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ON THE COVER:

The first mow at Pine Lake Country Club in Charlotte, North Carolina. Photograph by superintendent Will Laine.

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STILL FIT AND FUN TO PRINT

You're holding something you want. How do we know this? Like any quality industry brand, we back claims with research. Earlier this year, we conducted our annual Ad Effectiveness Study. We commissioned New Jersey-based Signet Research, the same company we use for our popular Turf Reports and Numbers to Know surveys, to poll an industry audience on content-consumption habits.

Professional research conducted by a reputable third-party entity requires a significant investment. Our parent company, GIE Media, believes in making these investments to properly serve markets.

As part of the survey, we asked audiences to indicate their preferred ways to receive industry information. Print magazines topped the list at 71 percent, followed by digital magazines at 63 percent.

And it's not just listed subscribers who relish consuming print magazines. Sixty-one percent of our subscribers share printed magazines with two or more people at their respective courses. We call this the pass-around effect.

The above numbers represent some of the science involved in understanding an audience. We won't inundate you with the digital metrics we crunch — we know you're too busy tracking growing degree days, moisture levels and clipping volumes to delve into digital media data.

There's also an art to understanding audiences. Fortunately, we receive the resources to visit many of you as part of our commitment to thoroughly cover this dynamic and growing industry. Guess what our observant eyes frequently notice atop desk and table piles? Seeing current and past issues of *Golf Course Industry* around maintenance facilities, pro shops, clubhouses and locker rooms induces proud grins.

When you tell us how much you enjoy receiving printed magazines, we smile and humbly respond, "Thanks for reading." When you urge us to continue printing 12 issues per year, we smile and humbly respond, "Thanks for reading."

A printed magazine is our version of a striped fairway or tightly manicured approach. We take immense pride in producing what you're holding. We refer to the final stage of print production as a walk through. Our entire team gathers in a conference room. We clutch printouts and inspect proofs like you scrutinize greens during a sultry summer afternoon. The occasion usually ends with the publisher + editor-in-chief giving a fiery speech about why monthly walk throughs should never be taken for granted.

We're among the fortunate few. Media is a rough, tumble and rapidly evolving business. The number of United States-based golf publications producing 12 print issues in 2025 can be counted on less than two hands. Support from the industry's leading brands (see page 73 for this month's partners) and committed ownership allows us to satisfy the print demand residing in this market. Editors and writers representing consumer golf media brands far older and larger than us don't receive 12 opportunities to bond with talented coworkers over physical page proofs. We're incredibly grateful for the unyielding reader, corporate and internal support.

We've countered publishing trends by growing our print product in recent years, with page counts increasing by 13 percent since 2018, a year when just 62 percent of golf courses, according to our Numbers to Know report, were profitable or broke even (compared to 88 percent in 2024). Last month, we sent you the largest September issue in our 19-year history as *Golf Course Industry*. This month, we've matched our October 2024 output, the largest fall folio in our history. Substantial folios represent a sign of vitality in our business.

But vitality can be fleeting. We're serving the right market at the ideal time. Instead of having to trim as golf expands, we're printing 12 times per year while adding digital features such as web-exclusive profiles, short videos on our popular social media feeds, webinars and showcases, and trivia contests and columns in our Fast & Firm newsletter. Our digital products complement what you're holding. We're a diversified multimedia brand in a cluttered contentsphere.

The demand for quality content as golf maintenance professionals seek solutions to handle enormous golf demand is vast. We enthusiastically accept the responsibility of producing thoughtful print content to satisfy the demand.

We're humbled you want us to consistently reach your mailboxes.

Enough about us. You have 75 other pages inside this issue to read about this amazing industry. 📖



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To provide an independent, innovative and inclusive voice for today's — and tomorrow's — golf industry professionals.

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Minnesota resort takes four-legged maintenance to the next level

No need to worry about a baaaaaaaaaad shot.

Rather, some helpful newcomers at Ruttger's Bay Lake Resort in Deerwood, Minnesota, are clearing the way for a unique agronomy assist on its Alec's 9 par-3 course, long one of the more popular short plays in northern Minnesota's bustling Brainerd Lakes golf region.

This past summer, Ruttger's introduced five Pygora goats to its short course. Bred namely for fiber production, the goats

By
**Judd
Spicer**

have fast provided the additional benefits of reducing chemical application on the grounds, while concurrently saving maintenance staff the time and toil of manually clearing woody or grassy course perimeters.

"It's in lieu of stabilizing what we do when we manage land," Ruttger's general manager **Mike Cameron** says. "The golf industry, of course, is high-demand land management and gets very expensive — not to mention a challenge to always find employees for these jobs on a repetitive basis."

Before actual goats, Alec's 9 was the original shortie GOAT, dating back to 1921 as the state's first resort course. In recent years, the par-3 play enjoyed a rework in its 100th year of action, seeing a design makeover by architect and former superintendent **Scott Hoffman**; the par-3 grounds, a sister complement to Ruttger's Jack's 18 Course, reopened in 2024.

"We're in the second year of operation with the redone Alec's," Cameron says, "and our new ownership group decided that they wanted to reduce the dependence on herbicides for some of the areas that weren't directly impacted by play."

As manifestation of the goat grazing, once the hoofed squad eats and digests the weeds, according to Ruttger's, the seeds are "Non-viable for future germination; this allows native plants to grow in their place."

The Pygoras are enjoying some rather fine fruits for the inborn labors.

"The goats work seven days a week, and they don't ask for a whole lot," Cameron says. "They get treated with oats in-season and then wintered in a very nice facility and grained-up really well. They're very spoiled."

Belled, collared and named (**Buddy, Ollie, Alfred, Sherman and Waylon**), the charcoal- and/or white-coated helpers evidence no perturb of golfers and the woolly crew isn't afraid to put on a show for visitors. Whether locking horns, or simply staring at players, the goats are gaining a fast following from guests on the walking-only course.

In time, Ruttger's has plans to further personalize the crew by way of providing posted bios for each goat.

"Folks playing the Alec's have just been delighted to stop and visit the goats, and the kids are getting a kick out of it," Cameron says. "Some people are just coming out to see them in the evening, so it's really been a fun project and guests are really embracing it."

Working with a rotational grazing method (adjacent to the fifth hole, as of August), the goats clear a fenced area —

complete with goat house, water troughs and feed bins — and then, once facilitated, eventually move them down the line to start the process anew. Ruttger's has employed electric fencing for purposes of both portability and to keep the goats contained as protection from possible predators.

Shorn in the autumn and spring, the goats may soon provide yet another benefit.

"That shearing will happen for this first time under our ownership this fall; and that fiber is very valuable in the world of yarn," Cameron says. "We don't yet know where that piece of it will go, but we are heavy into the retail business, so we'll see what we can do."

Whether Ruttger's eventually derives a line of novelty golf socks, sweaters, head covers or towels from the four-legged maintenance team, Cameron believes in earnest that goat notice in the golf-heavy region may well evolve beyond guest selfies. Much like a scorecard, golf agronomy is a results-based game.

"I think that when people see the results from where we started and how much work the goats do in a short amount of time," Cameron says, "they just might take note of this."

Judd Spicer is a Palm Desert, California-based writer and senior Golf Course Industry contributor.



Tartan Talks 111

Chris Jordan and **Drew Rogers** first met in the upper level of a clubhouse at a South Carolina golf course bracing for a gigantic transformation. The bonding that day continued at an outdoor tiki bar serving delicious cheeseburgers.

"It was a life-changing cheeseburger," Jordan jokes on the *Tartan Talks* podcast.

OK, maybe cheeseburgers don't change lives. But the project Jordan and Rogers are close to completing will give hundreds of people serene living and recreational experiences. Jordan is the superintendent at Olde Eight Golf Club, a layout designed by Rogers on the former Links at Stoney Point in Greenwood, South Carolina. Everything about the course be-

sides hole locations and playing corridors will be new when Olde Eight debuts. "These holes are



in the same place they have always been," Rogers says, "but they are expressed so differently. There's so much more drama, enhanced aesthetics and stronger strategic values across the board. The golf course should be really memorable from the get-go, and that's how we tied it together."

The regular encounters between Jordan and Rogers over the past year have also been memorable. In addition to describing Olde Eight, Jordan and Rogers use the *Tartan Talks* forum to share strategies for developing a solid superintendent-architect relationship. The podcast can be found on the Superintendent Radio Network page of popular distribution platforms.





Quickly back into play

Country Club of North Carolina director of agronomy Ron Kelly and his team rebuilt a hole disheveled by Tropical Storm Chantal.

Director of agronomy **Ron Kelly** has seen his handful of heavy storms and rainfall during his 35 years at the Country Club of North Carolina. But on July 6, as Tropical Storm Chantal hammered the private 36-hole facility in the Sandhills of North Carolina, Kelly knew this storm was intense.

“I started looking at the rain gauge, and it went from about an inch and a half to five inches within three to four hours, and I’m, like, there’s definitely something that’s going on that’s not normal,” Kelly says.

A few hours later, once the storm had passed and the course began drying, Kelly’s team discovered land once part of the Dogwood course’s 11th hole was now a fraction of what it used to be. Dogwood is one of the facility’s two 18-hole layouts, along with the Cardinal. Flooding submerged the area. The course is a local watershed collector, so thousands of acres of property direct water to the land. Water levels flowed above the course’s newly installed bridge over a spillway; irrigation and drainage pipes were washed out and three-quarters of an acre of sod was rolled up. “It was just in big rolls of

By
Kelsie
Horner

carpet it looked like,” Kelly says. Kelly and his team didn’t dwell over the damage. Kelly assembled a construction crew within five days to assess and fix any bridge and spillway damages. Shortly after, the damaged sod was cleaned up. Contractors were hired to assist with both tasks.

“Once we got all that done, we could go back to putting it back together,” Kelly says. Within six weeks of the storm, the 11th hole had been restored and was ready for play.

The maintenance team rebuilt the hole while continuing to maintain the other 35, all of which remained open for play following the storm. Kelly’s crew assisted in cleanup, reinstalled drainage and irrigation, and a sod company replaced the hole’s turf. “Our staff, we worked on it continually, doing what we could,” Kelly says.

Superintendent **Josh Weston** assisted with work and coordinating staff, and crew members **Jamie Ratliff** and **Steve Scarborough** were instrumental in excavation and construction work. In the end, the entire team was crucial to the success of the restoration.

“Pretty much the whole staff got

involved with it, because there’s just a lot of little things that had to be done,” Kelly says. “We’ll still be continuing to work on the hole. It’s hard to put something back together that’s washed out. There’s always something — something will change, like drainage, and you’ll have to put in some little extra drains, probably to catch some of the underground water.”

Development in surrounding areas has resulted in the Country Club of North Carolina experiencing greater impact from storms. “The amount of building and development in our area is probably just getting all that water on us that much quicker,” Kelly says.

To prevent and minimize future storm damage, the facility installed stone boulders to prevent the area from eroding to the level it did following the July storm. Other stabilization options are also being considered. The hole reopened for play in August.

“It makes you feel good to accomplish something that was unexpected and get it behind you and move on to something else,” Kelly says.

Kelsie Horner is Golf Course Industry’s digital editor.

COURSE NEWS

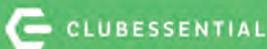
Storm King Golf Club in New York's Hudson Valley is offering fall previews and will officially open in late spring 2026. Set on 63 acres, Storm King offers more than 40 distinct golf holes within five 9-hole routing options for traditional or alternative loops. ... **Raymond Hearn**, ASGCA, will lead designs and renovations at Aurora (Illinois) Country Club, a classic 1914 design. Hearn will also restore the course at Pottawattomie (Indiana) Country Club, which opened in 1909. ... The Hermann Park municipal course in south central Houston will soon be renovated by golf course architect **Jon Schmenk**, in a large project privately funded by the Astros Golf Foundation and Hermann Park Conservancy. ... Jackson Kahn Design will lead design efforts at Kettle Forge, a new golf course in Ashippun, Wisconsin. ... El Macero Country Club in El Macero, California, reopened its renovated golf course following

a four-month renovation project on greens and bunkers. ... Western North Carolina's Champion Hills Club announced its **Tom Fazio**-designed golf course is reopen for play. Champion Hills suffered significant damage during Hurricane Helene. ... **Brian Curley** of Curley-Wagner Golf Design finished bunker upgrades to The Plantation Golf Club in Indio, California.

PEOPLE NEWS

Dr. Jackie Applegate will succeed **Steve Clifford** as president and CEO of PBI-Gordon Companies starting Nov. 1. Currently the company's COO, she will lead PBI-Gordon and its subsidiaries — PBI-Gordon Corporation, Pegasus Laboratories, TriviumVet, and Pet-Ag, Inc. ... **Edric C. Funk** is the new president and

COO of The Toro Company. Funk, a 29-year Toro veteran, had served as group VP of golf, grounds and irrigation since 2022. ... Control Solutions Inc. celebrated the career of founder and president **Mark Boyd**, who retired Sept. 1 after more than 33 years. ... The World Golf Village Resort in St. Augustine, Florida, recently welcomed **Pace Anderson** as its new director of agronomy. ... Landscapes Unlimited appointed **Ty Arndt** to senior program manager of its Project Development Group. ... The Philadelphia Association of Golf Course Superintendents named Aronimink Golf Club superintendent **John Gosselin** as the recipient of the 2025 Eberhard Steiniger Award. ... The Florida GCSA awarded **Todd Draffen**, director of agronomy at The Old Collier Golf Club in Naples, with the Distinguished Service Award. ... **Dan Miller**, a student at Michigan State University, is the winner of the Mendenhall Award of \$6,000 in the 2025 Scholars Competition offered through the GCSAA. The GCSAA also honored **John Patterson**, CTEM, the equipment director at Atlanta Athletic Club, as the winner of the 2025 Edwin Budding Award.



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Christina Bender

PENN STATE UNIVERSITY SENIOR

Christina Bender symbolizes the future of the turf industry. Bender is a senior at Penn State University and she already has some impressive lines on her résumé: A resident of Horsham, Pennsylvania, a Philadelphia suburb, she interned two summers at Merion Golf Club before spending this past summer at The Union League National Golf Club in southern New Jersey. She has also volunteered at the last two U.S. Women's Opens.

Bender wasn't planning on a career in turf when she enrolled at Penn State. But she's always had an aptitude for science.

"Going into college, I didn't even know that turfgrass science was an option," she told **Rick Woelfel** on the *Wonderful Women of Golf* podcast. "But I was determined to stay on that science track. My sister majored in chemistry in college and I always liked being in labs. I like learning about all that kind of stuff, doing experiments. My senior year [of high school], I was taking AP chemistry and AP environmental. Those were my favorite classes."

Bender's own interest in chemistry was inspired by **Anthony Adamucci**, one of her teachers at Hatboro-Horsham High School.

"He taught chemistry in a way that it wasn't scary anymore," Bender recalls. "That kind of inspired me to stick on that science path, just the way that he taught."

Bender entered her freshman year at Penn State as a general science major, with her specific career path still to be determined.

"I didn't really know what I wanted to do because I also really enjoyed environmental science," she says. "I ended up taking a few chemistry classes and biology classes. What kind of got me into turf, honestly, was I was sitting in all the lecture classes that freshmen sit in, and realized I don't like sitting still."

On the advice of her advisor, Bender signed up for a one-credit turf class—"about spraying and calibrating and all that," she says. That course proved to be a jumping-off point for Bender, who spent the following summer on the West Course at Merion.

"I'd never raked a bunker, I'd never mowed a green, I'd never done any of that," she says. "I

took that summer to learn the very, very basic level of what it takes to be on a golf course."

When she returned to Penn State, Bender's schedule was, in her words, "packed with turf credits."

The following May, she was on hand at the U.S. Women's Open before returning to Merion to spend her summer working the renowned East Course with a new outlook.

"I went back to the East Course to work and I started noticing all those finer details I didn't necessarily look at my first year, because I wasn't aware of the importance of everything," she says.

Bender found her level of self-confidence rising as she spent more time in the field.

"I think, at the very beginning of my career, doing bunkers every day, I was scared of the boss," she says. "Not because they were scary but because it's the big boss. And then, as I got more of, 'I know what this means and 'I know what I'm doing,' I definitely felt a different kind of confidence through me. It wasn't so much, 'I don't know what they're doing,' but more, 'What they're doing, I want to know.' I think that helped me feel more comfortable communicating with my managers."

Bender says that she gained plenty of confidence in her work during her second year on the East Course—and during her second U.S. Women's Open.

"It was an incredible experience both times," she says. "I would absolutely do it again. You don't work with a whole lot of women, at least I haven't. ... There are all these other females in the industry who are passionate about the same things around you. Some of my best friends to this day I met at that tournament." 🏌️



I didn't really know what I wanted to do because I really enjoyed environmental science. What kind of got me into turf, honestly, was I was sitting in all the lecture classes that freshmen sit in and realized I don't like sitting still."



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Sustainability starts with leadership

Southworth development company hired Eleanor Brown as director of sustainability in 2022. How is she making the most of her role?

Southworth, a family-owned developer of private members clubs, ensured sustainability and conservation are at the top of their priority list by hiring a director of sustainability. **Eleanor Brown** started in the role in July 2022 and has continued to elevate standards at the company's six clubs.

Southworth owns Massachusetts clubs Willowbend and Renaissance, Scotland's Machrihanish Dunes, New Hampshire's Meredith Bay, Virginia's Creighton Farms and The Abaco Club in the Bahamas.

Brown meets the superintendents where they are, learning their operations and strategies. "It's just a continuing relationship, really," she says. "I continue to learn and see what they're working on, and then I'm also doing research on new types of technologies that could make the practices even better."

She oversees projects and initiatives at each course, working as a one-woman team. Renaissance, an 18-hole **Brian Silva** design in Haverhill, Massachusetts,

recently planted a "mini forest" acting as a fence on the property lines. The project was led by superintendent **Chip Fitzgerald**. The trees planted were either taken from other parts of the property or were species native to the area. The facility also hosts on-site composting and a bee farm. The bees' honey is used for both consumption and data collection on the surrounding environment. Creighton Farms in Aldie, Virginia, an 18-hole **Jack Nicklaus** design, has also earned Audubon International certification through environmental preservation.

One of Brown's biggest goals includes becoming plastic-free across all the golf courses. While the courses still use plastic water bottles to some extent, Brown is working with each course to find a solution. "It's really key to understand the different characteristics of each property and its members so that we can identify projects that are impactful and easy to implement," she says. "We have independent solutions that we're trying out at each property."

At Willowbend, a private 27-hole facili-

ty in Cape Cod, water dispensers are located throughout the course, and the club has begun promoting the use of refillable bottles. The club also removed plastic bottles from the fitness center, replacing them with aluminum bottles, which is a potential end goal for all the courses to use.

The Abaco parrot, known to be an endangered species, has become a top priority at The Abaco Club on Great Abaco Island in the Bahamas. Brown has been working with **Dr. Caroline Stahala-Walker**, a dedicated scientist on the forefront of Bahama parrot protection, to begin conservation efforts for the bird on the golf course, including data collection on the species. The pair are also discussing which trees to reserve on the course to support the bird population, based on whether the parrot might eat from them.

Southworth's clubs can take multiple aspects of operations in the right direction through Brown's leadership.

Brown's passion for the environment began from a young age. Growing up in south Louisiana, she spent most of her time outdoors. As a kid, she assisted in an early wildlife management program working with endangered species. She was a high school senior in 2005 when hurricanes Katrina and Rita hit. "That just kind of changed everything," Brown says. "I wanted to understand everything about nature and what was going on and what might be changing."

The environmental steward went on to study marine science and environmental studies. After finishing her undergraduate studies, she attended law school. She then worked seven years as a litigator.

Everything helped prepare her for her current role.

"Being a director of sustainability in a company is actually bringing everyone else on board," Brown says. "Sustainability can be applicable to every corner of a business' operations."

"My background taught me how to step outside my comfort zone, adapt to different personalities and work toward uniting everyone around a shared goal. Those experiences have translated directly into the work I do in this role." 🌱



Kelsie Horner is Golf Course Industry's digital editor. To submit ideas about conservation-focused programs or actions at your course, email her at khomer@gie.net.

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RISING COST OF DOING BUSINESS

In last month's Game Plan, we discussed ways to make the budgeting process feel less frantic and more like business as usual. We continue this year's budgeting discussion by focusing on three key factors that will influence 2026 maintenance budgets: labor, oil and risk.

LABOR

According to an August report from the U.S. Department of Labor, the labor supply will continue to grow in the coming year, although not at the same brisk pace previously experienced. Unemployment projections for 2026 reflect a softening labor market with less access to entry-level manual-labor workers. As a broad range of observers, economists predict a rise in unemployment of 4.4 percent to 4.6 percent from 2025.

What do these numbers and projections mean for your 2026 golf course maintenance budget? Adding experienced and skilled workers will remain one of superintendents' biggest challenges. Courses will have less access to workers when filling open positions. In addition, new hires will require more training in

“

The limited supply of workers and the increased costs for training indicate that superintendents should budget for increased labor costs of 4 percent to 6.5 percent. Moreover, the volatile global oil market means golf courses should project an increase of 3.5 percent to 4 percent for gas and diesel for the year ahead.”

operational basics.

The limited supply of workers and the increased costs (time and money) for training indicate that superintendents should budget for increased labor costs of 4 percent to 6.5 percent, depending upon regional factors.

OIL

At most courses, the price of a barrel of oil seems a distant concern. While golf course operators purchase thousands of gallons of fuel to power maintenance equipment and vehicles, they mostly miss the global economic impact of the cost of oil.

According to J.P. Morgan Research data, “Supply-demand dynamics point to lower oil prices in the coming months. Demand remains soft, and markets may be underestimating final tariff levels on U.S. imports.” J.P. Morgan Research projects oil demand will expand with prices remaining steady.

What does the volatile global oil market — amid uncertain geopolitical considerations — mean for your 2026 budget? Golf courses should project an increase of 3.5 percent to 4 percent for gas/diesel for the year ahead.

RISK

Golf operations carry with them considerable risk for on-the-job injuries. Rising costs for risk management in most golf facilities is one of the fastest growing expense categories. While most golf course and club budgets show rising insurance costs within the administrative and overhead departments, superintendents should know that the rising costs of risk are also high with manual labor and outdoor activities.

What do these trends mean for your 2026 budget? The calamitous effects of climate-driven events such as wildfires, tornadoes and hurricanes are a ubiquitous concern for superintendents throughout their operations. A preemptive approach starts with a risk assessment of buildings, procedures, and operational practices to ensure that you are taking all reasonable steps to manage and minimize risk to your facilities and people.

Once your 2026 budget is finalized and approved, two factors loom that will influence your performance in 2026 and the satisfaction you take from the job. As course operating budgets increase with what no doubt seems to owners and managers unchecked control, superintendents must reckon with two subtle changes:

- Managing and measuring work
- Dealing with ambiguity

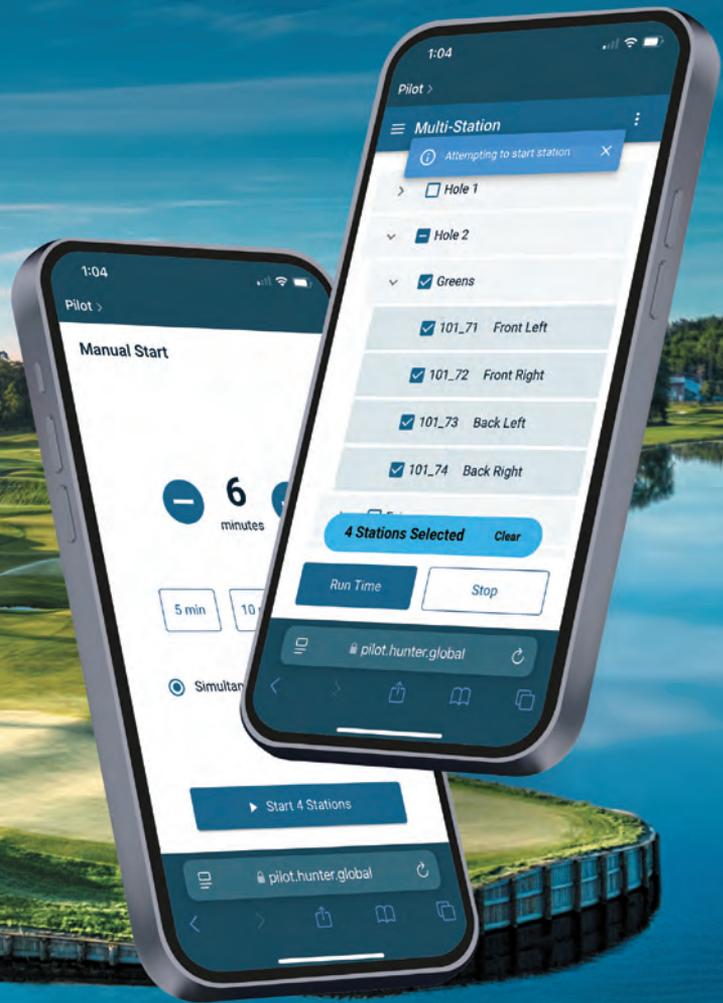
We will examine these two mission-critical demands next month. 



HENRY DELOZIER is a partner at GGA Partners, trusted advisors and thought leaders. He is currently Chairman of the Board of Directors of Audubon International.

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CORRECTING THE COURSE



Assistant superintendents Alex Riesenber (left) and Daniel Ritter (right) with superintendent Will Laine (middle) and Laine's dog, Charlie.

Smiling

at Pine Lake

Without question, from the day it starts until it's finished, the superintendent leads and carries a renovation. But the success of the project depends heavily on the strength of the team.

By Lee Carr

The staff at your nearest Waffle House is working hard to serve others, 24/7, not unlike a superintendent during a renovation. Waffle House, founded in 1955 by **Joe Rogers Sr.** and **Tom Forkner**, has expanded to 1,900 locations in 25 states. Their secret? “We aren’t in the food business,” Rogers famously said. “We’re in the people business.”

The restaurant business is competitive and so is the private golf club scene, particularly in Charlotte, North Carolina. Pine Lake Country Club, established in 1952 and located a few miles east of the city in Mint Hill, chose to invest in their course and its infrastructure with a complete renovation.

Pine Lake superintendent **Will**

Laine has a similar take to Rogers. “We are in the smile business,” he says. “We are in the business of putting smiles on people’s faces. Seeing golfers high-fiving each other on the greens or hooting and hollering because their shots bounced right up to the cup—that’s what it’s all about.”

Smiles increase when a course is meeting expectations, and **Jeff Lawrence**, architect and owner of Lawrence Golf Design, listened to members to understand what they wanted. “We discussed why every hole should be memorable,” Lawrence says, “and we agreed on Pine Lake, reimaged.” A fresh design concept was developed and implemented, in contrast to the former, repetitive green complexes surrounded by repetitive contouring.

Lawrence has a breathtaking

résumé, garnering years of experience with the design firms of **Jack Nicklaus**, **Gary Player** and **Tom Fazio**. Establishing his own firm, he is choosing projects he will fully engage with, being on-site often. Clients work with him directly, facilitating communication and efficient decision-making. The results of that dedication are easy to see at Pine Lake

“Our overall purpose was to make the course more maintenance-friendly and playable,” Laine says. “Not fun and easy, but more enjoyable for high handicappers.” Laine and Lawrence know that a great course starts with great infrastructure.

Aspen Corporation worked with the team to install truckloads of sod and helped sprig greens that

CORRECTING THE COURSE

increased in size by about 10 percent. They also helped with shaping and grading and were responsible for several other aspects of construction, finishing their work in July. More than 600 trees were removed to allow for more sunlight and to improve turf quality.

“We can’t provide good playing surfaces if we don’t have the means to do it,” Laine says. “With all the changes that have been made to the greens complexes, the approaches, and the additional drainage around the greens and in the fairways, the golf course is much more playable.” There are also a lot of ways to play the ground game.

Underground, there is a new Toro 2-wire irrigation system with Infinity heads, powered by a customized Watertronics pump. There are all new HDPE pipes, valves — everything —

and it’s working beautifully.

In addition to the new irrigation system, the power lines across the property were moved below ground. Union Power Cooperative decided to bury them during the renovation. “From a logistical standpoint, it’s made things interesting,” Laine says. The power lines cross seven holes, the parking lot, the driving range and the clubhouse. Oh, and the cart barn and the pro shop were also renovated!

Nick Mazzella, owner of The Mazzella Partnership, a national golf course construction project management firm, calls Charlotte home and was thrilled to help assemble the project team. Mazzella also helped establish and monitor master project budgets and schedules. The extra eyes, ears and firepower have been helpful.

“Pine Lake is a great club and this

project is really going to put them on the map here in Charlotte,” Mazzella says. “Kudos to Will, who has shown exceptional poise and leadership throughout the entire process. Will handled everything in stride and balanced more than most, considering the additional complexities.”

HOLE IMPROVEMENTS

Design, infrastructure and agronomic changes have all been significant. Par shifted from 72 to 71, due to No. 10 becoming a par 4 instead of a par 5. There were spirited debates about this, but the objective was to create the best hole for that location, not achieve a certain par. Besides, No. 10 is a special spot. “In the fall, you can see seven greens from here,” says Laine, smiling. “This is where I drink my coffee.”

Total bunker area has decreased by 40 percent and the bunkers are vastly improved. Previously, there were a few that some members could not physically get in and out of, and nearly \$80,000 was spent annually on bunker maintenance. After heavy storms, pumps had to be borrowed to remove the water and it was taking the crew a few days to repair them. By installing an aggregate liner, bunkers can now be maintained by a single crew member in a few hours, even after severe rain events.

Moving in a different direction with turf selection has improved every hole. Laine knows that maintaining bentgrass in Charlotte is tricky, and Pine Lake opted for wall-to-wall Bermudagrass. 419 Bermudagrass in the rough and fairways made it easy to sod everything initially, and define the fairways later. Tahoma 31 Bermudagrass works for the tees and approaches, and the greens are TifEagle Bermudagrass. Covers for all 21 greens — those on the course and the three practice greens — are ready for winter.

Fortunately, the summer was ideal for growing Bermudagrass. “Honest-ly, I could not have scripted a better



Drone decisions

“Having a drone is the best investment I have made as a superintendent,” says **Will Laine**, who purchased a DJI Air 2S to use at Pine Lake Country Club. Able to hover and fly for about 30 minutes, this drone can snap still images or record video, and it has been used in many ways to help with work around the course.

Drones make it easier to see what is happening in a large area quickly, such as viewing the perimeter of an entire green, and can provide views of places not easily accessible, like native areas. Aerial photos are great for showing members a different perspective of the course and providing interesting content for newsletters. The images and videos can be used by the marketing team for the website or to help with branding and member recruitment.

License requirements vary depending on the size of the drone, its location and purpose for use, and proximity to flight patterns. If it’s possible with next year’s budget, a drone is a powerful tool for comprehensive aerial data collection.



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weather pattern,” Laine says. “It was very, very hot, and very, very humid. There was not a lot of rainfall, which is good for growing in sprigs because you can control your moisture.” Two thunderstorms meant that two small areas had to be re-sprigged, but the damage took little time to fix.

The lack of rainfall did translate to concern for Pine Lake’s irrigation ponds, which are replenished with stormwater runoff. “I started to sacrifice other areas of the golf course to make sure I didn’t run out of water on the greens, but everything is fine now,” Laine says. That is an example of the choices superintendents must shoulder, striving to balance resources.

There are hybrid tees on Nos. 11 and 14 and, for most players, No. 11 will be the hardest hole with a bunker directly in front of the green. No. 12 has changed the most, partially because that green used to flood and it has drainage improvements to prevent that from happening. Visuals on the 12th are also completely different.

“That was the most bulldozing we did on property,” Laine says. “The green moved 15 yards to the

▼ Hole No. 6 before grow-in.

Good bones

Golfers and management sometimes don’t understand the importance of course infrastructure, but it’s essential for achieving premier playing conditions.

Put simply ... drainage pipes? Not sexy. Irrigation lines? Not sexy. Proper power sources and a solid maintenance facility? Not sexy. Coupled with the high costs associated with these elements, there can be some friction about what is necessary.

Educate the decisionmakers. Show them how quickly bunkers can be ready for play after a storm rolls through when those bunkers have been modernized. Show them the cost savings on those hours from the crew, and do the same thing with irrigation repairs or hand-watering. From the turf to the maintenance facility that protects the equipment, a course that is properly invested in and that is designed to be thoughtfully maintained will make a significant return on that investment.

right and the hole was shortened by 25 yards. It’s got a really cool view, framed by two bunkers, a really large pine tree and a Japanese maple behind the green. The slopes around the green, the bailouts and the short grass really frame it.”

Members talk about No. 12 all the time, frequently stopping Laine in the clubhouse with questions. Ninety-one percent of the membership voted in favor of the renovation and Laine hosted three course tours during construction. Members are invested. The maintenance team provided updates with the help of a DJI Air 2S drone (see *Drone decisions*, p. 20), capturing photos and video

shared through the club newsletter.

“I am eager to hear how the members feel about the new design, conditioning, aesthetics, playability and more,” Lawrence says. “They entrusted me with a big undertaking, and I think the collective team effort by many dedicated people has delivered an exceptional product. The overall Pine Lake golf experience has dramatically improved, which will help the club continue their success in the competitive Charlotte market.”

TIME MANAGEMENT

One of the more difficult challenges for superintendents leading renovations is balancing competing demands for their time. “Time management has definitely been one of the hardest parts of this for me,” Laine says.

One way he coped — and navigated his way through some sleepless nights — was recognizing the need to share responsibilities with Pine Lake assistants **Daniel Ritter** and **Alex Riesenberg**. He also leaned on **Scott Blair**, Pine Lake’s equipment manager. “We couldn’t do it without them,” Laine says. “Those three are my core management team.” Additionally, there were 15 full-time staff working hard and the seasonal help all returned, bringing significant talent and experience to the club.

“Toward the end of the renovation, there was definitely some fatigue and burnout, and I could see that in their faces,” Laine says. “I



tried to do little things here and there to boost morale.” Laine sent the crew home early on rainy days, or took them to Waffle House for breakfast, and there have been cookouts.

“I kept reminding everyone that the end is in sight,” Laine says. “I told them that we weren’t going to be hand watering sod every single day or fixing ruts from trucks driving up and down the cart paths. That stuff was ending.”

Laine was thoughtful with the crew and he was thoughtful in reflection. “It surprised me how much anxiety and stress came with it,” he says. “I knew that it was going to be a challenge, and I have always struggled with stress and anxiety. That’s something I am not afraid to admit, but there were times that I would wake up and have a little panic attack. I was wondering how we would get it all done.”

Organically, Laine developed the talented members of his team and maintained oversight. “My assistant superintendents were able to take some of the burden off my shoulders and I could delegate some of the tasks,” he says. “I’m grateful for them.” For instance, instead

of Laine writing monthly for the club newsletter, he established a rotation, with Ritter and Riesenbergs also contributing articles. They all operated the drone. Plus, everyone documented daily project activity in a spreadsheet. It was great for referencing what happened when on the course, and who was accountable. Spreadsheets helped accumulate agronomic data.

They also took turns as point person for the different crews on site and would meet early in the morning or before going home to ensure smooth communication. This was beneficial for the development of the assistants, as well as creating a broader balance for the project.

“As superintendents, we want everything to be perfect,” Laine says. “It’s hard to see the light at the end of the tunnel when things are dirt. Going into this project I knew that I was going to need a strong team. I didn’t know how much I was going to need them.”

Laine is looking forward to paying more attention to the details. The hours spent fixing bunkers and doing irrigation repairs can be spent focusing on acute work that makes a big impact. “We can edge curbs, or prune beds or do some tree work,” he says. “There’s



Design elements

At Pine Lake Country Club, the renovation produced a more refined golf experience by incorporating variety, playability, strategy, aesthetics, maintainability and enjoyment. Strategic bunkering, combined with thoughtfully considered green surfaces and surrounds, was the main focus. Post-renovation, hole locations have significantly increased and the creative shaping around the greens offers a variety of shot options, making every round more engaging. Each hole is memorable, presenting varying challenges and gorgeous visuals. Coupled with outstanding maintenance, these elements have created exciting, dynamic golf at Pine Lake.

a laundry list of things that we can now do that we didn’t have time to do in the past. Actually, I’m ready to dust off the clubs and go play a round myself.”

Praise should be shared widely. Laine has been resourceful and steady, nurturing the course and developing an accomplished, forward-thinking management team. With a dynamic, maintenance-friendly design by Lawrence, the members now have a course that has been reimagined. For everyone involved, whether together at the Waffle House or, better yet, while enjoying Pine Lake Country Club, it’s time to smile. 🌱

Lee Carr is a northeast Ohio-based writer and senior Golf Course Industry contributor.

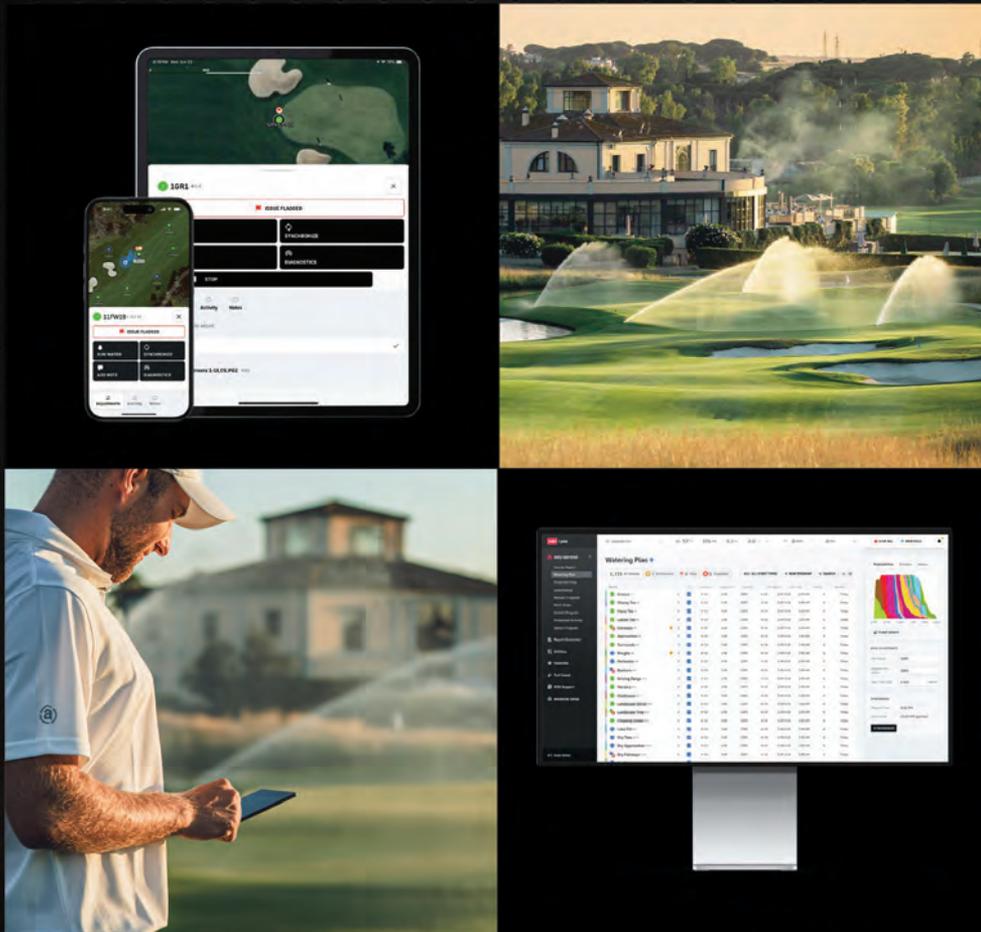
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Proactive patriarch

Why the oldest
course in
California's
Coachella Valley
assembled an
eclectic team to
address its water
conundrum.

By
**Judd
Spicer**

The oldest golf course in Palm Springs isn't swinging a narrative merely historic and halcyon. Rather, the O'Donnell Golf Club — which debuted in 1926 and has played its current 9-hole course since 1929—is proving among the more proactive tracks across the Southern California desert's 120-course bounty.

And the private club is doing as much as the only Coachella Valley course irrigated with domestic water.

About five years back, amid extreme California drought conditions,

O'Donnell received a faucet wake-up call from its water provider, the Desert Water Agency, a not-for-profit agency and state water contractor that provides water to approximately 24,000 domestic water connections, serving about 75,000 people.

“DWA came to us and said, ‘If you guys continue to use water the way you’re using water, you’ll have to demonstrate to us why we should let you overseed and water,’” says **John Essell**, co-chairman of the club's greens committee. “That’s when the flare went into the sky.”

That flare received subsequent

flame at the region's now infamously candid and alarming Coachella Valley Golf and Water Summit, held at the onset of 2023. Among the gathering's nearly 175 attendees were Essell and nationally renowned turfgrass scientist **Dr. James Baird** of nearby University of California, Riverside.

After the two men were introduced, Essell compelled Baird to visit the 33-acre O'Donnell grounds for the first time. The sojourn prompted, as Essell recalls, Baird's response of, "Well, now I know why I'm here — you guys are using way too much water."

O'DONNELL'S AGRONOMY MIND-MELD plays as unique as the serenity of its historic setting. Tucked adjacent to the San Jacinto Mountains and a mere block from the downtown Palm Springs' main strip din of drink, dine and tourism, the grounds' enchanted presence sits unknown to most desert vacationers.

The club's nine holes are played in wraparound as a 5,310-yard card with staggered tees. The time-honored course and buildings were recognized by the National Register of Historic Places in 2020.

Working with a third party for its course maintenance, former and present course brass has leaned on the passion of Essell, the *métier* of Baird and the trusted hand of longtime and now-retired desert superintendent **Roger Compton** as turf consultant. In a bit of irony, Compton's storied, full-time Coachella Valley career concluded at Thunderbird Country Club, the Coachella Valley's oldest 18-hole course.

For a team motivated by cost and sustainability alternatives and initiatives, irrigating with domestic water does not a hot drop make.

"We're on a meter here, measuring by cubic feet," Compton says. "My whole life [previous to working with O'Donnell], we've measured by acre feet. But we're in the ballpark of where we should be for usage. The problem

with the water here is that it's about \$1,000 per acre-foot; as opposed to other places here in the mid-Valley, which pay closer to around \$280 per acre-foot, and much less than that in the east Valley. So, it's tough — and we're definitely not wasting water with what we're paying."

Alternate water source options prove unfeasible.

"We've twice had somebody out here just to eyeball whether we could put a well out here, how far from the mountain," Essell says. "And the general consensus — based on the mountain proximity, because the granite is so thick — is that's there just no way to drill into it. And then the other part is seeing if we can get the reclaimed water, the closest of which is 2.3 miles from here. So, that's not gonna happen. We've got to live with what we've got."

Searching for solutions and savings, O'Donnell has opted for a card equal parts reinvestment and experimentation. Add a dash of spirited youth, and the nearly 100-year-old course is driving toward the future as much as acknowledging its past.

At the close of 2024, O'Donnell brought on 33-year-old **Alexandra Phillips**, PGA, as general manager. A former touring professional and long drive competitor, Phillips didn't take the gig to oversee a status quo.

"Yes, we are the oldest course, but we want to be forward-thinking, we want to help the Valley get into the future," she says. "And that's a big part of our water conservancy efforts. We don't just want to be part of the desert's history, but to be part of the future."

The assembled team and motivated frontwoman have made for a unique foursome.

"Roger has been a great consultant, and Mr. Essell has been amazing with the greens committee. They've been instrumental in teaching me," Phillips adds. "Yeah, I learned the basics through the PGA and working at another course and

being in golf forever, but it's a different world when you're in charge."

That world has been as much think tank as golf grounds across the past two years.

Adding its name to the desert's growing roster of an en vogue shift toward eschewing a putt portion of annual overseed, O'Donnell renovated its greens to MiniVerde in 2023.

Pleased with performance of the hybrid Bermudagrass and reputed speed (Stimping at 11.5 in-season), the surfaces have been double-cut and rolled thrice weekly in-season, while adding Primo to slow growth. "There's a learning curve to it, a lot more work to it," Compton says of MiniVerde.

Along with the new greens (coupled with a 1,500-square-foot MiniVerde sod farm), the club's further conservation efforts have included: allowing rough to go dormant in winter; namely turning heads off (approximately 60) in non-overseeded rough; a full rebuild of the pump house's injection system; and, a summer 2025 project replacing nearly 180 heads/internals.

Now regularly irrigating just 11 of the grounds' 33 acres, O'Donnell is assessing course performance with the satisfaction of its avid 235 golf members.

"There are challenges, with water being our biggest," Phillips says. "Not



The problem with the water here is that it's about \$1,000 per acre-foot; as opposed to other places here in the mid-Valley, which pay closer to around \$280 per acre-foot, and much less than that in the east Valley. So, it's tough — and we're definitely not wasting water with what we're paying."

— **Roger Compton**

CORRECTING THE COURSE

► Roger Compton (left) and John Essell (right) are key figures in helping O'Donnell Golf Club solve its water challenges.

only the state's drought issues and trying not to overstay our welcome in the regard, but also, of course, the cost. We have a small membership, and we want people to enjoy their time here. The upcoming irrigation project is going to be huge for us, being able to save almost 14 acres of watering over the winter."

WHILE SUCH EFFORTS AND AIMS may prove par for the course, other club initiatives are more mad turf science.

After Baird started sampling the effects of surfactants and wetting agents, the good doctor followed the Hoganism of finding secrets in the dirt.

On the club's eighth tee box, a Baird-led project planted four drought-tolerant Bermudagrass hybrid grasses for study. The test plot monikers include: Latitude, Tahoma, Acapulco Gold and the locally homaged Coachella.

Additionally, adjacent to the No. 2 tee box on the property's polar end, a near-1,800-square-foot plot is also testing quad of drought-tolerants, matching Tahoma and Coachella with TifTuf and Bandera.

"We put up these signs here so that the members could see what we're doing," Essell says. "And, working with the guidance of Dr. Baird and his graduate team, we did this project and left it basically dormant, irrigating about once or maybe twice a week. We did nothing else — except a very occasional mow — and just watched



how they transitioned."

Balancing reality and hope, while Compton would no doubt celebrate a wall-to-wall drought-tolerant overhaul, the veteran grassman is seeing an eventual fairway and green surrounds resod as more likely.

Standing by the ninth tee box, Compton says: "I would love hybrid Bermuda tees. But in order to do that — and let's say we wanna widen this tee — when you regrass it, and let's say you only regrass the tee-top and replace it with a hybrid and leave the other Bermuda, in three or four years with a few feet here and there, you're right back to Bermuda. You can work on it, but you can't keep it out."

Baby steps to continued conservation seem more likely.

"Part of this is just trying to understand how much or how little water is needed," Essell adds. "So, now that we're almost in transition [in late May], the next part of the process that Roger and I have talked about is

maybe taking an area, say, 50 yards in front of a green, putting in one of these turfs, letting it go dormant and seeing what happens."

With aims both bold and sanguine to eventually reduce water usage by upwards of 20 percent, O'Donnell's storied past and aggressive present is being met with both hope and back slaps.

"We hosted our own water summit here, and a few of the gentleman, along with the rep from the Desert Water Agency told us that they thought what we were doing was setting the chart for other courses in our Valley," Essell says. "They all expressed, regardless of water source, how important it is to recognize the value of these resources, along with the steps that need to be taken to conserve. They told us we were at the forefront of this effort." 🏌️

Judd Spicer is a Palm Desert, California-based writer and senior Golf Course Industry contributor.



MORE GRIT AND GLORY

Following the restoration of the Lower Course at Baltusrol Golf Club, everyone took a deep breath and started on the Upper Course. What lessons helped a talented team handle another grueling project?

A striking image of the first tee stripped down to the dirt, a few feet from the historic Tudor clubhouse, is a symbolic visual for the beginning of the restoration of the Upper Course at Baltusrol Golf Club. The restoration of the Lower Course, reopened in 2021, was a success, and here **Greg Boring**, director of grounds, and the maintenance team — many of them new — were gathering themselves for 18 more holes of grit and glory.

Through two restorations, an out-

By **Lee Carr**

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CORRECTING THE COURSE

sider might have thought Boring was living at Baltusrol, just off Shunpike Road in Springfield Township in New Jersey. In fact, some maintenance team members and staff enjoy accommodations on and near the property. There are also guest rooms in the clubhouse, where photos, descriptions and trophy displays cover the walls. The club boasts a wonderful interactive living history display with a touch screen to select videos that interest them.

On certain spots of the Upper Course, you can view the bustling New York City skyline from the relative calm of the suburbs, though it is easy to see the maintenance team has been exceptionally busy over the past few years. While the team had to manage pandemic protocols during the first restoration, that was unnecessary, thankfully, for the second.

Lessons learned and decisions solidified during work on the Lower Course made certain aspects of the restoration on the Upper Course easier. They used the same team and suppliers, with Total Turf Golf Services executing the work. The professional relationship between architect **Gil Hanse**, president of Hanse Golf Course Design, and Boring was also established.

Hanse was hired as the architect

DOUBLE THE FUN

The 14th hole on the Upper Course is a 400-yard par 4 with a double green and a unique history. Originally, there was only a lower green but it would sometimes flood, so a second green was built in preparation for the 1936 U.S. Open, won by **Tony Manero**. Over time, a single green became favored. Whether or not to restore the dual-green was a difficult decision and the management team and architect **Gil Hanse** changed their minds a few times. After working the land and some careful consideration, the team decided to fully restore the vision of **A.W. Tillinghast** with both the original and the second green. Now, two small bunkers rest between the greens, with a third farther forward in the approach area. Two larger bunkers defend the front left side of the green on the golfer's left. Players will enjoy both greens before the club determines how they will be used in the future. Double greens are great for creating a large variety of pin locations, encouraging creative shot-making on the approach, reducing turf stress and providing maintenance alternatives. Double greens inspire conversation and instantly make a hole memorable.



in 2017, and Boring was hired in 2019, so by the time they started work on the Upper Course, they had been working together for several years. They respect one another and communicate clearly, understanding the role each must contribute to the project's success.

Throughout the restoration of the Lower Course, decisions were made about infrastructure and playability, and a framework was established for understanding the strategy of **A.W. Tillinghast's** design. It was important to build on that understanding, and layer it with today's technological advances and the sensibilities of the modern game.

"The technology of the equipment for the game is not the only area where improvements have been achieved," Hanse says. "The continued advancements in how we maintain our courses has been the biggest cause for change in designs of this era. Our approach at Baltusrol set out to balance the advancements in technology and maintenance, with a respect for the original Tillinghast design."

The irrigation system was replaced, and PrecisionAire was added. "We get asked most about the PrecisionAire system and how much we use it," Boring says. "We were utilizing it almost every day this summer and it will be a tool that we will continue to use as the golf course matures." The Watertronics pump was new for the Lower Course in 2020, and it powers the irrigation for both courses.

Boring is savvy about turf types. "One of the things we love about that is you've got a superintendent who's comfortable maintaining *Poa* and continues to maintain *Poa*, but there's also a certain patina that the greens take on," Hanse says. "They feel older than they actually are. So, you've got all modern conveniences and infrastructure underneath them, but you're still presenting them in a fashion that looks as if they were a hundred-plus years old."

It's good they weren't a hundred-plus years old, though, because the summer weather was very difficult—likely the most difficult Boring has faced since 2005. "Heavy rains early in the summer



and extreme heat has been the norm,” Boring says. “Humidity has also seen some record highs throughout the summer, which is not what you want for a brand-new golf course.”

Boring’s experience meant he knew to stay away from aggressive maintenance practices, so the team is enjoying fall with the courses relatively unscathed. “We knew we had to be patient,” he says. “In a normal year you can’t push new turf too early or be too aggressive. We knew that going into the first season on the Upper Course and we communicated that to the membership.”

Boring is good at listening and answering questions, and on weekend mornings you can find him around the practice facilities, which are often referred to as the “third course.” The practice area near No. 1 on the Upper Course was significantly expanded and the putting green behind the pro shop was rebuilt. The practice facilities will continue to expand, with an eye on hosting the 2029 PGA Championship on the Lower Course.

The conundrums experienced on

the Upper Course post-restoration are not unusual. “Honestly, we have a few bumps and bruises out there, but we expected that,” Boring says. “Most of our thin turf is due to construction compaction areas and thinning of some of the bentgrass on our putting surfaces. The *Poa* on the greens tends to handle our mowing and rolling much better than bentgrass.” With proper attention, the turf is only getting stronger.

The team is also working to achieve the right balance for the fescue, or “eyelashes” around the bunkers. If it’s too thick, people can’t hit the ball out properly should it land there, and that’s frustrating. If it’s too thin, it doesn’t look right. The team is working through a learning curve while the fescue is being cultivated and hand-sheared. The look is distinctive, with aesthetics on both courses impressing members.

COURSE COMPARISONS

Statements comparing the Upper and Lower courses are amicably debated.

“The Upper and Lower courses at Baltusrol are distinct in their design

and strategy but equal in their conditioning and playability,” Hanse says. “More layout changes were made to the Lower than the Upper over the years, but the infrastructure beneath the surface was consistent throughout the property. That consistency has been preserved and improved with new drainage and irrigation systems on both courses as well as PrecisionAire technology beneath all greens. These improvements allow Greg and his team to provide Baltusrol’s members with near-championship conditioning on a daily basis.”

Providing that conditioning in high summer, after two restorations, meant the team was fighting fatigue. There were six interns, and the courses were extremely busy. Annually, they host 36,000 to 38,000 rounds between the two courses. There are very few maintenance days, with none scheduled between June and mid-November.

“I can’t say enough about the team,” Boring says. “We had an entire new management team on the Upper Course and they nailed it.

CORRECTING THE COURSE

The crew members are very mature and couldn't have handled this first season any better. They work with such a positive attitude and bring such excitement to the job every day. I couldn't be more proud of **James Surico**, **Kyle Boushell** and **Stephen Chumacas** for stepping into this situation and hitting it out of the park.”

The members have been waiting for their courses to both be playable for years — construction affects everyone. “Most members love the scale of the property now,” Boring says. “We have opened up corridors throughout the property that makes it look so much bigger, and people like to talk about the dual green complex on No. 14. The green on the right is the talk of the club. There was a lot of anticipation for how the dual greens would turn out, but the beauty is that the design is based on our old photos. We chose what Tillinghast envisioned.”

Across Baltusrol's 600 acres, 350 of them maintained, Boring won't make any significant changes in di-

PIVOTAL DECISIONS

Baltusrol Golf Club was founded in 1895 by **Louis Keller**, and the club promptly hosted five major championships during the next two decades. A courageous decision was made to clear the old course in favor of creating two entirely new courses for the members to enjoy. The club hired **A.W. Tillinghast** in 1917 to create the dual courses, Upper and Lower, that are well-known today. Through time, those layouts evolved. In 2017, the club hired **Gil Hanse** to execute a complete sympathetic restoration, inspired by Tillinghast's original vision. The Lower Course was restored first and reopened in 2021; the Upper Course was then restored and reopened this year. Baltusrol hosted the 2023 Women's PGA Championship and will host the 2029 PGA Championship. Including amateur and professional events, the 2029 event will be the 20th major championship in the club's history.

rection on days that are cold, cloudy and rainy when he is reviewing the courses. “I have learned not to make decisions when the light is not hitting it,” says Boring, and technology is helping with consistency.

Drones were used in July and September to spray the fescue, and it is flailed in the fall. There are nine pop-up fans on both courses, underground and invisible when they are not in use. The USGA's GS3 Ball and DEACON app help with data collection. There are 45 miles of drainage, with 21 miles of irrigation and 4,400 sprinkler heads. Technology is also

helping with the environmental aspects of course maintenance.

“From a sustainability standpoint, it might be counterintuitive, but it's true that the more sprinkler heads you put out there, the less water you use because you can pinpoint its accuracy and you can put it in the right place,” Hanse says. “And water is going to be the most challenging aspect that the golf industry will face going forward. So, from that perspective, I think the technology, the ability to apply water in a much more meaningful and efficient way, is going to be dramatically impactful.”

Boring will tell you that his three passions are family, golf and Ohio State. With his drive and enthusiasm, Baltusrol is lucky to have him. Having learned lessons from two full restorations, he describes the energy and support from the membership throughout it all as “first class.”

When that bulldozer was on the first tee of the Upper Course, it didn't touch the flowerbeds by the clubhouse because even when things are changing, Baltusrol respects tradition and recognizes some things are better left alone. Boring and the team deserve the glory following the grit that transforms the dirt on the first tee into a course of which everyone can be proud. At Baltusrol, they keep building on their championship history for their future, inspired by visionaries of the past. 🏌️

Lee Carr is a northeast Ohio-based writer and senior Golf Course Industry contributor.



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Q&A

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Double wonder

Along the Nova Scotia coast, veteran superintendent Aaron Little and the Fox Harb'r Resort team are bracing for more of everything. How do you logistically handle a turf maintenance operation when ownership wants to add another course?

By **David McPherson**

It's been more than 25 years since **Aaron Little** first set foot on Fox Harb'r Resort. The veteran greenkeeper is grateful to work at this idyllic 1,100-acre property nestled along Nova Scotia's Northumberland Coast and has no plans to leave any time soon.

"At this point, I'm a lifer!" says Little, the golf superintendent and grounds manager. "I've seen the property grow from the ground up."

Little grew up in a turf and maintenance environment. At 14, he started working for his father at Fredericton Golf & Curling Club in New Brunswick's capital. After a decade, he left for Fox Harb'r to join superintendent **Barry Scott**. The pair oversaw the grow-in of the original 18-hole championship golf course in 2000, and Little

assumed the head greenkeeper job when Scott left several years later. Over the past two decades, Little has watched the resort continually add new amenities such as a 26-acre vineyard (see *Project Timeline*, p. 39).

"The constant development certainly keeps me entertained," says Little, whose core turf team includes assistant superintendent **Richard White** and irrigation and spray tech **Brett MacDonald**.

Ron Joyce, the co-founder of Tim Hortons (Canada's favorite coffee and donut chain) planted the seeds for this posh place when he bought the property in 1987. The billionaire envisioned a gated residential community and an upscale retreat for his wealthy cronies and their friends. That's why Fox Harb'r features a 5,000-foot airstrip for

private jets and a deep-sea 25-slip marina for luxury yachts.

Tiger Woods holds the golf course record (63), which he shot during a Nike corporate event in 2009. Other celebrity guests over the years include former U.S. President **Bill Clinton**, the late American business mogul **Wayne Huizenga** and legendary National Hockey League star **Bobby Orr**. Joyce passed away in 2019, but today his son **Steven**, who serves as chief executive, and president **Kevin Toth**, carry on his legacy.

Fox Harb'r has always served three distinct markets: residential members, corporate business clients and individual travelers. Thanks to the foresight of the current leadership — and a strategic business plan focused on expanding the property's real estate offer-





From grass to grapes

A round of golf followed by a glass of fine wine are perfect partners. And, as superintendent **Aaron Little** has learned over the past decade at Fox Harb'r — because the resort added a vineyard to its list of amenities and the greenkeeper added overseeing these vines to his responsibilities — growing grass is not that different from growing grapes.

“There is a big crossover,” he says. “From the understanding of soils, fertilities, chemistries and fungicides to all the cultural practices that go along with maintaining a vineyard or a golf course. Soil management, drainage and spraying are also similar in terms of agricultural practices. And, just like golf, everything you do in a vineyard is dictated by the weather. It is the one variable we can't control.”

The Fox Harb'r Vineyard now grows five grape varieties: L'acadie Blanc, Chardonnay, Riesling, New York Muscat and Lucy Khulmann.

ings while concurrently enhancing the golf course — Fox Harb'r Resort is growing again.

“As a golf course property, we have evolved into more of a resort operation,” Little explains. “There are a lot of non-golfers now staying with us and golf is just another amenity. We realized though that if we want to expand our residential offerings, we couldn't block these members from the tee sheet four days a week with corporate traffic. The executive team decided the best way to address this challenge was to expand our golf offerings to better service the ever-growing corporate demand.”

When the original 18 holes opened, the course received instant acclaim. Still, one of the critiques of **Graham Cooke's** design, which combined a links-style course with a parkland layout, was that only nine holes from the three miles of the North Atlantic coastline with the other nine routed inland.

In 2019, Fox Harb'r sent out a request for proposal asking for architects to submit design ideas for a new 18-hole course. After reviewing all of the RFPs, the management team of Steven and Toth were torn between a pair of proposals: the one from

Doug Carrick and the one from **Tom McBroom**. Unknowingly, this pair of Canada's most accomplished modern golf course architects had submitted similar plans. Fox Harb'r proposed a co-design and they agreed.

“Kudos to them,” says McBroom, whose designs include many of the top courses in Canada. “No one ever asked us to [co-design a course] before. If we were asked to collaborate 20 years ago when we were younger and trying to make our own mark, ego might have got in the way and I'm not sure either of us would have agreed. But, at this stage in our careers, it made sense.”

RATHER THAN BUILD an entirely new 18-hole course, the architects are reimagining some of the existing holes — taking the links half of the existing seaside course, adding nine new holes and renovating some others — bringing them closer to the water to create a more authentic links course like Muirfield in Scotland. The second part of this renovation is renovating the front nine of the original parkland layout and giving it a Heathlands look like England's Sunningdale Golf Club. The result: two distinct world-class 18-hole offerings, rebranded as the Oceanside Course

and the Vineyard Course.

The project is now in the third year of a four-year building. The new Oceanside 9 opened this past spring. Then, the original back nine of the inland course would be shut while the new Vineyard 9 is seeded and grown in. This Heathlands course will feature interesting grassing and native material that will decorate and define the bunkering. The new Vineyard 9 is planned to open in the spring of 2026. The third phase will see the renovation of the existing Ocean course in 2026. Finally, by 2027, the renovated Ocean 9 will open and the renovation of the existing inland 9 will be completed.

According to Carrick, engaging greenkeepers from the outset of any project is paramount. “I advise a lot of my clients to bring a superintendent in early in the process, so they are familiar with everything we are proposing,” he says. “We can listen to their concerns from a maintenance perspective since they are the ones who need to look after the course after it is built and we are gone.”

“Aaron [Little] knows this property better than anyone. ... He knows the drainage challenges they've had in the past and the climate conditions

he faces here with nasty winds off the Northumberland Strait,” Carrick adds. “For example, we had the grade elevations on the new greens close to the ocean roughed in and Aaron told us they might be vulnerable to salt spray during a storm; he suggested moving them back and raising them up a little bit to minimize that impact and we made this change.”

Carrick is grateful for the opportunity to collaborate with one of his peers and he is especially excited to work—for the first time in his career—on a seaside property.

“Working on an oceanside golf course is something I’ve always wanted to do,” he says. “Fox Harb’r has an extensive coastline to work with. Graham did a nice job with the original design. Tom and I are just trying to enhance that whole experience by adding more ocean holes: two on the new front nine and a new par 3 on the back nine that features a green on a cliff adjacent to the ocean, so players will have to carry the ball over the sea.”

Construction of the new Ocean-side 9 was completed last fall, but weather delayed seeding. The new and renovated holes feature bentgrass greens, tees and fairways with dwarf bluegrass in the exterior roughs. Seeding was originally planned for August and September 2023, but due to heavy rainfall, only the fescue areas were seeded. The first new renovated Ocean 9 opened for play earlier this season.

Construction of the new Vineyard 9 is ahead of schedule. The plan is to start seeding this fall and finish in the spring to allow for a full-season of grow-in before the course opens in 2026. Along with the renovations to the original golf course and building an additional 18 holes, Carrick and McBroom are also co-designing a putting course on the property. On the residential side, Fox Harb’r is building 18 two-story townhomes and 48 new luxury homes.

With all of this development, Little

knows that finding enough skilled labor is a concern. The good news, for now, is that because they are a resort course, they can cross-train staff from other departments to fill any short-term employment gaps.

“Staffing, especially at the entry level, is already an industry challenge and that trend will continue,” he says. “In simplistic terms, you could almost double our labor with the addition of another 18 holes.”

LITTLE IS LUCKY to have a dedicated core turf staff, along with a few semi-retired locals who cut grass several days a week. Fox Harb’r also employs a full-time horticulturalist responsible for more than 20 acres of garden space that includes the hotel, conference center, clubhouse, golf course, spa and 55 residential homes. Because the property is far from a major urban center, Fox Harb’r owns most of the required heavy equipment for on-course construction, so they often tackle smaller grading and drainage projects in-house.

The shifting winds blowing in from the Atlantic Ocean are one of the maintenance challenges Fox Harb’r perennially faces, which affects its irrigation practices. The current renovation included the installation of a new Rainbird IC System. The heads were strategically placed—an extra 30 were added on the fly on the existing back nine of the Ocean course during construction where Little felt there was not enough coverage—and the fairways are triple row in most places.

“We now have sprinkler coverage on both the north and the south side,” Little says, “because what happens here is that you get a lot of southerly winds in the summer and the irrigation system was initially set up for the prevailing westerly and northerly winds.”

Having two courses to choose from in the future allows golfers to take a break and play the Vineyard when these coastal sea winds get wicked.

“I like to say that even when designing the best drainage plan you are still always going to go back and pick off trouble spots once the course opens,” Little says. “We put a fair amount in all the low-lying areas.”

The soil at Fox Harb’r is red clay; it is like mud: similar to pavement when dry and barely walkable when wet. “If I had my way, I would love to dry down the property a bit more, but the owners like it lush,” Little says.

The resort has a large surface area lake that collects rainwater. There are also five ponds on the inland course that feed back to this irrigation reservoir where all the drainage on the golf course goes. “It always amazes me that we can take a 17-acre lake, pump it all the way down to two or three feet, and it only takes a few good rainfalls to top it back up,” Little says.

To accommodate the potential additional water needed, in case of a period of prolonged drought, and due to the additional 18 holes, a second reservoir pond was excavated. Little hopes they never have to use it. “Leaves will be coming off the trees if it ever gets that dry!” he says.

By 2027, thanks to this unique design collaboration and course re-imagining, Fox Harb’r guests, homeowners and members can take their pick from more tee times and choose between two distinct golf experiences: an 18-hole links course or an 18-hole Heathlands layout.

“It’s been a bit of a roller coaster, but also a real pleasure and a blessing to work with these two acclaimed architects,” Little says. “I’ve enjoyed walking the property with them, offering my insight, and then having them take some of my suggestions and making changes on the fly. In the long term, my experience working alongside them on this site will pay off for the maintenance program.” 🏌️

David McPherson is a Waterloo, Ontario-based author, writer and communications consultant, and frequent Golf Course Industry contributor.

Project timeline

2024

Grow-in of
NEW Ocean 9 /
Construction of
NEW Vineyard 9

2025

NEW Ocean 9
opens / NEW
Vineyard 9 grow-in
/ Renovation of
existing Ocean 9

2026

NEW Vineyard 9
opens / Grow-in
of Renovated
Ocean 9

2027

Renovated
Ocean 9 opens
/ Renovation of
existing inland 9

CORRECTING THE COURSE

Teeth of the Dog is scheduled to reopen soon after a nearly yearlong renovation to update Pete Dye's favorite course. The story of its revival is filled with love.

By **Matt LaWell**

Jerry Pate arrived at Teeth of the Dog 51 years ago this month, part of a quartet of up-and-comers representing the United States at the 1974 World Amateur Team Championship.

Before Pate raised the Eisenhower Trophy in victory alongside **George Burns**, **Gary Koch** and **Curtis Strange**, he shared flights and news conferences and practice rounds with them. They were all so young then — 25, 21, 21 and 19 — with so much success still ahead of them. They all hydrated throughout that week with liter glass jugs of water during the day, sure to steer clear of the Dominican tap, and El Presidente beer at night. And they were often shadowed by **Pete Dye**, who lived near the seventh hole of what would become one of his most famous creations.

Dye talked with all four of the youngsters. He shared information about Casa de Campo's first course. He explained some of his design decisions. He even showed off some, admonishing them for plunking shots on 16, then pulling a four-wood from Koch's bag and landing his only shot of the day on the green. Perhaps he spotted in them a little bit of himself.

Those days on the island sparked something in Pate. He famously won the U.S. Open on the Highlands Course at the Atlanta Athletic Club less than two years later, still just 22, and the 1982 Tournament Players Championship at TPC Sawgrass — where he celebrated by tossing Dye and PGA commissioner **Deane Beman** into a lake before jumping in after them. But shoulder injuries derailed his career before he turned 30, and so he dived into golf course design and architecture much like he dived into that lake after 72 holes.

Maybe Pate would have discovered design without Dye, but the Marquis de Sod certainly spurred him on decades ago.

"Pete Dye was the catalyst in my love for architecture," Pate says. "And it started at Casa de Campo in 1974."

E. NUÑEZ MALENA arrived at Teeth of the Dog more than 45 years ago, not long after returning to the Dominican



BITE





▲ Jerry Pate



▲ Steve Dana



▲ Robert Birtel

Republic from the United States, where he earned a degree in soil and water management at Colorado State University.

Malena was born and raised in La Vega, “in the middle of the island” and his interest in irrigation and agriculture focused entirely on helping the Dominican develop. Even after three and a half years in Fort Collins, “I was not thinking about golf,” he says. Why would he have been? There were “three, maybe four courses” on the island at the time. When Malena landed at Casa de Campo in the late 1970s, he was hired as an agronomist.

Much like Dye followed Pate and his playing partners, passing along information that might one day help the game, Dye quickly turned an eye toward Malena. Something about the young man. A couple conversations convinced Malena to return to the United States — this time for months rather than years, and to Florida rather than Colorado — learning about golf course maintenance at Delray Beach Golf Club. “That’s where I learned the basics,” Malena says. “And the rest is history.”

Malena returned to Casa de Campo and never left again. Starting in 1980, he climbed from maintenance team member, to Teeth of the Dog superintendent, to vice president of golf courses and ground maintenance for all of the resort’s courses — every one of them a Dye design.

What keeps a person at the same

place for 45 years? “Many things,” Malena says. “First, is that I love this place and I’m very proud to be part of the organization that runs it. Second, Teeth of the Dog has been rated one of the best golf courses for years. That’s enough for any superintendent to stay.”

And third, for project after satisfying project, was working “hand in hand with Pete.”

PETE DYE IS gone now, of course. He died nearly six years ago during his annual visit south to the resort. **Alice**, his wife of more than 58 years and his longtime design partner, died less than a year earlier. Casa de Campo is filled with so much life — more than 2,500 homes, nearly two dozen restaurants, equestrian and polo fields, racket sport courts and shooting ranges all dot 7,000 or so acres — and the Dyes helped provide so much of it: Dye Fore opened in 2000, preceded by La Romana Country Club in 1990, The Links in 1974 and Teeth of the Dog in 1971.

The Dyes normally arrived at the resort around Christmas to celebrate the holidays and tinker with Teeth.

“When he was here,” Malena says, “my time was his time.” Dye would write a list of small fixes “and share it with me. We always went around the golf course together. He kept making small changes all the time to Teeth of the Dog.”

“He would move greens, he would

move bunkers, he would do sort of anything at a whim,” says **Robert Birtel**, who succeeded **Gilles Gagnon** as director of golf a decade ago. Dye’s tweaks decreased during his last years, though, and the course, to hear Pate describe it, “had become long in the tooth. It was getting old.” After a series of smaller projects on Teeth and around the resort, Malena, Birtel and the Casa de Campo decision makers were ready to update their lead attraction.

Thanks to Pate’s more than half a century of visits to the resort and friendship with the Dyes, Casa de Campo owner **Alfonso Fanjul** hired him as golf course consultant in 2019. And Pate, in turn, handed over much of the day-to-day renovation work to **Steve Dana**, senior designer and VP at Jerry Pate Design, who had dreamed for decades of just traveling to Casa de Campo much less working on Teeth.

“We started the project because we needed to sand cap our fairways,” Birtel says. “Nuñez was trying to grow grass through contamination, basically on clay. We had no sand base and that was where we started our project. Once you start doing that, that’s still eight months, so within the eight months you can do a whole lot of stuff.”

Officially, the Teeth renovation features sand capping on 14 fairways, work on 70 teeing areas and 127 bunkers — highlighted by new drainage and liners — new cart



paths throughout the course and five new reinforced retaining walls. Pure Dynasty Paspalum replaces 419 Bermudagrass on all fairways, a far better fit for salt sprays up from the Caribbean. Malena says he and his team are confident they will be able to handle the switch after recently replacing greens at La Romana with the same variety. Malena sourced more than 18,000 cubic meters of silica sand from Geoterra Dominica in Santo Domingo, about two hours west of the resort.

“We really wanted to improve the agronomic conditioning of Teeth of the Dog, especially with the soil,” Malena says. “Part of this project was capping the fairways with three inches of pure silica sand. That will really make a difference in allowing people to be able to play after heavy rain.”

“Most of the work is below the ground and it’s to help us with longevity and maintaining the golf course and keeping it in the best shape, keeping it healthy for the next 25 years,” Birtel says. “The proper sand, the proper drainage, the latest paspalum grass.”

Every bunker, Birtel says, has been reshaped, retouched, returned to

much more strategy to the golf course. A lot more went into it than just the liner and drainage and sand.”

Teeth will also feature some new teeing areas, including one on No. 2 that adds about 30 yards, all based on archival photos and videos. “There are certain holes where we moved the green enough to create a pin,” Birtel says, “and there others that just got bigger because the fringe went away and the green is where the fringe used to be.”

Part of the charm of Teeth is its timelessness. Even through Dye’s annual updates, the course feels the same in 2025 as it did in 2015, or 1995, or 1975. But resorts need to remain current, so the renovation also includes the construction of two new buildings with bars and bathrooms.

“That’s been interesting from a project management point of view,” Birtel says, “because if the bars and bathrooms were delayed, you couldn’t finish the cart path because you didn’t want heavy trucks driving on the new grass. It pushed things around. You needed to be aware of what you were doing and you needed to be flexible.” They are also wired

for electricity — “so we can blend things,” he says with a laugh.

PATE WILL RETURN to Teeth of the Dog this month or next month, to check in on Dana’s work with Malena and his team, and to play a round or two before the course opens back up for public play. The project is ahead of schedule.

Pate has played so many memorable rounds at Teeth. The team championship in 1971. A special round with his sons and Dye just before the course reopened after a 2005 renovation. A round with Dye, coal magnate and golf course developer **Garry Drummond** and Fanjul in 1984, shortly after Fanjul purchased Caso de Campo. During that round, Pate remembers riding in the golf car and Fanjul telling him, “Pete’s building his next course here, Jerry, and we’re going to build some more, but I’ve got to be careful. I was told he could break me building all these golf courses.” “Alfy,” Pate replied. “Pete never spent a lot of money on golf courses. He figured out how to do it himself.”

“Alfy was making a joke about Pete because he had so much creativity. He would build something and he would change it and he would make it better. He would always make it better.”

Like Dye, like Pate, Malena has always helped make Teeth better. After backing into the game, he has developed a love for golf almost as strong as his love for Dye. Pate considers Dye a mentor and a father. Malena considers him a friend.

“Jerry really understands the philosophy of Mr. Dye,” Malena says. “Even though everybody recognized the course needed some tweaking, we always say that we are trying to maintain the legacy of Pete on Teeth of the Dog. The structure, the design, we wanted to keep it, and Jerry agreed with us. He respected the tradition of the golf course.”

“I think if Mr. Dye was able to see what Jerry did, he’d be happy with it.” 🏌️



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REPORTS

INSECT CONTROL

About this report:

Golf Course Industry and Envu have partnered on a "Turf Reports" section focusing on insect control every year since 2022. This year's results are based on 132 responses at a confidence level of 95 percent and sampling tolerance of +/- 8.5 percent to a 20-question survey sent to a list of directors of agronomy, superintendents and assistant superintendents. *Golf Course Industry* collaborated with New Jersey-based Signet Research to execute this report.

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ENVU IS PROUD TO SPONSOR THE 2025 STATE OF THE INDUSTRY — INSECT CONTROL REPORT

The golf course industry continues to struggle with annual bluegrass weevil (ABW) as it has now spread west to Kansas, Illinois, Michigan, Missouri, Nebraska and Wisconsin. Chicago area golf courses, in particular, are likely seeing the largest increase in incidence and severity.

ABW is one of the toughest insect pests to control in cool-season golf turf due to resistance to insecticides and multiple generations per year which have overlapping, asynchronous life cycle stages. Successful ABW control programs usually include at least two applications: a spring adulticide targeting overwintering adults and then a larvicide application targeting first-generation larvae. However, additional larvicide applications are often required into the summer months, targeting later generations. Rotating insecticide modes of action is critical to limit the chance of resistance development in ABW populations at your course. Envu solutions for ABW include Talstar® insecticide and Triple Crown® Golf insecticide for controlling adults, followed by Tetrino® insecticide for residual control of the larvae. Tetrino is also highly effective on billbugs and caterpillars. We've seen on-course success with the program approach of the insect growth regulator novaluron applied at the overwintering adulticide timing, followed by Tetrino at the traditional larvicide timing(s).

Though white grubs traditionally have been more problematic in the eastern half of the country, turf managers from the Rockies to California and the Pacific Northwest are now encountering these insects. Areas near the coast where soils don't freeze can be especially problematic. In these climates, larvae stay near the soil surface and continue feeding, causing damage into late fall and winter. However, the most severe damage comes from animal feeding throughout the fall, winter and early spring in turf areas where the larvae were not controlled with late spring to summer insecticide applications. Unlike ABW, insecticide resistance has not been documented in white grubs and likely will not occur since they have only one generation per year. However, we are seeing population shifts in white grub species. Where Japanese beetles and northern or southern masked chafers were the most predominant species, we are now seeing more oriental beetles, Asiatic garden beetles and May/June beetles. Durentis™ insecticide (chlorantraniliprole) offers season-long control for white grubs and caterpillars like the fall armyworm. Durentis is backed by Envu, with guaranteed rescue treatment options should a breakthrough occur. A Durentis application during late April or early May can be added to the ABW programs discussed above, providing early-season and season-long control of surface feeding caterpillars.

Envu proudly supports the 2025 insecticide report administered by *Golf Course Industry*. If you have questions regarding controlling these pests or others on your golf course, our six technical specialists on the Green Solutions Team are a phone call, email or text message away, as is our nationwide team of area sales managers.

Let us know how we can help!

Envu Green Solutions Team



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Pest of THE RISING SUN

Greek mythology and modern insects have more in common than you might think.

Take the Trojan War, for example. Odysseus, Diomedes, Menelaus and several dozen other Achaean warriors famously arrived in Troy late during that conflict tucked in the belly of a giant wooden horse — a trophy of sorts for the clueless Trojans — their cunning immortalized in the *Aeneid*. They waited only until nightfall to spring their attack and win the war. The Japanese beetle, meanwhile, though not noted for its careful martial strategy, also arrived in a foreign land — in this case, the United States — surrounded by wood, when it gained passage around the globe in a crated shipment of iris bulbs. Unlike the Achaeans, the beetle wasn't discovered for years.

And, unfortunately for golf course superintendents, *Popillia japonica* seems to still be spreading, more than a century later.

The Japanese beetle long moved up and down the coast, then inland, but there were still a couple handfuls of states that remained free of their invasive destruction of various fauna, flora and fruit. That list is shorter after they arrived in Colorado around 2016.

"I had noticed in the fall that we had some yellowing in some of our rough areas, but it was also super dry, and it was near trees," **Tim Palko** recalls. "I poked around and found a few grubs but nothing that was triggering for me."

Palko is the director of grounds at Boulder Country Club. Located about 30 miles

northwest of Denver, the city is considered a high desert prairie. It receives less than 21 inches of annual precipitation. And even there, the Japanese beetles have started to thrive during recent years. Palko remembers another local superintendent telling him over dinner in 2018 that the pest was so prevalent he had areas in his fairways he "could roll up like carpet." Palko's reaction? "Thaaaaat's not good."

Palko prepared for the Japanese beetles, tank mixing a popular granular insecticide with a hydrating surfactant and spraying 72 of the property's 177 acres the next spring. He has repeated the practice every season since, often needing only a single application. "Really didn't get any damage," he says.

Palko has also worked with the Plant Select program at Colorado State University to replace a variety of plants around the grounds, opting less for the annuals the beetles prefer for desert plants that they tend to avoid. "We kind of switched our plants up every time we went to rebuild a bed," he says. "That was the other way to give them less to eat."

And while Palko has the beetles relatively under control, they still strike — and he still occasionally needs to remind members that the beetle doesn't know it's skeletonizing foliage on a golf course. "It just knows there's damp topsoil," he says, "with big, fat white roots."

— Matt LaWell

Where is your course located?

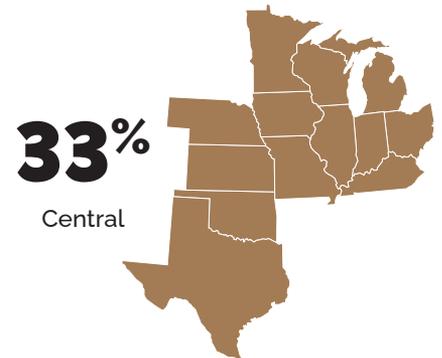
24%

Northeast



27%

Southeast



33%

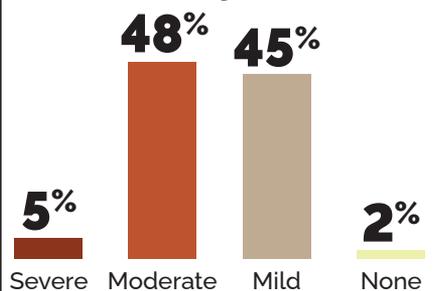
Central



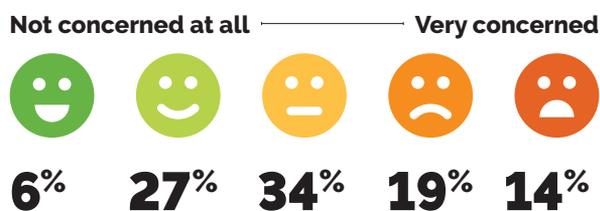
16%

West

Description of insect pressure at your course



Concern about insects negatively impacting playing conditions





FLEE, FLEA!

Kelly Grow almost never worried about insects during his 26 years at Hidden Valley Country Club in Sandy, Utah. Part of that happy ignorance was because he started as a "bunker kid" and worked his way up the maintenance team ladder to assistant superintendent, seldom if ever making the call about what and when to spray. And part of that is because the club, located about 20 miles south of downtown Salt Lake City, was blissfully free of most insects.

"In northern Utah, insects are not a huge thing," Grow says. "The only insect we ever really went after was the grub. That was the only one that caused damage enough that we constantly treated. You see 14 birds picking at one spot, you know you got grubs. ... There was never any preventative, it was all reactionary."

When Grow moved almost 300 miles south two years ago to become the superintendent at The Ledges of St. George, near the Beehive State's southern border, he realized rather quickly that he needed to expand his insect insight. "I've dealt with billbugs, I've dealt with sod webworms, and now they're warning us that nematodes are coming this direction," he says.

Most perplexing, though, is the flea beetle.

The tiny jumping beetle prefers warm and dry weather, and St. George meets both criteria: Average highs top 80 most Mays and don't drop back into the 70s until late October, temperatures creep into triple digits in July, and rain is normally only a rumor. They can also "wipe out bluegrass and ryegrass," Grow says. "And that's what I have on my fairways and my rough."

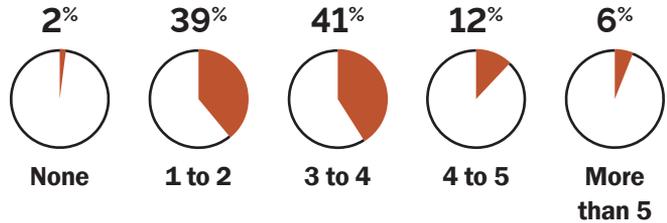
The St. George flea beetles popped up across the region in 2016 — perhaps expelled from their native habitat thanks to recent rapid development — and remain confoundingly mysterious. Some of the region's 18 golf courses deal with them and others have been mercifully spared for now. The easiest manner of detection is laying a sheet of white paper on the turf. And while Grow has worked with **Adam Van Dyke** of Professional Turfgrass Solutions to graph three distinct lifecycles and plan optimal application programs, no one has really figured out where they go during the winter.

The good news for Grow is that just two or three applications have dropped the flea beetle sample count at The Ledges from "the hundreds" last year to less than 30 this year. He started with Tetrino insecticide, designed to combat white grubs and annual bluegrass weevil, then applied a competing insecticide and another granular insecticide.

"It's all about timing when you spray," Grow says. "You can throw \$100,000 worth of chemical down, but if you don't do it at the right time, you're just throwing money away. You have to know what and when to spray."

— Matt LaWell

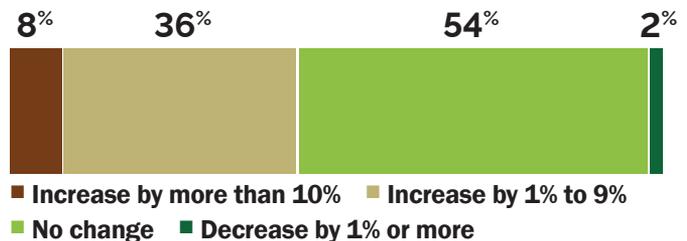
Number of insecticides in your rotation



Annual insecticide budget

\$1 to \$4,999	29%
\$5,000 to \$9,999	23%
\$10,000 to \$19,999	30%
\$20,000 or more	18%

Projected insecticide spending in 2026 compared to 2025



Three most important factors when selecting an insecticide

Insects controlled	86%
Cost	60%
Product history	40%
Resistance avoidance	32%
Research trials results	26%
Tank mixing capabilities	14%
Peer recommendation	11%
Distributor recommendation	10%
Reputation of manufacturer	4%

CRIMSON GUIDE

Red imported fire ants have spread over centuries from South America, up through Central America to the Southeast United States and now into parts of the Mid-Atlantic and the Southwest. But after more than two decades working in Alabama, **Matt Devine** likes to say that the Yellowhammer State in general and Tuscaloosa in particular is "the fire ant capital of the world."

"You get a rain after it's been dry and they are everywhere," he says. "They're all over the place. I had never experienced them until I moved south."

Born and raised in Buffalo, Devine studied history at Siena College in New York and turf at Penn State University before interning at Shoal Creek Club. After that, he never left the state: Eight years as an assistant superintendent at Shoal Creek, two and a half years as golf course superintendent at Limestone Springs Golf Club in Oneonta, and nine years as superintendent at North River Yacht Club in Tuscaloosa all led him to Crimson Reserve — the new \$47 million practice facility and course for the University of Alabama's men's and women's teams. He has lived in Alabama almost as long as

he did in New York. He knows the region's whims. He knows where the pests are.

To combat fire ants, "Mostly we just use fire ant bait and go spot treat mounds," he says. And to control armyworms, his other main insect nemesis, he applies a single application of a popular granular insecticide across the 45 acres of Tahoma 31 Bermudagrass and 43 acres of native grass.

"Probably the earliest you see them is mid-July and they can take over everything," he says. After spot treating for six years at North River, Devine switched to that single preemptive application, "and that's really helped. Last year, we didn't do anything because there was new construction and we got wiped out, so we had to go back out and make an app. We didn't see them this year because we had a treatment out. I'll do another preemptive spray and that kind of treats us for the year."

He spotted the occasional mole cricket at North River, handling them with Triple Crown T&O insecticide.

Beyond that, Devine is, so far, free from most insects at the new facility. Crimson Reserve soft opened in September 2024 and, unlike most college golf facilities, the teams

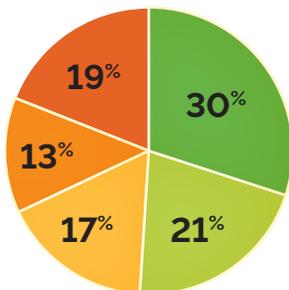
have full run. Only Crimson Tide golfers and 30 donors who helped fund construction have access. Devine and his team of 10 — 15 during the peak of summer — handled about 500 rounds this year and are planning for about 1,000 next year. And there might be no superintendent in the world who plays a higher percentage of their course's rounds than Devine: He has managed to squeeze in about 20 himself this season.

"I played yesterday," he says. "My assistant, **Brian Berberet**, and I, we usually play on the weekends, and we were the only two on the golf course. When the teams come back in mid-August, I'll joke around, 'They're tearing up the course!' But we're here for them. It's fun to have them around because they're really good golfers and they're good about us working around them." The fire ants, not so much.

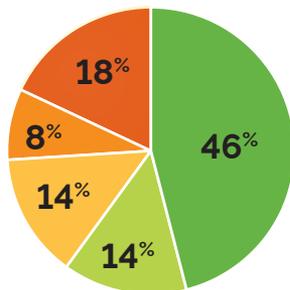
— Matt LaWell



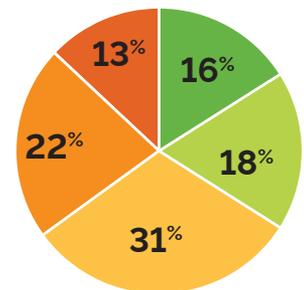
Concern about armyworm damage at your course



Concern about Annual Bluegrass Weevil damage at your course



Concern about ant damage at your course



Not concerned at all ————— Very concerned



WHAT ELSE IS ON THE INSECT CHECKLIST?

Ever hear about Bermudagrass mites? No? Neither had **Rob Uzar** for the first decade or so of his golf course maintenance career.

Located throughout the Southern and Southwestern United States, the microscopic arachnids can, as you might have guessed, damage Bermudagrass. But what makes their work sometimes tricky to detect is that they yellow or brown turf, making it look like some poor spray technician misapplied a plant protectant. The biggest tell is the sudden appearance of a witch's broom tuft.

"I haven't seen any at my place," says Uzar, the golf course superintendent at Hammock Creek Golf Club in Palm City, Florida. "I've been lucky with that, because they're a pain in the neck to get rid of. But there are a lot of guys in Florida who have to deal with Bermuda mites."

Uzar's introduction to Bermuda mites came when he was working at Hunter's Run Golf Club in nearby Cape Coral. He spotted the miscolored turf and the witch's broom on a fairway and wound up looking at a sample under the microscope stocked in the maintenance facility. "We could actually pull a piece off and go in there and look at it," he says. "It was kind of cool." He thought he spotted the same signs not long ago at Hammock Creek, but it turned out nema-

todes were crawling along the course.

Uzar deals with plenty of insects in Florida, especially when the late summer rains start to roll in.

"We usually get cutworms coming in this time of year," he says. "We sprayed for them last week because I saw some when I was playing golf. ... My place was notorious for mole crickets, too, but I really haven't seen any since I've been there. I feel like this year was a worse year for mole crickets, for whatever reason. I did my normal app that I've done the three summers that I've been here, and this summer I did see a bigger breakthrough. I got more product out of it and went and took care of those spots. I've caught up to it, but there were definitely areas that got hammered and I wasn't expecting it."

And, like so many superintendents, Uzar deals with grubs. "Lately," he says, "I've had a couple tees that have crazy grub problems that I've never had before. Maybe they've always been there and some of the insecticides had taken them out and I'd just done it a little different this year. ... The armadillos were going wild."

If only those armadillos enjoyed a good Bermuda mite.

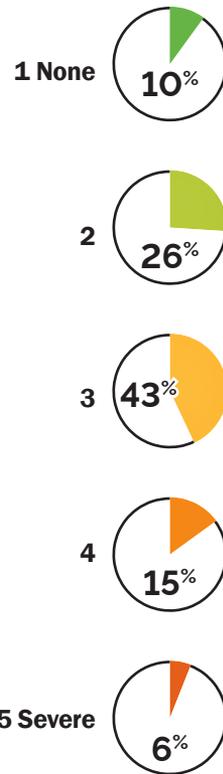
— Matt LaWell



Concern about mole cricket damage at your course



Description of white grub pressure at your course



Insecticide applications made per year at your course

None	3%
1 to 2	45%
3 to 4	35%
5 to 6	11%
More than 6	6%

CALM BEFORE THE SWARM?

Steven Aspinall keeps an eye on his lucky stars. He feels blessed. He thanks God. "My insect problems aren't that bad," he says. "And this is kind of new for me."

Aspinall is wrapping up his fourth full season at Watchung Valley Golf Club in Watchung, New Jersey, where he was recently promoted from golf course superintendent to director of agronomy. He has worked at seven other golf courses over the last 21 years, and everywhere — Saratoga Golf & Polo Club, Morris County Golf Club, Preakness Hills Country Club — he has spotted and diagnosed and treated something. But for now, at least, "I don't have many," he says. "I really don't."

Aspinall arrived at Watchung Valley — located about 25 miles west of Staten Island and about 75 miles northeast of Philadelphia — in October 2021. Those early months were filled with annual bluegrass weevils, always his biggest insect issue. Over his first couple seasons, he developed an application program that ultimately included Tetrino insecticide, which he says "has been incredible," along with a mix of other insecticides and insect growth regulators. "They're game changers," he says. "Absolute game changers for me." The more focused approach has all but eliminated ABW larvae damage and has helped him drop his annual application count from seven to "two, maybe three."

Aspinall often wonders whether his recent success is because of that blend and application schedule or because of Watchung Valley's unique position: Much of the course sits on a south-facing slope atop hard soil largely free from trees. Temperatures at the course are cooler than other area courses, insects struggle to crawl beneath the surface, and there are no trees for overwintering.

"Why am I not dealing with this?" he sometimes asks himself. "What am I doing? What's the environment here? I don't know if the really hard soil plays a factor, that they literally can't get into the clay.

"I'm not an entomologist. I don't understand what they're doing or why they do what they do. You thank your lucky stars you don't have to deal with this as much as other people do."

Aspinall is quick to acknowledge that his current situation will likely not last forever — or even beyond this season. He thinks about insect lifecycles and whether future generations will be born immune to his current multi-product approach. He says he's nervous that, at some

Where on your course do you apply insecticides?

Greens	91%
Collars/surrounds	82%
Approaches	78%
Tees	78%
Fairways	74%
Rough	55%
Bunker faces	47%

Acreage you treat with an insecticide

Up to 49 acres	51%
50 to 99 acres	30%
100 to 149 acres	12%
150 to 199 acres	4%
200 acres of more	3%

Mean: 59 acres

point, it will stop working.

"There's always different things coming," he says. "We have the spotted lanternfly. That just kind of popped up when I got here and they were really bad. I didn't know what they were or what they were doing. Nobody knew. ... The predator insects didn't know what these things were, either, but there are fewer of them now than there were four years ago. The praying mantis and bats and frogs all realized these are edible, and Mother Nature is taking care of it in a way."

— Matt LaWell

Part of your course most susceptible to insect damage

Approaches	Bunker faces	Collars/surrounds	Greens	Fairways	Rough	Tees
6%	7%	9%	41%	10%	20%	7%



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Take a rain check

When unexpected storms put the course and revenue at risk, the pressure to close or keep golfers happy intensifies.

By **Adriana Gasiewski**

As the sky turned darker, lightning started pelting the peaceful Grand Bear Golf Club while golfers continued playing the Saucier, Mississippi, layout's 18 holes.

David Beanblossom, director of agronomy for Cabot-managed properties, and his team went into action, shuffling golfers off the **Jack Nicklaus**-designed course and making the rounds to check on everybody's safety.



Don't let golfers cloud your judgment

The last thing any golfer wants to hear is about course closures, which makes breaking the news a tough task.

Brent Venenga, director of agronomy of GreatLIFE & Fitness, has learned a thing or two from watching **Jason Crisp**, director of golf operations, talk with golfers during these difficult times. "He is the best at talking to somebody, calming them down or just explaining why we gotta be closed," he says.

Following Crisp's example, Venenga says he approaches conversations calmly, understanding golfers are upset and taking the time to thoroughly explain the situation.

"It all goes back to we're not going to jeopardize anybody's safety, first and foremost," says Beanblossom, whose role also involves overseeing agronomy at Serket Golf Club and Cascata Golf Club in Las Vegas and Chariot Run in southern Indiana.

Safety is always the most important factor when determining whether to close a course based on weather conditions. On that ominous Mississippi day, the Grand Bear staff escorted golfers to safe spots and eventually allowed them to resume play once the storm passed.

"It's a matter of what time of day? What day is it? How many golfers are there? How's this going to impact them? How it's going?" says Beanblossom, listing considerations after safety when making weather-related decisions. "There's just so many factors that go into it, but overall it would be golfer safety first, protecting the golf course second."

Beanblossom keeps those specifications in mind, having previously served as superintendent at Chariot Run. The immediate safety of the four courses Beanblossom oversees rests on the shoulders of the general managers and superintendents.

Because Serket and Cascata are in Las Vegas, they hardly shut down because of the hot temperatures and constant sunshine, instead closing only for course maintenance.

"We never have closed for heat because they're both kind of casino-driven hotels," he says. "So, if the casino guests want to play, they can."

Meanwhile, Chariot Run in Indiana, and Grand Bear, just 35 minutes from the Gulf Coast, experience heavy rainfalls during the spring and summer. Wetter conditions can cause Chariot Run to cease golf for a day.

For East Coast courses, **Drew Thompson**, superintendent and general manager of East Aurora Country Club in New York, has discovered that the duration of a course closure can vary.

"You can't make a decision on what you're going to do for your golf course based on what's going on at mine," he says. "That's probably different in other parts of the country, but around here everybody's different."

Although the private course has been "pretty lucky," as Thompson describes the lack of closures, he understands what factors determine how long courses will remain off limits to golfers. Because East Aurora was built on sand and gravel, the greens drainage can differ from neighboring courses.

East Aurora, which is around 25 minutes from downtown Buffalo, often avoids showers because of its proximity to Lake Erie. "They're times where you'll have an 80 percent

chance of rain and you won't get a drop," Thompson says, "but five miles east of here will get a lot of rain, so it's quite an interesting spot."

To settle on closing the course, Thompson does a quick drive around. After 22 years at East Aurora, a close inspection of the grounds will help Thompson determine what the course will look like in an hour or two.

After arriving at the 18-hole course, Thompson thought he would spend five or seven years there, but now he laughs, "you would have to drag me out of here." His appreciation for the course helps him understand what areas need more protection.

"We have to make our decisions, jobs that we're going to do, those things every day based on the weather patterns and what the forecasts are," he says. "You learn when to listen—and when not to listen—to weatherman."

When storms strike, it's no surprise that some golfers grow frustrated, wanting to finish out their tee times and dreading going back to their office jobs, but Thompson doesn't encounter this type of golfer. Because he makes it a priority to remain open for as much of the season as possible without damaging the greens, members trust his choices. "Whether you like it, winter

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is coming at some point, and you got to make sure that people are getting their value of play,” Thompson says.

Any angry golfers, tossing their clubs in the air, might be shocked to learn that Thompson is not the only one who aims to keep his course open. Plenty of others also strive to remain up and running.

Brent Venenga, director of agronomy at GreatLIFE Golf & Fitness in South Dakota, jokes that he “pushes the envelope” for allowing golfers their tee times during colder temperatures when the ground is frozen.

“You could see a little damage to the turf, obviously, with ball marks on the greens, if they’re frozen,” he says. “Kind of a trade-off of getting people out there and being open for members and things like that.”

The two biggest factors that cause the six 18-hole public courses Venenga oversees to shut down are rain and cold conditions. “It could be that the

forecast is calling for 50 degrees, but we have a 20 mile per hour northwest wind, and it’s not going to feel like 50 degrees,” Venenga says.

After getting about 2 inches of downpour around 5 p.m. on July 7, GreatLIFE closed its Fox Run Golf Course in Yankton, South Dakota, for the rest of the evening, reopening at noon the following day to allow cart paths to dry out. “That’s two inches of rain in an hour,” he says. “It was pretty wet.”

Sometimes the balance of protecting both the course and revenue can be challenging when severe weather strikes. **Dave Donner** is Cleveland Metroparks director of golf operations. Despite working at the parks for nearly three decades, he still urges superintendents and general managers to not “be quick to jump” to a judgment call.

“Lot of times you can get a heavy storm at 3 o’clock in the afternoon,”

he says. “Then it clears up by 5:30, and your evening leagues come in and you can still get those leagues out.”

Although the nine golf facilities Donner and his team oversee are dotted across northeast Ohio, they all still experience similar inconsistent forecasts, like a late May frost. “It’s very unpredictable as far as weather goes in those shoulder seasons,” he says, “but as you get into more of the summer, I think you’re just going to see a lot of warm, humid weather for the most part.”

Cleveland Metroparks course closures are often results of severe weather. For example, on Aug. 6, 2024, a tornado ripped through three courses, leaving debris and downed trees in its path. “We had to close a couple courses for the day. Even our back nine was closed while we got crew working to get that cleaned up to make it safe for our guests,” Donner says.

Donner views these experiences as



be shut down. Through these discussions, he can impart superintendent knowledge on course drainage. “Yeah, the five greens that are visible here from the clubhouse are clear, but maybe the ones down to the valley at the backside are not clear.”

Venenga understands the frustration golfers might face when stormy conditions cut rounds short, so he patiently explains the purpose behind the course closures. “I’ve been in that situation, on the opposite side: ‘It’s not that bad,’ or ‘I can go out there,’” he says. “You just have to make that decision.”

Venenga stresses listening to that gut feeling, communicating with everyone on staff and supporting the final call. “In the end,” he says, “we’re definitely all in it together to make the right decision.”

Although Thompson keeps an open-door policy, welcoming members to share their thoughts about

educational opportunities, offering the chance to have conversations with golfers and help them understand why the courses will

his choice, he says it’s important to remember that they are opinions. “I can’t always let that affect my decisions because the decisions that I make are for the best of the course and the best of the club.”

While it’s important to ensure golfers’ happiness with quality conditions, Beanblossom notes that on the days with few golfers it may be better to shut down. “There’s no use keeping staff there and risking damage to the golf course for someone to golf after a huge rainfall,” he adds.

Whether communicating closures to staff or golfers, Thompson emphasizes the need for transparency. “The

more information you can give them, the more transparent you can be about your decision-making process,” he adds.

Sure, determining to close can be challenging. But Beanblossom understands why it’s important to protect a course.

“We don’t want to send a golfer on a golf course that is not worth what they’re paying either,” he says. “So, let’s kind of protect on their interest as well.” 🏌️

Adriana Gasiewski is Golf Course Industry’s editorial assistant.

How not to rain on golfers’ parade

To keep golfers up to date about closures, **Brent Venenga**, director of the agronomy of GreatLIFE and Fitness, says he has discovered mass emails and social media posts on platforms like Facebook work best.

The Cleveland Metroparks’ pro shop will call golfers to alert them of course conditions, and the organization also has a Golf Course Status website informing golfers not only about closures but other updates, says director of golf operations **Dave Donner**. “The superintendent can write down notes in there, how long, if there’s frost and things like that, until we’re open,” he says. “So, they can turn to that Golf Status for that.”

David Beanblossom, director of agronomy for Grand Bear Golf Club, Cascata Golf Club, Serket Golf Club and Chariot Run Golf Club, keeps staff updated with WhatsApp notifications.



PART 2: EXECUTION

From course fit to machine fundamentals, the process of bringing an autonomous fairway mower to the golf market includes numerous considerations.

By **Guy Cipriano**

Ever watch a fairway with intriguing terrain being mowed autonomously for the first time? The spectating begins with anticipation, as an inquisitive group often lingers in the intermediate cut or the fringes of the primary rough.

From a distance, over the crest of a hill where blind becomes visible, a machine devoid of a human operator appears. Then, somewhere around the time it takes to mow a pass, observing curiosity becomes a chore.

The Toro team responsible for developing the Greensmaster eTriFlex 3360 with GeoLink Mow relishes monotonous outcomes. The most impactful technology always evolves into an afterthought.

“You can only do so much watching. We were out there this morning, and it was just doing its job. It’s mowing, now

what?” says Kelly Meemken, a senior product marketing manager working on Toro’s advanced technology following a quick check-in on a GeoLink Solutions Autonomous Fairway Mower at a venerable Midwest club. “That’s the point: We don’t want superintendents watching the machine. It’s, Get it started, go do something else and

it will let you know when it's done.”

As is the case with bringing any emerging technology to the workplace, a few basic understandings must be obtained to achieve the effortless execution the GeoLink Solutions Autonomous Fairway Mower offers golf courses.

DETERMINING FIT

Not every golf course is currently a viable candidate to autonomously mow every fairway. Through training events conducted at its Bloomington, Minnesota, headquarters and select test sites, Toro is educating its vast distributor network about autonomous fairway mowing considerations, including identifying the right customer fits. “We like to call it training the trainer,” says Jeff Ische, a senior product marketing manager in the commercial group.

Sessions in college-like classrooms introduce how Toro will bring the mower to the market and how distributors can identify which customers are prepared to delve into autonomous mowing. Distributors learn they must establish realistic expectations upfront.

Toro has created an app assessing factors revealed on course tours with customers such as cell signal coverage, proximity to a RTK station, separation between private property and fairways, public thoroughfares within course boundaries, severity of slopes and drop-offs, and course architecture to determine the practicality of autonomous fairway mowing. The app allows distributors to take and upload pictures and add notes. Once complete, a pdf of the content is created and a report assessing autonomous

fairway mowing viability is sent to Toro and customers.

“It's probably the most important step in the process,” Meemken says. “It's a minimal investment for the customer and the distributor, but it's setting the expectations and making sure expectations align with what the machine can and is allowed to do.”

Distributors also receive field training on physical features separating the GeoLink Solutions Autonomous Fairway Mower from traditional units, control functions and how to guide customers in the mapping process. A multiplatform content library helps distributors once they leave training sessions and engage with prospective customers. How-to videos are also available to customers through any device with internet access.

Numerous distributors are entrusting representatives who visited Minnesota or test sites to impart knowledge on co-workers, creating a multiplier effect of professionals ready to guide golf course maintenance operations into autonomous fairway mowing journeys. A 111-year-old company heavily invested in golf, Toro supports the largest domestic and global equipment distribution network in the industry. The GeoLink Solutions Autonomous Fairway Mower follows hundreds of golf innovations introduced by Toro, including other GeoLink technologies.

Experience introducing GPS-guided spraying to superintendents will help Toro and its distributors introduce autonomous fairway mowing. Superintendents familiar with the RTK and cell subscriptions required to



activate a GPS-guided sprayer are on the path to grasping the technological infrastructure behind autonomous fairway mowing.

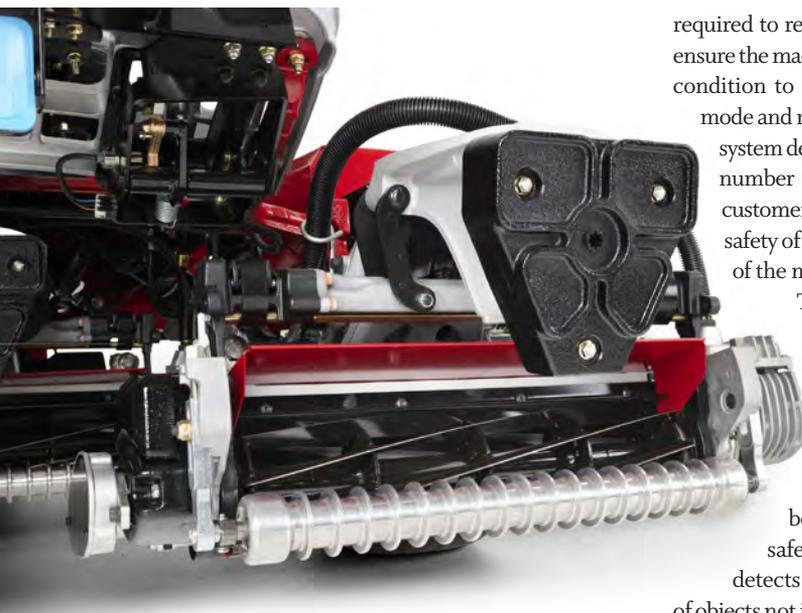
The combination of past Toro golf triumphs, thorough site vetting and structured support system removes trepidation surrounding deploying autonomous fairway mowers on key playing surfaces like fairways. Toro is also bracing for early adopters to demonstrate methodical execution.

“One of the things we've been hearing from the field from our test sites is the idea that, ‘I'm going to introduce this slowly. It's not wholesale,’” says Josh Lemons, a product marketing manager in the golf products group who works closely with distributors. “It's the idea that, I'm dipping my toes into this to supplement the existing crew, allowing them to focus on more value-added activities. Starting slowly by mowing three or four holes will help superintendents understand how this can change their practices. The idea of starting small is a great place to start.”

Support system

Toro will have three levels of support available to address potential issues involving the GeoLink Solutions Autonomous Fairway Mower.

The first level includes its distributor network, which receives training on the machine through targeted events at the company's Minnesota headquarters and various test locations. A second level includes a dedicated call line staffed with technical assistants. Highly trained members of the advanced technology group involved in the mower's development serve as a third level of support.



ABOUT THE MACHINE

Standing by a GeoLink Solutions Autonomous Fairway Mower parked outside a maintenance facility, Meemken notes the three biggest differences between the unit and a traditional fairway mower: the abundance of sensors, the “brains” residing atop the roof, and lights indicating autonomous and manual operating modes. Meemken shuffles around the mower, extending his arms to describe radiuses for obstacle detection and safety systems.

The GeoLink Solutions Autonomous Fairway Mower consists of a courtesy zone and hazard zone. As the machine approaches an object, the machine will stop while the object is in the courtesy zone and remains in autonomous mode with the reels and engine off, waiting for the object to move. If the object moves, the machine continues on its trajectory. If the object were to move closer to the machine, the object will enter the hazard zone before reaching the machine and the machine will enter autonomous mode and enter a safe state.

The remote operator responsible for the machine will receive a text message and the remote operator is

required to return to the machine to ensure the machine is in an acceptable condition to return to autonomous mode and resume its mission. This system design limits the required number of touch points by the customer while still ensuring the safety of people in the proximity of the machine.

Toro believes it has found the ideal safety bubble, because returning to manual mode too often limits effortless execution. “It’s a happy medium between making sure it’s safe and eliminating false detects and stopping because of objects not in its trajectory,” Meemken says.

LiDAR capabilities, which use light in the form of a pulsed laser to measure distances, further separates the GeoLink Solutions Autonomous Fairway Mower from traditional mowers. LiDAR allows the mower to operate in a myriad of conditions.

“That’s really, really valuable in our markets,” Meemken says. “It can operate in the rain, it can operate in the dark, it can operate in the fog.”

Toro is incorporating GeoLink Autonomous technology into the Greensmaster eTriFlex 3360, a popular and proven hybrid mower with all-electric components. A slight cutting unit adjustment disperses clippings (the machine operates without baskets) low enough to prevent interference with the obstacle detection system.

The Greensmaster cutting units have been configured for fairway use and include EdgeSeries reels, fairway EdgeMax bedknives, high height of cut kits, wide wheel front rollers and rear roller brushes. “We have an order-this-and-you’re-ready-to-go mentality with the fairway mower,” Ische says.

The lag between the arrival of a GeoLink Solutions Autonomous Fairway Mower and it becoming

operational is minimal. Similar to a GPS-guided sprayer, fairway boundaries are mapped after one manual pass using the addition of RTK technology. Maps are saved immediately, allowing connected users to establish missions consisting of various mowing patterns and alignments on a web interface accessible from any device with internet access.

The precision of RTK technology eliminates the human judgment required to mow exact stripes or patterns — and prevents scalping. Users receive updates on missions via text messages. After a user inspects a fairway for potential obstacles such as branches, golf balls and other debris, they’re able to work somewhere else on the hole being mowed or elsewhere on the course.

“The map is already created and all they are doing is making sure the machine is operating and making sure there are no sticks or flags in the way,” Meemken says. “The machine is going to mow where you designate it to go.”

Mission data is saved into the app, and operators will quickly learn the exact time required to mow various patterns. The data allows courses to make smarter mowing and resource allocation decisions. “Most people we talk to aren’t trying to replace a laborer, they are trying to do more with the labor they have,” Ische says.

Superintendent input will help shape the evolution of the GeoLink Solutions Autonomous Fairway Mower. Once more courses begin deploying the mower into regular maintenance programs, more productivity-boosting applications will be discovered. Every few months Toro will be releasing remote software updates. One click will allow users to begin benefiting from the latest features incorporated into the machine.

“Our messaging to the customer is that we are just getting started,” Meemken says. “We are invested in this technology—and we are invested in the future.” 🌱

More New Greatness

Part 1 of the New Greatness series profiling Toro’s entry into autonomous mowing appeared in the September issue. Scan the QR code to read the story.



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FIRST VISIT

Ispend a lot of time evaluating golf courses. Many of them are new to me, so I'm visiting for the first time. Over the years, I've developed something of a routine or framework for quickly getting the lay of the land and finding out the basic character of a place — what works and what needs TLC.

This is not just some tool for consulting. It's also useful to anyone playing a golf course for the first time. In fact, it might also be a useful tool for a superintendent or assistant preparing to interview for a job or to see a colleague in their workplace.

AERIAL. Before visiting I always look up the course on Google Earth and try to figure out the routing. With many courses featuring returning nines, you can usually figure out some semblance of a sequence, even if you get the nines flipped. With a continuous or “out and back” routing you should be able to figure out the logic, although as soon as you introduce home development and roads, the flow will be disrupted. This tells you a lot at the outset, because ease of routing is the single most important factor in the success of a golf course.

ARRIVAL. I get very uncomfortable at golf developments where the homes are big enough to be confused with the clubhouse. Likewise, the hyper-vigilant security guard gate out in the middle of horse country where the vigilance is performative rather than functional. Another off-putting element would be the bag-drop area where the bag rats on headsets immediately surround you and appropriate your golf bag for placement on one of a long line of motorized carts. As if walking were not a viable option.

CLUBHOUSE. I learn a lot in my first walkthrough of a clubhouse. Is it golf-oriented and welcoming? Or evocative of some mythic English

country hunting lodge replete with faded prints of barking dogs? Is it trying to be a museum of modern Western art? Or a place that feels comfortable for hanging out in common rooms that open up to views of the surrounding landscape? And do the walls convey something of the place — its history, championships, design evolution, prominent guests who have played there, boards depicting winners of various club events?

A clubhouse should honor the facility's locale and landscape and not feel as if it is adorned with discount art acquired by the truckload.

FIRST STEPS. You know you're in for a long day when the route from the staging area to the range is not self-evident and instead, entails detailed instructions, a map or an extensive network of signage. The more signs on a course, the more it feels like a cruise ship or gawdy hotel and the less it feels like traditional golf. The same goes for verbal instructions, like the speech the starter will often give at the first tee — which ought to be brief, welcoming but not overly effusive or didactic.

GOLF. It takes about three holes to figure things out that count: like the quality of the turfgrass coverage; whether the tees are level, crowned or collapsing on the edges; whether the greens are reasonably shaped or have lost their perimeters over the years; and whether the putts are running smoothly, which is a much more revealing indicator of maintenance quality than their speed. Is cart traffic reasonably

managed? Or is it out of control with multiple solo carts in a group and random access and egress on holes? Are the bunkers showing signs of proper drainage, edging and sand depth? Or are they collapsing, clogging or overly filled with sand to compensate for underlying structural failures?

FLEX. The real strength of a golf course is whether it can accommodate players of diverse skill levels simultaneously. Too many course evaluations and ratings by various panels take place from the back tees and end up being a combination of difficulty and superficial aesthetics of dense, lush greenery.

What counts is what everyday golfers are doing from 6,500 yards, 5,800 yards and 4,900 yards. A proliferation of unavoidable forced carries into greens is a liability in this regard, as is a single-minded emphasis on length, narrowness and penalties for golf balls that stray. What counts are diagonally placed options, ground game access for everyday golfers, and a variety of pin placements and teeing grounds.

It's not hard to form a reasonable judgment about a golf course on the basis of an initial visit — even a quick one. The key is fitting that assessment into the larger and more complicated issue of the club's culture. Every facility has its own distinct manner of deciding what it wants to be and who should have a say in that presentation.

As with any aspect of business life, the real skill isn't the material component; it's the element of human relations. More on that in my next column. 



BRADLEY S. KLEIN, PH.D. (political science), former PGA Tour caddie, is a veteran golf journalist, book author (“*Discovering Donald Ross*,” among others) and golf course consultant. Follow him on X at @BradleySKlein.



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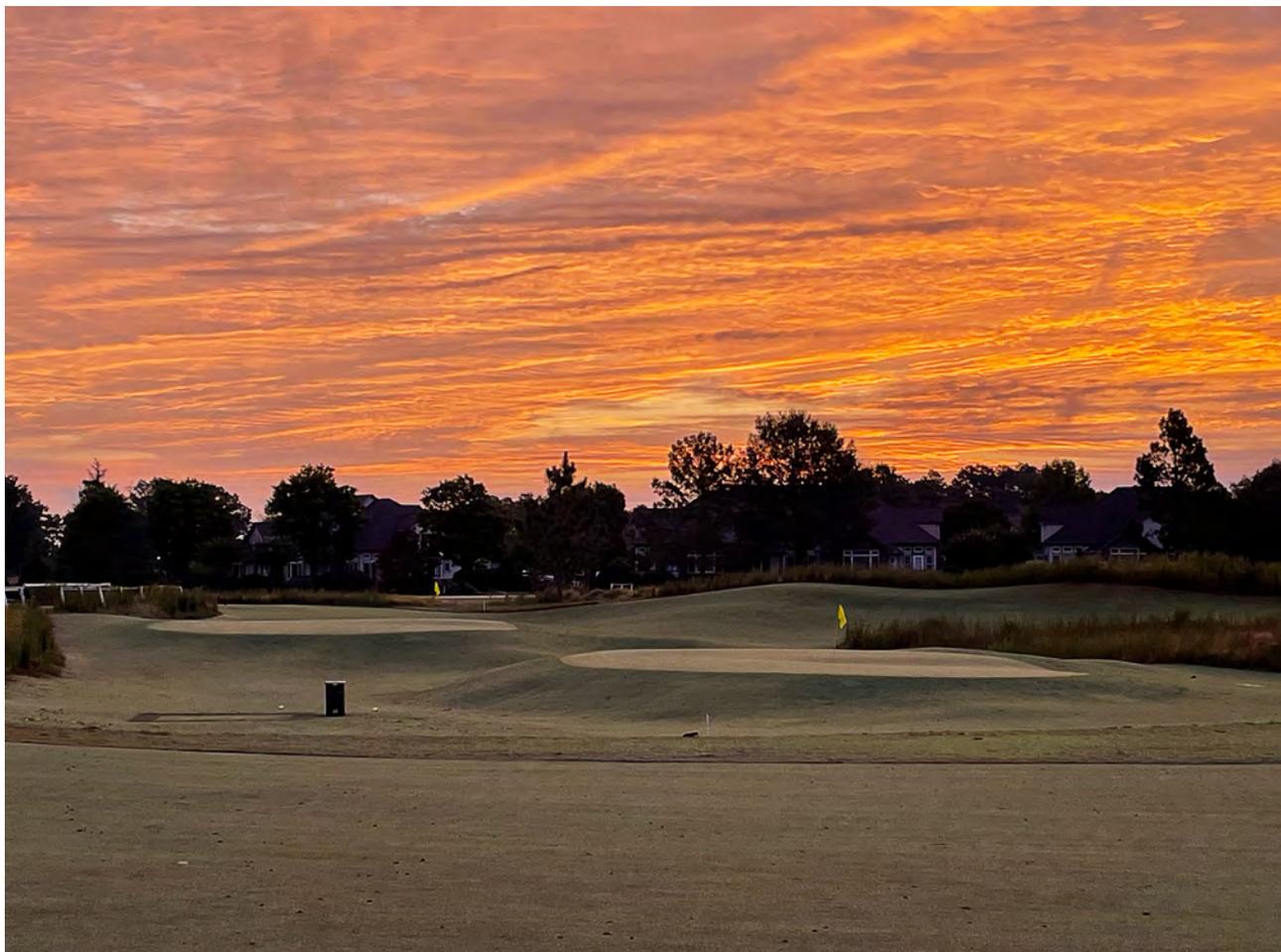
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MISSION in the name

What makes a family-centered golf course different from the rest? And how are staff members working to keep the course ready for players of all ages?

By **Kelsie Horner**

Longleaf Golf & Family Club superintendent **Jason Friedman** couldn't wait to get his driver's license when he turned 16. The excitement didn't stem from driving to school or to his friend's house. The anticipation was for the opportunity to drive himself to the golf course to spend his afternoons with his grandfather.

"It meant the world to me to be able to go out there and spend the afternoon with them, and play golf," says Friedman, an Ohio State University graduate and Hudson, Ohio, native.

The golf course offered a soothing place for a hobby, but also a chance to spend time with his family and bond over the game. Today, Friedman works each day to prepare Longleaf Golf & Family Club's golf course for others to do the same.

Longleaf Golf & Family Club, founded in Southern Pines, North Carolina,



just east of Pinehurst, is home to an 18-hole golf course, the Bottlebrush par-3 course and the U.S. Kids Golf Academy. The semi-private course was originally designed by **Dan Maples** and was later remodeled by **Bill Bergin**, renovating the driving range area, tees, greens and bunkers. The course was built on what was once a horse track, and remnants of that history are still seen on the property — the maintenance facility is a 70-year-old horse barn, and Friedman's office was once the tack room.

The club offers play to both members and non-members and is aimed at entertaining golfers of any age and skill level. The course offers a unique element, the Longleaf Tee System, which scales the golf course to players based on their driver carry distance. The system was developed between the U.S. Kids Golf Academy and the American Society of Golf Course Architects using statistics from Trackman Golf. Each hole features seven different tee boxes.

"It scales the golf course so that everybody is playing basically the same course," Friedman says. "Whoever hits the ball farther is going to use a tee that's farther back, which provides a lot of distinct benefits. It kind of eliminates that irrelevant shot between where the shorter player would hit from and then catch up to the longer hitter."

The tee system allows the club to host kids and beginners, as well as those who've been playing for

years. "We're not exclusively a kids' or beginners' facility," Friedman says. "We still host members, we have package play, which is a big industry in this area."

Friedman works alongside U.S. Kids Golf Academy vice

president **Chris Vonderkall**, head golf pro **Zach Martin** and the club's staff to set up each season's tournament schedule with green speed and course conditions in mind. The course hosted the U.S. Kids Red, White and Blue Invitational and the U.S. Kids Teen World Championship in July. The club also frequently hosts camps and instructional sessions with the U.S. Kids Golf Academy, in hopes of introducing more people to the game.

"It's important to have a responsible setup as far as tournaments go in regard to green speed, hole locations, whether it looks like it's going to be real hot and dry or windy," Friedman says. "We'll adjust how frequently we mow. We might roll a little bit more to keep some smoothness."

Friedman works to ensure that every kid coming out to play remembers the experience and has a positive interaction with the course. "I make sure that we're responsible in our golf course setup so that the kids aren't having a negative experience," he says. "This golf course, on any given day, could be the first golf course or the last golf course anybody sees. You want to make sure that the time they spend out here is worthwhile."

Welcoming players of all ages means promoting safety in ways a golfer might not notice at first glance. Friedman says the club uses golf cars that don't speed up quite as quickly as others. "If one of the kids jumps down



No need for speed

For most superintendents, fast and firm greens are the goal. Turf pros work each day to provide championship-level mowing heights, preparing to challenge the golfer. But at Family Sports Golf Course, high speeds are not the goal.

Located just south of Denver, in the suburb of Dove Valley, the municipal facility is home to a 9-hole executive course, a double-deck driving range and an 18-hole mini golf course. The course features one par 5, two par 4s and six par 3s, and is mainly used by junior golfers and retirees. It's often used for lessons and leagues, played by beginners and families.

Superintendent **Chris Lammering** prepares the course accordingly. He aims for Stimpmeter speeds at 10.5 and keeps them soft, intentionally cuts large fairways around the greens to add forgiveness if a golfer misses a green and offers four sets of tee boxes.

"I manage my course to help these golfers," Lammering says. "I set my golf course up to make it forgiving and easy for beginners."



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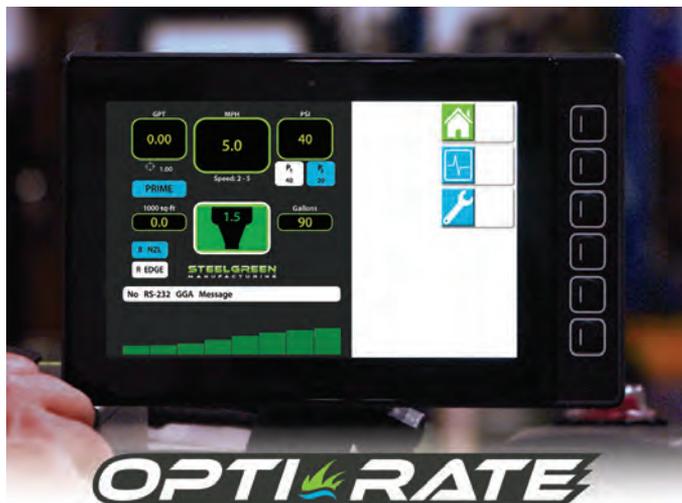
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and accidentally hits the gas pedal, that's going to be bad," he says.

Having "family" in the name is about more than just a title, it's about an encounter, an attitude, even a decision-making factor as a club. Friedman says having a family-centered golf course is going to have "something for everybody."

Bottlebrush, a six-hole par-3 course, opened in 2016. The course was designed by Bergin and plays at 450 yards total. Holes range from 50 to 100 yards in length and offer play for both the beginning golfer and the player looking to focus on their short game.

"I absolutely adore that six-hole golf course," Bergin says. "It's sexy, cool and fun."

Bergin designed the course with Donald Ross-type push-up greens,

and mixed challenges with entertainment. He designed the course to incorporate Longleaf's brand—welcoming to players of all skill types. Bergin has built numerous other short courses, but Bottlebrush remains his most favored design. Bergin has designed numerous notable clubs including the Country Club of Winter Haven in Florida and The Keep at McLemore in Georgia.

A former PGA player, Bergin has played hundreds of courses throughout his career. He played in three U.S. Opens, two Opens and more than 50 PGA Tour tournaments. His playing experience carried over into his course designs.

"It's a really hard game to wrap your arms around," he says. "On a small course like this, you don't take forever

to play, it's all feel, you can see your goals. It's all doable."

The short course's name comes from the idea of how pine tree saplings start. "Pine trees sometimes grow and start off from saplings in bottles to keep it hydrated and keep the roots moist," Friedman says. The bottles are then planted in the ground. The course's name is analogous to starting kids in the game of golf with good roots and an understanding of the game, then watching them grow, the superintendent says.

Having family in the name is more than just maintenance protocols or hosting events. It's a mindset and an atmosphere. 🌲

Kelsie Horner is Golf Course Industry's digital editor.



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BASF EOP 2026: FAST, EASY, FOUNDATIONAL SOLUTIONS

How has BASF added more value to their 2026 Early Order Program (EOP)? By continuing to keep it simple and making key products like Aramax™ Intrinsic® brand fungicide and Tower® herbicide even more affordable. We asked Jeff Vannoy, their Senior Product Manager, to give us the highlights.

What are the three biggest reasons to love BASF's 2026 EOP?

First and foremost, simplicity. We continue to refine the program to make it the easiest to use and the most valuable out there. Our EOP delivers the foundational products superintendents need with real savings for the customer without being a headache.

Second, we've made Aramax Intrinsic brand fungicide even more affordable for fairway use with a value-driving 9% kicker¹. It is now a key part of programs nationwide as a fairway rotation solution for a broad range of diseases and also for northern courses dealing with snow mold.

Finally, there's also a 5% kicker for Tower herbicide², providing even more value for our customers. Tower has had quite a resurgence because of regulatory issues for other products. Superintendents have rediscovered how effective Tower herbicide is for warm-season golf courses.

You've made Aramax Intrinsic brand fungicide even more affordable with the additional 9% kicker. Why was that important?

We know that highly effective, broad-spectrum products require an investment to use on fairways. We found that if a superintendent gets to the 24% rebate level and purchases 7.5 gallons or more – about 20 acres of material – then their price is down to about \$237 net price for an acre of Aramax Intrinsic brand fungicide. That's very doable for a product that's so versatile. Now, whether it's down south on large patch or up north with dollar spot or anthracnose, they can embrace Aramax Intrinsic brand fungicide without breaking the bank.

Why is Tower herbicide so popular right now for warm-season turf?

It's become a focal product in the south and the transition zone because of changes in the regulatory environment for other pre-emergence herbicides. University researchers view Tower very favorably because of concerns about the availability of other key products for goosegrass and *Poa annua*. Tower is highly effective, and superintendents have quickly found that it's a great replacement for some of those old standards for pre-emergence control.

We decided to make it even more valuable to warm-season superintendents by offering a 5% kicker for EOP. It's notable because it's the first time we've ever offered that kind of rebate on a herbicide.

Turning back to fungicides, tell us why BASF products are at the heart of so many good disease management programs.

It starts with the depth and breadth of our fungicide portfolio including products like Lexicon® Intrinsic brand fungicide, Navicon® Intrinsic brand fungicide, Maxtima® fungicide and Xzemplar® fungicide that are truly foundational in a lot of good programs. The superintendent can choose their go-to fungicides and then build around them using our Holiday Spray planning approach. Countless customers tell us those products are very much the foundation of their program.

Remind everyone about "Across-the-Course Solutions."

If you're a loyal BASF fungicide user, you're automatically at the top level for our Across-the-Course Solutions by purchasing \$20,000



of fungicides. That includes a lot of well-known brands like Free-Hand® herbicide for use around clubhouses, Tower herbicide, and Pylex® herbicide, which is often mixed with Drive® XLR8 herbicide. That's been a go-to for many superintendents and lawn-care operators. There's also Alucion® insecticide and more great herbicides like Pendulum® AquaCap, which a lot of superintendents love for native areas.

How do you keep it simple for busy superintendents and their local sales reps?

Superintendents shouldn't have to stress over EOP. Ours gives you the power to select exactly the product you want for the acreages you need. We don't make you buy things you don't need or want, and there are no pallets or other gimmicks.

We went to this "Design-Your-Own Program" approach six years ago. Why? The customer always comes first, and it's not about what we want to sell them. It's about what they need to buy and what works for them. We give them a way to buy what they want, when they want it and save a lot of money. It's just that simple.

Visit betterturf.basf.us/eop for more information about the 2026 BASF Early Order Program and the entire BASF family of products.

1. The 9% Aramax "Max Out" Kicker will only be applied to Aramax Intrinsic brand fungicide purchases at specified volumes and within program dates. The Aramax "Max Out" Kicker is not contingent on DYOP qualification.

2. The 5% Tower Herbicide Kicker will only be applied to Tower herbicide purchases at specified volumes.

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2026 **Early Order Program**

BASF

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Own Your Season.

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EARN REBATES UP TO 33%¹

THE MAX OUT KICKER

Earn an additional **9% rebate²** on your Aramax™ Intrinsic® brand fungicide order with the purchase of 7.5+ gallons of Aramax.

THE TOWER POWER KICKER

Earn an additional **5% rebate³** on your Tower® herbicide order with a purchase of 5+ gallons of Tower.



For More Information Visit
Betterturf.basf.us/EOP

1. The maximum total rebate percentage, including all allowable rebates, is 33%.

2. The 9% Aramax "Max Out" Kicker is in addition to the purchase tier rebate and will only be applied to Aramax Intrinsic brand fungicide purchases at specified volumes and within program dates. The Aramax "Max Out" Kicker is not contingent on DYOP qualification.

3. The 5% Tower Herbicide Kicker is in addition to the purchase tier rebate and will only be applied to Tower herbicide purchases at specified volumes.

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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.

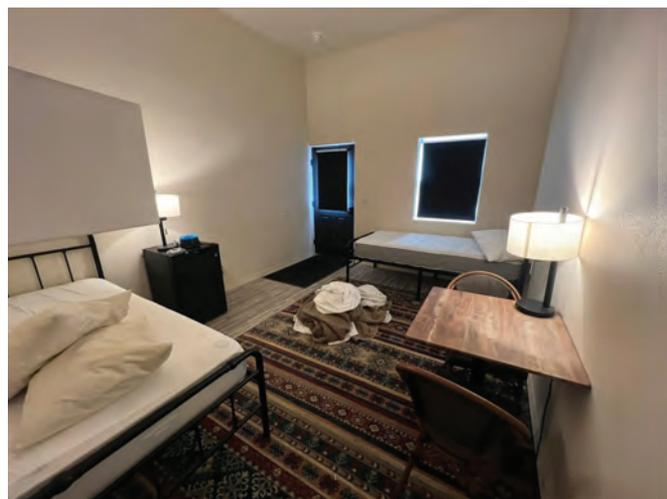


ULTIMATE GCM EMPLOYEE HOUSING

The first priority for a turf student looking for a quality internship is whether furnished housing is provided, with utilities included, at no cost. The new 18-hole golf course at the ABCW Ranch, LLC, in Twin Bridges, Montana, is currently under construction, designed by **Kye Goalby**, ably assisted by **Eamon Sullivan** and **Matt Smallwood**. The official name and logo of the new course are currently being considered. There are 15 new apartments, with eight on one side and seven on the other of the newly built metal maintenance building, with copper gutters and downspouts. Each apartment has a double bed and twin bed, small refrigerator, table and two chairs, two lamps, door with concrete stoop, window and shade and exterior light, separate window and shade, and individually controlled HVAC. The en suite bathroom has a sink, mirror with overhead light, toilet, shower with built-in seat and curtain, wall-mounted electric heater and overhead storage rack. Each apartment has only one employee per unit for excellent privacy. Each employee can park their personal vehicle in front of their apartment door. The superintendent has a permanently assigned apartment for his use whenever the need arises. **Jarod Spurlin** is the golf course superintendent. He really likes having employee housing for turf students, interns, and full-time and seasonal employees.

There is a central employee living area with a gourmet-equipped kitchen, flat-panel TV with elongated table below, dining table with eight chairs, couch with coffee table, two chairs with ottomans, a large floor rug and a central HVAC system. A propane grill, pellet grill, propane cooktop with large turkey fryer pot and charcoal grill are on the patio along with a wooden picnic table.

Having employee housing is highly recommended as part of a new maintenance building design or when an existing facility is being renovated or remodeled. This employee amenity is great for recruitment and retention in today's competitive golf labor market.



Terry Buchen, MG, is president of Golf Agronomy International. He's a 56-year, life member of the GCSAA. He can be reached at 757-561-7777 or terrybuchen@earthlink.net.

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WE'RE JUST 'BOUT THAT ACTION, BOSS

It was Media Day at Super Bowl XLVIII. **Marshawn Lynch**, per his usual temperament, was reluctant to speak to anyone, let alone the media. In that moment, **Deion Sanders**, who was an NFL analyst at the time, approached Beast Mode and asked him why he was not openly speaking with the media. Sanders asked Lynch if he was shy or simply didn't want to talk. Lynch replied, "You want something, you go get it. Ain't no need to talk about it." Lynch followed up with another, now famous quote, stating, "I'm just 'bout that action, boss."

If you are still with us, reading this column after a seemingly strange, Lynch quote-riddled introduction, you are likely wondering where we are going with this. We get it — and rightfully so. Let's try to stick together as we attempt to close the loop.

This column is being written in late August (on the eve of our fantasy football draft nonetheless) and should be published sometime in October. This timeframe, at least for us, brings up memories of what we were enamored with each season during the late summer and early fall — recruiting. We were engaged in navigating the inevitable annual — and sometimes seasonal — turnover part and parcel to our industry. We were performing the same level of maintenance with less personnel. The local, seasonal staff have gone back to school, interns have returned to university, and others have moved on to bigger, better or simply different jobs.

As we worked to attract new mid- to high-level management po-

sitions, courted interns from universities for the following season and worked to hire other late-season additions, we focused on selling the benefits of our organization. Higher wages, professional development opportunities, health care, PTO, free lunch and schedule flexibility were all great attributes we noted.

In retrospect, the previously listed employment benefits were relatively ubiquitous. Most golf courses offered the same or similar items. We assume you've come to realize the same truth. Something our current roles have helped us identify that we always recognized and understood, but maybe never deliberately focused on, was the culture of our department and how critical it was in our success, or lack thereof, when recruiting and retaining personnel.

The AI-generated definition of workplace culture notes the following: Workplace culture refers to the shared values, behaviors and attitudes that define an organization's unique character and atmosphere, influencing how employees interact, work and achieve goals.

We hear about it all the time. Culture is undoubtedly one of the most anecdotal, overused, overanalyzed words in domestic workplaces across every industry. How do you develop, maintain and strengthen culture? In our opinion it is "'bout that action, boss."

We hear superintendents and assistants talk about culture all the time. Those who talk about it are usually the ones who have been unable to effectively and successfully devel-

op it. In these instances, culture is viewed as an abstract concept. It's discussed as something that has several different flavors, like products on a grocery store shelf, allowing folks a chance to sit back, read, study and choose the culture they want to select and inject into their department. These efforts are futile. Rhetoric is transparent and hollow — exemplified by minimal action.

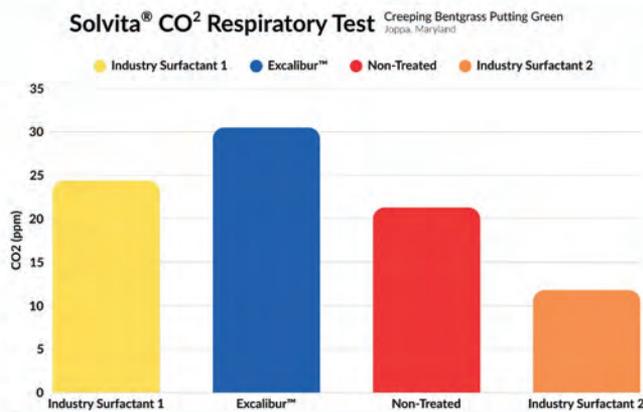
On the other hand, we readily observe that where culture is an action, instinctively expressed through deeds, pace, accomplishments and physical acts, it is real. The real-life embodiment is tangible — not necessarily as a physical object, but it persistently permeates. When being around the golf course, speaking with personnel and walking through the maintenance facility, it is readily apparent. A presence, feeling, intuition, confidence and swagger that becomes the foundation of how people interact with each other and with those around them. It is the basis for everything that is almost always directly correlated to the commitment, work ethic and attitude of those who accept it and embrace it. The translation is real and is oftentimes followed by operational and organizational success — however that might be defined in each distinct situation.

In today's transfer portal-esque, fluid, reactionary employment recruitment and retention environment, maybe a slight methodical shift in culture on the heels of actions rather than words could be the difference in building a successful team. 📌



DAVE DELSANDRO and **JEFF CORCORAN** are former superintendents and co-founders of Agronomic Advisors, a consulting firm that assists and advises industry professionals on every aspect of golf course management. Contact them at dave@agro-advisors.com and jeff@agro-advisors.com.

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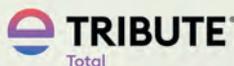
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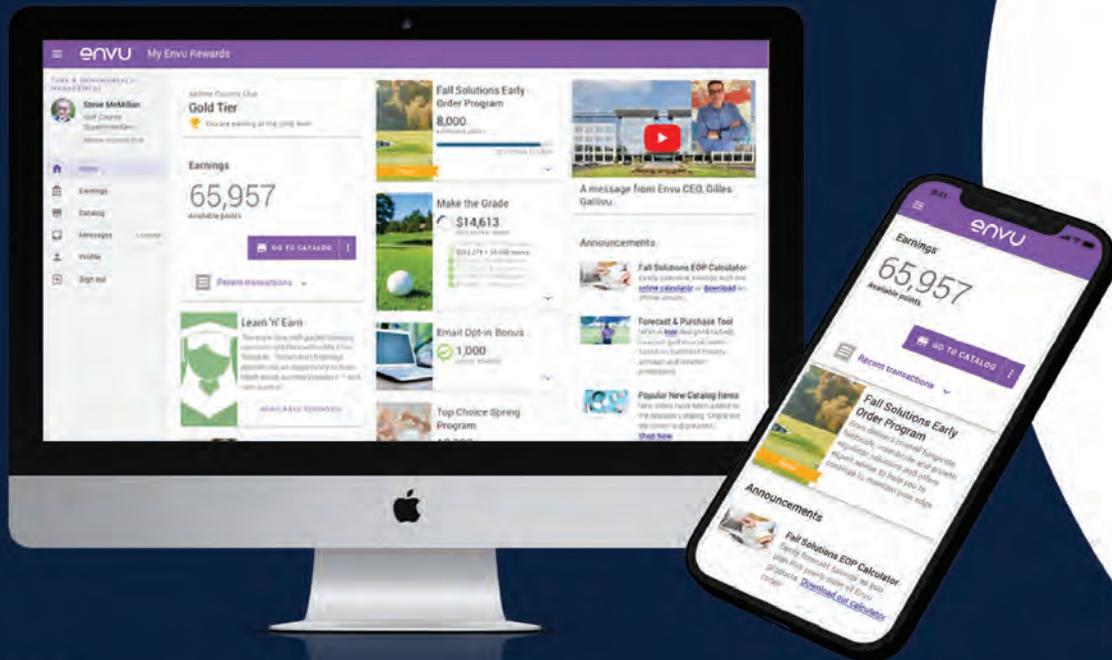
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