

# Golfdom

12.15

A member of the crew at Whistling Straits readies No. 5 for the first day of the 2015 PGA Championship.



## Reflections on 2015

From Donald Trump to WOTUS, a look back at the famous of '15.

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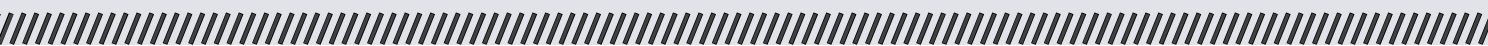
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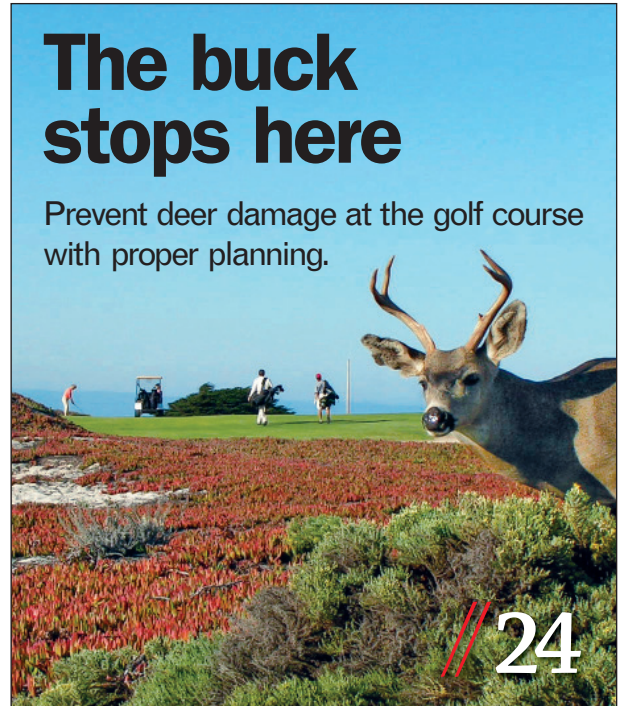
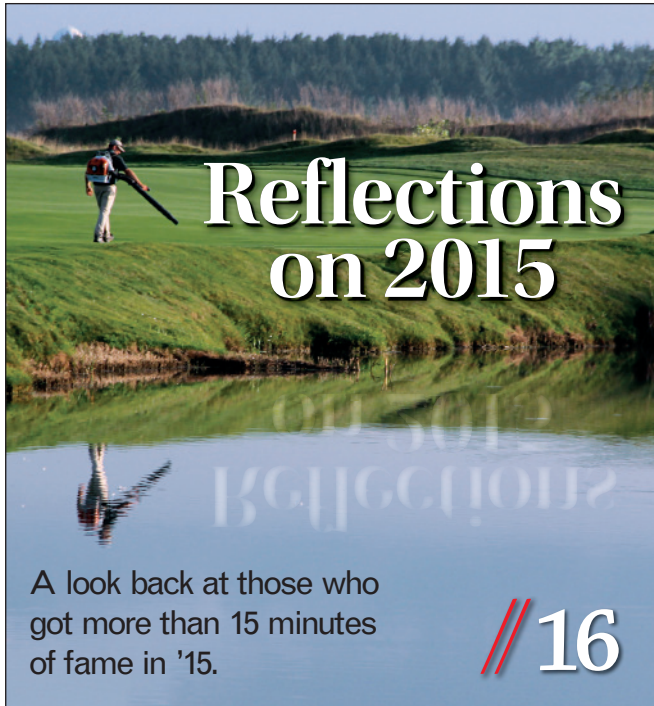


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"Time is moving faster than ever, just like my parents used to tell me when I was a kid. And now I'm the parent, telling my kids the same things I didn't listen to when I was young."

**SETH JONES**, *Editor-in-Chief*

trips. The Masters, the U.S. Open, the PGA Championship... the Golf Industry Show, the *Golfdom* Summit, the Sports Turf Managers conference... Pinehurst, Olympic Club, Bandon Dunes...

It all went by so fast. I met so many cool people, saw so many amazing things.

Even more exciting than the business trips were the family trips. I took the family for a week to San Francisco, and this fall I took both kids golfing and both kids fishing, together, for the first time. Evey is 8, Boyd is 4. I didn't know if Boyd was old enough to be out there on the golf course or trusted with a sharp fish hook.

Old enough? He might actually be the ideal age. The +4 I shot at the par-three course with both kids in tow might have been the most enjoyable round of my life. The two of them sitting together on a rock, casting into the water? One of my best fishing trips, even though our only catch was a Styrofoam cup.

In this month's cover story we celebrate the year that was. I hope you'll agree that 2015 was a great year. I certainly enjoyed it! And I realize that yes... it went by much too fast.

I can't get back those minutes that Coach Barker left me to warm the bench in 1996, but I definitely plan on making the most of the minutes I get in 2016.

Contact Jones at [sjones@northcoastmedia.net](mailto:sjones@northcoastmedia.net) or via Twitter @SethAJones.

## Fast and furious '15

I have recently been asked to be a guest speaker at a few different events. First was the Virginia GCSA Fall Conference. About a week later I was asked to return to Kansas University, my alma mater, to speak to two journalism classes and then sit in on some networking roundtable events with the students. And just last week I was invited to an early-season practice to speak to the varsity boys basketball team at Mulvane (Kan.) High School.

For the VGCSA, I gave a little background on the rich history of *Golfdom* magazine, and then gave some "behind-the-scenes" accounts of a few of our recent cover stories. That got a good discussion going, and I even came away with a few great ideas for 2016 cover stories.

For the kids at Kansas University and the kids on the Mulvane basketball team, I just spoke off the cuff about my experiences at both places.

The boys basketball team was easily the most ironic of my speaking invitations. Yes, I graduated high school from there, and I was on the bas-

ketball team. But it's not like I hold any scoring records for the team. Actually, the towel boy may have gotten more playing time than I did my senior year.

There was one recurrent theme with the KU kids and the Mulvane High kids: enjoy the moment.

I told the kids at both KU and at Mulvane High that even though it might seem like school is dragging out, in retrospect it goes by fast. All those minutes warming the bench for the Mulvane Wildcats (minutes I could have been playing) definitely went by fast.

My four years at Kansas

University were agonizing at times. I remember one semester for journalism school I had to come up with a new story every week about the Natural History Museum. I almost went mad.

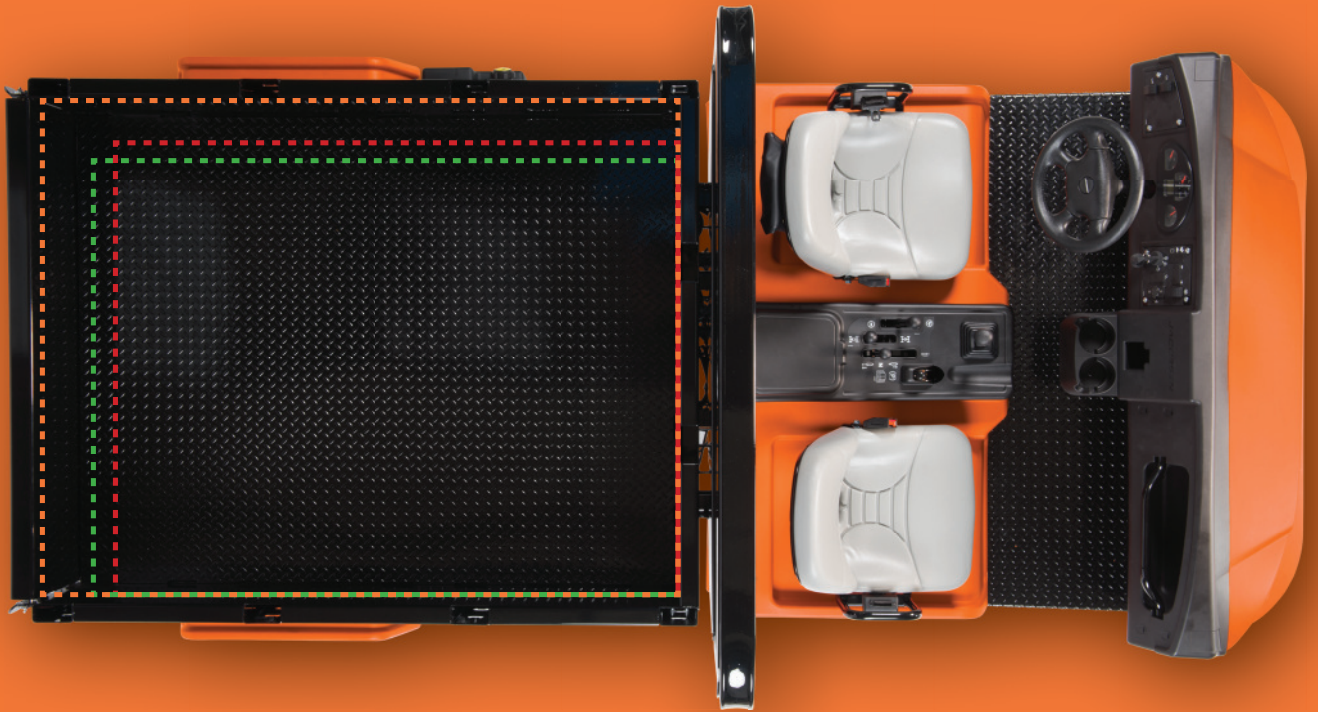
Now that I'm older? That went by in the blink of an eye.

Just like this last year did, I'm now realizing. Maybe I need to take my own advice.

Time is moving faster than ever, just like my parents used to tell me when I was a kid. And now I'm the parent, telling my kids the same things that I didn't listen to when I was young. History repeats itself.

In 2015 I took 24 business

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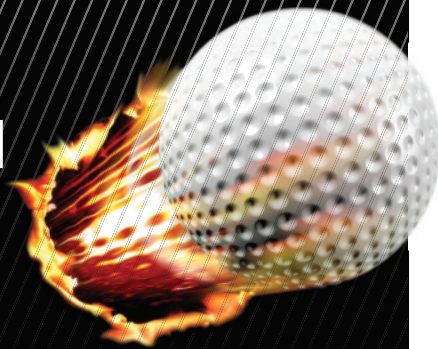
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# Starter

NEWS, NOTES AND QUOTES




## // GOLDEN GOPHERS



Brian Horgan, Ph.D., University of Minnesota, (left) pictured with the USGA's Rand Jerris, Ph.D.

## JERRIS TALKS USGA/MINNESOTA PARTNERSHIP

BY SETH JONES // Editor-in-Chief

 Shortly before press time last issue, the USGA announced a 5-year research partnership with the University of Minnesota. We caught up with USGA's Rand Jerris, Ph.D., senior managing director for public services, to learn more.

**Golfdom:** Why did the USGA specifically choose the University of Minnesota for this partnership?

**Jerris:** Given the breadth of what we want to study about the game, we realized that if we were going to be successful, we really needed a partner. It was fortuitous the university approached us at the same time. What really impressed us is the breadth of disciplines that the University of Minnesota represents; it's one of five comprehensive research universities in the country, and they were prepared to put on the

table any aspect of the university.

**Golfdom:** How do you see Minnesota helping out on a problem like pace of play?

**Jerris:** Traditionally we think of pace of play as a player experience issue, but there are agronomic components, economic components, probably even psychological and sociological components. One of our first projects in 2016 will be the relationship between green speeds and pace of play. Anecdotally, people have said faster greens mean longer rounds, but no one has quantified that. There are a whole series of interconnected questions. By looking at it in a multi-disciplinary way, we can study the economics of it, the player preferences of it, the agronomic and environmental issues that come

*Continued on page 9*

## // A NEW AQUA-MAN

### AQUA-AID NAMES MARK LANGNER DIRECTOR OF BUSINESS DEVELOPMENT

Aqua-Aid, Inc. has appointed Mark Langner, CGCS, as its new director of business development.

"Mark's unique background and his experience managing a variety of grasses in a research surrounding will be a huge benefit to our distributors and end users around the world for all aspects of our business," says Sam Green, chief operating officer of Aqua-Aid.

Langner has been the director of agronomy at FarmLinks Golf Club in Sylacauga, Ala., for the past 12 years. During his tenure at Farm Links, Langner has been involved in hosting more than 10,000 turf managers from around the U.S. as well as the world.



Mark Langner

"Having shared turfgrass management ideas/solutions with others in the industry while at FarmLinks, I look forward to sharing my experiences and seeking solutions with turf managers in their environments," Langner adds.

## // #WINNING

### GEORGIA GCSA NAME DSA WINNER

Wade Thomas, director of greens and grounds at Idle Hour Club in Macon, Ga., will receive the Distinguished Service Award from the Georgia GCSA.

Thomas served 12 years on the Georgia GCSA board of directors and was president from 2002 to 2003. He was also the first chairman of the Georgia Golf Environmental Foundation and served that organization's board of trustees. Thomas also served on the former Georgia Turfgrass Association board for more than a decade.

Since arriving at Idle Hour in 1994 he has hosted many significant events, including three Georgia State Amateur Championships, and was the Georgia GCSA's Superintendent of the Year in 2007.

## // GOLDEN GOPHERS



"This agreement will further the USGA's mission to apply fact-based research and deliver solutions back to the industry, particularly in three areas: the game's cost, the time it takes to play and golfer enjoyment," says USGA Executive Director Mike Davis.

Continued from page 8  
into play... so it becomes a much more complex question.

**Golfdom:** Do you think the USGA will mainly look to researchers, or could there be a 200-level class called "Analyzing Pace of Play?"

**Jerris:** We have access to the full assets of the university — from their 4,000 professors to their 50,000 undergraduates — to conduct substantive research and expand the bandwidth of the USGA.

**Golfdom:** How close are these first projects to getting going?

**Jerris:** We're already in the process of formulating the research plans for our first two projects, the pace of play and green speeds project, and we're also looking to supplement the tools superintendents and owners/operators have to monitor water. We're looking at things like, can we create a national evapotranspiration monitoring network that would allow any superintendent to have access to localized ET data that they

don't have? ET monitoring stations are expensive, but there are ET monitoring stations in all sorts of different industries. Could we pull that into a nationwide platform that would allow any superintendent to have accurate, timely ET data specific to your region?

**Golfdom:** The USGA is a great partner to so many groups in our industry,

including this magazine... how should other universities view this partnership? Should they worry that the USGA is less likely to partner with them now?

**Jerris:** We're increasing our funding for research. The

turfgrass research grants program that started in 1983 has provided more than \$40 million in funding to the university community. That commitment is completely intact, and we hope to grow it in the coming years. (The Minnesota) partnership is supplemental to that program. This is simply allowing us to look at a broader range of topics beyond turfgrass and environmental research.

**"We have access to the full assets of the university — from 4,000 professors to 50,000 undergraduates."**

## // TEE TIME HOTLINE

### PGA OF AMERICA, NGCOA FORM TEE TIME COALITION

The PGA of America and the National Golf Course Owners Association (NGCOA) announced a partnership to form the Golf USA Tee Time Coalition.

The coalition, designed to provide education for golf course owners, operators and PGA members and serve as an industry monitor for compliance of third-party online tee time providers, will engage companies that publicly support the Tee Time Guidelines unveiled last June by the NGCOA and endorsed by the PGA of America.

"This coalition demonstrates a strong commitment to ensuring those who market our industry's inventory are engaging in proper business practices that are helpful — not harmful — to those who supply the inventory," says NGCOA Chief Executive Officer Jay Karen.

The Golf USA Tee Time Coalition will employ a dedicated compliance officer based at the NGCOA's Charleston, S.C., headquarters and will feature an Advisory Council and a Compliance Hotline to report violations against the NGCOA guidelines.

## // MENTOR OF HUNDREDS

### CLARK NAMED USGA GREEN SECTION AWARD WINNER

The USGA has named Bruce Clark, Ph.D., Rutgers University, as the recipient of the 2016 USGA Green Section Award, recognizing his service to the game of golf through his work with turfgrass.

Clarke is the director of the Rutgers Center for Turfgrass Science. His research and Extension programs focus on the cause and control of turfgrass diseases and integrated pest management strategies to reduce fungicide use. His work with the biology and control of summer patch and anthracnose, and his introduction of effective cultural management and fungicides, are some of the most important achievements affecting the playing conditions of golf courses worldwide.



Nick Janovich @njanovich 12h

Just read @Golfdom cover2cover.

Great pieces-- WOTUS, manufacturer trips, bunker liners, Keith Happ tribute by @GlobalTurf. All well done!



# Golfdom Gallery



**1 Keep the camera-shy away** A *Golfdom* team member walks up to you at an event. What do you do? The obvious answer is gather for a group photo, and that's exactly what (L to R) Ian Grove, Residex, Mark McCaughan, Residex, and Jeff Holliday, CGCS, Salisbury Country Club, Midlothian, Va., did while at the Virginia GCSA Fall Meeting.



**2 Making Pinehurst friends** With two of Pinehurst (N.C.) Resort's finest caddies on each end (L to R) Matt Hayes, director of athletic facilities at Boston College, Chestnut Hill, Mass., Gregory Nicoll, VP of sales and marketing for golf, Harrell's, Brad MacDonald, superintendent, Granite Links Golf Club at Quarry Hills, Quincy, Mass., Charles Bramhall, sales representative, Harrell's, finish up a round on Donald Ross' masterpiece No. 2 course.



**3 Semper Fi** Two proud members of the U.S. Marine Corps make an appearance at the Virginia GCSA Fall Meeting to collect items donated to the Toys for Tots Foundation.



**4 No puparazzi here** Seth Jones, *Golfdom* editor-in-chief, and Joe Volk, director of golf facilities, Chagrin Valley CC, Chagrin Falls, Ohio, pose for a nice photo, but course dog Crocket gives the cold shoulder.

**5 Company policy** *Golfdom's* parent company, North Coast Media, loves golf. A love of golf is basically a requirement to be hired here. This group of NCM employees play a recent round at Nemaocolin Woodlands Resort in Farmington, Pa.



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"I plan on going to all the majors next year. Card-carrying turfheads can get tickets, so we just need to get there. Now please go to my 'Go fund me' page because I need to buy a jet."

**STEVEN WRIGHT, CGCS**, Pine Tree Golf Club, Boynton Beach, Fla.

## 2016: One for the books

I'm no Nostradamus, but I thought I'd step into Swami land with a few predictions for 2016.

- Barack Obama is still president... until January 2017. I know... tick-tock, tick-tock.

- **Donald Trump is still rich, same with the Clintons. No matter what, it's a no-lose scenario for them. As for the rest of us, not so much.**

- Tom Hanks wins an Oscar. Stretch, I know.

- **"Star Wars" makes billions at the box office. (It's already made millions and it's not even out yet.)**

- Caitlyn Jenner wants to become a man again. It's not possible... is it?

- **Twitter and Facebook merges and shares all of our information. It becomes known as Twitbook, and provides us all with 4 million followers and is hacked daily.**

**Now for the serious stuff:**

- NCAA football championship: The Baylor Bears vs. the Alabama Crimson Tide. Baylor wins 67-43. Of

course Baylor wins. Dr. Pepper started in Waco, Texas. That's reason enough. Also, my daughter is a Baylor grad and that's good enough for me. Sic'em Bears.

- **Playing in Super Bowl L, otherwise known as Super Bowl 50 (logo issues), are the Green Bay Packers and the New England Patriots. The Patriots win, Tom Brady is finally free of all controversy and retires on top. Bill Belichick, on the other hand, is arrested for using a drone to spy on the Packers' pre-game practice.**

- March madness is officially named "the best time of the year" by everyone. To golfers it really means Masters commercials. Which means the Masters is here, and that officially starts the *actual* best time of the year. Kentucky has a chance. Or maybe Duke, or North Carolina or Louisville. As usual, I'll be asleep — it will be too late for me to

watch the entire game.

- **Speaking of the Masters, Toro doubles the number of 5510s mowing fairways.**

- **As for the tournament, it's a four-way tie at the end of regulation between Jordan Spieth, Bubba Watson, Jason Day and Rory McIlroy. The best Masters ever, right?**

- The U.S. Open is the best in years. *Duh...* it's at Oakmont. John Zimmers and staff will outdo expectations. *Duh* again... it's Oakmont. Winner is the golfer who hits the most fairways, most greens and has the fewest putts. *Duh...* it's at Oakmont.

- **Somewhere in the U.S. there is a drought during the summer.**

- Somewhere else there is a flood. Not to wish this on anyone, but California could really use the rain. (Just not during the Golf Industry Show.)

- **There are 10 named**

**storms in the Atlantic because there always are at least 10 named storms in the Atlantic.**

- And the NBA champions are... I really don't care.

- **The Blackhawks win Lord Stanley's Cup... that's hockey right?**

- The 145th Open Championship has holes named Postage Stamp, Seal, Gyaws and The Monk. And that's just on the front nine. Anyone know what a Gyaws is? Ask a songwriter. Rory is on form and wins by 8.

- **The PGA Championship at Baltusrol might be rainy. It won't matter, it'll be great. Phil Mickelson returns for one more dual with Tiger. Stop laughing.**

- The United States wins the 2016 Ryder Cup at Hazeltine. About time. I plan on going to all the majors next year. Card-carrying turfheads can get tickets, so we just need to get there. Now please go to my 'Go fund me' page because I need to buy a jet.

- **Cubs win the 2016 World Series. Joe Maddon plays the coach with a great young team. (They almost got there this year except for that Murphy guy with the Mets.)**

- GIS show is well attended. It's in San Diego, people. San Diego! Think about it; SoCal in February.

*Editor's note: all of these predictions were made as of the Nov. 25 publishing date.*

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“The *L.A. Times* reported one Beverly Hills estate was using 11.8 million gallons of water per month. This is definitely not the only abuser, and the article hinted that the annual posting was a sort of status game to see how they ranked in use (or abuse).”

**JOEL JACKSON**, Senior Contributing Editor

## From the Sunshine State to the Golden State

**T**his column deadline really snuck up on me. You say, “Well, Joel, why didn’t you plan ahead?” Well, folks, I did, but this time I’ve got a good excuse — my wife and I packed up our Orlando, Fla., home of 37 years and moved cross country to Sherman Oaks, Calif., to live near our daughter now that I’ve retired from my Florida GCSA duties.

Happily, I’m still a contributing editor for *Golfdom*, so I’ve got that going for me. I’ve just changed my base of operations, from one golf hub to another.

Since I’ve become a “Left Coaster,” I thought I’d reach out to the GCSA of Southern California to see what’s on the agenda. Cyndy Neal, executive director of the GCSASC and Hi-Lo Desert chapters, sent me a welcoming email with several upcoming events that I hope to make. I’ve got my *Golfdom* hat on and I’ve hit the California ground running.

Neal mentioned their January event is the annual joint meeting with the USGA, Southern California Golf Association, Professional Golfers’ Association and Club Managers Association of

America. I definitely want to make that event to meet and greet the movers and shakers of the southern California golf community and get a handle on all the issues facing our industry here.

Meanwhile, drought conditions linger, and while most southern Californians voluntarily reduced water use and even exceeded mandated reductions, some glaring examples of disregard for the common good are being called out in the *L.A. Times*. Beverly Hills, that bastion of the rich and famous, is gaining infamy for its failure to meet the required reductions. One estate was reported using 11.8 million gallons of water per month. This is definitely not the only abuser, and the article hinted that the

annual posting was a sort of status game to see how they ranked in use (or abuse).

Because golf courses are always targets for finger pointing when it comes to environmental issues, I looked at the average annual water use for California golf courses. It was roughly 90 million gallons per year before the cutback mandates.

That estate uses 141.6 million gallons per year! At least golf courses have taken water conservation seriously and have reduced water use. The debate is whether or not to list the urban scofflaws publicly.

Moving on, how about our crackerjack U.S. Congress bringing up House and Senate bills to enact WOTUS, while at the same time “we

the people” have court orders pending review to delay its enactment based on confusing descriptions of exactly what constitute “Waters of the U.S.” and the lack of good science in describing why some of the restrictions are needed.

A few weeks ago the agriculture and green industries were breathing a sigh of relief when judges said our case had merits and deserved a hearing before implementation of WOTUS. While it’s politicians’ job to pass laws, given their track record of getting things done the past few years of deadlocked party politics, I think the courts could do a better job of sorting out the poor language of the act.

I’m through complaining now, so I’d like to mention a few benefits we’ve discovered from our move from the Sunshine State to the Golden State. First, the cool mornings and evenings are great for coffee, wine and chatting with our condo neighbors. The second benefit is improved health. I’ve lost 10 pounds walking up and down our condo stairs and to the grocery store and bank. Best of all, our daughter lives across the street and we get together several times a week for outings or home-cooked meals.

Until the next time, write your U.S. Senators and Representatives about WOTUS via the GCSAA Government Affairs website, and I’ll be back soon with an update from SoCal. Hey, I’m not really retiring, I’m just recycling!

**Joel Jackson, CGCS-Ret.**, is senior contributing editor for *Golfdom*. Email him at [flrjn@aol.com](mailto:flrjn@aol.com).



“In the course of evaluating my year end to-do list, I realized I had some unanswered (and completely fake) mail I hadn’t responded to yet from readers who apparently are not in the business.”

**MATT NEFF**, assistant superintendent,  
Wedgewood G&CC, Powell, Ohio

## Matt’s mailbag

**W**ith the end of the year rapidly approaching, many people are tying up loose ends so they can hit the ground running in 2016. In the course of evaluating my year end to-do list, I realized I had some unanswered (and completely fake) mail I hadn’t responded to yet from readers who apparently are not in the business. I figured I better get it knocked out now, especially since I couldn’t come up with a real topic this month. So I’ll get right to it.

**Q** I’ve seen “Caddyshack,” so I obviously have a pretty good idea of what golf course maintenance is all about. How many gophers would you say you kill in a given week?

**A** Dozens, my man, dozens. Our mechanic mounted a .50 cal on a Workman last winter, so it got real for those little guys in a hurry this season.

**Q** Is it true that women find you irresistible when you tell them you’re an assistant superintendent?

**A** Absolutely, especially when they realize how much free time and money you have for elaborate summer vacations.

**Q** Is it true that people in your business use work as an excuse to get out

of doing things like going to weddings of people they barely know or other similar gigantic wastes of time?

**A** No, that’s ridiculous. Here’s a question for you, reader. Why do people invite a bunch of their friends to birthday parties for their infant children?

**Q** Just a quick tip for you to pass along to your readers: Whenever I’m playing golf and am not close to a bathroom or some trees, I find that stepping behind my cart provides sufficient coverage, even if parked in the middle of the cart path.

**A** Um, no it doesn’t.

**Q** I have a few questions for you. Is there ever any reason to intentionally extinguish or otherwise dis-

pose of a cigar on a green or other playing surface?

**A** Nope, none – literally absolutely zero... ever. Just to be clear, NEVER DO THIS. Fidel Castro himself wouldn’t do this, and he’s a Communist.

**Q** Follow-up question. How about taking a divot out of a green, either out of anger or because my buddies wanted me to do my hilarious Happy Gilmore impression?

**A** You didn’t put a return address on your letter. Send me your address and I’m sure I could find a few people who would be more than willing to stop by and give you a detailed answer.

**Q** Last one. I like to employ the scorched earth approach to driving

range tee usage. For whatever reason, routinely leaving a 5-foot by 5-foot patch completely devoid of turf is oddly satisfying to me.

**Thoughts?**

**A** Never contact me again.

**Q** No offense dude, but you’ve been an assistant for a while now. Are you ever going to find a superintendent job?

**A** I would like to think so. If I keep working hard, I’m confident that I’ll eventually... wait... is that you, boss?

**Q** I just wanted you to know that you’re easily the best assistant superintendent in the world. You really know how to keep that grass green, dear. I love how your column is always well written and consistently combines your keen sense of humor and obvious intelligence. I also like how you don’t use profanity in it.

**A** Thanks, Mom. But to be completely honest, I don’t think profanity-laced trade magazine articles are common.

The last order of business for the year is to thank all of you for reading *Golfdom* and this column throughout the year. I’d also like to wish all of you a happy and safe holiday season and a successful 2016. To my fellow assistants out there who are trying to advance, hang in there. Next year could be the year, so don’t give up.

Matt Neff (mneff4@yahoo.com) is assistant superintendent at Wedgewood G&CC in Powell, Ohio.



Despite going winless in 2015, fan-favorite Phil Mickelson was a safe bet to be seen inside the ropes signing autographs.

# Famous in '15

BY KEN MOUM

WITH COMMENTARY BY SETH JONES AND MATT NEFF

If you're reading this article it means you made it through another year in the golf industry. Maybe you weren't as successful as Jordan Spieth, but you made it.

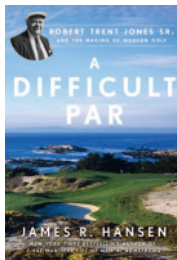
With the end of the year we take time to look back at the year that was 2015. We celebrate guys like Spieth, Tommy Anderson and Peter McDonough, commemorate gentlemen such as Keith Happ and Arden Spaltenberger, Ph.D., and flat-out make fun of some guys we think might deserve it.

Who are we to judge? We're nobody, really, just some golf nuts with a monthly magazine that published its first issue in 1927. It's up to you to tell us who we forgot, who we were unfair to and important events we failed to mention. Don't let us off the hook — email or tweet us.

And we look forward to recapping 2016 in a mere 12 months...

## JANUARY

James R. Hansen's book, "A Difficult Par: Robert Trent Jones Sr. and the Making of Modern Golf," wins the United States Golf Association's Herbert Warren Wind Book Award for 2014. The book contains multiple references to *Golfdom* and magazine founder Herb Graffis.



*If only Mr. Graffis could see us now... Well, OK, he'd probably punch every contributor right in the stomach. Except for Joel Jackson, he's too nice.*

## FEBRUARY

The Florida GCSA wins the GCSAA 2015 Excellence in Government Relations Award for its collaboration with the Florida Department of Environmental Protection to establish best management practices for golf courses.

John O'Keefe, CGCS, is elected GCSAA's 79th president at the annual meeting in San Antonio. Peter Grass, CGCS, is elected vice president and Bill H. Maynard, CGCS, is elected secretary/treasurer.

*Prediction: Mr. Grass is named President for Life in 2016, for obvious reasons.*

Matt Cowan claims the GCSAA National Championship, firing a 1-under-par 71 in cold, blustery conditions in Boerne, Texas, home of Cordillera Ranch Golf Club. Because of safety concerns brought on by a winter weather advisory for Boerne, the final round of the event is cancelled.

*Of all the groups of golfers to freeze out, why, oh why, would the golf gods punish a bunch of over-worked turfjockeys?*

## MARCH

Tommy Anderson, retired superintendent of Broadmoor Golf Club, is given honorary lifetime memberships to the Rocky Mountain GCSA and GCSAA.

## APRIL

Jordan Spieth wins the Masters in dominating fashion, tying the record of 18-under par held by Tiger Woods. He also sets a new record

*Continued on page 18*

A year of WOTUS woes, online tee times and alternative golf games: A look back at those who earned 15 minutes of fame in 2015.



Tommy Anderson with Zach Bauer.



Continued from page 17  
for the most birdies ever in the Masters, at 28, as well as new records for 36 holes and 54 holes, at -14 and -16.

National Golf Day is held in Washington, D.C. Golf's leaders meet with politicians to discuss golf's nearly \$70 billion economy, \$4 billion annual charitable impact and many environmental and fitness benefits. Participants share stories about the game's nearly 15,000 diverse businesses, 2 million employees, tax revenue creation, tourism and ecological value.

*The politicians acted interested, then immediately got back to fighting among themselves and fleecing American taxpayers.*

The USGA accepts 9,882 entries for the 2015 U.S. Open at Chambers Bay, the second-highest total in the championship's history.

*9,881 of them think Billy Horschel needs to cool it.*

RISE (Responsible Industry for a Sound Environment) delivers its pollinator petition to the White House Council on Environmental Quality. The petition urges President Obama to protect pollinators by creating more habitat and forage areas and by considering all sources of information and possible contributors to the pollinator health issue.

*In response, environmentalists the world over reaffirm their commitment to not let science stand in the way of protecting the environment.*

The membership of the International Golf Course Equipment Managers Association (IGCEMA) votes to dissolve the association, with roughly 370 equipment managers being welcomed to GCSAA membership in 2015.

*Rumored to be part of the deal: a handshake agreement that mechanics can never again complain about topdressing greens.*

## MAY

The Toro Co. establishes "The Toro Co.-David M. Lilly Faculty Chair" to honor the company's fourth president and former dean of what now is the University of Minnesota Carlson School of Management. The company officially dedicates the David M. Lilly Learning Center at its headquarters in Bloomington, Minn.

The USGA accepts a record 1,873 entries for the 2015 U.S. Women's Open Championship at Lancaster (Pa.) Country Club, surpassing the previous mark of 1,702 set in 2014 at Pinehurst No. 2.

*All 1,873 of them think Billy Horschel needs to cool it.*

## JUNE

Jordan Spieth adds the second leg of a Grand Slam by winning the U.S. Open at Chambers Bay. He does it in dramatic fashion, with a birdie on the final hole. Dustin Johnson, with a chance for eagle to win, three-putts...

*Don't feel badly for DJ's three-jack. He didn't take home the U.S. Open trophy, but he did take home \$877,000 and Paulina Gretzky.*



Chambers Bay steals headlines when players blast the greens on the course, including the aforementioned Billy Horschel, who is caught on camera swinging his putter in frustration at a green. Gary Player calls it "the most unpleasant golf tournament I've seen in my life."

*Let's keep things in perspective, Gary... your U.S. Open wasn't nearly as bad as Robert Allenby's Sony Open in Hawaii.*

The National Golf Course Owners Association releases a set of guidelines for the online distribution of tee time reservations aimed at helping golf businesses leverage the benefits of online tee times. They are developed following research and experts' input, including online agents and the PGA of America.

*Rule No. 1 of online tee times: Selling a tee time for less than the cost of a Happy Meal might not be a sustainable practice.*

President Obama sneaks in a quick 18 holes in Rancho Mirage, Calif., drawing the ire of environmentalists, who complain that teeing it up in the golfing paradise "sends the wrong message" to a state suffering through its fourth consecutive year of drought.

*Catching hell for sneaking in a quick 18? For the first time in a long time, golfers around the country actually relate to the Commander in Chief.*



Continued on page 20

# 13

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Continued from page 18

**JULY**

The year's third major, the Open Championship, puts major stress on the players and the golf course maintenance crew as brutal weather causes multiple stoppages of play and unusual flooding on St. Andrews Links.

*St. Andrews locals still haven't figured out what all the fuss was about.*

In pursuit of the third leg of the Grand Slam, Jordan Spieth finishes one shot out of a playoff for the Claret Jug. That barely does justice to the play of Zach Johnson, who overcomes the weather.

Jack Nicklaus and Arnold Palmer are named honorary co-chairmen of the 116th U.S. Open Championship at Oakmont (Pa.) Country Club. The duo made golf history at the course in 1962, when Nicklaus, 22, defeated Palmer in an 18-hole playoff to win his first major championship, and the first of four U.S. Open Championships.

*Let's cut to Gary Player and get his take on this... No?*

The USGA names The Country Club in Brookline, Mass., The Los Angeles Country Club and Pinehurst Resort & Country Club as the host sites for the 2022, 2023 and 2024 U.S. Open Championships, respectively.

*You mean, golf is still going to be around in 2024?*

**AUGUST**

In a return to Whistling Straits, the PGA Championship serves up more high drama as Jason Day emerges as the player of the month, winning by three over Spieth, who calls it, "...my best loss ever." Spieth finishes Major season with two wins, one shot out of a playoff in the third and three back in the fourth.

Jacobsen counts down the days until August of 2016, when the company will outfit golf's return to the Olympic games in Rio de Janeiro with 35 of its mowers.

The Toro Co. names Richard M. Olson president and chief operating officer. He's served the company in various roles throughout his 29-year tenure, most recently as group vice president of its international and micro-irrigation businesses.

GCSAA names Herbert V. Kohler Jr. as the recipient of the 2016 Old Tom Morris Award. He will receive the award at the opening session of the 2016 Golf Industry Show in San Diego.

*Among Kohler's qualifications for GCSAA's highest award: his uncanny resemblance to Old Tom Morris himself.*



**SEPTEMBER**

Despite Spieth's amazing season, Jason Day's run of six tournaments with four wins has people talking about him as Player of the Year. Spieth puts an end to the talk by winning the Tour Championship by four strokes.



The Golf Course Builders Association of America names Jim Moore the recipient of the Don A. Rossi Award. Moore is director of the USGA Green Section Education Program. He's also the originator of one of the best quotes in turf management, "The three best fungicides are Stihl, Poulan and McCulloch."

*Husqvarna reps immediately dismiss this claim and demand to see the results from university trials.*



Jay Karen begins his new position as CEO of the NGCOA, replacing Mike Hughes, who announced in January he was stepping down. Karen is returning to the NGCOA, where he was director of partner relations and membership from 1997 to 2007. Mike Tinkey resigns as the deputy chief executive officer of NGCOA, where he served for 24 years.

**OCTOBER**

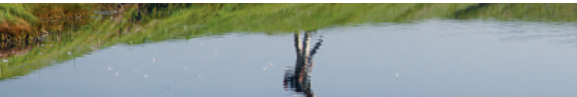
Arden Albert Baltensperger, Ph.D., emeritus professor of New Mexico State University, dies Oct. 6. Among other achievements, his efforts led to the release of NuMex Sahara, the first improved seed-propagated turf-type bermudagrass. Over the course of the next 15 years he produced six additional seeded varieties, including Princess 77.



The Presidents Cup is held in Korea for the first time. When Team USA jumps out to a 4-to-1 lead in the opening session it looks like the cup won't be any more interesting than recent editions. But the International Team puts on a comeback, and the USA Team only manages to win one-up when the captain's son and captain's pick, Bill Haas, pulls out a win on the 18th hole.

*It was either that or be removed from the will entirely.*

The U.S. Court of Appeals for the 6th Circuit temporarily blocks the Environmental Protection Agency and Army Corps of Engineers Clean Water Rule, or "WOTUS."

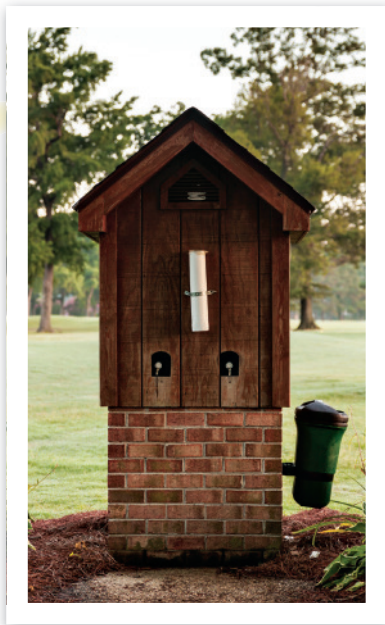




The decision has put a nationwide hold on the rule while the case continues.

*Mainly due to the fact that regulators need to decide if water cooler stations fall under WOTUS jurisdiction.*

John Deere produces its 500,000th unit built at the company's Fuquay-Varina, N.C. factory. The first mower rolled off the line at the facility in 1997.



Move over FootGolf. FlingGolf, which combines lacrosse with golf, is introduced to the masses by a Boston-based sports innovator whose great uncle invented the tiebreaker in tennis. Two-time NBA champion M.L. Carr is one of the game's advocates.

*Take our advice: There's nothing more embarrassing than showing up to a FlingGolf tournament with a soccer ball... Or to a FootGolf match with a FlingGolf stick... or admitting to your regular golfing foursome that you attended either event in the first place.*



Keith Happ

Keith Happ, a former superintendent and longtime agronomist with the USGA Green Section, passes away at age 58.

*A true giant in this industry and tireless advocate for superintendents who will be sorely missed.*

Continued on page 22

# 98

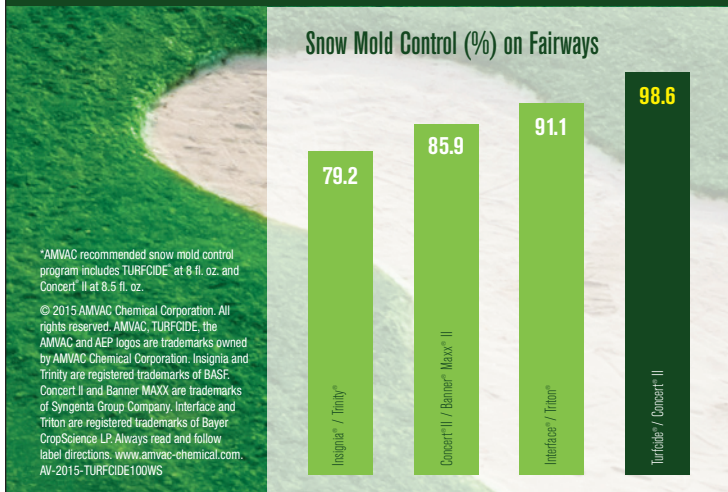
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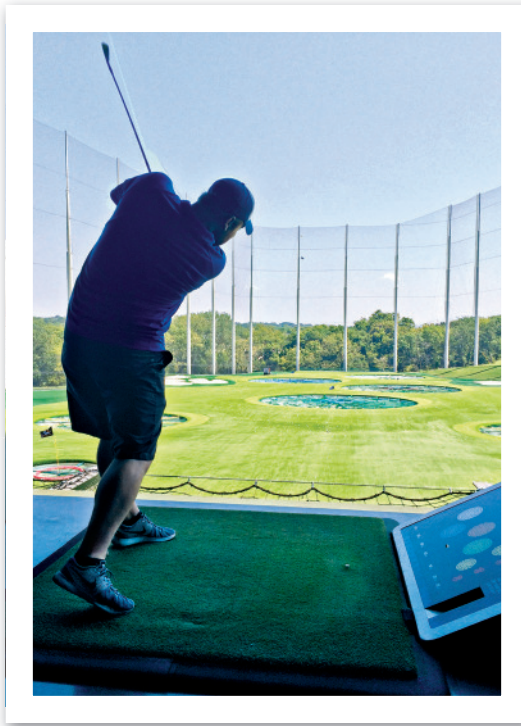
**NOVEMBER/DECEMBER**

Peter McDonough, superintendent at the Keswick Hall and Golf Club in Keswick, Va., is selected to receive the 2016 President's Award for Environmental Stewardship by the GCSAA Board of Directors.

Front-runner Republican presidential candidate and multi-course owner Donald Trump promises to American voters to deport 11 million illegal immigrants, but will allow the "good ones" to return.

*Trump's definition of "good ones" is still unclear, but probably includes a willingness to get up at 4 a.m. to work their tails off for \$10 an hour.*

The 2015 *Golfdom* Summit is



held at Reunion Resort in Orlando, bringing in 50 superintendents from around the country for the event, now in its fifth year. Annika Sorenstam delivers the keynote, with Clark Throssell, Ph.D., and Greg Nathan of the National Golf Foundation rounding out the list of speakers.

It's announced that the first-ever Topgolf location, built 10 years ago in Alexandria, Va., will probably close in 2017, not because of lack of business, but because it has outgrown its current location and must rebuild a larger facility in a new location to meet customer demand.

*Welcome to the next boom in golf: replacing outdated Topgolf facilities.* 

PHOTO BY: SETH JONES



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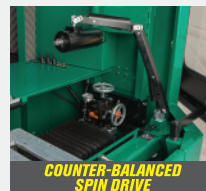
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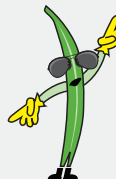
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# The buck STOPS HERE



BY HANNAH SCHRUM

## Prevent deer damage at the golf course with proper planning.

Deer, *Pythium* and cutworms all have something in common. These pests cause significant damage to golf courses. Deer, however, are likely to leave turf alone and concentrate their assault on ornamental plants such as those behind the backdrop on No. 3 green, the hostas near the practice putting green or the grand pansy display in front of the clubhouse.

Each year superintendents repair or replace thousands of dollars in damage caused by these large hungry grazers. Managing deer to reduce damage on the golf course demands an integrated approach, the same as any other pest. Knowing your enemy is critical to your defense plan.

When creating an integrated deer management program, keep in mind the following:

*Deer are creatures of habit, and habits are harder to break than prevent.* This explains why deer will readily go through fences installed over their familiar trails or why they return every spring to graze and de-

stroy the same azalea blooms. This also explains why you must use management tactics consistently and with a heavy hand when you are “breaking” a population of deer used to grazing on your landscape.

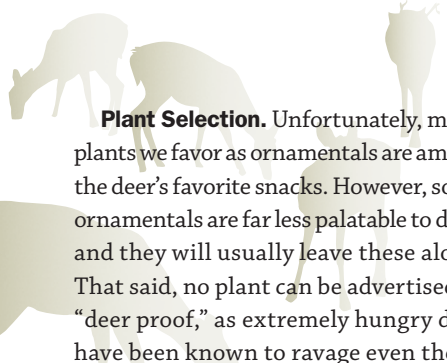
*Deer are adaptable, observant and more intelligent than we tend to give them credit for.* This is why many scare tactics (see below) only work for a small window of time, before deer learn to ignore what they deter-

mine to be no real threat.

*Deer have strong preferences about what they eat.* Utilizing deer-resistant plants helps thwart major damage. For the same reason, if you plan to use plants favored by deer you must anticipate using methods to prevent deer damage. As with any pest management plan, combining tactics will result in the greatest success.

Wildlife management experts cite five distinct methods for preventing damage caused by deer (see below table). Of these methods, the last two (highlighted) prove to be the most viable combination for the golf course.

DEER MANAGEMENT TECHNIQUES	EXAMPLES/NOTES
<b>Culling*</b> via nuisance permits	*Optional only in some municipalities.
<b>Fencing</b>	Electric fences or double fences are most effective. Trunk wraps on saplings.
<b>Scare tactics</b>	Sound recordings, human hair, soap, predator urine.
<b>Plant selection</b>	Choose deer-resistant species whenever possible. No plant is fully “deer-proof.” See sidebar, page 25, for recommendations.
<b>Repellents</b>	Apply consistently and on schedule for best results. Opt for those that repel via odor, not taste.



**Plant Selection.** Unfortunately, many plants we favor as ornamentals are among the deer's favorite snacks. However, some ornamentals are far less palatable to deer, and they will usually leave these alone. That said, no plant can be advertised as "deer proof," as extremely hungry deer have been known to ravage even these. But selecting plants not favored by deer puts the odds of a successful planting in your favor.

Furthermore, plan to have ornamentals concentrated in fewer areas, which can be easier to protect and manage against deer damage. Choose a location that you frequently manage rather than an area tucked in a corner off the back nine where it is likely to be serviced less often. Members will appreciate a single bed filled with showy knockout roses rather than 10 beds with scattered stumpy, flowerless stalks on them.

**Repellents.** The most effective deer repellents employ an odor offensive to deer, and discourage the animals from the area (versus those applied to plants that have an unfavorable flavor for the deer). Liquid Fence and Pro Scram are two examples. Most products advertise that no offensive odor (created by active ingredients such as sulfur; putrescent egg solids; or garlic) is

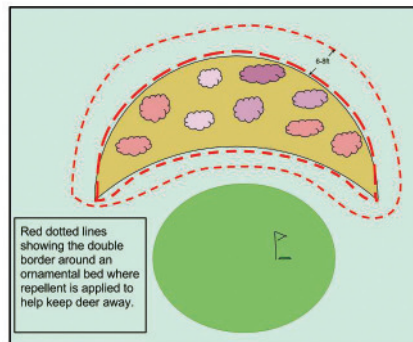
Yes, you can successfully use plants that are deer favorites. In doing so, plan to provide vigilant maintenance that includes repellents. Choose a high-focus location, and monitor closely for deer activity. Using deer-resistant plants will further help the odds of success for ornamental beds on your course. Check with your local Extension office for a more expansive list of deer-resistant plants in your region.

DEER FAVORITES	DEER-RESISTANT PLANTS
Pansies	Daffodils
Azaleas	Sedums
Hostas	Ornamental grasses
Impatiens	Ageratum
Tulips	Marigolds
Roses	Ornamental alliums
	Lantana
	Cosmos

noticeable to humans after applications have dried or settled. Unfortunately, the applicator and anyone nearby *will* notice the odor during the window of application.

However, one brand, I Must Garden, has cornered the market on creating an effective deer repellent that is not revolting to humans. By using a potent mix of botanical oils, these products have proven as effective as their traditional stinky counterparts, but you can use them closer to your clubhouse or outdoor patios without offending guests. In true IPM fashion, however, using a rotation of these repellents seems an appropriately vigilant course of insurance against a hungry deer population.

Repellents are available in liquid and granular formulas. Depending on the brand, both have similar durability under



rain or irrigation. Liquid repellents are messy to mix and apply, but they offer protection higher off the ground, and you can apply them directly on prized plants.

Granular products, on the other hand, protect only low-growing plants (less than 6 inches high). If deer pressure is particu-

*Continued on page 26*



Deer-resistant ornamentals (Papyrus, sun impatiens, Euphorbia and Fanflower) require little use of repellents, but should be monitored closely for any signs of interest from deer, such as hoof prints nearby or nibbled flowers.

PHOTO BY: HANNAH SCHRUM

## // FEAR NO DEER

Continued from page 25

larly strong, either because your plants are a premium investment such as tulips or roses, or because you know deer are likely to return based on past years, plan to use an aggressive program of repellents. Apply these often and always follow the product label. You may even combine granular and spray types.

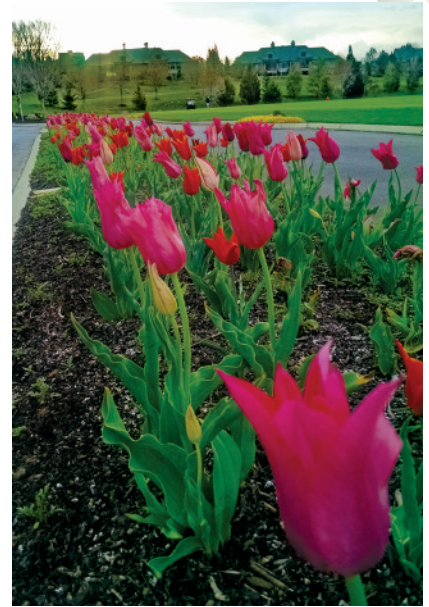
In addition to coating the target plants with a repellent spray, apply repellents along the perimeter of the ornamental beds. I suggest applying two lines of repellent. Spray the first line at the perimeter of the bed and second line about 6 feet to 8 feet out, where deer will encounter it first (see illustration page 25). After a single season of using an aggressive repellent program, the deer usually learn to avoid these areas. At this point you may dial down the application schedule to lesser frequency for maintenance.

While their massive size and charm-



Tulips grown successfully with deer repellent at the driving range at the Cliffs at Walnut Cove outside of Asheville N.C., a course surrounded by Pisgah National Forest with moderate-to-high deer pressure.

ing looks make them unique among the golf course pest line-up, the damage deer cause is anything but charming. Fortunately, employing a savvy plant selection combined with a schedule of repellents has proven effective in protecting ornamen-



tals against these pests on and around the course. **Ⓒ**

Hannah Schrum is the horticulturalist at The Cliffs at Walnut Cove in Asheville, N.C.

PHOTOS BY: HANNAH SCHRUM

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# Super Science

## // HEAD-TO-HEAD COMPARISON

### AN ALTERNATIVE APPROACH TO AERIFICATION

By Jordan Craft and Christian Baldwin, Ph.D.

**T**urfgrass managers are challenged with determining the right combination of aerification practices throughout the growing season. Soil physical properties change over time due to routine traffic and organic matter accumulation from roots and clippings, as well as natural soil aging.

The best indication of poor soil properties is the dreaded “organic layer.” Organic matter concentrations of 4 percent to 5 percent will decrease water infiltration and air movement into the root zone, resulting in excess moisture when it’s wet and exaggerated desiccation when it’s dry.

Ongoing research at Mississippi State University (MSU) seeks to minimize disruption due to traditional aerification technologies using high-pressure, water-based injection that simultaneously fills holes with kiln-dried sand (DryJect).

Our objective is to evaluate this technology against traditional aerification techniques. Research seeks to optimize the combination of the new technology with a modified traditional aerification program to achieve minimal surface disruption without compromising soil physical properties and playability.

Treatments compare effects of different combinations of 0.50- and 0.25-inch diameter hollow-tine aerification to DryJect from June to August. The DryJect treatments are performed with a DryJect 4800, with nozzles spaced at 3 inches by

3 inches and at a depth of 5 inches, and a DryJect 4800 Maximus with nozzle spacing at 6 inches by 5 inches and at depths of 5 and 10 inches. Hollow-tine aerification treatments, 0.25- and 0.5-inch diameter and 0.5-inch diameter, are applied with 1-inch by 1-inch spacing at a 2-inch depth. Data being collected includes surface firmness, hydraulic conductivity, bulk density, chlorophyll index, normalized difference vegetative index and thatch depth.

Superintendents will be able to use the results of this research to develop aerification strategies that control organic matter accumulation while minimizing surface disruption.

Jordan Craft and Christian Baldwin, Ph.D., Mississippi State University. Craft can be reached at [jordancraft18@gmail.com](mailto:jordancraft18@gmail.com) for more information.

## NEWS UPDATES

### OHIO TURFGRASS FOUNDATION HONORS ZACH WIKE FOR ENVIRONMENTAL INITIATIVES

The Ohio Turfgrass Foundation has selected Zachary Wike, assistant superintendent at Beavercreek Golf Club in Beavercreek, Ohio, to receive its Environmental Stewardship Award.

Wike led the effort for Beavercreek Golf Club to achieve the designation as a Certified Audubon Cooperative Sanctuary through Audubon’s Sanctuary Program. Beavercreek is the 17th course in Ohio to receive such status.

Wike volunteers his time to serve as a board member for the Miami Valley GCSA and Ohio Pesticide Applicators for Responsible Regulation while also being an active member of the GCSAA’s Grassroots Ambassador Program.

According to OTF, Wike has been active in meeting with legislators in Ohio and informing them of the environmental and economic impacts of golf and the turfgrass industry. He has taken the initiative to meet with representatives at the Ohio Statehouse and has hosted them at golf courses throughout the state, aiming to give them a firsthand look at how golf courses can have a positive impact on the environment.

The Environmental Stewardship Award is to be presented to Wike on Dec. 8 during the OTF Conference & Show and OSU Green Industry Short Course’s Awards, Scholarship and Keynote Ceremony.

### MAXIMIZING CULTURAL

PRACTICES TO CONTROL ANNUAL BLUEGRASS IS CRITICAL PRIOR TO INITIATING USE OF GROWTH REGULATORS OR HERBICIDES.”

**Matt Sousek**

(see story on page 28)



Mississippi State golf course practice putting green following June 2014 DryJect treatments.

## // TAKING CONTROL

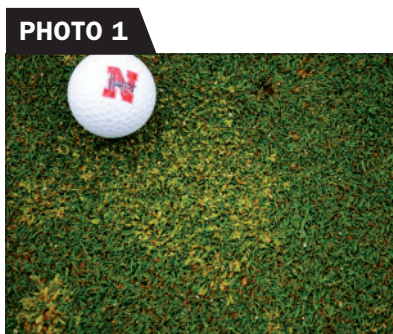
# Annual bluegrass control on greens

By Matt Sousek and Zac Reicher, Ph.D.

**A**nual bluegrass (*Poa annua* L.) is probably the most troublesome weed on golf courses worldwide. The genetic diversity and adaptability of annual bluegrass to varying environments, as well as its tremendous reproductive capacity, allows it to thrive in golf course turf.

In fairway-height turf, the growth regulators paclobutrazol (Trimmit), TGR (Paclobutrazol) or flurprimidol (Cutless) can be effective in shifting the competitive balance from annual bluegrass to creeping bentgrass. Selective postemergence herbicides such as bispyribac-sodium (Velocity), ethofumesate (Prograss) or mesotrione (Tenacity) can be effective for annual bluegrass control, depending on the desired species.

However, controlling annual bluegrass on greens is more difficult than on fairways because there are fewer labeled products, as well as potential injury to creeping bentgrass and the need to minimize or eliminate surface disruption for golfers. The growth regulators paclobutrazol or



**PHOTO 1**  
Annual bluegrass control at greens height is difficult because of few labelled products, the risk of damage and no golfer tolerance of disturbed surfaces.



Research provided and funded by USGA.

flurprimidol are most commonly used to reduce annual bluegrass in greens. Most of the previous research with growth regulators on greens was done in the southern U.S. and with

applications made on four- to six-week intervals.

Only one research study evaluated paclobutrazol or flurprimidol in the northern half of the U.S. (Idaho and Washington) with modern application intervals (every two weeks). They found paclobutrazol or flurprimidol applied at two-week intervals increased creeping bentgrass cover up to 39 percent after two years in creeping bentgrass/annual bluegrass putting greens in Idaho and Washington. In this same study, season-long applications of the commercially available combination of flurprimidol plus trinexapac-ethyl provided marginal to no control of annual bluegrass, depending on rate and location. There currently are no postemergent herbicides labeled for annual bluegrass control on greens, but bispyribac-sodium has reduced annual bluegrass in greens-height turf in research trials, albeit with varying levels of discoloration or injury.

Annual bluegrass control studies traditionally are on one or two experimental sites and often only last for one or two years. However, given the variability of this species from site to site and its ability to adapt to environments, it's important to understand long-term control methods and how these control methods vary over different sites and environmental conditions. Therefore, our objective was to evaluate six season-long regimes of herbicide or growth regulators for annual bluegrass control in creeping bentgrass greens over three or four years in three states in the northcentral U.S.

### HOW WE DID IT

We conducted identical studies on creeping bentgrass/annual bluegrass turf maintained as greens at the William H. Daniel Turf Center at Purdue



**PHOTO 2**  
Researchers often used transects to accurately measure cover of annual bluegrass in this study.

PHOTOS BY: ZAC REICHER



**TABLE 1**

**Location description and management of sites evaluating season-long programs for annual bluegrass control on greens-height turf**

	Nebraska	Michigan	Indiana
Age of stand at initiation of study	20 years	11 years	10 years
Creeping bentgrass cultivar	Penncross	Penncross	Penncross
Source of annual bluegrass	Natural infestation	Natural infestation	Natural infestation
Soil Type	USGA sand/peat	93% sand, 6.5% silt, 0.5% clay	Native soil (silt loam)
Mowing	0.105 inch 7X/week	0.125 inch 5X/week	0.156 inch 6X/week
Fertility	3.0 lbs. N/1000 ft <sup>2</sup> /year	3.0 lbs. N/1000 ft <sup>2</sup> /year	3.0 lbs. N/1000 ft <sup>2</sup> /year
Irrigation	As needed to prevent drought stress	As needed to prevent drought stress	As needed to prevent drought stress
Verticut	4-5 times during growing season	2-3 times during growing season	None during this experiment
Aerification	Solid tine (April & August)	None during this experiment	None during this experiment
Topdressing	Light USGA sand every 2 weeks	Light USGA sand every week	Light USGA sand every 4 weeks

**TABLE 2**

**Treatments evaluated to control annual bluegrass in identical experiments in three states over 2009-2013**

Active ingredient	Mode of action	Brand name and formulation	Rate oz./acre	Rate lbs. ai/acre	Application Frequency	Application Dates	Total applications per year
Bispyribac-sodium	B <sup>(2)</sup> Acetolactate Synthase Inhibitor <sup>†</sup>	Velocity 17.6 SG	1	0.011	2 wks	May-Sep	8
Bispyribac-sodium	(ALS) Inhibitor <sup>†</sup>	Velocity 17.6 SG	2	0.022	2 wks	Aug-Sep	4
Pacloutrazol	Gibberellic acid biosynthesis inhibitor, Class B <sup>‡</sup>	Trimmit 2SC	8 16	0.125 0.25	2 wks 2 wks	Apr-May, Aug-Sep June-July	8 4
Flurprimidol	Gibberellic acid biosynthesis inhibitor, Class B <sup>‡</sup>	Cutless MEC	8 16	0.081 0.163	2 wks 2 wks	Apr-May May-Aug	5 7
Flurprimidol + trinexapac-ethyl	Gibberellic acid biosynthesis inhibitor, Class B + A <sup>‡</sup>	Legacy	10	0.118	2 wks	Apr-Sep	12
Trinexapac-ethyl	Gibberellic acid biosynthesis inhibitor, Class A <sup>‡</sup>	Primo Maxx	11	0.086	2 wks	Apr-Sep	12
Untreated	—	—	—	—	—	—	—

<sup>†</sup> For each herbicide, the letter and number is a descriptive code for the mode of action that follows. This classification system (codes) was developed by the Herbicide Resistance Action Committee (capitalized letter) and the Weed Science Society of America (superscript number).

<sup>‡</sup> Class A plant growth regulators (PGRs) interfere with the production of gibberellins late in the biosynthetic pathway. Class B PGRs interfere with the production of gibberellins early in the biosynthetic pathway.

University in West Lafayette, Ind.; the Robert W. Hancock Turfgrass Research Center at Michigan State University in East Lansing, Mich; and Firethorn Golf Club in Lincoln, Neb. Site and management details are listed in Table 1. All experiments were arranged in a randomized complete block design with three replications. Individual plots measured 5 feet by 5 feet.

We applied herbicides and growth regulators season-long to the same plots according to recommendations from the label, company representatives or superintendents. We evaluated bispyribac-sodium (Velocity, Valent), paclobutrazol (Trimmit 2SC, Syngenta), flurprimidol (Cutless MEC, SePro Corp.), flurprimidol plus trinexapac-ethyl (Legacy, SePro Corp.), or trinexapac-ethyl (Primo Maxx, Syngenta). We included bispyribac-sodium because it had pending label changes when this experiment was initiated that would have allowed use on greens, but those changes currently are discontinued. We applied products up to 12 times per year at two-week intervals. Application rates and frequencies are listed in Table 2. Applications began in April of 2009 in Indiana and Michigan and in April 2010 in Nebraska, and continued through fall 2012 at all locations. We made applications with CO<sub>2</sub>-powered backpack sprayers in 88 gal/acre water at 30 psi, with a three-nozzle (8002VS flat fan, TeeJet Spraying Systems, Wheaton Ill.) spray boom.

Data collected included transect counts of annual bluegrass taken during peak seedhead production in spring prior to the first application and in the spring of 2013 following the last year of applications. We took estimates of annual bluegrass using a modification of the vertical-point quadrat method, where we laid a 4-foot by 4-foot or larger frame over the plots with an interval filament grid of 49 or 64 intersections, depending on

Continued on page 30

Continued from page 29

location. We recorded the total number of times annual bluegrass was present under each intersection for each plot and calculated percentage cover. We also took visual ratings of annual bluegrass cover, turfgrass phytotoxicity and quality throughout each growing season. We performed analysis of variance using PROC ANOVA in SAS. Significant treatment by location interactions occurred, so we analyzed locations separately. We determined mean separation using Fisher's least significant difference (LSD) at  $P \leq 0.05$ .

## WIDE VARIATION AMONG RATING DATES AS WELL AS STATE TO STATE

Depending on the rating date and location, treatment response varied widely. Even the best performing treatments were different visually than the untreated control on only 30 percent to 60 percent of the rating dates. There could be dual practical implications of this, in that the golfers might not notice that changes are taking place, which is positive for minimizing play disruption. Conversely, if the superintendent sold the annual bluegrass control project promising visual changes, the golfers may be looking for noticeable improvement.

## The highest cover and poorest control of annual bluegrass among the three states occurred in Michigan.

In Indiana, annual bluegrass cover decreased across the entire study in 2010 during an abnormally warm and wet summer. The annual bluegrass didn't recover in the last two summers of the study as 2012 was

**TABLE 3**

**Cover of annual bluegrass (ABG), % change from initiation, and number of rating dates where treatment effects were different than the untreated control during four years of season-long applications of herbicides or growth regulators to creeping bentgrass/annual bluegrass maintained at putting green height in West Lafayette, Ind.**

Treatment	Applications/year and rate	% ABG cover				Number of rating dates/total where ABG < than in untreated control	
		Initial (May 2009) †	Final (May 2013)	% change §			
Bispyribac-sodium	8 @ 1 oz./A	43 <sup>a</sup>	26	a <sup>#</sup>	-37	a	3/33 (9%)
Bispyribac-sodium	4 @ 2 oz./A	45	19	ab	-58	abc	6/33 (18%)
Paclobutrazol	8 @ 8 oz./A 4 @ 16 oz./A	39	2	d	-95	d	11/33 (33%)
Flurprimidol	5 @ 8 oz./A 7 @ 16 oz./A	41	11	c	-75	cd	10/33 (30%)
Flurprimidol + trinexapac-ethyl	12 @ 10 oz./A	34	13	bc	-61	bc	7/33 (21%)
Trinexapac-ethyl	12 @ 10 oz./A	43	19	ab	-56	abc	1/33 (3%)
Untreated	—	49	22	a	-50	ab	—

† Annual bluegrass cover was estimated with vertical-point quadrat method where a 4-foot by 4-foot frame was laid over the plots with an interval filament grid of 49 intersections. The total number of times ABG was present under each intersection was recorded for each plot and percentage cover was calculated.

§ Percent change from the initial ABG cover, calculated as  $[(\text{ABG cover in final spring rating} - \text{ABG cover in initial spring rating}) / \text{ABG cover in initial spring rating}] * 100$ .

<sup>#</sup> Means of three replications

<sup>a</sup> Means within a column followed by the same letter are not significantly different according to Fisher's least significant difference at  $P \leq 0.05$ .

also abnormally warm, and even the untreated control showed a 50-percent decrease in annual bluegrass cover from initiation to the final rating date (Table 3). This underscores the importance of long-term studies over multiple locations because weather had a huge effect on annual bluegrass cover in Indiana. Paclobutrazol reduced annual bluegrass cover to 2 percent by May 2013, which was a 95-percent reduction over the course of the study, while flurprimidol also reduced cover to 11 percent by the end of the study, a 75-percent decrease from initiation.

In spite of up to 48 applications over four years, no treatments in Michigan reduced annual bluegrass cover between the start and end of the study (Table 4). The best performing treatment was paclobutrazol, which resulted in a 5-percent increase in

annual bluegrass over the course of the study. Flurprimidol resulted in a 19-percent increase in annual bluegrass cover over the course of the study, but all other treatments produced increases of less than 73 percent, while annual bluegrass cover in the untreated check increased by 81 percent over the course of the study.

Paclobutrazol or flurprimidol reduced annual bluegrass compared to the untreated control on about or more than 64 percent of the rating dates in the study, while no other treatment affected annual bluegrass on more than a third of the rating dates. In Nebraska, treatments with bispyribac-sodium or paclobutrazol were the best performers, reducing annual bluegrass cover by 24 percent to 47 percent from the start of the study. Bispyribac-sodium applied four times at 2 oz./

**TABLE 4**

**Cover of annual bluegrass (ABG), % change from initiation, and number of rating dates where treatment effects were different than the untreated control during four years of season-long applications of herbicides or growth regulators to creeping bentgrass/annual bluegrass maintained at putting-green height in East Lansing, Mich.**

Treatment	Applications/year and rate	% ABG cover				Number of rating dates/total where ABG < than in untreated control	
		Initial (May 2009) †	Final (May 2013)	% change ‡			
Bispyribac-sodium @ 1 oz./A	8 @ 1 oz./A	27 <sup>a</sup>	50	a <sup>a</sup>	93	a	8/25 (32%)
Bispyribac-sodium @ 2 oz./A	4 @ 2 oz./A	25	46	a	88	ab	8/25 (32%)
Pacllobutrazol	8 @ 8 oz./A 4 @ 16 oz./A	27	28	c	5	c	17/25 (68%)
Flurprimidol	5 @ 8 oz./A 7 @ 16 oz./A	30	33	bc	19	c	16/25 (64%)
Flurprimidol + trinexapac-ethyl	12 @ 10 oz./A	25	46	a	92	a	6/25 (24%)
Trinexapac-ethyl	12 @ 10 oz./A	30	49	a	74	ab	0/25 (0%)
Untreated	—	28	49	a	81	ab	—

† Annual bluegrass cover was estimated with vertical-point quadrat method where a 5-foot by 5-foot frame laid over the plots with an internal filament grid of 64 intersections. The total number of times ABG was present under each intersection was recorded for each plot and percentage cover was calculated.

‡ Percent change from the initial ABG cover, calculated as  $[(\text{ABG cover in final spring rating} - \text{ABG cover in initial spring rating}) / \text{ABG cover in initial spring rating}] * 100$ .

<sup>a</sup> Means of three replications

<sup>#</sup> Means within a column followed by the same letter are not significantly different according to Fisher's least significant difference at  $P \leq 0.05$ .

acre reduced annual bluegrass cover compared to the untreated check on 55 percent of the rating dates.

The highest cover and poorest control of annual bluegrass among the three states occurred in Michigan, and may be due to a number of factors. More moderate summer weather compared to Nebraska and Indiana likely favored annual bluegrass competitiveness and also may have reduced its susceptibility to bispyribac-sodium or flurprimidol. Furthermore, a stand farther north is more likely to be perennial annual bluegrass (*Poa annua* spp. reptans) than a more southerly stand, and recent thesis data suggest perennial subspecies are more tolerant than the annual subspecies to bispyribac-sodium. Previous research also indicates differential susceptibility among subspecies to other annual

bluegrass controls, including rimsulfuron or fenarimol.

Though the treatments we used caused phytotoxicity in creeping bentgrass/annual bluegrass stands in other studies, we had few instances of damage, with none long-lasting. Most of the decreased turf quality we experienced was due to treatments reducing annual bluegrass cover and thus causing overall decreased density. If superintendents choose aggressive annual bluegrass control programs like we used, they should plan for — and communicate about — decreased density and/or phytotoxicity.

Turf specialists rarely recommend application strategies like the one used in this study — with usually only one primary active ingredient applied multiple times over many years — for fear of developing annual bluegrass

resistance to a particular product. Though annual bluegrass resistance to growth regulators has not been reported, 27 cases of annual bluegrass resistance to herbicides, including bispyribac-sodium, have been reported as of this writing. There were no obvious indications of the development of resistant annual bluegrass in any location in this study.

However, early indications from a companion genetic study suggest that many of these herbicide or growth regulator treatments affected structure and diversity of annual bluegrass populations when sampled two or three years after study initiation. In other words, our treatments caused changes in annual bluegrass populations almost without regard to their effect on actual annual bluegrass cover. However, we cannot conclude from the available data that our treatments shifted populations to more growth regulator- or herbicide-tolerant populations. That being said, it's critical for superintendents to employ all available tools to reduce annual bluegrass and alternate products with different modes of action.

### RECOMMENDATIONS FOR ANNUAL BLUEGRASS CONTROL IN GREENS

Our data show that treatment effectiveness varies widely depending on location and from year to year within location. Superintendents may have to experiment to find the most effective treatments for the population of annual bluegrass on their golf course.

Furthermore, many of our treatments reduced annual bluegrass only marginally, and so maximizing cultural practices to control annual bluegrass is critical prior to initiating aggressive use of growth regulators or herbicides. Our data suggest that the first growth regulator superintendents should use as part of a control strategy is pacllobutrazol, followed

Continued on page 32

**TABLE 5**

**Cover of annual bluegrass (ABG), % change from initiation, and number of rating dates where treatment effects were different than the untreated control during three years of season-long applications of herbicides or growth regulators to creeping bentgrass/annual bluegrass maintained on a practice putting green in Lincoln, Neb.**

Treatment	Applications/year and rate	% ABG cover				Number of rating dates/total where ABG < than in untreated control	
		Initial (May 2010) †	Final (May 2013)	% change ‡			
Bispyribac-sodium @ 1 oz./A	8 @ 1 oz./A	31 <sup>†</sup>	23	ab <sup>¶</sup>	-24	bc	4/33 (12%)
Bispyribac-sodium @ 2 oz./A	4 @ 2 oz./A	32	17	b	-47	c	18/33 (55%)
Pacloutrazol	8 @ 8 oz./A 4 @ 16 oz./A	32	18	b	-43	c	5/33 (15%)
Flurprimidol	5 @ 8 oz./A 7 @ 16 oz./A	37	30	a	-16	abc	1/33 (3%)
Flurprimidol + trinexapac-ethyl	12 @ 10 oz./A	32	32	a	2	ab	2/33 (6%)
Trinexapac-ethyl	12 @ 10 oz./A	23	24	ab	1	ab	2/33 (6%)
Untreated	—	29	32	a	13	a	—

† Annual bluegrass cover was estimated with vertical-point quadrat method where a 5-foot by 5-foot frame laid over the plots with an internal filament grid of 64 intersections. The total number of times ABG was present under each intersection was recorded for each plot and percentage cover was calculated.

‡ Percent change from the initial ABG cover, calculated as  $\left[ \frac{(\text{ABG cover in final spring rating} - \text{ABG cover in initial spring rating})}{\text{ABG cover in initial spring rating}} \right] * 100$ .

† Means of three replications

¶ Means within a column followed by the same letter are not significantly different according to Fisher's least significant difference at  $P \leq 0.05$ .

Continued from page 31

by flurprimidol. Flurprimidol plus trinexapac-ethyl would be less likely to reduce annual bluegrass on greens-height turf than paclobutrazol or flurprimidol, and superintendents should not consider trinexapac-ethyl for annual bluegrass control on greens.

Though bispyribac-sodium is not labeled for greens, anecdotal reports indicate superintendents are experimenting with it. If that is the case, four applications of bispyribac-sodium at 2 oz./acre every two weeks in August and September likely would be more effective than 1 oz./acre bispyribac-sodium applied every two weeks from May through September. To limit chances of annual bluegrass resistance to these treatments, superintendents should alternate products in long-term control programs.

## Acknowledgments

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**Matt Sousek, Research Manager, University of Nebraska-Lincoln and Zac Reicher, Ph.D., Technical Service Specialist, Bayer Environmental Sciences. Sousek can be reached at msousek2@unl.edu.**

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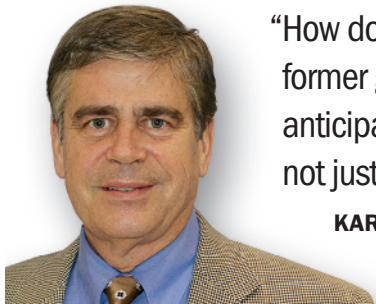
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“How do we provide people, mainly former golfers, with a sense of anticipation that draws them back not just to a hole, but to the game?”

KARL DANNEBERGER, PH.D., *Science Editor*

## The moment of anticipation

**T**his past year I bought a 1969 Pontiac Firebird. I didn't buy it because I had some deep passion, although I did have a '67 Camaro 327 in high school. I bought it because my youngest son has a 1970 Chevy Nova SS, and this seemed like a hobby I could do with him. ¶ My son's car needs a lot of work, but he and his friends have enjoyed camaraderie through the restoration process and a passion for cars. My Firebird was in mint condition, or at least as close as I was going to get it — my days of crawling under a car to put in a transmission are long gone.

My passion for that Firebird, and cars in general, has been rejuvenated. I'm busy like everyone else who works and has family responsibilities. Time is a precious commodity. But I find myself thinking about that Firebird and trying to figure out how to steal some time to go see it.

The funny thing is, I may not drive it or even work on it. I may just walk around the car looking at it or just sit in it. Even when I'm by myself it's joyful time. Not everyone understands it or “gets it” when it comes to classic muscle cars.

In some ways, golf is like a classic car.

You get it or you don't.

Much like the trip to the garage to see my Firebird, an important aspect of golf is anticipation, and many golf course architects incorporate that feeling into a course's design. For example, I spoke at the Northwest Turfgrass Association Conference in Coeur d'Alene, Idaho. As part of the conference, attendees had the opportunity of playing the Coeur d'Alene Resort Golf Course. The course is in exceptional condition, largely because of Superintendent Kevin Hicks and his staff.

The signature hole is the 14th, the famous par 3 with a floating green that

sits out on the lake. As you walk to the pro shop, you can see the 14th hole. The entire round builds, based on anticipation of playing that hole. There are other examples, like No. 17 at Sawgrass, or No. 13 at Leopard Creek in South Africa. I'm sure you can think of a few examples.

Those holes build anticipation for golfers committed to playing. But how do we provide people, mainly former golfers, with a sense of anticipation that draws them back not just to a hole, but to the game?

One idea comes to mind from my experience with my sons. When my sons first learned to play golf they took group lessons during the summer. Those lessons often were in the morning, with my sons dropped off just prior to the lesson and picked up and taken to another activity or home immediately after.

Why not schedule these lessons during late afternoon so that parents getting off work are the ones to pick them up? I know that when I got a call to pick up my sons at the golf course my anticipation of seeing them grew with every mile I traveled.

When I would arrive we would just hang out, get a quick snack or putt, or maybe hit a few balls or go play a few holes. I realized that with being so busy, you forget how much you miss being around the game, even when you have a job like mine.

Golf and classic muscle cars have a lot in common. As a whole new generation of muscle cars has been developed to generate automotive excitement for young and old, maybe we should focus on building excitement and anticipation in a way to remind the “too busy to play golf” golfers what *they're* missing.

Karl Danneberger, Ph.D., *Golfdom's* science editor and a professor at The Ohio State University, can be reached at [danneberger.1@osu.edu](mailto:danneberger.1@osu.edu).

# I'm worried

**I** am worried, and I'm not a worrier. I'm worried about the state of university turfgrass programs. I'm worried about the gradual erosion of some of our university turfgrass programs on two fronts; declining student enrollment and loss of faculty positions in turfgrass science.

I ask university turfgrass scientists about enrollment in their undergraduate turf major. They usually tell me it's down more than 50 percent from peak enrollment in the early 2000s and is continuing to decline, or in the best cases enrollment has declined more than 50 percent but is now flattening out.

Maybe you're thinking a decline in enrollment is a good thing, that the job market is flooded with freshly graduated students eager for their first permanent job. But a flood of qualified recent graduates looking for their first position as an assistant superintendent does not seem to be the case.

When I ask about job prospects in the industry for graduating turfgrass science majors, the answer is usually that they are great. Professors say demand for qualified graduates seeking a position as an assistant superintendent exceeds supply. There are many unfilled assistant superintendent positions at good golf courses that would be wonderful starting points for a career. Professors say they could place many more students in good positions if they had more graduating turfgrass science majors.

So where did all the turfgrass majors go?

There are many theories as to why undergraduate enrollment in turfgrass science is down despite the number of

jobs available. One theory is that even though there are many entry-level positions available, it takes years to become a superintendent at a top golf course. Another is that the relatively low starting salaries as an assistant superintendent compared to other professions

**“The high cost of tuition and the associated loans have parents and students questioning the return on investment.”**

discourages prospective students. The high cost of tuition at many universities and the associated student loans have parents and students questioning if the return on investment for a turf degree is worth the expense.

One theory deserves particular scrutiny. Because there are fewer high school- and college-age people working on golf courses, fewer potential turfgrass science students are exposed to the golf industry and the superintendent profession. Making an effort to

hire more high school- and college-age people for maintenance staffs — and mentoring them — may be a way to keep the industry's future vibrant.

Regarding university turfgrass scientists: as more retire or move to other careers, the trend seems to be toward replacing fewer of these positions. The sky is not falling, but there has been a net loss of turfgrass faculty positions in the past few years. This trend will accelerate as more turfgrass faculty members reach retirement age.

What's behind this trend? Contributing is the decrease in turfgrass undergraduate enrollment, tight state budgets that make decisions difficult on where to spend precious dollars, and the challenge for turfgrass faculty of securing research funding and constantly making the case that a strong turf program is needed and valued by the turfgrass industry.

It is important to retain these positions because these are our go-to experts, the people we call when facing a challenging problem. They are the people who teach classes, speak at conferences and conduct research to solve problems the industry faces.

To help retain these vital turfgrass faculty positions, talk to university turfgrass scientists in your state or region and find out the state of their turfgrass program and their faculty positions. Consistently communicate with university administrators about the valuable service these experts provide to you and your colleagues.

Above all, attend university sponsored turfgrass events. There's nothing like a huge crowd at a field day or turf conference to show a university administrator that you care about turf and that the university turfgrass program is important to you.

Trust me, it's worth worrying about.



Clark Throssell, Ph.D., loves to talk turf. Contact him at [clarkthrossell@bresnan.net](mailto:clarkthrossell@bresnan.net).

# The 19<sup>th</sup> Hole with



## Darin “Lumpy” Pearson

**SUPERINTENDENT/GENERAL MANAGER** // Eagle Bend Golf Course, Lawrence, Kan.



**What can I get you?** An Arnold Palmer, please.



**How long have people been calling you “Lumpy?”** Since 1987. I was working at Lake Perry CC (Ozawkie, Kan.) and a good friend, Ron McHenry, named me that and it stuck.

**Are there people who don’t know your real name?** When I was at Alvamar CC (Lawrence, Kan.), I wrote a column called “Lumpy’s Corner.” I think people thought Lumpy and Darin were two separate guys. “Darin must be the laziest guy, he’s never here!”

**Your brother Daryl also is a superintendent. Who got into the business first?** I did; we both started at Lake Perry

CC and then I moved down to Alvamar and brought him and Kent Morgison with me. It’s pretty cool, we’re all three superintendents now.

**Were you guys just a golf family?** Golf and sports, definitely. My dad introduced us to golf early. In high school, base-

ball was our favorite sport. Our family background is in construction, so I think we always liked being outdoors, working with heavy equipment.

**What are your sports teams?** I’m all local — Kansas Jayhawks, Kansas City Chiefs and the Kansas City Royals.

**How about those Royals!** Baseball is my favorite sport; I have so many childhood memories of

going to Royals games with my brother, dad and grandfather... it was awesome to go through a (World Series victory) again. Growing up in the ’80s they were so good — Hal McRae, George Brett and Frank White — and then we went through such a bad time. What an exciting time to be a Royals fan. You never gave up on them because (manager) Ned Yost had so much confidence in his players that they could overcome anything. We all doubted (Yost), but he always did it.

**The new “Star Wars” movie is coming out soon. Are you going to see it?** Yes, I can’t wait! The trailers are awesome. But the bad thing is, I’ll be too busy to go see it at the theater — I won’t see it until it’s out on DVD and I can watch it at home.

**What’s your favorite golf memory, all time?** Winning five straight Kansas Golf Association Championships at Alvamar in Kansas Cup play; it’s a team event. And seeing (North Carolina basketball head coach) Roy Williams after he made his first hole-in-one at Alvamar CC on hole No. 2.

**Fill in the blank: If I had one extra hour a day, it would probably be spent \_\_\_\_\_.**  
... getting in a Gator or a golf cart and riding around our land and my in-law’s land with our two girls, Nellie (4) and Paige (2). That’s our favorite thing to do.

As interviewed by Seth Jones, Nov. 24, 2015.



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