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• P. 40

INSIDE:

SMART IRRIGATION SUPPLEMENT

AFTER PAGE 42



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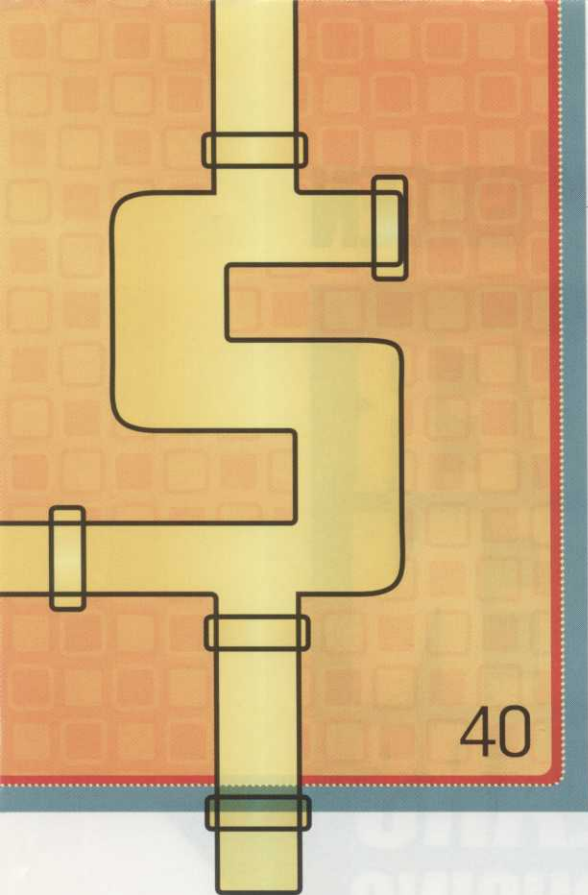
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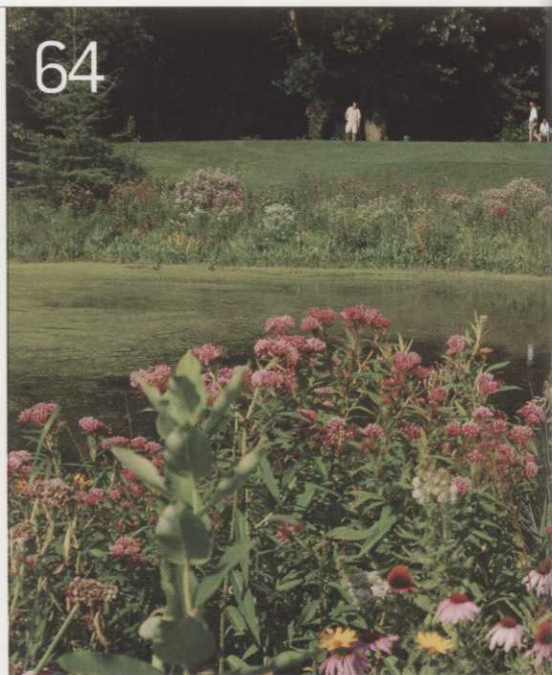
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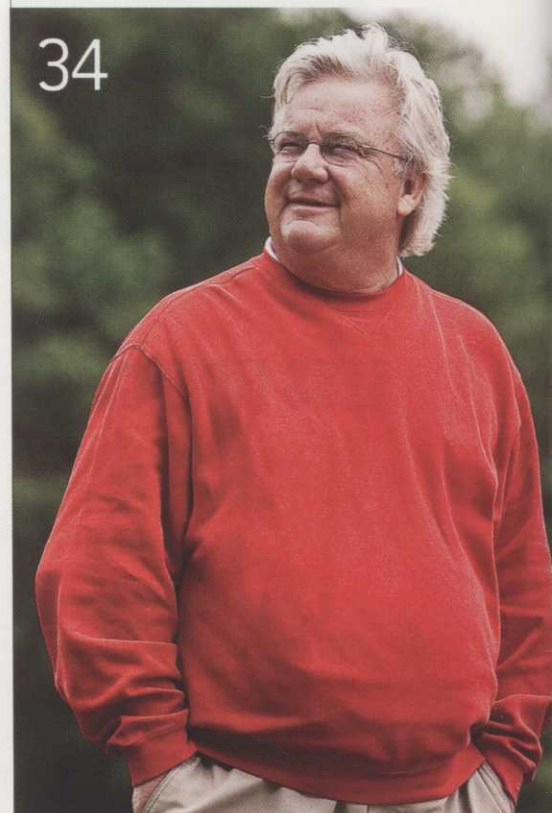
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There's a spot for a new controller on your course. How will you fill it?

Fact is, this used to be an easy answer. There were only a few choices in irrigation system controllers, and more or less they performed roughly the same. Well, that has changed quite a bit.

The demand for increased water conservation, more flexibility, and better efficiency has led to dramatic breakthrough technologies, and many new options.

So what used to be a routine decision isn't. (And, of course, irrigation controller technology isn't something most of us stay as up-to-date on as say who's at the top of the leaderboard at a PGA TOUR event, or who was just voted off the island last night.)

So where to go from here? That's the million-dollar question. Literally — the right controller system can have that much of an effect. First off, don't just consider the brand. Instead, look at capabilities too. If you do, you'll discover your choice is simpler than you might think. Because there are significant differences. For instance, there's a control system that can offer much greater precision (to the second instead of the minute) in setting rotor run times. Why is this important?

Because shaving seconds of program run time can save hundreds of thousands of gallons of water over

a year. Sometimes as much as 40% in total power and water costs. This same system also allows any controller to act as a central control for all the rest. Why does this matter? It's

a huge time saver if you operate without a central, or during a renovation. Instead of having to visit each and every stand-alone controller on the course, you can just go to one. (Or simply hook one up to a maintenance radio and control them all. Or even better, connect one to the internet with a modem, and manage the whole irrigation system from anywhere you can access the internet, like the clubhouse—or perhaps the couch in front of your TV at home.) Then, there's the question of how easy the controller is to upgrade in the future—as more and more sensor and web-based technology comes online. Here again, the answer is simpler than you might expect. Only one control system is totally software-based. Which means upgrading is just a matter of connecting the controller to a laptop and taking only a few minutes to upload the latest software. What is this advanced system? It's the John Deere Aurora Control Series. Sure it might not be the first name you consider in irrigation, but when you look at everything it offers, it might be just the right one to fill the position. Like to learn more? Call your local John Deere Golf distributor or visit www.JohnDeere.com/Aurora.



For the full story visit
www.JohnDeere.com/Aurora.

www.golfcourseindustry.com/readerservice - #11



JOHN DEERE
GOLF

Through the first half of 2009 there have been 71 golf course closures (18-hole equivalents) compared to 16.5 openings, the National Golf Foundation reports. There were 106 closures in all of 2008.

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FEEDBACK

We'd like to hear from you.

E-mail us at gci@gie.net with your thoughts and opinions.

Change starts within

More people need to think about what Pat Jones is saying in "Golf's reality show," (May issue, page 98). In the same issue, Doug Carrick addressed course design in terms of problems of growth and suggested all stakeholders get involved in growing the game (page 14). Unfortunately, there is not a unified golf industry trying to fix this problem of declining golf that has been going on ever since Golf 20/20 came up with a plan to grow the game in the year 2000.

When we talk about stakeholders, we tend to think about the obvious ones directly connected to the game, but don't really look at the entire supply chain...from paper products to other soft goods. Those suppliers have a vested interest, and it was perceptive for Pat to make note of that. I think he's a little conservative on the attrition over the next few years. In fact, instead of about 1,000 courses failing or falling away, I think it could be more like 3,000, mainly because of declining players and rounds. Recently NGF reported core golfers declining and that's alarming.

The industry needs to come up with a sound marketing program that reflects fundamental change in the way the industry offers its products, goes after new golfers and tries to keep what golfers it has. Pat noted "People seeking exercise and a taste of the outdoors will realize that walking a round of golf is more fun than jogging or running on a treadmill." I couldn't agree more, but nowhere do I see the industry talking about physical fitness and exercise in the outdoors. Change starts within first! People today are more health conscious and fitness oriented, golf offers that, and golf isn't talking about it. What a shame.

While Doug Carrick makes some very good points, I think he makes a serious mistake in

suggesting baby boomers are going to be a demand source of any significance. Boomers are heading towards retirement age, not retirement...they haven't saved enough to retire and will continue to work or won't have enough money to play golf. The boomer boom is a myth perpetuated by the NGF.

Tom Durbin
Former vice president of sales
SoloRider
Castle Rock, Colo.

Job well done

Just a quick note to compliment Marisa Palmieri on a job well done on the social media article in the May issue ("Is social media right for your career?" page 32). Nice job taking a timely issue and boiling it down. The end user profiles were also helpful.



Mike Sisti
Marketing manager
LebanonTurf
Lebanon, Pa.

SEEN ON twitter

@JustinRuizCGCS:

After reading the article in GCI about Facebook, LinkedIn and Blogging, got a LinkedIn account.

(In reference to the May cover story, "Is social media right for your career?")

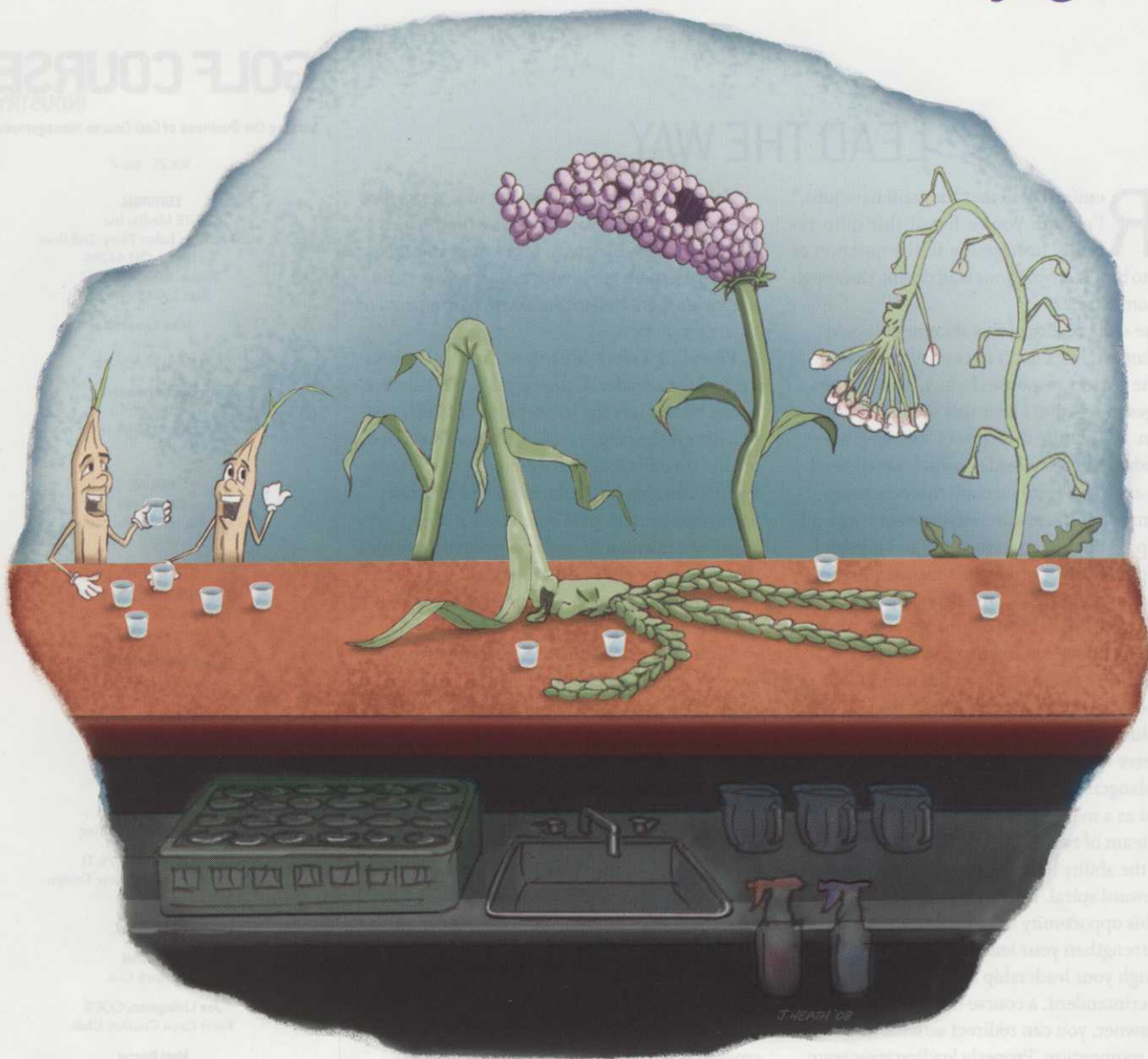
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EDITORIAL MISSION STATEMENT:

Golf Course Industry reports on and analyzes the business of maintaining golf courses, as well as the broader business of golf course management. This includes three main areas: agronomy, business management and career development as it relates to golf course superintendents and those professionals responsible for maintaining a golf course as an important asset.



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LEAD THE WAY

"Remind them that they still have jobs." I'm sure you've heard this quip recently in response to the question of how to best motivate your staff during this tough economic time?

The stark reality of this statement is cold and honest, but I don't necessarily believe it's the correct response. In fact, a part of me cringes every time I hear this used in conversation. It's not the response of someone who considers himself a leader, which we all need to be as we navigate through this economic quagmire. You see, adversity exposes true leadership abilities in an individual, and it is leadership that drives productive teams, whether they're maintaining a private golf course or running a Fortune 500 company.

I don't doubt you made some tough personnel decisions prior to the start of this season. But beware, I've seen these decisions sap the morale from a once cohesive workforce, which can be a very dangerous scenario.

But as a manager, whether it's a team of two or 20, you have the ability to prevent this downward spiral. Instead, use this opportunity to build and strengthen your team.

Through your leadership as a superintendent, a course manager or even club owner, you can redirect setback into forward momentum. Properly leading your team will not only improve morale this season, but also boost performance.

So how do you improve this quality in yourself? It starts with your mind-set and how you approach and interact with your team, says business consultant Joe Calhoon, president of Kansas City-based PriorityAdvantage. While qualities such as courage and integrity are often inherent in a leader, exercising greater patience and humility are traits anyone can improve to better guide their teams.



Mike Zawacki Editor

Calhoon explains that leaders must prioritize the tasks before them and inspire their teams through achievable goals. More importantly, they share these goals with every member and empower them to become active participants in their completion.

Providing a work-life balance is another critical tool for a leader, Calhoon adds. An effective leader recognizes the importance of family and of a life off the course and he makes allowances for the time his team needs outside of the facility. It's amazing how motivated and effective team members become when they realize their superior understands and appreciates the issues that are important in their lives.

And often forgotten, you need to recognize the emerging leaders in your midst. These circumstances provide great opportunities for "accidental" leaders to rise to the top. And remember, leadership can be contagious. If you're inspiring individuals, then their actions could influence those around them to achieve and excel, as well.

So the next time someone asks how you're motivating your crew during this summer slump, tell them you're focusing them on shared goals this season and you're using this opportunity to train everyone to become leaders in their own right. And who knows, you may emerge as a more effective leader yourself.

When you have a moment, please tell me how you're leading your team this season, and perhaps how you've had to become a more effective leader to accomplish your goals. E-mail me at mzawacki@gie.net. I look forward to receiving your insight on this topic. **GCI**

On a side note, I'd like to take a moment to recognize everyone who has worked tirelessly on Golf Course Industry over the last year. Recently, GCI's editorial and design team received a number of accolades, including best opinion/editorial writing, best cover design and best overall publication design in the 2009 Turf & Ornamental Communicators contest. Art director Andrea Vagas received a best-of-show Gardner Award for GCI's July 2008 issue. In addition, GCI received Best Trade Publication and best trade report for its 2008 Smart Irrigation supplement, as well as other writing awards at the Ohio Excellence in Journalism Awards in June.

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TALKING SHOP

The Michigan Assistant Superintendent Committee has been organizing assistant shop talks for a couple of years. These gatherings are a great way to engage assistants. Assistant shop talks can be simple to plan and execute and cost little or no money. Here are some of the ways we go about organizing them.

Organizing an assistant shop talk begins with finding a host maintenance facility. It could be your own course or another one down the road. The success with the assistant shoptalk begins by having the full support of the host golf course superintendent. Once the host facility is determined, establish a time and date that's convenient for the host facility. I've found the most success with shop talks running from 4 to 6 p.m. These hours allow plenty of time for assistants to work a full day and still be able to attend an event. It also allows assistants to be home at a good time.

The next item to consider is the agenda. The topics can be technical or non-technical in nature or something that's a trend. One recent shop talk we held included learning about a bunker renovation from beginning to end; many of them include talks on leadership, communication and daily tasks like irrigation, chemical management and staff management. Remember, all shop talks should include a tour of the maintenance facility and meeting the golf course superintendent. Most superintendents are happy to do a small presentation on any topic from a recent construction project to sharing interviewing tips and resume-building skills.

Talk to your local association or chapter president and ask them for help in sending out e-mails to the assistant members advertising the shop talk. I'd suggest sending out an e-mail about four weeks in advance to allow assistants plenty of time to manage their work and personal schedules. Always include a deadline for registration, which is important to finalize your number of attendees so you can plan for refreshments.

Using a core of assistant volunteers can help make your shop talk run smoothly. For example, to ensure good attendance, ask a group of assistants (possibly those on the chapter's assistants' committee) to divide

up a phone list of prospective attendees and make calls to personally invite assistants to the event. Don't worry about not getting a huge turnout the first time. Whether you get 12 or 30 assistants participating in the event, there's still something to learn.

The budget is nothing to worry about. I've yet to ask for money from our association for any of the shop talks I've organized. The superintendents I've worked with all have been very excited and happy about opening up their facilities and have volunteered to purchase pizza and pop. Once word got around, a subsequent shop talk was sponsored by a local industry vendor.

At the event, create a sign-in sheet and name tags. It's nice for assistants participating in the shop talk to be able to meet other assistants and immediately see their names and what courses they're from. A sign-in sheet will prove useful if you plan to organize another shop talk. You also can use it to send an e-mail thanking attendees.

Allow the host assistant the opportunity to chair the shop talk and give an introduction. This is a great opportunity for the host assistant to show off his facility and practice communication and leadership skills.

I've also found that it's good to have a few assistants in the crowd who are prepared to ask questions and initiate discussion should things get quiet. But trust me, there's always enough to talk about and the two hours goes before you know it.

Bring a camera and take notes. You never know what you might see and want to discuss with your own superintendent back at work. Take pictures and share them with your employer the next day. The pictures also can be used to prepare an article for your chapter's magazine or Web site.

When the event is over always thank the host superintendent and assistants for taking time out of their busy schedules to organize and host an assistant shop talk. Always follow up with a handwritten note.

A successful workshop takes planning, but it's worth it. Organizing assistant shop talks is about creating an opportunity for assistants to get together in a familiar environment that promotes networking and learning opportunities. **GCI**

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See Page 4

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R51-2413	Black 24 / Black 13	24 / 13

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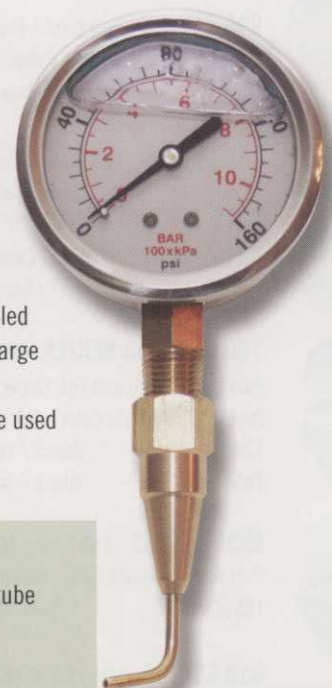
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Magnum™

SOLID METAL HOSE NOZZLE

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.



Magnum™ nozzle pictured with 1" brass adapter (sold separately on Page 7)

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



solid metal internal body

Won't stick...won't break

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

Perfect for tournament play, CoolPro™ puts down only enough water to cool the turf canopy. It prevents wilting while maintaining good ball speed. CoolPro is a great tool for protecting grass on hot days without damaging roots.



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.**



Rainmaker™

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



HIGHEST
FLOW VALVES
AVAILABLE

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

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

Part # CV075H

High-Flow 3/4" Valve - Brass

Part # A-BV77FM

High-Flow 3/4" Valve - Composite/Steel

Part # A-BA107FM

1" FHT x 3/4" MHT Brass Hose Adapter

Part # A-BA107MF

1" MHT x 3/4" FHT Brass Hose Adapter

Part # A-BQ7M

3/4" Quick-Connect, male end

Part # A-BQ7F

3/4" Quick-Connect, female end

Part # HN075W

replacement washer, 3/4" hose

PelletPro™

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/applies 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.

PelletPro™ rotates pellets at 1 revolution per second (RPS) to evenly dissolve/apply wetting agent



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!)

ordering

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

LiquidPro™

APPLICATOR GUN FOR LIQUID WETTING AGENT

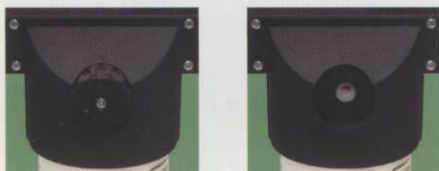
This popular "liquid" version of the PelletPro™ features the proven combination of our Precision™ Cloudburst™ nozzle and the high-flow composite/stainless steel valve. Adding a chemical-resistant, UV-protected, lightweight siphon/mixing system produces an applicator gun which can cover 1000 square feet 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.



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

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

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.

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



ordering

Part # A-RP221

RollerPro™

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



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

Precision German engineering, high quality components...built to last!



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



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.

ordering

Part # T-400 Tracker™ Portable Irrigation Machine

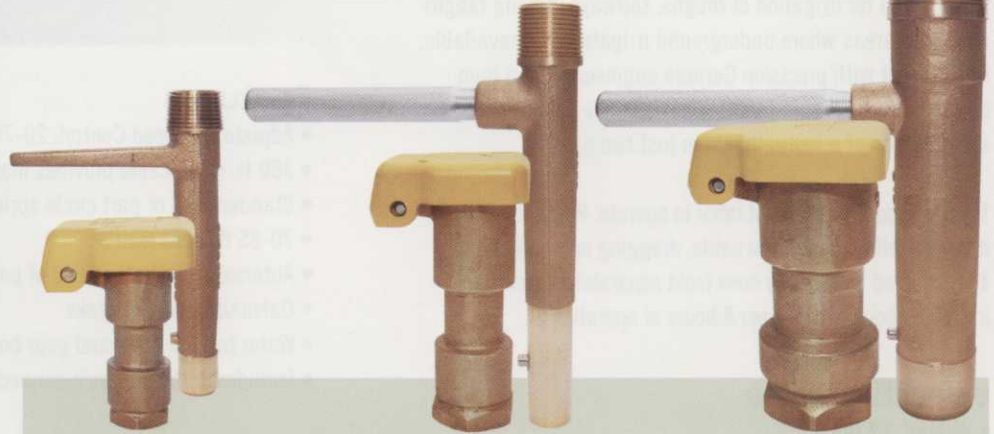


Solid brass one-piece quick coupler valves and valve keys can help you get your Tracker™ set up quickly.

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.



Valve: Part # QV-075R
(3/4" FPT inlet)

Key: Part # QK-075
(3/4" MPT x 1/2" FPT outlet)

Valve: Part # QV-100R
(1" FPT inlet)

Key: Part # QK-100
(1" MPT x 3/4" FPT outlet)

Valve: Part # QV-150R
(1-1/2" FPT inlet)

Key: Part # QK-150
(1-1/2" MPT x 1-1/4" FPT outlet)



hose swivels

Part # HS-075 3/4" FPT x 3/4" MHT outlet
Part # HS-100 1" FPT x 3/4" MHT outlet
Part # HS-101 1" FPT x 1" MHT outlet
Part # HS-151 1-1/2" FPT x 1" MHT outlet

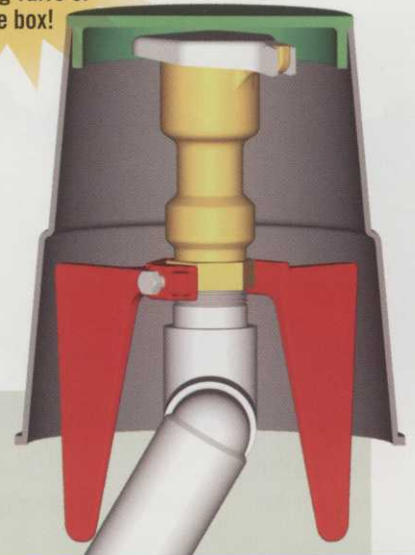
The Claw™

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!



The Claw™ pictured with 1" quick coupler, key and hose swivel.

ordering

Part # QCA-075100 The Claw™ for 3/4" and 1" valves
Part # QCA-150 The Claw™ for 1-1/2" valves

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

Underhill's SI100F 1" inlet brass impact atop the portable base RollerPro™ (see page 10) puts a powerful sprinkler anywhere you can run a hose.



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

		GPM	Radius (ft.)
Part # SI075F	3/4" MPT Full Circle Sprinkler	13	57
Part # SI075P	3/4" MPT Part/Full Circle Sprinkler	11	48
Part # SI100F	1" MPT Full Circle Sprinkler	23	71
Part # SI100P	1" MPT Part/Full Circle Sprinkler	23	71
Part # SI125F	1-1/4" MPT Full Circle Sprinkler	51	96
Part # SI125P	1-1/4" MPT Part/Full Circle Sprinkler	54	78

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



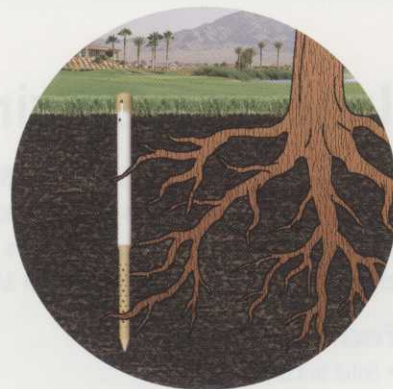
ordering

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.



PRO KIT
(faucet connection)



CONVERSION KIT
(sprinkler/riser connection)

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





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Form No. UIGWP-809

Products that work...smart.™



YOUR MAP TO GROUND ZERO

A lot of people talk at “30,000 feet,” as they say. Let’s bring it down to ground level, where the action is. Every year, we clean and tune up our irrigation equipment – knowing that on an old golf course, there’s a fifty-fifty chance things could go our way. Whether we like it or not, there’s a decent chance for some kind of an irrigation system failure, and often the bigger challenge is finding – not fixing – the problem.

Where will the action be this year? A compression fitting on the 11th tee box installed about eight years ago when a trencher nicked the piping? An electrical splice hastily twisted last summer and buried outside the valve box? Who’s going to have to find it and how fast?

I’ve always felt bad for irrigation crews, regularly dispatched on mapless treasure hunts. No clues, no markers, no direction – just find it and fix it. I guess it’s just part of the training. After all, you can throw just about anything at a seasoned irrigation foreman. Eventually, he (or she) can find a 30-year-old old irrigation drain somewhere on the east end of a 100-acre site, or the original 6-inch asbestos main from an old greens nursery buried 3-feet deep. But it takes a lot of time, patience, inspection, reflection and perhaps most of all – shoveling.

GET YOUR AS-BUILTS IN GEAR

Why would anybody not have a “map” to his or her site? I’d expect every golf course superintendent to have an accurate blueprint that quickly locates irrigation system features and even details when they were installed, modified, upgraded and removed, just out of good, old-fashioned CYA and professional paranoia.

Irrigation as-builts are worth their weight in gold, and the more current and accurate, the better. You can usually recognize a golf course that doesn’t work off an as-built. You see long trenching scars in the fairways or roughs from exploratory surgeries. Patches of turf around some of the valve boxes look lumpy and out of place.

If you’re managing a large site, Global Positioning System (GPS) might be the way to go. GPS refers to a network of satellites that can provide accurate positions anywhere in the world, 24 hours a day. It’s become a pretty hot product in the golf industry because you can catalog so much detail about the entire course – including turf and tree species, bunkers, water hazards, landscaped areas and parking lots.

In addition to locating details of irrigation piping and electrical runs, individual system components (to the year, make and model) and repairs, you can document the exact square footage, linear footage and acreage of your site and all of its features. The square-footage information can be used to more accurately calculate pesticide and nutrient requirements.

I’ve always felt bad for irrigation crews, regularly dispatched on mapless treasure hunts. No clues, no markers, no direction – just find it and fix it.

GPS as-builts record with astounding precision the location of every single irrigation head, valve, pipe and fitting, electrical and control line, drain and air-relief valve. Need I go on?

We’re all stuck with what we inherit, but too many golf course sites remain without any drawings or documentation whatsoever. One of the biggest challenges when arriving at a new site is not having enough documentation of the existing system, so out come the measuring wheels. But these data sets can’t tell you what parts of an antiquated irrigation system have been altered over the decades.

If you can’t go GPS, at least get started this season with some kind of baseline project map and inventory record. Stop working in the muck wearing a blindfold, feeling around for system repairs and upgrades. Hand-trenching across turf to locate irrigation lines or equipment is about as inspiring as breaking granite into sand.

I always marvel at a crew of three or four guys up to their waists in a hole guarded by a couple of trucksters. “What are you guys lookin’ for?” I ask.

“An old quick coupler that’s weeping – we haven’t seen it in years,” they say.

“How long you been here?” I prod.

“Dove into it first thing this morning,” they admit.

If you’re going to send them on a treasure hunt, at least give them some clues. **GCI**



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

WHAT DO GOLFERS WANT MOST?

When golf was booming back in the 1990s, it was easy to be a genius, much like it was easy to be a stock-picking genius when the market rose 20 percent a year. In tough times, it's more difficult to look smart. But, some positive examples of genius in the golf course business are certainly still out there.

I am proud to say that one of my designs, Sand Creek Station in Newton, Kan., recently won the National Golf Foundation Annual Customer Loyalty Award in 2008 with a strong 87 percent rating. The award is based on customer responses to the course's staff friendliness, overall experience, value, course condition, amenities, scenery and aesthetics. Looking at the criteria, KemperSports, who manages the facility for the city of Newton, must be given much of the credit for the "experience" customers have.

It's clear that maintenance and service are important factors in customer loyalty. As someone who chooses golf venues based on playing a variety of courses, it's hard for me to fathom that about 90 percent of all "where to play" decisions are based on camaraderie, convenience and cost. Even so, there's so much competition out there that a quality experience is critical to your success.

While it also humbles me to see how low design ranks in decisions on where to play, I do think good design has some benefit in making facilities popular, even if it's largely intuitive to the golfer or mixed in with "aesthetics."

While golfers rarely notice design nuances (if they all did, I guess it wouldn't technically be a nuance) they do notice repetition in looks, club selection and features – especially negative repetition, like too many short or long holes, too many water hazards or too many narrow fairways. They also notice a course with few features that's totally boring, even when paying low fees.

Golfers do understand "value" – the feeling that they're getting a great experience for a reasonable price, no matter what the price level. A common comment on

Sand Creek Station is that it feels a lot more like a \$75 dollar course than a \$40 course.

But, it's a matter of degree – most golfers will play an expensive, difficult and well-known course occasionally (courses rarely get famous for being easy), but for their "everyday course," a facility like Sand Creek Station is popular because it isn't a back breaker or a bank breaker. Majority of the time, golfers want to play courses they intuitively recognize as "good" and shoot their normal score (not lose golf balls) and be able to enjoy some scenery.

However, catering to all 25 million golfers is getting increasingly difficult. The "typical customer" may be extinct. I believe future courses will be more narrowly targeted to a specific market segments rather than being aimed at "average golfers." An example would be

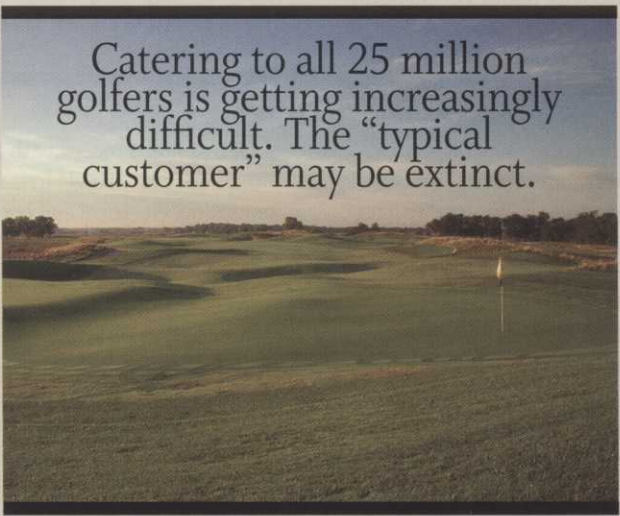
redesigning courses that lie within senior communities to provide what they want vs. the "championship course" that sold real estate initially.

While your customers can be harsh critics, asking for impossible ideals like lush, green fairways that give plenty of roll and soft greens that hold any approach shot but never get bumpy from traffic, in reality they aren't judging you against

Pebble Beach. Just as customers judge burger joints to burger joints and steak houses to steak houses, golfers judge similarly priced golf courses.

It's important that your "cues" tell golfers what it is they're getting for their golfing dollar. It's just as likely that spending money on flower beds at a low-priced course is as poor a business decision as not providing amenities at a high-price course.

Too many courses are competing only on price these days when with a little work and effort, they could probably charge more and golfers would happily pay it if the facility offered just a bit more value for the money. It might be worth asking some questions, rather than assuming your golfers like what you like and are the same as they've always been. **GCI**



Catering to all 25 million golfers is getting increasingly difficult. The "typical customer" may be extinct.

EASY GREAT VALUE
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WELL BUILT DAY IN CONSISTANT
SMOOTH DAY OUT UNCOMPLICATED
SERVICEABLE DURABLE



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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.

MENTORING'S PAYOFF

In many ways my career in golf couldn't have been scripted any better.

I greatly enjoyed the golf club that employed me for 36 years, and its location in my home state was an advantage I appreciated almost daily.

Our golf course was only a short distance from our land grant University of Wisconsin. That means Big Ten sports, terrific cultural opportunities and alumni activities galore.

Maybe best of all, the UW-Madison has a four-year turf program that we think ranks with the best. There's my prejudice – I am a product of that program.

From my first year in 1973 to my final in 2008, my staff included at least one turfgrass intern. That offered rewards and advantages that cannot be overstated, but serious responsibilities were also part of the deal.

I mention this because I've been asked many times already what I miss most about being retired from managing a golf course. It might be easier to answer what I *don't* miss because there were so many pleasant and rewarding aspects to my daily work life. But, honestly, I miss working with the college kids most.

Proximity made it easy for me to attract turf students. They were able to work both ends of the summer and even, sometimes, in the shop in the winter. They usually kept the same apartment they had for the school year – no sublets – and the appeal of campus life extended into the summer for them.

I was a student intern myself once, and wise words of advice from my undergrad advisor and major professor – Dr. James R. Love – were the catalyst for my commitment to turf students. He said many times that the only way for us to repay the help we'd received was to help those who aspired to the

same; in other words, pay forward, not back. He was right on.

It would be nearly impossible to record all of the positives to establishing an internship program for a golf course, but at the top of my list is the enthusiasm for golf turf I saw in every turf student I ever employed. Their career choice wasn't a second choice; they loved the work, just as I did when I was their age. Always, it was more than a summer job; their motivation to do good work was endlessly impressive and inspired me not to let them down in any way.

And talk! For most of these kids, "talking turf" among themselves and visiting with the rest of us about golf and grass was not only instructive, it was entertaining and enjoyable. Being surrounded by students kept me young and on my toes. The questions and challenges came fast and furious at times, and it would have been irresponsible for me to try to dodge even one of them.

One of the most important requisites of a mentor is your ability to be an open book. "Keep no secrets," was my motto; every time someone had a question, he got an honest and sincere answer. More than a few times I'd confess, "I don't know but I will definitely find out for you."

Mentoring on a golf course provided an opportunity to be a teacher, one of the most noble of activities. Superintendents, at least in our four-year undergrad program, filled in the technical and practical aspects of turf student education. It's one thing to be able to integrate or differentiate a calculus equation and quite another to calculate quantities that go into the tank for disease control.

Our weekly meetings included relevant math problems, a few grammar lessons, equipment issues and a whole lot more of the down-to-earth

situations faced daily by golf course superintendents.

It's inevitable that interns will leave with some of your basic philosophy, things I like to think will help over time. Neatness, no tolerance for tardiness or absenteeism, teamwork, a real sense of committing to what's good for the game of golf and respect for the chain of command are but a few examples that may not be taught in a college four-year curriculum but were learned in our workplace.

A good internship plan isn't always fun; it's always a lot of work and has a significant time requirement. Occasionally you'll experience a student who's difficult or arrogant or who's quite sure he knows much more than you do. And there will be an individual who expects an internship means riding around with you all day and who's in a state of shock when given a shovel.

Having so many former golf course employees is like having a large extended family. We talk on the phone, exchange Christmas cards and visit about fun things when we meet. I get wedding invitations, birth notices, write letters of recommendation and both send and receive letters of congratulations and condolence.

More than anything, I'm proud of them all. They've accomplished great things in our profession.

Internships and students have enriched not only my career but my life, as well. The responsibility to instruct students is formidable, but it can lead to respect and a contribution to golf that can make a difference.

The great English golf writer Bernard Darwin, commenting on students and teaching, put it this way: "It is no small bond between two people or between a hundred that they have been at the best house of the best school in England." **GCI**

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CONSUMER RESEARCH

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



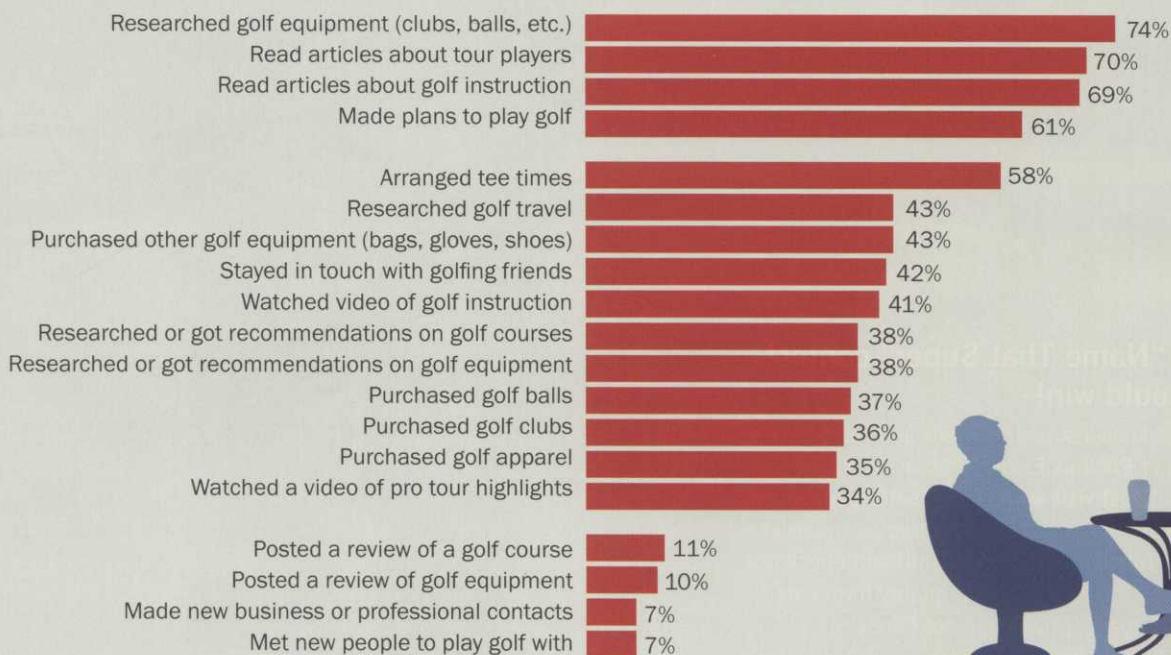
GOLFERS & THE WEB

In March NGF conducted a survey about golfers' technology habits. The survey was fielded online to a nationally representative sample of adult core golfers (those who play eight or more rounds per year). A total of 1,662 golfers completed the survey. Key findings include:

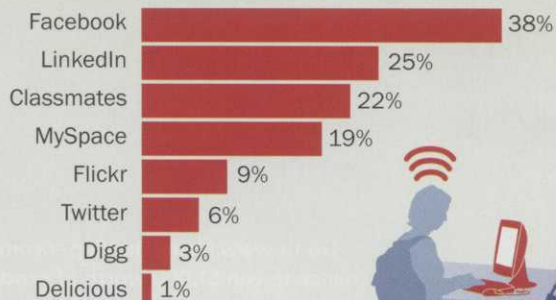
- Most core golfers are online and/or use e-mail every day (88 percent use it several times a day).
- 83 percent go online just for fun or to pass the time.
- Almost all core golfers are engaging in golf-related activities online.

Online golf-related activities of core golfers

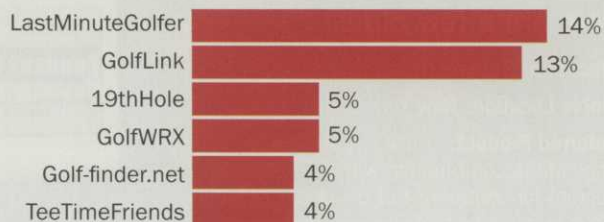
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Core golfers' use of social networking sites



Core golfers' use of golf-related social networking sites





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ALL ABOUT PERSPECTIVE

As host of this year's PGA Championship, Hazeltine National's Jim Nicol, CGCS, shares his realistic approach to life, tournament prep and the role of the superintendent.

Approximately a zillion years ago, when I worked for another industry magazine, we asked Jim Nicol, the longtime certified superintendent at Hazeltine National Golf Club, to be on the advisory panel that guided the editorial content. It was a love/hate relationship... he only had an opinion when he loved something or hated it. Otherwise, he kept things in perspective.

That's Nicol. He's all about perspective.

Now, with the perspective of 13 years at one of the world's great golf courses and with one major under his belt, he's on the hot seat for another one: the 2009 PGA Championship.

I got in touch with Jim and asked him if he'd do an interview. My precondition was we wouldn't do the usual "major prep" article talking about cutting heights, rolling schedules and fertilization programs. Instead, we'd talk about his perspective on all things about golf and life. He said yes.

Nicol is a Minnesotan through and through. He was born and raised in St. Cloud, about an hour northwest of Minneapolis. His dad was an insurance salesman and his mom stayed at home and took care of family business. Both were golf nuts – in fact his 94-year-old father is still the oldest golfing member of St. Cloud Country Club. Nicol was a club rat who grew up caddying, shagging balls, cleaning clubs and mowing greens for 50 cents each at the ripe old age of 14.

His inspiration for getting into the profession was the promise of warm weather: "I'd

graduated from high school and went to a local state school and didn't like it, so I went back to work at the club. At the end of one season, I saw the superintendent get in his big-ass Oldsmobile and head to Florida for the winter. I thought, 'This guy's got it figured out!' Thus, a superintendent was born.

After trying out a few turf schools, he hooked up with Gerry Murphy, the legendary superintendent at Somerset Country Club in St. Paul who was a key figure in the development of GCSAA's certification program, and worked his way into Penn State's two-year program. Like many of his Nittany Lion peers, a huge influence in his life was Dr. Joe Duich.

"He stressed stuff beyond turfgrass science," Nicol says. "On the last day of class, he talked about how superintendents need to lead more normal lives. He asked us, 'What if you get sick and miss a month? What would happen to your operation? Would it fall apart?' That really stuck with me. You have to structure your life to do more than maintain a golf course." Nicol has practiced and preached balance between work and life ever since and shoves his full-time crew out the door for a week of vacation every summer.

He graduated from PSU in '75 and went to work at the Lake Geneva (Wis.) Playboy Club where he was an intern, then served as a foreman of the Briar Patch course and assistant superintendent for three years. Next he moved to Bunker Hills Golf Course, a hidden gem in the sand prairie of Minnesota with a great reputation for hosting top-flight events

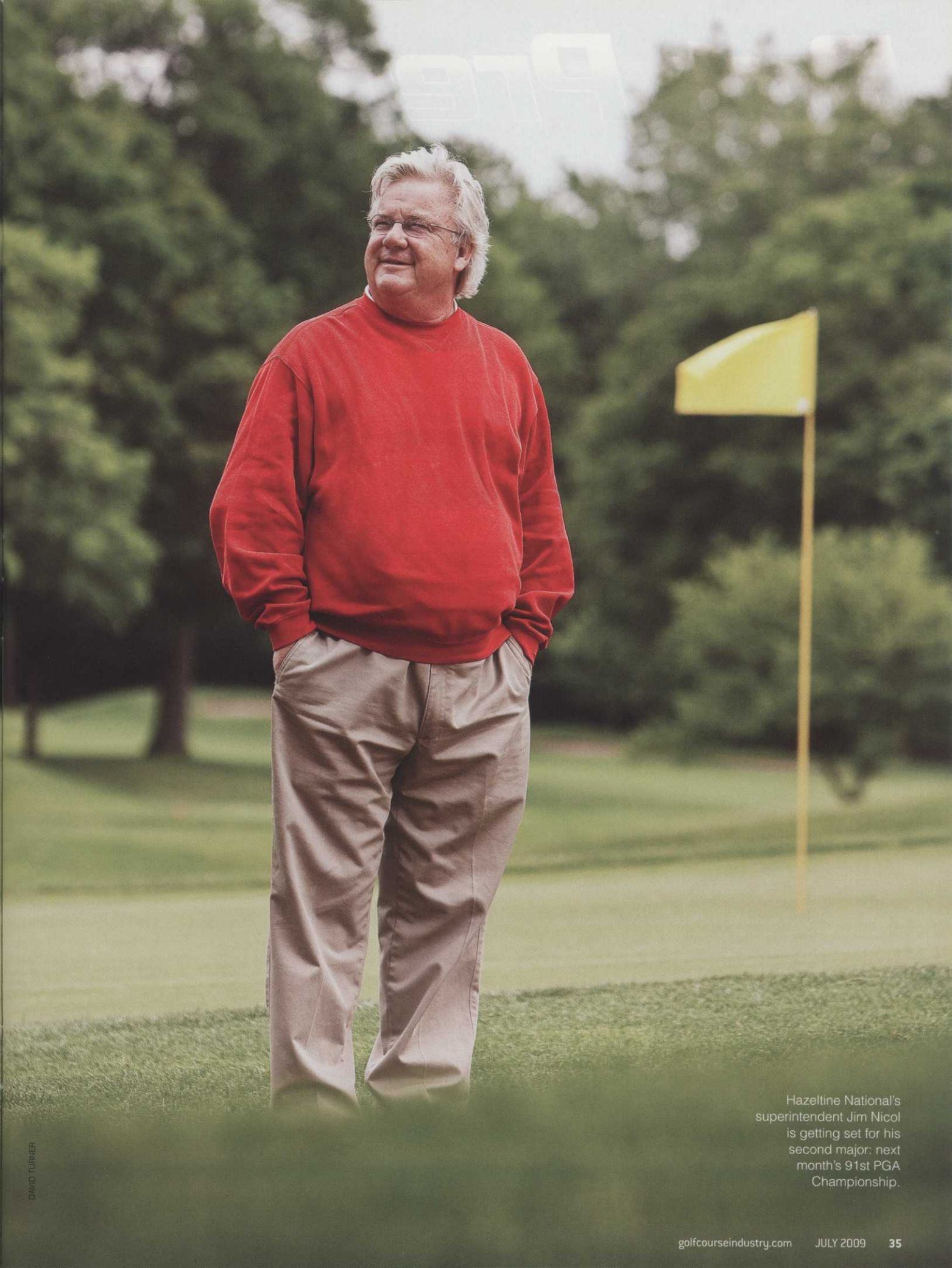
like high school championships, USGA qualifiers and local PGA tournaments. Then the job at Hazeltine opened in the fall of 1996.

"I had an interview and they liked the fact that I'd hosted a bunch of tournaments," Nicol says. "Then, one day, they just showed up at the course (Bunker Hills) in the middle of an event and the place was chaos. But, apparently, my experience with all the tournaments really paid off. They knew they were getting the 2002 PGA Championship and I didn't. There were a ton of great candidates, but I suppose what did it was that I had the tournament experience and the fact that I was familiar with winter in Minnesota.

"To this day, I think my wife, Barbara, got me the job. They did a dinner interview with us and Barbara and a woman from the selection committee excused themselves for a minute and didn't come back for the longest time. A few minutes after they came back, they offered me the job. Once again, marrying well pays off."

What's different this year vs. other events you've hosted?

The weather. In 2002, we had a good winter. This year we've had ice damage plus a rain storm in February that was really not fun. Now, it's so dry that we're watering areas to keep grass alive that we usually don't touch until July. It's challenging to get any growth going in those areas because it's cool and dry. I don't want to sod those spots because they're old bent/*Poa* which isn't widely available; plus, we're regrassing next season. I'm



PGA

Hazeltine National's superintendent Jim Nicol is getting set for his second major: next month's 91st PGA Championship.

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taking a cue from the old guys up north who, when they got hammered (with winter kill), spiked 'em constantly. We're doing something weekly to get growth going. And we're going to have to do a lot more hand mowing around bunkers to let balls roll in. These bunker entryways are new to me.

How are the members holding up?

The members love the changes (done by Rees Jones). In addition to the championship stuff, we're also positioning new tees at 5,100 yards for anybody – ladies, seniors, whatever – and we'll grass them next year. Overall, they like the new bunkering and changes that Rees did. It's always stressful when the course isn't perfect and it's June 1 and things haven't come back yet. It's mostly self-imposed pressure, but our president and green chairman have been great and patient. I post on our Web site weekly and we do e-mail blasts to keep members posted.

How's the business side of the event considering the economic pressures?

We're doing pretty well on ticket sales, but we are being smart and curbing costs where we can. For example, in the corporate (tent) areas we used to excavate paths and roads down for several inches of gravel. Then, afterwards we had to remove it all, fill it with soil and regrass. Now, in some areas we just lay fabric or plastic out and build the road up on it. It's much easier to fix later and a lot less expensive. We're also not having sleeping trailers and things like that. We're just being wiser with spending overall. The experience will be every bit as good, though.

Who's the one person you rely on the most during prep?

It's not just one person, it's all our full-timers. Joe Maloney, my assistant is another Penn State guy who's been here 14 years. Blair Hawkins, my second assistant and another Penn Stater, who's actually been here longer than me. Steve Giesen, my foreman, has been here since 1991. Keith Conway, who's a University of Minnesota guy, is pretty good considering he didn't go to Penn State. I also

have two great equipment guys, Ralph Arnt and Tom Wheeler and a new guy, Ryan Moy, who'll be with us during the tournament.

All winter long we sit for about an hour in the morning going over "what ifs" – like the flooding last time – and they come up with terrific ideas. I let 'em talk because they've all been here as long or longer than me. Because of that, by Saturday morning last time (during intense flooding), everybody knew what they needed to do and did it. Plus, other superintendents and other people just showed up and helped. It was unbelievable.

Does the PGA of America downplay or support the role of the superintendent in tournaments?

They're very good to me, but it's not their job to promote us. I don't need the attention. Look, when you're in this kind of position you have to take the arrows as well as the kudos. I'm recognized at the trophy presentation and other places, but it's not what it's about. We (superintendents) do enough stuff to promote ourselves. It's the

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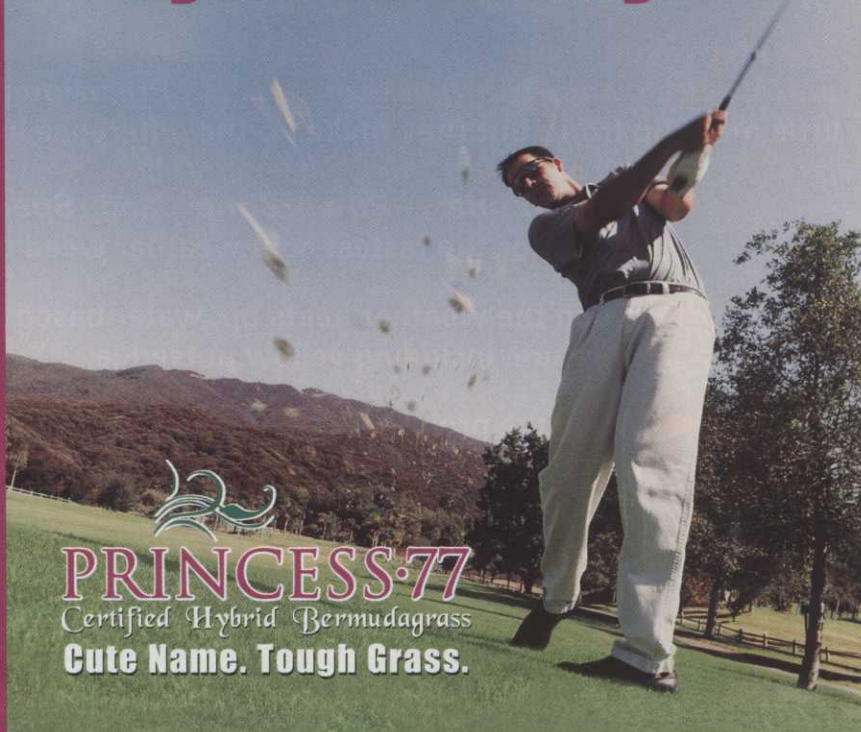
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Speaking of being out of your mind, who's the craziest guy in the Minnesota GCSA?

(Laughs.) John Steiner from White Bear Yacht Club. One of the smartest guys I know and I absolutely love being around him. We've been through a lot together. I always look forward to meetings and seminars just to sit next to him. I've learned loads from him.

If you weren't a superintendent, what would you be doing?

I have no idea. I don't think I'm wise enough to be a doctor, I don't think I'd be a good salesperson. I've never been around anything else. People seem to envy what I get to do.

What did you think about the Ryder Cup where Mark Wilson worked so closely with Azinger to set Valhalla up favorably for the U.S.?

My role (as host in 2016) will be determined by the captain. If the captain asks Mark or me

or any host super what he thinks, he should tell 'em. Mark's done an outstanding job there. Azinger knew that and turned to him. He used his experience. They actually set the course up pretty easy all things considered.

In big events, your role is what the big guy – whether it's Azinger or (PGA senior director of tournaments) Kerry Haigh or the USGA – deems it to be. That said, I've learned a lot from these set-up guys. You can't deny their experience, so you have to rely on that and respect it.

Which part of prepping for a major really stinks?

You miss things. I miss occasions like weddings, birthdays and stuff. That stinks. That and the self-imposed pressure. Right now it's work, eat and sleep. There's also the alarm going off at 4:20 in the a.m. It's tough on Barbara, too. I can't go out at night or be with her very much.

What advice do you give to students/interns about the profession?

Right now, I tell kids not to get in the business. If they still want to, I tell them to be very patient.

We have some students here that might have a chance to go on to big things, but there are no jobs. When a decent job does open up, there are 150 applicants and the guy who gets it is probably taking a pay cut. If kids are smart enough, they should go into academics or research. That never stops or slows down.

Final thoughts?

As far as the tournament, the biggest thing that's on my mind is the safety of our crew and people during the early morning hours. We'll get through it, no matter what happens. We proved that last time. I just want to do it without anyone getting hurt.

One last thing. The more I've been around, the more admiration I have for people at minimal budget courses around here. It's pretty damned impressive what they do with very little. We have more money, and I still try to spend it wisely, but what those superintendents do is really amazing. GCI

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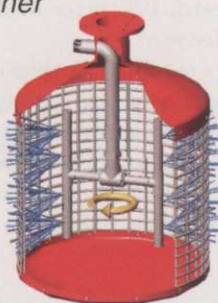
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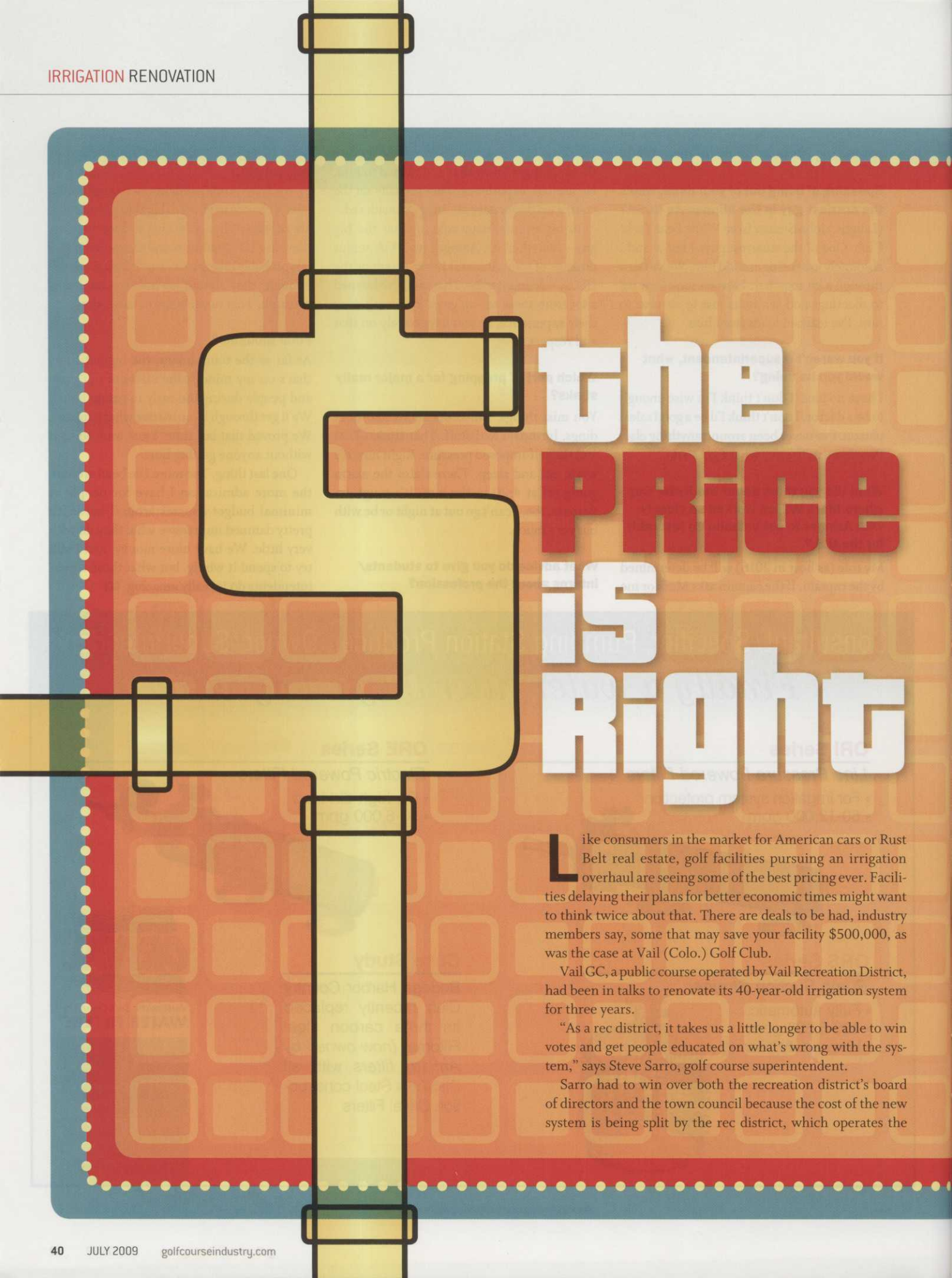


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the PRICE is Right

Like consumers in the market for American cars or Rust Belt real estate, golf facilities pursuing an irrigation overhaul are seeing some of the best pricing ever. Facilities delaying their plans for better economic times might want to think twice about that. There are deals to be had, industry members say, some that may save your facility \$500,000, as was the case at Vail (Colo.) Golf Club.

Vail GC, a public course operated by Vail Recreation District, had been in talks to renovate its 40-year-old irrigation system for three years.

"As a rec district, it takes us a little longer to be able to win votes and get people educated on what's wrong with the system," says Steve Sarro, golf course superintendent.

Sarro had to win over both the recreation district's board of directors and the town council because the cost of the new system is being split by the rec district, which operates the

By **marisa
PALMIERI**

PRICING FOR AN IRRIGATION RENOVATION IS AT ITS PRIME.

course on property taxes, and the town of Vail, which owns the land.

It turns out the delays were a good thing. The new irrigation system was designed about a year ago and went out to bid in December. By the end of January, the club was down to three contractors, and eventually chose Landscapes Unlimited, which began work in April.

"I really wanted to get it done last year, and every day I wake up thinking how glad I am we didn't," Sarro says.

Timing couldn't have been better, considering copper was at a recent low in December and construction work has slowed in the North American golf market, making contractors' bids competitive.

Sarro estimates the course saved about \$500,000. The total cost for the system was \$2.6 million. If they'd started work in mid-2008, like he'd hoped for, the system could have been more than \$3 million.

Other golf facilities also have saved significantly, thanks to the rules of supply and demand, which have driven down commodities costs, reduced contractors' prices and eliminated energy surcharges and other extras.

COMMODITY MARKETS

Allied products make up 30 to 40 percent of the total cost of an irrigation renovation budget, so commodity prices greatly affect the overall cost of an irrigation overhaul, says Erik Christensen, president of irrigation consulting firm EC Design Group in West Des Moines, Iowa.

The prices for commodities used in irrigation construction – mainly copper wire and plastic pipe and fittings – are eking up from their early 2009 levels,

though they're still much lower than their post-Hurricane Katrina surges.

"Right now commodities are a lot like the price of gas," Christensen says. "It's not as low as it was a couple months ago, but it's not as high as it was last summer and we don't know how quickly it will return."

Copper reached a recent high in July 2008 (breaking the \$4 mark), but nose-

dived in December to a low of \$1.27, a price not seen since 2004.

"With 200 miles of wire on an average, 18-hole golf project, the copper market's volatility has a significant impact on the cost of a system," Christensen says.

At press time, copper prices were at \$2.33 per pound, showing signs of a slow but steady increase.

ONE-YEAR COPPER SPOT



U.S. PRODUCER PRICE INDEX/PLASTICS MATERIAL AND RESIN MANUFACTURING



Because piping equates to about 25 miles on an average 18-hole project, according to Christensen, plastics prices also play a major role in the overall cost of an irrigation system.

The plastic price index that accounts for both PVC and HDPE pipe and fittings costs has dipped significantly since last summer, when petroleum prices fueled increases among many plastics.

Plastics prices are edging back up, too, though they're nowhere near recent highs like August 2008.

"Pipe and wire have both started to climb since they hit bottom in January of 2009, but it is still an advantageous time to purchase these goods," says Jim Boyer, senior operations manager for Leibold Irrigation, a contractor based in East Dubuque, Ill.

Energy costs can do double duty on irrigation projects – affecting plastics prices and potentially creating the need for surcharges. These surcharges can come in the form of \$1,000 tacked onto a delivery or contractors trying to renegotiate for an extra \$20,000 to cover unex-

pected fuel increases. Such surcharges have all but disappeared in this down market.

Whole goods pricing is down, too, mainly due to supply and demand. Distributors report about a 26 percent decrease on bills of goods when compared to projects quoted in early 2008.

"Materials prices are similar to what they were exactly two years ago," says Gary Kaye, vice president of Kaye Contracting Co., Anthem, Ariz.

HUNGRY CONTRACTORS

Plagued by the downturn in the golf market and the economy, builders are hungry for work. Consider it a "new definition of busy," Christensen says, comparing contractors to airlines.

"The flights are full, but they're flying half as much as before," he says. "Contractors used to be able to take on four or five projects, but now they might only take on two, but they've had layoffs, so they're full."

Construction prices are where they were

three years ago or about 15 percent less than early 2008 figures, Kaye says.

"You're never going to get a better price on construction," Kaye says. "People are doing projects for no profit at all – I know we are. It's just to keep your employees working, your business going and the machinery paid for."

Roy Wilson, president of Landscapes Unlimited's Irrigation Group, based in Lincoln, Neb., says projects are going for 7 to 12 percent less than a year or two ago. Leibold's Boyer estimates some projects may be as much as 15 to 20 percent cheaper.

"Demand is just not there as it was in the last couple of years and that brings prices down for the materials," Wilson says. "And with less projects for contractors the competition is greater and the bids for their work are less."

"Fear and hesitation with the markets and with the economy are causing owners and clubs to take a wait-and-see approach, although they're missing out on some great savings right now," he says.

(continued on page 63)

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JULY 2009

SMART IRRIGATION



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S3

5 WAYS TO BETTER MANAGE YOUR WATER

Ideas big and small to help you save water and, potentially, money.

S12

CASE STUDIES

A look at three facilities saving water: Indian Hills Golf Club, Murfreesboro, Tenn.; Silver Stone Golf Club, Las Vegas; and Chariot Run Golf Club, Laconia, Ind.

S18

A DESIGNER'S VIEW

Golf course designer Joe Jemsek's perspective on turf conversions.

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5 ways

to better manage
your water

Ideas big and small to help you save water and, potentially, money.

BY MARISA PALMIERI

SMART IRRIGATION

1. GET LOW

Low-volume emitters, or microsprinklers, are a tool that International Golf Maintenance's desert-climate courses are using to improve conditions and save water.

"We battle bad wind in the desert," says Steve Gano, vice president of operations for the ChampionsGate, Fla.-based contract maintenance firm. "Even at night, the winds can be so bad that we battle dry spots in the summers."

Rather than overwatering or hand-watering the localized dry spots, IGM facilities use sets of low-volume emitters, which are typically made up of strings of 10 heads with about 10 feet of hose between them.

"They sit low to the ground – they're only 18 inches tall – so wind doesn't affect them," Gano says.

In addition to preventing drift and evaporation, the emitters prevent runoff, which is inevitable when turf managers attempt to treat small dry spots (like a 10- by 10-foot area), with a typical irrigation head that may have a 75-foot radius.

Though Darin Pakkala, director of golf course maintenance for IGM at ViewPoint Golf Resort in Mesa, Ariz., hasn't calculated the short-term water savings, he says he's certain he's saving water.

"Going off the basis that we're running the emitters that put out about 12 gallons an hour vs. a head that puts out more than 24 gallons a minute, we're saving water," he says.

Use of the emitters combined with other

management practices have helped ViewPoint reduce its annual water use from about 450 acre feet to about 330 acre feet per year (more than 39 million gallons) since Pakkala joined the staff three years ago.

Pakkala keeps one set of emitters for every few holes. The maintenance staff moves them to various dry spots twice in a typical day.

"They're very easy to move, you can grab them and drive them to the next location, or sometimes you don't even have to drive," he says. "I'm able to move about six of them in 20 minutes tops, including getting them set-up."

Pakkala and other IGM superintendents fabricate the emitters in-house, purchasing the parts from irrigation distributors for between \$50 to \$250 per set (depending on the set's size).

Gano points out that the emitter sets are also good tools for leaching salts and establishing seed or sod.

Plus, they can be used during golf play because they're so low to the ground.

"Golfers aren't bothered by them at all," Pakkala says. "If there's wind, you're not getting any drift because the water's going right to the turf."

.....
The top three water conservation methods superintendents use are wetting agents (92%), hand-watering (78%) and keeping turfgrass drier (69%).*



2. WET IT RIGHT

Sometimes saving water is just about saving water.

But sometimes it's about a lot more – like improving course conditions and conserving labor.

At the private, 18-hole South Hills Golf & Country Club in Fond du Lac, Wis., Jim Van Herwynen, CGCS, has found a way to do all three with the help of his wetting agent program.

Since implementing the program about four years ago, the facility has not had to tap into the city water supply, which it had been spending about \$8,000 a year to use.

Though Van Herwynen estimates he spends \$8,000 to \$9,000 on wetting agents each year, he says the program saves him additional dollars in labor and has improved course conditions.

"Turf conditions are far better than they used to be," he says. "Everything's more consistent and uniform."

This region of Wisconsin is so wet from the snow melt-off in the spring; plus, the area's heavy clay soil retains that moisture, which means Van Herwynen risks not being able to get



**Source: GCSAA and the Environmental Institute for Golf's "Water Use and Conservation on U.S. Golf Courses" report.*

the heavy machines out on the golf course without damaging the turf.

After years of trial and error, he's devised a plan where he injects Dispatch into the irrigation pipes as he's starting up the system. The first application goes out with the initial irrigation test.

"Doing this helps us move the water through the soil profile in the spring so we can actually get our machines out there," he says, noting he injects Dispatch throughout the spring until about Memorial Day weekend.

In the fall, Van Herwynen does a double application of Dispatch via injection on back to back nights just before he blows out the irrigation system. Again, the goal is to help water move through the soil profile so the crews can get the equipment out faster in the spring.

In the summer Van Herwynen makes an application of Lesco-Flo at 12 ounces per 1,000 square feet to fairways, intermediate rough, green surrounds and tees. He prefers

to apply the product in the rain. The goal of this step in the program is to keep the heavy clay soil from going dry.

"The problem in our region is extremes — it's either too wet or too dry," he says. "So we've combated that with penetrants in the beginning and end of the season and a true wetting agent in the summer."

On the native push-up greens that have five decades worth of sand topdressing, Van Herwynen applies 5 to 6 ounces of Revolutions once a month starting the third week in April and running through September. He tries to time those applications when it's going to rain, or he'll water them in with 3/10 inch of water that night.

The biggest benefit of the greens wetting agent program is preventing the need for hand-watering — which hasn't taken place at South Hills in more than four years.

Before that, in the summer it wasn't uncommon for three crew members to hand-water tees, collars and surrounds every other

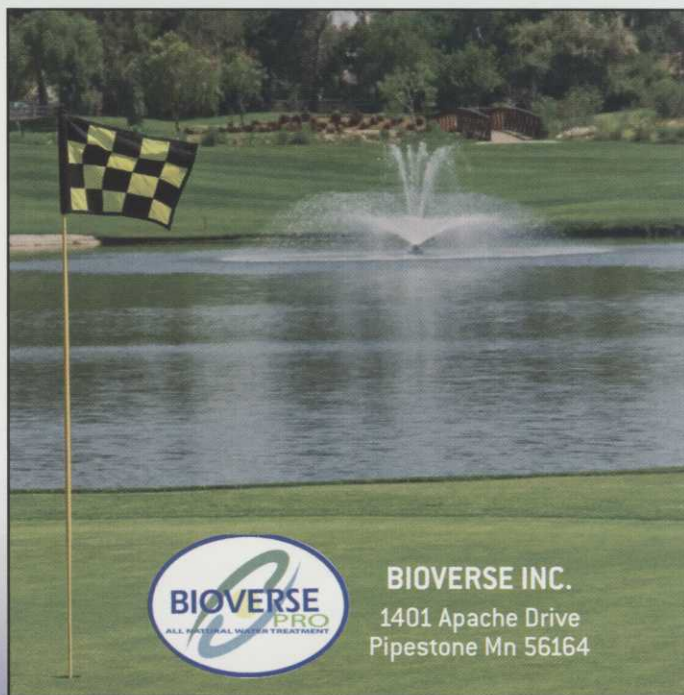
day for six hours a day.

Now that Van Herwynen is down to a crew of 12 after peaking at 18 in 2002, saved labor hours are a boon as budgets get tighter. Those hours can go towards other tasks that were neglected in the past.

"Our landscaping and detail work is much better," he says. "We have time to do those things now. We're slowing decreasing our staff size to become more efficient and we're using wetting agents to help us out."

.....
Approximately 46 percent of 18-hole golf facilities treat their irrigation water or distribute products via their irrigation system. The most common products distributed through the irrigation system are wetting agents (34 percent) and fertilizer (23 percent). More than 70 percent of 18-hole golf facilities with maintenance budgets less than \$500,000 do not treat irrigation water or deliver products through their irrigation system.*

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SMART IRRIGATION

3. LOOK FOR LITTLE THINGS

A water conservation strategy with many little components can do a lot of good. That's the philosophy at American Golf Corp., the Santa Monica, Calif.-based company that manages 110 golf facilities in the U.S. With many of its facilities located in the Southwest, mandatory water reductions are a reality.

"Not being proactive and just becoming a victim of the circumstances is not an option for us," says Scott Bourgeois, director of maintenance for Southern California.

American Golf's comprehensive strategy to minimize water consumption includes many components, all of which are tailored to each specific operation.

Some of the tactics include: aggressive cultural practices, including verticutting and aerification to improve water penetration; being choosy about turf types (favoring drought-tolerant, warm-season varieties); minimizing or eliminating overseeding on

some properties; and looking for spots to further cutback on irrigation, including slopes, landscape beds and deep rough areas. Also, employees are careful when it comes to cleanup — they clean golf cars with air hoses and by wiping them down vs. using water. They use backpack blowers instead of hoses to tidy up hardscape areas.

Irrigation system components, of course, play a role. American Golf is retrofitting irrigation heads on about 20 of its courses to FCI Profile nozzles, which are eligible for a Metropolitan Water District of Southern California rebate program. FCI nozzles are metal nozzles with stainless steel orifices, designed to improve distribution uniformity.

Bourgeois estimates a 5 percent water reduction per course because of the nozzle upgrades. The company has used these nozzles over the years, but recently committed to converting more facilities to them



as increasing drought conditions and water restrictions have put pressure on the golf business and large-volume water users.

"When a course is applying 300,000 gallons to over 650,000 gallons a night to irrigate the entire course during the warmer months of the year, saving 5 percent to 20 percent with a comprehensive water reduction strategy can really help the cause and help protect this precious and limited supply," Bourgeois says.

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SMART IRRIGATION

4. KEEP IT DRY AND AERIFY

Managing turf in Las Vegas is like growing grass on the moon with bad water, or so says John Pollok, director of golf course maintenance for Spanish Trail Country Club in Las Vegas.

He's been overseeing maintenance of the private club's 27-holes since last July, after managing the grow-in of a renovated nine holes last spring. Though the new nine has a recently installed Toro/Rain Bird hybrid irrigation system that's already helping save water, part of Pollok's job is to evaluate the water use on the other 18 holes.

A combination of leveling all the irrigation heads, upgrading 20-plus-year-old nozzles and reprogramming the irrigation systems to run with a crop coefficient of 1.1 vs. 1.5 has saved an average of 10 million gallons of water per month.

"That's substantial when you're paying \$700 per acre foot," he says. "All of these things add up to savings. I like to keep a little drier golf course than most."

Spanish Hills will spend more than \$1.2 million on this year on water expenses.

All of the water is reclaimed, which means the maintenance staff battles high pH, bicarbonate and sodium levels, which is a recipe for poor water and nutrient retention.

To mitigate these factors, Pollok aerifies with a Soil Reliever, then topdresses with a 90/10 mix of sand and Dakota Peat, then



makes a pass with a Toro OnePass to process the cores and mix in the topdressing material. Finally crews drag the surface to work the organic matter back into the soil.

The results of the aerification and topdressing program have been good so far, Pollok says, though he says it'll be three to five years before it fully pays off.

"We're seeing a flush of growth after we aerify, which is a product of opening up the soil and getting the air and organic matter down there to retain nitrogen and moisture," he says.

Pollok doesn't just rely on observations to ensure his programs are working, though. He conducts quarterly soil and water tests through consultant Corey Angelo, who works with Brookside Laboratories.

"We base our entire fertility program around our soil test," Pollok says. "Prices of fertilizers have gone up. If I'm putting on a product our soils don't need, that's money wasted. And since our water is not the best, we want to make sure we're documenting what's in it, because that dictates a lot of what we do as well."

But just because his water quality is not the best, that doesn't mean Pollok is not interested in saving it.

"We turf managers need to make sure our irrigation systems are working as efficiently as possible," Pollok says. "The added tools of aerifying, deep-tining and adding organic matter are only going to make matters better."

More than half of the 18-hole golf facilities in the Southwest, Southeast and upper West/Mountain regions have had their irrigation water analyzed since 2003. Golf facilities with more holes, higher budgets and private facilities are more likely to test the quality of their irrigation water.*

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5. MAKE ROOM FOR MONITORS

Though only 3 percent of golf courses use soil-moisture sensors to schedule their irrigation systems, according to GCSAA research, superintendents who use the technology say it's an area of opportunity for saving water, thanks to recent product improvements, increased drought conditions and a focus on water conservation across the nation.

Golf course superintendents with soil-monitoring technology say they'll cut an average of 10 percent of their typical water use, according to a May 20 New York Times article. Depending on the volume used and cost of water, the systems can pay for themselves within the first year. The Times reported that an Advanced Sensor Technology subsurface system including 18 wireless sensors, 3 routers and gateways, software and help from an agronomy support staff, would cost slightly more than \$11,000.

Shawn Emerson, the superintendent

at Scottsdale, Ariz.'s Desert Mountain Golf Club, which has six courses and 500 acres of turf, told the Times the facility would save more than 100 million gallons of effluent water for the year. That equates to between 18 million and 20 million gallons per course and, based on current prices, about \$130,000 in savings.

The Card Sound Golf Club in the Florida Keys installed wireless sensors in April, the Times reported. The facility's high salt content recycled water requires superintendent Sean Anderson to regularly flush his greens with fresh water. Before the club installed sensors, he used about 150,000 gallons every two weeks.

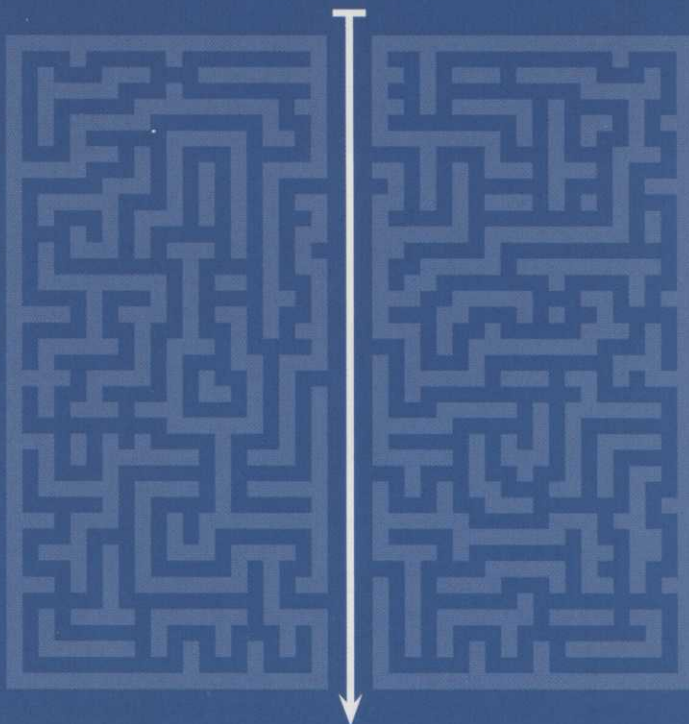
"We have actually cut in half the amount



of water we were using," he told the Times. "To me, it sort of shows that the sky is the limit with this technology." GCI

Approximately 3 percent of golf facilities use soil-moisture sensors to aid in irrigation scheduling.*

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CASE STUDY 1



Win-Win IRRIGATION

Tennessee's Indian Hills Golf Club was in need of more water, and its corporate neighbor was looking to rid itself of some.

It was an offer too good to resist.

Indian Hills Golf Club, an 18-hole, semi-private club located in Murfreesboro, Tenn., had always relied on two small wells to fill its irrigation reservoirs, and this supply typically dried up around the end of July or the first of August, says superintendent Brad Marcy.

"The well pumps don't pull out enough water to keep our reservoirs full," says Marcy, who operates with a \$400,000 annual maintenance budget and a staff of 14. "So we really didn't water much more than tees and greens because our water source was so weak and limited."

Across the way, Indian Hills' neighbor, a General Mills processing facility, needed a way to get rid of the wastewater it used to clean equipment instead of treating it and sending it into the city's sewer system — a process that incurred a substantial cost.

So two years ago representatives from the General Mills facility proposed footing the \$1

SMART IRRIGATION

By Michael Zawacki



million price tag to divert the wastewater from its facility to Indian Hills' irrigation reservoirs. The plan would transfer about 500,000 gallons per day for 236 days per year.

"We would no longer be dependent upon our well pumps for water," Marcy says.

For both parties it's an apparent win-win water scenario.

Marcy, though, had initial reservations about the quality of the plant's wastewater. Elevated mineral content or other contaminants potentially could have harmed the course's 419 bermudagrass fairways and its bentgrass greens. However, extensive water quality assurance tests haven't yet raised any major red flags with the course, he says.

"Right now I'm concerned about the lack of calcium in the water, which weighs down the sodium and pushes it through the soil profile," he says. "For right now we'll continue to strictly monitor it and conduct weekly testing to make sure the sodium level is where we want it. We'll improve the water's quality as we go when it's needed, and to do that we'll use a calcium product to reduce the sodium issues in the water."

As of mid-June, construction crews were breaking ground and laying the pipe to divert the wastewater from the General Mills facility to Indian Hills. The project is scheduled for completion early this month. GCI



Top left: A rock trencher gets ready to cut a trench that will hold the pipe that will bring as much as 500,000 gallons of water a day to Indian Hills Golf Club.

Top right: An inflatable device called "The Big Blue Bladder" dams part of the river to allow workers to lay the 12-inch pipe from one bank to the other.

Bottom left: The finished river crossing in mid-June. The \$1 million project is scheduled for completion early this month.

CASE STUDY 2

By Robert Diebold

Silver Stone saved BIG

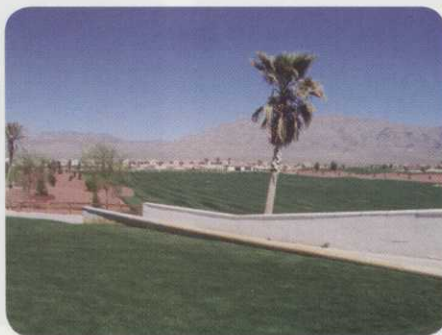
A Las Vegas club finished a four-phase improvement plan in 2008 that's expected to save 68 million gallons of water per year.

During the last four years, Silver Stone Golf Club underwent a plan to improve the course's operating costs, make it more aesthetically pleasing and – most importantly considering its Las Vegas locale – conserve water.

Ninety acres of the 27-hole golf course were originally designed to be landscaped areas and were initially irrigated by overhead sprinklers. This design created two big problems as the course matured: the planted areas required a considerable amount of water and more chemicals and labor to control weeds. Though it's difficult to know how much water was designated to the landscaped areas, the course as a whole at that time was using about 1,195 acre-feet per year.

Given the water shortages in the Las Vegas valley and the water price hikes over the last few years (water costs are at \$3.25 per 1,000 gallons), International Golf Maintenance knew a move to a drought-tolerant golf course was in order.

Four years ago IGM started the first phase of the transformation of the original 90 acres of out-of-play landscape. The first step was to remove all existing irrigation and unwanted plants, which included anything that wasn't drought tolerant, such as deer grass, mock or-



Silver Stone Golf Club converted landscaped areas to native plants and removed turf from out-of-play areas. Above: The driving range before (left) and after the changes.

ange, crepe myrtles and clover groundcover. The second phase included installing plant material. IGM chose to use native plants like Creosote, Brittle Bush and Yucca; these plants only require supplemental water until they're established. After they're growing on their own, they thrive off of the 4 inches of rain Silver Stone receives annually.

The third phase included spreading 18,000 tons of red decomposed granite (DG) around the groups of plantings. DG's purpose is twofold; it creates an aesthetically pleasing desert look while providing dust control.

IGM just finished the fourth and final

phase of the project, which involved removing more than 20 acres of turf (mainly around tees and from out-of-play areas). This move is expected to save nearly 4 million gallons of water per month during the hottest parts of the year, which equates to nearly \$15,000 in water costs during a summer month. Removing turf, adding drought-tolerant plants and installing DG cost the facility about \$900,000, most of which was reimbursed by the Southern Nevada Water Authority (SNWA). The total cost for all four phases was \$2.5 million.

Silver Stone's stakeholders are happy with the results – one of them being named "Most Improved Course" by Vegas Golfer Magazine, which membership director Terry Clark expects to help member referrals, sales and guest play. IGM doesn't expect the changes to create cost efficiencies in pesticides or labor for the first few years or until weed populations have diminished. In the future, though, it expects maintenance costs to decrease 8 percent.

The biggest benefit, however, is the projected water savings. The facility is on track to use 985 acre-feet of water this year compared to 1,195 before the changes – a savings of more than 68 million gallons. GCI

Robert Diebold is the superintendent at Silver Stone Golf Club.

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GROW GREEN

CASE STUDY 3

By Michael Zawacki

Going eau NATURAL

Cutting the number of irrigated acres of rough, introducing natural areas and upgrading sprinkler heads is conserving water at Indiana's Chariot Run Golf Club.

When superintendent Roger Meier arrived at Chariot Run Golf Club in 2005, the 18-hole Harris Entertainment resort property in Laconia, Ind., was irrigating 80 acres of tall fescue and bluegrass rough and 35 acres of bentgrass fairways.

The facility's water is supplied primarily by a rainwater-fed, 7-acre irrigation lake. When

that reservoir is depleted the course must tap into city water, an expensive fallback for which Meier budgets \$30,000 annually. Chariot Run is located in a transition zone in the eastern part of the state, so summer can be very dry or very wet.

"It was critical for us to take conservation measures and reduce our water needs," says Meier, who operates with an \$850,000 annual maintenance budget and oversees a crew of 19 in June, July and August. "There are no water restrictions mandated to us, but it's something my staff and I believe in for success at our club."

In 2006, Chariot Run embarked on an extensive bunker renovation and redesign project. The course hired architect Randy Hoffacker from RJH Golf Design, Louisville, Ky., for the redesign and it was Hoffacker who suggested changing grass lines and introducing a native mixture of fine fescue around the bunkers.

"Hoffacker is a big fan of golf course designers Coore and Crenshaw, and they do a lot of natural, rough-looking bunkers," Meier says. "That's where he got a lot of his ideas from for this project."

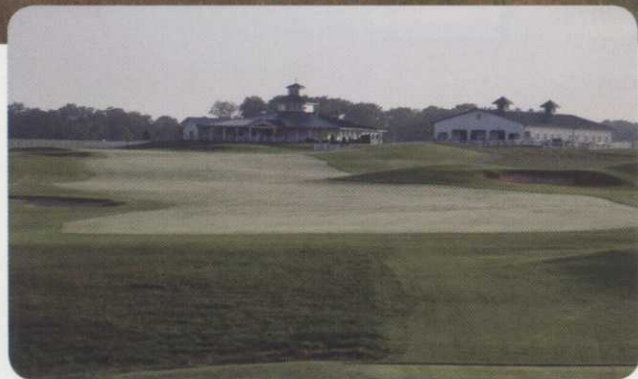
Making this change and allowing several acres of out-of-play areas to go "natural" reduced Meier's maintained rough acreage by about 55 acres.

In addition, they reduced the course's bentgrass acreage by converting its bentgrass driving range floor to tall fescue and they've started the process of reducing several fairways as well. "Our goal is to reduce our bentgrass fairways to about 27 to 28 acres," Meier says.

The property's general manager, though, needed to approve this plan before the transition could take place. Hoffacker assisted in selling the concept by creating a presentation that superimposed native grasses around a specific bunker, providing an accurate visual on what the final concept would look like. The budget for the bunker renovation/restoration project was roughly \$380,000.

One initial problem, though, was they couldn't find a sod grower who grew native grasses. "So we had four acres on the property that had been established with the native grasses when they built the site," Meier says. "We stripped that whole field using a 22-inch sod cutter and brought the cut and prepped grasses in so the construction crew from Professional Golf Services, based in Fort Worth, Texas, could lay it and redo the bunkers."

The native grasses are low-fertility and Meier has had some growing pains. "They're clump-type grasses and they don't spread like bluegrass does," he



Chariot Run Golf Club integrated native grasses during an extensive 2006 bunker renovation and redesign project. Before (inset) and after (top).





Chariot Run Golf Club's 13th hole as it is today with native grasses (left) and before the grasses were introduced (below).



says. "So we've actually had to do some plug-in in some places."

Outside of this issue, though, the positives far outweigh the negatives, Meier says.

"The advantage of having those grasses is that they're drought tolerant," he says. "You don't have to irrigate and put all of that labor and maintenance into those bunkers. When we changed all of those grasses it allowed us to reduce our maintained acreage of primary rough that we were mowing—the turf-type tall fescues. We estimate we've eliminated about 55 acres of turf-type tall fescue that we were mowing, irrigating and fertilizing."

Reducing the facility's irrigated acreage from 126 to 76 acres allowed Meier and his crew to identify, cap and remove 150 irrigation heads from these original sites. In addition, Meier installed 48 quick couplers (about three to four per hole) to aid in hand-watering and is in the process

of installing more efficient part-circle heads around tees, rough perimeters and green surrounds. "We changed a lot of the grass lines — hills that used to be maintained we let them grow natural," he says. "We then tied those lines into areas where we could convert a full-circle head into a part-circle head and really target specific areas and use half the amount of water."

Altogether, Meier estimates the project has reduced the course's water consumption by about 30 percent.

"This is one of the toughest places to grow grass," Meier says. "So it can be a real challenge because we're growing all bentgrass from tee to green."

"It's a unique course and it's something that you don't see everywhere," he adds. "It's rated one of the second toughest in the area because of the native grasses, but people love this course. I've had people tell me it's the closest to Scottish golf as you're going to get." GCI

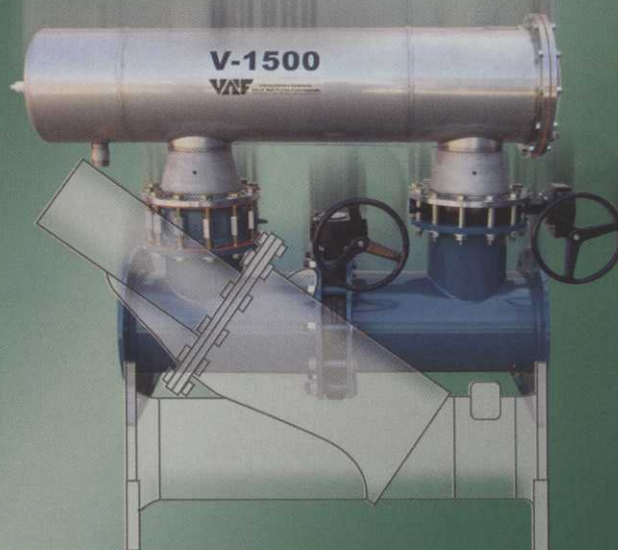


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By Joe Jemsek

A designer's view

WHY CHOOSE TURF CONVERSION?

Turf conversion is a relatively inexpensive, long-term solution to water conservation.

The only way to permanently reduce water consumption is to reduce the amount of irrigated turfgrass. Replacing irrigated turf with non-irrigated or reduced irrigated materials such as pine straw, wood chips, drought tolerant field grasses, or native sand bunkers can reduce water usage by up to 30 percent. The benefits include not only water conservation, but reducing annual maintenance costs and providing a natural look to parkland-style golf courses.

What courses are good candidates?

Courses that are irrigated year-round and located in arid or semi-arid climates can see the greatest return on investment from a turf conversion project. However, any golf course can see cost-saving benefits from a turf conversion by replacing maintained turf with naturalized areas. The ancillary benefits of reducing maintained turf grass, includes cost savings on turf maintenance, chemical applications, utilities and overseeding costs.

How much can a course really save?

A typical golf course uses around 6,500 gallons per acre per watering cycle. If a conversion plan eliminated 20 to 30 acres of turf, the water savings could be between 130,000 to 260,000 gallons daily. For example, in Southern California if a course saved 200,000 gallons per day over 200 nights, it would translate to 40 billion gallons and a cost savings of more than \$165,000 per year. In just a few months these cost savings can offset the expense of the turf conversion.

How does turf conversion begin?

Before embarking on any turf conversion, solicit the help of a golf course designer and irrigation consultant to analyze the course and the irrigation system. After taking inventory of the site, identify areas for turf removal and develop a plan. For example, tee surrounds are an excellent option and can provide contrasting textures to help define golf features.

Before implementing any changes to the course, display plans near the pro shop and educate staff and players about the planned water conservation efforts. Players will recognize

the course is taking environmentally friendly actions through the management of precious resources like water. Change is difficult, but when informed, players are more willing to accept the conditions during the process.

To get started, replace full-circle sprinkler heads around tees with reduced radius heads and only irrigate tee tops. Rough widths can be reduced by part-circling sprinkler heads in between landing areas and along tree lines. As new irrigation limits are realized, edge grass lines and follow the plan to convert areas.

What are the results?

By the next growing season, the advantages of the program will extend far beyond water conservation and will enhance the aesthetic appeal of the course with a contemporary and natural style. Often times, water conservation occurs only in response to water restrictions. Before water restrictions are imposed at your course, consider implementing a turf conversion project. GCI

JOE JEMSEK IS PRESIDENT OF CHICAGO-BASED JEMSEK GOLF DESIGN.

A before photo and after rendering of what a turf conversion may look like.

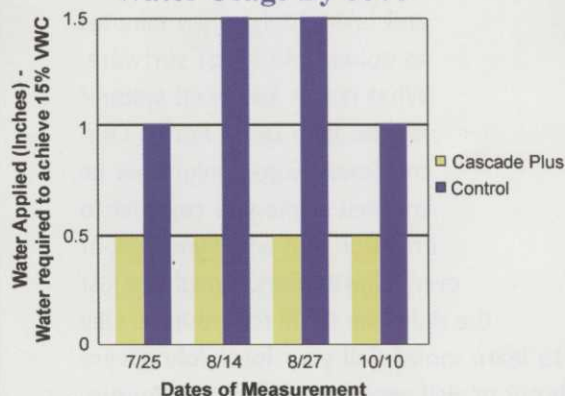


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There's a spot for a new controller on your course. How will you fill it?

Fact is, this used to be an easy answer. There were only a few choices in irrigation system controllers, and more or less they performed roughly the same. Well, that has changed quite a bit.

The demand for increased water conservation, more flexibility, and better efficiency has led to dramatic breakthrough technologies, and many new options.

So what used to be a routine decision isn't. (And, of course, irrigation controller technology isn't something most of us stay as up-to-date on as say who's at the top of the leaderboard at a PGA TOUR event, or who was just voted off the island last night.)

So where to go from here? That's the million-dollar question. Literally — the right controller system can have that much of an effect. First off, don't just consider the brand. Instead, look at capabilities too. If you do, you'll discover your choice is simpler than you might think. Because there are significant differences. For instance, there's a control system that can offer much greater precision (to the second instead of the minute) in setting rotor run times. Why is this important?

Because shaving seconds of program run time can save hundreds of thousands of gallons of water over

a year. Sometimes as much as 40% in total power and water costs. This same system also allows any controller to act as a central control for all the rest. Why does this matter? It's

a huge time saver if you operate without a central, or during a renovation. Instead of having to visit each and every stand-alone controller on the course, you can just go to one. (Or simply hook one up to a maintenance radio and control them all. Or even better, connect one to the internet with a modem, and manage the whole irrigation system from anywhere you can access the internet, like the clubhouse—or perhaps the couch in front of your TV at home.) Then, there's the question of how easy the controller is to upgrade in the future—as more and more sensor and web-based technology comes online. Here again, the answer is simpler than you might expect. Only one control system is totally software-based. Which means upgrading is just a matter of connecting the controller to a laptop and taking only a few minutes to upload the latest software. What is this advanced system? It's the John Deere Aurora Control Series. Sure it might not be the first name you consider in irrigation, but when you look at everything it offers, it might be just the right one to fill the position. Like

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JOHN DEERE
GOLF

THE PRICE IS RIGHT

(continued from page 42)

That's not the case for the Kensington Metropark Golf Course in Milford, Mich., which is wrapping up an irrigation renovation this month. The facility benefitted from a dry construction market this spring.

Paul Dushane, golf course superintendent for the parks authority-owned golf course, is grateful the facility didn't go through with its irrigation renovation last year. It was put out to bid last August and bids came back much higher than expected.

"Copper was high and it was also a time when contractors had jobs, so they weren't hungry for work," Dushane says.

Based on advice from vendors and consultants, Kensington's decision makers opted to hold back on the project until spring.

The difference in the price tag was "shocking," Dushane says.

"It was around \$1.2 million down to about \$850,000 just for the installation of sprinklers and pipe," he says, noting that the pump house renovation was completed last year. "We saved almost \$400,000."

Kensington's system was designed in-house by former superintendent Mike Brahm-Henkel, who's now an engineer with the parks system. Waterford, Mich.-based Marc Dutton Irrigation is the contractor.

"We couldn't be happier about the deal we got," Dushane says.

The private, 27-hole New Richmond (Wis.) Country Club recently overhauled its 23-year-old irrigation system to a new, double-row design.

Though golf course superintendent Tom Johnson says the club didn't meet the window of opportunity for excellent pipe/fitting prices, he believes the facility benefitted from the slow construction market.

Though Johnson says it's difficult to determine a dollar figure for how much the club saved by squeezing into the prime time for building, he says one indicator is the quality of contractor that won the project.

"Contractors – not only irrigation but also golf course builders – looked at their businesses and said we can go after these smaller projects," he says. "They had to do some adjusting."

"I consider Leibold one of the best, and at the onset we didn't think we were going to get them," Johnson says, adding the club's total project cost about \$800,000 (not including a

pump station). "But we did – it was a fair bid, but it was the low bid. It was just right for this golf club."

"As it turns out, I think we did a pretty good job of timing everything."

TIGHT PURSE STRINGS

Despite excellent prices on irrigation construction, observers report there's a hesitation to move forward with projects – even at financially healthy golf facilities.

In Phoenix, Kaye estimates, 70 percent of golf facilities are hurting and 30 percent are doing well.

"Even for the third that aren't hurting, the perception that things are bad is making them keep a tight grip on purse strings," he says.

At private clubs, many members have had their personal stock portfolios battered.

"That has a psychological effect on how they want to spend money, even the club's money," Kaye says.

Municipal golf facilities are taking a hit because their tax revenue is collapsing.

"When you're losing teachers and police, you're not going to redo a part of your golf course – that's politically untenable," he says.

Wilson is seeing the same trend. "There are some pretty high-profile clubs that can easily do any scope of work on their course and already have the plans and funds in place to do the project but have backed away because it's just not the prudent thing to do right now as perceived by the membership during these times of economic uncertainty."

"No doubt that's understandable and commendable," he says. "But on the other hand it can be argued it's not being prudent business-wise and not the best use of the membership's money when bypassing great opportunities and value when the times offer it and then paying significantly more for the same service and product later on."

A rocky economy didn't stop Wichita Falls (Texas) Country Club from moving forward with its renovation plans last year, says Nathan Neumann, golf course superintendent.

It's a good thing because he believes his club benefitted from excellent pricing during its irrigation overhaul, which was part of a greater renovation completed in December by Wadsworth Golf Construction Co.

Though the club hadn't previously priced out the project to compare what it would have cost several years earlier to what it actually paid – \$3.5 million for the whole project with \$1.3

million going toward the irrigation upgrade – he believes the timing was right.

Neumann worked with architect Steve Wolfard and Christensen, who served as the irrigation consultant on the project, to keep a close eye on industry trends and current pricing.

"It was a team effort on our part to educate the members and effectively communicate that it was a good time to do a renovation," he says.

The result is a happy membership that has felt the sting of the recession, but not as badly as other clubs.

"The renovation has helped," Neumann says. "We've picked up a few new members, which is positive because it's balanced out a few that we've lost due to the economy."

WHEN WILL PRICES GO BACK UP?

Kaye says irrigation contractors have been strapped for a solid year, and he expects the situation to remain this way for at least six more months.

Kevin Plageman, principal in West Coast irrigation consulting company Zellers-Plageman, expects it to take longer. "The prices are so low right now and it's the time to get great construction prices, but purse strings are tight."

Though he's not sure how long commodities prices will remain low, he expects aggressive bidding among contractors to remain.

"I'd say it'll be this way for a couple of years," he says.

"That's just my opinion, but I think it'll be this way until real estate turns around. Especially in California, which is overbuilt [with golf courses], many of them are closing down, or converting from 36 to 18 holes."

Both Leibold's Boyer and LU's Wilson expect the construction market to improve moving into 2010 with the disclaimer that consumer confidence will play a major role in how it bounces back.

"We're seeing a little more activity coming on line this fall and more into next year as we receive requests for proposals for those times," Wilson says. "But confidence in the economy and a little more flexibility in bank lending will have an impact on that."

Christensen expects the prime pricing window to close in the next four to six months.

"Commodities and whole good are going to go up, availability is going to go down," he says. "People who are trying to make good business decisions need to focus on the fact that this really is the time to buy." GCI

War on algae

Superintendents struggle to keep their ponds clean, even with aeration, biological strategies and hand removal in their arsenals. By David McPherson

The list of specialized knowledge a superintendent needs to maintain a golf course keeps growing. Not only must superintendents understand agronomy and manage the inner workings of growing turf, but for those whose courses include water hazards, they must also understand how to manage ponds.

Ponds are not only a hazard for golfers, but these bodies of water present a host of problems for superintendents. High levels of nutrients from Canada geese droppings, fertilizer, septic systems and other sources

In 2006, Keller Golf Club in St. Paul, Minn., implemented a native shoreline restoration program on the pond that sits between the tee and green on its 15th hole. The buffer zone has helped the algae problem, but duckweed continues to be a nuisance.



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often cause algae problems, which are aesthetically unappealing, smell and, if not treated properly, often lead to other concerns, such as creating a breeding ground for insects.

When maintained properly, ponds add to a golfer's experience. As Paul Scenna, superintendent at Beacon Hall Golf Club in Aurora, Ontario, says, "We're in the business of looking good."

Superintendents struggle to find the right solution to keep these ponds looking good, especially in tough economic times when many course managers are faced with shrinking operating budgets.

Since turf comes first, managing ponds is low on the priority list. As this problem persists, some facilities have begun allocating specific funds for pond management. Superintendents estimate the average cost to manage a pond effectively is \$5,000 per year per pond, minimum, but it depends on the size of the pond and the scope of the problem.

Many superintendents have tried everything, including aeration/fountains, bioaugmentation (adding bacteria cultures or compounds like

alum), hand removal by raking, cutting, etc. and biological strategies (adding grass carp or dying the pond).

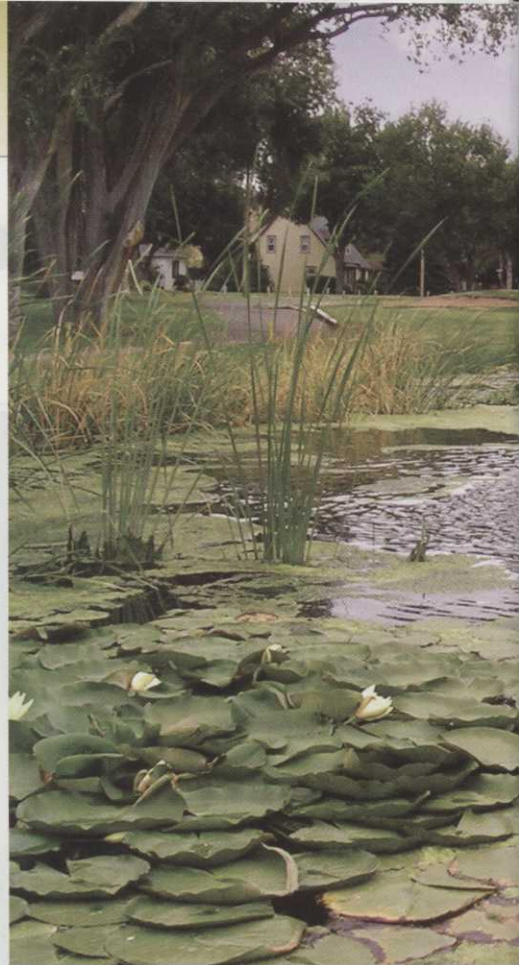
While each of these strategies provides a temporary stopgap, none completely solve the problem.

"I wish I could say these practices have provided us perfect water features, but the quest for high-quality ponds is a continuous struggle," says James Beebe, golf course manager at Priddis Greens Golf & Country Club, a private course outside Calgary, Alberta. "We've won some battles but the war isn't going well."

Thankfully, there are experts in this growing field to help superintendents win this war.

Bernie Hertzman is one of these specialists; he operates AMA Sales, a pond-management business in Toronto. The 53-year-old is a lifelong golfer who had an epiphany about seven years ago while he was chasing the little white ball.

"I was paying a lot of money to play at various courses and seeing gigantic globs of algae all over ponds," he recalls. "The season ended and I said to one superintendent, 'You have a



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Golf courses commonly add aerators and surface fountains to ponds to improve circulation and mitigate algae problems.

lot of algae in your pond, is there anyone in this business?' He said no. I looked into it and one thing lead to another. I got really involved and studied what algae is, what water is, to better comprehend what superintendents faced."

Today, he services ponds at many of the private and public courses throughout the Toronto area, including Glen Abbey Golf Course, host to the 2009 PGA Canadian Open. He takes a strategic approach to pond management, customizing the solution for each course and for each pond.

"I sell a pond service," he explains. "It's a yearly service. With all the heavy restrictions we have these days, there are a number of reasons why algae happens. The No. 1 reason algae

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exists is because of phosphorous nitrogen. I offer a service of adjusting the water, balancing the water properly without any miracles. I use a liquid organic product and have the tools and knowledge, but it's more about working with the superintendents."

The vast majority of ponds on golf courses exhibit what Hertzman calls the "beach" scenario. The ponds have not been dug down deep

enough on the edges, so the slope is too gradual and the water is as little as 2 or 3 inches deep at the shore. When the sun hits the shallow water, it helps anything under the surface grow.

"In this case, you don't need chemicals, you don't need to blow the pond up, you just need to dig that out and clean the sides up," Hertzman explains.

Keller Golf Club in St. Paul, Minn., offers

a good case study. As a certified Audubon Cooperative Sanctuary, the course tries to minimize its use of pesticides, including aquatic herbicides.

For years, superintendent Paul Diegnau struggled to find the right solution to manage his ponds. Since he came to the course 13 years ago, he's tried many techniques, with mixed results.

"We have five ponds on the property ranging in size between 0.75 and 0.1 acres," Diegnau says. "Three of the ponds are original to the 1929 design and have trees in the vicinity. Leaf drop in the fall adds tremendous amounts of organic material and phosphorous to these surface waters, which tends to overwhelm the aquatic system and results in heavy accumulations of bottom muck, or loon shit as it's called in these parts. Muck levels vary between 1 and 3 feet in depth and the ponds are less than 5 feet deep. This excessive bottom sediment is a never-ending source of phosphorous."

When Diegnau arrived at Keller, all turf was mowed to the water line. In his second year, he decided to create grass buffer strips around the water features. Buffer zones can have physical characteristics (such as varied height or pockets of shrubs) that serve as a point of reference for where a player's ball tends to enter the water. Native plants contribute to the overall habitat value of the property. In Diegnau's case, the buffer zone initially helped improve the water quality and the look of the pond, but the algal blooms were still a problem.

Next, the Diegnau installed surface fountains in four of the five ponds; they were ineffective and eventually removed. Over the next five-plus years, Diegnau experimented with biological control products.

"I tried many different products on the market with limited success," he says. "I tried doing alum applications in house, but never achieved the results we experienced years previous. I experimented with pond dyes also, but the watershed district frowns on this method due to its effect on submergent vegetation. By this time the filamentous algae outbreaks were diminishing in severity and duckweed was increasing. Duckweed is much more tolerable visually and our mallard and wood duck populations thrived."

In 2006, in conjunction with his local watershed district, Diegnau implemented a successful native shoreline restoration program on the 0.75 acre pond that sits between tee and green on its par-3 15th hole.

"Approximately 2,700 native prairie plants and 700 wetland plants were planted," says

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Diegnau. "Then, in 2008, a cedar split-rail fence was added for visual appeal and to keep golfers out. This area is now one of the focal points of the golf course and the water quality is good. Duckweed continues to be the primary nuisance weeds, but it's kept in check most of the summer by the duck population."

This year, the superintendent is planning to restore another pond shoreline on the 6th hole. Prior to planting, Diegnau is investigating the feasibility of vacuuming the muck off the bottom. He says estimates the price of this job at \$3,000 to \$4,000 for a 0.2 acre pond, depending on the depth of the muck.

Other options he's considering include: experimenting with a bottom bubbler system in one of his deeper ponds and looking at floating vacuum systems that collect floating plant material and pump it to land.

EVALUATING BIOAUGMENTATION

Bioaugmentation, the process of adding bacteria cultures to form compounds, is a new business. Hertzman is leery of these services. "I compare the golf course pond business

now to the bottled water industry when it first launched," he says. "One day Perrier came out and the next day every food broker was offering bottled water and was an expert. Everyone claims to be a professional offering new bacteria for your pond water, but what people don't understand is these are products developed by golf distributors who don't care about what they are – it's just a product line in their gamut of products they try to sell while hitting the super to buy fertilizer.

"There's no effective biological/enzyme in the marketplace in North America anywhere registered that is really effective to cure algae problems," Hertzman adds. "It's not a hoax, but people are presenting these products as a natural substitute for harsh, toxic chemicals – throw your products away and use this natural stuff. In reality, it is a slow digestive – it breaks down small amounts of algae at a slow rate, but in the enzyme world, enzymes become dormant within a 72-hour span therefore you have to repeat that process endlessly."

Other techniques superintendents have tried include: dying ponds and introducing carp to

eat the algae. Again, these provide short-term solutions, but are not long-term cures.

"The reason people dye the ponds or use carp is because it's a simplistic solution," says Hertzman. "The reality though is it just covered up or masked the problem. Dying ponds shades the surface area of the sunlight, but it can't penetrate all the way down to the bottom of the pond, so the weeds just keep growing. Carp can only eat so much and the more they eat the more they excrete acidic poo."

So, what's a superintendent to do with no clear-cut solution in sight?

"Every pond is different," says Hertzman. It's important, no matter what strategy you choose, to look at the root of the problem, rather than just reacting to the surface algae.

"You may get rid of the surface algae, but it doesn't do anything to eradicate what is going to come back up," he says. "You need to take a strategic approach and find the solution that is right for your course." GCI

David McPherson is a freelance writer based in Toronto.

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Rethink Tomorrow

Wow your green committee

Effective communications help foster a relationship
with your green chairman and beyond.

The success of a golf facility lies foremost in the condition of the course. Superintendents and their staffs strive for quality and consistency every day. But dealing with agronomics and Mother Nature is only a fraction of superintendents' jobs. They must build the all-important rapport and interactive relationship with the green chairman and beyond.

It's paramount to communicate regularly and effectively with the green chairman and to receive buy-in of the maintenance program and an understanding of realistic expectations of course quality. This close relationship is vital to gaining unwaver-

BY KURT LAWTON



ing support of both the chairman and green committee.

Once that relationship is well established, the superintendent and green committee can face their larger challenge of keeping locker-room advice and politics at bay. This team must support the greater good of a best-laid golf course maintenance plan compiled by the superintendent, so it won't be derailed by critical non-experts (golfers).

JOINED AT THE HIP

Since the green chairman often sets the stage with recommendations to the board of directors, regular and consistent communication is a necessity, especially during times that interrupt or impair normal play.

"A successful working relationship hinges on two key ingredients – a superintendent who's incredibly talented and organized and a committee that provides input from the entire membership while supporting the superintendent with all members," says green committee member and project coordinator David Tier-

ney, who worked closely with superintendent Tim Anderson during the award-winning renovation of Naperville (Ill.) Country Club.

"We were joined at the hip, Tim and I, in order to pull off such a huge renovation project," Tierney says. "And thanks to Tim's excellent 'master sergeant' role in both agronomics and communications, we were able to overcome numerous challenges, keep the members informed and achieve success in increased membership."

This \$2.75 million reconstruction of the course (\$8.5 million including all infrastructure changes: buildings, parking, irrigation, etc.) truly tested the patience of members.

"We employed many communications tools to help engage the members so they understood the vision to become comfortable with the entire project – from start to finish. Communications every step of the way is vitally important, because we took away members' 'beloved golf course' for over a year and they deserved transparency on every aspect of the project," Tierney says.

The green committee enlisted five members with communications experience to help both Anderson and the green committee keep the rest of the membership informed.

"We used biweekly newsletters, produced videos and displayed project boards with photos and more. And we kept the clubhouse open for food – so everywhere a member turned, they saw and understood what was going on with their golf course," he says.

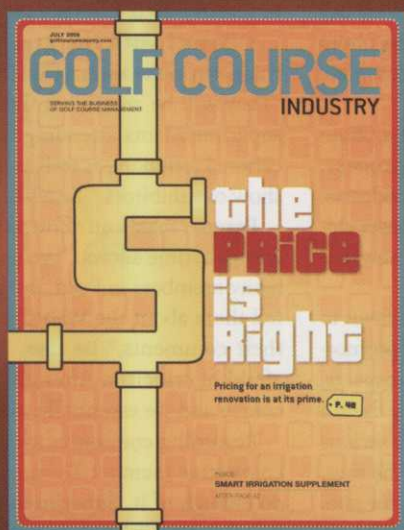
WEEKLY COMMUNICATION

While major renovations put good communications to the test, many superintendents rely on regular communications beyond the green committee to all staff and members.

"I started a weekly report back in 1988 at the insistence of a new GM when I was superintendent at a course in Kansas City, and it became a successful ritual everywhere I've worked," says Pat Finlen, superintendent at The Olympic Club in San Francisco. "I learned early on that you cannot always rely on the golf shop to tell our message and portray it in the correct man-

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ner. It's a very tough job placed on them, so I've learned it's best that I put the message out the way I want, directly to everyone, using print as well as e-mail. This direct communication gives readers a chance to respond back to me via e-mail."

Finlen and his two assistants put together the e-newsletters. Each issue begins with club event news for the week. Next they discuss anything new or unusual that's happening on the course, explaining why and how they're handling the situation.

"And we always make a special point to alert members of upcoming special or regular projects that impact their course, such as aeration, well in advance so they can plan accordingly," he says. "By incorporating photos and basic agronomic explanations, it has helped members not only learn themselves, but take an active role in telling other members about what they read."

Finlen initially sent his e-newsletter to all golf course committee members and all club managers (80 to 90 people) at the 5,000-member, multisport athletic club, but the list has grown to 500 recipients.

"The newsletter has been a really big success here," he says. "The initial committee and staff members that received it began forwarding it to their member friends. Now, many of the regular members who found value have signed up to receive it."

"It's truly helped explain to members how our job is much more than mow, water and fertilize," Finlen says. "It's been a great tool to interact with members, who regularly send me five to 10 questions every week."

He spends about 15 minutes answering these questions early in the week.

Finlen values the importance of meeting and talking to as many members as he can on a regular basis, but he realizes he cannot be up in the bar and grill every Saturday fielding questions.

"But the interesting thing, thanks to this e-mail newsletter, is that people in the bar who get the newsletter can answer most questions, and take pride in sharing their knowledge," he says.

Transparency is the best policy, Finlen says. "Don't be afraid to divulge any issue with the turf or about the course, or even admitting mistakes and how they were handled," he says. "You're taking care of their golf course, not yours, and members have a right to know."

Finlen also recommends tailoring the message, so it's readable for the entire

membership; avoid getting too technical or too in-depth.

Don't forget to hand deliver communications to key members as well as post printed forms of communication with photos in locker rooms, on bulletin boards, in the pro shop and at other key locations. And for special projects, consider using outdoor educational posters near tee boxes.

"We've found pedestal boards extremely beneficial, not only to tell why the work is being done, but to show project timelines and photos," Finlen adds.

ON THE WEB

Some superintendents are taking communications a step further by developing Web sites and blogs to keep members up to date. One such passionate assistant superintendent, Bryan Bergner at Westmoor Country Club in Brookfield, Wis., took it upon himself to design, write and shoot all photographs for his Grounds & Greens department Web site (westmoorgrounds.com).

"I came up with the idea to visually show the progress of our course reconstruction, which tied in with our general manager's weekly newsletter, by adding a link to the photo page. I would take pictures every day during construction and upload new photo galleries every two to four days, complete with captions," Bergner says.

He didn't stop at including just a photo gallery of the reconstruction process. Bergner writes a blog, produces podcasts, lists employment opportunities, posts videos and posts HTML files of every newsletter (that he designs and writes).

"I do all this on my off hours as a favor to Westmoor because I really enjoy promoting our course to members and prospects, showing my photography and giving them a glimpse of the lighter side of all the serious work we do for their golf course," he says. "And members are really enjoying the site, and more are going there as I do e-mail blasts to highlight what's new on the Web site."

BE VISIBLE

Being highly visible to everyone at the golf course is equally as important – if not more

so – than written communications. Dave Fearis, GCSAA director of membership, offers several tips that often benefited him during his 28 years as a superintendent.

- Play golf with committee members and other key members to really understand their thoughts about all aspects of the course and learn about any good or bad agendas they might have. "You can head off or even extinguish a lot of potential fires even before they happen," Fearis says.

- Each day, personally drive the course backwards and talk to as many groups as possible to find out their thoughts. "Offer personal touches to early golfers, such as bringing them coffee before the pro shop opens," he says. "And personally congratulate all top tournament winners."

- Present a notebook of past years' green committee minutes to any new members – and spend quality one-on-one time answering questions. "Make sure they

understand and buy in to the master plan and maintenance plan," Fearis says.

- Always listen and be open to ideas from members. "We must remember it's not our course, it is their course and we ultimately need to satisfy them," he says.

- Travel with the green committee chairman to the annual Golf Industry Show. "They will be amazed at the thousands of superintendents attending dozens of educational seminars, as well as the huge trade show of exhibitors," he adds.

Bergner makes an effort to meet as many groups as time allows. "I go up and talk to as many members as I can, introduce myself, tell them about the Web site and listen to their comments," he says. "You can't be afraid of criticism. After all, it's their golf course and we essentially work for them."

Regarding communications, says green committee member Tierney, "You cannot do enough of it. Superintendents succeed by helping members understand what's going on, what's going to happen next, where we stand and why we're doing it." GCI

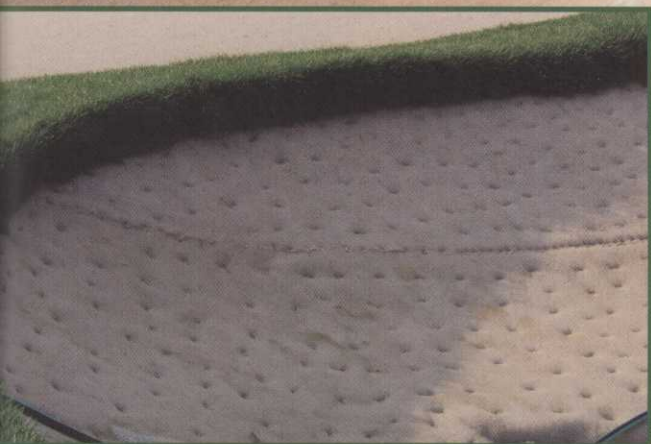


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Kurt Lawton is a freelance writer based in Eden Prairie, Minn.

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Research

BY ERIC J. REBEK AND TOM A. ROYER

White grubs vary in size depending on species and stage of development, but all are generally C-shaped with white bodies and tan head capsules.



Down and dirty with WHITE GRUBS

A look at May/June beetle biology and how knowledge about the identity, distribution and age structure of white grubs allows for better control.

By most accounts, white grubs are the leading insect pest of managed turfgrass in the United States. The term “white grub” is used to describe the immature stage (larva) of a complex of scarab beetles that includes masked chafers (Northern and Southern), May/June beetles (*Phyllophaga* species), European chafer, Oriental beetle, Japanese beetle, Asiatic garden beetle and green June beetle.

Adult beetles of these species are not turf pests, although some feed on leaves of various woody plants and can be serious pests of ornamental gardens. May/June beetles are the nickel-sized, brown-black beetles that are attracted to lights around maintenance buildings at night, and make that loud

“crunch” in the morning when stepped on by golf course personnel. Larvae, however, live underground and feed on the roots of most turfgrasses and other plants. White grubs are key pests of turf because they cause direct injury by consuming root tissue and are responsible for collateral injury caused by vertebrate predators, including skunks, moles and armadillos, which tear up the turf to devour them.

White grub control is a challenge for turf managers because a grub infestation may include numerous species that have complicated life cycles. The life cycle of any white grub includes an egg, three larval instars (stages), a pupa and the adult beetle. Many species (collectively referred to as annual

white grubs) complete their life cycle in one year; these include masked chafers and Japanese beetles. Others, particularly May/June beetles, may take two or even three years to complete development, spending the majority of that time below the soil surface as third-instar grubs. The length of the life cycle depends on the species of beetle and where they occur geographically. May/June beetles living in the southern U.S. may take one or two years to complete development, while the same species may take two or three years in northern states.

Several years ago, investigators in the Department of Entomology and Plant Pathology at Oklahoma State University began to evaluate insecticides for white grub control.



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We soon discovered that unlike most places in the U.S. that are typically infested with annual white grubs, Oklahoma turf typically is infested with a mixed population of southern masked chafer and May/June beetle grubs, or in some cases a preponderance of the latter. We also discovered that we didn't know which species of May/June beetle grubs were turf pests in our state. It turns out that more than 70 species of May/June beetles call Oklahoma home. We can identify adult beetles to species rather easily by examining distinct physical characteristics that differ among them. In contrast, larvae are very difficult to identify to species because differences in physical traits among grubs are not so readily apparent. Their correct identity can only be assured by someone with special training and experience in using the keys for identification of these larvae.

While we were addressing these challenges, several new classes of insecticides were being registered for control of white grubs. These products control white grubs over a fairly long time period (treatment window) during the summer. Yet, we also know that they're more effective at controlling young grubs (first and second instars), and are less effective at controlling larger, older grubs (third instars). In addition, most treatment recommendations suggest that applications coincide with egg hatch of masked chafers, which commonly occurs about two weeks after oviposition (egg laying). While this

recommendation seemed to work most of the time, we occasionally received reports from turf managers of "poor control" with products that had previously provided good control. In nearly all of those cases, the "problem grubs" turned out to be May/June beetle grubs.

We soon realized that to effectively manage white grubs, we needed to answer several questions:

- What species of May/June beetles infest turf?
- What are their life cycles, and when do adult beetles emerge and lay eggs?
- How are white grubs physically distributed in turf?
- What insecticide products effectively control white grubs of May/June beetles?

In 2005, we initiated a research project to begin answering these questions. To answer the first two questions, we worked with several golf courses and sod farms that were located in different areas of Oklahoma and we collected beetles and larvae throughout the summers of 2005-2006.

QUESTION 1: WHAT SPECIES OF MAY/JUNE BEETLES INFEST TURF?

We collected white grubs that were feeding on turf at bermudagrass sod farms to identify the predominant species occurring in different regions of Oklahoma. Since OSU currently lacks a reliable expert in identification of larval white grubs we decided to use the "CSI" approach and compare

DNA from correctly identified adult beetles with the DNA from unknown larvae. This method works because the DNA fingerprint doesn't change from larval to adult form. To accomplish our goal, we froze specimens in liquid nitrogen, ground up a leg from both beetles and larvae, and sequenced a small fraction of the DNA contained within the leg tissue. Once the DNA was processed, we "matched" the DNA sequence from an identified beetle with an unidentified larva to determine the identity of the latter (see Figure 1 for a hypothetical example).

We recovered eight species of May/June beetle grubs that infest turf; five of these were common, each accounting for at least 12 percent of the total specimens collected (Table 1). We also found that in general we collected more May/June beetle grubs than Southern masked chafer grubs from the sod farms.

QUESTION 2: WHAT ARE THEIR LIFE CYCLES, AND WHEN DO ADULT BEETLES EMERGE AND LAY EGGS?

Once we identified the turf-infesting May/June beetles, we were able to look at the flight patterns of those species that we collected in our adult traps. We learned that instead of calling them May/June beetles, we could just as easily call them "April beetles," "July beetles" or "August beetles" because, depending on the species, they emerge and take flight from early spring through early fall. In addition, it appears that their peak flight activity ranges from April through July.

Since there is flight activity throughout the summer, it shows how critical it is to apply an insecticide for grub control at the optimal time to avoid having to make multiple applications. A preventive insecticide applied too early might not provide good control of the grubs that hatch later in the summer. If applied too late, some of the early-hatching grubs could escape control, especially if the insecticide is applied at the lowest rate. We think a sod producer, golf course superintendent or lawn care professional would benefit most from an application made from mid-June to July 1.

QUESTION 3: HOW ARE WHITE GRUBS PHYSICALLY DISTRIBUTED IN TURF?

Table 1. White grubs collected from seven sod farms in Oklahoma, 2005-2006.

Species	# Locations found	% of Total white grubs collected
<i>P. bipartita</i>	4	13.8
<i>P. calceata</i>	5	12.2
<i>P. congrua</i>	3	14.6
<i>P. crassissima</i>	6	20.3
<i>P. crinita</i>	2	15.4
<i>P. ephillida</i>	2	2.4
<i>P. submucida</i>	4	8.9
<i>P. torta</i>	3	7.3
Southern masked chafer	7	0.8



Left: Mixed populations of white grub species infesting a bermudagrass fairway. Above: Armadillos and other vertebrate predators can cause "collateral" damage to turf as they dig for white grub prey.

Insects can be distributed across a habitat in three distinct patterns: uniform, random or clumped. A uniform distribution means that individuals are spread evenly across the landscape. This pattern is rare in nature. More commonly we see clumped, or aggregated, distributions of insects. Clumped distributions usually occur when individuals are drawn to a high-quality resource; visualize zebra gathered around a watering hole in the dry African savannah. Random distributions are also common and are at least partially explained by the heterogeneous nature of habitats. The distribution pattern of an insect is affected by availability of necessary resources, such as food, shelter and reproduction or nesting sites. For species that have overlapping distributions, competition within and among them may influence their physical distribution.

From an ecological standpoint, we are interested in the distribution of white grubs in turf because it may help us understand how different species of May/June beetles that overlap in time and space are able to "share" the turfgrass resource and interact with one another. We wouldn't expect to see two or more species sharing a resource peacefully, so the distribution of each species may be influenced by competition with other species.

From a practical standpoint, knowing the distribution of white grubs in turf might allow us to target insecticide applications as spot treatments rather than broadcast applications. Broadcast applications for white grub control tend to be a waste of

time, labor and money unless the infestation is widespread. They also place biological poisons in the environment where they are not needed, which goes against the philosophy of Integrated Pest Management (IPM). Circumstantial observations suggest that white grub infestations in turf occur in concentrated patches of damage in fairways and lawns (clumped). Therefore, knowledge about where white grub infestations are present (or not present) helps build a more time- and money-efficient, and effective IPM program.

We're studying the distribution of white grubs at several Oklahoma sod farms by recording GPS coordinates for each specimen collected in the field over time. We'll use these coordinates to create distribution maps for each species to help us visualize overlapping species distribution patterns. Observing these maps over time will reveal how these distributions change throughout the season. We're also classifying the development stage of the white grubs by measuring their head capsule size; with the largest measurements corresponding to third instar (oldest) white grubs. Remember that larger white grubs are not as easily controlled with many insecticides and must be treated with Dylox, Sevin or Arena.

QUESTION 4: WHAT INSECTICIDE PRODUCTS EFFECTIVELY CONTROL WHITE GRUBS OF MAY/JUNE BEETLES?

Much of our recent research involves evaluating efficacy of new insecticides for controlling May/June beetle white grubs.

Before we discuss the results of our trials, let's first talk about strategies for chemical control of white grubs: preventive, curative and rescue applications. Preventive applications are made in anticipation of a pest problem, usually in response to repeat infestations of a pest insect at a particular location. Most systemic insecticides are used preventively and are applied in advance of white grub activity. Curative treatments are made when white grubs are actively feeding but not causing visual damage to the turf. Their presence may be detected by monitoring or collateral damage to turf caused by vertebrate predators. Rescue treatments are similar except they're made when turf is showing damage symptoms and needs to be rescued immediately.

Monitoring is recommended for areas that historically have been infested with white grubs. Effective management often depends on estimating population density (e.g., number per square foot) and treating when grub densities reach a damaging level. Grub counts are made by cutting and peeling back several 1-square-foot patches of turf and looking for the C-shaped larvae in the root zone. Enough patches are observed to get a representative number of samples for estimating grub density in the area of interest. Treatment recommendations vary by geographic area and host plant, but in Oklahoma we recommend treating for white grubs of May/June beetles when their populations exceed four grubs per square foot.

Knowing when to treat is important, but we also need to choose the right insecticides for the job. We conducted two trials in 2008 at a teaching golf course on the campus of OSU-Oklahoma City. These trials were performed on bermudagrass to evaluate Arena, Merit and a new product, Acelepryn,

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Research

as preventive and curative treatments (Figure 2). All products worked well against a mixed population of May/June beetle species and southern masked chafer compared to plots not treated with insecticide. Even though average grub densities in untreated plots were below the recommended treatment threshold, preventive and curative strategies were effective at reducing white grub densities using the products tested.

Acelepryn is of particular interest because it's the newest insecticide registered for white grub control on golf courses in most states. Acelepryn controls grubs with a single application and can be applied effectively at low rates. Based on our results and those at other universities, the treatment window for using Acelepryn is wide ranging because it's effective as a preventive or curative application. This is probably due, in part, to the chemical nature of the active ingredient, chlorantraniliprole, which belongs to a novel class of insecticides known as the anthranilic diamides (Group 28 Insecticide). However, we recommend that Acelepryn should be rotated with insecticides from other chemical

classes to avoid/delay the onset of resistance in white grub populations.

SUMMARY

Not all golf courses are equal in terms of the complex of white grub species they harbor. As G.I. Joe used to say, knowing is half the battle. Knowledge about the identity, distribution and age structure of white grubs allows for better selection of insecticides, treatment windows and target sites. Our research strives to improve white grub management while saving money and reducing the adverse environmental impacts of chemical control. **GCI**

Eric J. Rebek is an assistant professor of entomology and the state extension specialist for Oklahoma State University. Tom A. Royer is professor of entomology and state IPM coordinator there.

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IMPACT ON THE BUSINESS

War on white grubs

A superintendent at an Army-owned, public golf course combats June beetles with preventive insecticide treatments. **BY MARISA PALMIERI**

At the Army-owned Ruggles Golf Course in Aberdeen Proving Ground, Md., golf course superintendent Mark Burk is now winning the battle with green June beetles, which he's fought in the white grub stage for years.

Two years ago, Burk hit a wall in his grub control program, as the grubs' tunneling was raising the turf up and creating mounds everywhere. Additionally, skunks and other animals were causing damage of their own, digging for their favorite snacks.

"Combined, they were creating a real mess on the fairways and tees," Burk says.

Until 2007, Burk was spraying the ryegrass fairways and tees with Dylox. Though he says it worked well as a clean-up product, the result was a sea of dead grubs baking in the hot August sun, which caused a noticeably foul odor.

"We were definitely looking to spray preventively to avoid clean-up work," he says.

At that time, Burk tried Arena. The first season, he sprayed preventively on the fairways, but since he was working with a new product, he didn't spray the tees.

The preventive application in the fairway worked very well, but come August, Burk had grub activity in the tees. A vendor recommended he try Arena in its granular form as a curative measure.

"I broadcast the granular and watered it in, and literally had success the next morning," he says. "There were dead grubs on top of the turf - I was pleasantly surprised with the quick knockdown."

Burk's pleased to report he only had to use the curative method one season. Since then, he's preventively sprayed fairways and tees around June 1.

"We usually see the June beetles' eggs hatching the first week of August, so we like to have the active ingredient down so the timing is such that we get them just as the eggs hatch," Burk says.

He spends about \$3,500 a season on grub control, and as a superintendent who maintains 27 holes with about a \$500,000 budget and nine part-time staffers, he's pleased with making a single application.

"One application is getting the job done," he says. "And it's also more environmentally friendly, because there's much less insecticide hitting the ground." **GCI**

A woman with blonde hair, smiling and looking off to the side. She is wearing a dark green V-neck shirt with a white and yellow striped collar and a Nufarm logo on the chest. The background is a blurred indoor setting.

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Read about a complete system overhaul at Val Halla Golf and Recreation Center in Cumberland, Maine, in the July Online Extras section at golfcourseindustry.com.

Technical difficulties

A high-tech renovation makes life at Starmount Forest Golf Club a lot easier. BY EMILY MULLINS

When Mike Brown solved an irrigation system maintenance problem from 600 miles away, he knew he'd chosen the right system.

"With three keystrokes, I fixed the problem from my hotel room while at a staff

boro's ever-changing water use mandates. Brown needed an irrigation control system that would best use the course's two holding ponds, each providing 3 million gallons of water that can stretch over three-and-a-half weeks, and prolong the need to tap into the

any computer with Internet access through John Deere's server. The program is also BlackBerry and iPhone compatible, which was another plus for Brown.

"We log in to our own secure page that stores our information," Brown says. "Any system upgrades happen from John Deere's end, so I never have to worry about having the most up-to-date version of software."

Brown's assistant took part in the purchasing process, traveling to meetings to test the systems in real-world settings. Brown also invited Deere representatives to present the system to the club's board and, in the end, Starmount chose an E Aurora John Deere control system that cost \$75,000. "I wanted the board and committee to know this was the product I recommended, but I also wanted them to know it's a new system on the market," Brown says. "I thought it was important that they take ownership of the decision."

With the new system, Brown and his crews spend maybe an hour a month on programming and setup issues, compared to about six hours they used to spend maintaining the old system. In addition to the ease of virtual maintenance, Brown also has seen vast improvements in water management and turf quality. For example, the course used 20 million fewer gallons of water from March 1 to Dec. 1, 2008, than during the same period in 2007 – and Greensboro was in a drought both years. This savings includes 10 million gallons of water the course would have had to buy from the city.

"It was great not to have to use the community's resources and it was also a huge monetary savings for the club," Brown says.

While he believes he took a leap of faith by stepping outside of his comfort zone, Brown is truly pleased with his decision.

"I consider myself a bleeding-heart liberal in a sea of conservatives," he says, laughing. "A lot of people in the industry would have stuck with a tried-and-true system and raised their eyebrows when I went with John Deere," he says. "But it's working out so well." **GCI**

Emily Mullins is a freelance writer based in Lakewood, Ohio.



Starmount Forest Golf Club in Greensboro, N.C., installed an E Aurora control system in March 2008.

conference in Myrtle Beach," says the superintendent at Starmount Forest Golf Club in Greensboro, N.C. "And all it took was an Internet connection."

However, life wasn't always so easy for Brown, who manages the 18-hole private course with an annual maintenance budget of about \$800,000. Before the club's irrigation control system renovation in March 2008, he and his crews operated a Toro LTC, a first generation DOS-based central control system installed at the course in 1994.

"When we'd call Toro for software support, they would have to put us on hold to research our problem because our system wasn't even part of their active troubleshooting manual," Brown says. "Needless to say, it didn't have the sophistication we needed."

Not only did Brown need a more technologically sophisticated system, he also needed a system that could keep up with Greens-

boro's six wet wells of city water, or "liquid gold," as Brown calls it.

The facility was at the half-life of the system's previous renovation that took place in 1999, so the pipe, heads and other components were still in working order. Brown's focus was on a control system that would stay relevant for as long as possible, ideally until the system's next scheduled overhaul in about 10 years. His top three picks were Rain Bird, Toro and John Deere.

"Originally Deere wasn't at the top of my list," Brown says. "But because of their solid reputation on the equipment end of things, I decided to check them out."

Brown was drawn to John Deere's strictly Internet-based control system. Unlike other companies' "PC anywhere" aspect, which means a system can be controlled from any computer with the appropriate software, the John Deere system can be controlled from



WHAT RECESSION?

“There’s no recession here,” says The Meadows Golf Club owner Hank Finelli Jr., whose 18-hole public golf facility is located 20 miles west of New York City in Lincoln Park, N.J. With golf course superintendent Andy Schuckers, CGCS, The Meadows has, before, during and presumably after these tough times, created an enjoyable, well-conditioned and challenging golf atmosphere with a maintenance budget that’s about 50 percent less than industry standards.

With a full parking lot and no gaps between groups, I toured the golf course with Andy to see what advice he could offer those struggling this season.

Q With financial cutbacks occurring throughout our industry, what have you and The Meadows GC done to remain busy and successful?

A We’re on a small piece of property (130 acres), which helps with keeping expenses to a minimum. However, we must maintain quality conditions or our customers will go elsewhere. We do this by continuously reviewing our finances; forecasting upcoming expenses and potential increases in equipment, supplies and labor as early as possible; pre-ordering our entire agronomic inventory, which saves a minimum of 10 percent; and relying on used equipment more than new equipment.

I talk to vendors to see who’s selling a quality unit with low operating hours, look for golf course lease agreements that are ending to locate certain low-mileage specialty units, search the equipment Web sites and pore over equipment records and base purchasing decisions on operating hours and the type of repair work accomplished to a particular unit.

We also:

- Talk with area superintendents to see who may have equipment ready to sell or exchange with a unit we have;
- Look for employees who have varied golf course experiences in construction, maintenance, equipment management, landscaping, turfgrass and who really want to work hard;
- Provide each employee a 40-hour work week, without overtime, with four, 8-hour work days and two

4-hour work days to accomplish necessary tasks each day;

- Aerify during spring break so we can employ part-time labor, such as vacationing college students, to assist in the process and clean-up;
- Schedule agronomic practices to coordinate with on-course activity such as outings, special offers, tournaments, leagues and general daily play. Often we’ll accomplish work very early or late in the day so as not to interfere with play or slow down our operational pace; and
- Implement daily multitasking with on-course assignments.

Q Your putting surfaces (*Poa/bent*) are outstanding for the volume of play they receive. What cultural practices are involved in their maintenance?

A Our turf quality is based on our budget. However, we realize 50 percent of a round of golf is played on the putting surfaces. With this reality, the majority of our efforts are dedicated to the greens.

We focus on early season deep-tine coring to vent the subsoil, smooth the playing surface, reduce compaction and we follow up with ¼-inch hollow tine in mid-April (spring break) to stimulate root growth and follow with sand topdressing.

We’ll hollow core again in August using ½-inch tines and topdress accordingly. Using the large pull-behind top-dressing units, we light topdress our greens throughout the season and match the amount of sand with plant

growth rates. All work is accomplished while we have a full labor source.

We use plant growth regulating materials regularly to reduce costs. We apply trinexapac-ethyl to all surfaces as well as our bunker banks/faces, around tree basins, cart path edges and curbing and within the primary roughs to reduce mowing frequency, keep turf density and allow players to locate their golf balls without impacting pace of play.

I believe in the appropriate height-of-cut for all surfaces, especially greens. A proper cutting height reduces mowing, pesticide and labor costs. Fast greens are difficult to maintain and affect pace of play, which limits the amount of play on the course.

We routinely apply wetting agents to decrease all forms of irrigation, and I use agronomic forecasting updates to coordinate pesticide and fertility applications.

Q What do you look for beyond agronomics to assist your operating philosophy?

A Much of the work accomplished at the golf course during my 13 seasons has been done in-house. We enjoy accomplishing as much as we can without outside help. Also, I consider the following: accomplish as much work as possible prior to play; hire the right people who you can trust; create a schedule for all present and future operations, on and off the golf course; be flexible, especially with Mother Nature – don’t let weather add to your work load; if no work can be accomplished due to weather issues, head home for the day; multitask; do more with less; treat equipment like the owner is riding in the seat next to you; be open-minded and look hard for the right price – it’s out there; and keep prices fair and competitive. **GCI**



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

HOLD THE LADDER

Equipment manager Gary Slaughter and Jed Spencer, CGCS, designed and built a ladder holder for the 1998 Club Car Carryall II equipment manager's vehicle at the Chenal Country Club in Little Rock, Ark.

The ladder holder is made of 1-inch by 1-inch, thin-wall ($\frac{1}{8}$ -inch thick) square tubing that has two vertical supports at 40-inches high each. The supports are 44 $\frac{3}{4}$ inches apart, 25 inches wide over the top of the canopy with two 6-inch long vertical brackets that support the ladder. Cross braces provide added support.

The ladder holder is attached to the turf vehicle's canopy uprights with $\frac{1}{4}$ -inch diameter bolts, washers and nuts; $\frac{1}{2}$ -inch spacers are used in between the ladder holder and windshield so the windshield can be opened or closed. An 8-foot long aluminum ladder is transported permanently where one side of the ladder is placed in between the two 6-inch long vertical brackets. A 20-foot fiberglass extension ladder also can be transported with ease. It took about two hours to design, cut and weld the ladder holder. The materials cost about \$30.



SPREADING IN STYLE

At the Great Southwest Golf Club in Grand Prairie, Texas, equipment manager Jeff Jamnik designed and built a 12-volt fertilizer spreader. He attached a Lesco #80 Electric Truckster Commercial Plus Spreader to a 2005 E-Z-Go MPT 1200 G turf vehicle with a 2-inch square tubing ($\frac{1}{8}$ -inch thick) frame. The frame is 27 inches high and the section that goes into the receiver is 18 $\frac{1}{2}$ inches long and has a triangular-shaped brace where all pieces are welded together. Jamnik painted the brace with three coats of glossy black enamel.

The spreader is mounted to a 21-inch by 4-inch ($\frac{1}{4}$ -inch thick) piece of flat steel (which is welded to the tubing frame) with $\frac{3}{8}$ -inch by 1 $\frac{1}{2}$ -inch bolts.

The electric wires were run from the motor and attached with alligator clips to the vehicle's 12-volt battery. The meter flow cable lever, with the on/off switch for the 12-volt motor, is mounted to the operator's plastic seat grab-handle with $\frac{1}{4}$ -inch bolts. The wires and cable are protected and encased in 1-inch outside diameter loom-split poly tubing. The spreader is easily transferred to other vehicles. Jamnik had all of the scrap steel in inventory. With the hardware the project cost about \$40. The design, build, electrical wiring and installation took about six hours. **GCI**



Travels With Terry

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

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Syngenta Professional Products.....	7	12
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Tee-2-Green.....	2-3	10
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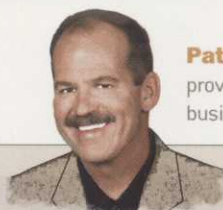
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Pat Jones is president of Flagstick LLC, a consulting firm that provides sales and marketing intelligence to green industry businesses. He can be reached at psjhawk@cox.net or 440-478-4763.

GOVERNMENT THAT'S NOT DUMB

Big ideas sometimes come in small packages. I recently found one right in the palm of my hand.

The other day, I grabbed a can of Coke for a little mid-afternoon pick-me-up. I popped it open, took a gulp and glanced at the printing on the can to distract myself from the 93 things I needed to do for work. Isn't procrastination wonderful?

I noticed the can had some kind of ad or offer printed on it. You see these a lot. Usually it's a little promo that advertises some kind of discount for a theme park, renaissance festival (ack!) or NASCAR race or whatever.

But this ad was different. It was for the Cleveland Metroparks golf courses. It was a "buy one, get one" deal that allows two golfers to play for the price of one during limited hours.

I was – to use a wonderfully emotive Briticism – gobsmacked.

Someone at a municipal golf operation overseen by a bunch of county bureaucrats had created a brilliant idea to drive rounds and promote their facilities. I immediately wondered who dreamed this thing up, how much it cost and whether it was working.

So, I e-mailed my buddy Sean McHugh, CGCS, who's been the big cheese of Cuyahoga County's golf/turf department for years, and asked him if he was the super-genius behind the scheme. In a rare burst of honesty, he admitted he wasn't the originator of this scheme and gave all the credit to Jane Christyson, the director of marketing and clubhouse operations for the Metroparks. It turns out that golf is just one of her babies along with the parks themselves, various nature centers, facilities and programs. She does it all on a shoestring...but it's a pretty cool shoestring.

Every year, the Metroparks buys a lot of stuff – pop, bread, buns, beer, etc. – plus the inevitable balls, shirts,

clubs and turf products. They provide 108 holes of damned good golf to Greater Clevelanders and they generate about 340,000 rounds annually. So, because of the purchasing leverage they command, they are able to get – and I use this term bluntly for entertainment purposes only – kickbacks from the various suppliers.

Happily, those kickbacks – er, I mean marketing partnerships – are used for public good instead of personal gain (which is quite rare in Cuyahoga County, as I understand it from the appalling things I read in the paper lately). The Metroparks actually reinvests the money and other benefits into the system. What a concept, huh?

One of the benefits is a relationship with the local Coca-Cola bottler that makes it possible for them to put this amazing ad on a bazillion cans of pop. So, every time some hacker opens a soda can, he/she sees the cool Metroparks Golf logo and is offered a chance to fill a tee time during the slower hours on the sheet. And, gee whiz, it's actually a measurable promotion. They can count the number of can/coupons redeemed. "We know how it benefits us and they (the bottler) like the idea of a 'pour' off of a sponsorship," says Christyson. "It's not a warm fuzzy thing. We show them value of the investment."

But wait – as they say in the Sham-Wow infomercials – there's more!

Christyson and McHugh are also driving rounds through a modest media buy with a local TV station... which offers a value-add under which the station's very popular morning host does video podcasts. The local TV guy plays with the pro on the Metroparks courses and gives tips. The program is underwritten by a local bank sponsorship.

They're also using social media like Twitter and Facebook. Twitter "follow-

ers" can get updates on weather, aeration, special deals and other things that might affect play. There's even a Twitter-driven trivia contest that ties into the local TV deal. Again, they're measuring what works, according to Christyson: "We count column inches (of articles generated by PR), minutes on TV and radio and use a monitoring service and then we assign a dollar value to that exposure. Over ten or 12 years, we've had \$12 million in 'earned media' through those programs. Obviously, that's really important when we're reporting to our board."

What else? Among many other things, they're using "mystery shoppers" to secretly visit, observe and report on the experience of playing at the county's courses.

"Course condition is customers' No. 1 priority when deciding whether they come back again," she says. "So, it's critical that Sean and I work together on that."

How well do the turf guy and the marketing guru ham-and-egg it together? "It works out great," says McHugh. "We have a common goal... get more people on the golf properties. It's a no-brainer that marketing and maintenance work hand in hand."

The whole thing is part of a larger, decade-long branding effort to ensure that the Metroparks competes effectively in the Cleveland golf market. And, compared to the many government-operated facilities that are struggling, failing and getting spun off to management companies, Cuyahoga is doing quite well, thank you.

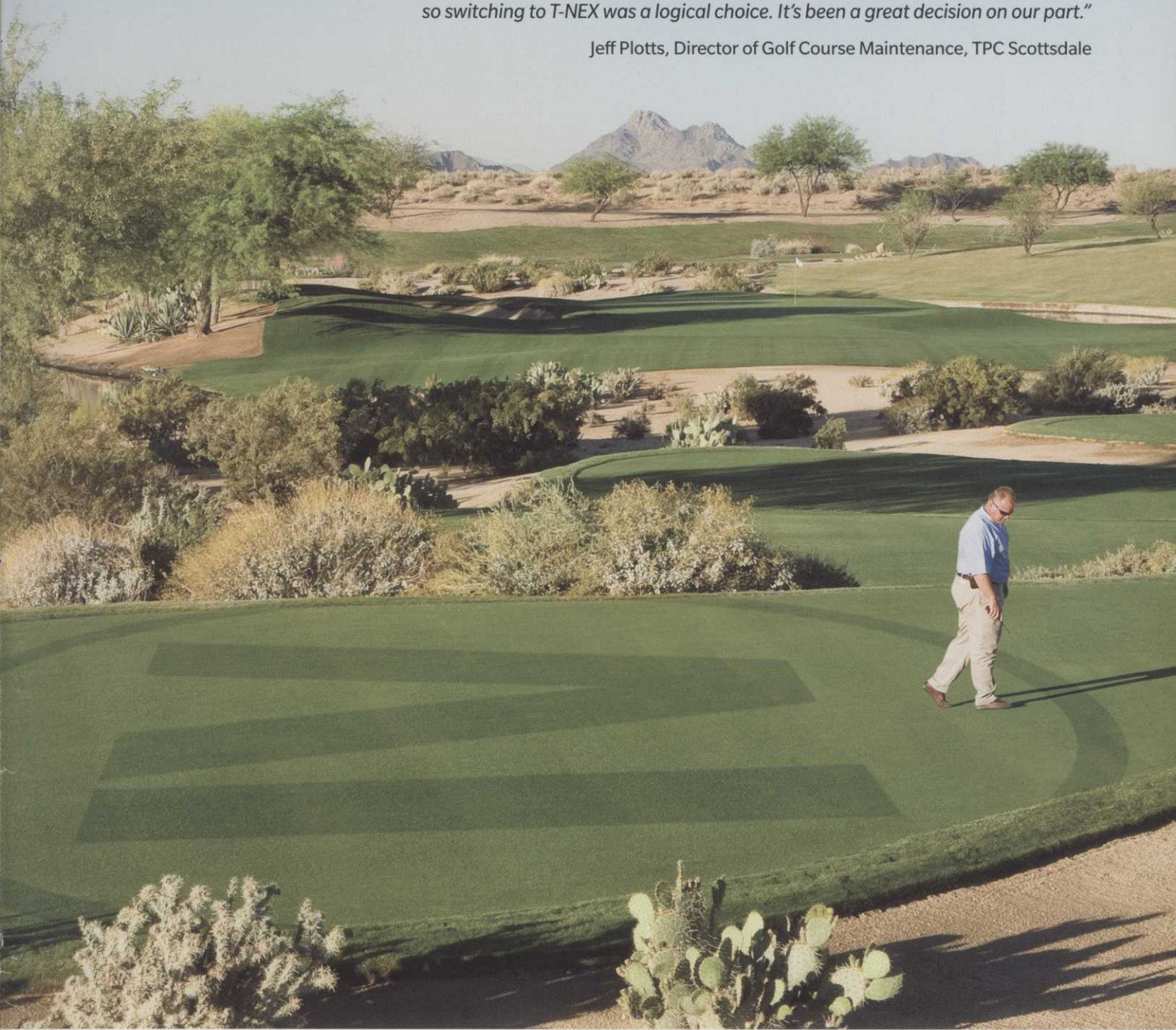
What hasn't worked? "Discounting!" they yell in unison.

"We've learned how incredibly careful you need to be to maintain your green fee structure," says Christyson. "You can't panic and cut prices. We may work for the government, but we're not dumb." **GCI**

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