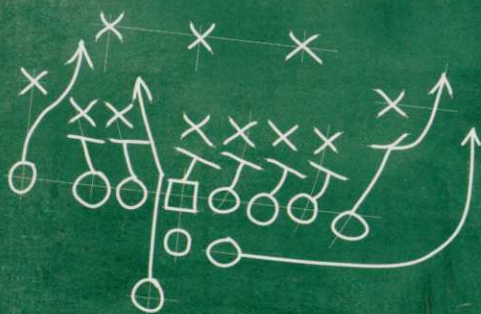


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INSIDE:

Ron Whitten on course rankings pg 10

Reclaimed vs. potable water pg 46

Jones: My friend Stan pg 58

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TRAVELS WITH JONESY

I use Facebook posts as a travelogue of the weird and wonderful things I see and do in my job. My life is a little like Johnny Cash's, "I've Been Everywhere," except my list of destinations is longer and stranger. Why the hell do I subject myself to endless trudges through TSA security and schlepping golf clubs across three time zones? Because this is a people-driven, relationship-driven business and I LEARN every time I go somewhere. Here are a few highlights from recent trips.

Syngenta did a power-launch for two brand-spanking new fungicides – Briskway and Secure – at the fabulous Pinehurst Resort a few weeks ago. It was awesome. I got to spend time with a good friend, Pinehurst's Bob Farren, and Kevin Robinson, the man who's stewarding the new, improved version of the #2 course toward the 2014 U.S. Open and Women's Open. I liked the old #2...I'm absolutely gobsmacked by the new version. I've said it before: the notion of "rebranding" a golf course like #2 which had become Augusta-ized over the years is sheer, bloody genius.

But, as nice as it was to catch up with Bob and Kevin, I also spent some real time with key Syngenta senior executives, all of whom were smiling like the cat who ate the canary because they knew they were about to acquire DuPont's insecticide products. Part of the event involved them performing routine maintenance tasks around the course while we rotated around to talk with them. A little cutesy, but the point was that Syngenta is trying to get beyond simply providing chemistry and look at the big picture of how things get done on golf courses and how they can be more responsive with products, support and services.

Sound like corporate hokum? It's not. The company is broadening the commitment they started with the Syngenta Business Institute and the EcoMeasures tool because they genuinely want to change their business model to get beyond jugs and bags. They're serious about it. Keep watching them...there's a reason they were one of GCI's top "Most Admired" companies last year.

Another of my trips took me to Waukegan,

Ill., the global HQ of Precision Laboratories. I'd be shocked if too many of you didn't know about Cascade, Sync or their other surfactants and adjuvants, but you might be like me and not know a helluva lot about a company that's been around for 50 years.

Rick Wohlner and his team are passionate about their products, absolutely buttoned-down as businesspeople and totally committed to our market. They talk to customers as much as any manufacturer I know. They see a future where superintendents will come to rely as much on adjuvants for tank-mixing as big farmers do. The proof is in the pudding and they can prove that these products can boost to the efficacy of anything you apply.

Next, I was off to Phoenix to talk to the Marriott/Ritz-Carlton golf team. Short version: they get it. They understand better than nearly any group how important it is for superintendents to be on top of the business side as much as the agronomics.

From there, it was off to St. Augustine for the GCBAA Summer Meeting. Again, short version: I love a meeting where everyone attending is engaged and almost all at-

tendees have relationships that span decades. Executive Director Justin Apel and his team put on a first-class event, too. The GCBAA used to be a larger Army. Now, they're a smaller, more tight-knit and focused Marine Corps.

There were other trips and observations, but I'd be remiss if I didn't mention two very important citizens of our community who we lost recently.

Gregg Breningmeyer was my client, my friend, my smoking buddy and my golf partner for a decade. He was the visible, vocal and incredibly passionate leader of Deere Golf. You absolutely knew that Gregg's word was his bond. He adored his business and he loved superintendents. I don't read auras or any of that stuff, but there was simply an electricity around Gregg. He burned brightly and our world is a little dimmer without him.

And then there was Stan Zontek. I invite you to join me on the back page of this issue to talk about my friend of 25 years and what he meant to all of us. **GCI**



Pat Jones

Editorial director and publisher

GOLF COURSE INDUSTRY

Serving the Business of Golf Course Management

Vol. 24 No. 9

GIE Media, Inc.

4020 Kinross Lakes Pkwy, 2nd floor

Richfield, OH 44286

Phone: 800-456-0707

Fax: 330-659-0823

EDITORIAL

Pat Jones

Publisher/Editorial director
pjones@gie.net

Mike Zawacki

Editor
mzawacki@gie.net

Kyle Brown

Associate Editor
kbrown@gie.net

Bruce Williams

Senior contributing editor

SALES

Russell Warner
National account manager
330-523-5385

Martha Corfman
Manager, books
330-523-5366

Ted Schuld
Account manager
216-236-5937

Maria Miller
Conferences manager
330-523-5373

Bonnie Velikonya
Classified sales
330-523-5322

Jodi Shipley
Marketing coordinator
330-523-5368

GRAPHICS / PRODUCTION

Andrea Vagas, Creative director
Helen Duerr, Production director
Heidi Clevinger, Production coordinator

CORPORATE STAFF

Richard Foster Chairman
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Marco Urbanic Director, Integrated Data Systems
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Helen Duerr Director, Production
Melody Berendt Director, Circulation
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INTERFACE
 Intelligent Turf Management

Get a *life*

GCI spotlights people's lives outside of turf.

While many golfers would like to see more eagles, Brian Beckner is content to pick up a few bluebirds. Beckner, superintendent at La Playa in Naples, spends his free time on the course birding – that is, looking for birds – and more recently, building housing to encourage specific species to take up residence. His tenants reside among the 14 wooden birdhouse boxes, six PVC bird boxes and two purple martin houses that he built and maintain himself. He's even developed a business around building birdhouses.

What influenced you to start building bird houses on the golf course?

All of this began with my love of nature, being outdoors and bird watching. Having been in the golf course management industry for the last 20 years, one of my greatest pleasures is observing Florida wildlife that passes through each season and sharing these experiences with others. I enjoy spending time outdoors and get a thrill from watching the varieties of birds which inhabit southwest Florida, even at times of rescue when an injured animal needed assistance. We use local professional agencies for nursing these animals back to health, our's locally is the Conservancy of Southwest Florida.



Beckner has more than 20 boxes at La Playa.

I explored and created other species specific boxes. As life developed further for me, I began to share this same passion with my children, for which the company is named. The company now builds and supplies area golf courses with species specific nesting boxes so that others too can foster natural habitats for the numerous bird species in Southwest Florida or wherever they may take them.

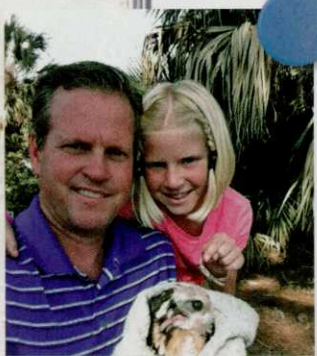
What are some of the rare species of birds you've seen on the course?

The species that are most common in the bird houses the eastern bluebird, red-bellied woodpecker, the screech owl and one of my favorites, wood ducks. I have a particular box for wood ducks and since 2003 we fledged young from that wood duck box every year – in 2012, it fledged three broods.

A juvenile red tail hawk fell from a tree, and we rescued it. We took it down to the Conservancy of Southwest Florida, where they took care of it on the weekend. They released it to me on Monday and I put the hawk back in the nest with its sibling with an 80-foot lift I rented. Typically, the siblings fight. There's a lot of sibling rivalry – one got kicked out of the nest, and we were at the right time at the right place. It was within seconds of setting the bird down out of my hand into the nest that the parent came down and took it right after and was feeding it.

How have the birds improved the golf course?

Being able to keep the wildlife going is the most important thing to me. It seems there's a depletion and a loss of nature so I like being able to provide a habitat and even a bird feeder. I don't care how young or old you are, I can get a smile and a conversation knowing that we are giving back to nature.



Beckner's company, Lane Edwards Designs, produces handcrafted Audobon-sensitive habitats nesting boxes for different bird species.

From THE FEED

A true golf legend was lost when Stan Zontek, the director of the USGA Green Section's Mid-Atlantic Region, passed away Aug. 28 after suffering a heart attack. GCI followers are reminiscing about his impact on golf, but superintendents came together online to give tribute to a hero of the turf manager, including a specialized hashtag of some of his famous lines.



William Brown, CGCS @greensuper
"Bill, at the end of the day, it's just grass."
#ThingsStanSays



Stan ending all his presentations with "Go Golf!" #ThingsStanSays

One of my favorites "How's the family?"
#ThingsStanSays

TPC Potomac GCM
@TPCPotomacGCM
"You know Stephen, the grass wants to grow." #ThingsStanSays



Ryan Howard @TWRyanHoward
"Grass can't tell how much your Nitrogen costs." #ThingsStanSays



Michael Fidanza @MikeFidanza
"This is not for publication" ...
#ThingsStanSays



Shane A Miller @SmillerTurf
"Is losing a few trees a bad thing?"
#ThingsStanSays



Richard M Pagett @RickPagett
"I am Stan Zontek, class of 1970 (with that smile)!" #ThingsStanSays



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Getting it sorted

The turf is a little greener at Royal Oaks Country Club in Vancouver, Wash., in more than one way. GreenDrop Recycling Stations are popping up around the course, in an effort to make it easier for golfers to reduce their environmental impact.

"We're a part of the Audubon program," says Alan Nielson, superintendent. "We want to be good stewards and recycle what we can."

The new stations - the first on a golf course - are meant to make it easier to self-sort recyclables on the fly. The container is a single unit, so waste shares the same space, and rather than using generic labels it sport images that show users which products go where.

"Why have just a small label that says 'Glass' when you can have a label set that show easily recognizable pictures of suitable items?" says Marcia LaFond, club manager.

The club has seen a high rate of participation due to the one-stop sorting, says LaFond, and the containers clean out with a damp rag or power wash. Beyond the training on recyclables and compostable items, the containers have provided another benefit on the course.

"We used the custom advertising panels to reinforce Royal Oaks in-house branding," she says. "Those panels are eye-catching."

Syngenta acquires DuPont's insecticide business

One year after DuPont's Imprelis herbicide was linked to widespread damage to non-target plants, Syngenta has acquired the company's insecticide business.

Syngenta picks up pest control brands Advion, Acelepryn, Altriset, Calteryx, Provaunt and Arilon, as well as other intellectual property, and some employees. Syngenta will also access the related active ingredients and formulated products from DuPont through exclusive supply and licensing agreements. DuPont will continue to manufacture and distribute products using indoxacarb, chlorantraniliprole, cyantraniliprole.

The \$125 million transaction is expected to close in the fourth quarter 2012.

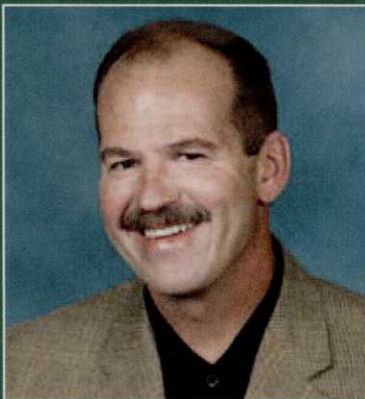
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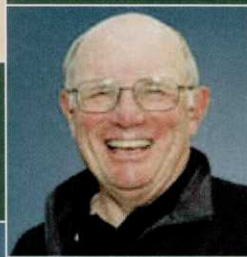
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The ratings game

by Jeff Brauer

If you delve back into the long history of this illustrious sport I'd bet that you'd find it was the construction of the game's second golf course that served as the catalyst for the first official golf course ranking.

So why do we find this process so fascinating? Because it's simple human nature to rank the things we like and enjoy – and golf is certainly no different.

Rankings, though, create a fair amount of anxiety among clubs, superintendents and golf course architects, like myself. So to get a better handle on getting a leg up on the ranking process, I tracked down Ron Whitten, Golf Digest's resident rankings guru, and asked him to enlighten us on the golf course ranking process.

What are the best and worst parts about doing these rankings?

After 27 years, I'd say the best part is helping generate interest and enthusiasm for golf course design. I love the fact that people debate our "100 Greatest" rankings, complain about them, even condemn them. We don't claim to have a perfect system, but we do offer justification for our rankings, for all to see. You may not agree with our list, but at least you know how we got there.

The worst part is informing courses that fell off our rankings. No one likes to receive bad news, and I don't enjoy delivering it. They're not losers, but they feel like they are. The worst situations are when courses fall off simply because it didn't get enough evaluations to qualify for a ranking. (We need a minimum of 10 over 8 years for Best in State, 25 over 8 years for 100 Greatest Public, 45 over 8 years for 100 Greatest.)

It's really our task, not theirs, to maintain coverage. With 1,100 panelists, you'd think that would be easy, but it's not. We have 1,600 courses competing in our various surveys every two years. Panelists are volunteers, travel and play at the own expense and timetables. It's hard to get everybody everywhere.

“Conditioning” is the one area every club can control.”

— Ron Whitten, *Golf Digest*



“The more exclusive a club, the less its membership wants to share its course with outsiders, particularly when several magazines want access.”

— Ron Whitten, *Golf Digest*



“A superintendent was reportedly fired when his course dropped in our rankings due primarily to a drop in the conditioning score – but that is rare.”

— Ron Whitten, *Golf Digest*

Another downside for me is that I have been denied a few opportunities to participate in design because Golf Digest's is policy that my involvement makes those designs ineligible for a Golf Digest ranking. At least two such courses have gone on to be ranked by Golf Digest, which shows the clients made wise decisions.

What don't most people know about the ranking process?

I'd like to think readers know a lot about our ranking process because we reveal as much as any publication about the process - 1,100 panelists judging on a 1-10 scale on seven criteria, highest score wins, etc. What clubs and architects sometimes forget is it's a magazine article. It's meant to attract readers and generate talk, even debate. I've always called it our "swimsuit issue."

How should clubs treat raters

from golf magazines?

I can only speak for Golf Digest. We ask clubs to treat Golf Digest panelists as they would any other paying guests. No special treatment. No high pressure sales tactics. Just let panelists do their job.

No club has ever been so crass as to offer payment in exchange for a ranking. We had a few instances where clubs offered inducements, like travel and accommodations, to a panelist. That's against our rules, and the club was removed from survey consideration for a while, and the panelist who accepted the offer was dismissed.

What single factor might affect a Golf Digest ratings the most?

Shot Values, since its score is doubled in our formula. However, Shot Values are either

strong or weak. Without a major redesign, it's hard to enhance shot values.

"Conditioning" is the one area every club can control. Our new definition focuses on firm and fast fairways and firm-yet-receptive greens over color. You can roll back the irrigation, install more drainage, and improve your conditioning score.

Do rankings increase memberships, dues or fees?

I've never paid much attention to memberships or fees. In the 1990's, every public course that won our "Best New Public" jacked up its green fee. That's part of the reason we instituted a "Best New Affordable" category, with a ceiling of \$50 greens fees (later \$75). That didn't keep winners from raising prices. Hey, that's business.

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Why do some courses shun ratings?

The more exclusive a club, the less its membership wants to share its course with outsiders, particularly when several magazines want access. I can understand why some clubs don't want to be considered. We abide by their guest restrictions and still get evaluations for those clubs, but it takes much longer.

What list is the most important to be on?

That depends upon a course's goal. If it's a local daily-fee hoping to attract more business, a 5-star rating in "Places to Play" is ideal. A national membership club trying to convince a multi-millionaire to join his 15th club may seek listing on America's 100 Greatest. Obviously, we consider America's 100 Greatest to be the

ultimate achievement, but there's nothing wrong with being ranked one of the "Best in State" or a "Best New Course."

Why is the Golf Digest list the best?

I'm biased, but I like to think Golf Digest's list is the most respected because we offer the most transparency. We publish category-by-category scores of all winning courses, and we base our results solely on those scores. We don't cook the books.

Golf Digest's rankings have existed since 1966 so it's the oldest, by far, among golf publications, which makes it the most recognizable to most golfers.

With almost 16,000 US courses, is a Top 100 enough? Have you considered either 200, or in current

parlance, identifying the top 1 percent?"

Our franchise is 100 Greatest, and has been since 1969 (reduced from 200 Toughest). We feel comfortable with keeping it at Top 100. It's tough, because about 250 courses can legitimately contend for our 100 Greatest, but I think readers appreciate the consistency of maintaining a 100 Greatest ranking. Another publication ranks 200, but I like to say they just don't want to make the tough decisions.

Has anyone ever gone to extremes to influence the Golf Digest rankings?

In the 1990's Oakland Hills dropped from the Top 10. When asked why, I reported that their "Aesthetics" score had dropped. A few months later, Alice Dye told me that Oakland Hills had

installed a waterfall behind their 16th green "to improve their numbers with Golf Digest." I called the superintendent, who said they installed the waterfall primarily to drain the clubhouse air conditioning, but thought it might make a neat feature. It was 800 yards from the clubhouse, and a totally artificial rock garden. It didn't improve their "aesthetics" numbers and they later removed it.

A superintendent was reportedly fired when his course dropped in our ranking due primarily to a drop in the conditioning score – but that is rare. **GCI**

Jeff Brauer is a licensed golf course architect and president of GolfScapes, based in Arlington, Texas. He is the author of GCI's "Design Concepts" column.

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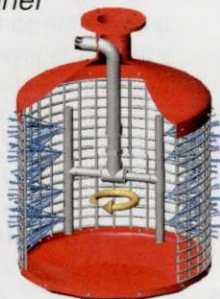
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Tim Moraghan, principal, ASPIRE Golf (tmoraghan@aspire-golf.com). Follow Tim's blog, Golf Course Confidential at <http://www.aspire-golf.com/buzz.html> or on Twitter @TimMoraghan

OH CAPTAIN, MY CAPTAIN

Preparing a course for an international rivalry is a career-expanding task, one welcomed with open arms by Curtis Tyrrell, GCS, director of golf course operations at Medinah Country Club outside Chicago. His previous tournament experience was as on-course superintendent at the Cochise Course of the Golf Club at Desert Mountain in Scottsdale, Ariz., for The Tradition, a Champions Tour event.

Tyrrell's specialty is golf course construction: He actually came from Lake of Isles (Conn.) to rebuild Medinah's other two courses, No. 1 and No. 2. Used to the deadlines common in course construction, he had a knack for managing projects with lots of moving parts. While working on No. 1 and No. 2, he had an opportunity to look "under the hood" at No. 3, the venue for the Ryder Cup, which was originally laid out by Tom Bendelow in the late 1920s. And he found many agronomic issues in need of attention.

Around the time Tyrrell came on, Medinah brought in architect Rees Jones to renovate the Ryder Cup course. Jones' directive was to re-establish the integrity of the No. 3 – to toughen it up. The members wanted Jones to redesign the relatively flat greens, make the bunkers more penal, lengthen the course with new teeing grounds, and add bunkers that would come into play from the new tees and in second-shot landing zones on par 5s.

Tyrrell attended the Ryder Cup at Valhalla in 2008, where he first met Kerry Haigh, the PGA of America's managing director of championships and business development, and the man most responsible for course set-up for the organization. They discussed the upcoming Jones renovation, as well as Haigh's goals for the course and the Cup matches.

With a little more on the line than

the average golf nut, Tyrrell awaited the naming of the captain in January 2010. A self-professed "big fan" of Davis Love the golfer, Tyrrell is now also an admirer of Love the captain. "I was a bit star-struck when I first met him at the captain's announcement," Tyrrell admitted. "But I've come to admire his outgoing nature, courteous style, and respect for the golf course superintendent. Davis really made me feel an important and vital member of the 2012 Ryder Cup team."

The two had a private chat to get to know each other better. "We talked

The Ryder Cup is unlike any other professional tournament, a fact that influences how Tyrrell and his staff have to set-up and tend the course.

about our families, golf and the set-up goals for the golf course."

Love's main focus has been the primary rough, asking for it to be shorter to provide additional shot options. He also wanted to review fairway contours, rough contours, and ways to create intermediate rough, especially around bunkers and green contours. Right now, they are planning on the intermediate being cut at 1.25 inches and the primary rough at 2.5 inches, pending final decisions just before the matches begin.

With agreement on the roughs, over-seeding began. The mix included Kentucky bluegrass, creeping red and Chewing's fescue, and gray leaf spot-resistant perennial ryegrass to enhance ball lie. Fairways also have been widened slightly.

The plan for the bunkers is to make them as firm as possible, even tougher than Jones had them. Some bunkers now wrap around greens, toughening some possible hole locations.

Jones left his biggest mark on

the 15th hole, a par four that was shortened by about 100 yards, making it potentially driveable. (It can play as short as 280 yards, but the original tee—367 from the regular men's tees, 392 from the back—has been preserved for the club's use.) But Jones also added a two-acre lake that dangerously borders the right side of the fairway and green.

The result is a strong risk-reward challenge both for club members and Ryder Cup players. And since match-play competitions such as the Ryder Cup rarely reach the 18th green, this

change didn't only improve the course but also showed strategic foresight.

While the 15th hole was under construction, 11 of No. 3's original greens, plus its main putting green, were rebuilt. Having all 18 greens conform to USGA standards gives the grounds crew more control over moisture levels and, Tyrrell says, consistency. "I'm excited that every green is the same now. The members will be able to enjoy a uniform stand of turf offering a consistent appearance and playability."

The PGA of America won't determine green speeds until after Labor Day, Haigh and Love agreeing it was important to get through the summer with healthy greens. Decisions will be made once the summer heat has passed and the Ryder Cup is in sight.

Love also didn't want to settle on green speeds and other issues until his team was set. No. 3 received a great deal of play in May, June, and July; in August, rounds were cut back to pro-

(continued on page 56)

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GET WITH




THE PLAN

An agronomic plan is the first step toward a more accurate budget and achieving your ultimate vision for turf quality.

by Bruce R. Williams, CGCS

Early on I remember hearing the old adage that “a failure to plan is a plan that will surely fail”. Such is the case with creating an agronomic plan for any golf facility. Without a plan that is written, approved and communicated it is likely that an operation is being run without a roadmap to meet the goals of the business.

Agronomic plans can be simple or complex but should include a number of basic items. All of the items in a plan require resources in terms of manpower, equipment, materials and products. The agronomic plan is the first step to developing an accurate budget to maintain the golf course at the desired quality level.



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“All too often I have found that maintenance standards are much higher than the programs and expenses needed to achieve those goals.”

MAINTENANCE STANDARDS. The genesis of any agronomic plan should be the creation of a written set of maintenance standards. These standards are set by the owners, members, or management. An agronomic plan is the bridge to provide those standards and develop a budget and calendar to accomplish those goals. It should be a collaborative effort between the golf course superintendent and those that he reports to.

All too often I have found that maintenance standards are much higher than the programs and expenses needed to achieve those goals. There's the rub. A lot more resources are required to be 100 percent weed free or disease free than allowing for a tolerance threshold of 90 percent. Each facility has its own personality, and development of agreed upon maintenance standards will go a long way to make the right fit for your type of course and the local competition.

RESOURCES. There are a number of resources that go into an agronomic plan. Typically the largest maintenance costs fall under the categories of labor and plant protectants. Fertilizer and topdressing sand are also in the same category, and each course has its own plan on accomplishing the goals set forth in the maintenance standards.

When decisions are made as to the type of mowers, collection of clippings, and frequency of topdressing, they will all have an impact on the labor expense. All of this needs to be calculated into the agronomic plan.

Equipment is another factor in the agronomic plan. What equipment do you have and what equipment do you need to get the job done?

There are a variety of labor saving pieces of equipment out there today that can save your facility money in the long run. Good superintendents can make the case for cost savings by calculating the return on investment for any and all equipment purchases.

Over the recent difficult economic times I have seen an overall reduction in equipment purchases and often see the inventory in the junk pile growing while the operable equipment diminishes. This too will have an impact on what can be included in the agronomic plan and also what practices must be outsourced at a greater cost due to a shortage of equipment.

MATERIALS AND SUPPLIES. Few golf courses operate without any expense in the areas of insecticides, fungicides, herbicides, growth regulators, fertilizers, wetting agents and topdressing sand.

So it is not an issue of whether these products are required but more of an issue of what products help you achieve your goals through your agronomic plan. Generally speaking there are a lot of products to choose from. There are also a variety of prices on products. The best advice is to use high quality products and not just the least expensive items. Do the appropriate research to verify that the products control the pests or provide the fertility for the desired period of time. One of the earliest lessons I had in school taught us to calculate the cost of a fungicide per day of control versus cost per 1,000 sq. ft. The same is true for fertilizers and other products used to create healthy turfgrass plants.

As mentioned under equipment it



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is necessary to keep a long-term capital improvement program for all golf courses. Sadly I have seen a huge cutback on capital items and as the old TV commercial would say “you can pay me now or pay me later”. Most things on the golf course have a specific time frame for their use. At some point they may require upgrade or replacement. This can extend from equipment all the way to bunkers, greens,

irrigation systems, maintenance buildings. When one knows that you are on the last couple of years before bunker rebuilding or an irrigation system replacement then it will surely affect your expenses.

Expenses go up as items age – just like your car – but certain expenses can be deferred at the end of their useful life and before replacement.

THE AGRONOMIC PLAN. Before you know where you are going... you need to know where you are at. Initial testing is the best way to analyze where Point A is as you develop the roadmap to Point B (maintenance standards and goals of the facility). The following list is a good start toward having the adequate information to make sound decisions:

- Water quality
- Soil chemistry
- Soil physical properties
- History and trends of the above tests

What are the desired grasses for your facility? Most courses that were built prior to 1970 had much fewer options for grass types and also particular cultivars of each grass. It is hard to compete with the courses down the street if you are not taking advantage of newer turf varieties that can be cut lower and have quicker green speeds, etc.

Every course should set the proper range for mowing heights of each grass type and also different playing areas and time of the year. For those courses requiring fairway mowing four days per week the cost is higher than those that opt for two days per week. With the use of growth regulators we have seen a reduction in mowing frequency and this also lessens labor costs, fuel consumption and wear & tear on equipment.

By monitoring growth regulation via clipping yield and growing degree days it takes a lot of guesswork out of fertilizer and pesticide applications. Time and materials equate to cost so proper pre-planning is like putting money in the bank.

Greens only comprise about 3 acres on an average 18-hole golf course that would sit on 100-150 acres that are maintained. So 2-3 percent of the acreage is involved in 75 percent of the shots in a round of golf. In theory each hole has the shot into the green and two putts to reach par. With an average par of 4 that means 3 out of 4 shots involve the greens. It is reasonable to assume that the inputs on this small acreage are much greater than any other part of the golf course.

Agronomic plans for greens should include most or all of the following inputs and cultural practices:

- Insecticides
- Fungicides
- Herbicides
- Growth regulators
- Wetting agents
- Fertilizers
- Rolling
- Grooming

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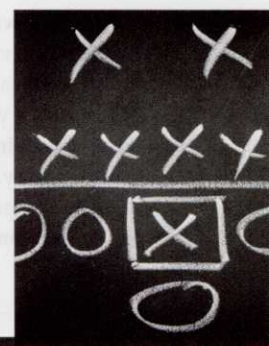
IRRIGATION. The largest single input to any golf course is water in terms of not only the number of gallons of water, but also the elements that are in that water. New greens built with materials at a pH of 7 can rapidly change to a higher or lower pH that reflects the pH of the water source. I am not sure if enough additives can ever be applied to overcome irrigation inputs especially in arid parts of the country.

In recent years there are a variety of tools that can be used daily or weekly to evaluate things such as percent of moisture in greens tracked via computer and/

or spreadsheet, evapotranspiration via a weather station, and salinity levels in the soil profile. All of these tools are used to develop a game plan for greens management and should be considered in the agronomic plan development.

FERTILIZER. Plant health is based on sufficient elements in the soil available for uptake by the plant to provide optimal growing conditions. The cost of fertilizers will only go up in the future as resources become scarcer. While timing may differ from year to year it is fairly easy to establish a game plan in advance. Know what level of nitrogen, phosphorus, potassium and micronutrients are required. And remember, all fertilizers are not created equal and let the buyer beware.

“ One of the earliest lessons I had in school taught us to calculate the cost of a fungicide per day of control versus cost per 1,000 sq. ft.”



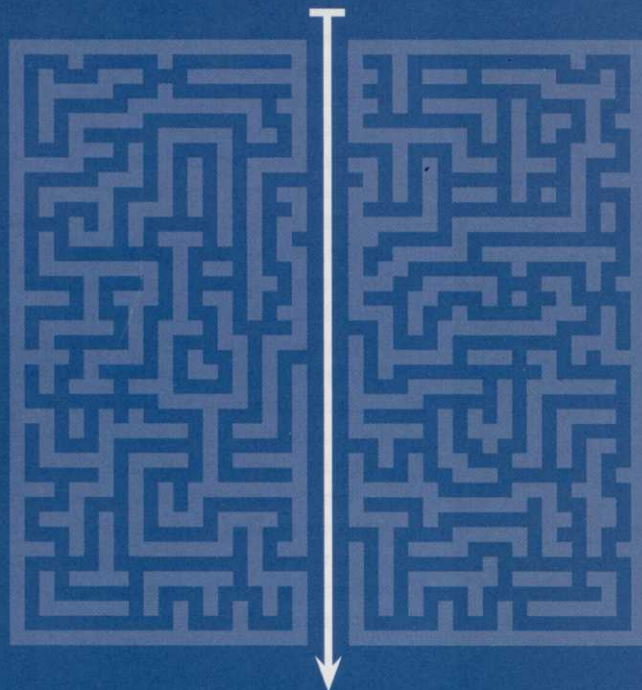
Be sure to evaluate what materials, what rates, what timing and ultimately the results achieved.

Understand the history of the turf performance. Know the soils on your property. It is likely there are pockets of clay, loam and sand all on the same property. Fertility may not be required on the same levels on different soil types. Roughs may not require

the same fertility and quality of fertilizer as golf greens.

Understand the relationship of fertility to pathogen activity. Higher levels of nitrogen enhance certain disease activity while lower levels of nitrogen can also impact the incidence of other diseases. The same is true for other nutrients. It is all about balance and timing.

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A golf course with 100,000 rounds would normally require higher fertility rates to recover from wear stress than a club with 25,000 rounds a year. Tournament stresses would also require greater inputs after an event for recovery. Aerification is a necessity but the healing process can be sped up by proper application and timing of fertilizer.

COMMUNICATING THE AGRONOMIC PLAN. Once the agronomic plan is developed then it is time to match the costs associated with it. All of these should align with the desired maintenance standards set forth by the golf facility. If the budget, the maintenance standards and the agronomic plan are not in line then goals will not be achievable with the resources provided.

“With a sound agronomic plan you have a playbook for the year ahead.”

I see golf courses with champagne dreams and beer budgets. That is an operation setting itself up for failure. Instead, be realistic with what it takes to achieve the desired results. In recent years I have seen many courses reducing their budgets but not their expectations. In fact, their expectations have risen.

Progressive superintendents utilize programmatic budgeting and get their clubs to buy into the levels of excellence they desire. Above-average budgets accomplish above-average results. However, every time a budget is scrutinized or fails to keep pace with inflation then programs suffer. Remember, it should be a joint decision as to the sacrifices that will be made when adjustments are made to an agronomic plan.

VALUE. Agronomic plans take time to be done properly. Not every superintendent has the skill set to put a proper document together. The best news is that there are a lot of resources and people that can help accomplish this process. Superintendents have many peers that are more than willing to share information. Depending on the time involved I might suggest the assistance of USGA agronomists, extension specialists, consultants, industry experts and trusted commercial representatives.

With a sound agronomic plan you have a playbook for the year ahead. This allows for proper budgeting on a monthly basis for cash flow for the facility. It allows you to take advantage of early order discounts because you know what your proposed usage will be.

Early planning allows for appropriate comparison of products that are safe and effective... and the best value for your club's dollars that are spent. Businesses operate off of business plans. Why wouldn't a golf course operate with a sound agronomic plan? The value is there if you take the time and effort to do things the right way. **GCI**

Bruce R. Williams, CGCS, is principal for both Bruce Williams Golf Consulting and Executive Golf Search. He is a frequent GCI contributor.




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

MEDINAH MEMORIES

This month, I'm looking forward to the 2013 Ryder Cup matches at historic Medinah Country Club No. 3 course. Medinah is personally historic, because it's where I first played golf.

My best friend's family were members, and I often went with them to swim, ice skate, or toboggan. When my friend took up golf, he wanted me to try it, too, which we did, starting in the summer of my 12th year.

At first, we just hit balls on the practice range, or putted on their huge putting clock near the front entry. My first divot was actually on that green, rather than any fairway, attempting to launch one clear to the other side with a huge putter swing. I sheepishly looked around to make sure no one saw me – a maintenance worker did – and learned the art of divot replacement and ball mark repair on the fly right then and there!

I was hooked on golf from the moment I stepped on the property, mostly because of the beauty of Medinah, with its mature trees, lush fairways and huge clubhouse made me feel as if this – and not Green Acres – was the place to be. (Note: That is one of those Facebook-type questions to see how old you are...)

Late one day, with the course empty, we actually attempted my first actual golf round on the ladies' course, where we could start with a three-hole loop of holes No. 1, 17 and 18. He lined me up on the first tee and stepped aside as I took my first shot – a shank that hit him in the right ankle. In pain, he set me up again, and again stood aside. My second shank caught his other ankle, ending our first attempt at "real golf" as I carried him on my shoulders back to the clubhouse.

Eventually, we played that three hole loop, then nine, and finally 18 hole rounds. We played the ladies' and then men's courses depending on traffic, but, having studied the layout of the famous No. 3 on club placemats and ashtrays, I was determined to someday play the famed No. 3.

We often played dawn to dusk in virtual seclusion, usually on Mondays, hoping to avoid guest fees. All went well for a few years, until one day, we arrived at the then 17th hole (now 13th) hole on No. 3, only to see the pro sitting in a cart behind the green. After nervously putting out, he presented us with a stern lecture and a bill for \$140 in guest fees for my three rounds that day. That was beyond the means of a 15 year old in 1975, and I tearfully took the bill home to mom and dad, who then paid for what I couldn't afford, and never mentioned it again. However, my days of free golf at Medinah ended.

Medinah forever cemented my interest in golf course design. I studied the club's placemats, with the routing and hole layouts, and continually developed hole designs on napkins (eventually, as I like to tell Pete Dye, evolving to a higher plane with drafting boards, and finally CAD). In fact, I still doodle golf holes at every chance I get, and hotel maids must wonder just what those note pad doodles may mean.

My interest in golf design caused me to call my local golf course architects (and later, first employers) looking for information and possibly a job. Around that time, articles concerning the upcoming 1974 U.S. Open there trickled out, with one crediting George

We often played dawn to dusk in virtual seclusion, usually on Mondays, hoping to avoid guest fees.

Fazio (the 1949 third-place finisher at Medinah) with changes to the course. Knowing Killian and Nugent had done those changes, I was incensed, and tried to set the record straight, with little luck.

I watched the U.S. Open there, and disliked negative comments by Palmer and Nicklaus about the sharp doglegs on 13 (now 16) and 18, and on course conditions. That mature forest always makes ultra fast US Open greens difficult in the summer heat. The course dropped out of the top ten in national rankings, and has yet to recover.

As a teenager, I vowed to design courses just like Medinah. I never did, eventually agreeing with critics that the narrow fairways, deep woods, and deep bunkers left and right of most greens made for a tough, but not great course, and certainly not a fun one. I followed popular trends towards more numerous, but shallower bunkers for aesthetic, maintenance and pace of play reasons. Still, I like to believe that the "Spirit of Medinah" (the title of their excellent club history) shows in my work, because Medinah will always be first in my heart, if not my head.

I still follow every architectural change to No. 3, most recently by Rees Jones. As a golf course architect, I know the changes Rees made for the major tournaments are right, but in my heart, I wanted the course to remain as I remember it. Perhaps, I also hope for golf itself to remain as it was when I was 15. **GCI**



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Facility of Dreams

Build it and they will come. Actually, they should come before you build it. Consult with colleagues who have already completed state-of-the-art maintenance facility projects and you'll save yourself lots of trouble.

By Jason Stahl

Matt Shaffer, director of golf course operations at Merion Golf Club, Ardmore, Pa., has some advice for other golf course operators who are looking to build a brand-new maintenance facility: buy him, Aronimink Golf Club Superintendent John Gosselin and Pine Valley Club Superintendent Rick Christian dinner and a case of beer. Take them out, show them your plans and ask them what you're doing wrong.

Other than trying to cadge free vittles and booze, why does Shaffer suggest this? Because he, Gosselin and

Christian have all built a new facility within the last four years and learned a lot in the process.

One of the things Shaffer learned was that planning and building the maintenance facility – which in his case included chemical storage, equipment storage, boardroom, dorms, living room, men's and women's locker room, break room, wash bay, fuel station and loose storage area for sand and soil – was one of the toughest projects he ever undertook. Two grow-ins, building countless greens and redoing countless bunkers didn't compare to

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The miracles of science™



Michael Vogt: It wasn't until recently that a maintenance facility was considered a steel "building-in-a-box" with a concrete floor and several rooms in one end.

the blood, sweat and tears this project got out of him. It was made especially challenging since they built the new facility where the old one used to be, which forced them to operate out of tractor trailers and tents.

"And then you're still expected to deliver the standards even though you're working like a bunch of gypsies," says Shaffer. "It took a lot of planning to figure out where, for example, the portable gas tanks and toilet facilities would go. And none of the other course maintenance activities we do stopped. You could probably build a golf course and get 15 change orders, but it would be darn tough to build a maintenance facility and have 15 or less."

The fill station, chemical storage room and fertilizer building are all self-contained. Shaffer says they ideally would have liked to have put their chemical and fertilizer facilities in a stand-alone building separate from the rest of the maintenance facility so that, in case they ever caught fire, they could burn down without taking everything else with them. But they didn't have the space. That's why courses can't cookie-cutter maintenance facility projects with one ideal design template.

"It depends on your site," says Shaffer. "Gosselin and Christian had lots of space, which makes it easier."

It's all predicated on your budget, Shaffer says, adding that it's best to back into the project.

"If the club says you have \$2.2 million, then you know what you will do and what you won't do," he says.

Even though the chemical and fertilizer facilities are not stand-alone, Shaffer says he's not worried about any catastrophes.

"We haven't had a leak yet, but it's con-

7 tips to maximum chemical storage safety

1. Have a containment area where the chemicals are stored, a curb of concrete around the base of the room or building. A water tight seal should be incorporated in the concrete placement at all concrete control, expansion and construction joints. After concrete cures a concrete sealer and elastomeric joint filler should be applied.
2. Install a controlled temperature system and adequate ventilation system.
3. Build away from the main drainage of water and surface water. A good plan is to have the chemical storage and mix/load building separate from any other structure by at least 200 feet.
4. The most desirable construction materials for walls are Consider concrete masonry units and placed concrete for wall construction materials.
5. A floor sump system should be considered to retain, reuse or dispose of chemical rinsates and unintended releases in storage areas.
6. Store dry and liquids away from each other in separate rooms. Within these rooms, herbicides, insecticides and fungicides should be segregated as well.
7. Be sure your shelving is made of non-absorbing material.

tained the whole way around and all floors slope into the building," he says. "Even if we have a fire and the fire suppression system goes off, quite a bit of water can be contained in that building before it would get loose."

Shaffer and his team have always been "fastidious" about safety and cited 291 days without a lost-time accident for any of their employees. They have a safety officer on staff and 12 licensed spray applicators.

Everyone has to move up the ranks. In fact, all current supervisors were spray techs first. Any time there is mixing going on in the two 350-gallon tanks, there is an immediate supervisor making sure all protocols are being followed and everyone is wearing the proper safety gear. Spray teams are rotated so they don't burn out and start taking shortcuts.

"I'm sure our system isn't perfect, but we're probably 90 percent there," says Shaffer.

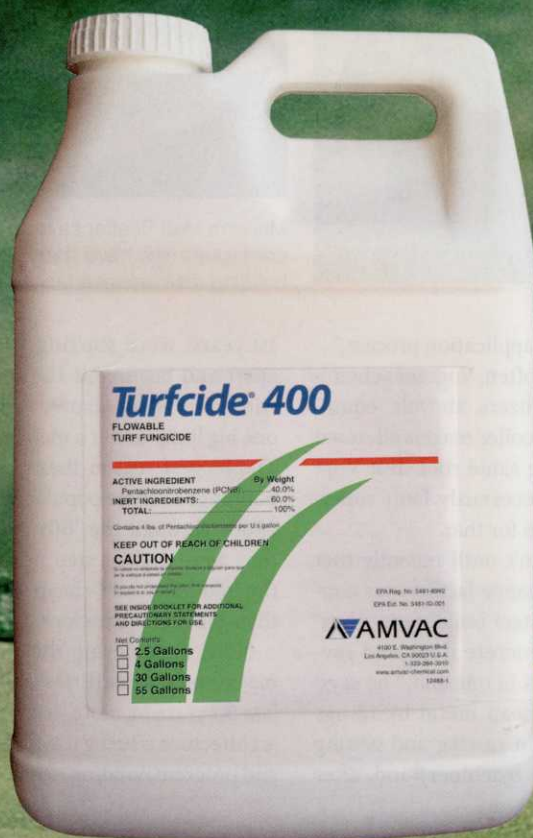
The entire new facility is self-contained. All the drains run into a central sump, and everything that flows into the sump gets neutralized before being pumped out onto the driving range.

"Any water that gets cut loose in there goes right into the floor drains, which have a pumping system, and then gets pumped into a big holding tank," Shaffer says.

The fertilizer building has a "high air exchange," where all air is exchanged every 10 minutes via high-volume, low-voltage pumps.

"You can walk in there in the dead of winter when the doors haven't been opened in three weeks and you can't smell any fertilizer," says Shaffer. "Also, you can run a forklift right into

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Marion's Matt Shaffer says superintendents need to lean on colleagues who have "been there done that" when it comes to building maintenance facilities.

our chemical room, which is nice for off loading product. And everything is behind closed doors."

It seems like common sense to segregate chemical storage away from the rest of a golf course's operations, but this is rarely seen in the field, says Mike Vogt, consultant with the McMahon Group.

"By storing all things related to chemical application in a separate area, it's much safer," says Vogt. "Plus, the superintendent is in a position to be able to control all of the moving parts of the

chemical application process."

All too often, Vogt sees chemicals, fertilizers, shovels, equipment and coffee makers all stored under the same roof. But Vogt doesn't necessarily fault superintendents for that.

"It wasn't until recently that a maintenance facility was considered a steel 'building-in-a-box' with a concrete floor and several rooms in one end," he says. "These cheap metal buildings soon began rusting and getting dented by machinery and, after

10 years, were starting to fall apart and busting at the seams with every maintenance item in one big lump under a metal roof. The biggest reason these metal buildings become popular in the 1960s through the '80s is that they were a giant step up from the 'old barn' and cheap at less than \$15 per square foot."

Now, considering that most maintenance facilities should last 50 years or more, industrial architecture is being used to plan and program buildings to specifi-

cally fit the needs of golf course maintenance. No longer are steel buildings being configured to "make do" for a cheap maintenance facility.

Vogt believes one of the best new developments concerning chemical storage safety is chemical manufacturers selling their products in large format packages.

"This packaging makes it easy to safely store large quantities of product," Vogt says. "The empties are easily recycled, and 10-gallon quantities are slightly cheaper than small format packages."

Shaffer re-emphasized the need for superintendents to lean on colleagues who have "been there done that" when it comes to building maintenance facilities.

"They can tell you if your containment area is too small, this is how big your chemical room should be, if you're going to fudge do it here not there, this is the footprint you need to park your sprayers, etc.," he says. "People who have built these before have a multitude of information that can help you." **GCI**

Jason Stahl is a Cleveland-based freelance writer and frequent GCI contributor.

Chemical storage best management practices

Store liquids away from dry chemicals. If that's not possible, store liquids below dry chemicals.

Have some type of containment. Even cheap plastic bins can be used to store chemicals on the shelves.

Make every effort to keep chemical packages dry and in their original containers with a legible label.

Look for old chemicals and get rid of them. "I can't tell you how many superintendents have old chemicals stashed in the dark corners of the building," says consultant Mike Vogt. "Many municipalities have programs to dispose of these products."

Get rid of wood shelves. The wood can become contaminated with chemicals over time; toxic waste.

Be vigilant. Keep chemicals locked when not using the specific storage area.

Breath free. Have a ventilation system in chemical storage areas.

Prepare for the worst. Have an emergency plan in place in case of fire, flood or uncontrolled release of chemicals – and be sure to educate all employees on that plan.

Documentation. Keep a separate file or a three-ring binder of labels that you have used in a separate place for reference.

Safety. Keep personal protection devices (goggles, safety glasses, respirators, dust masks, gloves, face shields, ear protection, etc.) away from chemical storage areas.

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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.

THE ART OF INFORMATION MANAGEMENT

Legendary management guru Peter Drucker said managers manage three things: anxiety, resources and information. Of those three, managing information flows among their distinct audiences may be their most challenging responsibility, requiring equal amounts of engagement, knowledge and experience.

Club communications are a potential minefield of confusion, embarrassment and inaccuracies that can have serious consequences. Too often we see written and verbal communications filled with endless, mind-numbing sentences that ramble on with no apparent point. Often without intention, communications come off as far too negative when the need is actually to inspire improved performance. We also forget that everyone doesn't know what we know. As a result, we get out-of-sequence communications that leave staff scratching their heads and wondering what they're supposed to do. Then there are those times when the communication is factual incorrect or misleading.

There are shelves full of advice dedicated to the subtle science and marvelous art of information management. While every club management professional must find his or her own style and system, here are four guiding principles that can help streamline information management in a wide range of situations.

If you're responsible for managing information up the organization ladder, remember three S's.

Be specific. Get to the point quickly and be sparse with your words. Earnest Hemingway compared a well-written sentence to a clenched fist: "Everyone knows what it means."

Keep it simple. Refine each message point to its essence. Use straightforward and professional language, avoiding jargon and unfamiliar terms.

Bring solutions, not problems. In each management specialty, the manager should be a problem-solver.

If you're responsible for managing information downstream in the organization, think of the letter E.

Offer **encouragement** in real time and in real terms. Recognize your people for their accomplishments and celebrate a job well done. Everyone appreciates – and is motivated – when recognized. Keep up the **energy**. State goals and needs in an enthusiastic and can-do manner. Let your energy lift up your teammates and staff. Set

Too often we see written and verbal communications that are filled with endless, **mind-numbing sentences** that ramble on with no apparent point.

expectations. Communicate goals and objectives clearly; set timelines so everyone understands the deadlines that accompany the milestones.

If you're responsible for informing the board of directors, use a three-step process:

1. Communicate in simple terms with sufficient background to help everyone understand what is required of them. For example, "The pump for the well is broken. Repairs require an expenditure of \$20,000. I have everything arranged for repairs pending your approval today."

2. Communicate ideas that are aligned with the vision and mission of the club and are consistent with the expectations of the board.

3. Be patient with questions and answer each one in clear, simple terms. Before moving on to another question, make sure the person who

asked the question understands your response.

If you're communicating to multiple audiences, align your messages to each audience segment and communicate with each independently.

Inform members so they understand the answer to the question, "What's in it for me?" Your members expect that you're looking out for them and their needs. Your communications should reflect your commitment to that expectation.

Inform peers of issues, opportunities and needs with clarity and simplicity. Recommend solutions without dumping your problems on others. If you need help, say so.

Inform subordinates with respect and understanding. Staff members depend on the honesty, concern and integrity of their bosses. If their request or need goes beyond your authority, say so. And commit to making sure the request will be communicated to the person who does have the authority to make a decision.

When communicating in writing, be aware of who will be reading your messages. Aim for the center of the audience, keeping in mind that those who receive the message first and easiest – as well as those who receive it last and with the most difficulty – represent the edges of the classic bell-shaped curve. Ask a colleague or a member of your intended audience to review the message before it is distributed to see if it is potentially confusing or might be misinterpreted.

Managing information is an endless task. Recognizing communications as one of your most important responsibilities and approaching the job with diligence and attention to detail can help each memo, letter and report deliver its intended message and move your audience to the desired behavior or outcome. **GCI**



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Getting what you're **worth**

GCI's Bruce Williams explains how to accurately assess your value and calculate better compensation.

Defining value

Several of the key factors for assessing value are:

- Education
- Experience
- Responsibility
- Past performance
- Current compensation



by Bruce R. Williams, CGCS

One of the most important calculations you may ever make is the one that provides you with the correct information to ensure you are or will be compensated fairly for your level of responsibility, experience and expertise. Typically this is a two-step process. The first step is for you to assess your value to the specific job you are in or applying for. The second step is to develop a solid checklist that provides the basis for discussing or negotiating compensation.

Knowledge is power and any discussion regarding compensation should be backed up with an appropriate amount of facts. Those individuals who are well prepared surely fare better in these types of discussions.

What are you worth?

The easiest answer to that question is "Only what the employer is willing to pay you." However, most employers want to compensate you at a rate that is fair and reasonable. It is just a matter of providing information that will support what is fair and reasonable.

The Golf Course Superintendents Association of America (GCSAA) has done a number of extensive surveys regarding compensation. They clearly show that there is a differential between base compensation for different levels of education, size of facility managed, completion of certification, etc. One of the interesting things about statistics is that they are just numbers until you take the information and make it fit your set of circumstances.

When I work with clubs or individuals I try to take the statistics that best represent similar positions in a similar geographic location. For example, golf courses in Chicago tend to pay more for the northern suburbs than they do for the south suburbs. This could be very valuable information when negotiating compensation. Please note that I am not saying that the northern suburban clubs are better than the southern, but the value is dictated more by the cost of home ownership than anything else.

In recent years GCSAA has developed compensation information by state, chapter and sometimes metropolitan area. Chapters often have their own surveys and may get an even better response than the GCSAA survey. I had participated in surveys done by a number of top 25 clubs and multiple course clubs when I was at The Los Angeles Country Club so that I had the most accurate reflection of what other similar facilities were doing.

Many surveys offer average or median compensation level information. Be sure you know how your club is positioned in the golf industry in your area. If the facility is ranked in the top 25 rankings in your state then median compensation would not be a fair comparison. It is highly likely that you would fall into the top 10 percentile. If you are certified and have a bachelor's degree you would fall into higher compensation levels than the median survey information unless you use those specific categories.

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“ Knowledge is power and any discussion regarding compensation should be backed up with an appropriate amount of facts.”

in the industry the greater your value in general. Surveys show the greatest earning years are from the age of 30-58 in our business. There is no doubt in my mind that experience translates into value for the employer. It is just a matter of presenting the stats and coupling why that increased value is there.

Employers place a high value on education. They also place a high value on certification. Some of our peers may not have had the good fortune to receive a formal education. Never fear as I counsel my clients on providing a transcript of their continuing

education. Employers love to see a lifelong commitment to continuing education no matter what previous education you have had. All education is not defined by college credits or CEU's but can also be attained through various leadership positions, presentations made, articles written, etc. Consider this as a part of the value you bring to the facility.

What is the responsibility level of a specific job? Typically the more people you manage, the larger the budget you manage, higher staffing levels, and areas of responsibility will help you to establish the value of a job.

Calculating your compensation

Base compensation can be calculated from a variety of resources. Here are a few that I utilize when working with clients:

- Comps of similar jobs
- Surveys
- Financial condition of the facility
- Positioning among other key management staff
- Value of the golf facility to the overall business
- Potential to improve the property
- Scheduled capital improvements
- Proven savings from past positions

With each of these skill sets an individual needs to relate how those skill sets will provide the employer with value. I always prefer to utilize hard numbers of how these skills have resulted in savings (value) for previous employers.

So, does current compensation matter?

It depends. For those assistant superintendents who are accepting a first superintendent job offer I often hear that the employer is offering the individual a 25 percent or more pay increase. Actually I believe that is an unfair statement as the person is taking on far greater responsibility, will have many more hours on the job and significantly more pressure.

The situation is similar to when an individual is hired to manage 36 holes or take on regional responsibilities within a management company. That person has far greater responsibility and should be compensated accordingly.

Previously, I discussed the methods to utilize surveys and develop comparative information from similar golf facilities. Make sure your numbers are correct. If any small items are not found to be credible then it takes away from your discussion or negotiation.

I am often asked how one goes about finding the information of comparative golf facilities and also reliable data on compensation for other superintendents in the area as well as the professional or manager at that facility. Be aware that it takes some time to do this. Most of what you would be looking for is on the internet. Of course you can utilize a qualified career counselor to facilitate this for you. Golf facilities that are owned by governmental agencies are required to provide full disclosure of their compensation as well as income and expenses. By going to the website of the city, county or state you will easily find this information.

Accessing information from private clubs can be a little bit more difficult. Suffice it to say that there are several websites that will allow you to gain access to information in the IRS 990 form. Several years ago a new requirement for reporting was initiated and non-profits must now provide this information. It contains budget/expense information as well as salary and total compensation for key employees. You should be able to find out what the key economic indicators for each facility and this allows you to speak intelligently to the topic as it relates to compensation.

I had mentioned we should all know what other key management positions pay at our facilities. Seldom do these people share that info, but through the 990 Form you can get a good feel for how you are positioned. Remember that this knowledge guarantees you nothing but a smart person would know that they will likely be in a similar range to the other key employees of the facility.

All too often superintendents do not take a broad look at the overall financial position of the golf facility. Is the facility profitable? What is the trend for the volume of business? What has the trend in golf course expenses been in recent years? All of this figures in to the ability to receive fair and adequate compensation. If a facility is trending negatively and making payroll is difficult then we all have to realize that superintendents can be a big part of the solution to gain profitability. Cost reduction is a necessity now more than ever before.

Timing is everything when compensation is concerned. I encourage keeping files on this information on a year-round basis. Access surveys and info as the year goes on. It will avoid a crunch time before your annual review or contract negotiation. For those entering a new job it



Don't sell yourself short

Many superintendents manage more than a golf course. They manage some or all of the following:

- Tennis courts
- Paddle tennis courts
- Croquet courts
- Swimming pools
- Driving range
- Cart fleets
- Equipment fleets
- Building engineering
- In-house construction
- Project management
- Wastewater treatment on site
- Aquatic vegetation
- Landscape design and construction
- Director of golf (in some cases)
- General manager (in some cases)



would be quite helpful to keep a file with general information you can develop into more specific information for a single property.

Compensation discussions are best if done when it is prime time at your golf course. My value at a golf course in Chicago was perceived at a much higher level in July rather than December. Discussions should take place with the appropriate decision makers. It is not always the person that signs the checks that has the power to analyze your value or calculate fair compensation.

If you find that your compensation is out of whack with comparative golf facilities then you need to develop a strategy to attain fair compensation. It is unrealistic to look at pay increases of double digits in this economy. However, if current compensation is way

below market valuation then think of a multi-step plan to get to the right amount. That plan must be based on measurable goals that bring increased value to the facility for what you do.

Nobody wants to leave any money on the table when entering a new job. Anyone taking a job at below market value later realizes they may never be able to make up the difference with cost of living increases. I urge everyone to do their homework. If the thought of doing this analysis on your own scares you, then work with people who know how to create a win-win outcome. **GCI**

Bruce R. Williams, CGCS, is principal for both Bruce Williams Golf Consulting and Executive Golf Search. He is a frequent GCI contributor.

“Many surveys offer average or median compensation level information. Be sure you know how your club is positioned in the golf industry in your area.”

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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.

DON'T MISS AN OPPORTUNITY

The majority of the U.S., according to some experts, is an unprecedented drought. The U.S. Drought Monitor indicates that most of the country is experiencing either abnormally dry conditions or moderate, severe, extreme or exceptional drought. The Drought Monitor is updated weekly on Tuesdays (drought-monitor.unl.edu/). The monitor also shows history, allowing you to see how the drought has expanded and worsened over the last 6 to 12 weeks.

On top of the “non” winter, many superintendents had to start their systems early and dip into back-up water supplies before the onset of a hot and dry summer. However difficult this year has been, there may be a silver lining and an opportunity that shouldn't be missed.

Droughts reveal irrigation deficiencies. Superintendents who believe they have adequate irrigation systems find out they don't and irrigation systems that aren't very good to start with end up being very difficult to deal with. In a drought, an irrigation system requires more maintenance – in both labor and material – more attention, and more management.

If your water supply is limited, then you have probably lost sleep this summer. If you pay for your water, then you've had to review and rearrange your budget on a weekly basis. And if you are on a potable water supply, then you may be subject to water restrictions.

The good news is that all droughts end at some point, but unfortunately usually in dramatic fashion which could cause you even worse problems.

For example, the 10-year Australian drought ended in 2011 with major flooding causing wide-spread havoc and death. So, take advantage of the drought. Think of it as a learning experience about your irrigation system.

People have short memories, especially members. In two years – when your golf course is completely green – no one will remember how dry it was and the turf's condition or appearance during the drought. Therefore,

“If you already had irrigation issues, then this summer's drought just compounds them. However, it does allow members to see the issues you have. It's difficult to showcase problems when it is raining on a regular basis.”

document the problems that drought caused and how poorly your irrigation systems performed. If you document the problems, then when the time comes for you to pitch any type of irrigation system improvement you'll have the documentation to jar your board's and members' memories.

Documentation needs to be detailed and factual. Nothing beats pictures – low pond, exposed intake piping, dry spots around the course. If it's really bad, get in the air and take some aerial photos.

You also need to collect data. How much water are you using compared to past years? How much more are your water costs than in past years? How much longer are you irrigating than in past years? Is your pump station operating longer? Look at your

electric bill as compared to previous years. Are you buying more irrigation material? Document how much labor is being consumed by irrigation repairs. Has your hand watering increased from watering hot spots, because you need to be more judicious with your water use, or is it the only way you can keep critical areas alive?

In a drought water quality becomes an issue. Hopefully you have a baseline water test from a normal year.

As water flows through streams and rivers, and ponds draw down, water quality can deteriorate. Concentrations of various contaminants increase as there is less dilution. Test your water and see if it is changing. If it is, then how is that affecting your turf quality? Document it!

If you already had irrigation issues, then this summer's drought just compounds them. However, it does allow members to see the issues you have. It is hard to showcase irrigation problems when it is raining on a regular basis. Use this opportunity to your advantage. Point out the deficiencies in the irrigation system that the drought clearly illustrates. You may not get to use the information immediately, but you will have it when you need it. **GCI**



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5 HIRING MISTAKES TO AVOID

Superintendents can take the wrong turn in the pursuit of the right job candidate. GCI's legal experts offer some sound advice on hiring.

by Christopher G. Elko, Esq.
and David B. Cronheim, Esq.

The downturn in the job market has led to an increase in employment-related litigation. In fact, not only have employees and former-employees targeted companies with a wide array of lawsuits (wage and hour claims, wrongful termination claims, and discrimination claims), but even rejected applicants are getting in on the action, and employers within the golf industry are not immune.

Golf course superintendents focus on turf, not employment law...and rightfully so. However, superintendents charged with recruiting and managing their own staff must be aware of the risks inherent in the hiring process. Often, that process can be quite informal. There is nothing wrong with informality, but superintendents should guard against overly casual approaches that can ultimately lead to liability; the line between informal and unlawful is narrower than many realize.

In the face of these growing risks, superintendents should remember that they

are part of a team, and the best way to avoid lawsuits is to work with their general manager to develop strong published policies and promote self-aware hiring practices. To that end, we have identified below a few of the most common pitfalls that plague superintendents in their hiring practices.

Interview Questions – Know Your Boundaries

Interviews are strange creatures and employers can often talk their way into trouble by trying to fill an awkward silence during an interview. Keep in mind also that interviews don't always take place between people wearing suits and meeting in a corner office. The rules governing interviews apply with equal force to a quick chat with an applicant beside a mower at 6 A.M.

Federal laws – such as Title VII, the Americans with Disabilities Act (“ADA”) and the Age Discrimination in Employment Act (“ADEA”) – all prohibit employers from considering certain characteristics in the hiring process. During an interview, the interviewer may not ask questions about an applicant's race, religion or sexual orientation. These types of prohibited inquiries are often familiar even to non-lawyers. However, even seemingly innocuous questions or small talk can inadvertently create liability. For example, an employer may not inquire about an applicant's marital status, whether they have children or whether they intend to have children. Such questions create serious risks for the employer. Similarly, a polite discussion about an applicant's health could intrude on protected confidential information. However, given that golf course maintenance



Key points

The rules governing interviews apply with equal force to a quick chat as they do to a one-on-one sit down.

- It may be unlawful to pass over an applicant based on information gathered from social media sources.
- It is critical that employers collect a candidate's proper documentation.
- Check to see if your state requires you to inform new hires in writing of their designated pay date, rate of pay, and overtime rate, if applicable.
- It's important to determine what type of employee you're hiring – ie, salaried vs. hourly; at-will vs. contract.

is physically strenuous work, a superintendant is entitled to ask questions that relate to necessary job requirements, including whether the applicant has the physical ability to perform the work.

Social Media – When Less Is More

Over the past few years, social media platforms have transitioned from a technological fad to a ubiquitous communication tool utilized by many of your potential employees. It is exceedingly easy to Google an applicant and, in a few seconds, uncover a wealth of information about that individual's personal and professional history. Curiosity is natural, but it also killed the cat.

Employers in search of extra information about their applicants are becoming more and more likely to find a lawsuit instead. As discussed above, certain applicant characteristics are off-limits when determining whether an applicant is suitable.

Once an employer's Internet search reveals an applicant's religion, marital status or genetic affliction, the employer cannot unring the bell. It is stuck with

that information. In any ensuing litigation for discriminatory hiring practices, the onus will be on the employer to explain how those characteristics did not factor into the hiring decision. Moreover, several states (such as New York, California and Colorado) have laws that prohibit employers from taking adverse action based on lawful off-duty conduct. So, if you stumble across social media evidence of an applicant drinking, smoking, or campaigning for a cause you do not support, it might be unlawful to pass over that applicant based on that information. Employment counsel can advise on the best way to use an Internet search without incurring liability, but when in doubt, a superintendant's best bet is not to let their curiosity get the better of them.

Air-Tight Hiring Procedures

Even employers that hire employees on a regular basis fall victim to simply “winging it” when it comes to progressing through the hiring process. It is critical that employers collect the proper documentation. For example, failing to check an applicant's immigration status and then sub-

sequently hiring an illegal alien can be costly. Repeat offenders can be liable for up to \$10,000 per illegal employee.

From I-9's to W-2's and any state-specific documents, the hiring process can be frustratingly complex and untangling that paperwork can be the last thing a superintendant needs to add to a busy day. Consistently following a system is the key to avoiding liability. Don't be afraid to ask your GM to provide a hiring checklist. If the GM won't handle the paperwork, then the superintendant should have that checklist handy to make sure nothing gets skipped. By establishing a solid checklist, an employer can face a lawsuit or even an audit with the confidence that they have covered all of the necessary bases.

Know Your Notice Requirements

Last year, the New York State Legislature passed the Wage Theft Prevention Act, which requires employers to inform new hires in writing of their designated pay date, rate of pay, and overtime rate, if applicable. In enacting this statute, New



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ALUMNI UPDATE

“The SBI was one of the best educational experiences of my career. The lesson most valuable and useful to me was the block of sessions revolving around employee morale, and learning to understand the differences between generations. One of the big challenges as a superintendent in the past few years has been dealing with declining employee morale (in the atmosphere of minimal pay increases), and attracting different new employees to our teams. Many superintendents believe employee relations is nothing more than a ‘crew carne asada’ once a month. There is so much more to understanding each employee and what actually motivates them. Learning this and understanding your employees will lead to stronger teams, better retention and ability to recruit. We have taken much of that information and used it to change our operation here at Coto De Caza.”



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WORK FORCE



Legal note

Some states and cities have local laws that are even more restrictive than the federal law, and you should consult an attorney when determining acceptable hiring practices in your jurisdiction.

York became just the latest in a long line of states that require employers to provide such notice to employees. Other states with similar laws include Connecticut, Colorado, Delaware, Illinois, Maryland, and Pennsylvania, just to name a few. Some states require employers to post certain payroll information in the workplace. Contact an attorney for more advice on the notice requirements for your jurisdiction.

Don't identify "who," identify "what"

So you have finally finished the hiring process. Now what exactly do you have in your new employee? The first question to ask is whether they're a contract employee or an "at-will" employee? Most employers prefer "at-will" employees, which means they can fire their employees for any reason or no reason at all. However, some states have found that language within an employer's handbook can create an employment contract that negates an employee's "at-will" status and ends the employee with added rights against termination. Does your course have an employee handbook or policy manual? If so, be sure to follow the handbook's guidelines. Practice trumps policy, so if something looks great in writing, but is not followed in practice, your policy will not protect you.

Almost all employees hired by superintendents will be "at-will" employees, but digging down a little further, an equally important question is whether the employee is a salaried or hourly employee. The distinction is important because hourly employees are entitled to overtime for hours worked beyond the limits set forth by state and federal laws. Claims for unpaid

overtime are common.

For example, in January 2012, a New Jersey golf course was sued in federal court by a former employee who claimed that he had worked 65-70 hours per week, but was classified as a salaried employee. He is now seeking unpaid overtime wages. The club's liability could exceed half a million dollars for that employee alone. If the club used the same allegedly impermissible practice for more employees, the total exposure could be far greater.

As this case demonstrates, simply calling an employee salaried does not make it so. In fact, many states have instituted task forces to crack-down on the misclassification of hourly employees as salaried employees. These task-forces include a variety of state agencies sharing information and conducting audits based on tips from disgruntled employees, or sometimes randomly and for no reason at all. That said, correctly classifying employees is also good business.

By hiring the correct number of hourly employees rather than relying on erroneous designations designed to skirt the law, a superintendent can cut down on costly overtime paid to their greens crew. Spending less is a surefire way to make any greens chairman smile. **GCI**

Christopher G. Elko, Esq. and David B. Cronheim, Esq. are attorneys at the law firm of Norris, McLaughlin & Marcus, P.A. Mr. Elko is a member of the firm's employment group specializing in labor relations and wage and hour issues. Mr. Cronheim serves as general counsel to Twin Brooks Country Club in Watchung, N.J. and is the author of the golf law blog Tee, Esq.

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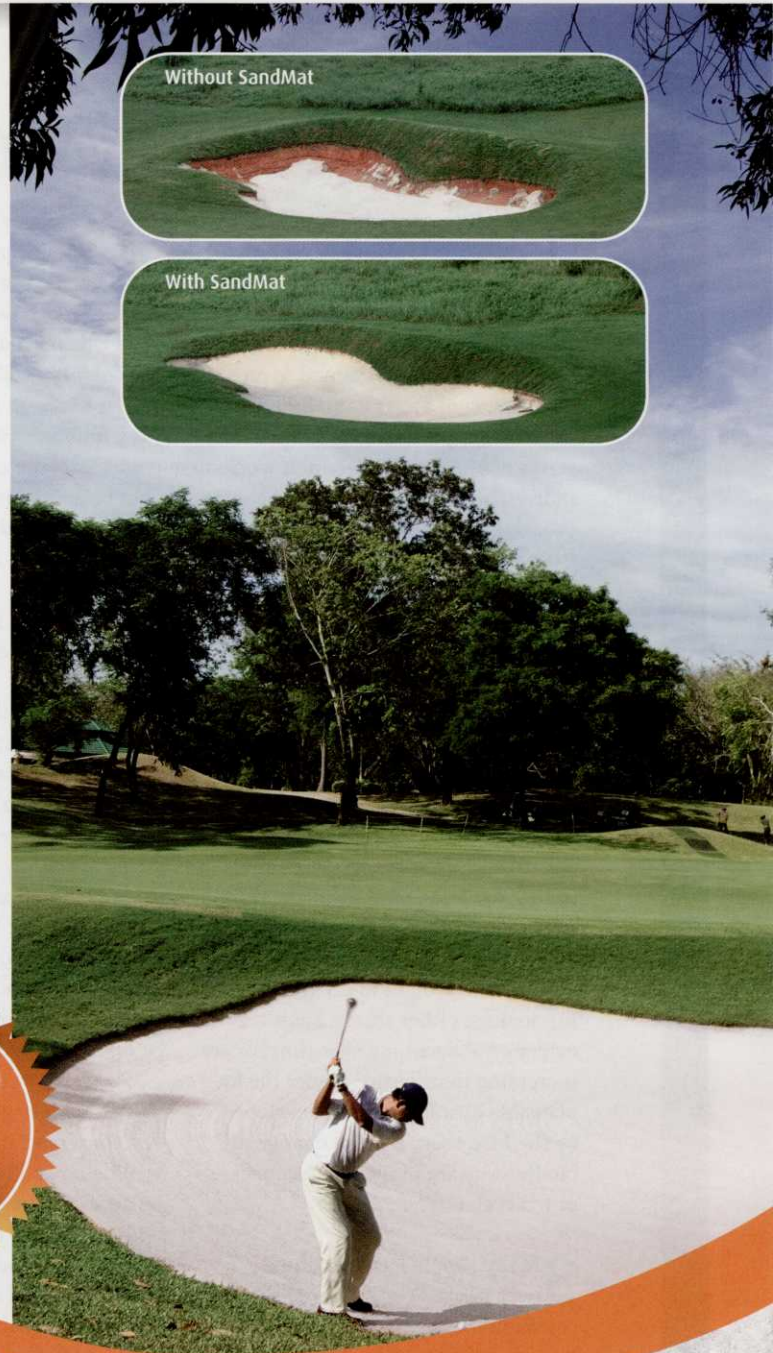
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BECOME CONSERVATION MANAGERS

The Millennium Ecosystem Assessment (MA) was carried out between 2001 and 2005 to assess the consequences of ecosystem change and to analyze ways to enhance the conservation and sustainable use of ecosystems and their contributions to our wellbeing. The MA responded to information requests received through the Convention on Biological Diversity and other international conventions and is designed to meet the needs of other stakeholders, including business, civil society, and indigenous peoples. It has been nearly 8 years since the MA was produced and distributed. The key findings still hold true, only the status of biological diversity is worse than it was a decade ago. While working on individual sites – such as a golf course – might be a fine idea, this site-by-site approach is not getting the job done. We must link individual landscapes and work from a regional perspective. Here is a summary of the MA 2005 findings.

1 Biodiversity benefits people through more than just its contribution to material welfare and livelihoods. Biodiversity contributes to security, resiliency, social relations, health, and freedom of choices.

2 Biodiversity changes due to human activities were more rapid in the past 50 years than at any time in human history, and the drivers of change that cause biodiversity loss and lead to changes in ecosystem services are either steady, show no evidence of declining over time, or are increasing in intensity. Under the four plausible future scenarios developed by the MA, these rates of change in biodiversity are projected to continue, or to accelerate.

3 Many people have benefited over the last century from the conversion of natural ecosystems to human-dominated ecosystems and from the exploitation of biodiversity. At the same time, these gains have been achieved at growing costs in the form of losses in biodiversity, degradation of many ecosystem services, and the exacerbation of poverty for other groups of people.

4 The most important direct drivers of biodiversity loss and ecosystem service changes are habitat change,

climate change, invasive species, over exploitation, and pollution.

5 Improved valuation techniques and information on ecosystem services demonstrate that although many individuals benefit from biodiversity loss and ecosystem change, the costs borne by society of such changes are often higher. Even in instances where benefit and cost knowledge is incomplete, the precautionary approach may be warranted when the costs associated with ecosystem changes may be high or the changes irreversible.

6 To achieve greater biodiversity conservation to improve human well-being and reduce poverty, it will be necessary to strengthen response options that are designed with the conservation and sustainable use of biodiversity and ecosystem services as the primary goal. These responses will not be sufficient, however, unless the indirect and direct drivers of change are addressed and the enabling conditions for implementation of the full suite of responses are established.

7 Trade-offs between achieving the 2015 targets of the Millennium Development Goals and the 2010 target of reducing biodiversity loss are likely, although there are many potential synergies between the various

internationally agreed targets relating to biodiversity, environmental sustainability, and development. Coordinated implementation of these goals would allow the consideration of trade-offs and synergies.

8 An unprecedented effort would be needed to achieve by 2010 a reduction in the rate of biodiversity loss at all levels. (*This goal was not met.*)

9 Short-term goals and targets are not sufficient for the conservation and sustainable use of biodiversity and ecosystems. Given the characteristic response times for political, socioeconomic and ecological systems, longer-term goals and targets are needed to guide policy and actions.

10 Improved capability to predict the consequences of changes in drivers for biodiversity, ecosystem functioning, and ecosystem services, together with improved measures of biodiversity, would aid decision-making at all levels.

11 Science can ensure that decisions are made with the best available information, but ultimately the future of biodiversity will be determined by society.

So, what does this mean for superintendents? It means we need to walk the walk of conservation management for the good of the individual courses we are responsible for, and we must see beyond our individual borders and encourage golf outsiders to follow our lead. We must think about watersheds and all the various land uses within that region and make connections with the people, companies and municipalities who manage them.

This will be great for the game of golf, but critical to the future of our environment. **GCI**

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“The effluent is clean by most standards, but we are a little concerned about sodium, chloride and bicarbonates.”

— Rick Owens, Laurel Hill Golf Club

by David McPherson

Laurel Hill Golf Club really doesn't care what side of the political fence you're on. The golf club in northern Virginia recently tapped into the Norman M. Cole Jr. Pollution Control Plant Water Reuse project – part of the federal aid program and coordinated with and permitted by, the Virginia Department of Environmental Quality and other local agencies; it is also partially funded through the American Recovery and Reinvestment Act. This hefty H₂O handout was a government gift the six-year-old course in Fairfax County, Va. could not refuse.

With water conservation top of mind in Washington and water levels in the nearby Potomac River and Chesapeake Bay an issue, this project was a win-win for everyone. It was good for the environment, good for the County, good for the federal government, and most importantly good for the golf club as it gets a relatively clean water source at 75 percent of what they were previously paying.

“The water authority gets credit for not dumping into the Potomac River and eventually the Chesapeake Bay as everyone is very concerned about the health of the Bay,” says Laurel Hill Superintendent Rick Owens. “We knew we weren't going to have enough water from the get-go since the irrigation lake we had is not big enough and permit issues prevented it from being enlarged. So this project is a very good thing for us.

“You can debate the political merits of the [government's] stimulus package all you want, but as a county-owned golf course, we didn't have to pay for that effluent line coming our way, other than a few expenses to hook it up ... so it was a windfall.”

While the summer of 2012 is the first full season the course has used effluent water, results of extensive testing have already shown no ill effects.

“The effluent is clean by most standards, but we are a little concerned about sodium, chloride and bicarbonates,” Owens says. “It is also written into the contract that the County will pay for us to buy gypsum if needed, which helps precipitate out the salt. For example, if we buy \$10,000 in

gypsum that comes off the top of our water bill.”

Laurel Hill Golf receives the effluent via an eight-inch line coming from the water treatment plant, which is located about five miles away. The line dumps the reclaimed water into the club’s wet well in its pumping station. The wet well has a check valve going out into the lake, so water can’t go out into the lake.

“It operates on a sensor,” Owens explains. “If we get down to a low level in our pond, then the reclaimed water starts dumping into the wet well and another valve ensures we don’t pull water out of the pond anymore. Reversely, we can shut off the flow of effluent if we have enough lake water.”

With a dry summer, the lake level is way down; Owens says

odds are they will use mostly reclaimed water for the rest of this season. The Water Reuse Project will provide up to 24 million gallons of treated reclaimed/reused water to irrigate not only the golf course, but also the baseball field at Lower Potomac Park. According to Owens, there is no chance this water source will dry up anytime soon.

“There will always be plenty of water,” he added. “It’s a treatment facility for Fairfax County, which has one million people and is steadily growing, so I don’t think that will be an issue.”

While many clubs consider switching to effluent water for the environmental savings alone, the set-up costs are often an issue and an expense too great to overcome. Just ask Doug Heinrichs.

Catching up with Heinrichs,

CGCS, at Montreux Golf & Country Club (the host of the PGA TOUR’s Reno-Tahoe Open) he says water management is one of his biggest challenges. Since Montreux sits close to 6,000 feet above sea level, all their irrigation water comes from a nearby mountainside creek. A mild winter that saw only four to five inches of snowfall compared to an annual average of six to ten feet, and the creek is at the lowest level he has ever seen in his 14 years at the Jack Nicklaus-designed course.

“I haven’t had to cut back to the point where we are losing turf, but I’ve had to be more prudent than ever this year managing our water,” Heinrichs says.

Faced with this lack of water, is effluent an option the seasoned superintendent would consider

in the future?

“We looked at it a few years back, but it’s not cheap to convert to effluent,” he commented. “We are at nearly 6,000 feet so you have to get the effluent up here ... that alone is very expensive. If it was readily available next door, it might be a different story. People think effluent water is free ... it certainly is not.”

Getting back to Owens, luckily for him, the effluent was almost free. There were no installation costs for putting the line in other than a few incidental expenses. While this is the first summer the club has been irrigating with reclaimed water, the superintendent is already seeing significant savings.

“For the water treatment plant our cost is 75 cents on the dollar for what we were previously pay-

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ing for the treated water,” Owens says. “In a dry year, we can easily buy more than \$100,000 of water, so right there that’s a \$25,000 savings.”

EFFLUENT EVERYWHERE IN THE SUNSHINE STATE. Kevin Sunderman, superintendent at Isla del Sol Yacht & Country Club in St. Petersburg, Fla. is also a fan of using effluent water. He has no choice since that’s the only irrigation source he’s had available at the trio of courses in the Sunshine State where he’s worked for the past decade.

Because reclaimed water is all he’s used lately, Sunderman says it’s hard to compare the costs of reclaimed water versus other water sources. With no irrigation lake, well, or potable source available, Isla del Sol sources its

water directly from the city’s treatment plant.

“We have pumps that boost up the pressure for use on the golf course,” he explains. “The lakes are not an option because we are on Barrier Island, so we would have a lot of salt content in our lake water.”

Avoiding a water source high in salinity is one of the main reasons Sunderman says they use effluent. Overall, the quality of their reclaimed water is good, but it varies week-to-week.

“It has a lot to do with how much it rains and how many people in the area are using their supply because in the wintertime there are a lot more people here flushing toilets, etc. While in the summer, there are not as many people here, so it doesn’t have as much impact on our supply.”

Bicarbonates and salts are the two major issues the course faces when it comes to the quality of the reclaimed water. To combat this, they flush their soils with gypsum and spray the course with other flushing agents to knock the sodium off. The course also get traces of nitrogen build up from time to time in their effluent water – about a pound of nitrogen per 1,000 square-feet of turf in a year.

Sunderman says they pay approximately \$30,000 per year for their effluent water, plus an additional \$5,000 to treat the soils.

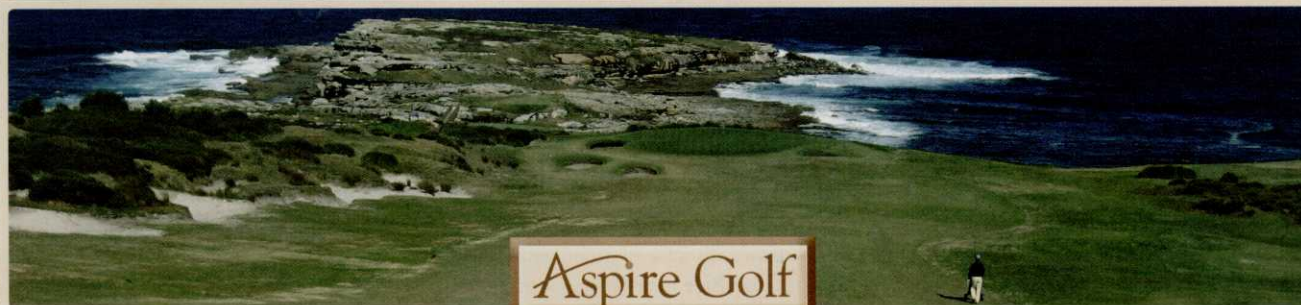
“The cost is better than spending nothing and not getting any water, so we are lucky to have that option,” he says. “Potable water would be much more and we would have restrictions on our use. If you don’t have a water

source, or if it is an unreliable source, effluent is a great option. Certainly, in terms of the environment, probably a better option than if you are getting potable water from lakes. We only have so much good water to go around on this planet.” **GCI**

David McPherson is a Toronto-based freelance writer and frequent GCI contributor.

For more online

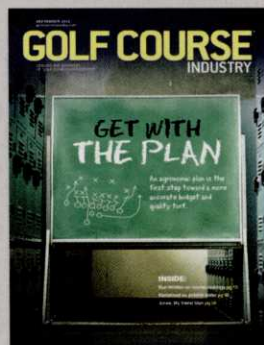
For an outline of the costs and maintenance practices necessary to manage reclaimed water, enter bit.ly/RYP35d into your Web browser for article published in the Green Section Record: “A Step-By-Step Guide For Using Recycled Water,” authored by USGA agronomist Pat Gross.



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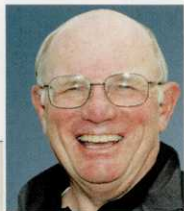
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Monroe Miller is a retired golf course superintendent. He spent 36 years as superintendent at Blackhawk Country Club in Madison, Wis. Miller can be reached at groots@charter.net.

MY PILGRIMAGE TO ST. ANDREWS

It was 30 years in the making – a pilgrimage to Europe to visit the home of my ancestors.

This was the summer. My 42-year-old daughter – a language teacher who lived in Europe for two years -- joined us to serve as our driver and tour guide. This allowed Cheryl, my wife, and me to focus on our core mission – genealogy.

And it was a success. We visited the Foulis Castle near Inverness, Scotland, the ancestral home of the Clan Munro (where my first name comes from). We spent three days in St. Andrews, Scotland. Those days were, in a way, part of our genealogy effort. I left St. Andrews with a keen sense of the profession that was mine for 40 years. Really, it was an opportunity to get close to Old Tom Morris.

St. Andrews is a small town, medieval in appearance, and easy to walk. We stayed at the Albany House hotel, right across from St. Andrews University, the place where Prince William met Kate and the institution he calls his alma mater. The walk to the golf courses on one end of town was short, and on the other end the Cathedral, the St. Andrews Castle, St. Rule's Tower, the cemetery and the museums were even closer.

We spent hours at the British Golf Museum and were welcomed by the same statue of Old Tom Morris that welcomes you to GCSAA's Lawrence, Kan. headquarters. Museum admission is free on Sundays, the same day the Old Course is closed and filled with walkers enjoying it as a park. We walked the Old Course backwards and learned a lot.

For example, I understand now how it is possible for 18 holes of golf to have only 11 greens. The double greens are enormous! I paced a couple of them and roughly calculated the areas at just under an acre. Imagine

mowing straight lines over those lengths. I was expecting all fescue grasses, but I saw a lot of *Poa annua*. No surprise – it was cool and rainy and wet while we were there. The courses were a little greener than I expected, likely due to the weather. During our visit, we only experienced one day above 70 degrees.

It was fun chatting with crew members who were working and mowing on Sunday. Everyone was friendly, a common trait of the Scottish people.

We sandwiched our trip before the London Olympics and after Queen Elizabeth's Diamond Jubilee celebration. To celebrate Victoria's Diamond Jubilee, St. Andrews opened its third course in 1897 and named it "The

...I understand now how it is possible for 18 holes of golf to have only 11 greens.

Jubilee Course." I wanted to see it for that reason, and because Gordon Moir, St. Andrews' director of greenkeeping, has his office near there. Gordon was a wonderful host, friendly and a great conversationalist. Mindful of his hectic schedule, I took a few minutes to tour his shop and to introduce him to my wife and daughter.

We took time to see The Himalayas Putting Green, which I'd read about any number of times. Tom Morris built it in 1866 and you really have to see it to believe it. I would have liked to give it a try, but to play it you have to be a member of the St. Andrews Ladies' Putting Club.

The Road Hole (17) merited two trips back and forth. We did the same with the home hole. We were surprised that the Old Course hotel was located where it is; you get a different perspective when you actually are visiting a place. It's owned by the Kohler

Company, no stranger to golf and the hospitality industry in Wisconsin. We posed for pictures on the Swilcan Bridge and then headed off to learn more about Old Tom Morris.

My library has only eight books about Old Tom Morris, and three are duplicates by different publishers. The best is the most recent: David Malcolm and Peter Crabtree's magnum opus, "Tom Morris of St. Andrews – the Colossus of Golf 1821 – 1908." From reading and rereading the books and supplementing them with journal articles I found over the years, I had a lot of facts about this durable and amazing man. However, standing in his shop (his great-great granddaughter lives above the shop yet today),

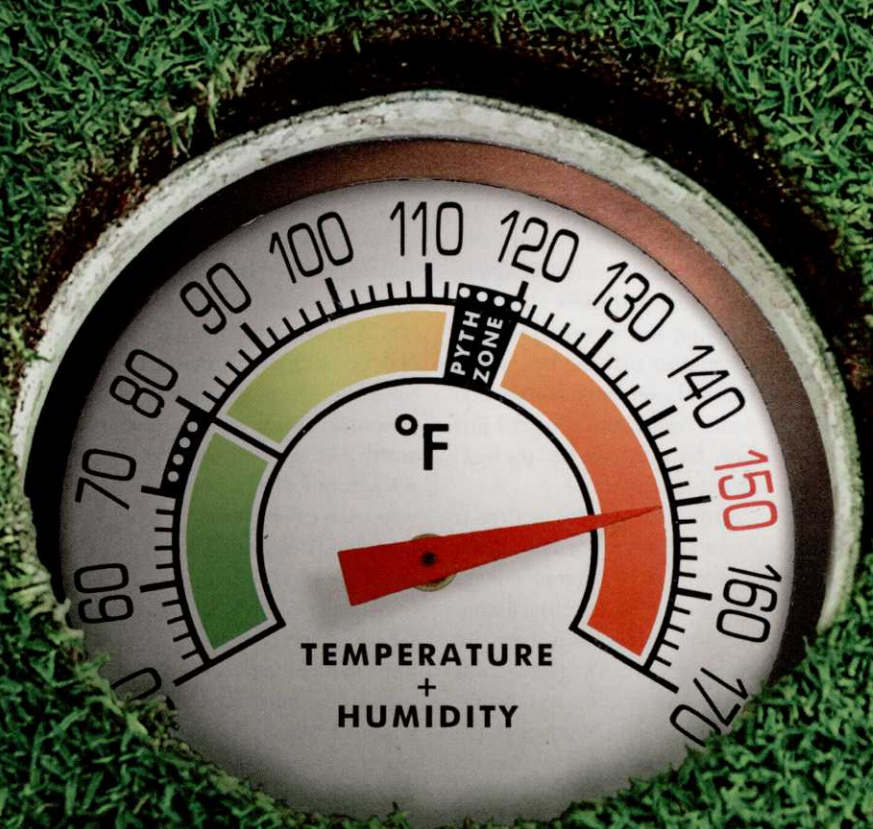
pausing in front of his home for so many years and seeing the house on North Street where he was born, the facts I had took on much greater meaning. I leaned on the fence along the 18th hole and watched the world go by in the same way he watched players finish their rounds of golf. We saw St. Mary's Church where his funeral was held, and we spent some quiet time at his grave, humbled to be so close to him in a physical way.

As we traveled through Scotland we'd stop at courses that were designed by Old Tom. That also amplified to me his expansive influence on the game and the talent he had and so humbly expressed.

For me, I felt a sense of closure or finality in my desire to learn as much as possible about the man who we give tribute as the father of our profession. And he was quite a man. **GCI**

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JEFF NUS, PH.D

Thirsty but green

A Kansas State University study explores the minimum amount of water needed for Kentucky bluegrasses to survive while remaining green between irrigation cycles.

In most of the United States, watering the golf course is an important responsibility of the superintendent. It is equally important for golfers and course officials to understand that water availability, usage, and cost are major issues facing the golf course industry. Water impacts nearly every aspect of managing golf course turf, such as color, mowing operations, traffic control, disease development, and playability. In addition, a significant amount of the golf course maintenance budget is directly related to water — maintaining the irrigation system, energy costs to pump water, costs for using and storing water, and on and on.

Editor's note

This article first appeared in the July 6 edition of the Green Section Record. Reprinted with permission. Enter bit.ly/Nj6uHk into your web browser to read the article in its original format.

For nearly three decades, the USGA Turfgrass and Environmental Research Program has addressed these issues by funding the development of turfgrasses that use less water, studies to determine how much water turfgrasses use, and just how far they can be “pushed” to use less.

One such project at Kansas State University demonstrated a potential 30 percent savings in water when selecting a Kentucky bluegrass cultivar for golf course roughs. The researchers compared water use requirements among 28 Kentucky bluegrass cultivars and two hybrid bluegrasses (Kentucky bluegrass X Texas bluegrass) that were maintained under wilt-based irrigation. Water was applied when an individual cultivar plot started to wilt. In that way, each cultivar was maintained under far less than ideal moisture conditions in an effort to find the minimum

amount of water needed to have acceptable turf. The cultivar received one inch of water

when visual symptoms of wilt appeared, rather than applying daily amounts of water to replace moisture lost from the leaf and soil surfaces.

“Deficit irrigation consumes less water than the turf would normally use under well-watered conditions. Although our irrigation strategies in this study often resulted in deficit irrigation, we didn’t monitor the level of deficit during the study,” Dr. Fry says. “We took the approach superintendents would often use, which is to apply about an inch of water when wilt first appears. It’s practical and could be used with cultivars of other grasses.”

Dr. Fry explains that this approach of irrigating in response to visual wilt saves water. “Across cultivars, our range of deficit irrigation levels ended up being 46 to 89 percent of evapotranspiration. In other words, we applied only 46 to 89 percent of the amount of water the cultivars would have received under well-watered conditions.”

Dr. Steve Keeley, a co-investigator on the study, says, “It is important for superintendents to know the difference between water use rate and irrigation requirement, as well as how long the turf cultivars on their golf courses can go between irrigation cycles. Previous research has shown slight differences among cultivars in their water use rates. However, there is a difference between water use rate, which is typically measured under non-limiting moisture conditions, and irrigation requirement, which is not.

“This research shows some pretty dramatic differences in

irrigation requirement. Knowledge of these cultivar differences is critical for making cultivar selection decisions, and superintendents certainly should be familiar with the capabilities of each grass on their golf courses in order to irrigate efficiently. That is, superintendents need to have a feel for how long each grass can go between irrigations,” explains Dr. Keeley.

It would seem logical that turfgrasses with low water use rates also would have greater drought resistance. However, Dr. Dale Bremer, project leader, cautions that this is not always the case, because there are several factors determining drought resistance, which refers to the ability of turfgrasses to survive extended dry periods.

“There is not necessarily a strong connection between water use rates and drought resistance,” says Dr. Bremer. “Turfgrass A may have higher water use rates than Turfgrass B, but if Turfgrass A also has deeper roots, it may be equally or even more resistant to drought than Turfgrass B. The deeper root system of Turfgrass A has greater ability to absorb soil moisture for a longer period between irrigations than Turfgrass B.”

Dr. Fry points out that it is essential for superintendents to have a good idea of the rooting depth of their turf in order to irrigate efficiently. “A good superintendent will have an idea of how deep the majority of roots are across all playing areas. Knowing rooting depth helps the superintendent determine how deep the soil should be wetted during irrigation to impact the majority of the roots.

Figure 1. Water Applied Groups

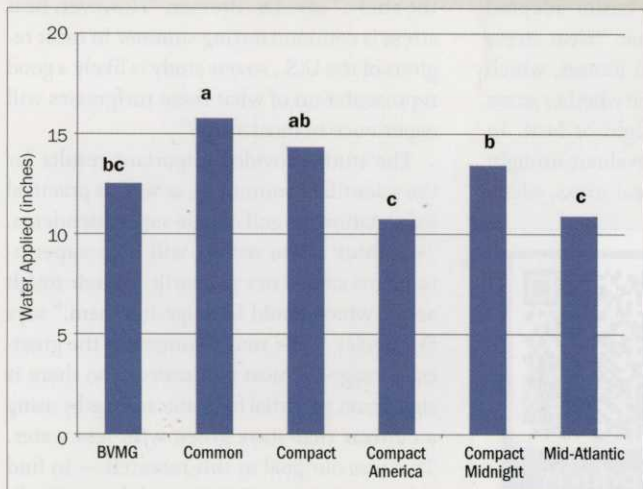


Figure 2. Days to wilt groups

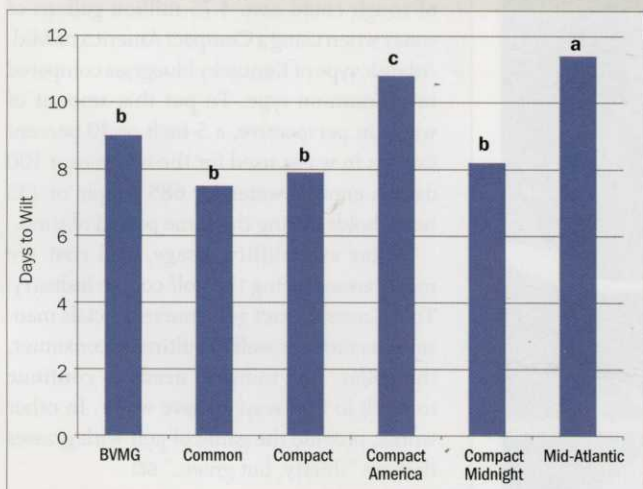
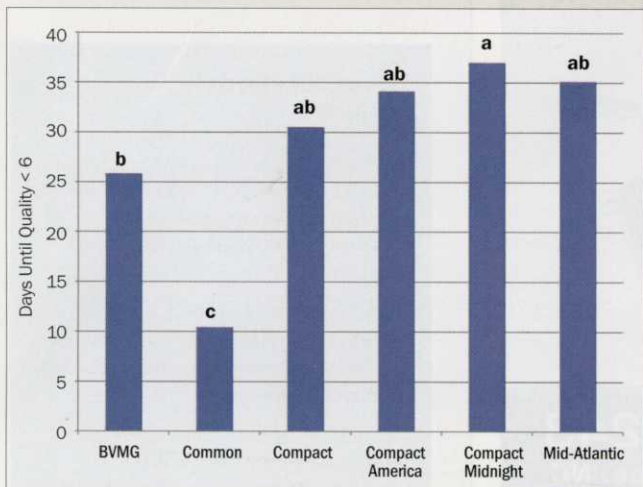


Figure 3. Days till less than 6 groups



“In turfgrasses, rooting is one of the primary means that grasses have to resist drought. In the Midwest, grasses that root deeply and extensively are able to avoid drought when the soil surface begins to dry down,” Dr. Fry explains. “Those cultivars that can go the longest between irrigations before exhibiting wilt are the ones with the most extensive root systems.”

Kentucky bluegrasses can be categorized by type, and the 28 Kentucky bluegrass cultivars and the two bluegrass hybrids used in this research study are listed by type in Table 1. To save water, it would be helpful if a particular type of Kentucky bluegrass outperformed the others under moisture-limiting conditions. This study determined the average water use rates and turf quality of the different Kentucky bluegrass types during the summer in Kansas.

“For our study, we generally selected cultivars that were best performers, in regards to visual quality, from the 2001 National Turfgrass Evaluation Program (NTEP) Kentucky Bluegrass Trial. The Common types (Ken-blue, Park, and Wellington) were the exceptions, because they weren’t best performers in nationwide studies by NTEP or in our study, even under well-watered conditions,” says Dr. Bremer.

“In general, visual quality averaged over the study was similar among the cultivars with the exception of the Common types, which were lower. Cultivars in the Compact Midnight (Award, Blue Velvet, Midnight, Midnight II, and Nu Destiny) group tended to have equal or higher turf quality than cultivars in the Compact America (Apollo, Bedazzled, Kingfisher, Langara, and Unique) and Mid-

Acknowledgement

This research project was co-funded by USGA, Turfgrass Producers International, and the Kansas Turfgrass Foundation.

Atlantic (Cabernet, Eagleton, and Preakness) types, but they also received more water.” (See Figures 1-3).

Are there differences in growth characteristics between Kentucky bluegrass types that may help to explain differences in water use rates? Dr. Keeley notes, “We didn’t specifically look at morphological characteristics in this research, but we do know some things about them. For example, the Mid-Atlantic types, which did well as a group in this study, have deep, extensive root and rhizome systems.

“Physiological differences may provide better clues in some cases. For example, the Common types are known to respond to drought by going dormant more quickly than other groups. While that can be a good mechanism to survive drought, it can lead to a higher irrigation requirement if you are trying to keep them green, as we were,” explains Dr. Keeley. “The Compact America types are another good example of how physiological characteristics may play an important role. Previous research has shown this group to be more heat tolerant than other groups, and heat tolerance probably contributed to their lower irrigation requirement as a group.”

This study provided important insight into the performance of Kentucky bluegrass cultivars under moisture-limited conditions, but Dr. Keeley cautions that these results may

Research

not be applicable to other turfgrass species. "I would not expect to find such dramatic differences in most other cool-season turfgrass species. Kentucky bluegrass is particularly diverse. That is one of the things that makes it an interesting species to work with."

Dr. Bremer also cautions that the results of the study could have been different if it was

conducted in areas of the country where Kentucky bluegrasses are better adapted than the hot transition zone. "Heat stress was a factor in our study in Kansas, which made it difficult to determine whether stress symptoms were from drought or heat. In cooler climates, one could evaluate drought effects alone, without the heat stress, which

could certainly have changed the outcome of the study," says Dr. Bremer. "However, heat stress is common during summer in most regions of the U.S., so our study is likely a good representation of what these turfgrasses will experience in most areas."

The study provided important results for the scientific community, as well as practical information for golf course superintendents. "We think these results will help superintendents save water primarily in their rough areas, which could be huge for them," says Dr. Keeley. "The rough comprises the greatest acreage on most golf courses, so there is significant potential for water savings by using a cultivar that stays green with less water. That was our goal in this research — to find cultivars that stayed green with less water."

For example, a golf course with 35 acres of rough could save 4.75 million gallons of water when using a Compact America or Mid-Atlantic type of Kentucky bluegrass compared to a Common type. To put this amount of water in perspective, a 5-inch or 30 percent savings in water used for the rough over 100 days is enough water for 685 people or 135 households during the same period of time.

Water availability, usage, and cost are major issues facing the golf course industry. These costs impact golf course officials managing a course as well the ultimate consumer, the golfer. The industry needs to continue to work to find ways to save water. In other words, provide the game of golf with grasses that are "thirsty, but green." **GCI**

Jeff Nus, Ph.D., is manager of Green Section Research, and is based in Lawrence, Kan.

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



Travels With **Terry**

Globetrotting consulting agronomist Terry Buchen visits many golf courses annually with his digital camera in hand. He will share 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.

SIDE SPINNER CONTROL SWITCH

Multi-talented Eric Kulaas, equipment manager, at the Renaissance Vinoy Resort & Golf Club, St. Petersburg, Fla., found an inexpensive dual on/off light switch that costs less than \$10 in lieu of buying a \$100 replacement switch for their TurfCo WideSpin Topdresser. The dual switches control the conveyor belt or spinners individually with a simple flip of either switch. To keep the control switch dry from the elements, a zip-type plastic bag is used to make it waterproof. The labor time took less than an hour to complete.



UNIQUE FAIRWAY ROLLER

Matt Shaffer, the director of golf course operations at the Merion Golf Club in Ardmore, Pa., site of the 2013 US Open Championship, has always been an innovator of golf course maintenance equipment who likes to “think out of the box.” Shaffer had a vision to produce a wide fairway roller – similar to a green’s roller – to remove the early morning dew off of the fairways, reduce the leaf wetness to reduce foliar diseases, breakdown organic matter, and raise the mowing height to use less water and still have great playing surfaces. Shaffer had a dinner meeting with Sal Rizzo, president, of Salsco Inc., and the rest is history. The Salsco Tranz-Former Fairway/Greens Roller’s went from research and development to production in eight months, with three to four months spent on the steering alone so that it will not tear the grass, because Salsco is a small manufacturer that can move quickly on R&D. The Tranz-Former has the same design concepts as a greens roller that follows the contours and smooths the surfaces. The rolling width is 10 feet, the transport width is 5 feet, 3 inches that fits easily over bridges, cart paths and through gates with a transport speed of 11 mph. The MSRP is \$35,000.



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MORGAHAN (continued from page 14)

tect the greens. The course will close around Labor Day to ensure healthy playing surfaces.

The captain made a number of summer visits, meeting with Tyrrell as well as Medinah's membership. He listened to what the members wanted to see. "Knowing how difficult the conditions have been, Davis checked in with me several times this summer," Tyrrell said. "He also advocated to the membership on behalf of the maintenance crew and stressed the need to be cautious under these rigorous circumstances." He added that Love was very supportive of all the superintendents in the Chicago district area, who, in turn, have prepped Love on what to expect of local weather and conditions this fall.

He also spent time with European captain José María Olazábal, and expects more European team members in the coming weeks.

The Ryder Cup is unlike any other professional tournament, a fact that influences how Tyrrell and his staff have to set-up and tend the course. Most obviously, the field is only 24 players and most matches never reach the 18th hole. Before the matches begin, the teams have four days of practice rounds, alternating morning and afternoon times so each squad gets a feel for how the course plays at different times of day. The first matches are on Friday, Sept. 28.

The days have been divided into three maintenance shifts: morning, midday, and evening. Play will commence at 7:20 a.m., which in Chicago in the fall means the crew will likely start and finish work in the dark. To deal with the long hours and allow his crews to work in natural light, Tyrrell created six teams of 16, each assigned to three holes. They will be responsible for complete maintenance on their holes - greens mowing, divot filling, bunker raking, rough cutting, Stimpmeter and firmness readings. Teams will be monitored by Tyrrell's three on-course supers and their assistants, with the final review conducted each day by Tyrrell, Love, the assistant captains, and Haigh who will sign off on the preparations before play starts.


Thrust into the limelight, Tyrrell is keeping it all in perspective: "My goals for the week are for my maintenance team to enjoy the experience and reap the rewards of their commitment and hard work ethic; for our membership to have a great experience given the resources they've committed to allow Medinah to host its first Ryder Cup; and last, but certainly not least, would be a win and to hoist the Cup for the home team." GCI

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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.

FOR STANLEY

The USGA used to run commercials touting the fact that it was all about people who “really, really loved golf.”

It’s a fitting epitaph, then, for Mr. Stanley J. Zontek because no one I know really, really loved golf more than Stan.

In hindsight, it occurs to me that I never played a round with Stan, but I doubt he was one of those rabid golfers who obsessed about putters or remembered every hole he’d played. I don’t think he “loved” golf that way. I know even though he could have had playing privileges at pretty much any Top 100 courses he wished, he joined a relatively modest little club near his home just to have a place to get away and enjoy a quiet nine.

The Stan I knew for 25 years truly loved The Game of Golf. He lived for the concept of fairness in the sport. He adored being part of every aspect of the process of preparing courses for play. He worshipped what the USGA is supposed to stand for even if he quietly shrugged his shoulders and sighed about the political crap that occasionally took place in Far Hills. His idols were people like Old Tom Morris and Alexander Radko and Fred Grau and Burt Musser. If you don’t know who those people are, shame on you.

He genuinely loved turfheads and appreciated the character and skill of good superintendents as much as anyone I’ve ever met. Science – real, practical, legitimate science – was his bedrock. You had to prove things to Stan. He abhorred snake oil and, although the USGA frowns on agronomists talking about specific products, he always made it clear with a frown or a shake of his big Polish head when he thought something was bogus. He had a finely honed B.S. detector.

Stan was, famously, the longest-tenured USGA staff member. I bugged him about his impending retirement constantly. He kept finding reasons not to give up the grinding life of a traveling agronomic wizard, even though he could have taken his pension, left the sometimes maddening Blue Blazer bureaucracy behind and made way more money as a consultant. That was simply not his style. The Green Section was his life – a “calling”

The Stan I knew for 25 years truly loved The Game of Golf.

in the old sense of the word – and I’m not sure he could bring himself to visualize what it would be like to wake up and not put on that damned sport-coat and those beat up old black turf shoes and go try to solve a problem on a course for The Good of the Game.

He was an awesome storyteller. On too many occasions back in the day, we’d end up someplace cozy and boozy with a small group of hardcore turfies swapping war stories. One night at least a decade ago, a bunch of us sat in those great old white rocking chairs on the porch of Pinehurst’s Carolina Hotel smoking cigars and drinking warm brown liquor until the wee hours. Stan was...a bit overserved, as they say...and he was really digging into his memory banks and producing astounding stories about U.S. Open sites, Tour players, the White House putting green and personalities from around the business. Every 20 minutes or so, he’d glance over at me – Mr. Media – and ask, “You’re not writing any of this down, are you Pat?” I’d jokingly reply, “Everything’s on the record, pal.” We finally all got to bed

around 4 a.m. as I recall. At 5:30 a.m. my room phone starting ringing like hell and I answered to hear a panicked Stan: “You REALLY didn’t write any of that down, did you?!?!?”

Stan, I promised you that morning I wouldn’t rat you out and I’ll take that to my grave.

We did a book deal of sorts, he and I. We had a handshake understanding that when he finally did turn in his official red-and-blue rep tie and his staff money clip, we’d lock ourselves up someplace and write The Book, which I would ghostwrite for him. The man had seen so much, done so much and met so many people that it was only natural that he’d finally share these stories for posterity. It was not going to be an expose or a tell-all – he’d never publicly say a bad word about the USGA. Instead, it would have been a celebration of all the joy he derived from The Game and the overwhelming gratitude he felt for being allowed to be a part of it for his entire adult life.

Gratitude. That’s what Stan always talked about when we’d get to spend time together at a USGA regional event or GIS or a Musser Foundation meeting. He felt so lucky...so blessed...to have made a career out of something that brought him joy. He helped people bring golf courses to life. These beautiful, amazing, unique playing fields designed to provide happiness, recreation and competition to millions of people. He shook his head in amazement every time he talked about how thankful he was.

So, I can think of no better tribute to Stan that I – or I think anyone – can offer, than to express our gratitude for the time we had with him, for the lives he touched and for everything he did for The Love of the Game. We’ll really, really miss you, Stan. **GCI**

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