A NEW COURSE

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The members at Bigwin Island Golf Club don't notice the golf course accessories – and that's how superintendent Scott Heron likes it.
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ON THE WEB – GOLFCOURSEINDUSTRY.COM

Items you can find online and in our weekly e-newsletter.

AVOIDING BURNOUT
Superintendents’ long hours can take a toll on home lives. At Greenville (N.C.) Country Club, superintendent Chris Parham devised a plan so he and his assistant only work every third weekend. Read about their set-up in the June Online Extras section at golfcourseindustry.com.

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"This too shall pass."

This phrase has guided me through some tough times. When the chips were down, when obstacles seemed insurmountable and when situations seemed at their most dire, I repeated these four words to myself and they would encourage me to hang in there a little longer. Things will get better. And they did.

To be honest, I don’t remember where I heard it first. In researching the phrase’s origins, one of the stories I liked the most was that it was inscribed on King Solomon’s ring to remind him that the present—whether positive or negative—was a fleeting thing. It’s also one of the fundamental principles in a complex adaptive system, a theory often used to describe how ant colonies and the stock market work. The world is in a state of flux, always changing and constantly reacting to fit the environment around us.

This spring I talked with a number of golf course superintendents about how they were managing through the inevitable budget cuts at their courses.

To no surprise, most superintendents are dealing with the issue of doing more with less—substantially less in some cases. For some, it meant heading into the season with fewer people on staff, while others were forced to eliminate hours, even a day, out of their work week to meet their new budgets. Nearly all, though, were expected to manage through this financial hurdle and present a golf course Shangri-La to members.

I was curious to know how they were getting through this. Many superintendents told me they were managing the best they could, reinforcing to their staffs that, while their hours may be fewer this season, at least they still had hours to work.

I firmly believe superintendents who have the skills to adapt and the fortitude to persevere will make it through this economic downturn as better, stronger managers with more cohesive crews.

Take, for example, Scott Cybulski, CGCS, who is the superintendent at the private Falmouth Country Club in Falmouth, Maine. Cybulski, like many superintendents, told me membership at his club was down and his budget went right along with it.

Cybulski’s particular economic challenges have forced him to approach his job with a new mind-set, one that matches up the strengths of his existing staff to the jobs that need to get done. It also is requiring him to foster more of a team mentality with his crew.

“I’m going to need for them to work without any direct supervision because there’s no way I’m going to have the time to watch over them,” Cybulski says. “It’ll be a good test to see how efficient I can be as a manager, and it’s going to be a good test of how my people can work together.”

Thomas Wright, superintendent of parks and grounds at Mohonk Mountain House in New Paltz, N.Y., says while budget cuts are cumbersome, they’re forcing managers to realize that they can no longer throw money and resources at problems. “In a crazy sort of way, I see this revitalizing us,” he says. “If there’s an issue, we must find a way to troubleshoot it with the skills, talents and resources we already have on hand and retask our people to do the work.”

It strikes me, though, that while the economy will rebound, it will take longer for superintendents to feel any financial relief.

Superintendents may become victims of their own success. They’ve proven to be highly capable managers who can do more with less and uphold the ideals members and players have come to expect at their respective courses.

It’s a high compliment for anyone to survive a test of this magnitude without throwing in the towel or without compromising professional standards. It’s also an unfortunate reality that green committees and corporate boards will hesitate to restore budgets and fail to reward these accomplishments with a return to normalcy. And who out there doesn’t long for a return to how it once was?

Remember, for better or for worse, eventually this too shall pass. GC
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'Family' thanks

Pat Jones’ recent article, “All in the Family,” (April, Parting Shots, page 90) has struck a chord with me. Working for a small, regional independent distributor of soft goods – his article was greatly appreciated. I’ll keep this article for the occasional pick-me-up when things look dire. Keep fighting for value and the good guys in this business!

Chris Hoff
Sales representative
Precision Turf & Chemical Inc.
Greenfield, Minn.

I had to tell you how much I loved Pat Jones’ column in the April issue regarding local/regional distributors (“All in the Family,” page 90). Even though I’m now in Rhode Island, it made me realize how important Grass Roots Inc. in New Jersey has been to me personally and professionally over the years. There’s no question these businesses provide a service that national companies just can’t match. Hey, it’s the main reason the GCSAA’s attempt to broker products through the Big Guys would never work. I think they know that now.

Thanks for recognizing just how vitally important these local companies really are. You opened my eyes to something that’s been right in front of me all these years.

Ed Walsh, CGCS
Golf course superintendent
Shelter Harbor Golf Club
Charlestown, R.I.

A dose of humor

I like Pat Jones’ column in GCI. I’ve always liked his insight into the turf industry. Some in our business must stop taking everything so seriously. Our image is important, but we certainly aren’t oppressed coal workers that “the man” is holding back. We’re all fortunate to be in this business; it seems to me some should enjoy it more. Screw anyone who can’t laugh at themselves or see the humor in the written word.

Thad Thompson
Superintendent
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- 2005 Jacobsen HR5111 1,700 hrs nice
- 2001 Toro 580D 16 ft rotary 4 wheel drive recent engine overhaul
- Proflex 120 $4,500
- 2004 Toro 4000D Rotary Mower $5,500

AERATORS
- 2005 Jacobsen/Ryan renovaire tow behind w/hydraulics Like NEW
- 2002 Ryan GA 24 unit (2 avail) choice of tines
- 2004 Ryan GA 24 greensaire nice
- John Deere 800 aercore with windrow attachment

FAIRWAY MOWERS
- 2004 Toro 6500 fairway mower $8,500
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- 2003 Jacobsen 3800 with canopy sharpened 1,750 hrs $8,500
- 2005 Jacobsen LF 3800 1,300 hrs very nice condition sharpened $13,500
- 2004 Jacobsen 5 gang hydraulic lift reel mower nice unit sharpened new bed knives $8,000
- 2004 Jacobsen LF 1880 2 wheel drive (3) $7,000
- John Deere 3235B with verticuts $8,500
- 2002 Jacobsen 3400 with brand new reels $9,500
- 2004 Toro 5500 4 wheel drive fairway mower $9,500

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- 2003 Toro 1250 Sprayer nice unit $10,500
- 2005 Smithco 1600 sprayer/hose pto drive nice clean unit $6,000
- 2004 Cushman DS 175 basic sprayer with flood jet and booms $7,000

ALL PHOTOS ARE ACTUAL PICTURES OF THE EQUIPMENT
Leaders who put other goals or priorities above building and maintaining relationships lose credibility. True leaders inspire those who follow them.

IN YOUR STAFFS' SHOES

Another golf season is underway and I hope spring has treated you well. No matter what the season, I encourage you to step back and evaluate yourself on how you're leading your staff. We've been taught that leadership, business and communication skills are invaluable to today's assistant superintendents. So, how do you stack up?

In the past I've gotten caught up with putting my career goals ahead of building relationships with co-workers. It's been obvious to co-workers and has hurt our relationships. Leaders who put other goals or priorities above building and maintaining relationships lose trust and credibility. True leaders inspire those who follow them. John Maxwell is my favorite author on leadership, and he often says, "A leader without followers is simply going for a walk."

One of my favorite articles on leadership, authored by David Sirota, Louis A. Mischkind and Michael Irwin Meltzer, focuses on three things employees want in their jobs: accomplishment, camaraderie and equity. Employees want to be proud of their work and who they work for. They want to have solid, productive relationships with those they work with. Finally, employees want to be treated fairly when it comes to compensation and benefits. Do any of these priorities surprise you? It seems like common sense, yet most of the time I've been involved with or have witnessed employee dissatisfaction, it's been linked to one of these three criteria.

Think of the relationships you have with your staff as a bank account. For every positive leadership action you display, there's a credit added to the account, for every negative action, a debit. What's your balance? Think about that as you communicate and direct your staff members. No one has greater influence on an employee's motivation level than his or her direct supervisor. Studies have shown that the No. 1 reason employees leave their jobs is because they didn't get along with their manager.

I can recall talking to a superintendent this past winter at the GIS in New Orleans. We were attending a class on leadership and the question arose about whether you should spend time getting to know your employees and coaching them to make decisions for themselves. He felt that building relationships with his staff members was not that important and that everyone has his job to do — simply do it and we'll all get along. He didn't have time to build relationships with his staff members; he had better things to do.

I imagine many of you can relate to his comments. If so, I would encourage you to put yourself in your employees' shoes and ask, "What's my incentive to be here and what do I have to gain?" Talk to your employees about their motivation levels and how you could be a better leader. You might be surprised by what you hear.

I'll leave you with a quote from the godfather of leadership quotes, corporate trainer Zig Ziglar, "You will get all you want in life if you help enough other people get what they want." Enjoy the rest of the season.
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I once wrote a column on maximizing the value of your annual trek to the Golf Industry Show. I'm a believer in the value of going to industry conferences to get a better idea of what's going on and improving your skills. My grandfather always noted that the happiest people are the ones who keep learning and keep challenges out in front of them. So I should be a happy camper this month – I’ve been to a few educational opportunities recently.

In April I attended my state’s American Society of Landscape Architects meeting, where seminars covered various “nuts and bolts” topics, like designing better concrete cart paths and numerous ideas on how to make my designs “greener.” I took some CAD training and I’m scheduled for some more later this month.

I just got back from the 63rd Annual Meeting of the American Society of Golf Course Architects. I became a member in 1981 and have attended 24 out of 28 meetings since then. I always learn a lot from sitting around with the best in the business.

I get a good sense of the state of the industry, which is currently grim. I’m one of the few architects designing a new domestic course. Some architects have remodel work, and others have international work, but as a group, we make the Maytag repair man look busy. If things don’t pick up next year, we might change the symbolic ASGCA blazer from tartan to burlap. (Grandpa also said you need to maintain a sense of humor.)

The main focus is continuing education seminars. While some of these look a lot like golf rounds at significant courses that can teach us about design (I played all four courses at Bandon Dunes and Chambers Bay), there are also classroom-type seminars, which updated me on some industry initiatives that affect superintendents and club members as much as architects.

The first initiative of interest to superintendents was an update to the GCSAA and Environmental Institute for Golf’s survey on current water and environmental practice. Ironically, the first e-mail I read when I got home was a plea from my local superintendents association to participate in the ongoing environmental surveys to document where golf courses are right now in improving their environmental performance.

Both ASGCA and GCSAA leaders recognize just how important it is to collect accurate data concerning what superintendents are doing now to create new models and technologies for water conservation and ecological performance. Real data about how each course is improving its performance may very well make the difference in perceptions about the role of golf in our lives and the environment.

The report notes how much progress has been made in reducing water and chemical use. Those kinds of facts have been useful to golf course architects making presentations to get projects approved, but as more courses fight water restrictions, club members, managers and superintendents will be making similar presentations more frequently. It’s very important for all courses to participate in this endeavor, even when the facts aren’t flattering – like the fact that many courses have actually used newer, water efficient irrigation systems to increase irrigated turf areas rather than cut the water bill.

The second important industry initiative is the USGA museum’s new golf course architecture archives, which will preserve the history of the game’s legendary architects and courses by archiving course drawings, field sketches, aerial photographs and other documents related to design. While they’re archiving the most historically important courses first, eventually they’d like information on most courses in America.

While preserving golf course architecture history is a passion of mine for obvious reasons, it’s important for every course to know its history. Besides being inherently interesting to members and many others, it also can benefit you as you remodel the course to know the agronomic and design history of your course.

I recommend that you safely archive your own documents, plans and also seek out all old photos, using the Internet as a research tool. Starting now, you should photographically document your course since it evolves slowly over time. If your golf course architect or his associates are still alive, have them visit for a day to hear and record the story of how your course came to be, either originally or in a previous renovation.

You’ll learn a lot and have fun researching your course’s history. And, someone will thank you for it someday, even if you don’t make it into the USGA museum. GCI
SeaDwarf® Seashore Paspalum requires up to 50% less water than Bermuda varieties. It can be irrigated with a wide range of water quality. Alternative water sources such as effluent, reclaimed or brackish may be used as an irrigation source. Weeds can be treated with table salt, and SeaDwarf® has reduced nitrogen requirements – meaning less fertilization and less nitrogen run-off.

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I just returned from the American Society of Irrigation Consultants' 2009 Annual Conference in St. Augustine, Fla., where there was a lot of talk about the society revisiting its roots.

The ASIC was established in 1970 to provide a wide range of water resource development and irrigation consulting services. One of the primary motivating factors was - and still is - preserving the independence of professional members from the influence of equipment manufacturers and their agents.

It's an organization I truly believe in and serve. True irrigation consultants strive to develop resources and create the best performing irrigation systems according to individual sites, budgets, water, staffs and other available resources. We represent the best interests of golf and land developers, institutional and municipal bodies and private owners and operators by specifying irrigation products that are most appropriate for the project.

The other primary motivating factor for its Northern California roots was - ironically - regulation. Wow, how things always manage to come full circle.

Nearly 40 years ago, the California State legislature was considering restricting independent irrigation design. ASIC's newly minted professional group of irrigation design and consulting specialists was successful in proving to the state that they possess the true expertise and knowledge to deliver an efficient and effective set of construction documents resulting in successful water delivery projects.

To achieve this level of irrigation performance, ASIC maintains water delivery and product management selection and application are integral to an overall system design and should be based on:

- Regional area climate data and trends;
- Site-specific weather, exposure, plant selection and soil conditions;
- Product availability and service support;
- Current and projected human fiscal resources;
- Current and projected site water quality and availability;
- Property/turf and landscape management capabilities; and
- Numerous other factors pertaining to an efficient and effective design.

This year's meeting was extra special with the presentation of our Roy Williams Award, given in recognition of an individual's or an organization's significant contributions to the irrigation industry. This year's recipient is Bill Kubly with Landscapes Unlimited. Bill has been in our golf industry for more than three decades and got his start in the irrigation side of golf construction.

Bill's accomplishments include the following:

- With landscape architecture degree in hand, he started LUI in 1976 and has grown it to arguably the largest golf course builder in North America with more than a thousand employees.
- Owning/managing 18 different golf courses.
- Three-time appearance on Inc. Magazine's list of Top 500 fastest-growing privately held companies.
- Completion of more than 800 golf course projects from coast to coast.
- Perennially being named by Golf Inc. as one of the Top 25 Influential People.
- Serving as past president of the Golf Course Builders Association of America (GCBAA).

Thanks, Bill, for all your contributions - not only for our golf industry but for letting ASIC recognize you with the Roy Williams Award. We were pleased to have you participate in our conference. GC
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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.

TIME FOR THE GREEN SECTION

In the world of golf course management, there really isn’t anything like the GCSAA conference and show. I was lucky to attend 37 of them consecutively, from Boston in 1973 through New Orleans this year.

Most states also offer a turf conference and/or a show. Here in Wisconsin we have the WGCSA Golf Turf Symposium in the fall, the Wisconsin Turfgrass Association Green Expo in the winter, and the WTA Summer Field Day. I never miss these.

There are some regional turf conferences that are simply outstanding, as well. Ohio, the Carolinas and New England are ones I’m familiar with. The New England conference is one I’ve attended regularly over the past 25 years, and I went to Providence, R.I., again this past March. The program this year has some special appeal to me.

The first half-day session on Tuesday was the USGA Green Section presentation, and one of the speakers was Adam Moeller, a Green Section agronomist. He’s a Wisconsin alum from Dr. John Stier’s program (2005) and worked on our golf course in 2004. Add to that his five seasons at Sheboygan Town and Country, a season at Blackwolf Run in Kohler and a master’s degree from Purdue (2006-2008) in Cale Bigelow’s turf program, and you have an agronomist who’s going to offer many years of service to golf courses wherever he serves. I felt like a proud parent that day he spoke.

That’s the Green Section for you. Quality, dependable and unbiased advice about golf course issues starts and ends with quality people. When hired, Moeller had great potential; after training by people like Dave Otis, Jim Skorulski, Stan Zontek and Darin Bevard, he is very well prepared for his responsibilities as a Northeast Region agronomist.

The state of our nation’s economy has been tough on golf; it’s been a period of decreasing rounds and diminished revenue. Golf course superintendents are scratching hard to reduce expenses without sacrificing quality playing conditions.

I contend this is exactly the best time to enlist the Green Section Turf Advisory Service, whether your course is a long-time subscriber or a potential first-timer. It always has been a great bargain, and it is more so today.

The agronomists bring a wealth of information with them when they visit your course. Moeller, for example, visited more than 100 golf courses last year, his first. Imagine what veteran agronomists have seen in their long careers. They make about 2,000 total golf course visits each year; their combined experiences and observations are invaluable to golf course superintendents who access them. Although only an agronomist from your region visits, you are potentially getting input from all 18 of them due to their extensive networking activities.

The actual visit can take on any format that suits your course. They’ll come for a morning green committee meeting or visit in the afternoon and attend an evening board meeting, if you want. They’ll come whenever an unplanned emergency arises. We’ve had visits in every season to give a different perspective to the course.

I would enjoy the conversations we’d have, always appreciating the logic behind a different point of view.

The visit itself is worth the cost ($3,100 full day/$2,300 half day with early sign-up discounts available), but the written reports bring even more value to a TAS subscription. I’ve seen the report posted in the locker rooms. Other times it was distributed to the board, the green committee or both. We had on file the continuous history of the Green Section visits to our club. Rereading them for reminders of past advice or for reinforcement of some idea was helpful at times.

I like to reflect back on the good advice I’ve received from TAS agronomists – F. Lee Record, Carl Schwartkopf, Stan Zontek, James Latham and Bob Vavrek, and wonder what I’d done without their help.

My good friend Joel Jackson of the Florida GCMA recently made an excellent case for not cutting golf course travel and educational spending. I think of TAS visits the same way. In the financial scheme of operating a golf course, the subscription fee is relatively modest and the potential payoff in good advice is substantial.

And who knows – if you’re in the Northeast Region, maybe you could get Moeller to stop by.

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12 DO’S AND DON’TS OF THE SHOP

1 Do not bring your machine in for service until you, your crew leader, and everyone on the crew has had the time to form an opinion as to what may be wrong with the unit. Allow each person in this group a chance to correct the problem. Whenever possible, move several electrical connectors around and turn all the adjusting screws you can find.

7 Your machine should be as dirty and greasy as possible. Drive it down a dusty road on the way to the shop. Half-eaten bags of food, golf balls wedged behind control levers and empty soda cans in the battery compartment are always appreciated.

2 If you can’t bring the unit in for service immediately, wait until the malfunction has become a major emergency before calling a mechanic to tow it to the shop. If you tow the machine yourself, drop the unit in front of the shop door so we must fix your machine before we can get another out of the shop. Fridays are best, but anytime after 4:00 p.m. is OK.

8 Ask again when your machine will be ready. This question is particularly welcome when the engine is in 100 pieces and spread out on the workbench.

3 When describing the problem be sure not to tell us the whole story – the only thing better than that is a good Hardy Boys mystery.

9 If the technician is looking at a schematic diagram, ask if he knows what he’s doing. Be sure to mention that you fixed your toaster last week without using a schematic diagram.

4 Invite your section helper to the shop so they can give their version of what’s wrong. The technicians welcome your suggestions on how to fix your machine.

10 When the technician tells you he needs to order a part to complete the repair, be sure to tell him how your Grandpa could fix anything with a piece of wire or some duct tape.

5 The minute we begin working on your machine, ask how much longer it’ll take. Make it clear that you have important work on the course that has to be done within the hour. Be sure to look at your watch often and to remind the technician of the time in case he’s forgotten.

11 Always stick to your story: “I didn’t hit anything,” “I checked the oil,” and “That’s the way it was when I got it.”

6 If you’re unable to be with us while your machine is being repaired, assign someone who has never worked on or operated the machine to take your place and supervise the repair. Bad breath is a plus.

12 After the repairs have been made, and you’ve used the machine, be sure to come back and let us know how Johnny’s machine mows a half a mile per hour faster than yours.

Equipment managers and technicians:
Have any to add to the list? E-mail them to gci@gie.net, and we’ll print our favorites.

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

GOLF TRAVEL: BUSINESS VS. PLEASURE

The National Golf Foundation released its “Golf Travel in the U.S.” report earlier this year. It focused on travel between 1989 and 2007. One key finding is that one in 10 golfers played golf while on a business trip in 2007, while four in 10 played golf on vacation.

A look at how business golf travelers compared with vacation golf travelers and the media habits of all golf travelers may offer resort and destination courses some insight into how to best market their facilities.

The report is based on an NGF survey of 1,993 golfers. The survey was conducted by Synovate, a market research company. Respondents were randomly chosen from the company's online panel of more than 2 million Americans. Data was statistically weighted on key U.S. Census variables, such as age and income, to be nationally representative of all U.S. golfers.

Source: National Golf Foundation

### Business golf travelers vs. vacation golf travelers

<table>
<thead>
<tr>
<th></th>
<th>All U.S. golfers</th>
<th>All golf travelers</th>
<th>Business golf travelers</th>
<th>Vacation golf travelers</th>
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</thead>
<tbody>
<tr>
<td>Average household income</td>
<td>$82,540</td>
<td>$104,000</td>
<td>$130,430</td>
<td>$102,150</td>
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<td>Average age</td>
<td>44.7</td>
<td>48.5</td>
<td>49</td>
<td>48.6</td>
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<tr>
<td>Average # of rounds/year</td>
<td>17.7</td>
<td>25.7</td>
<td>22</td>
<td>26.7</td>
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### Business travel and rounds played while on business

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### Vacation travel and rounds played while on vacation

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The USGA's longest-tenured employee reflects on his career, turf consultants and the advice he gives most frequently.

By Pat Jones

I'm pretty sure the first time I met Stan Zontek was in the bar of the Nittany Lion Inn, the great old on-campus hotel that's been home to the Penn State Golf Turf Conference for a zillion years. I was just an idiot kid working for GCSAA, but he took me under his wing that night and proceeded to introduce me to damn near every important PSU turf alum and faculty member. I'm pretty sure he also initiated me into the joys of drinking black-and-tans that evening although my memory is a wee bit fuzzy 20 years later.

What I do remember quite lucidly is that Zontek blew me away with his knowledge of the business, his keen ability to pinpoint nearly every agronomic trend going on east of the Mississippi and a wicked sense of humor that I learned nearly every successful USGA agronomist develops as a defense mechanism against the pounding hours, grueling travel and byzantine politics the job sometimes entails.

After 38 years of getting up every morning and donning a crested blue blazer and red striped rep tie, Zontek is the longest tenured employee of the USGA and a legend within the Green Section. He's garnered his share of honors, including the 2006 GCSAA Distinguished Service Award, the 2007 Distinguished Alumni Award from Penn State University (only the second turf person to receive it, the other being Dr. Joe Duich), the 1997 GCBA Don Rossi Award and numerous local kudos, but it's the people and the friendships he's earned that he seems to value most.

"The great thing about this business is it's not as much about growing grass than it is about getting along with the people," he says. "I absolutely love the people."

Zontek grew up on grass clippings and gas fumes as the son of a Pennsylvania superintendent. ("I've never forgotten my roots. If I do, kick me in the ass.")

He mowed his first green at the age of 12 and was essentially predestined to be a turfhead - and to attend Penn State. He graduated in 1971 and, rather than take one of the assistant superintendent jobs he was offered, decided to go with a suggestion that he give the Green Section a shot for a while.

"A while" turned into four decades as he worked his way up and through the ranks from a novice agronomist working under the legendary Al Radko to his current position as director of the Mid-Atlantic Region. Zontek isn't sure how many courses he's visited over the years ("No clue... thousands," he says) but he's made his mark with hundreds and hundreds of formal Turf Advisory Service visits, informal consultations and countless speeches, articles and typically candid advice offered over a beer after hours.

When I caught up with Stan, he was - predictably - driving for a few hours from one Turf Advisory Service visit to another. I asked him about his experiences, his favorite superintendents and his future, as the rumor mill has him pondering retirement in a few years.
When Stan Zontek, director of the Mid-Atlantic region for the USGA Green Section, retires, he's likely to pursue a consulting practice that's an extension of what he's been doing for 38 years: giving superintendents the support they need.
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How much time do you spend behind the wheel of your car every year?  
(Laughs.) I wouldn't even want to guess. I usually put about 35,000 miles on the car and fly way too much. I'm on the road about 100 nights a year.

How did you get started with USGA?  
Ah... The saga begins in the summer of 1970. I was completing my undergrad at Penn State under Dr. Joe Duich and was thinking about staying in research and doing a five-year plan they had that allowed you to skip your master's and move right on to a Ph.D. But, Dr. Duich and (famed superintendent) Billy Buchanan encouraged me to get out in the real world and suggested looking at the USGA. They just happened to have a job open. Al Radko hired me in 1971 for the princely sum of $11,000 a year.

What was Radko like?  
He doesn't get the credit he deserved, not just for what he did at the Green Section, but also when he was in the Army in 1946. He was the man who basically rebuilt all the golf courses in Japan after World War II. He and a guy named Pete Nakamura really sort of started the whole golf movement over there. He never gets credit for that.

OK, what about retirement? We keep hearing those rumors.  
I am thinking about it. Technically, I can retire in 2014. It would kind of bookend things since my first U.S. Open was at Merion [Golf Club in Ardmore, Pa.] in 1971 and the 2013 Open is back at Merion again.

I’ll tell you one thing: When I do retire, I won’t be a volunteer at the Y. This is my life. I’ll definitely be involved some how, some way with golf course turfgrass management. I’ll be doing what I’m doing right now, but working for myself. I’d truly like to be an independent consultant. I love to travel and be involved.

Wait, I know for a fact that you’ve butted heads with a few consultants in the past. Isn’t “consulting” kind of a dirty word in this business?  
It seems like there are two predominant types of consultants in golf: positive and negative. The first kind comes in and says, “Your superintendent’s done a great job,” and takes their fee and bolts. The second one says, “You were right, Mr. Green Chairman, this guy stinks and you should get rid of him.” I don’t want to do either one of those. I’ll tell them what I honestly think, how to solve their problems and make their golf course better. I want to be more of an advisor than a consultant and help people do it right. No commercial tie-ins...that’s another problem with some consultants out there today. I want it to be an extension of what I’ve been doing for years: giving the superintendent the support that he or she needs.

Years ago, some superintendents shied away from using the TAS because they were suspicious about having anyone else come onto “their” course and...
undermine them or even steal their job. Still true?
I haven't heard the "steal a job" thing in a long
time. I would have been gone from the USGA
a long time ago if there were a perfect job out
there, but I haven't seen one yet that would
tempt me that much.

Like I said earlier, any consultant can be
accused of costing superintendents their jobs.
But, there's no question that we [the USGA]
have saved more guys' jobs than anyone can
imagine. You know, more times than not,
when somebody gets fired, it's because some-
body at the club just doesn't like them. Then,
they bring in somebody else and that new guy
gets all the new stuff that really would have
helped the other guy. Unfortunately, that's
kind of the cycle.

How about some who say the TAS is only
for big-budget courses that really don't
need that much help?
I did a visit at a course last week that has a total
budget of under $400,000. We're helping
them maximize ever dollar they spend. You
have to concentrate your focus and be the best
you can be with the money you have to spend.
Small course or big course, the question is
what kind of golf course do you want? I still
think the first thing you do is ask, "Why am I
here?" You can't have an agenda.

Also, remember that even though we may
not visit a high percentage of the smaller
courses, we touch a lot of people through
the speeches and e-mails and newsletters.
We're an information source for everyone,
regardless of funds.

How often is your advice based on the
business of golf vs. agronomics?
All the time - particularly lately. Everybody
is asking, "Where are the economies? How
can we cut our maintenance budget?" I like
to remind them that 88 percent of golfers
say playing on good grass is very important to
them. You can't compromise on the condition
of your course. You can't save your way out of
that. Also, I remind them that golfers like new
things. That's what drives renovations. You've
always got to be doing something new.

Has the economy affected TAS
participation?
We see a few dropping out in this region. Hey,
a couple of thousand bucks is still a couple of
thousand bucks. We absolutely have to sell
what we do to keep people involved. You have
to justify your existence every day.

You've met thousands of superintendents
through the years. Who are some of the
guys you were really impressed by?
Well, first, there are the old timers with amaz-
ing staying power. The longer I've been in this
business the more I respect the old timers.
Maybe because I am one now. You have to
marvel at guys like (the late) Eb Steiniger and
Terry Bonar who stay at the same course for
over 40 years. Think about it - just to be able
to survive all those different club presidents,
green committee chairmen and committees
is incredible.

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Then there's the new breed: John Zimmers, Matt Shafer, Mike Giuffre at Congressional... these guys who come to work every day and get it done. And don't forget someone like Ben Abel at Glenrochie Country Club in Abingdon, Va. – he gets it done on $400,000 per year. Those are the guys who are really impressive – not necessarily the ones with unlimited budgets.

What are you most proud of?
Mentoring, without a doubt. You get to watch people grow whether they are superintendents or Ph.D.s. You've had some positive influence on their lives.

Favorite championship you've been involved with?
I don't think I've had it yet. Maybe one when I was just a junior agronomist at the Walker Cup at Shinnecock, just because it was so beautiful with the sun setting and a bagpiper was piping the sun down. That was cool. I also have great memories of the 1980 Open at Baltusrol. Watching that crew was like watching a ballet or an orchestra. It really showed me what a great team can do.

Championship golf just kicks everything up a notch. If we don't have fun at a championship, somebody's not doing his job. It's crazy, but it's an absolute ball.

You have access to some of the greatest clubs in the world. Where do you sneak off to play just for fun?
I actually have golf privileges at Bidermann Golf Club in Wilmington, Del. – which no one's ever heard of – but it has a great membership and staff and only does about 9,000 rounds a year. And no, I don't whine about green speeds or much else there. It's a great course in excellent condition.

What are high-end clubs looking for when hiring superintendents?
They're not going to be asked questions about agronomy. They're going to assume they can grow grass. The agronomy is a given. They want the superintendent that can do the job and they can trust with their grass and their money. They don't want to ask questions about agronomy. They're begrudging volunteers. It's all about charisma. They just like you. It's intuitive. It's how you look, dress and speak and it's a beauty contest based on your resume and where you were before. Right or wrong, that's the way it is. There are always exceptions, but...

Agronomically, what piece of advice do you give most often?
Don't forget the basics. Aerification, water management, enough sunlight and fertilizer, soil management, drainage, irrigation – things that never change. Nothing replaces these things. The corollary to that is, if it sounds too good to be true it probably is.

Speaking of which, you've been pretty vocal about some of the supplemental products out there and the claims they make.
Yes, I have, but you've gotta be a skeptic. All these manufacturers say, "We have something that's better than you have now." OK, how? Why? What's in it?
I have problems with biostimulant companies when they don't list what's in their products on their labels. It's like buying cold medicine with no ingredients on the package. They're just saying, "Hey, trust me!"
We've tested a lot of this stuff and know what it will or won't do, but we still don't necessarily know what's in it. Curiously, in Sweden, which has a "right to know" law, at least some of these products were forced to disclose their ingredients – surprise! – urea was in them.

Look, the ultimate biostimulant is nitrogen. That's why I'm skeptical of these materials. Compare them to urea and iron. I don't tell anyone not to use them...but if they ask me what I think, I tell them to test and compare to the industry standard, which remains urea.

When you go to that great maintenance facility in the sky, how do you want to be remembered?
Here's what I want on my tombstone: "He left the world a better place with better golf courses and better people." How can you beat that?
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The Next Generation of Turf Growth Regulation Technology
A New Course

Former superintendents use their management experience in new careers.
decade ago Kerry Satterwhite thought he’d retire from his job as the golf course maintenance director for the city of Bloomington, Ill. There he oversaw three 18-hole golf courses and a staff of 50.

But six years ago Satterwhite noticed a general decline in the golf course industry. At that time, Bloomington’s golf courses were generating about $3.5 million in revenue. Last year, they brought in about $3 million.

Over the years city council members began asking, “Should we be in the golf business anymore?”

After 25 years in golf course management working more than 60 hours a week, seven days a week, Satterwhite asked himself the same question.

According to Golf Course Industry research, he’s not alone. Forty-five percent of superintendents have considered departing the profession. Half have not considered it, and 5 percent have left their superintendent posts for other positions, only to return.

Why have so many superintendents considered a career change? A bevy of reasons, including the long hours, unsuitable pay/benefits, and a lack of available jobs (see “GCI’s career change survey,” on page 36) are turning superintendents toward other professions.

Superintendents who’ve left—no matter what type of job they’ve taken—can’t complain about their new schedules, which for the most part have improved their quality of life.

“I don’t think I’d ever go back,” says Satterwhite, who’s now executive director and COO of STL Business and Technology Solutions, a company that hosts Web sites, sells computer equipment and provides network support to businesses. He’s proud to announce his family is planning its first ever summer vacation.

On top of a more flexible schedule, the biggest revelation for former superintendents is that so many of the skills they acquired during their years in golf course maintenance are assets in any management position.

“So many people define themselves by what they do, not by who they are,” Satterwhite says.

Superintendents who are burnt out, unhappy or just seeking a change should rethink that mentality and flaunt their abilities in project management, effective communication, financial management and human resources, to name a few.

WHERE ARE THEY GOING?

GCI’s research sheds some light on where superintendents who’ve thought about changing careers have considered going. More than half have considered pursuing a new profession altogether, 43 percent have thought about working for a supplier in the turf industry and 27 percent have considered working for a service business related to the turf industry.

When Satterwhite first thought about leaving his job, he figured he’d stay in the industry and go into sales, working for a supplier. He interviewed for some positions, but worried the golf industry’s troubles would eventually affect the supply side, too.

He also considered going into business for himself when the opportunity to set up an organic fertilizer distributorship presented itself.

During his due-diligence process, Satterwhite talked with an acquaintance who’s an entrepreneur. Over the several months the two men talked, the business owner learned that Satterwhite had skills that would apply to any management position.

“Until then, I always thought I just cut grass,” Satterwhite says.

When a management position opened at his company, the business owner called Satterwhite and offered him the job.

“It was a quantum leap for me to go from 25 years of golf course management to this,” he says. “But you have the same types of problems anywhere, and it’s all about communication.”

Mark McCarel, former superintendent of The Country Club in Pepper Pike, Ohio, is several months into a job as an agronomic analyst for industry supplier Advance Sensor Technology, based in King of Prussia, Pa.

He works with facility managers to interpret data gathered by the company’s wireless soil sensors to see if they can produce favorable turf conditions while using less water.

He’d had his eyes open for a new opportunity for a number of years, he says, though he never looked outside the golf business.

“Everything I looked at was in the industry, I just wasn’t quite sure what was available to me other than another superintendent position or a sales position,” he says. Turns out, at least several months into his new role, his job satisfaction is at a high level.

“If I’d written a job description for myself five years ago, this almost fits it,” McCarel says. “I’m doing agronomics, seeing a lot of golf courses and working for a company that’s fighting the good fight in conserving water. It’s really exciting.”

Former superintendent Darren Harris took another route. Earlier this year, he signed on to run a new irrigation company that’s an offshoot of a friend’s 12-year-old organic lawn care company in Dallas.

“My salary for the company is less than I was making as a superintendent, but it’s the freedom and the ability to be my own boss that are attractive,” Harris says. “I’m working five days a week and I set my own schedule based on how many clients I can serve. Sometimes I might have to work until 7 p.m., but I see a much bigger benefit to working longer hours now—it will pay off for me personally in the long run.”

WHY ARE THEY LEAVING?

Superintendents leave the profession for many reasons—among them are stress about the job market, long hours and weekends and employer-induced pressure.

“I don’t think many superintendents realize the skill sets they have make them very capable to do a lot of jobs.” – John Neftval, CGCS
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What are the reasons you've considered changing careers?

- Lack of available superintendent jobs: 33%
- The profession requires too many hours (early mornings, late nights, weekends, etc.): 44%
- Pay and benefits (health care, retirement, perks, etc.) aren't suitable: 37%
- I'd like to try something new: 35%
- Another opportunity presented itself: 21%
- Other*: 18%

*Responses for “other” include: physical demands, self-employment, was fired, stress, pressure/discouragement, unrealistic expectations, too political, ministry, unhappy with parks and recreation, being a boat captain, golf instructor, golf course general manager, etc.

What career options have you seriously considered?

- Working for a supplier in the golf/turf industry: 43%
- Becoming a golf/turf consultant: 22%
- Starting my own service business related to the turf industry (lawn care, irrigation, etc.): 22%
- Working for a service business related to the turf industry (lawn care, irrigation, etc.): 27%
- Starting my own business outside of the golf/turf industry (franchise, restaurant, retail, etc.): 20%
- Pursuing a new profession altogether: 57%
- Other*: 10%

*Responses for “other” include: starting own supplier business, golf course construction, parks and recreation, being a boat captain, golf instructor, golf course general manager, wind and/or solar energy, working on the office/business side of golf course industry.
SUPER SKILL SETS

Superintendents who've moved on to new careers paint a positive picture, and encourage their former peers who are considering a career change to tally their talents.

"Superintendents have an unbelievable skill set," says former superintendent Mark McCarel, an agronomic analyst for Advanced Sensor Technology. "We're businessmen and agronomists. We're accountants, managers, HR people, farmers. We know how to go from being in an agricultural setting to a board room to pitch a business proposal."

As such, any career search should highlight those management skills loud and clear, says former superintendent Kerry Satterwhite, executive director/COO for STL Business and Technology Solutions.

"All those things you're doing translate to any kind of management position," he says.

Outside of the golf industry, Blew surmises he could put his management skills to good use, especially if he learned another trade.

"But I'm not sure I'd like to give up working outside," he says.

His ideal position? Working as a superintendent on a privately-owned public golf course.

"I'd like to work hand-in-hand with the owners to really buy into making a profit," says Blew. "I'd like to work hand-in-hand with the owners to really buy into making a profit."

Satterwhite had experience reviewing advertising and scripts for golf industry marketing firm EPIC.

"That's a huge skill I've used in my current position, and it really surprised the company - they didn't know I had marketing experience," he says. "And now I'm putting out a monthly newsletter for our clients. A lot of that experience and those ideas came from volunteer opportunities I had as a superintendent."

For those moving over to the supply side of the industry, the technical and practical knowledge are invaluable.

"If a superintendent asks me what's the easiest way to do something, having that knowledge helps you out," says former superintendent Cory Blair, CGCS, irrigation manager for Marietta, Ga.-based Stovall & Co. "You earn credibility because you were on their side of the desk not too long ago. With some superintendents, that makes a big difference."

Having a superintendent's organizational skills makes almost any new career easier to do, Blair says. In his role, being organized and having a weekly plan - just like when he was a superintendent - has allowed him to do his job better.

Former superintendent John Netwal, CGCS, is now director of operations for North Scott Community School District in Eldridge, Iowa.

When he took on his new role, he surprised himself with all of the skills he developed over the 28 years he was a superintendent.

"Because he was an agriculture professional, he thought his skills were specialized."

"I never thought I could do anything else," he says.

When he was tapped for his new role, he accepted the job to put his management skills to use.

Netwal, who manages 80-plus employees, a $65 million plant and funding streams in excess of $3 million,

"One thing about superintendents is they're concerned about today, next week, two months from now, next year and the years to come," he says. "The ability to look into the future and the planning that takes has been very helpful to me and the school district."

He adds, "I don't think many superintendents realize the skill sets they have make them very capable to do a lot of jobs."

"I love the profession, the game of golf and I miss my peers. I'm proud as heck to have been involved in the GCSAA and to be a certified golf course superintendent, and the industry prepared me to do far more than I ever thought I was capable of doing," he says.

ASSISTANT STRIFE

Many assistant superintendents are in the same boat - tectering on taking the next step in their careers or switching gears.

Scott Verdun, assistant superintendent at the Merit Club in Libertyville, Ill., is feeling the stress of the swollen job market.

"The last two-plus years there have been a handful of superintendent job openings around Chicago, but there have been as many as 350 applicants," he says. "It gets to be a numbers thing. There are a lot of talented people in this area, and there are a lot of people looking to move here. It's really competitive."

Several years ago, before he joined the Merit Club, he'd applied to go back to school to possibly teach high school.

"I was fairly burnt out at that point," he says, relating it to a several month stint working 90-hour weeks on a course construction project.

"For a short while there, I was dead set on getting out of the industry, but there were a few months where I was able to relax, go back and work at my high school job - my first golf course job - and then it helped when I came to the Merit Club."

Verdun's at the point where he has to determine how long he's content being an assistant, whether he wants to expand the geographical location of his job search or whether it's time to move on.

He knows of peers who have moved on to sales jobs and love having regular hours and weekends off. "Someday down the road, I may love that, too. But for now, as long as I'm single and I don't have kids, I still want that shot to run my own course."

"I know that I love doing this job - that 99 percent of the time I look forward to coming into work in the morning," Verdun says.

LETTING GO

Though McCarel is happy in his new position, he hopes other superintendents won't walk away from their profession as knee-jerk reactions to bad days, weeks or seasons. He'd been looking to make a change for several years, which made him confident his decision was the right one for him and his family.

"It's getting tough to do the impossible - better standards for less money," he says. "Guys are working harder than ever trying to do it, though."

Former superintendent Cory Blair, CGCS, sees the trend toward "doing more with less" as the reason for many superintendents burning out and looking to get out of the profession. "Superintendents as a whole tend to be resourceful and can do things different ways to achieve similar results, but save money," he says.
says. "Owners want the same conditions, but they want to pay less for it. As budgets shrink, there's only so much you can do. You're asked to do more, but all of the things you need to do your job are getting more expensive. That's stressful. And I think it's driving a lot of the burn out."

Blair knows a thing or two about burn out. Until December, he managed two golf courses as director of agronomy for Rarity Communities, a residential developer in Knoxville, Tenn.

At age 37, he was working 70- to 80-hour weeks, he'd been on blood pressure medication for five years and was always on edge. "I was wound so tightly," he says.

After five years working for the company, he was let go. Blair's still not exactly sure what happened, but he does know money was tight and he was making a good salary. Regardless of his circumstances, Blair and most people in the industry know of veteran superintendents who've been let go because their employer can find someone cheaper.

"A lot of guys are looking over their shoulders right now," he says. "And that's sad. For those guys, I'd say maybe it's time for a career change. It's always easier to find a job when you have one."

Through the connections he made when he was a superintendent, Blair landed a job as irrigation manager for Marietta, Ga.-based Stovall & Co. and reports that he's dropped 25 pounds, is off his blood pressure medication and happily wraps up his day by 5 p.m. His wife says he's a different person.

"It's nice being centered again as opposed to always being on edge," he says. "And that's sad. For those guys, I'd say maybe it's time for a career change. It's always easier to find a job when you have one."

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"It's nice being centered again as opposed to always being on edge," he says. "I carry my phone, and if I get a call from a customer on the weekend, I answer it, but it's not ringing a lot. It's just a completely different mind-set."

Though it took a while to recognize it, Blair considered being fired a "blessing in disguise."

"One of my old professors from Auburn told me, 'Everything happens for a reason. You might not see the reason right now, but keep looking.' And he was right. I'm in a much better place right now."  

Blair

To learn about how the superintendent and assistant at Greenville (N.C.) Country Club avoid burnout, visit the June Online Extras section at golfcourseindustry.com
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Revenue at many facilities has decreased because of declining membership and rounds played, while at the same time costs for everything from electricity to fuel have escalated. The situation has forced many clubs and courses to tighten their belts and reduce expenses.

One important item in a superintendent's struggle to keep turf healthy and lush has seen rather dramatic, manic price fluctuations in the past few years. Global demand, driven in large part by an emerging China, has helped push fertilizer prices ever higher with no end in sight.

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director of agronomy for Western Golf Properties, a Lake Forest, Calif.-based management company.

“The prices seemed to peak last fall, but they’ve leveled off over the last few months and even dropped for some. I do expect those prices to climb back up to a higher level based on the increased demand of the growing season.”

Greg Pattinson, superintendent at the Captains Club at Woodfield in Grand Blanc, Mich., has seen similar price spikes.

“Potassium nitrate has more than doubled from last year. My fairway fertilizer that I purchased in bulk this year increased 9 percent versus the per-bag cost that I paid in 2008.”

Cohoon

A significant increase in even one item can burden superintendents, many of whom have already been asked to trim expenses.

“The amount of money spent on fertilizer certainly isn’t a huge number in the overall scheme of things,” says Jeff Spangler, senior vice president of science and agronomy for Scottsdale, Ariz.-based Troon Golf. “But in today’s economy, every dollar is important.”

So, resourceful operators search for ways to save money, if not reduce the amount of fertilizer they use. They’re doing this through such measures as buying in bulk, looking for bargains or reducing highly maintained areas.

PRECISION IS KEY

Western Golf Properties is not reducing its fertilizer use as much as it’s seeking the best value based on the needs of each property, Cohoon says. The company asked its national fertilizer providers to keep the firm aware of pricing in the rapidly fluctuating market to allow for the purchase of material “when it made the most sense.”

“In addition, we work with soil-testing laboratories to tailor our fertility programs based on each course’s specific conditions,” he says “In this way we limit the fertilizer use to exactly what each area of the course needs.”

Lance Johnson, CGCS with the city of Westminster, Colo.’s two golf courses, is reducing the amount of fertilizer, mainly in rough areas, and reducing the total nitrogen applied in fairways to help offset some of the increase in product cost.

“We’ll probably avoid the use of potassium and phosphorus in fairways due to the continued high costs of those nutrients,” he says. “We’re prepared to absorb some extra costs in fertilizer by reducing seasonal staff if necessary later in the summer.”

Johnson uses agricultural grade products for bulk fertilizer applications and fertigation, which saves his club money.

“We’ll continue to fertigate more, focusing on applying these applications to fairways on a regular basis,” he says. “We’ll continue the same fertilizer programs on greens, tees and approaches as in previous years.”

Robert Hertzing, superintendent at Valencia Country Club in Valencia, Calif., says his facility also is reevaluating the timing and quantities of the fertilizers it uses.
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"Are we applying at the right time for maximum uptake and are we applying any excess? Those are the questions you have to ask on every application. We have gone to applying less and less in a granular form and more and more through spraying soluble nutrients in smaller quantities."

Matt Deuel, superintendent at Las Posas Country Club in Camarillo, Calif., reports he’s been cutting back on fertilizer for the past three years in light of increasing prices.

“I don’t see this year being any different,” he says. “We’re using more foliar fertilizer and injecting fertilizer. We’ve been laying out granular fertilizer maybe three times a year, but we may cut back to twice in 2009.”

**BARGAIN SHOPPING**

Some old-fashioned bargain shopping sometimes is the best way to save money, even for a golf course. Hertzing began carefully examining his fertilizer purchases two years ago when prices started to jump.

“We’ve been looking for close-out specials because many fertilizer manufacturers and distributors have inventory they want to move and are willing to sell it at a lot lower margin,” he says. “We’re also using more raw materials and going back to the basics of applying a nitrogen source, then applying phosphorus and potassium based on soil tests.”

He also uses a soluble spray program of micronutrients to maintain the color of the turf and plant needs.

Pattinson, who says his fertilizer use was on the lean side to begin with, took advantage of bulk buying to save money this year.

“Last fall I bought in bulk bags for the first time in preparation for the 2009 season. When fertilizer prices started to skyrocket, I took advantage of the bulk discounts. Davey Golf, the company I work for, understands the overall savings in early-order and bulk purchases.”

He also is using longer lasting products such as Polyon and Expo that give him extended release while reducing the number of applications he needs to make. The result? A savings in product and labor costs.

Johnson, too, is a believer in bulk purchasing, as long you have a proper storage area.

“I’ve also found that distributors have been very helpful in holding our orders in their warehouses and will deliver when we’re ready for the product,” he says.

Pat Lange, superintendent at Red Tail Golf Club in Devens, Mass., is another superintendent who’s has taken advantage of bulk buying and early ordering.

“That allowed us to save a little money, and I’ve also avoided buying what I would call premium fertilizers for my rough and natural areas and instead bought less expensive brands. This has saved us a few thousand dollars off the fertilizer budget.”

Companies such as Troon Golf and Western Golf Properties have an advantage over individually managed courses because they have a significant number of clubs in their portfolios, which allows them to maximize their buying power to realize lower prices for bulk purchases.

Troon Golf has taken a closer look at organic fertilizers, which, Spangler says, have held or in some instances decreased in price.

“Organic fertilizers, such as seaweed extract and composted chicken manure, were considered expensive compared to artificial soluble fertilizers,” he says. “But because artificial have increased so much in price, there’s now little difference between the two. So, we are considering buying more organics. It’s also very good from an environmental standpoint, naturally slow releasing, and there are a wide variety of options.”

Dustin Riley, CGCS at Oconomowoc Golf Club in Oconomowoc, Wis., will tweak his program a bit rather than reduce fertilizer use.

“I’ll be utilizing some older technology and less expensive fertilizers,” he says. “These fertilizers will not have the consistent, extended release characteristics of the new, more expensive technologies.

“I’ll also make multiple, lower rate applications of the less expensive products to achieve a consistent release to the turf, hopefully avoiding highs and lows of the less expensive fertilizers.”

Spangler says superintendents and operators should be careful when adapting fertilizer programs so they don’t damage the long-term
health of the turf, which, after all, is the product the customer's paying for.

"Rather than give up on key agronomic programs, which fertilization is, we look for other areas in which to reduce costs," he says. "Maybe we edge a little less or mow the fairways a little less. These are things that the consumer won't notice. You have to be careful when you tinker with the fertility programs of a golf course."

**Reducing Highly Maintained Turf**

Another method to reduce the amount of fertilizer used is decreasing the amount of turf that must be treated, i.e., creating more natural areas away from the primary playing surface.

"Almost every one of our properties is reducing or looking to reduce the amount of highly maintained turfgrass," Cohoon says. "This is being done not only to be fiscally responsible but environmentally sensitive as well."

Riley concurs. "Everyone will be looking at reducing the amount of maintained turf for the long term," he says. "Creating low-maintained areas will affect my maintenance costs, not just fertilizer use."

Says Johnson, "Decreasing the amount of maintained areas is a good idea. It not only helps reduce fertilizer use, but also water use and manpower costs. All of these factors can contribute to our bottom-line budget. It's important when reducing maintained areas of the golf course to make sure you don't affect the playability or change how the golf course architect designed the course to be played."

Cohoon says superintendents and course operators must communicate any changes in the course to the patrons, as well as evaluate which parts of the course may be suitable for natural areas.

Some economic benefits derived from creating new natural areas may be tempered by the need to apply herbicides to reduce tall weeds, Pattinson says, so any cost savings "may not be as great as first anticipated."

Hertzing cautions, "Taking areas out of play reduces water usage, reduces fertilizer usage and lowers maintenance costs. These are all great gains, but you have to make sure they're sustainable. If you take too much area out of play and at some point you need to reestablish these playing areas, what is that going to cost?"

He says to be conservative in the amount of area taken out of play and don't rely on creating natural areas to make up for poor water management and excessive fertilizer use on the rest of the course. 

John Torsiello is a freelance writer based in Torrington, Conn.
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Jeff Plotts, Director of Golf Course Maintenance, TPC Scottsdale
Renewable resources, such as wind, solar and biofuels, are being put into play by golf courses nationwide.

The economic downturn has lead golf course managers and superintendents to put a sharper focus on all operating costs that affect their bottom lines. During this process many learn that the issue of energy, which for so long was neglected, now needs to be addressed.

While water is the lifeblood for the turf itself, electrical energy is the spark that keeps the heart beating, as well as the source for lighting, computers, golf cart charging and heat for facilities. Finding ways to be more energy efficient and how to control costs in the future has opened the door to exploration and the use of renewable energy sources such as wind, solar and biofuels at golf facilities nationwide.

When thinking about wind power, commercial wind farms typically come to mind, but advancements in smaller turbines allow for servicing commercial sites and can be a viable energy source for golf course operations.
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Learning about renewable energy systems

Taking the first step to understand how renewables can be a part of a green movement at your facility can be a daunting task. It’s essential to gather information about electrical use throughout your facility. This data should be broken down so that you know how much power is used for the clubhouse, exterior lighting, the maintenance facility, pumps and cart-charging if applicable. Contact your power provider and ask about energy audits. Many utilities will have a list of area contractors who specialize in energy auditing.

Searching the Internet for information about solar, wind and biofuels can be an overwhelming task, but it can be simplified by visiting the Solar Electrical Institute of America’s Web site, www.seia.org, which not only gives excellent information about solar power but the link to the DSIRE page which compiles a complete list of the various incentive programs that are available in each state.

Another good resource is the American Wind Energy Association (www.awea.org), which provides information on wind generation, detailed wind maps and information on incentive programs.

If your facility believes it has a good potential site, contact a reputable renewable energy company that has been around for several years. The increased interest in green technologies can create a good opportunity for golf courses to highlight their ongoing commitment to the environment while investing in a long-term solution to increasing energy costs.

Public concern about energy independence, climate change and increasing energy demands has driven green initiatives into the forefront of focus for federal, state and local governments. Finding ways to offset rising costs while making a green statement has led some golf courses to incorporate renewable energy into their operations.

HERE COMES THE SUN
On an early spring morning at the Island Golf Course in Plaquemine, La., general manager Glen Clouatre sits in his office making the daily checks on his operation. One of the first items he tends to is monitoring the output of the 3,000 square feet of solar panels that grace the south-facing roof of the cart barn. As the morning sun hits the system, he’s encouraged to see that it’s pumping out kilowatts to offset his energy costs, just as it has nearly every day since the system was installed last October.

“Last spring we looked at all of our energy usage and felt that, picking at the low-hanging fruit of these costs, we should research incorporating a solar array,” Clouatre says. “We brought in a regional solar supplier to help us out in determining the feasibility as well as determining the cost of a system.”

Island Golf Course’s 32-kilowatt system consists of 160 solar panels mounted on the cart barn roof. It can produce 4,800 kilowatt-hours a month—enough power to offset electrical use by about 30 percent. More importantly, the supplemental power source has helped Clouatre avoid excess demand charges from the utility company.

“We pay 12 cents per kilowatt for electricity, but there’s an over-use charge of $5.10 per kilowatt for extra power use,” he says. “Last year we were charged that rate for 1,872 kilowatts—almost $10,000—so finding some way to lessen that bill was important.”

While the offset in energy costs are helpful, alone they make a $220,000 investment hard to justify. But the recent changes in various state and federal tax incentives dramatically have changed the economic dynamics of renewable energy sources. The federal tax rebate is now 30 percent of the investment and the various state programs in Louisiana have helped the Island Golf Course offset $110,000 of the investment.

The energy generated from the system is tied back into the utility grid. As the system generates power it’s allowing the meter to run backwards, creating a net metering compensation. Through these various programs the Island Golf Course hopes to recoup its investment within six years.

These incentive programs are directly related to the other part of the energy equation that has to be considered. Electrical suppliers will have a difficult time adding more generation sources in the near future and are taking a more proactive look at renewable sources themselves. Many states and utility companies have set ambitious goals to generate a percentage of their power through renewable sources within the next few years. This shift has led to a variety of new ways to finance or lease renewable energy equipment as utilities try to meet these goals. Golf facilities can be an attractive site because of their location and acreage and they can be a visible example for their surrounding community.

Wee Burn Golf Club in Darien, Conn., recently completed the installation of an 86 kilowatt solar system consisting of 380 panels installed on the roof of its maintenance building. The system will produce 92,000 kwh annually—about 20 percent its power...
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#### 760 and 860 SERIES

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#### 630 SERIES

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#### EAGLE 700 SERIES

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Underhill™ Magnum™ contains no plastic internal parts to break, stick or wear out. Our unique ratchet mechanism easily adjusts from gentle fan to powerful jet stream and prevents over-tightening damage. Precision-machined, incredibly smooth operation and outstanding distribution patterns make it ideal for high-demand areas like greens and tees. Magnum™ is also an excellent equipment wash-down nozzle.

features

• Built for 1" and 3/4" flow rates
• Fire hose quality nozzle feels great in your hands
• Ultra-durable construction withstands any abuse
• Solid metal internal - no plastic parts to break or wear out
• Beautiful, consistent spray patterns for life
• Ratchet mechanism prevents over-tightening damage
• Multi-pattern sprays - effortless control with hydraulic assist on/off

specifications

Materials: stainless steel, aluminum, TPR rubber
Flow: 37 GPM at 80 psi
Inlet: 3/4" hose thread (1" brass adapter available, see Page 7)

CoolPro™

Cool Without Over Watering - No Root Damage

A hot summer day can be murder on your greens. Use too much water and you risk damage to the roots. CoolPro™ is the first nozzle specifically designed for the single purpose of lightly misting the turf canopy to cool without over watering. And its 25 foot fogging pattern gets the job done quickly.

features

• 3/4" inlet (1" brass adapter available, see Page 7)
• Ergonomic handle/valve provides easy grip and variable on/off control.
• Durable solid metal design: zinc, aircraft aluminum and stainless steel.
• Patented Precision™ nozzle fogs at 70 psi to deliver a 25 ft. pattern with only 4-6 GPM

ordering

Part # NG450 MAGNUM™ Hose Nozzle
Part # HNC075 CoolPro™ Hose Nozzle
Precision™

PATTERNS SO REMARKABLE, NOZZLES SO GOOD... THEY'RE PATENTED.

It's hard to beat MAGNUM™ for all around versatility... When you have more precise watering needs, you simply cannot buy a better nozzle than the Underhill Precision™ series. These solid metal, fixed spray hose nozzles deliver millions of soft, uniform droplets to provide rapid yet surprisingly gentle water application over a huge range of flow rates. From watering fragile seed beds to drenching dry spots, Precision spray patterns are designed with ideal flow rates and droplet sizes to offer you the ultimate solution for every hand watering application.

Rainbow™
LOW FLOW RATE
LANDSCAPING, LIGHT WATERING
Ideal for watering greens, tees and seed beds. Excels at lower pressure flows. 15 GPM @ 80 psi.

Rainmark™
LOW TO MEDIUM FLOW
SYRINGE AND SPOT WATERING
Perfect for syringing and gentle watering of turf and landscape at lower pressures. 23 GPM @ 80 psi.

Cloudburst™
MEDIUM TO HIGH FLOW
DRY SPOT SPECIALIST
High volume drenching, syringing, and application of wetting agent. Ideal flow rate for 3/4” and 1” hoses. 48 GPM @ 80 psi.

Cyclone™
HIGH FLOW RATE
HEAVY WATERING, SOAKING
Powerful fan-shaped spray covers a HUGE area, and gets heavy watering jobs done quickly. Ideal flow rate for 1” hoses. 50+GPM @ 80 psi.

GPM will vary with pressure at nozzle.

high-flow valves

COMPOSITE / STAINLESS STEEL
• 3/4” hose thread inlet/outlet
• oversized handle
• up to 55 GPM

SOLID BRASS
• 3/4” hose thread inlet/outlet
• up to 50 GPM

hose adapters / quick-connectors

ordering

Part # HN1500
Part # HN2300
Part # HN4800
Part # HN5000

Part # CV075H
Part # A-BV77FM
Part # A-BA107FM
Part # A-BQ7F
Part # HN075W

High-Flow 3/4” Valve - Brass
High-Flow 3/4” Valve - Composite/Steel
1” FHT x 3/4” MHT Brass Hose Adapter
1” MHT x 3/4” FHT Brass Hose Adapter
3/4” Quick-Connect, male end
3/4” Quick-Connect, female end
replacement washer, 3/4” hose

Precision™ Rainbow™ Hose Nozzle
Precision™ Rainmaker™ Hose Nozzle
Precision™ Cloudburst™ Hose Nozzle
Precision™ Cyclone™ Hose Nozzle

866-863-3744 • www.underhill.us
APPLICATOR GUN FOR SOLID WETTING AGENT TABLETS

We outfitted our heavy-duty surfactant applicator with a high-flow composite/stainless steel valve and a Precision™ Cloudburst™ nozzle to produce the finest wetting agent gun available. The PelletPro™ accepts all wetting agent tablets and is designed to provide powerful, yet ultra-soft spray when watering or applying surfactants to tight, hydrophobic soils.

features

• 48 GPM capability gets the job done faster!
• Ultra Heavy-Duty - brass fittings, aircraft aluminum, stainless steel, and precision engineered glass-filled materials
• Patented Precision™ Cloudburst™ nozzle delivers large droplets in an outstanding fan pattern
• Pellet rotation (1 RPS) evenly dissolves/applying tablets

With the included 1" FHT x 3/4" MHT brass adapter, PelletPro™ works with both 3/4" and 1" hoses.

2 products in 1!

Remove the PelletPro™ bowl and you have a superb syringe nozzle combo: the patented, 48 GPM Precision™ Cloudburst™ with our high-flow, oversized handle valve.

ordering

Part # A-PPWA50K PelletPro™ Applicator Gun
Part # A-FPB In-line Filter Bowl
Part # A-PPBG Gasket

PelletPro’s bowl, also sold individually, works perfectly as a replacement in-line filter bowl for most spray rigs. Heavy-duty, transparent plastic shows fluids. (No more cracked bowls during winter storage!)
LiquidPro™

APPLICATOR GUN FOR LIQUID WETTING AGENT

This popular "liquid" version of the PelletPro™ features the proven combination of our Precision™ Cloudburst™ nozzle and the high-flow composite/stainless steel valve. Adding a chemical-resistant, UV-protected, lightweight siphon/mixing system produces an applicator gun which can cover 1000 square feet in less than a minute. Now, with unmatched speed and uniformity, you can virtually "paint" your turf with liquid wetting agent, fertilizers, and micronutrients. And like the PelletPro, LiquidPro disassembles easily to create the Cloudburst™ High-Flow Valve syringe nozzle.

features

• Patented Precision™ Cloudburst™ nozzle evenly distributes wetting agent ensuring uniform coverage. Made of aircraft aluminum and stainless steel.

• Lightweight, durable nylon construction weighs only 3 lbs., UV-protected and chemical resistant.

• High-density polybottle has full quart capacity with easy-to-read measurements in fluid ounces and milliliters.

• Needle Valve Metering Chamber: Engineered venturi siphon mixes proper amount of wetting agent into the water flow.

• Pistol grip design with textured handle provides sure grip surface and reduces operator fatigue.

• Adjustable metering dial offers 10 additive settings including "Water Only."

• Metering dial can be removed to prevent tampering with a predetermined setting.

2 products in 1!
The Precision™ Cloudburst™ nozzle and high-flow valve can be quickly assembled to create a powerful, 48 GPM syringe nozzle.

a real time saver!
Bring plenty of wetting agent, fertilizers, and micronutrients to the field all at once with our 6-pack of polybottles.

ordering
Part # A-LPWA50K - LiquidPro™ Applicator Gun
Part # A-LPWAB-6 - 6-Pack of 32 oz. Polybottles and Carrier
hose sprinklers

**RollerPro™**

**PORTABLE SPRINKLER BASE**
The 22" wide stainless steel roller of RollerPro™ provides a stable field position for supplemental watering. Designed for years of hard use, it is ideal for watering dry spots and newly seeded areas.

**features**
- 22" wide stainless steel roller is weighted to prevent movement during use.
- Standard 1" FHT inlet x 1" female NPT outlet.
- 3/4" inlet and outlet adapters included.

**ordering**
Part # A-RP221  RollerPro™

RollerPro™ works with both 1" and 3/4" hoses and sprinklers using the included adapters. Sprinklers sold separately on page 12-13.

---

**HoseTap™**

**SOLID METAL HOSE ADAPTER**
HoseTap™ gives you a hose connection anywhere you have a Toro® or Rain Bird® electric, valve-in-head sprinkler...ideal for fast connections when quick-couplers or hose bibs are not available. Aircraft aluminum body won't break or wear out like plastic, and is anodized with color for easy sprinkler manufacturer identification. Each HoseTap™ includes the precision metal disc, o-ring, and riser. Brass swivels sold separately (see Page 12).

**ordering**
Part # HN-T100  HoseTap™ for Toro® 1" inlet golf sprinklers
Part # HN-T150  HoseTap™ for Toro® 1-1/2" inlet golf sprinklers
Part # HN-R125  HoseTap™ for Rain Bird® Eagle 700 Series golf sprinklers

Add "B" to part numbers to specify BSP thread.
Add "S" to part numbers to include 1" brass swivel for combination savings.

**REPLACEMENT O-RINGS**
Part # OR-100  Fits Toro® 1" inlet and Rain Bird® Eagle 700 Series golf sprinklers / HoseTap
Part # OR-T150  Fits Toro® 1-1/2" inlet golf sprinklers / HoseTap

Order with brass swivel for extra savings!
Tracker™

PORTABLE IRRIGATION MACHINE
The Tracker™ offers a very economical solution for supplementing seasonal watering needs of 1/4 acre to 2 acre areas. Ideal for irrigation of roughs, fairways, driving ranges and other areas where underground irrigation is unavailable. Built to last with precision German engineering and high quality materials, this portable powerhouse can irrigate an area the size of a football field in just two passes.

Tracker™ requires minimal labor to operate. Powered by water, it pulls itself along a nylon cable, dragging up to 360 ft. of 1” reinforced heavy-duty hose (sold separately). Each pass irrigates about 2/3 acre per 8 hours of operations.

specifications
- Weight: 58 lbs.
- Size: Length 33”, Width 22”, Height 22”
- Materials: Aluminum, Brass, ABS
- Hose Required: 1”
- Minimum Water Pressure: 50 psi

Use Tracker™ to help areas where an irrigation system is not available. Tracker’s maximum 400 ft. irrigation path makes it practical for large areas and its compact size allows it to operate in narrow spaces such as in between trees.

features
- Adjustable Speed Control: 20-70 ft./hr.
- 360 ft. nylon cable provides maximum irrigated length of 400 ft.
- Standard full or part circle sprinkler (8-15 GPM)
- 70-85 ft. pass width
- Automatic shut-off at end of pass
- Galvanized anchor stake
- Water turbine drive and gear box
- Includes 1” brass quick-connect adapter

ordering
Part # T-400 Tracker™ Portable Irrigation Machine
Quick Coupler Valves & Keys

SOLID BRASS, SINGLE SLOT/LUG ESSENTIALS
Built to last, Underhill valves and keys are constructed of solid red brass and stainless steel. Valves incorporate rugged one-piece design.

<table>
<thead>
<tr>
<th>Valve</th>
<th>Part #</th>
<th>Inlet Size</th>
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</thead>
<tbody>
<tr>
<td>QV-075R</td>
<td>3/4&quot; FPT</td>
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</tr>
<tr>
<td>QV-100R</td>
<td>1&quot; FPT</td>
<td></td>
</tr>
<tr>
<td>QV-150R</td>
<td>1-1/2&quot; FPT</td>
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<tr>
<th>Key</th>
<th>Part #</th>
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<tbody>
<tr>
<td>QK-075</td>
<td>3/4&quot; MPT x 1/2&quot; FPT</td>
<td></td>
</tr>
<tr>
<td>QK-100</td>
<td>1&quot; MPT x 3/4&quot; FPT</td>
<td></td>
</tr>
<tr>
<td>QK-150</td>
<td>1-1/2&quot; MPT x 1-1/4&quot; FPT</td>
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</table>

hose swivels

<table>
<thead>
<tr>
<th>Part #</th>
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<tr>
<td>HS-075</td>
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</tr>
<tr>
<td>HS-100</td>
<td>1&quot; FPT x 3/4&quot; MHT</td>
</tr>
<tr>
<td>HS-101</td>
<td>1&quot; FPT x 1&quot; MHT</td>
</tr>
<tr>
<td>HS-151</td>
<td>1-1/2&quot; FPT x 1&quot; MHT</td>
</tr>
</tbody>
</table>

The Claw™
QUICK COUPLER MOTION RESTRAINT
When quick coupler valves become unscrewed from swing joints, it's more than just a hassle - it can be dangerous. The Claw™, new from Underhill, offers a simple solution. Embedded in the soil below the quick coupler, and then securely attached to its base, The Claw provides significant resistance to rotational, vertical and horizontal motion, preventing the valve from moving. Made from high strength ductile iron, this compact anchor attaches easily with a single steel bolt.

EASY RETROFIT
Installs without removing valve or valve box!

ordering

<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QCA-075</td>
<td>The Claw™ for 3/4&quot; and 1&quot; valves</td>
</tr>
<tr>
<td>QCA-150</td>
<td>The Claw™ for 1-1/2&quot; valves</td>
</tr>
</tbody>
</table>
Impact Sprinklers

SOLID BRASS, ULTRA-RELIABLE WORKHORSES
For reliable, trouble-free, high-performance year after year, you just can’t beat our brass impact sprinklers. Available in full circle and full/part circle, in inlet sizes of 3/4”, 1” and 1-1/4”.

features

• Solid brass construction
• Stainless steel drive spring
• Bearing assembly hood for longer wear life
• Chemical resistant bearing seals
• Solid brass nozzle

3/4”
Flow: 5-15 GPM
Spacing: 40-60 ft.

1”
Flow: 15-45 GPM
Spacing: 50-80 ft.

1-1/4”
Flow: 25-120 GPM
Spacing: 75-110 ft.

ordering

<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
<th>GPM</th>
<th>Radius (ft.)</th>
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<tr>
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<td>3/4” MPT Full Circle Sprinkler</td>
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<td>57</td>
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<tr>
<td>SI075P</td>
<td>3/4” MPT Part/Full Circle Sprinkler</td>
<td>11</td>
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<tr>
<td>SI100F</td>
<td>1” MPT Full Circle Sprinkler</td>
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<td>23</td>
<td>71</td>
</tr>
<tr>
<td>SI125F</td>
<td>1-1/4” MPT Full Circle Sprinkler</td>
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<td>96</td>
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<td>SI125P</td>
<td>1-1/4” MPT Part/Full Circle Sprinkler</td>
<td>54</td>
<td>78</td>
</tr>
</tbody>
</table>

Performance data shown at 80 psi. GPM and radius will vary with pressure at sprinkler.

VersaLid™

UNIVERSAL REPLACEMENT LID FOR ALL VALVE BOXES
VersaLid™ is the easy solution for broken or missing valve box lids. No need to guess what brand a buried box is or even worse - dig it up to find out - VersaLid’s locking system fits all 6”-7” round valve boxes.

features

• Stepped locking system
• T-Top design minimizes dirt in valve box
• Fits all 6”-7” round boxes
• Interchangeable, easy to install
• Greater top-load strength and more UV-resistant than structural foam lids

ordering

Part # VL-6 VersaLid™ 6”-7” valve box lid
DeepDrip™

TREE WATERING STAKES

DeepDrip™ stakes allow you to water and fertilize your trees at the roots, encouraging deeper roots and healthier trees. Water gets underground fast, so you can water for shorter periods and enjoy considerable water conservation. They also help to aerate the soil with oxygen, and you can add fertilizer into the shaft to direct nutrients to the root zone.

THREE LENGTHS FOR USE WITH ALL TREE SIZES

DeepDrip comes in three sizes, each designed for use with automatic landscape drip systems or a hose. The 14.5” unit is ideal for small trees and shrubs with shallow roots, like rose bushes and ornamental trees (or in commercial use for boxed trees). The 24.5” stake is best for most other tree varieties except for palms and similarly deeper rooted trees, which will benefit from the longer 36” stakes.

BUILT SMART - AND EASY TO USE

The DeepDrip’s reinforced tip and cap are made from ABS and the upper shaft is made from Schedule 40 PVC. Multiple holes in the bottom half of the spike, internally covered by a mesh filter, allow water to flow out but keep dirt from getting in and clogging the tube. The UV-protected cap acts as a reinforced cover when pounding the stake into the ground, keeps debris from entering the shaft and holds a 1/4” drip line/emitter securely in place. By inserting a screwdriver through the two holes at the top of the upper shaft, stakes can be easily pulled up to remove/reposition or rotated to deter root invasion.

DeepDrip™ watering stakes can be installed during or after tree planting. Once in, you have instant access to the root system for fertilizer delivery or to set up deep automatic drip watering.

ordering

Part # A-DD14  DeepDrip™ 14.5” watering stake
Part # A-DD24  DeepDrip™ 24.5” watering stake
Part # A-DD36  DeepDrip™ 36” watering stake

MicroEase™

MICRO-IRRIGATION KITS

Convert your current, inefficient irrigation into a highly effective, low-maintenance, water-saving drip system. MicroEase™ kits can connect to a water faucet, existing sprinkler system or 1/2” riser, providing efficient, low volume irrigation ideal for clubhouse surrounds and other landscaping, shrubbery and planter areas.

ordering

Part # ME-SS-PK  MicroEase™ Pro Kit: spray spikes (25)
Part # ME-8SS-PK  MicroEase™ Pro Kit: 8-stream spikes (25)
Part # ME-SS-SCK  MicroEase™ Conversion Kit: spray spikes (9)
Part # ME-8SS-SCK  MicroEase™ Conversion Kit: 8-stream spikes (9)
Gulp™ Series Pumps

WATER REMOVAL SUCTION PUMPS

Whether you need to remove water from sprinklers and valve boxes or displace gallons of standing water in the field, the Underhill Gulp™ series of water removal hand pumps has the right tool for the job. Constructed from heavy-duty, corrosion-proof materials, these pumps are self-priming and easy to clean. The Gulp Syringe™ and Gulp™ are ideal for carrying on maintenance carts for small, routine needs. For larger water removal jobs, BigGulp™ pumps a gallon of water in only four strokes and SuperGulp™ can move 16 gallons of water in one minute.

SUPER GULP
- 16 GPM pumping capability
- 4” dia. x 2 ft. pump chamber
- 3” dia. x 3 ft. outlet hose
- 3” dia. x 7 ft. outlet hose

BIG GULP
- 35 oz./stroke
- 3 ft. pump chamber
- 36” or 72” outlet hose

GULP
- 8 oz./stroke
- 1 ft. pump chamber
- 10” outlet pipe

GULP SYRINGE
- 8 oz./stroke
- 1 ft. pump chamber
- 11” outlet tube

Use the BigGulp™ Riser Attachment to help prevent mud and rocks from entering the pump chamber.

ordering
Part # A-G12 Gulp™
Part # A-G12S Gulp™ Syringe
Part # A-G3636K BigGulp™ with 36” outlet hose
Part # A-G3672K BigGulp™ with 72” outlet hose
Part # A-G2484 SuperGulp™ with 84” outlet hose
Part # A-G01 BigGulp™ Riser Attachment
needs — and was installed basically at no cost through a lease agreement developed by the solar outfitter, Mercury Solar Systems in New Rochelle, N.Y., who created a Power Provider Agreement (PPA) with the local utility company.

As a private club, Wee Burn didn’t qualify for the tax credits, says Mercury Solar Systems President Jared Haines. “So having our company create the PPA was the only way to make the system pencil out,” he says, noting a daily-fee course could buy the system and take advantage of the incentives.

“Our membership was interested in making a statement about our commitment to the environment and our carbon footprint by adding solar to our facility,” says Warren Burdock general manager at Wee Burn Golf Club. “The solar company installed the system, took the tax incentives, developed a PPA agreement and worked out an arrangement for the carbon offsets. For us, our energy costs are 12 percent less for the power generated by the solar grid.”

**BLOWIN’ IN THE WIND**

While harnessing the sun’s energy has been a focal point of renewable technologies for several decades, attempts to harness the boundless power of the wind have seen vast improvements in technology in recent years. When talking about wind power, one first thinks of the 80-foot-long prop blades associated with the commercial wind farms around the country, but there has been significant development in smaller turbines that can service home sites, commercial buildings in metropolitan settings and can be a viable energy source for golf course operations. While the viability of wind generation is more site-specific as a steady wind source is needed, the cost of wind generation can be lower than a solar array and can be used in rather creative ways.

Consider the windmill system at the Interbay Golf Center in Seattle. Superintendent Rocky Tharp maintains this learning center and nine-hole golf facility, which has a small retention pond where algae suppression is an ongoing challenge. Last summer Tharp installed a small windmill by the pond that powers a compressor, which pumps air into the pond to control the algae bloom. His $1,500 system eliminated the need to run power out to the pond and helped him eliminate the use of standard copper sulfate previously used for algae control.

“I set up this system last fall and so far it has worked very well,” Tharp says. “The other payback is that the public is encouraged by the proactive approach that we have taken at this city-operated facility.”

At Rochester Golf Club in Milton, Mass., superintendent Stuart Tallman has operated a small windmill on site for three years. His windmill was set up through a grant from the Massachusetts Technological Collaboration (MTC), a state agency looking for ways to introduce renewable energy sources.

“Our windmill is a 10 kilowatt Burgey windmill, but I’ve found that our 50-foot tower isn’t high enough to get it above the trees and into a more consistent wind stream,” Tallman says. “We’re generating a little over half the power originally projected, so our payback is projected for 10 years now. Still the system has helped to cut $3,500 a year from my electrical bill. The system is tied into the grid creating a net metering arrangement that makes the meter run backwards when it’s generating power. During the winter months when the course is closed, it’s generating power and building up a reserve.”

Robert Luff is the owner of the Sagamore Hampton Golf Course in Seaport, N.H., which is located just a few miles inland from the Atlantic Ocean and sits on a hillside. He began to research alternative power sources 10 years ago and found little support from both the utility company or the governing bodies.

“Things have changed dramatically since I began to research the idea,” Luff says. “Today I can get a net metering agreement from the power provider and there are more incentives to help make the systems affordable. In my case I found that I could put up two Sky Stream windmills and generate 3.8 kilowatts per year, about 30 to 35 percent of my power needs for less than a solar array would cost because I had a good wind source here. I was able to work with the city for variances for the 50-foot tall towers and the state incentives make the whole project feasible.”

A good example of how community green initiatives will be a continuing driving force can be found in Reno, Nev. In March the city council voted to install various solar and wind generation systems around the city to offset its utility costs. At the city-operated Rosewood Lakes Golf Course, three windmills will be erected.

“I had mentioned to the city that I thought looking at alternatives made sense and I am glad that they are moving forward with the idea,” says golf professional Bob Force.

“It just makes sense for golf as an industry to embrace any way to be better environmental stewards,” he says. “The payback from these types of programs in terms of showing our concern for the future can’t be overlooked.”

The project in Reno will highlight two windmill companies based in the city – Mariah Wind and Synergy Corp. One windmill will be set up next to the maintenance building while one will be installed out near one of the pump houses on the golf course. These two sites were chosen to make an easier grid connection to develop a net metering arrangement with the utility company. The city hopes to have the windmills in operation by the fall.

Doug Saunders is a freelance writer based in Truckee, Calif.
THE BUZZ ABOUT HDPE PIPE

A consultant's perspective on golf course irrigation pipe options.

BY RICK ROBBINS

We've come a long way since the days of wooden and hand-made brick pipe from the early 1900s. If you've never seen wooden pipe, the construction is ingenious. There's an angled wooden lath cut to form a circle. Surrounding this wooden circle is a continuous wrap of aluminum wire that not only holds the structure together but also keeps the swelling of the wood in check. Next, there was clay tile, copper, galvanized, steel, asbestos cement (AC), ductile iron and polyvinyl chloride (PVC) pipe. AC pipe posed the biggest environmental and health threats, and to expose it now requires a white-suited and masked team of EPA specialists.

The PVC pipe evolution began in the 1940s but wasn't used for irrigation until the mid-1960s when pressurized PVC pipe had been developed. Skeptics at the time criticized the introduction of "plastic" pipe and claimed it could not possibly outperform steel or AC pipe. The early PVC pipe didn't have strict regulations regarding strength, pressure rating, diameter or even manufacturing. However, once the familiar governing bodies of the American Water Works Association, ASTM International (originally known as the American Society for Testing and Materials) and others got involved, standards were created for PVC pipe manufacturers.

GOLF COURSE APPLICATION OF PVC PIPE

PVC pipe has been used almost exclusively in the golf course industry since 1970. Golf course irrigation designers, golf course superintendents and installing contractors all have to been aware of the issues involved with PVC pipe and fittings. These include:

• The class of PVC pipe used (CL 160 vs. CL 200 vs. C 900);
• Adequate thrust blocks (or pipe joint restraints) at all fitting and valve locations and for changes in direction;
• Deflection (bending) limits of PVC pipe (maximum of 5 percent);
• Bedding of pipe and backfill material, particularly in rocky soil;
• In cooler climates, preventing the freezing of any water in the pipe (draining and blowing down the irrigation systems with air);
Talk about productive: our US manufacturing plant is on a site a commercial sprayer could cover in minutes. But our team there formulates, packages and ships millions of gallons of over 200 products every year. That productivity and attention to detail lets us provide you with more options and more value. In other words: better choices for better business. For more, see your Nufarm representative or www.nufarm.com/us.


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Irrigation Options

A butt-fusion machine.

- For smaller diameter pipe (3 inches and smaller), gluing the pipe properly with the correct primer, glue and method; and
- The anticipated life expectancy of underground, pressurized PVC pipe and fittings.

The Development of HDPE Pipe

The newest pipe is high density polyethylene (HDPE). It came about as irrigation industry experts tried to improve the flexibility and durability of underground pipe. In the 1930s, European countries began using it for utilities. The United States began using it for gas and water utility lines in the 1950s. As the popularity of HDPE pipe increased, so did the technological advances. Manufacturers developed more fittings and improved the pipe manufacturing process and regulatory agencies developed standards for the industry.

In the late 1980s, HDPE pipe was introduced for golf applications in select areas of the United States.

In 1988, Jim Kirchdorfer of ISCO Industries is said to have been the first in the U.S. to use HDPE pipe entirely on a golf course at Quail Chase, a Kentucky golf course he owned. At that time he had to manufacture the fittings for his project because they were not yet made by any other company. Kirchdorfer introduced HDPE pipe to golf course irrigation systems in the late 1970s using HDPE on the tough applications such as stream crossings, exposed pipe, intake pipe and poor soil conditions.

During this early period of HDPE pipe in golf irrigation, from the late 1980s until the mid-1990s, the selection of fittings for the pipe was limited. Manufacturers would make the fittings needed for each individual project. In the late 1990s, manufacturers finally began making the fittings that were most commonly used for golf irrigation. This was a big shot in the arm for the use of HDPE pipe in the golf irrigation industry.

HDPE Pipe vs. PVC Pipe

Connecting pipe to pipe or pipe to fittings, such as HDPE tees, is done with a butt-fuse connection. For this method with large diameter pipe (4 inches and above), two lengths of pipe are placed into a specialized fusion machine (most commonly a McElroy Tracstar).

The operator enters the appropriate data into the fusion machine (for example, 8-inch pipe in 60-degree weather conditions). The edges of the two ends to be fused are shaved, a heat plate heats the ends for the correct amount of time, and the ends are then placed together, essentially fusing them together. A "bead" is created around the outside and inside of the pipe where the fusion took place, and this bead should be the same thickness throughout.

After cooling time, the fused pipe is removed and two new pieces are fused in the same manner. The same process is used for fittings such as tees. Some fusion machines maintain a data logger for every fusion process, which can later be printed for reference. For smaller diameter pipe, 3 inches and below, the process is the same, but it's done by hand with a smaller machine (most commonly a McElroy Pitbull).

If we use our 8-inch pipe and 60-degree weather conditions as an example, 30 to 40 minutes are required for the entire heating and cooling fusion process. The main variables affecting the time are the wall thickness of the pipe and the temperature needed to fuse the pipe correctly.

A qualified contractor can fuse approximately 1,000 feet of 8-inch DR 11, PE4710 resin pipe per day. Butt-fusing takes place above ground, and while it's being done, others can be opening the trenches where the pipe will be placed. Contractors usually have one work area where butt-fusing takes place, and the fused pipe is then dragged to where it's needed.

Connecting 2-inch lateral pipe to mainline pipe requires an electro-fused saddle. An electro-fused HDPE saddle can be ordered for all ranges of pipe size, with a threaded outlet of ¼-inch to 2-inches (or larger with fused or threaded outlet). The underside of the saddle contains electrical wire incorporated into the saddle. On the top are two electrical prongs where the electro-fusion machine is attached. During the electro-fusion process, the electrical wire within the underside of the saddle heats the surface of the saddle and fuses it to the pipe. Once again, for each fusion process the appropriate data is entered into the machine.

After the saddle has been fused to the top of the pipe, the contractor can drill a hole through the saddle and into the HDPE pipe, where a cast iron elbow is threaded into the saddle for installing a 2-inch lateral gate valve. The contractor also can use a fully fused HDPE elbow with a fused valve. There are numerous and proven methods to make the connection to the electro-fused saddle.

Sprinklers are connected to 2-inch HDPE pipe rather easily. Contractors have found that using 250 feet to 2,000 feet rolls of pipe is the easiest and most economical method. The pipe is run through a "line tamper" machine to straighten it to make it easier to handle and install. Where the sprinklers are actually connected to the pipe, the Lasco Co. has manufactured a mechanical saddle specifically made for this application.

We have found the process of connecting and installing HDPE pipe to actually be quicker than PVC pipe installation. With large diameter HDPE pipe installation, no thrust blocks are needed and no special bedding is needed for the pipe trench due to the wall thickness of the pipe and fittings. For 2-inch lateral pipe, there is no gluing time involved for connecting PVC pipe every 20 feet (HDPE comes in a minimum of 40-feet length up to 2,000-feet coils) and no fittings are needed except for the saddle at the sprinkler swing joint locations.
TECHNICAL ADVANTAGES OF HDPE PIPE

The methods briefly described above are used to install an HDPE golf irrigation system. Not included in those descriptions are the technical advantages in using HDPE pipe and fittings for golf irrigation applications. They include:

Pipe fatigue factor - When water surges take place within PVC pipe as sprinkler cycles turn on and off, the PVC pipe and fittings expand and contract ever so slightly. Due to the chemical composition of PVC, the material is weakened over time. With HDPE pipe, however, it contracts to its original size without weakening. For this reason, AWWA "derates" PVC pipe, stating that over time, the pressure the pipe can handle is reduced from its originally manufactured pressure rating. There is no such derating for HDPE pipe. The lifespan of PVC pipe is 25 to 30 years; HDPE pipe's is more than 50 years.

Flexibility - According to manufacturers' recommendations, larger diameter PVC pipe cannot be deflected (bent) more than 5 degrees. HDPE pipe has a bend radius of 25 times the diameter of the pipe with no detrimental effect to the pipe. This eliminates many of the fittings and thrust blocks required for PVC pipe installation, which in turn, reduces the number of potential main line breaks.

Leakage - Even the best installed PVC irrigation systems experience leakage at fitting and valve locations. With the butt-fusion technique for HDPE fittings and valves, the pipe and fittings become one monolithic unit, which eliminates leaky joints. This saves water and electrical costs as it eliminates pump cycling to maintain pressurization. Environmentally, as more courses choose to use effluent water for irrigation, less leakage means less worry about environmental breaches.

Freeze breaks - In colder climates, golf course personnel must drain as much water as possible from PVC pipe systems before winter to avoid the freezing and breaking of the irrigation system. HDPE pipe can be frozen solid and not break, although draining the irrigation system before winter is still recommended. Worry about breakage is eliminated with an HDPE system.

Going green - Most professionals in the golf industry are concerned about environmental issues - from the materials used to build the golf course to the inputs used to maintain them. The EPA has expressed concerns about PVC at various seminars and would like to see it disappear from the irrigation industry. HDPE pipe is 100 percent recyclable.

Rick Robbins is president of RRI, Inc., which began designing golf course irrigation systems in 1981 and with HDPE in 1997. He can be reached at rrigolf@comcast.net.

HDPE and PVC: Working Pressure Rating and Fatigue Life

Design Fatigue Life (Years) at Velocity of 4 fps at 1 cycle every 15 minutes

<table>
<thead>
<tr>
<th>Pumping Pressure (psi)</th>
<th>PVC DR14 PC305</th>
<th>PVC DR18 PC235</th>
<th>PVC DR21 PC200</th>
<th>PVC DR25 PC165</th>
<th>HDPE DR9 PC200</th>
<th>HDPE DR11 PC160</th>
<th>HDPE DR13.5 PC128</th>
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Pumping Pressure exceeds Working Pressure Rating, not suited for use.

Design Fatigue Life less than 50 years.

The above chart gives the estimated design fatigue life for PVC using C900-07 and HDPE pipe based on a two-to-one safety factor. Light blue indicates an acceptable Working Pressure Rating and more than 50-year fatigue life.
Researchers consider velvet bentgrass as an alternative to creeping bentgrass, evaluating whether it can provide high-quality golf turf and reduce the need for fertilizer, water and fungicide inputs.

Most of us take for granted the creeping bentgrass (Agrostis stolonifera L.) turf used for putting greens. Daily irrigation and routine disease control practices are just an accepted fact of management costs. But creeping bentgrass only has been used commonly on putting greens for about 50 years. Can there be another, lower maintenance alternative? The turfgrass research program at the University of Wisconsin-Madison has been developing approaches towards lower cost, more sustainable golf courses since the early 1990s, and the potential looks good. We’re particularly interested in addressing fungicide, nutrient and water issues.

Superintendents are constantly dealing with new restrictions on fungicide use. Mercury-based fungicides met their end a couple of decades ago. More recently, restrictions have been placed on the more common, lower cost fungicides such as PCNB, chlorothalonil and iprodione. PCNB will likely be phased out in the next two to three years, eliminating arguably the most cost-effective means for controlling snow mold disease.

Golf courses of the future will need to be maintained with less reliance on fungicides. The most practical way to reduce fungicide requirements is to use grasses that are inherently resistant to diseases.

Fertilizer use on golf courses also is becoming a contentious issue. The large and sudden increase in nitrogen costs in 2008 had superintendents asking me when was the single best time to fertilize, as they could only afford a single application for the year. Bans, or at least restrictions, on nitrogen use are likely to occur, beginning in the Northeast as the Environmental Protection Agency seeks to reduce nitrogen fertilization of golf courses. States such as Minnesota and Wisconsin have already severely restricted phosphorus fertilizer applications to turf.

Water restrictions are the up-and-coming bane of golf course management in many areas of the country and are no longer restricted to the South. It’s becoming an accepted fact that many golf courses may have to cut back their use of potable water due...
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- Summer Patch
- Fusarium Patch
- Pythium
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Research

to other public demands. Last year the state of Wisconsin began requiring golf courses to submit information on their water use. This is likely the first step towards limiting ground and surface water withdrawals for irrigation – and Wisconsin is considered a water-rich state.

One of the most insidious and least-recognized challenges to the golf course industry is the development of invasive species rules at both state and federal levels. Virtually all turfgrass species commonly used on golf courses are on one or more invasive species lists. Creeping bentgrass, for example, is listed by The Nature Conservancy as a prime example of an invasive species (http://wiki.bugwood.org/Invasipedia).

Some states (e.g., Massachusetts and Wisconsin) are beginning to pass bans on the sale and transport of plants deemed invasive. Publicly-funded sites (e.g., municipal golf courses) tend to be the first areas to respond to actual and impending regulations, eventually followed by private industry.

HISTORY OF VELVET BENTGRASS

Velvet bentgrass (Agrostis canina L.) is native to North America, though it was also likely introduced about 100 years ago in bentgrass seed mixtures known as South German bentgrass (Brilman, 2003). Its leaves are extremely fine-textured, producing a dense, uniform turf well-suited for putting greens. During the first half of the 20th century, it was deemed a better putting green surface than creeping bentgrass (Monteith and Welton, 1932). Problems with seed supply, coupled with the advent of seeded types of creeping bentgrass and good marketing in the 1950s, motivated golf courses to begin using creeping bentgrass.

In the 1960s, Dr. Skogley developed the first new velvet bentgrass in nearly 30 years. Named 'Kingston,' it struggled to gain acceptance because its light green color caused managers to over-fertilize it, leading to excessive thatch development (Brilman and Meyer, 2000).

Other breeders, notably Dr. Leah Brilman of Seed Research of Oregon and Dr. Bridget Ruemmele of the University of Rhode Island, began developing new velvet bentgrass cultivars in the 1990s. In the past 10 years several cultivars have been released by various companies, including 'SR7200,' 'Vesper,' 'Legendary,' and 'Greenwich'.

Velvet bentgrass has the capacity to provide high-quality golf turf with reduced reliance on water and chemical inputs. In fairway situations, velvet bentgrass has been shown to use less water than creeping bentgrass (DaCosta and Huang, 2006a). Velvet bentgrass has better drought tolerance than other bentgrass species, perhaps partly because it uses more of its energy for root production, which allows it to extract water better from the soil (DaCosta and Huang, 2006b).

The fine leaf texture of velvet bentgrass may lead some people to think it's less traffic tolerant than creeping bentgrass, and so won't hold up under typical putting green traffic. Scientists at Rutgers University, though, proved otherwise. They planted two cultivars of velvet bentgrass and 13 creeping bentgrasses, then tested them under four levels of traffic (Cashel et al., 2005). The two velvet bentgrass cultivars, Vesper and SR7200, maintained excellent turf over the three-year test. The velvet bentgrasses always had better turf quality than the
creeping bentgrasses, as good or better turf density, and essentially no annual bluegrass (Poa annua L.). Greens seeded to creeping bentgrasses had 5 to 15 percent annual bluegrass at the end of three years.

Annual bluegrass infests almost all mature putting greens. Many biotypes look and grow differently than bentgrass, which reduces the quality of the putting green and can affect ball roll. Annual bluegrass also requires more water and chemicals than bentgrasses to keep it in green during the summer. Golf course superintendents will occasionally overseed greens with bentgrass to reduce the amount of annual bluegrass, but it doesn’t always work. One study showed that planting SR7200 velvet bentgrass into a turf of 100 percent annual bluegrass resulted in as much as two-thirds of the green being converted to velvet bentgrass, one and a half to seven times better than creeping bentgrass cultivars (Henry et al., 2005). The ability to maintain velvet bentgrass on a putting green instead of annual bluegrass will reduce a golf course’s input costs.

**WISCONSIN RESEARCH**

Textbooks state that velvet bentgrass is adapted only to New England and perhaps the Pacific Northwest. However, no studies conducted outside of these areas have been published, and the extent to which velvet bentgrasses were ever planted outside of these areas is unknown.

The few scientific studies of velvet bentgrass all have been conducted on acidic soils (pH < 7.0); consequently, conclusions have been reached that an acidic soil pH is needed to grow velvet bentgrass. Part of the reason for conducting turf research, though, is to test assumptions and find new uses for plants. Given that about one-third of U.S. golf courses are in the Midwest, with soil pH often above 7.0, we’ve been evaluating velvet bentgrasses in one way or another for nearly 10 years.

One of our first trials was a test of shade tolerance. Velvet bentgrass has been touted as more shade tolerant than creeping bentgrass, but no data have been published to support the claim. We partnered with golf course superintendent Scott San at Greenwood Hills Country Club in Wausau, Wis., to compare SR7200 velvet bentgrass to Penncross in the shade. Those plots were planted in the early 2000s and maintained at tee height. SR7200 maintained much better turf cover and quality than Penncross over a two-year period.

We have since constructed two putting greens at the O.J. Noer Turfgrass Research and Educational Facility in Madison, Wis., for further shade research. We’re comparing newer cultivars of each species, Vesper velvet bentgrass and Tyee creeping bentgrass, both of which have received high scores in cultivar trials (NTEP, 2008; Cashel et al., 2005). The greens were planted in summer 2008 and are being maintained in advance of probable water restrictions, which is currently the benchmark of many high-end golf courses. Vesper produced twice the shoot density of creeping bentgrasses (~18,000 to 28,000 shoots per square foot compared to ~9,000 to 14,000 shoots of creeping bentgrass). Denser turf not only produces a better looking turf but one that is more resistant to weeds such as annual bluegrass and chickweed. One of the potential drawbacks to a dense turf can be loss of green speed. In our study, we tested the ability to maintain velvet bentgrass on a green instead of annual bluegrass will reduce input costs.

The ability to maintain velvet bentgrass on a green instead of annual bluegrass will reduce input costs.
lished, velvet bentgrass on the soil green is able to produce high-quality turf with only 1 pound of N per 1,000 square feet. This is considered a very low N rate, and could be quite useful for golf courses seeking to reduce their fertilizer inputs.

We’re extending our research into the use of velvet bentgrass for low maintenance, sustainable golf course fairways. We’re planting monostands of velvet bentgrass, creeping bentgrass, fine fescues, Kentucky bluegrass and a mixture of velvet bentgrass and fine fescues. Turf will be irrigated to replace only 40 percent of water use during the summer, far lower than what is normally used to maintain creeping bentgrass or Kentucky bluegrass. All turf treatments will receive low and high N rates, with and without fungicide applications. We’ll be monitoring turf quality, disease and soil moisture. We anticipate that the velvet bentgrass and fine fescue turfs will perform much better than the creeping bentgrass and Kentucky bluegrass turfs. The treatment we’re particularly interested in is the mixture of velvet bentgrass and fine fescues, as they both appear capable of providing good turf with few inputs, yet have different growth habits. So far it appears that velvet bentgrass can reduce the need for fertilizer, water and fungicide inputs, especially on soil-based root zones.

John Stier, Ph.D., is a professor and chair of the Department of Horticulture at the University of Wisconsin-Madison.

Literature Cited


How is maintaining velvet bentgrass different from other types of turf you were most familiar with?

My previous experience was with *Poa annua*, Penncross, Penlinks and Providence creeping bents, from the West Coast of Vancouver to the East Coast of Cape Breton Island, Nova Scotia. The very first head-scratching issue I had was just after seeding [in 2002]. It was the traditional seven to 10 days to germinate, and then it was like watching molasses. It took weeks for the greens to thicken up. I understood that I was dealing with a strange animal to begin with – bunch-type growth and absolutely no stoloniferous growth habits that a conventional creeping bentgrass inherently possesses – but this was absurd. [Architect] Doug Carrick would come for his site visit and pace around like an expecting father wondering if the greens were ever going to fill in; the ownership had the same puzzling look on their faces. This was the nature of the beast. Don’t expect quick establishment; it’s not going to happen. Because of the super fine leaf blade, velvet bentgrass has such an incredible density to it, so fine, so dense, so upright – the perfect putting surface. In fact I had a conversation with Dr. Peter Landschoot from Penn State just last year and he said, “Velvet is the finest putting green grass in the world.” Unfortunately, velvet has fallen by the wayside since its trendy reintroduction back in the early 2000s.

You have to appreciate that there are no text books; there's very little if any current literature regarding growing and maintain velvet bentgrass. It’s been trial and error. It took me three years until I was getting the results I was looking for. The biggest myth perpetrated by agronomists in the past was that velvet doesn’t need a lot of nitrogen and if you over fertilize velvet, it’s a death sentence. In those first three years I had this in the back of my mind, but at the same time I knew the greens could be better. They still looked thin. It was an acceptable putting surface, but it was a struggle to keep them consistent. They would look good for a week, then go sideways, then look terrible, only to turn around and look great again. We had sound management practices and constant soil and tissue monitoring; again, all the soil labs and top agronomists had no benchmarks for what constituted an ideal range for nutrients in the greens. There was no established data anywhere. I was certainly frustrated, but I was not giving up. The course at the time was still getting great reviews, but that wasn’t good enough. I felt almost ashamed of the greens – I had to get these greens to the next level. At times during this period I’d picture my industry colleagues enjoying their afternoons, laying back in a lounge chair, ice cold beer in hand watching their lovely creeping bentgrass become even more flawless, as I ran around my golf course sweating, frustrated and kneeling on the greens peering into the canopy of the grass. I’m sure the golfers must have thought that either I was praying to the turf gods or I had gone crazy.

In late 2005 I started to custom blend some fertilizers and slowly increase the nitrogen levels, completely ignoring the warnings that were so ingrained in my skull about over fertilizing velvet. As it turned out the velvet liked the extra nitrogen. It thrived, it became denser. Cultural practices such as topdressing are a must with a dense turf like velvet in order to constantly dilute the thatch layer; however, that same dense canopy can make it next to impossible to work a topdressing onto. I’ve had to search for sand that’s fine enough to incorporate into the canopy, but yet still falls within the specifications of the root zone matrix. Verticutting is an excellent tool to utilize in conjunction with topdressing in order to open that canopy up.

What are some of the greatest challenges associated with velvet?

Where do I start? Because of its bunch-type growth and fine texture, it's extremely slow for ball marks to heal – we’re talking season-long. We now incorporate mini plugs to remove the whole ball mark because we cannot sit around and wait for the recovery period. The biggest challenge is recovering from drought stress. Do not allow these greens to wilt or even approach the wilting point. The plants will not die, but all the above surface leaf tissue does and it takes two to three weeks for the plant to send up new shoots. Heaven forbid we ever host a professional event in which the tour agronomist expects us to maintain U.S. Open-style greens. They would be 100 percent brown. With mowing heights getting lower and lower and the expectations of green speed, you want to maintain them at a comfortable spot that works for both the turf and the golfer.

Has working with velvet bentgrass been what you thought it would be?

I can honestly say yes, and then some. I knew it was going to be a challenge, and trust me it has delivered its promise. If I could hit one point home through this whole conversation it’s that velvet is unpredictable. Dr. Peter Landschoot is correct when he said that velvet has fallen out of fashion. I find it very ironic that all of these new generation creeping bentgrasses are being bred to have finer texture, short internodes and a dense upright growth habit – all the characteristics of velvet. If only more research and development was put into velvet bentgrass, you could have the perfect turf species in every way. In this day and age of genetic modification, anything is possible.

Would you characterize velvet bentgrass as “low maintenance?”

I would certainly not attach a label saying “low maintenance.” It needs just as many inputs, a lot more topdressing and verticutting. If you had a very high-end private club with 15,000 rounds a year and a great maintenance budget, you could have some fantastic greens. I will say that we apply fewer fungicides than we would otherwise apply to a creeping bentgrass.

Do you have advice for other facilities considering velvet bentgrass?

Each course must evaluate its needs, from the type of facility, the vision of the architect and the requirements of the superintendent to maintain the level of conditioning that the clients expect. I want to make a point that all turfgrass species will respond differently to the type of root zone you have – straight sand, 80/20, 70/10/20, etc. These are my observations of the trials and tribulations that I’ve had here. Perhaps other superintendents in different parts of the world have achieved greater success with velvet. What surprised me was the lack of sound management data out there, even after seven years of having it. I guess that’s why it went by the wayside back in the 1950s when Penncross came on the scene.
The little things

The members at Bigwin Island Golf Club don't notice the golf course accessories — and that's how superintendent Scott Heron likes it.

BY MIKE ZAWACKI

Image is everything.

As director of turf operations for Bigwin Island Golf Club in Huntsville, Ontario, one of Canada's top-ranked golf courses, Scott Heron understands this fact and it's why he pays particular attention to his annual golf course accessory purchases.

The Bigwin Island course, which Heron and his crew of 27 are responsible for maintaining, is a par-72 layout measuring 7,166 yards from the championship tees. The course is designed with a variety of tee locations measuring 6,742 yards from the blue tees, 6,287 yards from the white tees and 5,346 yards from the red tees. Each nine is a par 36 consisting of two par threes, two par fives and five par fours.

Every year Heron purchases new flags, flagpoles and tee cups for each of his course's 18 holes. An excessive annual purchase, some golf course superintendents may say, but essential for Bigwin Island, Heron adds.

"They just don't last," he says. "The weather coupled with the fact that they're getting picked up and thrown down all the time marks them up pretty good. And the cups, they really get beaten up by the end of a year's time."

Heron tends to purchase accessories based on quality and durability. He wants a flagpole and flag to go the distance from July to July, the typical year these items are pressed into service. Another factor, though, is the relationship he has with his vendor, Bayco Golf.

"I put a lot of trust into the advice that my sales rep offers when I have questions about the accessories I'm about to purchase," he says. "Also, I value the fact that if there's a problem during the year with any of these products, they take care of any issues without any worry."

While not as frequently, Heron approaches other course accessory purchases in the same fashion.

For example, occasionally a tree will damage a course trash can, prompting it to be replaced, or one of the course benches begins to show, that too much be refurbished or replaced.

The cost is minimal, roughly $2,000 per year for all of his course accessory purchases, but the return is invaluable because most often it's the little things that make a difference in the course's overall presentation, Heron says.

"Sure you could use these things forever, but they'd look pretty ugly," Heron says. "It's one of those things that, by replacing them, none of the members really ever takes notice that they're new every year. But if you didn't replace them, and they started to show some wear and tear, then it would begin to attract the attention of the membership."

GCI
Craige Currier, superintendent for Bethpage State Park, oversees agronomics for five golf courses within the 1,600-acre New York state park system. He's readying the Black Course for its second U.S. Open Championship.

Are there any preparation differences between 2002 and 2009?

The one thing that affects the course is the amount of public play received – 250 rounds per day in season. Our greens are 80 percent Poa, so to be able to handle the traffic, get ready for the event and be healthy enough to withstand the impacts from anthracnose and drought stress gets tricky. We're on a regular, spoon-feeding liquid fertility program. We use 1/10 of a pound of nitrogen per week, combined with a micronutrient package and supplemented with humic acid and separate calcium applications to make the turf healthy and strong. The course is also on a weekly growth-regulation program.

One of the benefits this year is that the course will close to public play on June 1, allowing us ample time to coordinate our off-course work and volunteer schedules, keep track of final off-course operations and set-up and fix ball marks and divots. We also check and monitor isolated dry spots on putting greens so we can have proper moisture content and firmness. To respond to the stress and wilt caused by foot traffic, we hand-water and closely monitor irrigation. Finally, we protect chosen hole locations for the U.S. Open so there are no old hole plugs, scars or wear from traffic.

Our greens are slightly bowl shaped and we’ve drilled and filled our greens four times in the past two years to improve water infiltration. This practice is done in conjunction with weekly sand topdressing and hand-broomed to backfill any hole or groove created.

What’s really helped in the preparation is the closing of the Black Course on Mondays. This is key for us to conduct maintenance practices we couldn’t otherwise accomplish.

With a healthier plant, quality of cut on the putting greens is vital. We’re using the Jacobsen Eclipse mowers. The adjustable reel frequency designed into this unit has enhanced the quality of cut and will result in a more consistent, smoother ball roll.

It’s been challenging to comply with the state’s chemical application policies. We’ve been fortunate to have the insight and guidance of Dr. Frank Rossi of Cornell University to guide us through the process. As we are a state park and offer more than just golf, we have to be sensitive of other uses and visitors.

What changes have been made to the course over the past seven years?

We’ve added length to holes 3, 5, 7, 9, 12 and 13, going from 7,200 to about 7,500 yards. The two most prominent changes are on the 7th hole, where we took it from 480 to 525 yards (par 4) and the 13th hole, which was extended to 610 yards from its previous 555 yards (par 5).

Bunkers have been added to holes 4, 8 and 9. The ninth will really test the players off the tee. We deepened bunkers on the 10th and 11th holes, reshaped the cross bunker on 12, added and deepened bunkers on 13 and deepened the bunkers in the landing zone on 18.

Putting greens were expanded on two holes. On the par-3 eighth hole we slightly rolled the green over on the front edge to bring the pond more into play for shots that are short to a front hole location. On the par-3 14th hole, we added a back shelf, going from left to right, which will penalize a ball hit over the green by bringing the downslope into play. These changes add additional opportunities for hole locations, as well as shot options.

Do you have any concerns for this year?

Of course, my biggest concern is weather, as rain and thunderstorms impacted us in 2002.

In 2002, you proposed to your wife. Any big plans for this year?

No response... (Currier smiles).
TOW-TALLY EFFICIENT

At the Members Club at Grande Dunes in Myrtle Beach, S.C., turf equipment technician Joe Corsetti came up with the idea to tow a John Deere Aerocore 800 greens aerifier behind a turf vehicle to save the operator lots of walking time in-between aerifying greens. The tow bar design uses tubular and flat steel welded together that’s attached to the tow vehicle with a hitch and pin with a chain so it won’t get lost. The other end is attached to the aerifier with a U-shaped metal bracket held in place with two lynch pins that connect/disconnect easily. The aerifier shift lever is transported in the “neutral” free-wheeling position up to 10 miles per hour from green to green. Corsetti’s concept has a patent pending; it took about three and a half hours to build and it cost about $65 in materials.

GETTING FLOORED

The Locust Hill Country Club in Pittsford, N.Y., has a unique wooden floor in the shop and employee lunch room. It was implemented by golf course superintendent Rick Slattery, equipment mechanics Dan Lloyd and Rich Bournival and longtime employee Dennis Smith.

The floor, which was installed in 1960, is made of 4-inch thick yellow pine that began to splinter with age. The employees began the renovation process by using a sander to remove 35-years of paint build-up and the top 1/4-inch of the pine. They caulked the cracks and initially applied three coats of epoxy.

They sand the floors and apply a light epoxy coat every December; sometimes another coat of epoxy is applied in the spring. It takes about an hour and a half to apply the epoxy on the 30-feet by 35-feet shop floor. Besides protecting the yellow pine, the epoxy is soft to stand on, which the equipment mechanics’ legs and backs really appreciate. They use Benjamin Moore 100% Solids Epoxy Floor Coating CM40-00 (at about $100/gallon – 4 gallons initially and 2 gallons per application for upkeep), which resists spills from petroleum products. The floor is dry mopped once a week and then washed with a benign cleaner or mild soap.
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MYTHBUSTING

The good news thus far in 2009 is that the weather has cooperated, at least here in the Great Lakes and broader Northeast. The last thing anyone needs is a bunch of soggy weekends and rained-out events. So, at least Mother Nature doesn’t hate us as much as the banks, Congress and the media.

The bad news is that the shakedown cruise continues. A still relatively small percentage of courses are closing, at least temporarily, rather than continuing to operate at a loss. Nearly everyone is managing back to some extent, most notably in terms of labor costs and deferred capital spending and projects.

Most facilities are slogging along. Occasionally, you even hear of a few that are still kicking butt through some combination of filling the right local niche, marketing creatively and sheer hard work. In short, it could be worse. But many people are using a broad brush to paint a much darker picture than reality exists. Given that, I’d thought I pay tribute to one of my favorite TV shows, “Mythbusters,” by examining which of the legends currently floating around our business are confirmed, plausible or just plain busted.

Myth No. 1: The downturn will bring on the demise of the “executive superintendent” concept.

I’ve talked with “knowledgeable” golfers who say some high-end superintendents who’ve had more than ample staff and budgets will be most at risk because they don’t actually know how to maintain their own courses. Somehow, they’ve risen through the ranks because of their ability to B.S. with members and throw money at problems.

The premise is that those guys won’t be able to survive in the new market because, due to staff downsizing and budget reductions, they won’t have a gaggle of assistants to grow grass for them or a pile of cash to buy every new toy that comes along. They’ll never be able to survive in the real world.

Here’s how you test the premise of this urban legend: scratch almost any “managing” superintendent and they’ll still bleed green. Name me one of these guys who would rather be sitting in a board meeting or glad-handing with members instead of being out on the course doing what they love. Most have been pigeonholed into these positions out of necessity, not desire. If necessity requires them to pull off their neckties and climb back onto a mower or jump into a muddy hole to fix a busted line, most will jump at the opportunity. They’re problem-solvers and turfheads, not empty suits. Myth: Busted.

Myth No. 2: Economic pressure will create an opportunity for superintendents to convince golfers that “brown is beautiful.”

In other words, the silver lining is that players will understand what’s going on and accept less pristine conditions. Therefore, we can be both more environmentally friendly and create those famed fast-and-firm conditions that some low-handicappers claim are more important than aesthetics or receptive greens.

This one’s a variation on the legend that, with education, golfers will embrace less-intensive maintenance for the sake of the game. Here’s how we test this one: take a photo of a perfectly maintained golf hole and digitally insert some brown patches. Then, put both pictures in front of 100 golfers and ask them which course they’d prefer to play. If even three of them asked, “How firm are the fairways?” before choosing the pretty green one, I’d be shocked. Myth: Busted, but plausible at a few clubs dominated by low-handicappers.

Myth No. 3: The biggest problems will come after the season’s over.

The idea is that courses, particularly in cool-season areas, will wait until after the season to axe support staff. I’ve had more than a few e-mails from assistants around the country who sense that they’ll be sent packing after Labor Day.

The argument is that ownership will decide to shift to seasonal rather than full-time positions for more staff, including assistants, technicians and mechanics. The test here – aside from administering polygraphs to the general manager or owner – is to look your boss right in the eye and ask him/her the odds of you still having a full-time job come October. It’s a gutsy and imperfect experiment, but it’s the only way to at least test the premise. Myth: All too plausible and likely to be confirmed this October.

Myth No. 4: Private clubs are the most at risk in the current economy.

Clubs are all going to fail eventually, right? Wrong. Well-managed clubs that adapt to the new needs of the modern member will do fine. The recession is, in some cases, accelerating the decline of clubs that refused to change with the times, made horrible financing decisions or failed to be creative.

Far more at risk (besides stand-alone, high-end daily fees with atrocious debt service) are government-owned courses. At a time when local governments are struggling to keep cops on the beat, losing hundreds of thousands annually on a muni just isn’t politically palatable. Myth: Busted.

Myth No. 5: Jones watches too much TV and keeps using shows as a platform for his columns.

Myth: Confirmed.
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Use Less

A catalyzed fertilizer increases nutrient uptake so you can use 25%+ less.

Improved Nutrient Uptake With NutriLife

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<th>Total N Uptake (mg)</th>
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<th>NutriLife 3 oz</th>
<th>NutriLife 6 oz</th>
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<td>2074</td>
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University of Florida Perennial Ryegrass in Hybrid Bermuda Golf Green

NutriLife Fertilizer Meta-Catalyst that increases nutrient uptake in turf and ornamentals.

Spend Less

Fertilizer costs going way up? Control your expense by catalyzing your fertilizer with NutriLife. NutriLife Fertilizer Meta-Catalyst allows you to lower the amount of fertilizer applied by 25% or more.

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<th>Fertilizer Savings</th>
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<th>New Way with NutriLife</th>
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<td>4 lbs/1,000 sq. ft</td>
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