is often when others are focused on cost savings.”

introductions to help golfers make new friends on the days and at the approximate times when they routinely play.

- Organize special events for like-minded interest groups at off-peak times. Think of this as another league event to increase utilization and revenue. For example, host golf leagues with foursomes that represent

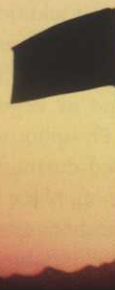
Reward your best customers – those who play most often or who spend the most at the course – with high-profile prizes such as tickets for concerts, ballgames and golf tournaments in your area. Make the winners' threshold achievable and profitable to the course. And, most important, make a big deal of recognizing the winners. **GCI**

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BY KEVIN W. KING AND JAMES C. BALOGH

Golf Course Watershed Management for Reduction of Nutrient and Pesticide Losses to Surface Water

Golf course managers recognize the importance of keeping nutrients and pesticides on the golf course and preventing offsite movement into surface waters such as streams, reservoirs, and lakes. Research on a Minnesota golf course highlights the importance of watershed scale investigations for development of effective best management practices to significantly reduce nutrients and pesticides from leaving your golf course.

There are approximately one million hectares of golf course turf in the United States. Since 1992 the golf course industry and many turfgrass managers have focused their efforts on development of environmentally sound golf course management.^{1,5,9} In the urban landscape golf courses are the most intensively managed land use, leading to a perception that golf course management significantly contributes to environmental degradation by offsite movement of nutrients and pesticides.^{3,10,13}

Nutrient applications on golf courses are used to promote healthy, dense turfgrass. Due to its dynamic characteristic in soil, available nitrogen levels tend to decrease over time

and require regular additions. Phosphorus usually enhances the rate of turfgrass establishment from seed or vegetative plantings. Phosphorus is generally needed during the start-up or green-up phase but subsequent applications may be reduced. Nutrient enrichment is a primary cause of water quality impairment in the United States and the world.²

Use of herbicides and fungicides are an important component of maintaining healthy turfgrass. Two commonly used pesticides on golf courses are 2,4-D and chlorothalonil. Chlorothalonil is one of the most widely used fungicides in the United States. Recreational turfgrass usage by golf courses

makes up approximately 10 percent of the total usage of chlorothalonil. Chlorothalonil and 2,4-D have been observed in surface waters associated with golf courses at low concentrations with occasional large concentration spikes.^{6,12} Regionally and nationally, it has been recognized by scientists

and the public that migration of pesticides from areas of application may pose substantial risk.^{9,15}

Golf course managers recognize the importance of keeping nutrients and pesticides on the golf course and avoiding offsite movement into surface waters. The importance of developing watershed scale practices to substantially reduce offsite losses of management chemicals is the foundation of environmentally sound golf course management. Cooperative watershed scale research to monitor and develop effective



In addition to surface runoff, nutrients and pesticides can sometimes find their way into surface drainage inlets. This research project examines part of the Northland Country Club watershed located in Duluth, Minnesota

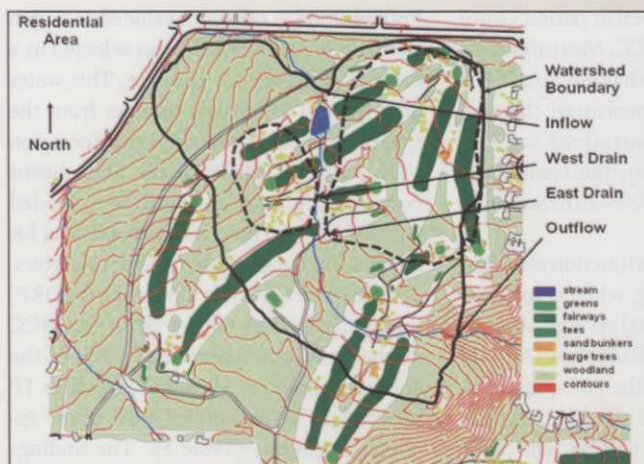


Figure 1. Study area of Northland Country Club (NCC) golf course.



Figure 2. Installed H-flume at Northland Country Club (NCC) in Duluth, MN.

BMPs to reduce offsite movement of management chemicals has been conducted from 2003 to 2013 at Northland Country Club in Duluth, Minnesota. This research is supported by the United States Golf Association and conducted by the USDA Agricultural Research Service and Spectrum Research, Inc.

EXPERIMENTAL APPROACH. The experimental site is a 21.8 ha sub-area of Northland Country Club (NCC) golf course located in Duluth, MN. The study area contains 7 greens (0.3 ha), 8 tees (0.5 ha), 10.5 fairways (3.95 ha), grass roughs (8.1 ha), and 8.95 ha of unmanaged mixed northern hardwoods (Figure 1). A small stream enters the study area at the inlet and empties into a small detention pond and water hazard. After the water leaves the pond it meanders approximately 700 meters through the study area until it exits at the outflow collection site and eventually into Lake Superior. Approximately 80 ha of low density housing and forested area feed the inflow site.

Northland Country Club

soils are clayey deposits, moderately deep (3 to 6 m) over bedrock. The site is located in a temperate-continental climatic region. The average monthly maximum summer temperature (May - August) ranges from 16°C to 25°C while the average monthly maximum winter temperature (December - March) ranges from -9°C to 0°C. The stream bed at the inlet and outlet is typically frozen from the end of November through the end of March. Average annual (1949-2008) precipitation measured at the Duluth International Airport during the period of April-November was 648 mm.

Northland Country Club is managed at a moderate to intense level. Greens and tees are seeded with creeping bentgrass. Fairways are primarily creeping bentgrass with some Kentucky bluegrass. The roughs are a mixture of annual bluegrass and Kentucky bluegrass. During the study period the course did go through one change in superintendents altering the approach to management. Nutrient application at NCC is considered moderate and is

a combination of organic, biostimulant, slow release, and fast release formulations applied by both dry broadcast and spray techniques. More recently the approach has been to move toward an organic approach with reduced applications. Nitrogen fertilization is greatest in May and June and gradually decreases through the remainder of the playing season. Similarly, phosphorus application is greatest in May. Phosphorus application throughout the remainder of the management season is similar but generally less than May applications.

Pesticide application at NCC is primarily used for weed and disease control. Aerial weighted chlorothalonil application averaged 3.2 kg/ha of active ingredient (a.i.). Chlorothalonil is primarily used to retard snow mold and is generally applied in late fall to the primary playing areas. However, it is also used in smaller spot applications during the growing season to treat dollar spot and other turfgrass diseases. 2,4-D is applied throughout the year to control broadleaf weeds. Aerial weighted annual 2,4-D a.i. application was 1.1 kg/

ha. 2,4-D is regularly applied to the roughs; however, occasional use on the primary playing areas does occur. During the study period, chlorothalonil and 2,4-D were applied in sprayable formulations.

Hydrology and water quality samples were collected by a combination of grab samples and automated sample collection. In summer of 2002, two three foot H-flumes with stilling wells and approach sections were installed in the stream that bisects the study area (Figure 2). One flume was positioned at the inflow while another was placed at the outflow. Precipitation was collected at the inlet and outlet using tipping bucket and standard rain gauges. Isco 6700 automated samplers were programmed to collect discrete flow proportional samples every 132 m³ (35,000 gallons).

Editor's Note

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	Upland	Upland + NCC	NCC
	DRP (kg/ha)		
2003	0.00	0.02	0.11
2004	0.02	0.05	0.17
2005	0.03	0.08	0.25
2006	0.01	0.02	0.07
Period 1 Average	0.015	0.043	0.15
2007	0.02	0.04	0.11
2008	0.03	0.05	0.13
2009	0.02	0.02	0.02
2010	0.05	0.06	0.09
Period 2 Average	0.03	0.043	0.088
Annual Average	0.022	0.04	0.12
	TP (kg/ha)		
2003	0.06	0.11	0.29
2004	0.05	0.11	0.36
2005	0.05	0.11	0.36
2006	0.02	0.04	0.09
Period 1 Average	0.043	0.087	0.247
2007	0.04	0.07	0.18
2008	0.09	0.16	0.33
2009	0.04	0.05	0.08
2010	0.14	0.15	0.20
Period 2 Average	0.078	0.108	0.198
Annual Average	0.06	0.10	0.22

Table 1. Annual loading of dissolved reactive phosphorus (DRP) and total phosphorus (TP) from upland site, upland plus NCC, and NCC during data collection period April through November for Period 1 (2003-2006) and Period 2 (2007-2010).

Concentrations of NO₃+NO₂-N and PO₄-P were determined colorimetrically by flow injection analysis using a Lachat Instruments QuikChem 8000 FIA Automated Ion Analyzer. Total nitrogen (TN) and total phosphorus (TP) analyses were performed concurrently on unfiltered samples. Analysis for chlorothalonil and 2,4-D was conducted using enzyme linked immunosorbent assay (ELISA) and methods outlined by Strategic Diagnostics Inc.¹⁴ Nutrient and pesticide loads were calculated by multiplying the analyte, nutrient and pesticide concentration, by the measured water volume for that respective sample. The volume of water associated with any one sample was determined using the midpoint approach.

FINDINGS. Rainfall, stream discharge, nitrogen, phosphorus, chlorothalonil, and 2,4-D concentrations and loadings were measured

during the hydrologic active period (April 1 to November 30) at NCC. Measurements began in 2003. Chlorothalonil and 2,4-D concentrations were measured through 2009. Nutrient concentrations are still being collected; however, the results presented here reflect the 2003-2010 sampling period.

Hydrology at NCC is a function of winter thaw in the early spring, while convective thunderstorms and frontal systems account for summer and fall discharge. Annual surface discharge from the golf course expressed as a fraction of the precipitation (Q/P) ranged from 0.43 to 0.86. The range of Q/P ratios was substantially greater than the 0.18 Q/P ratio determined from a 5-yr golf course study in Austin, TX and the 0.17 to 0.34 Q/P ratio range reported for urban and suburban watersheds around Baltimore, MD. However, the Q/P ratio at NCC was comparable to the 0.47 runoff fraction reported for a 1.5 year study on a subarea of a golf course in North Carolina. The higher runoff fraction is directly related to the clay soils at NCC.

NITROGEN. Nitrate-nitrogen (NO₃-N) concentrations as low as 0.05 to 0.1 ppm were observed in outflow at NCC. In marine estuaries even these low NO₃-N levels contribute to eutrophication. Total nitrogen (TN) concentrations as low as 1 to 2 ppm promotes and sustains algal growth in marine estuaries. Maximum NO₃-N concentration measured in the outflow at NCC was 1.9 ppm. The median NO₃-N concentration was 0.25 ppm. In total, 85% of all NCC outflow (n = 1317) NO₃-N concentrations exceed the 0.1 ppm eutrophic threshold. The median TN concentration for this study was 1.08 ppm. Fifty-three percent of the outflow TN concentrations were greater than 1 ppm.⁷

At NCC the mean annual NO₃-N load (0.7 kg/ha) represented 1.7% of the applied nitrogen while the average annual TN load (4.43 kg/ha) represented 10.7% of the applied nitrogen. The TN captured in the discharge waters was comparable to the 5% TN recovered for two golf courses in Canada, but substantially less than the 32% recovered in drainage waters on a course in Japan.^{11,16}

PHOSPHORUS. A reference value of 0.05 ppm as total phosphorus (TP) was selected as a basis of reference for this site. This water quality level was based on data from the USEPA ambient water criteria for Ecoregion VIII. At NCC, 13.2% of the phosphorus concentrations in the outflow exceeded the USEPA 0.05 ppm recommendation for streams discharging into lakes or reservoirs. The dissolved reactive phosphorus (DRP) load (0.12 kg/ha) recovered in the NCC discharge waters represented 2.6% of the applied elemental phosphorus, while TP losses (0.22 kg/ha) totaled 4.6% of the applied phosphorus (Table 1).⁷ The findings from NCC were comparable to, but greater than, the 2% phosphorus recovery from two golf courses in Canada, but markedly less than the 14% reported for a golf course in Japan.^{11,16}

From 2003 to 2010 there was a distinct decline in the amount of phosphorus applied to the course (Table 2).⁹ During this same period, the phosphorus applied to the course also shifted from inorganic to organic formulations. Thus, the study period was divided into two distinct time periods. The first or "before" time period (Period 1, 2003-2006) is representative of more traditional phosphorus fertility management on golf courses using inorganic formulations (mono-ammonium phosphate, di-ammonium phosphate, and to a lesser extent, ammoniated normal super phosphate, triple super-phosphate, and calcium meta-phosphate). The second or "after" period (Period 2, 2007-2010) represents a more progressive and environmentally aware approach to fertility management and primarily use of organic formulations (fish extract, liquid seaweed concentrate, yucca and black strap molasses, and compost growers tea).

A smaller percentage of the TP concentrations exceeded the 0.05 ppm threshold in Period 2 (20%) compared to Period 1 (37%). At 50% of the TP threshold or 0.025 ppm, exceedences in both periods were recorded between June and October. However, the number of exceedences in Period 2 (13%) was less than Period 1 (38%).⁹

Mean annual TP concentration (0.047 ppm) during Period 2 was below the 0.05 ppm threshold recommended to maintain a mesotrophic level in stream water (Figure 3). Similarly, flow-weighted DRP concen-

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[...on your tee boxes]

[...on your greens]

[...on your high traffic areas]

[...on your fairways]



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	Greens	Tees	Fairways	Roughs	Total (aerial weighted)	Total Number of Applications	Amount of total P applied in organic form
	kg/ha						%
2003	26.1	60.2	25.8	6.3	8.8	20	1.0
2004	26.9	51.7	27.4	---	6.5	20	5.0
2005	25.3	28.6	32.7	---	6.9	21	0.8
2006	7.5	12.7	21.1	0.6	4.4	19	2.9
Period 1 Average	21.5	38.3	26.8	3.5	6.7	20	2.4
2007	46.0	6.6	9.6	1.4	3.1	25	6.9
2008	6.0	7.2	2.0	---	0.06	64	83.4
2009	0.03	0.02	0.47	---	0.09	77	99.3
2010	2.37	2.38	0.01	---	0.09	111	100.0
Period 2 Average	13.6	4.05	3.02	1.4	0.84	69.3	72.4
Overall Average	17.53	21.18	14.89	2.77	3.74		

Table 2. Locations, number of applications, and rate of elemental phosphorus applications at Northland Country Club (2003-2010).

tration (0.021 ppm) was below 0.025 ppm (50% of the mesotrophic threshold value). TP and DRP concentrations during Period 1 exceeded the 0.05 ppm threshold. TP concentrations in Period 1 were approximately twice the threshold value. There was a greater than 50% reduction in elemental phosphorus applied to the course between the two periods (Period 1 greater than Period 2). The reduction in phosphorus loss occurred as a result of the combined switch to organic phosphorus formulations and reduced rates of application (Table 2).⁹

2,4-D. The maximum 2,4-D concentration measured at the outlet of NCC was 67.1 ppb and is consistent with course applications. The maximum measured 2,4-D concentration approached but did not exceed the 70 ppb maximum contaminant level (MCL). The greatest monthly median 2,4-D load originating from the golf course was in September (2.4 g/ha) followed by losses in October. These losses occurred immediately after peak applications.⁶

CHLOROTHALONIL. The median chlorothalonil concentration measured at the outlet of NCC was 0.58 ppb while the 25th percentile concentration was 0.17 ppb and the 75th percentile concentration was 1.45 ppb. The 95th percentile concentration was 4.12 ppb. The maximum measured chlorothalonil concentration was 48.1 ppb. The greatest chlorothalonil concentrations were observed in October and November, following applications for snow mold retardation in October. The probability of any concen-

tration exceeding the LC50 threshold for rainbow trout (7.6 ppb) was 1.87%.^{6,8}

There were 145 rainfall/runoff events during the study period. Eight events with peak concentrations exceeding the LC50 (7.6 ppb) for rainbow trout threshold were identified in the seven year study. The exposure duration of 4 days for the LC50 for rainbow trout was approached on two of the eight, high concentration events, suggesting that this exposure would be lethal for a significant portion of the sensitive organisms.

Greater chlorothalonil concentrations generally occurred with elevated flow rates. These greater flow rates were associated with storm event runoff throughout the year but were clearly evident in the spring and fall.

Elevated chlorothalonil losses were closely related to timing of application. Primary peak concentrations occurred in fall after application while secondary peaks occurred in the spring when residual chlorothalonil was still present. The secondary peaks measured in the spring were a result of its presence in the turfgrass environment, being sorbed to the thatch and soil and its persistence in the environment indicated by its greater degradation half-life.

Application timing prior to a storm event was even more critical in generating concentrations that exceed the threshold than amount of precipitation or runoff volume (Figure 4). There was a marked difference in the concentrations of chlorothalonil generated shortly after application in the fall compared to concentrations generated with spring runoff. Precipitation amount was

not as critical as just having a precipitation/runoff event. Five out of the eight events occurring in the fall had approximately 12.7 mm of rainfall or less.^{6,8}

RECOMMENDATIONS. Seasonal variations in nutrient concentrations and loading were apparent for all nutrients. In fresh water systems, nitrogen concentrations and loadings from turf systems are less important than they are in saltwater systems. However, phosphorus concentrations and loads are problematic in both fresh and saltwater systems. These variations are a function of hydrology, application timing and rate, and seasonal turfgrass physiology. Concentrations were generally less than concentrations from other land uses. However, export coefficients or mass losses were comparable to other land use categorizations. Similarly, concentrations and loadings of fungicides and herbicides varied annually and were a function of application rate and timing. Adopting BMPs and conservation practices aimed at reducing the offsite transport of both nutrients and pesticides is necessary.

With respect to nutrients, nitrogen and phosphorus, the recommended BMPs are:

- adhering to soil test recommendations or reduced rates should be followed,
- using slow release formulations to significantly reduced both leaching and surface runoff losses of nutrients,
- placing nutrients into the thatch and soil through 'light' irrigation,
- timing of nutrient applications to coincide with turf needs,
- avoiding application if rainfall is expected within 48 hours,
- avoiding fall applications or adhering to judicious use of fall fertilization,
- monitoring irrigation practices in rela-

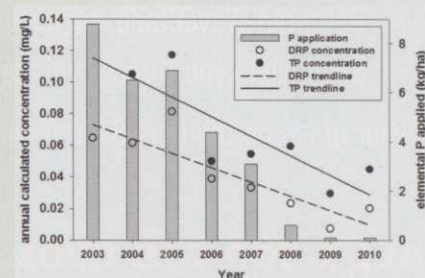


Figure 3. Trend between annual flow-weighted DRP and TP concentrations and applied elemental phosphorus.



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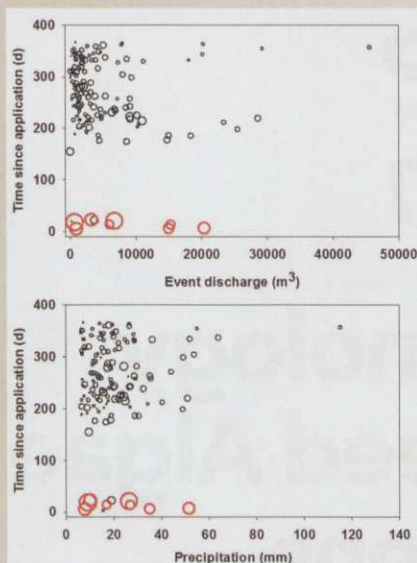


Figure 4. Bubble plot of flow weighted event concentrations (bubbles) and their relationship to precipitation and time since application (lower graph) and their relationship to event discharge and time since application (top graph); the larger the bubbles, the greater the event concentration. The red bubbles correspond to those events with peak concentrations exceeding the reference value of 7.6 mg/L which is equivalent to the LC50 threshold for rainbow trout.

tion to timing of nutrient losses (irrigation can and will promote tile flow, especially on greens),

- adopting the use of organic formulations,
- making multiple low-dose applications rather than fewer large applications,
- installing buffers or route drainage waters through wetlands.

With respect to pesticides and particularly chlorothalonil and its course wide use for snow mold retardation, the recommendations are:

- avoiding application for course wide snow mold protection until after last major rainfalls and before first snow cover events (the label recommendations do allow for multiple applications if snow cover is intermittent),
- using granular and wettable powder formulations rather than liquid or sprayable formulations,
- avoiding application at least 48 hours or longer prior to rainfall,
- installing buffer strips, setbacks, increase buffer strip widths or introduce graduated buffer heights,
- removing clippings,

• maintaining healthy, high density turfgrass to promote infiltration and reduce runoff.

This research conducted on a Minnesota golf course highlights the importance of watershed scale investigations for development of effective best management practices (BMPs) to significantly reduce nutrients and pesticides from leaving your golf course. In general, the development of integrated management plans and implementation of (BMPs) can reduce the environmental footprint of golf courses. An important first step is to seriously consider the fertilizer and pesticide recommendations outlined in this article.

In general, the development of integrated management plans and implementation of (BMPs) can reduce the environmental footprint of golf courses. An important first step is to seriously consider the fertilizer and pesticide recommendations outlined in this article. **GCI**

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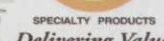
Flock Free and Make Em Move Manufacturing came from a simple beginning. Tom Kaps operated a small cleaning and general maintenance company for over 20 years. After his cleaning company handled a few bird control contracts with success, Tom formed Flock Free with his partner, Paul Rosario, in 2007. In just a few short years, Flock Free grew from a small, northeast bird control company to a full service, international bird control provider. Based out of an industrial warehouse in Lakewood, NJ, we are proudly Home Depot's #1 bird control provider, responsible for servicing stores across the country and even over the Canadian border.

At Flock Free, we believe that educating customers and providing realistic expectations is paramount. When we were unable to achieve desired results using established products we developed alternative, humane ways to solve our customer's bird issues. This quest for perfection is what led Tom and Paul to design, manufacture and patent their own bird hazers. After creating a multitude of innovative bird products, they developed their manufacturing division, Make Em Move Manufacturing, LLC.

Tired of settling for the same old products with predictable, limited results, Make Em Move creates exciting products that offer new ways to treat bird problems. Most pest control websites selling or distributing products continue to market the same products they have pushed for years. While the tried and true products of yesterday still have a place in today's pest control world, we at Make Em Move believe there is room for improvement.

Take a look at our product line. We're confident that our concepts and products speak for themselves. From bird hazers, to flying hawks, to pallet protection, we have it all covered so your merchandise won't be covered in pest droppings! Some of our most popular and well used methods include the hazer units, such as our Portable Moby, which turned Rejex-It Fog Force (active ingredient Methyl Anthranilate or MA) into a lighter than air haze that rises to meet birds mid-flight. MA has a pleasant grape aroma to humans. When inhaled by birds, however, MA nano-particles cause enough of an unpleasant reaction to make birds want to leave the area. Geese are one of the only birds affected by Rejex-It Fog Force when they walk through the invisible haze. It only takes a small amount of MA to cause a reaction in birds and since it is invisible, they cannot see it to avoid it.

We believe managing both the manufacturing component of Make Em Move along with the service entity of Flock Free sets us apart from other bird control professionals. Our familiarity and faith in our products coupled with reliable and experienced service technicians allows us to offer our customers a truly unique experience rarely seen in the pest control industry.



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The average course owns between \$300-\$500k of cutting equipment, and when observing what does all the work providing the "quality of cut", you soon realize you've spent a tremendous amount of money to make three to five cutting heads cut grass.

There is only one set of tools you'll invest in to re-condition what does all the work, and that's grinders. A recent GCI survey showed that "quality of cut" was priority number one in the field, and with grinders being a 15 to 20 year long-term purchase, it's a minimal expense when trying to attain goals.

The goal of achieving premium cut quality is not the only benefit derived from today's Foley grinders, as Foley has set the standard for product quality, capability, and productivity.

Workshop Productivity

Foley United developed the first completely enclosed "table-top" spin grinder in 1993 that introduced an innovative hands free "auto-index" relief system. Combined with new automated grind cycles for the spin and relief processes, labor required for a complete grind has been cut by more than 80%.

Operators now have the ability to enter programs for specific reel makes and with the push of a button, they are 100% away from the machine while the machine does the work.

Many users of single use "spin only" equipment who've converted to Foley's automated grinding systems still enjoy the ability to do quick touch-up spin grinds, but it's the ease and automation of relief grinding that has them re-conditioning the reels to "like new" on a regular basis.

Performance

Once the original reel relief area is worn away, horsepower required to rotate the reels increases from an approximate 0.8hp per cutting head to as much as 2.6hp per head. Your five-gang or triplex still cuts, it still works, and the equipment is designed to be able to function like this, but operating like this for extended time frames can negatively effect the overall life of the equipment.

Grinding is the only process used to "re-shape" and re-condition the reel to the way you bought it. This not only minimizes load on the engine and hydraulic systems, but ultimately saves money on fuel and

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Adjustments are easier, units stay on cut longer, and not having to backlap or grind as often will lower operating costs.

"Quality of Cut"

In addition to excessive load on the cutting equipment when reels lose their relieved "shape", dull cutting units directly effect the aesthetic aftercut appearance. Torn grass "tips" get dried out by the sun, creating an unsightly brown hue across the turf surface and 'die-back' occurs, which slows the recovery rate of the plant.

This weakens the root structure making the grass more susceptible to disease. This ultimately makes chemical use less effective and can effect water absorption rates to levels where you wind up spending more money for both.

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Lower heights of cut, newer grass strains, and reel manufacturers looking for advantages with reel technology make re-conditioning units more important than ever. Golf managers recognize that grinders are no longer a luxury, but are a necessity, and investing in the most capable grinders you can is not only a good investment, but a wise one.

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Superintendents Agree, A Complete Ecosystem Management Program Saves Money and Improves Overall Turf Health

When Doug Snyder took the job as superintendent at The Millbrook Club in Greenwich, Connecticut, he was forewarned of all of the disease and insect pressures he would face at the nine-hole golf course. As a preventative measure, Doug implemented a complete Ecosystem Management Program™ (EMP™), highlighted with the Performance Soil Treatment™ (PST™) by Performance Nutrition®. Doug applied KaPre® ExAlt, KaPre® RemeD8 and Pennamin® High K, two times per month beginning in May of 2012. "As the season moved along, I wasn't seeing the disease pressure and insect pressure that I was promised would occur. I really believe that the PST built a strong foundation in the soil, making the turf more tolerant of disease and insect pressure."

Doug's experience is not unique. All over the country, superintendents from high-end championship courses to daily fee municipal facilities save money and reduce corrective chemical applications by using the preventative Ecosystem Management Program developed by Performance Nutrition.

At the Country Club of Ocala in Central Florida, Superintendent Reed Orr says, "I have not had to make any of the emergency 'high dollar' fungicidal applications that are normal this time of year as the plants are just healthier with the PST program." He says, "I also saved on my fertility products as well. The soil is in better condition to grow healthier

turf." After a routine soil test, he says, "The results came back and the analyst had no recommendations to give. He was surprised as everything was in check, my soil condition was all in balance."

At Rum Pointe Seaside Golf Links in Ocean City, Maryland, Superintendent Joel McTavish says "I don't have the localized dry spots that I had in the years before using Performance Nutrition's products."

"My greens are better, remarkably better. I get comments now about how good the greens are."

~ Jack Birdwell, Comanche Trail Golf Course

In Big Spring, Texas, Superintendent Jack Birdwell uses the Performance Nutrition Ecosystem Management Program at Comanche Trail Golf Course. He says, "My greens are better, remarkably better. I get comments now about how good the greens are."

Performance Nutrition's Ecosystem Management Program is a pro-active, comprehensive system for turf management that is safe, effective, easy-to-use and simple to manage. EMP consists of just three patented Performance™ Treatments, each of which targets specific components of an ecosystem:

- Soil
- Turf Nutrition and Micronutrition
- Microbial Populations
- Water & Soil Solutions

Each Performance Treatment corrects conditions that negatively impact the turf ecosystem and enhances conditions that favor vigorous, more stress tolerant, sustainable turf.

The Performance Soil Treatment (PST) improves the condition and composition of the soil, enhances microbial populations, improves nutrient efficiency and delivers an arsenal of amino acids, enzymes, sugars and organic substances. Incorporating PST into turf management regimens supports a vigorous ecosystem and enhances conditions that contribute to turf quality and sustainability.

The Performance Foliar Treatment™ (PFT™) safely and efficiently delivers foliar nutrition, micronutrition and disease suppression. Turf treated with the PFT develops highly fibrous and branched root systems, stays greener longer and is more stress tolerant.

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Performance™ Eco-stations™ release organic nitrogen and organic extracts that unlock P and K in the soil and make micronutrients more bio-available for turf uptake. Performance Eco-stations also absorb plant nutrients, micronutrients and organic compounds whenever soil applications are made; recharging and releasing beneficial compounds all season long.

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Rain Bird's IC System Gives Superintendents a Greener, More Cost-Effective Way To Manage Golf Course Irrigation

In today's highly competitive golf course environment, superintendents are challenged to provide golfers with the best possible golfing experience while keeping expenses to a minimum. Combine that challenge with an increased emphasis on water conservation and environmental stewardship, and the result is a strong need for irrigation technology that's both cost-effective and eco-friendly.

Simplified Two-Wire Solution

Rain Bird's IC (Integrated Control) System is one of the most notable examples of irrigation technology designed to answer need. Introduced in August 2009, the IC System directly links sprinklers to a central control system with just a two-wire cable. Thanks to the IC System's unique design and features, some golf courses have saved up to \$100,000 in installation and wire costs by choosing it over a traditional satellite-based control system that requires individual copper wires to each sprinkler.

By incorporating a small Integrated Control Module (ICM) with each sprinkler, the IC System eliminates the need for decoders or satellite controllers on the course. The system requires up to 90% less copper wire than a satellite system and 33-50% fewer splice points than a standard decoder system, effectively diminishing opportunities for potential system failure. The IC System is also simple to expand, with only two splices necessary to install an additional sprinkler or valve. And, since ICM's are located underground, there's less risk of



damage from vandals, inclement weather or outdoor pests.

Satisfied Users Save Time and Money

River Bend Golf and Country Club near Great Falls, VA and Trump National Golf Club near Washington, DC are just two of the many courses that have successfully converted to the IC System.

According to Tom Lipscomb, greens superintendent at River Bend, the decision to install the IC System was easy. "You simply lay the pipe, install the head—and this is the kicker—you only have to continue the wire path from the previous head," Lipscomb says. "No more time, money and unsightly trenches going back to satellite controllers."

Brad Enie, director of grounds for Trump National Golf Club, was faced with the challenge of replacing the older of two systems running the 36-hole facility. "It (the IC System) offered the best solution for us," Enie says. "The system acts as a 'hybrid' by controlling a hard wire, wireless and a two-wire system from just one computer. This ultimately saved us time and money on the install, as well as future energy savings became of the real-time



communication of the system.

"After looking at the final drawing, we also realized that we would save over one million feet of copper wire if we were to go with the two-wire system. That's over 20,000 pounds of copper that we didn't have to put in the ground."

Going Green Can Be Smart

Not so long ago, the golf industry associated "going green" with higher initial costs and lower return on investment. However, revolutionary products like Rain Bird's IC System are changing that perception. Now, golf course professionals have the ability to make smarter economic and environmental decisions thanks to this type of groundbreaking technology. To learn more about the IC System, contact a Rain Bird Golf distributor or visit Rain Bird Golf at www.rainbird.com/golf.

Set your course at
rainbird.com/ICS



Setting the right course of action.
That's intelligent.



Rain Bird® Integrated Control (IC) System™ gives you flexibility for today and tomorrow. In a class of its own and masterfully engineered with rapid two-way communication, real time diagnostics and centralized control, the fully underground IC System puts you in command of individual rotors from your central control computer, tablet, radio and smart phone. The IC System helps save costs using significantly less wire and material, making it easy to install, expand and adapt as your course grows and evolves. With the Rain Bird IC System, you're setting a course of action. **Set your course at rainbird.com/ICS.**

RAIN BIRD®

Redexim North America: Breaking Barriers To Better Turf

Redexim North America is a leader in the design and development of professional turf equipment produced specifically for aeration, seeding, top dressing and environmental maintenance. With marketing operations in over 50 countries in the world, it has the largest range of equipment in its sectors, supported by a worldwide network of authorized distributors.

The Redexim North America corporate office is in Fenton, Mo., with its parent company and central engineering base in Zeist, Holland, with sister companies in England and in Australia, supported by manufacturing in the USA, UK, Holland, Italy and Hungary. The Group's philosophy is to supply to each market with products that meet local needs.

"These products are designed to withstand vigorous use in all conditions, and are backed by a distribution network that can handle technical, parts and service back-up that is the best available in the industry," said Paul Hollis, executive vice president of Redexim North America. "Investment in new product development and research into finding better methods of grounds care/maintenance is a major objective of Redexim North America to ensure that we remain the world leader in meeting the specialist needs of the turf and ground care markets."

Redexim North America was formed as a corporation in Pennsylvania in 1997. For 17 years prior

to that, Redexim equipment had been imported by a sales agent in the Scranton area. "Since the beginning, we have experienced tremendous growth in the company, expanding into synthetic turf and other markets, while staying with our core philosophy," Paul said.

"We lead the way with products like Verti-Drain, Verti-Core, Verti-Seed, Verti-Quake, Verti-Knife, Over-Seeder, Easy Spread, and Turf Tidy. These unique and trend-setting machines are the most advanced turf management tools on the market, recognized for performance, quality, durability and customer satisfaction. All Redexim products pass the toughest test of all – the test of time.

"The quality construction and advanced design of Redexim products are backed by the best after-the-sale service program in the industry. Our distributor network, the finest in the world, guarantees spare parts availability to keep your equipment running. Redexim North America has become a leader in golf course and turf management equipment by supplying the best machines money can buy, and by listening to the people who use them. Forging strong relationships with customers, built on trust and respect, is essential to our promise of quality."

Paul went on to say, "Innovative design, craftsmanship, and heavy-duty construction make Redexim products the standard of quality in the turf management marketplace. We know what our customers

need – machinery that performs well, saves time and offers value. The market-leading range of Verti-Drain's and other fine equipment have outsold and outperformed all competitors for over 30 years."

Redexim products have been used by golf course superintendents in the four major championships, and by sports turf managers in championship venues for the NFL, MLB, NCAA, IOC, FIF, UEFA, and the World Cup.

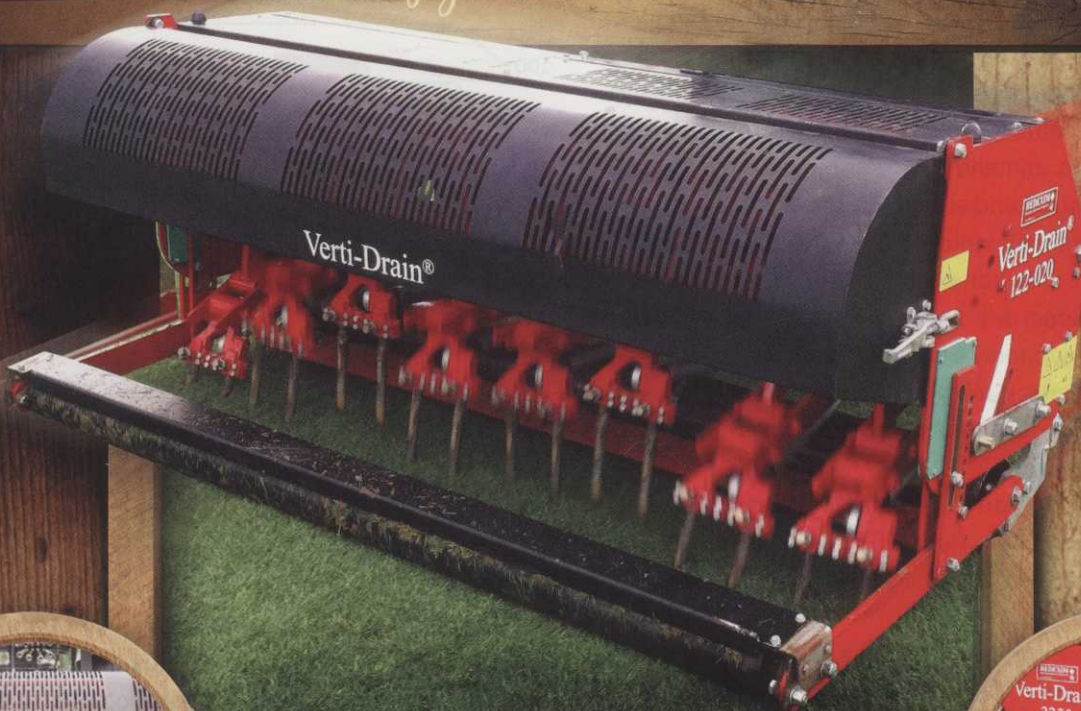
In the coming year, Redexim North America plans to launch its walk-behind power plant called the Carrier, which can work with seeders, aerators, verti-cutters and a multitude of other small three-point mounted equipment. In addition, Paul told us that Redexim North America is planning the exciting introduction of a new high-speed deep-tine aerifier called the Bullet in two sizes later this spring or summer.

"While we have no crystal ball to foresee the future, our hopes are that we see the world economy to pick up and strengthen existing revenue streams. Further expansion of our factory-direct store, Redexim Turf Products, as an alternative to conventional distribution is on the drawing board, as well as additional investment in our agriculture division, Tortella North America, while the agriculture market continues to be booming," Paul concluded.

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near 4 mph

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Depth adjustments made
from the tractor seat



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Redox Turf Proves Less Isn't Just More ... It's Better!

Redox Turf Proves Less Isn't Just More... It's Better! Golf course superintendents are constantly under pressure from three fronts: agronomically, to produce vibrant, healthy and quality playing conditions; economically, to produce positive results profitably; and environmentally, generating visible results while faced with the demand for lower inputs and reduced impact on ground and surface water.

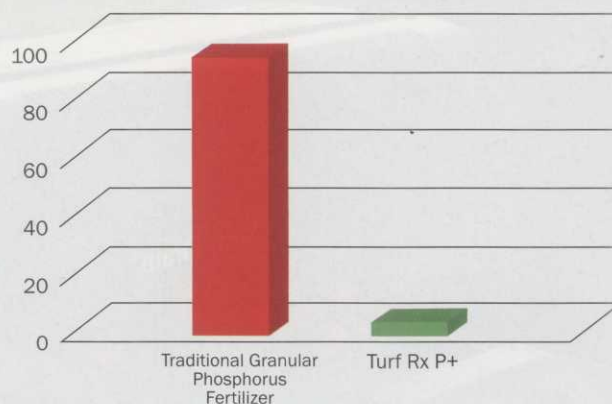
Lower nutrient inputs – particularly phosphorus and nitrogen – is not simply a fad that superintendents can expect will fade away. While most people educated in agronomy understand the need for nutrients to generate quality turf, it is also understood that the nutrients need to be kept from leaching into ground water.

Through the development of high-efficiency fertilization solutions, Redox Turf provides protected, complexed nutrient molecules, preventing “tie-up” in the soil.

With superior effectiveness, and dramatically lower application rates, Redox Turf allows you to be environmentally responsible without sacrificing conditions.

The result is more effective uptake by the plants and dramatically lower inputs, protecting ground water from potential ecological harm.

Phosphorus Inputs



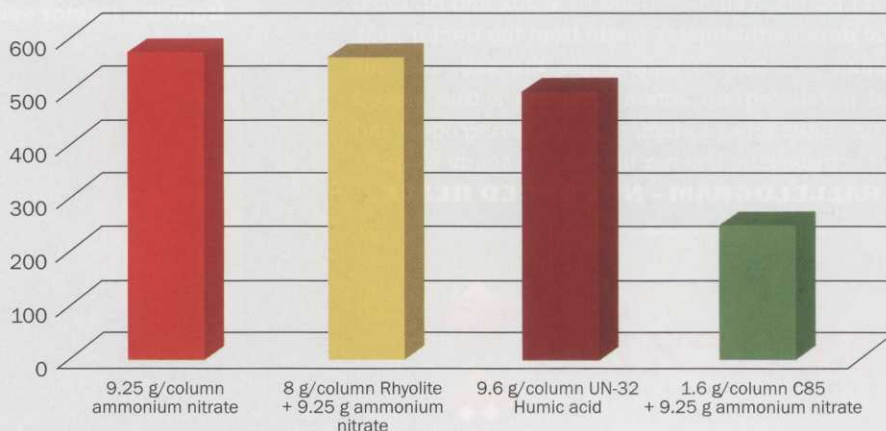
Much of today's conventional product chemistry was developed decades ago with simple product chemistry in mind, often neglecting the agronomic requirements that may be necessary for optimum plant growth.

The science of Redox focuses on Agronomic Chemistry centered on four primary considerations: The agronomic needs of the plant, potential soil and plant interactions, interactions of the elements in solution and finally, product chemistry. In essence, we address the question of product formulation in a reverse order of the traditional approach.

The result is plant nutritional solutions that work, and work effectively together, to produce healthy and high quality turf.

On golf courses across the nation measuring by all relevant standards, including Visual Quality, the use of Redox Turf has continually shown to be agronomically, economically and environmentally advantageous.

Nitrate Content In Percolate



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From coast-to-coast, **Redox Turf** has been the solution of choice of leading course superintendents. Now, we are introducing easy-to-use formulations of our two most popular products:

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Fairway
Flowable

TURFRx
Green
Flowable

Cost effective, safe to handle and easy to mix, the **Redox Turf Flowable** solutions provide powerful, plant-available nutrients that strengthen plant growth in any growing environment.

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Improve Turf Quality and Reduce Maintenance Costs With Turf Screen

Since its introduction in 2010 by a former golf course superintendent, *Turf Screen*™ has received widespread recognition from golf courses throughout the US and Canada for its ability to help turfgrass cope with summer stress conditions (<http://turfscreen.com/blogs/testimonials>). But *Turf Screen* helps superintendents do their job better and more effectively in other ways, too. Research studies by independent testing laboratories and universities have verified that *Turf Screen* improves fungicide efficacy and duration when part of a sound agronomic maintenance program. *Turf Screen* can also help provide firmer and faster playing conditions, and reduce overall maintenance costs.

So, how can such a simple concept and product – a pigmented “sunscreen for turf” – achieve these wide-ranging and important benefits? Very simply, its patented formulation of titanium dioxide and zinc oxide, which puts *Turf Screen* in a pigment class all by itself. Here’s how it works.

Refractive Index:

Due to their high refractive index, TiO₂ and ZnO are the only FDA-approved natural ingredients for human sunscreen. In simple terms, TiO₂ and ZnO reflect solar radiation away from its surface – particularly plant-damaging UVB and IR radiation. UVB is widely known to be greatly damaging to turf, up to and including cell collapse and death. Additionally, UVB has been demonstrated to damage the plant mechanisms directly responsible for photosynthesis production. Solar radiation’s IR component is a major source of plant overheating on hot days. It’s pretty simple: by reflecting and reducing UVB and IR exposure, *Turf Screen* improves turf quality and allows turf to better withstand extreme summer stress conditions.

Fungicide Photo-degradation:

If you spray fungicides, add *Turf Screen* to the tank-mix to improve fungicide performance. Many fungicides are highly susceptible to UVB radiation and will breakdown rapidly from exposure to solar radiation. *Turf Screen* reduces the fungicide degradation effects of UVB radiation so fungicides stay intact longer on the turf.

Sticking Technology:

We’ve all heard fungicide companies tout the next generation of weather sticking technology. But none comes close to matching the incredible sticking power of *Turf Screen*. TiO₂ and ZnO are used exclusively in primer paints because of their excellent ability to cling to surfaces and not wash off. Independent laboratory testing in 2011 showed that *Turf Screen* was able to stick to turf for over 100 days! *Turf Screen* enhances the sticking power of everything else in the mixing tank.

Product Safety and Inertness:

TiO₂ and ZnO are non-hazardous and completely inert. Their safety is indicated by their wide use in human sunscreens, and ZnO is a well-known treatment for babies’ diaper rash. Humans ingest TiO₂ and ZnO every day since the food industry uses them extensively to make products like milk and sour cream look whiter. Because of their chemical inertness, they are extremely safe on turf. They simply cannot have a reaction in your spray tank or on your turf.

If you are looking for commonsense, safe and effective ways to improve turf quality and cut your maintenance costs, try *Turf Screen* today. Its effectiveness, versatility and affordability will impress you. Visit www.turfscreen.com today for more information.



Double Down on Predictable



Tank Mix Turf Screen™ + Turf Screen™ Dormant

You can't forecast what Mother Nature will bring. So guard your turf with the best of both worlds this fall and winter by adding Turf Screen and TS Dormant to your tank mixes. Turf Screen is proven to provide complete plant protection, increase snow mold fungicide efficacy and improve turf quality year-round. TS Dormant is a special formulation that increases canopy and soil temperatures by attracting solar radiation. Whether you manage warm or cool season grasses, you'll get healthy, great looking turf next spring when you add Turf Screen and TS Dormant to the tank this fall. Learn more at www.turfscreen.com.



DEVELOPED BY A SUPERINTENDENT FOR SUPERINTENDENTS

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How Super Efficient Deep-Cycle Batteries Can Lower Overall Operating Costs For Fleets

Golf courses and businesses that incorporate a fleet of golf cars, are always looking for ways to lower their operating costs. Because all deep-cycle golf car batteries will eventually run through their life cycles, extending battery life in the fleet plays a major factor in determining quarterly and annual operating costs.

While many golf courses and companies tend to minimize costs by purchasing the least expensive batteries they can find, the results in the long run don't always turn out that way. New formulations in battery plate technology allow some deep-cycle batteries to produce greater total amp-hours in service, longer cycle life, and fewer cycles to reach rated capacity. "Anyone in charge of maintaining a fleet of golf cars needs to look at their battery expenditures in terms of cost-per-cycle, and cost-per-amp hours delivered over the life of the battery," says Fred Wehmeyer, Senior VP Engineering for U.S. Battery Manufacturing. "Comparing battery ratings on the label or published life cycle, doesn't always tell the true story. In addition, purchasing the least expensive batteries you can find, almost always never adds up to a cost savings in the long run."

Wehmeyer suggests the best way to determine the cost-per-cycle and total cost-per-amp hour delivered over the life of the battery, is to first make regular, routine maintenance checks. These include measuring the condition of the batteries on a weekly basis and determining the total service hours you get from a full charge (total amp hours), and noting each time the batteries are charged (number of cycles), before they are no longer useful. Over the course of several months, the average run-time and amp-hours of your batteries become evident, allowing you to compare that information against the battery purchase cost.

Once fleet managers compare the actual operating costs between various battery manufacturers, they can begin to see that not all deep-cycle batteries are

the same, and those that are more efficient, even at a higher initial purchase price, can actually save overall operational costs in the long run.

This is one of the reasons why manufacturers like U.S. Battery, improved the efficiency of its deep-cycle golf car batteries, by reformulating the lead sulfate crystal structures that are used in the company's battery cell plates. The company's XC2™ formulation and Diamond Plate Technology® allow its batteries to reach peak capacity in fewer cycles, providing higher total energy delivery, and extended battery life. "Our batteries with XC2™ formulation reach peak capacity in as few as 25 cycles," says Don Wallace, U.S. Battery CMO/Executive Vice President. "This also increases the battery's rated capacity and service life, creating a longer-lasting, more efficient battery that saves golf car fleet owners time and money."

For comparison, a U.S. Battery with XC2™ was tested against a popular brand. The results show that the more efficient U.S. Battery delivered a 36 percent longer cycle-life and 55 percent more total amp-hours than the nearest competitor. If the purchase price for the batteries are the same, this example translates to a 27 percent reduction in cost-per-cycle and a 65 percent reduction in cost-per-amp hour over the life of the battery. Putting this into hard dollars, if both batteries cost \$100, the more efficient battery offers a 0.148 cent cost-per-cycle compared to 0.200 cent cost-per-cycle on the competitive battery. The U.S. Battery product also costs 0.135 cents per 100 amp hours, versus 0.210 cents per 100 amp-hours on the comparison battery. Multiply those figures by the number of batteries in any fleet, and the savings in operating costs become much clearer. For more information on deep cycle battery maintenance or selecting the right battery for your golf car fleet, contact U.S. Battery Manufacturing, 1675 Sampson Ave., Corona, CA 92879. (800) 695-0945. Visit <http://www.usbattery.com>.

Discover **U.S. Battery's** Proven XC2™ Technology now available in our entire golf line.



Our batteries may not help your game, but we sure can help your drive.



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- X** Ultimate compatibility with the wide range of chargers used in the field.
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U.S. Battery Manufacturing Company is providing you with the highest rated batteries available today. With the addition of XC2™ *Diamond Plate Technology®* our batteries will last longer and outperform the competition, saving both time and money. U.S. Battery offers you both flooded (wet) and AGM (sealed) deep cycle batteries making us your one-stop-shop for premium lead acid batteries. Our new line of AGM maintenance-free batteries offers ease and convenience, minimal gassing and no leak applications.

U.S. Battery has three manufacturing plants strategically placed within the USA and a network of distributors throughout the entire world making it extremely easy to obtain our superior made-in-America battery products no matter where they are needed.



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Wiedenmann Products Delivers a Payback

Superintendents face ongoing challenges throughout the year. **Wiedenmann** manufactures several pieces of equipment to aid in clean up and cultivation practices that provide excellent results with a large payback in time and labor.

Wiedenmann's newest product is the **Core Recycler**, a self-contained walk behind machine for collecting and processing cores. The sweeping head gently collects the cores and transfers them into 4 rotating screens that separate the sand from the organic material (thatch), then returns the sand to the green while the thatch is collected into the high dump hopper. The hopper can then be dumped directly into the bed of a utility vehicle, thus saving money by re-using approximately 75%-80% of the topdressing material and saving labor to transport and spread the topdressing material. By top dressing 20%-25% of new topdressing material prior to aerification, the need to run a heavy topdresser over a freshly aerified green is eliminated. Plastic inserts can also be placed on the inside of the rotating screens for core collecting.

For aerification, Wiedenmann manufactures several models of **Terra Spike** deep tine aerifiers that will obtain the depths needed to break through any black layer, thereby reducing compaction and increasing water, air, and nutrient exchange to the roots. A variety of tine options, both solid and coring, are available as well as multi-tine blocks for tighter hole spacing. The Terra Spikes are **the fastest deep tine machines on the market**, are very durable and user friendly, and feature Quickset, VibraStop and PowerPack, Quickfit, and ATC (Advanced Tine Control) systems.

For debris clean up, Wiedenmann offers the **Mega Twister** blower which swivels 270° on the ground while producing 14,000 cfms of airflow and creating

very little noise. Another tool for debris clean up is the new **Super 120 M** turf sweeper, a self-contained sweeper that efficiently collects leaves, debris, aeration cores, etc. Due to its compact size, it can be maneuvered on and around greens and tees as well around other tight areas. It is also ideal for cart paths and hard surfaces. The bigger brothers to the Super 120M are the **Super 500** and **Super 600**. These machines do a superb job with wet and dry debris cleanup and also perform some mulching of material while sweeping and collecting. The airflow is so great that the multi-purpose sweeper head does not come in contact with the surface. Once collected, debris can then be deposited into a dump truck or other container by using the high dump feature allowing dumping up to 83" off the ground.

For mowing native areas, the **Super 500** and **Super 600** with flail blades are the ultimate tools for mowing and collecting the clippings in one pass. Debris can be dumped in a container or dump truck by using the high lift feature of the Super 500 and the Super 600.

For removing excess thatch by verticutting, the **Super 500** and the **Super 600** will verticut and collect the thatch in one pass, which allows for verticutting without making a mess. Verticutting can be completed by choosing optional spacing of $\frac{3}{4}$ ", $1\frac{1}{2}$ ", or $2\frac{1}{4}$ ". The Super 500 and Super 600 have high dump hoppers that will lift up to 83" high. Another method for thatch control is to use the **Terra Rake** to pull up the thatch material from the turf and deposit this material on the surface. This is accomplished quickly by the rake fingers of the **Terra Rake**.

For more information, please contact Wiedenmann North America, LLC. www.wiedenmannusa.com. (912) 790-3004. info@wiedenmannusa.com

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Watch the Side-by-Side Comparison.





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.

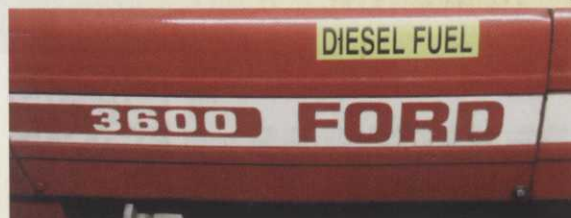


Terry Buchen, CGCS, MG, is president of Golf Agronomy International. He's a 41-year, life member of the GCSAA. He can be reached at 757-561-7777 or terrybuchen@earthlink.net.

FUEL STICKERS

These stickers are a unique way to train employees to put the proper fuels into their respective maintenance equipment gasoline and diesel fuel tanks. Each sticker measures 9x2 inches and they were acquired from the local Do It Best Hardware Store.

They must be applied to metal surfaces only (not on plastic) after cleaning the surface with Windex. The industrial adhesive material holds-up quite well when cleaning the maintenance equipment with pressure washers. The stickers cost about \$5 and their large size makes them very conspicuous to use the proper fuel types.



Labor time took just a few minutes. Rick Bowden, golf course superintendent, and Defino Cordova, equipment manager, came up with this great idea at the Bob O'Link Golf Club in Highland Park, Ill.

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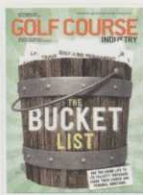
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Pat Jones is editorial director and publisher of *Golf Course Industry*. He can be reached at pjones@gie.net or 216-236-5854.

SMALL CHOICES

Support the companies that support the industry.

Last month I outlined my bucket list for our industry – the things I hoped we'd achieve in my lifetime – and asked readers to tell me theirs. I received several emails with good golf business suggestions. The one that really struck me came from an old friend on the supplier side that said:

"You know what's on my bucket list? I hope I live to see the day when customers actually do support the companies that support their profession."

Whoa! This is a guy who's spent a career directing marketing dollars for an important industry company who made nearly every investment decision thinking, "What's the right thing to do to support my customers?" His first thought, beyond running a good business, was about how he could be loyal to you and provide you with opportunities for education, information and other things you needed to grow. Now, he really questions whether his customers appreciate that commitment or whether it's just lip service.

I agree with him. There's a disconnect between what you say about how you support companies committed to the industry and your actual buying habits. This isn't a new phenomenon. Here's part of a rant I wrote about this subject in this space a few years back:

The companies that reinvest in our business and your profession are getting slammed by the carpetbaggers, and, quite simply, they can't be expected to take it forever. Nor can they be expected to invest even more to bring new products to the market, conduct research to help you use products better, hire first-class sales reps or sponsor the numerous educational and social opportunities we've all come to enjoy.

Let's be clear: Good companies won't continue to value this market unless you value them.

I would love to provide a list of the good guys and bad guys in print, but the nice lawyers at Golf Course Industry would probably be very unhappy with me. Instead, let me offer a quick quiz to help you sort things out as you plan your purchasing for 2008:

- 1. Does the company have a name you know and trust? (+10 points)*
- 2. You've never heard of the company, and you couldn't spell their name if you tried. (-10 points)*
- 3. Is their sales rep someone you've known for years who has demonstrated good agronomic knowledge and who has served you and your friends well even when he wasn't trying to sell you something? (+10 points)*
- 4. The sales rep is a guy whose last job involved selling ink-jet cartridges... and he wasn't particularly good at that. (-10 points)*
- 5. Does the company support your educational needs by sponsoring events, participating in your chapter and advertising in industry journals? (+10 points)*
- 6. Is the company's idea of industry support bringing along some donuts for an unscheduled call by their salesman? (-10 points)*
- 7. Does the company work with a solid local distributor that has a reputation for honesty and quality? (+10 points)*
- 8. The company claims they "don't need no stinkin' distributor" taking a cut so they can give you lower pricing? (-10 points)*
- 9. You're almost always willing to try new products and services from the company because it has a good track record. (+10 points)*
- 10. You have to gulp real hard when it occurs to you you're risking your greens – and your job – to save a few hundred bucks on a case of product. (-10 points).*

I wrote that column in 2007 about the influx of no-frills generic pesticide

products from companies that didn't support the industry. That was before the recession hit. In a post-recession world where golf courses have to be managed efficiently and cost-effectively, the choice for you becomes even tougher. It's even more understandable to consider a lower-cost alternative, but it's also important to recognize that the consequences may be more serious.

In 2007, choosing alternative products based solely on price might have made it harder for companies to justify the fairly lavish marketing money spent on customer entertainment, big feel-good sponsorships or discretionary stuff like logo golf balls for chapter tournaments. Today, that choice could impact whether the company continues to invest in R&D to bring you new products. It could tip the scales against continuing to support educational conferences and trade shows (which are the economic engine that drives many associations). It may force them to reduce advertising spending (bye-bye free information from trade journals). It could eliminate trusted salespeople you've relied on for technical help.

For many of the companies which – like my bucket-list friend – have been stalwart supporters of your professional and educational needs, it's tougher to justify those investments when they continue to lose market share to competitors who don't.

Every time a super chooses a cheaper alternative from a company that doesn't reinvest back into the business, it's not that painful. It's like getting a little cut on your finger that bleeds just a bit. Hardly life-threatening.

But, multiply that across the market and over years and pretty soon it becomes death by a thousand tiny cuts.

Small choices matter. Choose wisely. **GCI**

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- ▶ Protect turf from UVA and UVB rays, heat and other stress factors
- ▶ Optimize turf color, strength, density and consistency
- ▶ Provide an economic solution for disease control and enhanced turf quality
- ▶ Deliver total protection for high-performance turf

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(iprodione)

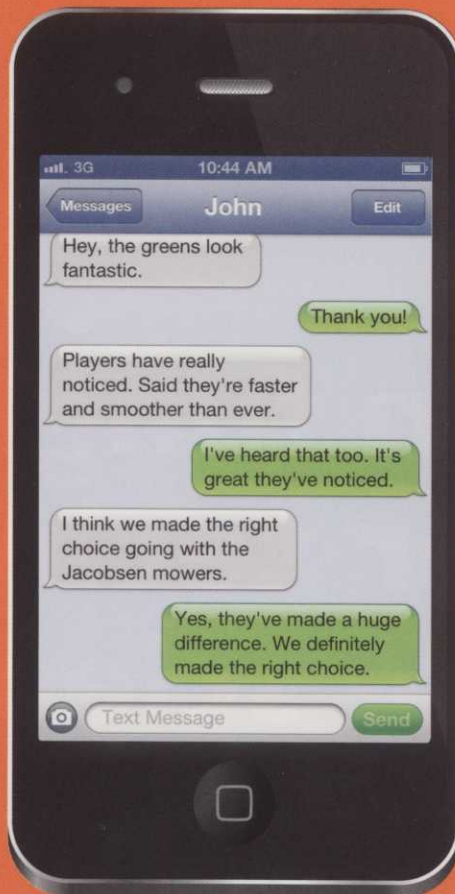
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