

JUNE 2017 | golfcourseindustry.com

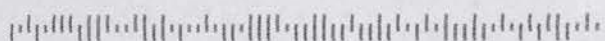
GOLF COURSE[®]

INDUSTRY

when
the creek
rises

THE BIG REBUILD

The second part of an emotional telling of last year's tragic flooding of southern West Virginia and The Greenbrier and its inspirational recovery told by the people who endured it.



V9007
2998
0051102
P0010

EAST LANSING MI 48824-3700
366 W CIRCLE DR - W301A
MICHIGAN STATE UNIVERSITY
PETE COOKINGHAM
#00336645862# 7A
#BXNCLQB *****AUTO+SCH 5-DIGIT 48823

GREENWORKS
COMMERCIAL

Now available at
SiteOne
LANDSCAPE SUPPLY

COMMERCIAL GRADE
POWER

...from a
BATTERY

**UP TO 50% QUIETER
THAN GAS MODELS**



**COMMERCIAL
GRADE POWER**



**FUEL AND
MAINTENANCE
SAVINGS**



**CLIENT
FRIENDLY**



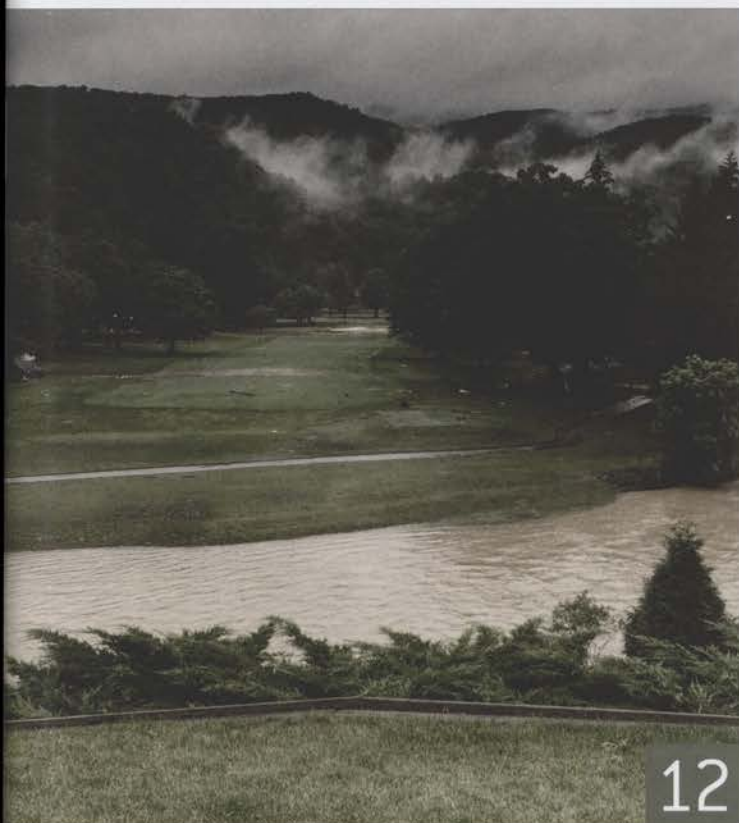
**ECO
FRIENDLY**

***The Most Powerful
Cordless Commercial
Tools on the Market***



Find out more at www.greenworkcommercial.com

IN THIS ISSUE



COLUMNS

- 12 OUTSIDE THE ROPES**
Tim Moraghan: Father knows best
- 26 DESIGN CONCEPTS**
Jeff Brauer: Using water features wisely
- 34 IRRIGATION ISSUES**
Brian Vinchesi: Escalating costs
- 38 GAME PLAN**
Henry DeLozier: Telling an earthly story
- 52 NUTS & BOLTS**
Paul F. Grayson: Maintenance shop tricks
- 58 PARTING SHOTS**
Pat Jones: That's what friends are for

DEPARTMENTS

- 4 TEEING OFF:** Can you see the real me?
- 6 EDITORS NOTEBOOK:** It's not just a superintendent thing
- 54 TRAVELS WITH TERRY:** Equipment ideas
- 57 CLASSIFIEDS**
- 57 AD INDEX**

FEATURES

Agronomics

- 28 PINNING DOWN PGRS**
Why monitoring temperature is a route toward regulating growth of cool- and warm-season turfgrasses.

Agronomics

- 36 IS BIG BETTER?**
The industry is seeing a gradual shift toward larger tines. Turf experts share their views on this trend.

Agronomics

- 40 CORRECTING THE GREAT LIE**
Putting quality and player expectation are more than just speed. Experts look beyond fast and firm to other factors that impact high-performance greens.

Super Solutions

- 48 CLIMATE CHANGE**
The Olympic Club created a reliable agronomic program to handle the San Francisco Bay's unique weather palette.

Cover story

when the creek rises

THE BIG REBUILD

A GCI Special Report Supported by



JOHN DEERE



GOLF COURSE INDUSTRY (ISSN 1054-0644) is published monthly. Copyright 2017 GIE Media Inc., 5811 Canal Road, Valley View, OH 44125. All rights reserved. No part of this publication may be reproduced or transmitted by any means without permission from the publisher. One-year subscription rate, \$33 in the United States, \$42 in Canada and Mexico, and \$88 in other foreign countries. One year foreign airmail rate: \$102. Two year subscription rate: \$65. Single issue rate, \$5. Subscriptions and classified advertising should be addressed to the Valley View office. Periodicals postage paid at Valley View, Ohio, and additional mailing offices. Postmaster: Send address changes to GOLF COURSE INDUSTRY 5811 Canal Road, Valley View, OH 44125. Canada Post: Publications Mail Agreement #40612608 Canada Returns to be sent to Bleuchip International, P.O. Box 25542, London, ON N6C 6B2.

CAN YOU SEE THE REAL ME?

I recently hit upon a "Eureka!" moment – one that tied up loose ends, as well as connected the dots on other nagging issues that plague our management styles. I knew I just had to share it. A few weeks back, I attended a business management conference and one of the roundtable discussion topics focused on acquiring, developing and retaining any organization's most important asset – labor.

During the discussion, the panel's conversation drifted to personnel evaluation methods – the dreaded annual performance review. As managers, we've all agonized over these one-on-one meetings with our people. And they're even worse if you run a small team of individuals who you work closely with on a day-to-day basis. Typically, in these small-scale scenarios over the course of regular conversation you discuss goals and frequently offer real-time critiques on performance.

So, how do you offer constructive feedback of any real substance? How do you impart some real guiding wisdom? How do you not sound like a broken record?

It was suggested to do the following. Sit down together for the evaluation and, on a piece of paper, instruct them to write down three things throughout the course of their daily job they will continue to do in the coming year, three things they'll stop doing over the course of the coming year, and three things they'll start doing in the coming year. While they're composing their list, you're completing a similar three-question breakdown about them.

Now you've got material for a productive discussion. Let me break these down one by one.



Mike Zawacki
Editor

Three things to continue doing. Together you acknowledge the key assets and talents they bring to the job each day. Through this self-discovery you reinforce their value

to the team, while patting them on the back for a job well done. It also highlights performance points they didn't realize you valued as a manager, and offers insights to you on what they perceive they bring to the job.

Three things to stop doing. OK, time to get real with some soul searching about job performance. Hopefully, you both identify nearly all the same issues. However, this is a great opportunity for the employee to realize those job-related points you want changed. And it may offer some interesting insight into the things they suspect they shouldn't be doing or should change.

Three things to start doing. Now's the time to focus in on developmental issues for the coming year. It also offers a window into not only what the employee sees for himself or herself, but also your career expectations for them over the short- and long-term. It's a good way to gauge where you both see them on the hierarchical ladder of not only your turf maintenance team, but the course's management structure, as well.

OK, now here's the real bonus. Try this exercise on yourself and conduct your own personal performance evaluation. And do it not just on an annual basis, but try it once a month... Heck, do it every Monday morning to set immediate developmental goals for yourself. By doing so, you'll become a stronger leader, and your team's performance will benefit from your growth.

As a manager of people, we're always seeking ways to not only get the most out of our employees, but also get more out of ourselves. So why not start with three simple questions? The answers may just surprise you. **GCI**

GOLF COURSE INDUSTRY

Serving the Business of Golf Course Management

Vol. 29 No. 6

GIE Media, Inc.
5811 Canal Road
Valley View, Ohio 44125
Phone: 800-456-0707
Fax: 216-525-0515

EDITORIAL Pat Jones

Publisher/Editorial Director pjones@gie.net

Mike Zawacki Editor mzawacki@gie.net

Guy Cipriano Associate Editor gcipriano@gie.net

Terry Buchen Technical Editor at-large

Bruce Williams Senior Contributing Editor

GRAPHICS / PRODUCTION Jim Blayney Art Director

ADVERTISING/PRODUCTION INQUIRIES
Jodi Shipley
jshipley@gie.net, 216-393-0273

SALES
Russell Warner National Account Manager
rwarnar@gie.net • 216-393-0293

Craig Thorne Account Manager
cthorne@gie.net • 216-393-0232

Bonnie Velikonya Classified Sales
bvelikonya@gie.net • 216-393-0291

CORPORATE

Richard Foster Chairman

Chris Foster President and CEO

Dan Moreland Executive Vice President

James R. Keefe Executive Vice President

Christina Warner Audience Development Director

Maria Miller Conferences Manager

Kelly Orzech Accounting Director

Irene Sweeney Corporate Communications Manager

Kevin Gilbride Business Manager, GIE Ventures

Golf Course Industry is a member of:
Golf Course Superintendents
Association of America
National Golf Foundation
Golf Course Builders Association of America
The Irrigation Association
Responsible Industry for a Sound Environment



We can't control his slice, but we can control your dollar spot and brown patch.

They might not hit the fairway every time, but when they do, your golfers want optimal conditions. With OREON™ Fungicide, you can control the dollar spot, brown patch and anthracnose that would mar an otherwise perfect approach.

OREON is the only fungicide product that utilizes both PCNB and tebuconazole, which makes it an important resistance management tool. And, since it features TurfJet™, our exclusive water-based technology, it's easy to apply any time April through June or mid-August through November, our recommended application windows.

Make the game pretty, with OREON.

OREON
F U N G I C I D E

It's not just α superintendent thing

A discussion at the annual Turf and Ornamental Communicators Association meeting reveals how all sides of the turf industry are using and benefiting from social media.

By Guy Cipriano

BRANDON RICHEY MADE a 90-mile trek through rain-starved Florida last month to serve as the only superintendent in the room.

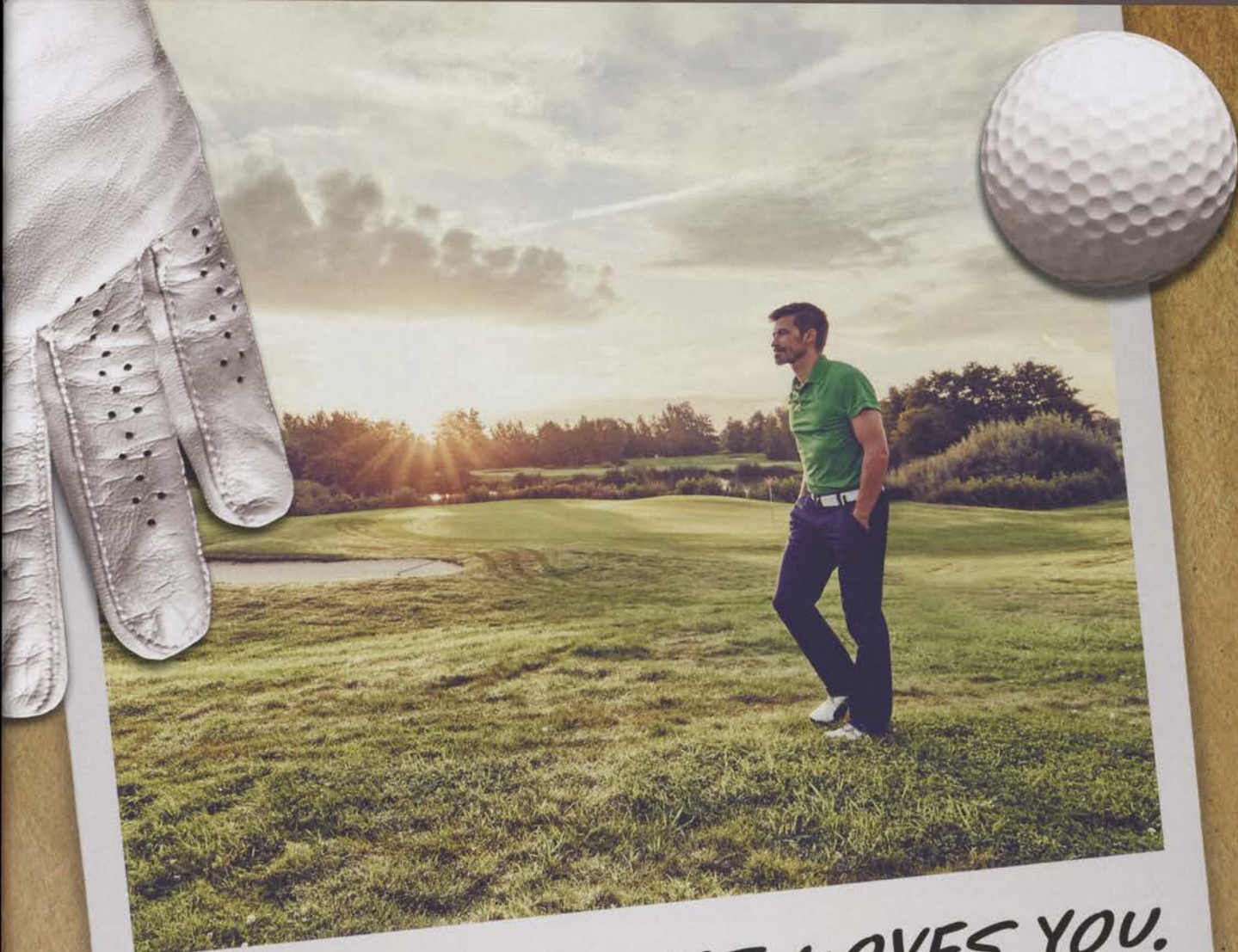
Richey, the superintendent at Lake Nona Golf & Country Club in Orlando, represented the golf industry in a panel discussion about social media at the 28th annual Turf and Ornamental Communicators Association meeting at Saddlebrook Resort outside Tampa. Orlando City FC head groundskeeper Matt Bruderek, APL Lawn Spraying owner/operator Rick Orr and Cherrylake Tree Farm President Timothee Sallin

joined Richey on the panel. Their conversation revealed similarities and differences between how Richey uses social media compared to other turf industry leaders.

Richey's professional social media usage revolves around Twitter, where he has more than 1,600 followers. His following quickly increased this past winter when Lake Nona



IMAGE: MATTIEACOCK



POWER FOR WHAT MOVES YOU.



At Trojan Battery Company, making exceptional batteries is what moves us. For over 90 years, Trojan has empowered people to live, work and play using our high-quality battery products. We provide clean, reliable energy so you can focus on what matters to you.



Show us what moves you.
#trojanbatteriesmoveme

800-423-6569 | +1-562-236-3000 | www.trojanbattery.com





Lake Nona Golf & Country Club's Brandon Richey, Cherrylake Tree Farm's Timothee Sallin, APL Lawn Spraying's Rick Orr and Orlando City FC's Matt Bruderek participated in a social media discussion at the annual TOCA meeting.

resident and former Ryder Cup hero (or villain depending on your perspective) Ian Poulter praised the course's conditions. "It was really neat to see the benefit of the outreach for our club and how we can get our club and our profession out there," Richey says.

Holding the head agronomic position at Lake Nona since 2014, Richey uses Twitter to stay connected with the industry. He started understanding the prominence of social media during the interview process for his current job. A Lake Nona search committee trimmed the list of applicants to eight finalists, and close to five minutes of an ensuing hour-long interview focused on how Richey planned to use social media. "It put a lightbulb in me," he says. Richey tweets from the account @BKRichey, and he speaks as a unified voice for the Lake Nona golf course maintenance department.

In most cases, sports turf managers use Twitter for similar reasons as golf course

superintendents. The opportunity to exchange ideas about products, equipment, weeds and disease attracted Bruderek to the social media platform.

Orlando City FC recently opened a soccer-specific stadium, and Bruderek document the progress to colleagues via Twitter. The stadium is the home venue for Major League Soccer and National Women's Soccer League franchises. Like a golf course superintendent, Bruderek will host multiple events in short periods of time, so turf stress and recovery are topics he might pursue with colleagues. "Most people in my industry are willing to help you," he says. "Just like if somebody asked me, I would be willing to help them."

It's less congenial in the lawn care segment of the turf business. Orr and his competitors own companies competing for business in Pinellas County, Fla. "Lawn spraying companies hold their cards pretty close to their chest," he says. "There's not a lot of communication within our community of lawn spraying

guys. It's a little more cutthroat."

Orr uses social media, along with his blog www.iloveturf.com, to educate residents about managing St. Augustinegrass, a popular home lawn variety in the region. The information he provides is specific to the county's soils, regulations and environmental conditions, and social media allows him to target potential customers. "The website made me appear much bigger and much more glorious than some guy driving a truck down the road," Orr says. Neither Richey nor Bruderek use social media to attract potential members or fans, although their accounts generate indirect interest for Lake Nona and Orlando City FC.

Sallin, who employs a full-time marketing team, strays from using social media to promote Cherrylake, a subsidiary of Florida agribusiness firm IMG Enterprises. "Social media is about communicating ideas," he says. Sallin views social media conversations as "one-on-one chats," and he's experienced success using it to communicate with the company's



THE NEW HAULER.[®] BUILT CHLOE'S WAY.



Chloe, Sage Valley Golf Club

NOW, BUILD YOURS.

The new Hauler was designed by superintendents for every member of the team, including their best friend. With its simple, customizable design, it's so easy to #BuildItYourWay. Just ask Chloe.

See how her master, Chuck Green, built his bed and schedule a demo at www.HaulerDemo.com.



CUSHMAN
LET'S WORK.[®]



©2016 Textron Specialized Vehicles Inc. All rights reserved.

Hispanic workforce. He adds that social media will help his company drive future discussions about water conservation and irrigation practices. The majority of Central Florida is in severe or extreme drought, according to the U.S. Drought Monitor released May 23.

Richey also says social media offers opportunities for the golf industry to present similar conservation messages.

"Our biggest fear going forward is that there's going to be a reduction of resources that you can use," Richey says. "I really hope that we can continue to use social media to put our service and stewardship out there to government officials and to the general public and make them realize how efficient we are in using resources and things of that nature." GCI

Tartan Talks No. 11

Paul Albanese designed Pow Wow grounds for Native American tribes as part of a graduate school project. As a golf course architect, he's developing another celebratory way to use tribal land.

Albanese joined "Tartan Talks" to explain his recent work with the Potawatomi and Santee Sioux tribes that have led to new golf courses in Michigan and Nebraska. The courses are part of casinos and Native American principles guided numerous design decisions.



Albanese

"They are always interested in how the golf course fits with the environment because Native American principles and culture always cherishes the environment," Albanese says. "It's nice to not have to go into a client and not have to preach about being environmentally sustainable and have somebody on board with that concept."

Enter bit.ly/2r1xEKQ into your web browser to learn more about Albanese's work with Native Americans.



1st
products

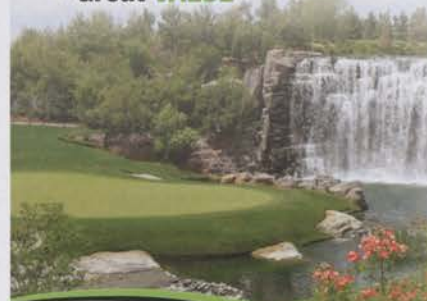
VC60 VERTI-CUTTER

The VC60 is designed for use on golf course fairways, tees and all types of sports fields. Unique swing hitch allows operator to turn while using. New "optional" double roller gauge system is now available, which allows for 1.5" spacing. Skid shoes are still available.

sales@1stproducts.com • 1-800-363-8780 • 1stproducts.com



- Product **INNOVATION**
- Proprietary **TECHNOLOGY**
- Natural **SUSTAINABILITY**
- Good **SCIENCE**
- Great **VALUE**



BioPlex Organics
toll free: 1-800-441-3573
email: bioplex2@earthlink.net
tech support: bioplex@earthlink.net
www.bio-plex.com

Xzemplar® fungicide keeps reputations spotless

For unmatched dollar spot control, top courses trust **Xzemplar** fungicide



*Jimmy Devaney,
Superintendent of
the Upper Course,
Mark Kuhns,
Director of Grounds,
and Dan Kilpatrick,
Superintendent of
the Lower Course,
Baltusrol Golf Club,
Springfield, NJ*

Premier courses like Baltusrol Golf Club, the host of 16 major tournaments, rely on **Xzemplar** fungicide. This go-to solution for dollar spot provides immediate knockdown plus a 28-day residual. Now, Superintendent Mark Kuhns and his team no longer have to spray every two weeks, and their players can enjoy beautiful, spotless fairways.

To keep your own fairways as spotless as your reputation, visit betterturf.basf.us for more details.

 **BASF**
We create chemistry

Always read and follow label directions.

Xzemplar is a registered trademark of BASF. © 2016 BASF Corporation. All rights reserved.

FATHER KNOWS BEST



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

June is one of my favorite months. It means the onset of summer, the longest days on the calendar, and Father's Day. My dad has been gone for 21 years, but not a day goes by that I don't think of him, usually remembering some of the life lessons he taught me.

In that spirit, I asked other course superintendents to think about what their fathers taught them, lessons that have affected both their lives and their careers. I was swamped with great responses, proving what I already knew, the amazing impact dads have on their children, often in ways neither party realized at the time. Thank you to everyone who wrote in and shared their father's advice: It was difficult. I wish I had room to run more, but here are some of my favorite paternal pearls of wisdom, brilliance that is just as relevant today as when dad passed it on to us way back when.

FATHERLY ADVICE

- "If you try to learn one new thing every day, do you know how smart you will be when you die?"
- My dad never gave me advice through words or counsel. He led by example, working construction from sun-up to sundown. When I was small, I would go to work with him in Sundays if I wanted to see him at all.
- He metered his anger with me when I did or said anything inappropriate,

acknowledging that I was new to the world and didn't have his wisdom. He praised me to anyone who would listen when I made advancements in any endeavor.

LIFE LESSONS

- Dad's wisdom and guidance could be intimidating when I was young, but as I age, like a great steak the seasoning of the preparation comes out in ways we never expect. My dad's words — "never forget the small country town values of hard work, respect for others, and helping others first" — ring in my ears daily.
- By example: work hard, be honest, be loyal.
- Great achievement comes at a price. Some, not all, are willing to pay it.
- My father understood the value of networking and maintaining professional relationships. So as my responsibilities increased and distance or time between communicating with key individuals occurred, he advised that a Christmas card with a handwritten note, or at the very least a signature, would keep my name in others' minds.
- My dad always related life lessons to baseball. "Yesterday it was a ball, tomorrow it might be a ball, today it was a strike: Don't let someone else determine your life path." What he meant by that is to deal with today, not what was or will be!"
- "Always tell the truth—you won't

ever go wrong by telling the truth. But if you lie or try to cover it up, you will only make it worse and disappoint people, including me."

- He woke up early and got to work before everyone else. He made time to shine his shoes before work every day. He used a leather briefcase with a broken handle and carried it football style until I graduated from college. It wasn't until I was a teenager I realized that he went without a new briefcase so our family would have something else instead.

GOLF ADVICE

- While I was young and learning to play the game, he would always have a comment when he saw me frustrated. He taught me to be optimistic and lead a half-glass-full type of life. After I would card a triple bogey, he would say, "that's better than a quad" and "no matter what the end result, the scorecard only had room for numbers and not pictures."
- As a kid, after each round I'd recap the round for my parents—hole by hole, shot by shot. My dad would say, "Me and the box on the scorecard... we just need a number, not a chapter."

CAREERS

- Despite not having the greatest relationship with my father and never having lived under the same roof with him, when I was about 14 or 15 years old he told me something I have never forgotten. "Every job you do will forever be a reflection of not only who you are but also a reflection of who raised you." Considering he didn't raise me and my grandfather did, I never wanted to embarrass him or let him down.
- "There's heat in the tools." During the cooler times when working outside, if you keep moving and working, you won't get cold.
- "You know we never said anything about your career path and we both

(MORAGHAN continues on page 55)



**REDUCE SEDGE.
SAVE TIME.
SAVE MONEY.**

INTRODUCING



Dismiss[®] NXT
Herbicide

Get the most out of your application with
the next generation of Dismiss[®] Herbicide.

To learn more, contact your local distributor or
FMC representative or visit www.fmcprosolutions.com.



@FMCturf



FMCturf

■ fmcprosolutions.com

■ fmc turf wire.com

ALWAYS READ AND FOLLOW LABEL DIRECTIONS.

©2017 FMC Corporation. All Rights Reserved. FMC and Dismiss
are trademarks of FMC Corporation or an affiliate.

when the creek rises

A GCI Special Report Supported by



JOHN DEERE

“IT DIDN’T EVEN LOOK LIKE A GOLF COURSE ANYMORE. PEOPLE’S PERSONAL BELONGINGS, CARS ... YOU COULD BARELY SEE THE TOPS OF CARS. IT WAS FILLED WITH ROCK AND GRAVEL. JUST SEEING EVERYBODY’S PERSONAL PROPERTY DOWN THERE WAS SOMETHING YOU COULDN’T BELIEVE UNLESS YOU SAW IT.”

—ROY YOUNG



THE BIG REBUILD

The second part of an emotional telling of last year's tragic flooding of southern West Virginia and The Greenbrier and its inspirational recovery told by the people who endured it.

By **Guy Cipriano**

Photos courtesy of
The Greenbrier



Cars, boulders, refrigerators.

There's no template for how to begin life after a natural disaster, and sleep doesn't come easy when a normal period becomes numbing. So, Josh Pope, Chris Anderson and Drew Greene started the morning of June 24, 2016 the same way as thousands of others trained to maintain turf. They headed straight to the golf course.

The saunter from The Greenbrier's stately white hotel to its golf clubhouse should be soothing. A springhouse once believed to possess healing powers sits between the structures. Without the rejuvenating waters, it's unlikely southern West Virginia develops into a gathering spot for well-heeled residents from surrounding states.

Resorts, above all else, are therapeutic places. And golf, when played with the proper mindset, is a therapeutic game. Pope, Anderson and Greene landed in White Sulphur Springs, W.Va., because of the intertwined relationship. Golf has represented a major part of The Greenbrier's mission since renowned architect C.B. Macdonald and talented associate Seth Raynor designed a course on its grounds in 1913. The resort needs people trained in the art and science of golf course maintenance to protect Macdonald and Raynor's work. Pope, Anderson and Greene – a superintendent, assistant superintendent and turfgrass intern – are here on this eerie morning, hundreds of miles from their respective hometowns, because they grasp concepts such as labor efficiency, pest control and evapotranspiration rates.

Immediate history trumped distant events as they walked past the springhouse, which they couldn't see anyway because of darkness. An event meteorologists later declare a "1,000-year flood," slammed the region, forcing them to spend the night in the hotel.

Nobody slept well, a trend over the ensuing months. Despite the darkness, they decided to hover outdoors instead of inside a hotel room.

The trio encountered thick fog, yet surprisingly little water when they reached a paved area between the clubhouse and Howard's Creek, which rose from its banks a day earlier. "All three of us probably didn't sleep well that night," Anderson says. "We all woke up at 5 a.m., probably even earlier. It was really foggy and you couldn't really see. But when we got down to the water, it was pretty much gone at that point."

Instincts reigned when sunlight arrived. Pope began inspecting the condition of The Old White TPC, a famed course designed by Macdonald and Raynor scheduled to host the PGA Tour's Greenbrier Classic in 13 days. The tranced superintendent was staring at destruction. "The question I kept asking: 'What just hap-

"YOU DON'T KNOW WHERE TO START. IT WAS A SHOCK. IT'S OVERWHELMING. THAT'S WHAT IT WAS. WITH THE GOLF COURSES, YOU DON'T KNOW WHERE TO BEGIN."

—RANDY BITTINGER



pened.”

Pope continued walking the course. On the second hole, he found a dog he later learned was owned by a co-worker's wife. On the ninth tee, he spotted a cart used by PGA Tour representatives evacuated from the course the previous day. With the dog by his side and the cart somehow operating, he meandered navigable portions of the course, passing objects he never imagined seeing on a golf course. Co-workers experienced their own surreal moments upon seeing the post-flood version of The Greenbrier's golf courses for the first time. Ten inches of rain on June 23, 2016 changed the next year of their careers.

Propane tanks, bridges, mattresses

The Greenbrier Classic provides an athletic and economic bonanza for West Virginia. Introduced in 2010, the tournament's short

history includes a round of 59, spectators receiving \$100 bills from a billionaire following holes-in-one, and appearances by golf stars Tiger Woods, Phil Mickelson and John Daly. Organizers planned a rip-roaring celebration for 2016, with free weekly grounds badges for spectators, a celebrity program featuring Denny Hamlin, Danica Patrick, Larry Fitzgerald, Shaquille O'Neal and Nick Saban, and youth clinic conducted by affable golf professional emeritus Lee Trevino.

CBS broadcasts the final two rounds, leaving thousands of viewers fascinated by The Greenbrier and West Virginia. The satisfaction of showcasing their delightful surroundings outweighs the strain it places on an agronomic team responsible for maintaining three 18-hole golf courses. “We want to put on a good show,” says Kelly Shumate, the resort's director of golf course maintenance since 2010.

All decisions involving The

Greenbrier Classic are calculated, and resort officials close The Old White TPC 10 days before the event. The stakes aren't just high for professional golfers. The upscale resort segment of the golf industry is crowded, competitive and cut-throat. Presenting a gleaming course on worldwide television boosts business.

No business means more to southern West Virginia than tourism, which generated \$243.7 million in direct spending in Greenbrier County, according to a 2012 “Economic Impact of Travel on West Virginia” report prepared by Dean Runyan Associates. The Greenbrier employs close to 2,000 people during its peak season. The median income in Greenbrier County, W.Va., population 35,729, is \$39,746, below the West Virginia average of \$41,751, according to U.S. Census data. West Virginia is one of four states with a median household income below \$45,000.



9009A TerrainCut™ Rough Mower

TPC RIVER HIGHLANDS

“ The 9009A is probably one of the best if not the best rough mower that’s on the market today for wide area rough mowing. ”

– Jeff Reich, Superintendent



9009A TerrainCut™ Rough Mower

SHELTER HARBOR GOLF CLUB

“ We felt the 9009A was the perfect fit for us here at Shelter Harbor. The quality of cut we got was just second to none. It was unbelievable how well that machine performed. ”

– Mike Dachowski, Superintendent



They know the A Model mowers. Do you?

The reviews are in: our A Model mowers will give you more control and more exacting results on your course. Thanks to the TechControl display you can control your operator's turn speed, plug in mow and transport speeds, service reminders and receive diagnostic feedback quickly and accurately.

Take it from the best: the power to control your course is now in your hands. To find out more about our new A Models, contact your local John Deere Golf distributor today.

Trusted by the Best



OFFICIAL
GOLF COURSE
EQUIPMENT
SUPPLIER



ATLANTA ATHLETIC CLUB

“I love the TechControl for the tuneability of the A Model mowers. I can tune in those parameters. Programming in the turn speed is a big benefit for me.”

— John Patterson, Director of Equipment



8800A TerrainCut™ Rough Mower



QUAIL HOLLOW CLUB

“I love the A Model mowers, especially the reel technology. I’m even more impressed with some of the adjustments that we can make, thanks to the TechControl display.”

— Keith Wood, Superintendent




7700A PrecisionCut™ Fairway Mower



JOHN DEERE
GOLF

JohnDeere.com/Golf

when the creek rises

A GCI Special Report Supported by  JOHN DEERE

For southern West Virginia to function, The Greenbrier needs to be filling rooms, dining seats and tee times. Residents struggle envisioning the quality of life in the region without the resort. "If it wasn't for The Greenbrier – and I don't know any numbers – but what would be here?" says Greg Caldwell, the assistant superintendent on The Old White TPC. The Greenbrier Classic has quickly developed into a major part of the region's identity.

As Pope and other employees toured the grounds following the flood, a summer without the tournament was becoming a reality. PGA Tour official Ken Tackett visited the resort Saturday, June 25, 2016. He saw enough damage in his first 10 minutes touring The Old White TPC to comprehend the severity of the situation. The PGA Tour wasn't coming to West Virginia in 2016.

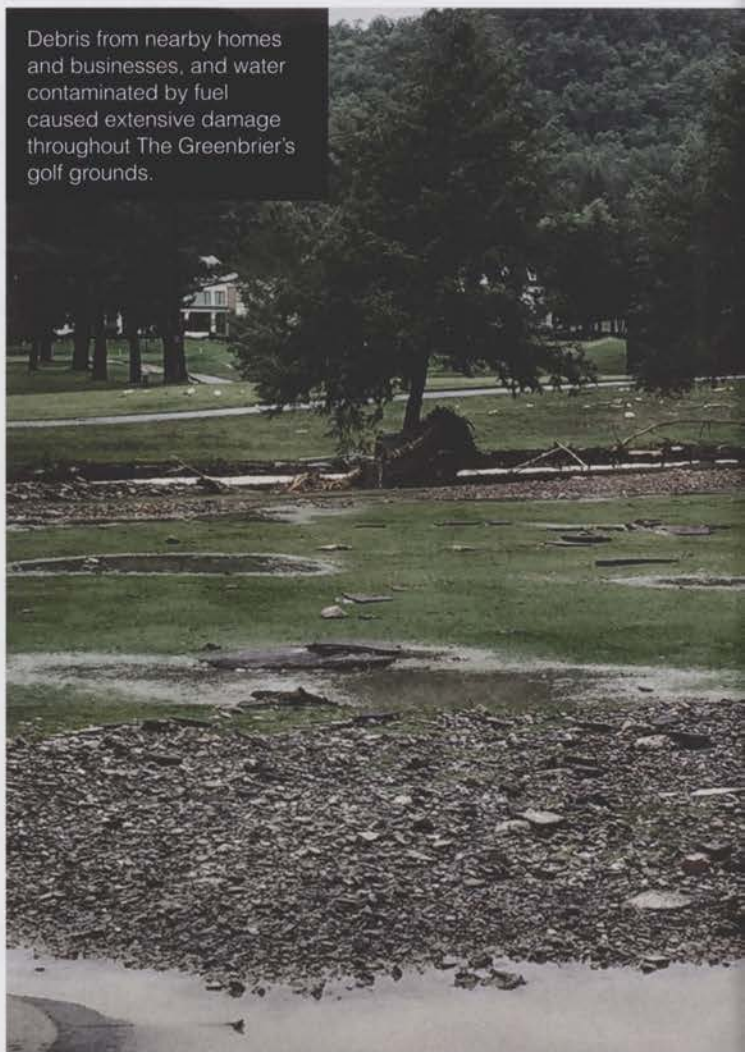
Thanks to maintenance miracles, the PGA Tour has cancelled only two other tournaments, the 1996 Pebble Beach Pro-Am in

California and 2009 Viking Classic in Mississippi, in the last 20 years. Even bringing the 2017 Greenbrier Classic to the site would require a miracle, according to many who saw The Old White TPC's condition in the aftermath of the flood.

"It didn't even look like a golf course anymore," longtime mechanic Roy Young says. "People's personal belongings, cars ... you could barely see the tops of cars. It was filled with rock and gravel. Just seeing everybody's personal property down there was something you couldn't believe unless you saw it."

The scope of the flood hit Pope when he reached the second fairway and noticed a jar of Vlasic Bread & Butter pickle chips. Pope, who honed his skills at elite private clubs, including Oakmont Country Club and Pikewood National, moved to southern West Virginia in 2014 to fulfill a career dream of becoming the host superintendent of a PGA Tour event. He never imagined spotting a pickle

Debris from nearby homes and businesses, and water contaminated by fuel caused extensive damage throughout The Greenbrier's golf grounds.



"PEOPLE COULD HAVE LEFT, PEOPLE COULD HAVE QUIT. NOT A SINGLE CREW MEMBER ON OUR STAFF LEFT. WE HAVE EVERYBODY HERE. THEY COULD HAVE SAID, 'NO, I HAVE BEEN HERE FOR 15 YEARS. I DON'T WANT TO DO THAT ANYMORE. I COULD RETIRE.' AND NOBODY SAID, 'I'M GIVING UP.' THAT PUTS IT INTO PERSPECTIVE HOW MUCH THE JOB MEANS TO THEM AND HOW MUCH PRIDE THEY HAVE IN EVERYTHING. I THINK IT'S VERY POWERFUL."

—JOSH POPE



Crews have worked furiously since last July to complete the reconstruction of The Old White TPC in time for the 2017 Greenbrier Classic. The 2016 tournament was cancelled in the aftermath of historic flooding.



jar on a tour-caliber fairway. "That's when you start to realize it was something bigger than golf and turf and grass," he says. A photograph of the jar is still stored in Pope's phone.

The flood destroyed much more than summer cookout plans. The disaster resulted in 23 deaths, including the sister of a crew member on the private Snead course at The Greenbrier Sporting Club. At least a half-dozen members of the resort's golf course maintenance department lost either all or significant parts of their houses.

Full-sized coolers, bikes, red wagons

To help move lives and the community forward, Jim Justice, the billionaire who bought the resort in 2009, quickly decided to rebuild the golf courses, a massive challenge embraced by golf department leaders. "The only thing I knew we could do was knock it out of the park with what we were doing and do it as fast as we could so we could get these people back to work and guests coming back," Shumate says.

Every member of the agro-

nomic leadership team, including Greenbrier course superintendent Nate Bryant, whose house suffered major damage, visited the property the day after the flood. "You didn't even really know where to begin," Bryant says. "Even with your personal property it was like, 'What do I do?'" Rebuilding the golf courses required assessing and documenting the damage for insurance purposes, a process that entailed Shumate's managers working closely with vice president of golf Burt Baine's professional staff.

Equipped with notepads and cameras, superintendents

and assistant superintendents walked each course alongside golf professionals, documenting the extent of the damage on each hole. At the end of each day, they handed their materials to associate director of golf Jamie Hamilton, who created hole-by-hole checklists. "My knowledge of what was going on out there was on my computer screen," Hamilton says. "It's crazy all the things that were coming in. You were blown away by the things you saw."

Hamilton even received a call from Caldwell about a smell originating from a debris pile on a meditation trail along the 16th hole of The Old White TPC. Was Caldwell sniffing human remains? Hamilton called resort security which contacted the police. "When as a golf professional do

you ever think that's the phone call that you are going to be getting?" Hamilton says. Animal remains caused the smell. Thousands of trout from White Sulphur Springs National Fish Hatchery, along with dogs, raccoons, deer and various other animals, flowed onto the property during the storm. The hatchery sustained \$1.5 million in damages and 15,000 rainbow trout broodstock either died or were lost after water receded. Another 30,000 juvenile were exposed to the contaminated floodwater. "Big trout were just laying everywhere," Young says.

Human bodies, unfortu-

when the creek rises

A GCI Special Report Supported by **JOHN DEERE**



nately, also flowed onto the golf courses. The body of White Sulphur Springs resident Natasha Hughes, 33, was found on Greenbrier property nine days after the flood. "That was a bad day," says Larry Allen, who has worked on the golf course maintenance crew since 2004. Hughes' father Hershel Nicely, 68, and her son Dakota Stone, 16, were found dead on the property earlier. Search-and-rescue teams and cadaver dogs were regular sights for nearly two months. "We were scared that we would be working and you would find someone," says irrigation technician Doug Moyer, a member of the crew since 2001.

Instead of preparing for a PGA Tour event, the crew returned to work and embarked on a golf reconstruction project with few emotional or physi-

leakage scorched vibrant turf. Powerful currents turned bunkers into muddy craters. Water crashed into a steel bridge and carried the structure 500 yards from its original spot. Potholes and cracks filled cart paths. Parts of the irrigation system were dismantled.

Managers understood the extent of the damage because of the superintendent-pro inspections. Shumate struggled finding the proper way to describe the damage – and the process that awaited – to a veteran crew. How do you tell people rebuilding their own lives their most fulfilling professional work was destroyed? "We stressed to them to take care of their own issues first," Shumate says. "Once you can comeback, comeback and help us. But don't rush things."

Shumate warned the group

unreal. I don't know how to say it," says Carrington Bryant, the superintendent of the Meadows course. "The amount of damage that quick ... Fairways. Gone. Cart paths. Gone. Refrigerators, cars, boulders. It's incredible the power of that water."

Condiment jars, family pictures, gloves with the palms facing upward

The crew spent its first few weeks back at work removing debris from the golf courses while the resort's leadership concocted an ambitious restoration plan. Some sections of The Old White TPC and Meadows course suffered more damage than others, but Shumate says a desire to provide guests

with consistent playing conditions made reconstructing both courses the best option. Because it sits on higher land, the Greenbrier course suffered less damage, and the course reopened last July.

In a five-week stretch last summer, The Greenbrier selected an archi-

tect and contractor for The Old White TPC, ordered materials and established deadlines. Restoration guru Keith Foster was selected to oversee the efforts on The Old White TPC. A large crew consisting of Greenbrier employees and golf construction veterans from Maryland-based McDonald & Sons started the restoration July 27.

Design and construction decisions needed to be made in

"JUST THE DUST WAS ENOUGH TO DRIVE YOU CRAZY. YOU GO HOME AND CLEAN YOUR EARS EVERY NIGHT, AND IT WOULD BE LIKE BLACK ON Q-TIPS."

—NATE BRYANT

cal peers. Land the crew had worked into what Pope described as "perfect" condition resembled something lurking behind thick, yellow crime tape, not thin, white golf gallery rope. "We had The Old White in fantastic shape for the Classic," assistant superintendent Marty Maret says. "You busted your butt all spring and then that."

Silty water mired by fuel

they would see scarring images. He urged patience. But nothing fully prepared employees for their first looks at the courses. One rainy day ruined decades of labor.

"You don't know where to start," Randy Bittinger says. "It was a shock. It's overwhelming. That's what it was. With the golf courses, you don't know where to begin." The shock didn't subside quickly. "It was



The Old White TPC superintendent Josh Pope shows a visitor the damage to a bunker on the 17th hole.

the field, although Shumate had been studying grass varieties for The Greenbrier Sporting Club's new private course. Pope visited multiple Chicago-area courses last summer before construction started to further research grass varieties. The pair chose V8 bentgrass for The Old White TPC greens and T-1 bentgrass for the fairways. Any realistic shot of hosting the 2017 Greenbrier Classic required seeding greens by mid-September.

After years of mowing, rak-



ing, trimming, irrigating and spraying, members of The Greenbrier crew working on The Old White TPC and Meadows served as an extension of the construction team. They prepared The Old White TPC fairways for seeding by Frazee mowing the surfaces. Removing hundreds of acres of turf, combined with a dry and toasty July and August, created conditions resembling a “dust bowl,” says shop coordinator Curtis Persinger, a Greenbrier em-

ployee for nearly four decades.

Every full-time crew member returned to work following the flood despite a dizzying pace. Commute times doubled for some employees because of roads that remained closed for months. A few employees spent mornings and afternoons rebuilding the golf courses and evenings rebuilding homes. Knowledge possessed by longtime employees helped contractors with tasks such as locating irrigation lines, saving

countless hours.

“People could have left, people could have quit,” Pope says. “Not a single crew member on our staff left. We have everybody here. They could have said, ‘No, I have been here for 15 years. I don’t want to do that anymore. I could retire.’ And nobody said, ‘I’m giving up.’ That puts it into perspective how much the job means to them and how much pride they have in everything. I think it’s very powerful.”

Managers and young employees made similar sacrifices. Anderson and Caldwell helped Pope handle the consuming demands of the sudden restoration of a PGA Tour course. Anderson guided the crew through daily tasks and helped coordinate sand deliveries; Caldwell used water management tactics he learned in Texas to irrigate newly established turf. Nate Bryant, Carrington Bryant and Maret led work on the Meadows and Greenbrier



How The Old White TPC second tee looked 10 months after flooding destroyed significant parts of the course.



courses. Greene, a Mississippi State student, extended his internship through the fall to help with construction.

Each deadline they hit brings normalcy a little closer. Or, as a lingering Greenbrier construction joke goes, every piece of sod they drop means less dust they must eat. "Just the dust was enough to drive you crazy," Nate Bryant says. "You go home and clean your ears every night, and it would be

like black on Q-tips"

The variable that altered their careers has cooperated throughout the past 11 months. Good weather permitted the team working on The Old White TPC to seed the final green on the evening of Friday, Sept. 16, 2016. Pope introduced his preferred seeding method to Shumate, Anderson and Caldwell, who seeded the first 17 greens. Shumate, Anderson and Caldwell pressed

Pope to seed the 18th green, but Pope says he wanted one of his assistants to complete the job. Finally, after some chiding, Pope relented. Shumate recorded video, adding a symbolic and triumphant moment to an expansive multimedia library documenting the project.

Shumate convinced his bosses and senior PGA Tour senior vice president of agronomy Cal Roth, his team could also handle the logistics of seeding

The Old White TPC fairways. The surfaces were seeded in both directions at a rate 1.80 pounds per 1,000 square feet by Aug. 26.

A warm start and mild ending to the fall added optimism entering winter, which expedited the grow-in of greens and fairways. Crews continued laying fairway sod on the Meadows course into December, delaying the blowout of the irrigation system multiple *(FLOOD continues on page 56)*

The best Proven Foliar™ combination for

Summer Stress



**Quality
Performance
Compatibility**

- Grigg Brothers® exclusive Elicitor® Technology
- A proven component of Nutritional IPM™
- Proven to enhance plant defense mechanisms
- Proven to enhance the summer stress tolerance of turfgrasses
- Safe for the environment
- Effective natural biostimulants, amino and organic acids.
- Sea plant extract (*Ascophyllum nodosum*)
- Macro Nutrients (N & K).
- A full organically chelated micronutrient package including Fe, Mg, Mn, Zn, Cu, and Boron.
- A natural, non-ionic and organic surfactant for improved leaf coverage and absorption.



For more information
scan or link.
<http://gri.gg/note203>

For a Distributor Near You Call:
1-888-246-8873
or find us on the web at: www.griggbros.com

USING WATER FEATURES WISELY



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

Architecturally, diagonal, lateral or crossing streams are attractive and effective hazards. The courses I played in my youth, or saw on television, usually featured babbling brooks. Holes like Merion East No. 11, with its green perched on a rock wall just above a stream, exude charm. Placed carefully adjacent to greens and fairways, they present a challenge, and yet who among us mortal golfers haven't experienced the pure luck (and joy) of just missing or bouncing over a narrow stream?

However, it seems that greens adjacent to pristine streams are less common now, whereas larger, shot-gobbling ponds are used more frequently. Assuming my golf experiences (and memory!) are accurate and representative, what's behind this long term architectural trend? In a few words, "increasing complexity."

Older courses tended to "find" natural features to use, like placing greens adjacent to little "country" streams. As development encroached around the golf course, urban runoff substantially increased, causing erosion and frequent flooding. In some cases, raising affected greens above flood levels was sufficient flood protection. Other greens were moved further from the stream. That increased flow also increased flow velocity, causing erosion. Formerly bucolic streams were often widened to engineered ditches, lined

with rubble, gabion walls or rip rap. They lost their charm.

Newer environmental practices/regulations discourage golf courses near streams, requiring a 25- to 50- foot vegetation buffer to filter chemicals and fertilizers before entering water bodies. Long grass close to greens also mean loss of stroke, or ball, even on slight misses. The days of turf right up to streams is ending, as are the days of the lucky bounce over a narrow stream!

Aesthetically, few golfers like dry (or muddy) ditches, even in the heat of summer, so it's difficult to design around intermittent streams. Some courses have used modern technology to build artificial streams well away from natural drainage courses, solving some of the problems. These are often stylized to be more attractive than what might be found in nature. Building "fake streams" might be the new norm, but the recirculation pumps do use electricity, and both sustainability principles and economics suggest reducing electricity use. It seems golf course streams are near, if not on their death bed.

Ponds are still very much architecturally in vogue. Since the advent of irrigation systems after WWII, courses needed one pond for irrigation storage. Architects made them multi-functional, also serving as decoration and hazards. That Robert Trent Jones started this trend with his famous dogleg par-5 13th hole at the Dunes Club in

Myrtle Beach. Increased earthmoving ability allowed large lakes to be built at reasonable costs.

Irrigation ponds tend to be large, and even larger as irrigation systems get bigger. The general rule of thumb is to hold nightly draw down to 6 inches or less to reduce exposed muddy banks. If your nightly usage is typically 440,000 gallons (one acre foot), then you ideally need a two-acre irrigation lake. If smaller, your lake should have rip rap "Armor" on the banks to prevent muddy banks, which may also aid in reducing erosion from wave action. However, rip rap isn't particularly charming either.

Ponds are also required on flat sites, which necessitates creating drainage outlets close to each fairway. Moving surface drainage over land requires a minimum 2 to 3 percent slope, and drain pipes require minimum of .25 percent. Water is always at zero percent, and long, linear lakes paralleling fairways create shorter flow distances for both, but makes for a lot of water hazards.

Developers and urban planners also see golf course ponds as excellent floodwater detention areas, either for surrounding neighborhoods, and sometimes, as part of a regional plan. Detention ponds usually have a deeper "freeboard," which is the elevation difference between normal water level and the top of its banks.

Any water feature requires some management, and costs depends mostly on how manicured the edge looks. Manicured turf banks are expensive, while the environmentally preferred natural look may reduce cost. Lake edges can erode and require repair due to wave action, and streams are subject erosion and cave-ins. Pond maintenance may also include controlling aquatic plants and removing debris, which accumulates surprisingly quickly on the downwind side of ponds. And even off-stream ponds eventually require periodic dredging to restore pond depth and increase water storage. **GCI**



Connect with us at **SePro Turf**. Join the conversation @**StewardsofTurf**

Beautiful water features and no irrigation headaches

The Hammer & Broom approach to algae management:

- Hammer tough algae with Captain® XTR
- Continue to fight algae and sweep away phosphorus with the Broom, SeClear Algaecide and Water Quality Enhancer*

Proactive and reactive options for aquatic weeds:

- SonarOne®, never see the weeds
- Komeen® Crystal, fast and easy control with no irrigation restrictions

Visit stewardsofturf.com/water



Contact your SePRO Technical Specialist or call **800-419-7779**

Always read and follow label directions. Captain, SonarOne, Komeen, and SeClear Algaecide and Water Quality Enhancer are registered trademark of SePRO Corporation.
©Copyright 2017 SePRO Corporation.



PINNING DOWN PGRS

Why monitoring temperature is a route toward regulating growth of cool- and warm-season turfgrasses.

By **John Torsiello**

When is the optimal time of the year for using plant growth regulators? While there is a consensus among experts that when growing begins is the time to ramp up your PGR program, there are variables, such as weather conditions and the type of grass you will be treating, and, of course, your goals for

using PGRs.

"Similar to most use concepts with PGRs, it depends on what the goal of the superintendent is," says Dr. Jeff Atkinson, SePro's portfolio leader/turf and landscape. "For a superintendent wanting to regulate warm-season turf, throughout growing season makes a lot of sense. But, aggressive applications during the shoulder seasons, as turf is going into or out of dormancy, doesn't

WHAT

Turf equipment and irrigation suppliers.

MATTERS

Consistent commitment to my long-term success.



MOST

They always have my back.

What Matters Most to You Matters Most to Us.

Toro Distributors. For over 100 years, Toro has been a trusted partner to help golf courses and clubs succeed. With Toro, you not only get a top name in turf equipment & irrigation solutions, but you also get a top local partner, both of whom are committed to your long-term success.

Together, we are passionate about delivering customer-valued products and services that solve real-world problems. It's in our culture, and it's the right way to do business.

Contact us to learn how Toro and our channel partners are providing lifetime value for all of your turf equipment and irrigation needs.

Call your local Toro distributor today: 800-803-8676

TORO®

Count on it.



make sense.” On the other hand, he says, superintendents in cooler season areas that battle *Poa annua* will want to be more aggressive during the shoulder seasons, as *Poa* is germinating or actively growing.

Cam Copley, golf national accounts manager for Nufarm Americas, believes the best time to use a PGR is anytime the plant is healthy and actively growing. “If the plant is dormant either due to temperature or drought, it is not growing anyway,” he says.

To effectively control annual bluegrass seedheads, says Dr. Zac Reicher, technical special-

ist for the Bayer Green Solutions Team, the product Proxy can be applied prior to seed-head formation. Historically, this has been early spring when seed heads appear in the boot stage. He says recent research and superintendent experience shows an application of Proxy after the final mowing in the fall followed by two spring applications improves control and consistency over the two spring applications alone. “This approach also provides greater flexibility in initial spring application timing, which can be difficult to schedule due to constantly changing weather

conditions,” Reicher says.

Fall applications have proven effective because annual bluegrass seedheads are initiated in the fall following shorter days and cooler temperatures. Reicher adds that university research has shown Proxy applied in the late fall or early spring is not affected by cold temperatures.

Dr. Dean Mosdell, Syngenta field technical manager, also advises superintendents to apply PGRs when the grass is actively growing. “PGRs, such as Primo Maxx, reduce cell elongation, resulting in reduced leaf and internode

length that doesn’t affect normal plant development, such as root and tiller initiation,” he says. “Superintendents should wait for spring green-up before beginning their PGR program, except in the winter overseeding regions.”

Mosdell says to start at the half rate in the spring and gradually build up to higher rates. In the fall, start reducing the rate and cease applications prior to the first killing frost. “Some superintendents favor measuring clipping production as an indicator of rate and frequency of application, and others may use a growing



Paying close attention to long-range weather forecasts can enhance the effectiveness of PGR applications.

a PGR program. However, a unique example is applying a high rate of a PGR just prior to a hurricane, since it may be difficult to mow fairways and/or roughs for an extended period of time.

Atkinson cites work started by Dr. William Kreuser at University of Nebraska-Lincoln and continued by him and others that has shown higher temperatures speed the metabolism of PGRs by the plant, reducing the length of time that they're effective following an application. As temperatures increase, applications are needed more frequently to maintain the same level of growth regulation. There are several other factors that go into how effective a PGR application will be and how long it will last. "Water, fertility, plant health status, sunlight intensity and duration, to name a few," Atkinson says. "But understanding how one of these variables, temperature, effects PGR applications is helpful to give some level of resolution how turf will respond to a PGR application."

degree day model," Mosdell says. "Whichever method is preferred, the benefits of a PGR will be evident as a season-long program, not in one or two applications."

Mosdell says effective PGR use and timing "is all about the growth of the turf." He adds, "All turfgrass species have an optimum temperature range for growth. This is the time when turf growth is at its peak, which requires a higher rate or more frequent applications of PGRs to control growth." Short-term changes in weather patterns will not significantly affect

PGRs should not be applied when turf is going into or coming out of dormancy or when a heavy frost is expected, warns Atkinson. PGR applications should also be avoided when turf is under drought stress or any other biotic or abiotic stress. Gen-

REALIZE ANUEWTM SUCCESS.



FIRST EPA APPROVED LABEL
WITH GDD MODEL APPLICATION
track it on GREENKEEPERAPP.COM

FEWER CLIPPINGS

4.17 g

REDUCED DRY WEIGHT

Dykema and Vargas | Michigan State University
2014 | Penncross Creeping Bentgrass
Applied: 6/6 | Results: 6/19

2.01 g

2.36 g

Untreated

AnuewTM
8 oz/A

PRIMO MAXX[®]
12 oz/A

AnuewTM

AnuewTM Plant Growth Regulator slows vertical growth, is labeled for most managed turf areas, and now offers the first EPA approved label containing Growing Degree Day (GDD) model application instructions.

Learn how we can help you grow a better tomorrow.

NUFARMINSIDER.COM

©2017 Nufarm. Important: Always read and follow label instructions. AnuewTM is a trademark of Nufarm. PRIMO MAXX[®] is a trademark of a Syngenta Group Company.



Nufarm

Grow a better tomorrow.

erally, plants are weak during these periods and effects from a PGR application can be more drastic than expected or desired. This can result in transient turf discoloration.

Kreuser concurs that the best time to use PGRs is when grass is actively growing, starting in the spring and ending when the grass growth slows down in fall. "You want to maintain growth suppression the entire season," Kreuser says. "The length of suppression depends on temperature. Use growing degree days (GDDs) to schedule repeat

cations because they can slow spring green-up. "That may be good, however, if there is a lot of *Poa*," he says. "Also, very hot weather (both day and nights) can put tremendous stress on cool-season turf. In those conditions, the use of PGRs can be argued for and against."

Temperature, continues Dr. Kreuser, is a "huge driver" of the duration of a PGR response, while application rate has more of an effect on how much suppression occurs. Too much suppression can result, especially when it is cold and



applications. Failing to sustain growth, suppression can have negative effects on turf growth because of accelerated growth, called the rebound, after a PGR has worn off. I'd only stop applying on cool-season turf when the temperatures are extremely high (both day and night) and the grass is struggling to grow."

Kreuser adds, "plants are like reptiles, they break down or metabolize PGRs faster when it's warmer." Thus, application intervals need to tighten up during the summer and loosened into the winter. He remains wary of winter appli-

breakdown of PGRs is slower than re-applications (calendar-based intervals). Instead, GDD models allow the interval to stretch or shrink with weather conditions.

"Our GDD models are in degrees Celsius with a base of 0 for cool-season turf and 10 for warm-season turf," he says. "Our web app, GreenKeeper-App.com, automatically calculates the ideal GDD reapplication interval based on mowing height/management, grass species, PGR active ingredient and PGR rate. It accesses local weather data to automatically calculate GDD accumulation

SUBTLETIES OF SAND

Turf managers may find some "small differences" in response when root-absorbed plant growth regulators are used on sand root zones, according to Dr. Cale Bigelow of the department of horticulture and landscape architecture, turf science, management and ecology at Purdue University.

"In essence, differences in longevity and/or slight differences in *Poa* suppression," may be seen, Bigelow says. The major reason for this is most likely due to the lower cation exchange capacity of a sand root zone compared to a native soil that contains larger amounts of silt and clay. "In my research trials, I have observed slightly better PGR response of a root-absorbed compound on our native soil research putting green," Bigelow says. "Although we have never specifically measured, I would associate this with the longer residual of the compound at the soil exchange sites."

Bigelow says when applying PGRs to a sand-based root zone it is vital to take into consideration the overall health/vigor of the turf on a sand root zone. "Because of the lower cation exchange capacity of sands it is not uncommon for the turf to be 'running lean' in terms of vigor at certain times of the year (particularly during late summer months)," Bigelow says. If such is the case, Bigelow says applications should be carefully evaluated, either in terms of product rate and/or application interval. "Another thought might be to make sure at least a little bit of soluble nutrients (such as urea) are included in the application," he adds.

"It is more about mowing height and frequency than sand or push up growing media. We see very good suppression on warm-season greens and fairways," says Dr. William Kreuser, assistant professor, turfgrass specialist at the University of Nebraska-Lincoln. "They are pretty equal, and the suppression is much greater than cool-season greens."

since the past application.”

Depending upon the species, grass grows more during certain parts of the year. “You might need to use a higher rate of PGR to reduce clipping yield,” Copley says. “Air temperature affects the rate at which the plant metabolizes the PGR. Remember that plant metabolism, as affected by temperature, can greatly influence retreatment intervals, requiring a superintendent to increase the interval to avoid over regulation when cooler, or decrease the interval to maintain even regulation and avoid rebounding effects when warmer.”

Reicher believes Proxy can be effective suppressing annual bluegrass seedheads when applied after the final mowing in the fall, or when included in the final snow mold fungicide application. If the fall application is missed or omitted, it is best to err on the earlier side of the GDD models, because the variability in environmental conditions and annual bluegrass biotypes might have seedhead initiation weeks earlier than other biotypes or locations on the course.

Kreuser says paying close attention to long-range weather forecasts can enhance the effectiveness of PGR applications. “Long-range forecasts can help tell when the next PGR application is required,” Kreuser says. “GreenKeeper is going to use 10-day forecasts to help predict when PGRs need to be applied. It will even be able to email users when their PGRs are about to expire.”

Copley adds, “It is important to pay attention to long-range weather to plan when you should reapply a PGR. You can use the high and low temperature to calculate the number of growing degree days moving ahead to begin planning when to reapply the PGR.”

“With the improved understanding of how temperature affects efficacy of a PGR application, using a long-range forecast to predict when another application will be needed is an approach some superintendents are taking,” Atkinson says. “As the weather shifts and we get out of the growing season, it becomes important to pay attention to the long-range forecast to understand when a frost can be expected.”

On a final note, Mosdell cautions su-

perintendents to always read and follow label instructions. Some products may not be registered for sale or use in all states or counties and/or may have state-specific use requirements. Check with a local ex-

tension service to ensure registration and proper use. **GCI**

John Torsiello is a writer based in Torrington, Conn., and a frequent GCI contributor.

EASY IN. EASY OUT.

The **Little Giant Aeration System** makes it simple to keep a body of water clean and healthy. Quickly attach or detach the pump from the float. No bolts, no screws... just easy installation and conversion to our optional fountain kit.



Little **GIANT**
CELEBRATING
75 YEARS



lg-outdoor.com

ESCALATING COSTS



Brian Vinchesi, the 2015 Irrigation Association Industry Achievement Award winner, is President of Irrigation Consulting, Inc., a golf course irrigation design and consulting firm with offices in Pepperell, Massachusetts and Huntersville, North Carolina that designs golf course irrigation systems throughout the world. He can be reached at bvinchesi@irrigationconsulting.com or 978-433-8972 or followed on twitter @bvinchesi.

We're all aware a new irrigation system is expensive, and costs are escalating quickly. The competitive market has kept the hard goods (sprinklers, controllers, swing joints, etc.) from skyrocketing, but the costs of accessory items (pipe, fittings, wire, valve boxes, isolation valves, etc.) continue to climb.

These expenses are minor compared to the installation costs. Due to a large increase in demand for golf course irrigation systems, there are fewer qualified contractors available. The result is an increase in qualified golf course irrigation contractors' labor costs and a decrease in their availability. The 2017 and beyond irrigation market is much better than we have seen over the last 10 years or so. Unfortunately, you will pay for it. So, if your course needs a new irrigation system, how can you save on costs? And, what are the pros and cons of not doing a complete system replacement to save costs?

Not replacing the mainline pipe is the most significant cost saving item. Maintaining your mainline pipe will also save money on fittings and possibly the mainline isolation valves, drains and air release valves. We know PVC pipe has a life expectancy that exceeds 50 years, and while we are not sure yet on HDPE, it also has a long life. Most mainline pipe

systems are not replaced due to age, but because they are transite (asbestos cement), too small to support an expanded irrigation system or the fittings are failing. Depending on your existing mainline fitting type, the fittings will lifecycle out, especially if they are gasketed PVC or epoxy-coated steel. Saddles tend to move with time or the seals fail. Ductile iron fittings have a long life also exceeding 50 years. But if your mainline fittings are failing or about to lifecycle out, you will need to replace the mainline because replacing fittings is not economically viable even if you know where they are located on the golf course.

Isolation valves are the other issue with mainlines. Over time isolation valves either stop closing/opening or do not close tightly, and some might even break the stem which opens and closes the valve. The good news is they are replaceable in the field. And while not an inexpensive task, they can be replaced over time as budgets allow.

Small gate valves wear out even faster than mainline isolation, and their condition is based on their initial cost. If they were cheap, foreign-made valves, then they will have more issues than more expensive valves and will need to be replaced if new laterals are being installed.

When considering whether to replace the mainline, you need to

consider the water window. If you are substantially increasing the number of sprinklers or the irrigated area, your overall watering time will increase. If you are already taking six-plus hours to irrigate, then the water window will be longer. I recently dealt with a course that wanted to save \$1 million by not installing a new mainline.

However, due to the existing mainline's size and the increased number of sprinklers for the new system, the water window was potentially changing from eight hours to 14 hours.

The irrigation control system is another place for potential savings. If your existing controllers are functional and you do not visit them often, then why replace them? You could keep those controllers as part of a new system and just add additional controllers as needed. The downside is the inability to switch control system manufacturer or technologies. And you may be prohibited from gaining all of the benefits of today's irrigation control system hardware because the existing controllers may be limited due to the manufacturer.

There are other savings to consider such as excluding weather and lightning protection systems, but they will not have the significant impact of a mainline or a control system. You can save small amounts with components such as PVC swing joints as opposed to brass for quick couplers, less isolation, and the type of fittings for both laterals and mainlines (saddles versus service tees). Not having individual sprinkler control would save some money, but is not usually a good idea. You can reduce the amount of grounding as well, but you must weigh the cost of grounding against the risk of damage to the electrical components. **GCI**

IT'S YOUR CHOICE



PYTHFUL **or** BLISSFUL?



Segway® Fungicide SC makes Supers smile.

It's hard to be happy when Pythium disease damages your turf. So don't let it. Segway® Fungicide SC delivers outstanding protection against Pythium root dysfunction, Pythium blight, and Pythium damping-off. Segway works fast and lasts up to 28 days for healthier turf. Healthier turf means happier golfers, and happier golfers mean happier Supers.

GordonsProfessional.com

Always read and follow label directions. Gordon's® is a registered trademark of PBI-Gordon Corp. Segway® is a registered trademark of Ishihara Sangyo Kaisha Ltd. 10/16 04536

 **pbi / GORDON**
CORPORATION
Employee-Owned



Is BIG better?

The industry is seeing a gradual shift toward larger tines. Turf experts share their views on this trend.

By Rick Woelfel

Aerification is one of the turf industry's dirty jobs. However, despite years of technical advances in the field, aerification remains a necessary task for turf health.

Sub-par greens will render your best efforts elsewhere on the course as meaningless. And quality greens cannot be accomplished without periodically opening the soil, says Chris Hartwiger, who directs the USGA Green Section's course consulting service and has been with the group for more than 20 years.

However, today's economics minimizes the time a course is shut down during the aeration process. "We've seen an adjustment in how people have maintained their putting greens, specifically with

aeration, over time," says Adam Moeller, director, USGA Green Section Education. "There has been an emphasis to scale back on the number of aerations a year for fear that they're going to get golfer complaints and ultimately lose the revenue."

Superintendents are increasing the interval between aerations, says Jeremy Opsahl, Toro's global product manager. "Rather than doing two or three

treatments in a year they might do it in one or two," he says.

At the same time, superintendents are punching more and larger holes in their greens. For example, Toro now offers superintendents a range of diameters from 1/4 to 7/8 of an inch, but Opsahl notes over the last decade or so superintendents have trended toward larger tines. "There's been a shift ... since 2008 or so," he says. "There's been a gradual shift toward a larger diameter, more toward 3/4 of an inch.

"Certainly, we still have people who are saying 'I'm not going to change what I'm doing for my aeration treatment. I'm still buying my 3/4-inch tines and I'm going to continue to do that.' (But) you're seeing a gradual shift toward a larger tine."

Hartwiger has witnessed the same trend and adds by punching more holes and decreasing the space between them superintendents can theoretically get the job done in half the time. "I'd say that people prefer to punch more holes in their greens less frequently," he says. "Therefore, they would have closer-spaced holes so they can put more holes in the green when they do it, rather than (spread it out) over two dates."

Aerating regularly is like visiting the dentist when needed, Hartwiger says. "If you've got to get two teeth pulled, do you want to spread that out over two different dates?" he says, "Or do you want to just go and get it over with that one time?"

To minimize the impact, some superintendents have gone to using smaller tines, with smaller intervals between them, on their turf. For example, a Northeast course that aerates in the spring and early fall with 1/2-inch tines might

SAVE THE DATE

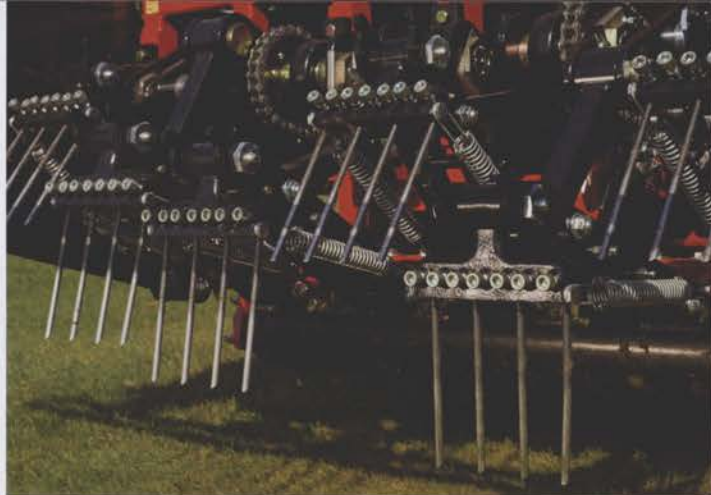
The USGA has developed a model that will help superintendents determine the optimum time to aerate while taking both economic and environmental realities into account.

"That's something that's kind of new for the Green Section," says Chris Hartwiger, who directs the course consulting service. "We've spent a good amount of time developing a model for the economic impact of aeration and guiding folks into selecting the optimum date for their facility."

The program will allow superintendents to get the maximum benefit from aeration while intruding on play as little as possible, Hartwiger adds.

Hartwiger cites a common occurrence, a superintendent in the Northeast wanting to aerate in the last week of April because of the anticipated weather conditions, but fielding complaints from his members about disrupting play. The USGA can help him pick a new date that is still prime growing season but will have less impact on play.

Hartwiger is excited about the possibilities. "Really you never know until you put the numbers in and then you see 'Here's the sweet spot,'" he says. "Picking the right day can mean several thousand dollars in revenue (to a daily-fee facility)."



To minimize the impact on turf, some superintendents are using smaller tines with smaller intervals between them when aerifying.

switch to slightly smaller tines but with tighter spacing; the tines might be set 1 1/2 inches apart instead of 2 inches. In some instances, the facility might aerate a third time during the season.

"The net result is about the same amount of surface area disrupted in one treatment," Moeller says, "but hopefully with a shorter recovery time because you're using smaller tines."

The challenge is getting sand into those smaller tines. It's difficult to fill the holes punched by smaller tines. "So then you're going through the whole process of aerating and cleaning up the cores but if you're not able to fill those holes with sand you're not maximizing that aeration treatment," Moeller says. "You're not seeing as much of the benefits of aeration."

This approach is not without risks, particularly if a facility is extending aeration intervals, Moeller says. "A lot of (smaller tines) can have short-term advantages in terms of less revenue loss," he says. "But if you're not aerating as much as your soil and your putting greens require, at some point down the road there are likely going to be problems." He adds putting green damage or turf decline develops because of too much organic matter or not enough drainage in the putting greens.

Some superintendents utilize needle tining, or solid-tine aeration, on high-stress areas to enhance the turf's health. This method involves

using tines with a diameter of perhaps 1/4 inch or smaller to allow additional air to circulate through the root zone with minimal impact on the turf from a playability point of view.

Needle tining has proven particularly effective in areas prone to prolonged drought, or in warm, humid climates. As a result, the practice is becoming more prevalent throughout the industry, Moeller says. The benefits are short-lived, he says, lasting just a couple weeks. However, you get critical air flow in and out of the soil profile.

There is no one-size-fits-all model when it comes to aeration methods, Moeller says. Some courses, particularly daily-fee facilities, are reluctant to aerate at all, citing the cost in man hours, or lost revenue while the course is shut down or even afterward, because many golfers shy away from playing a course with recently aerated greens.

It comes down to weighing that risk at each facility, Moeller says. Summers with more extremes in heat and moisture are when you see the effects of deferred maintenance programs, like aeration.

"If the summers were mild and we didn't have stress, we could maintain our golf courses probably with a little bit less input," Moeller says. "But we're preparing our courses for 'What if we get really bad weather?' Aeration is a great program that helps balance everything out and improves the health of the greens." GCI

TELLING AN EARTHLY STORY



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

The People's Climate March – organized to coincide with Earth Day in April – drew tens of thousands of environmental activists to cities across the nation. Their mission: call attention to the dangers of climate change. It's not a stretch to say that golf course superintendents and club and course managers conduct their own march to show their support of environmental sustainability every day.

Broken Sound Club in Boca Raton, Fla., where more than a million honey bees are thriving in the club's apiary, is just one example. From more than 1,000 pounds of honey the bees produce each year, club members receive jars of honey to enjoy and the spa features Broken Sound honey in its treatments.

Club manager John Crean and his team at Broken Sound are doing more than providing a sweet and distinctive member amenity. They're part of a movement to bring awareness to the plight of declining adult honey bee populations.

The environmental program at Broken Sound started with small steps, including eliminating Styrofoam cups, reducing the use of plastic bottles and recycling cans, plastic and cardboard. Its initial success encouraged the club to be more ambitious. An industrial composter is now reducing the amount of waste the club adds to the local landfill, solar

panels are heating swimming pools and a charging station is recharging members' electric vehicles.

Christine Kane, the CEO at Audubon International in Troy, N.Y., recognizes the leadership of the club, which is a part of the Audubon Cooperative Sanctuary Program, an education and certification program that helps protect the environment while preserving the traditions of the game.

"Broken Sound is leading the way in recognizing that projects like this can be a great way to educate and involve your community in your environmental stewardship efforts, demonstrating that you are using your greenspace wisely and strengthening your ecological footprint," she says.

Broken Sound may be an exemplary example of sustainability, but it's also proof of how one club can make a difference.

Herb Pirk, the forward-thinking executive of the Oakdale Golf & Country Club in Oakdale, Ontario, and his superintendent, Michael Dermott, are advocates of teaming up with environmental experts. Their partnership with Global Organic Partners has reduced the application of chemicals and pesticides while improving course conditions.

"The changes (Global Organic Partners) recommended have reduced the environmental impact of pesticides and chemicals by almost 90 percent,

and course conditions and member satisfaction have never been better," Dermott says.

Ted Horton, an Audubon director and widely admired golf course superintendent for his stints at Winged Foot in New York and Pebble Beach in California, advises clubs to take a proactive approach. "Assume the mindset that we can be part of the solution, not part of the problem and make it happen," he says.

Following are four ways clubs can be part of the solution to environmental challenges in their communities:

- Decide to launch a program that's right for your facility. Gather input from a cross section of members and the people who use your facility. And don't overlook the young people, many of whom are especially attuned to sustainability issues.
- Take advantage of available resources. The Audubon Cooperative Sanctuary Program can guide courses through projects in environmental planning, wildlife and habitat management, chemical use, water conservation, and water quality management.
- Start small and grow. One of the first steps is to engage your members and golfers in your efforts. Let them know what you're doing and why. Then keep taking the next step toward a deeper commitment.
- Tell your success stories to your members and customers and encourage them to be ambassadors for your program in the community.

Golf courses have been the focus of criticism from environmentalists over the years for their use of water, fertilizers and pesticides. The truth of the matter is that many clubs and facilities are doing commendable work to support the health and well-being of our planet. Their stories need to be told – and more clubs need to follow their lead. **GCI**

ENDURANCE *Plus*

Power That Stands Out!



HANDCRAFTED IN THE USA

WWW.USBATTERY.COM



By **Kyle Brown**

Correcting the GREAT LIE

Putting quality and player expectation are more than just speed. Experts look beyond fast and firm to other factors that impact high-performance greens.

You've heard it from a player or member at some point: "I wish the greens were a little faster." But chasing faster green speed isn't the same as cultivating a high-performance green that serves the players best. A lightning-fast green could be a huge drain on inputs and resources, and still not provide players a solid playing surface.

There are more factors at play in keeping healthy, high-quality greens, says Paul Carter, CGCS, superintendent at The Bear Trace at Harrison Bay in Harrison, Tenn. A good green keeps its speed in balance with smoothness, trueness and consistency.

"It's a combination of everything that makes a green work," Carter says. "It's a complex entity. We try to tell everybody, 'Greens are living, breathing entities, and you have to treat them as such.'"

Even if a player is asking for fast greens, it's important to keep those other qualities in mind, says Dr. Scott McElroy, professor of crop, soil and environmental sciences at Auburn University. "Speed is part of the putting quality, but it's not the only factor," he says. "I can take you to a smooth, concrete surface that's extremely fast, and also unbelievably untrue. The ball is going to react wildly and erratically."

A superintendent's goal should be to balance the speed and firmness of the surface, and at the same time manage the turf to provide a roll buffer to keep the ball from veering at the first aberration or grain of sand, says McElroy. In fact, a high speed can highlight imperfections in the turf by decreasing the ball-surface contact, minimizing that buffer.

By slowing the green down a little and increasing the roll buffer, even a bumpy green can play a little

more true. "If you slow the ball down, there's more buffer there for any untrueness in the surface," McElroy says. "You can only push the speed so far before you just lose control."

Mowing practices contribute to maintaining the balance of speed and trueness, says Dr. John Sorochan, associate professor of turfgrass science and management at the University of Tennessee. His research focuses on how the quality of cut impacts the green surface. "We're comparing a single cut versus a double cut, where you go mow perpendicular or backtrack, and what it does for green speed and clipping yield," he says.

So far in his research, two years of data show that bentgrass greens improve trueness with a double cut program, with the second pass running perpendicular to the first, picking up slightly more clippings than either other method. The first year of data collected on Bermudagrass, however, shows that a single pass at a higher frequency of clip provides the



Examining daily clippings and building a dataset from the findings can help superintendents make management decisions regarding greens, according to Adam Moeller, director, USGA Green Section Education.

best surface. "With a better quality of cut, you're going to have healthier turf, which means it's going to come back and grow faster," he says.

For his ultradwarf greens,

Carter avoids double-cutting as much as possible with his triplex mowers. When he needs to make up some speed, he sends rollers out, and can "pick up 6 to 8 inches on a greens roll"

© COURTESY OF PAUL CARTER, BEAR TRACE

Take Sod Cutting to the Next Level with Hydro Drive!

Featuring effortless operation and maximum productivity for any job on the course!

- Set & Forget™ blade depth adjustment to 2.5"
- New operator controls, cut system and drive system



One & Done Reciprocating Hydro Aerator

Due to its unmatched maneuverability and durability, offers the ideal solution for green, tee and bunker surrounds, cart path edges and areas around the clubhouse for tight hole spacing and deep core aerations.

0% DOWN & 0% INTEREST FOR 48 MONTHS FINANCING*



*See your local Billy Goat dealer for Financing details.

POWERED BY HONDA

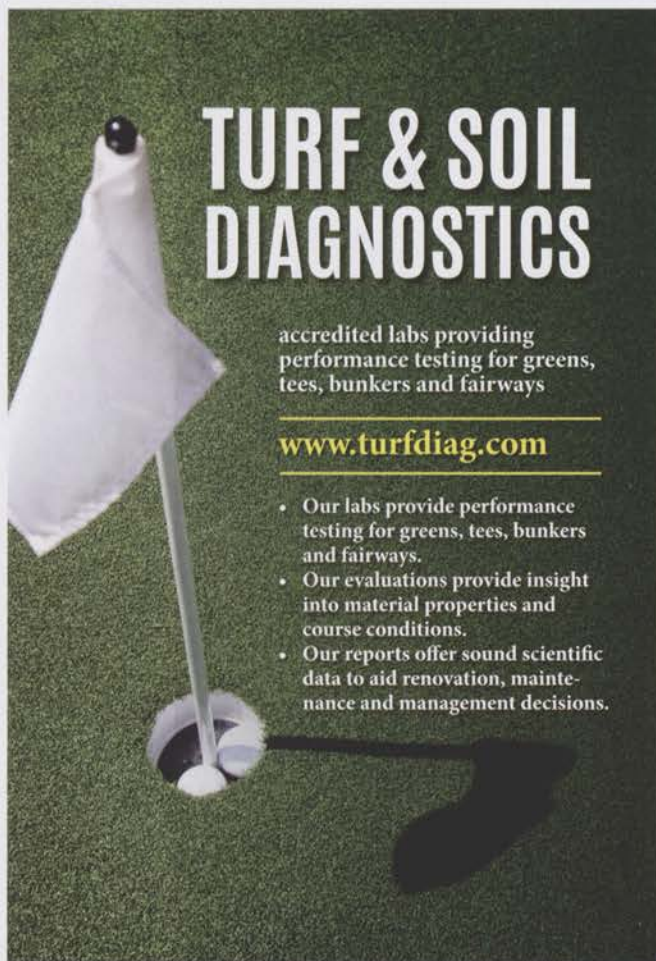
www.billygoat.com

TURF & SOIL DIAGNOSTICS

accredited labs providing performance testing for greens, tees, bunkers and fairways

www.turfdiag.com

- Our labs provide performance testing for greens, tees, bunkers and fairways.
- Our evaluations provide insight into material properties and course conditions.
- Our reports offer sound scientific data to aid renovation, maintenance and management decisions.



CHANGE THE MESSAGE

while cutting back on plant growth regulators, he says.

Rolling a green three days a week is always good for the turf, says Sorochan, smoothing the surface without damaging the plant. "[Rolling] is a better way to get your speed than it is to lower your mowing height," he says. "Lowering the mowing height is something people get caught up on, and it causes too much stress. Superintendents have to avoid it."

"I think 0.125 was the lowest we went this year on our greens," Carter says. "We've gone below 0.100 before, but you're putting the plant under so much stress at that height. It's using all its carbohydrates,

It can be difficult to shift the players' focus on green speed to other qualities like trueness or consistency. But some of this could be due to the players' lack of education on the turf pressure it takes to hit high Stimp-meter rates.

"A lot of patron card members ... are very free with their ideas and suggestions," says Paul Carter, superintendent at The Bear Trace at Harrison Bay, a public facility in Harrison, Tenn.

He looks at these interactions as a chance to talk to the players about what recent weather patterns could be shaping the course they're playing today, and how their main-

tenance practices are aimed more at overall green health than just a Stimp-meter reading. "We try our best to keep the golfers informed on the cultural practices we're doing and why we're doing them," he says.

The USGA has also been building educational tools for golf course superintendents to share with players to help explain that faster greens don't automatically mean high-quality greens, says Adam Moeller, director, USGA Green Section Education.

"We've done videos and certainly some articles discussing how fast green speeds can negatively affect a golfer's experience," he

says. "Greens that are too fast can easily turn people away from the game, so we need to keep that in mind."

Carter considers the wider skill levels of his players as he aims for a set 9.5 to 10.5 Stimp-meter reading through the season to give the most players the best chance to both enjoy the game and move through the course at a reasonable pace of play. "You've got to find a balance between the good players and the not-good players," he says. "I can't run my greens as fast as some people want them. Not everybody's at the same level of play."

It's on the golf course superintendent

often to consider what the best targets are for their greens and their players, Moeller says. But the more golf course turf managers can talk to players about why the greens are a little slower, the better are the chances are the players will notice the higher-quality play

"When you combine the educational materials out there with the superintendents who are committed to trying to maintain the best green speed for their course and their golfers and not just those who want fast greens, we're going to make headway on speed versus smoothness," Moeller says. "But it's a challenge."

a WIN-WIN for Golf Courses, Clubs and the Business of Golf

Be a winner! Increase facility utilization and revenues by serving a grateful population of engaged, motivated players. Demonstrate to the community your dedication to assisting people who wish to maintain and improve their lives despite mobility constraints. Offer golf carts that help people with mobility impairments play their passion: The Game of Golf.

Swift ALLMobile provides safe, fun, convenient golf carts for the rapidly growing population of aging players, people of all ages with disabilities and help our wounded warriors to embrace the proven therapeutic advantages that Golf provides. They can pitch, hit and putt sitting or standing.



The Swift Single Rider Golf Car Designed to Play Hard

- Operates on greens and tees without damaging turf
- Design features assure safe operation
- Proven trouble free, heavy duty industrial components, 100% uptime, low maintenance
- Spare parts and technical support available from our Massachusetts headquarters
- Lease purchase finance options: One cart or an entire fleet
- Qualify for tax credits
- Maintain ADA compliance
- Optional accessories, color choices and custom livery identification available

Contact us for a proposal. Many models in stock for immediate delivery!
Swift ALLMobile 888-223-3280 (518)798-7211 • www.myALLMobile.net

all of its energy just to stay alive.”

Raising cut height gives the turf a better chance to absorb sunlight and go through photosynthesis for an overall healthier plant that can absorb a footprint or ball shot more effectively. “When we raised the heights up, our greens got better, because now I’ve got more leaf blade up top for the ball to ride on,” Carter adds. “I’ve got more leaf blade to manage and manicure, where I can do some brushing and verticutting without getting down into the stolon and stems and really abusing the plant.”

He’s also strayed from a heavier schedule of verticut-

ting, to avoid a cycle of verticutting the greens, then putting fertilizer on them to help them heal and recover, he says. “The more I tear my green up, the more I’m requiring of it to recover

from that and be healthy, so I’m putting more fertilizer on it,” Carter says. “Then I’m going to grow more thatch. It’s just a circle of taking it out and putting it back. If you can balance

your growth with your cultural practice, you don’t have to do either one as much.”

Topdressing is a big part of finding that balance for Adam Moeller, director, USGA Green

Section Education. “Through the year, there’s ball marks, foot traffic and equipment wear and tear,” he says. “Topdressing plays a major role in just smoothing everything out. It’s

Through the year, ball marks, foot traffic and equipment wear and tear impact the turf. Topdressing plays a major role in smoothing everything out and the practice is important in managing organic matter.



© COURTESY OF PAUL CARTER BEAR TRACE

A black and white photograph of several young children sitting at a table, eating from bright orange bowls. They are all smiling and looking towards the camera. The setting appears to be a simple, possibly outdoor or semi-outdoor, dining area.

I love your neighbor

Over 30 years of trusted relief aid at home & abroad.

A graphic illustration of an orange bowl with a black spoon resting inside it. The bowl is filled with a light-colored substance, possibly food or a drink.

To change the life of a child,
please visit www.feedthehungry.org
or call 800 888-832-6384

LeSEA Global
FEED THE HUNGRY
A full life feels good.



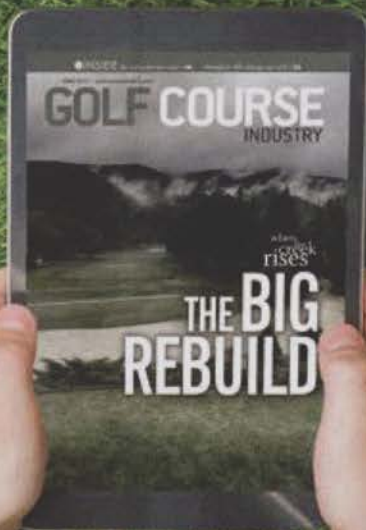
Quality Through Service

For over 45 years the golf course industry has trusted **Target Specialty Products** to deliver solutions to keep courses and landscaping healthy and pristine, and educate teams on the latest products and regulations. We provide:

- A complete line of quality, effective products in stock
- Specialized Training Programs
- Worker Safety and Risk Management
- Regulatory Compliance
- Multiple West Coast distribution facilities with same day/next day service

Learn how our certified and experienced staff can partner with you!

(800) 352-3870 | target-specialty.com



Put **MORE** **INFORMATION** in their hands!

Give your **assistant**
superintendents a free
subscription to **Golf Course**
Industry. We're here for your
entire staff!

Email subscriptions@golfcourseindustry.com or
visit golfcourseindustry.com/subscribe

GOLF COURSE
INDUSTRY

extremely important in just managing organic matter."

There's no one-size-fits-all topdressing program, says Moeller, but a superintendent should topdress as often as necessary based on the plant growth. For most courses he visits, he says, that falls around once every one to three weeks.

The best putting greens go weekly with a light dusting of sand or once every two weeks depending on the budget or time, Sorochan says. "That's always filling in those little imperfections and keeping that area smooth," he adds.

Carter's team topdresses right along those guidelines, with a light application once or twice a week if necessary to keep organic matter diluted so the grass doesn't get spongy, he says. Though players' first association when they see sand on the green is aerification, it lets the green putt more smoothly and receive a ball better.

Like topdressing, a nitrogen nutrition program should be spoon fed in smaller applications on greens. "You want light, infrequent nitrogen," Sorochan says. "It's like eating three balanced meals a day versus eating a huge breakfast and trying to get through the day. Maybe a little bit of nitrogen every seven days, so you don't get those peaks and valleys in growth."

Moisture management also benefits from frequent attention, says Moeller. In areas of the country without much rain, superintendents need to be on their guard and hit hot spots on the greens as quickly as possible, but all superintendents should

use moisture meters with evapotranspiration (ET) information to dial in water requirements.

To find those hot spots, a superintendent can turn off the irrigation and let the greens dry down. Put on a pair of polarized sunglasses, and hot spots in the green will show up more clearly, Sorochan says.

Superintendents should base irrigation on the volumetric water content of the root zone, measured by a soil probe. If the turf starts to wilt at a measurement of 14 percent volumetric water content, the green should be watered when that measurement lowers to about 17 percent, until it reaches about 20 to 22 percent, or about where the roots are. "You want to keep it just above wilting to what we call 'plant available water,' which is 5 to 10 percent above whatever the wilting point is," Sorochan says.

But it's impossible to tell if a maintenance plan is working if there isn't any way to measure results. Beyond Stimpmeter readings, Moeller recommends collecting data and creating a scorecard with targets for each green for smoothness, trueness and consistency, as well as speed.

"Where I've seen it done successfully, they took clippings from the same green every day. They built their dataset and started to understand where the greens were," Moeller says. "They didn't start making decisions from it instantly, but once they had a competent dataset, they really started to see how the little adjustments they could make had an impact." GCI

Hit diseases in as many ways as possible, all season long.


Secure® fungicide is the first multi-site contact fungicide in the market in over 45 years. The only registered fungicide for turf in FRAC group 29, Secure has no known resistance and low risk of future resistance. With 12 applications of Secure, when used in rotation with Daconil Action™ fungicide, you can create a solid foundation by protecting your course with a multi-site contact, all season long. For a sure shot against 10+ diseases including resistant dollar spot, brown patch and leaf spot, make Secure your foundation fungicide.

See Secure perform in a time-lapse video at GreenCastOnline.com/Secure



 **SECURE®**
Fungicide

syngenta®

 @SyngentaTurf

©2014 Syngenta. Important: Always read and follow label instructions before buying or using Syngenta products. The label contains important conditions of sale, including limitations of remedy and warranty. All products may not be registered for sale or use in all states. Please check with your state or local Extension Service before buying or using Syngenta products. Daconil Action™, the Alliance Frame, the Purpose Icon, and the Syngenta logo are trademarks of a Syngenta Group Company. Secure® is a registered trademark of Ishihara Sangyo Kaisha, LTD. MW1LGG4036-P1 8/14

TM

CLIMATE change

The Olympic Club created a reliable agronomic program to handle the San Francisco Bay's unique weather palette.

By **Guy Cipriano**

The Olympic Club features 45 holes, including the nine-hole par-3 Cliffs course. Summer conditions, which rarely dip below 50 or exceed 70 degrees, are "right in the wheelhouse of cool-season grass growth," director of golf course maintenance operations Troy Flanagan says.

Mornings on the 365 acres between an ocean and lake, southwest of downtown San Francisco, are one-jacket affairs. Sometimes handling the morning requires two jackets. Hats and gloves sit in carts. Packing a hoodie nets body temperature bonus points – and this in the middle of summer.

Guests experiencing the prized turf and admiring the seclusion provided by towering cypress and pine trees for the first time are noticeable. They often arrive in July wearing short-sleeved golf shirts and leave with new jackets purchased from the golf club.

No matter how many mornings one has spent maintaining golf courses, few surroundings mirror what early risers encounter at The Olympic Club. The 45-hole facility offers views of the Pacific Ocean, Lake Merced and Golden Gate Bridge. The foreground equals the background, as numerous spots on the Lake course determined fates of hundreds of golfers participating in five U.S. Opens. Members, guests, touring professionals and employees develop instant and deep connections with the land.

"You are honored every day that you can be out here just knowing that you are not only maintaining this great piece of property that hosted so many USGA championships, but also one that the members love so much," says director of golf course maintenance operations Troy Flanagan. "I have never seen a membership have this much passion for their golf courses. I have worked at some great places, but the passion they have for The Olympic Club is

next to none."

Flanagan's tenure started in May 2014, when he moved to the Bay Area after eight years as the director of agronomy at Anthem Country Club in Henderson, Nev. A well-trained staff and frequent fog greeted his arrival. The foggy season begins with what Lake course superintendent Thom Irvin calls a "May gray" and extends into mid-August.

In its thickest form, the fog obstructs almost all views of the 18-hole Lake and Ocean courses and nine-hole par-3 Cliffs course. "I kind of describe it as if you are in the clouds," Ocean course superintendent Geoff Plovovich says. "The visibility can be less than 10 feet. It's strange. You hear a club hit a ball, but you don't necessarily know from where that happened." In its other form, the fog creates a layer thin enough to yield photogenic moments, adding further allure to an iconic venue.

Summer temperatures rarely dip below 50 or exceed 70 degrees. Last year, for example, Flanagan says he only saw the sun a "handful of days at most," in June, July and August. "It's not just foggy," he says. "It's



The 18th hole of the famed Lake course at The Olympic Club. The course, which has hosted five U.S. Opens, features tight fairways, steep bunkers and bentgrass greens.

drippy wet. When I say I wear a winter coat every day of the year, I'm not exaggerating that much."

The summer conditions are "right in the wheelhouse of cool-season grass growth," Flanagan adds. Greens are bentgrass, fairways are primarily *Poa*. Growth is further accelerated by an effluent water supply possessing nitrogen. More than 90 percent of the water used on The Olympic Club's golf courses is effluent,

according to a Corporate Social Responsibility report the club developed in collaboration with IMPACT360 Sports. To control growth on fairways, tees and approaches, Flanagan and his team apply the plant growth regulator Primo Maxx on a biweekly basis from March through October.

"You have to remember that we are in the middle of the perfect weather for cool-season turf growth," Flanagan says. "It likes to grow out here. Since we don't receive rain from May through September, we're essentially spoonfeeding nitrogen every time we are irrigating with the effluent water. We're on a very aggressive Primo package to help us control the excessive growth."

Irrigation, especially during the summer, is one of the biggest challenges Flanagan and his team face. Blame it on the fog, not the five-year drought that ended earlier this year. Flanagan arrived in San

Francisco prepared to handle dry stretches because of his experiences in Nevada, and an ample effluent water supply helped The Olympic Club avoid crippling restrictions. Annual rainfall averages between 20 and 25 inches, but the fog often negates some benefits of making data- and forecast-driven irrigation decisions.

"At most places if you are able to look at the forecast and see that it's going to be sunny the next day or a certain temperature the next day, you kind of irrigate for that next day," Irvin says. "But you can't really when the fog is on the horizon and it's looming, and it can come any day and stick around for days at a time. We get much more reactionary in our watering processes. We try to halt as much overhead irrigation and go with hoses during the foggy part of the year."

San Francisco's microclimates are perplexing. Olympic Club members can wakeup,

"YOU HAVE TO REMEMBER THAT WE ARE IN THE MIDDLE OF THE PERFECT WEATHER FOR COOL-SEASON TURF GROWTH. IT LIKES TO GROW OUT HERE. SINCE WE DON'T RECEIVE RAIN FROM MAY THROUGH SEPTEMBER, WE'RE ESSENTIALLY SPOONFEEDING NITROGEN EVERY TIME WE ARE IRRIGATING WITH THE EFFLUENT WATER. WE'RE ON A VERY AGGRESSIVE PRIMO PACKAGE TO HELP US CONTROL THE EXCESSIVE GROWTH."

— Troy Flanagan



step on dry home lawns, drive 10 minutes to the golf course and hit shots from damp fairways. But Flanagan hasn't wavered on his desire to produce firm fairways on contrasting courses. The undulating fairways on the Lake course remain the same widths as the 2012 U.S. Open; the Ocean fairways are wider and flatter. Topdressing occurs monthly on both courses during the tournament season, resulting in seven to nine sand applications to fairways per year. The club owns a deep-tine aerifier, and Flanagan's team tries to use it monthly on each course. Fairways are also core aerified twice per year. Coastal wind and an aging irrigation system are among the reasons Plovanich says "we pull a lot more hoses than we did in the past" on fairways.

Intense scouting isn't as prevalent in Northern California as other regions because of moderate temperatures, but disease and pest concerns can arise on fairways and other surfaces. Two winter applica-

tions of Concert II, a fungicide containing a blend of active ingredients from Banner MAXX II and Daconil, are performed to control pink snow mold. Concert II is also applied twice in the summer to help control anthracnose. Using Apear with Daconil Action decreases summer leaf spot concerns on greens caused by a lack of sunlight and the stress associated with heavy play and frequent mowing and rolling. Daconil Action strengthens the plant and improves rooting, thus mitigating drought stress, Flanagan says. On the pest side, BTA has been spotted on both courses since Flanagan's arrival. Acelepryn will be applied in June to provide season-long control.

Flanagan, who entered the industry in the early 1990s, says advances by suppliers are among the reasons why facilities such as The Olympic Club can elevate the condition of playing surfaces. "Expectations have definitely gone up over the years," he says. "But the manufacturers – the equipment manufacturers, the chemical manufacturers, the fertilizer manufacturers – have really stepped up their game and allowed us to achieve amazing results."

Reliable agronomic programs are needed to handle a flurry of activity. Conditions in San Francisco are conducive to year-round play, with The Olympic Club regularly hosting big tournaments from May until October. The club has 975 golf members, and an additional 10,000-plus members with access to the courses through their affiliation with the athletic club. The relationship

with the USGA remains strong, and The Olympic Club will host the 2021 U.S. Women's Open on the Lake course. "My team's



Troy Flanagan

mentality is that you are always keeping the golf course as close to championship ready as you can, knowing that all we need is a few days to tweak it to get it to those standards," Flanagan says. "That's what we live by here."

Managing events and projects is a major part of Flanagan's job. Recent projects on the Lake course involved converting the rough on the Lake course from *Poa* to ryegrass and renovating bunkers to include drainage, aggregate and new sand from Idaho. Fine fescue was installed around all 57 bunkers. Continual enhancements, including adding fine fescue and native plants, are elevating the reputation of the Ocean course.

The next project is a major one – constructing a new maintenance facility on the same site as the existing structure. Work will entail moving 75,000 square feet of equipment, chemicals, fuel and other supplies to a temporary location on the property. And,

plans are being concocted to revamp the irrigation system before the U.S. Women's Open. "My time managing projects outweighs my time growing grass on the golf course," says Flanagan, who further honed his business and personnel management skills at the 2011 Syngenta Business Institute.

Flanagan leans on what he calls "a city of agronomists" to oversee daily maintenance. "They are the ones who do such a great job of executing the game plan," he adds. Irvin and Plovanich, a pair of Midwest natives, lead experienced crews on the 18-hole courses. Flanagan, Irvin and Plovanich are three of nine agronomic staff members with turfgrass science degrees. The club's general manager, Pat Finlen, is the former director of golf course maintenance operations and a past GCSAA President. When Flanagan needs an outside perspective, he contacts Syngenta technical manager Dr. Dean Mosdell, who provides guidance about fighting *Poa* and controlling growth on greens. The combination of skill and synergy, along with enthralling scenery, make working at The Olympic Club a memorable experience.

"It's non-stop here," Plovanich says. "That's why having this team is so important and that's why we have to work so closely together because there's so much going on. It's a lot easier to get everything done and get it done right when we are all working together." GCI

Guy Cipriano is GCI's associate editor.

MAINTENANCE SHOP TRICKS



Paul F. Grayson is the Equipment Manager for the Crown Golf Club in Traverse City, Mich., a position he's held for the past decade. Previously, he spent 8½ years as the equipment manager at Grand Traverse Resort & Spa. Prior to that, he worked as a licensed ships engine officer sailing the Great Lakes and the oceans of the world.



REEL TEST

To properly test the cut of a freshly adjusted reel, the test strip of copier paper needs to be very dry. Humidity in the air can be absorbed by the test strip, so I use a hair dryer to drive the dampness out of the paper. The hair dryer is less likely to set fire to the paper than a heat gun.



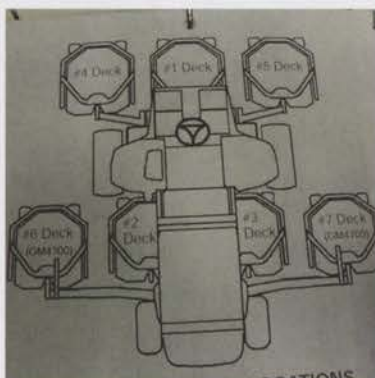
LABELS

Here is the adjusting knob on a well-experienced Toro cutting head. If there is any hope of people being able to do some of the tasks themselves, they need to read the labels. Engraved directions are easily refreshed by rubbing paint into the engraving and then quickly wiping off the excess paint. Let dry and they will be easy to read for a long time.



CHAIN GANG

Tow chains, log chains and lift chains get tangled when in a pile. Chains in small individual cardboard boxes last for a while but are hard to carry as the box changes to the shape of a bag under the weight of the chain. The best solution I have found is to use empty gallon paint cans with a bit of scrap hose as a grip on the handle.



SKETCH IT

In the service manual for our Toro GroundsMaster 4700-D there is a diagram that shows the factory numbering system for the mower decks. Being able to chat with tech support using their numbering system is helpful. I have marked the deck numbers on the deck motors.

TARTAN TALKS

Join Superintendent Radio Network for its monthly "Tartan Talks" podcast series examining the work, ideas and careers of American Society of Golf Course Architects members. Podcasts are available through www.golfcourseindustry.com, iTunes and GCI's bi-weekly Fast & Firm enewsletters.



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





Travels with Terry

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



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

DRAG MAT CARRIER

This 1993 Club Car Carryall-II Plus easily transports a 1-inch square steel drag mat or cocoa mat from green to green. It can also be fitted on the six other Carryalls. Two-inch angle iron, with the edges rounded-off where necessary for employee safety, was welded together from parts already in inventory. This lightweight carrier is mounted onto the dump bed using two $\frac{3}{8}$ -inch bolts on each side with flat and lock washers and wing nuts for a quick and easy installation and removal. The ends of the carrier are bent slightly upward to keep the drag mat in place, with the aid of bungee cords, during transport. Sand bags are put at the front of the dump bed as counterweights to keep the dump bed latches from stress from the weight of the drag mat and carrier. The carrier also has a gap intentionally left for the tailgate latches. It took less than three hours to design and build. Doug Marion, equipment manager, designed and built it at the Eagle Hills Golf Course in Eagle, Idaho. Jacob Sagasta is the new superintendent.



POWER SQUEEGEES

These two motorized squeegees for greens offer different options for use during tournament play, instead of using manual push-type roller squeegees, and for much easier ice/slush/water removal during the winter and spring months.

PUSH-TYPE

This 2013 John Deere 1200A Bunker Rake's front plow is equipped with a custom-welded metal frame bolted to it. The squeegee "blade" was made from a rubber Snow Cat track, which is flexible at $\frac{1}{4}$ -inch thick by 6-foot wide. Both ends of the squeegee are angled just like a floor-type push squeegee. The lever can distribute the amount of down pressure as the operator feels is appropriate. All the materials were scrap or in inventory. It cost about \$10 for hardware and about five hours to design and build. Ben Wilmarth, former superintendent at Osprey Meadows at Tamarack (Idaho) Resort, designed and built it. Wilmarth is now the assistant superintendent at The Club at SpurWing in Meridian, Idaho.



PULL-TYPE

The bunker rake was removed on this Cushman Groom Master and this custom-made squeegee was bolted to the hydraulic up and down framework. The 6-inch high by $\frac{1}{4}$ -thick by 6-foot wide rubber belt is bolted to the recycled conduit, where the ends were bent inwards with a heat gun. One-inch chain, 1 $\frac{1}{4}$ -inch square tubing and 2-inch angle iron were bolted to the conduit and then bolted to the bunker rake up and down mechanism. The operator can apply the correct amount of hydraulic down pressure as required. Also, a 40-pound "breaker bar" is laid on the 2-inch angle iron brackets for added weight. It took about 10 hours on and off to design and build. The materials were mostly recycled and the overall cost was less than \$50. Brandon Crim, superintendent, and Sam Davis, irrigation and spray technician, at the Boise (Idaho) Ranch Golf Course designed and built it.



(MORAGHAN continued from page 12)

thought you were absolutely crazy for going into golf, but you've done a really great job and we're proud of you." It sunk in after I finished laughing that they held their tongues and didn't try to deter me, which was great.

- Shortly after taking my first golf course superintendent position, I was taken back by how many people suddenly wanted to take me to lunch or drop off "things" (clothing, etc.) In a conversation with my father, he asked if any of these things would influence my buying decisions. I quickly and confidentially responded, "Of course not, never." He replied "good, but if you ever even hesitate when answering that question, then you should always decline whatever was being offered."
- There is no fault in taking pride in good work, but we can always strive to do and be better.
- "You're giving up a career in engineering to do what?"
- I replay in my mind words from my grandfather: "Do not forget the golf course is there to play golf on, let them play!" I know that sounds obvious, but there are times where I have caught myself being a protectionist wanting to hold play back during marginal conditions just to "let them go" with little damage doing so.
- On more than one occasion, he shared with me that I could accomplish anything in life if I focused upon it mentally and worked hard for it.
- I was always told, "remember who you are doing it for." This had nothing to do with the golf industry, but I think it is perfect for us. So many times, superintendents get caught up in needing to get to 12 on their greens when the members/customer can't tell the difference. That extra mow or roll, who is that for? My father told me "If you are doing it for yourself, you're doing it wrong."

- My father would remind me, "Manage the course like you own it, but never forget they (the members) own the facility." Sounds basic, but those words pop in my head often in many different circumstances.
- "Those greens are not yours to experiment on," so that is why I have so much nursery turf to experiment with.
- The odds of accomplishing great things increase tremendously with excellent preparation.
- When I was much younger, he said to me, "The people you are working for (members) are very powerful people in their own respective fields. When around them, keep your mouth shut and your ears open." I still struggle to follow the first part of that advice.
- A good friend offered a classic bit of wisdom from his father:
- Most of the advice I got from dad related to hunting, fishing, and chasing women. When hunting rabbits, squirrel and birds, "if you take more than one shot, you bought your meat." When fishing, "don't let the game warden catch you." Can't print the women stuff. After getting beat up after school, it was "fight your own battles" and "you have to fight the bully." When it came to employment, it was "whaddya wanna do that for? Old so-and-so is crooked as a dog's hind leg and he's rich. And it's all legal. Become a lawyer."

Of all the superintendents I know whose fathers I've met, one of the greats is Bill Emerson, long-time superintendent from Maryland and Arizona, now retired and recently inducted into the Arizona Golf Hall of Fame. Here's how he responded to my request:

- Persistence to purpose leads to success: Life lesson? Have the courage to follow the plan.
- You cannot maintain a course around players' lack of availability: Life lesson? Be careful who you listen

to about conditions.

- Your friends are those who are around you when times are tough, not the ones who surround you when times are good: Life lesson? True friends are with you all the time.
- Spots on a leopard never change. Life lesson? People do not really change, just their commitment to you.
- And my favorite Bill-ism: "Sir, I can do anything you want me to do to this golf course. But there is nothing I can do for your inability to hit a golf ball!"

Happy Father's Day. GCI

Were You Featured In This Issue?



Reprints enable you to reuse your article and simply place it into the hands of your target audience.

Having been featured in a well-respected publication adds the credibility of a third-party endorsement to your message.

Give yourself a competitive advantage with reprints.

800-456-0707
reprints@gie.net

(FLOOD continued from page 24)

times. "When your hand turns purple when you're watering, it's maybe time to blow it out," Carrington Bryant says.

The winter was the "mildest in the last 10 years," Shumate says. The entire team took Christmas off, but some form of work has occurred every other day since the flood. Contractors returned to The Greenbrier this spring and frantic activity resumed. Long weeks – think 90 to 100 hours – have been common since construction commenced. "It's a constant thing," Anderson says. "It never slows down. Every day is like you don't have time to catch your breath. There is always something going on."

A mid-April tour of The

"IT'S A CONSTANT THING. IT NEVER SLOWS DOWN. EVERY DAY IS LIKE YOU DON'T HAVE TIME TO CATCH YOUR BREATH. THERE IS ALWAYS SOMETHING GOING ON."

— CHRIS ANDERSON

Old White TPC and Meadows revealed courses bracing for summer golf. Greens and fairways featured healthy turf with pleasant hues. Crews spent a comfortable morning placing sod around The Old White TPC tees and mowing stripped patterns into the Meadows fairways. "When I got here and looked at the golf courses that next day, I thought there's no

way we will ever get this back together," Allen says. "And, look, we are almost there."

Pride and humility prevent employees from disclosing the extent of their personal exhaustion. Reassembling a golf course is grueling, stressful and at times thankless. Natural disasters, though, push determined humans to unthinkable limits. Greenbrier Classic prac-

tice rounds begin July 3. A countdown clock in the maintenance facility break room reminds employees of how close they are to achieving a feat that will boost the morale of a recovering region.

"I think about it every day," Pope says. "It's a huge motivational force because it will ultimately

show the resolve of the West Virginia people. I'm not a West Virginia native. I want to have it for those guys because I know how important this job is for them and how important it is for them to do say they did. It's a monumental task to rebuild, but it shows you how strong the community is to get together and get this done from start to finish." **GCI**

In addition to The Old White TPC, Greenbrier officials decided to rebuild the Meadows course following last summer's flooding.

FOR SALE

Discount Small Engines & Parts

Small engines & parts
from Briggs & Stratton, Kohler,
Tecumseh, Robin and more.
www.smallenginesuppliers.com

Also, look up your own parts
and buy online at
www.smallenginepartssuppliers.com

FACTORY DIRECT **CLICK HERE NOW!**

**PATCHES ARE HOT! LET US MAKE
YOUR CUSTOM GOLF PATCHES TODAY!**

800.872.8778
Quotes@PacificEmblem.com
SMALL ADS = LOW PRICES
PacificEmblem.com

MAXIMIZE YOUR ADVERTISING DOLLARS

Place a GCI Classified Ad
Contact Bonnie Velikonya
at 800-456-0707
bvelikonya@gie.net

HELP WANTED

Golf Course Construction Personnel Needed

Illinois based company seeking
experienced/motivated
construction project managers,
field superintendents,
estimators, shapers, and
operators. Must be willing to
travel.

Please email resume to
Jim Lohmann
jlohmann@lohmann.com

Golf Creations
www.golfcreations.com

MERGERS & ACQUISITIONS

BUYING OR SELLING A GOLF COURSE?

Leaders in Exclusively Marketing and
Selling to the Golf Course Industry

NATIONAL
GOLF & MARINA™
PROPERTIES GROUP

Eddy A. Dingman
O: 847.313.4633 | C: 847.987.6626
eddy@nationalgolfandmarina.com
www.nationalgolfandmarina.com

- Golf Courses
- Golf Developments/
Communities
- Acquisitions



SEEDS

NATIVE SEEDS

Largest supplier of native seeds
east of the Mississippi. Over 400
species of grass and wildflower
seeds for upland to wetland
sites. Bioengineering material for
riparian areas and erosion control.

Contact **ERNST SEEDS** today.
www.ernstseed.com - 800/873-3321

MERGERS & ACQUISITIONS

MILLER MANAGEMENT ASSOCIATES

The Carolinas and TN brokerage leader
CONFIDENTIAL COURSES
AVAILABLE
www.mmagolf.com
brett@mmagolf.com
828-775-7765

View Classifieds online at www.golfcourseindustry.com

AD INDEX

ADVERTISER	WEBSITE	PAGE
1st Products	1stproducts.com	10
AMVAC	amvac-chemical.com	5
BASF Corporation	betterturf.basf.us	11
Billy Goat Industries	billygoat.com	42
BioPlex Organics	bio-plex.com	10
E-Z-Go	cushman.com	9
FMC	fmcprosolutions.com	13
Greenworks Tools	greenworkcommercial.com	2

ADVERTISER	WEBSITE	PAGE
Grigg Bros.	griggbros.com	25
Jacobsen	jacobsen.com	60
John Deere	JohnDeere.com/Golf	18, 19
Little Giant	lg-outdoor.com	33
NuFarm	nufarm.com/us	31
PBI Gordon	GordonsProfessional.com	35
SePRO	stewardsofturf.com/water	27
SipcamRotam	sipcamrotam.com	59

ADVERTISER	WEBSITE	PAGE
Swift Allmobile	myallmobile.net	43
Syngenta	greencastonline.com/secure	47
Target	target-specialty.com	45
Toro	toro.com	29
Trojan Battery	trojanbattery.com	7
Turf Diagnostics	turfdiag.com	42
U.S. Battery Manufacturing Co.	usbattery.com	39

THAT'S WHAT FRIENDS ARE FOR



Pat Jones is editorial director and publisher of *Golf Course Industry*. He can be reached at pjones@gie.net or 216-393-0253.

As if you needed any more proof that I am an old fart, consider this: 2017 marks my 30th anniversary of “working” in this crazy little industry. I was 25 when the nice folks at GCSAA hired me to be a reporter for GCM in 1987. I turned 55 a few months ago and I’m still shocked that I get paid to do any of this.

People ask how many articles and columns I’ve written over three decades. I honestly have no clue. Maybe 600-700? I’ve been to 29 GCSAA/GIS shows (I missed 1997). I’ve given at least 250 talks along the way. I’ve visited nearly 700 golf courses, including about 85 of the *Golf Digest* Top 100. And I’ve attended about 80 professional golf events, including 35 majors, Ryder Cups and President’s Cups.

Much has changed in 30 years but the way we host and conduct major championships and other big televised events has evolved most dramatically. It’s gone from bringing back a few former workers and friends (ala Paul Latshaw the Elder who pioneered the idea) to a literal army of workers, including staff, former staff, buddies, local volunteer supers, out-of-state volunteer supers, and, of course, ambitious assistants and students looking to add “major championship experience” to their resumes.

The concept is simple. The host superintendent gets several thousand hours of free labor and expertise in

exchange for the experience of being part of a major championship. For many, it’s a transactional thing: I will come work at your golf event so I can tell potential employers I’ve worked at a major. For others, there are less tangible but even more important benefits to volunteering. I’ll come back to that in a bit.

The championship agronomy team concept has also grown into a logistical monster. It takes a lot of work and money to organize, feed, shelter and clothe 100+ folks for a weeklong event. (Imagine Pinehurst with back-to-back Men’s and Women’s Opens stretching over two weeks.) In the old days, you just showed up to work and maybe you could sleep in the maintenance facility or share a cheap hotel room with six other guys. You might get a hat or shirt if you were lucky.

Today, there is housing, uniforms, catered meals, entertainment and swag galore. And that all costs a lot. Consider for a moment that one volunteer for a big event will usually be on site for a week (five hotel nights), needs at least three shirts, jackets, hats and other stuff, and gets fed three squares a day. When you add it all up, each of those free volunteers actually costs a thousand dollars or so.

Who pays for that stuff? Well, it’s mostly the same industry leaders who sponsor and underwrite a lot of what we do in our community. The Big 3 iron manufacturers, the big chemical

and fertilizer companies, and the distributors who serve the course itself. I’ve talked with a lot of them and, increasingly, they’re being asked to write five-figure checks (or otherwise ante up) for tournament support. The thinking is it’s a great opportunity to support an important customer during their time in the spotlight ... but they also get some time to impress and bond with those volunteers.

So, the big championship process has turned into big business for host courses, volunteers and the industry that serves it. That’s awesome ... but sometimes the most important things get lost in the bigness. How?

Last month, I zipped down to visit my friend Mike Johnson of Vereens in Myrtle Beach and he was kind enough to take me up to Wilmington, N.C., to see a bit of the Wells Fargo Championship at the fantastic Eagle Point GC. I saw many superintendent and industry friends there, including, of course, the host super Craig Walsh. Since I was there, Craig decided to put me on the spot a little and say a few words to the 100 or so staff and volunteers gathered in the maintenance tent.

My message to those folks working their butts off to present a great course, get career experience and learn great things about our industry should also remember to do one more thing: Build great friendships.

The best thing I’ve learned about our business in the past 30 years is that friendships really, truly matter. I urged every one of those volunteers to use their time at the Wells Fargo event to make new friends, create relationships and build lifetime bonds. Yup, it’s great to have an event like that on your resume, but it’s even better to expand your circle of friends.

So, don’t get so caught up in your career or the demands of everyday life that you forget what really matters. It’s about the people. You’re never going to make a fortune doing this ... but you can always get rich in friends. **GCI**

DO THE MATH.

Endow 2SC = Great Value

SipcamRotam's Endow 2SC provides 2.5x more azoxystrobin than **Heritage® TL** and 4x more than **Heritage®** in every gallon of Endow. You can have high performance turf at a great value. It's simple math.



EndowTM 2SC

Fungicide

©Sipcam Agro USA, Inc. Endow is a trademark of Sipcam Agro USA, Inc.
Heritage is a trademark of a Syngenta Group Company.
Always read and follow label directions.



SipcamRotamTM

www.sipcamrotam.com

877.898.9514

TWO PASSES, A THING OF THE PAST



JACOBSEN

Reduce aeration time and improve turf condition with the Jacobsen GA600 tractor-mounted aerator. The Jacobsen AerStrike™ 4 tine attachment system produces optimal hole spacing and a diamond pattern that reduces aerification time and improves turf condition, all in a single pass. The GA600 with the PerfectStrike™ tine arms ensure that the tines enter and exit the turf perfectly straight. Contact your local Jacobsen dealer today for more information.

1.888.922.TURF | www.jacobsen.com



AerStrike 4 Tine attachment System

Discover the next generation of aeration with the new Jacobsen GA600, the industry's only aerator that performs deep and conventional aeration in a single pass.

©2017 Jacobsen division of Textron. All rights reserved.