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"I'm not sure how these misconceptions concerning *Poa annua* began, but it likely started with experienced superintendents who have either succeeded or failed at managing *Poa*," says Dr. John Kaminski, assistant professor of turfgrass science at Penn State. These superintendents passed information down to their employees and peers and it stuck.

*Poa* management programs are also regional in nature, Kaminski says. "For example, being at Penn State and in the state of Pennsylvania I have to know how to manage it and how to suppress it because depending on which side of the state your course is located the philosophy on *Poa* is completely opposite," he says.

Dr. Shawn Askew, assistant professor and extension turfgrass weed specialist at Virginia Tech University, suspects *Poa* misconceptions are passed down from one generation of superintendents to the next. Geography is an influential factor, as well.

"When it comes to *Poa*, myth or misconception often depends on where you live," he says. "What works in the South may lead to myth in the North. What works in the desert southwest may flop in the Mid-Atlantic. The reason is *Poa* control comprises more than just herbicide efficacy. Turfgrass competition, abiotic stress, and pestilence of *Poa* are all at play and interact with herbicides to ultimately bring the demise of a foe like *Poa*."

Because southern golf courses

experience extreme heat, especially hot nights, *Poa* will tank pretty readily if proper turf culture and an herbicide/plant-growth-regulator (PGR) program is administered.

Up north, however, *Poa* stressors are less common and plants are more difficult to kill. "Complicating things further is the broad genetic diversity of the species," Askew says. "The ecotypes found in one area will differ from those in another. Such genetic differences have been shown to influence control efforts with herbicides and PGRs. Given all this diversity over a broad geographic area, myth and misconception is bound to follow."

Brian Horgan, associate professor in the department of horticulture science at the University of Minnesota, believes the misconceptions concerning *Poa annua* are rooted in management and the diversity of *Poa* biotypes.

"*Poa*, like most grasses, can be conditioned to grow based on the management style," he says. "So, if you give *Poa* too much food or too much water, the *Poa* will soon require the input. Light and frequent irrigation programs will confine roots to shallow depths, when the water is turned off for a day, the *Poa* dies. Hence the myth, *Poa* needs light/frequent application of water."

And myths often compound other myths. For example, if you



Turgeon

believe the myth *Poa* requires more water, then you over water early in the growing season causing roots to be confined to shallow depths. "As summer temperatures increase, this management philosophy would dictate even more water because of a secondary myth '*Poa* dies in the summer heat,'" says Sam Bauer, a turfgrass extension educator at the University of Minnesota. "*Poa* does not die just because of heat. Heat tolerance is reduced

they create unfair expectations," says Carmen Magro, owner and chief agronomist of Agronomy Management Solutions.

"A member or guest plays a course and has an excellent experience playing on *Poa* greens only to come home to his or her home course and see failing *Poa* greens or fairways," he says. "The simple mistake of comparing two *Poas* with no regard for the *Poa* type, management program, resources to manage that *Poa*,



*Poa* myths and misconceptions are passed down from one generation of superintendents to the next.

by increasing hydration level. More simply, overwatering in the summer causes heat stress and *Poa* death more so than any other practice. All of this from the myth that *Poa* requires more water."

Dennis Petruzzelli, superintendent at the Country Club of Woodbridge in Connecticut knows all of the *Poa* myths, including the one that *Poa annua* is bad grass. "Sometimes we are forced to manage it as the primary grass type when environmental conditions cannot be improved any further to successfully promote and encourage heartier grass types," he says. "*Poa annua* can be a great playing surface, but effort, time, and budget resources to manage it consistently due to its vulnerabilities from various stresses which mostly result from its shallow root system."

Player comparisons are the bane of superintendents because

micro-climates within a particular property and a slew of other things [perpetuates misconceptions]."

Every aspect, from the *Poa* type and the way it is managed to its age, the water quality, the soil type, texture and qualities, shade patterns, direct sunlight patterns, traffic and micro-biological influences all affect how *Poa* performs as a playing surface.

"As superintendents, we understand we are managing a golf course and not an arboretum," Magro says. "In other words, we are preparing a property for the game of golf and that requires many unnatural things to occur. So when it comes to managing *Poa*, it is totally unfair to ever make a comparison between properties. These types of comparisons have led to many myths and given *Poa* a bad name."

Lumping all *Poa* together is

## Extreme *Poa* Makeover

Penn State's John Kaminski says there are some extreme management programs in circulation that purport to magically make *Poa annua* disappear, while favoring bentgrass.

While there are chemical and cultural programs that can assist in this goal, there is no single way to completely eliminate *Poa*. Kaminski cautions that extreme *Poa* management programs usually look favorable for a year or two and then greens may ultimately decline or die and "the superintendent has to start looking for a new job." He advises to keep turf-management basics in mind and always ask to see the data. "If something looks too good to be true then it probably is," he says.



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## TURF HEALTH

a mistake, says Laurence Mudge, a Bayer turfgrass expert. "There is a lot of genetic diversity within the grass," he says. "There are varying opinions on the grass and the proper way to manage it in every region. Even Augusta National fights *Poa annua* all the time. Some courses in the North deal with it and manage it so that it can become part of their playing surface, even on putting greens. In

the Northwest, there are greens that are 100 percent *Poa*."

*Poa* myths lead to poor superintendent decisions, says Dean Modsell, technical field manager at Syngenta. "I've heard of superintendents trying to eradicate or manage *Poa* with products that may not be suitable for their turf or the hole's location," he says. "They become a little careless in their treat-

## Perfect harmony

John Schreiner, superintendent Briardale Greens Golf Club in Euclid, Ohio, believes whether northern superintendents want to live in harmony with *Poa* or not they may have to do so to some extent on greens. "With the use of PGR's combined with proper cultural practices, such as frequent light topdressing, light verticutting, brushing, rolling, and double cutting there is no reason why any superintendent, north, south, east, or west, can't successfully live with *Poa* greens," he says.

In the end, after breaking down the myths and misconceptions about *Poa annua* that may be the best many superintendents can hope for.

Don't overlook the surrounding environment, says Dr. Cale Bigelow, assistant professor of agronomy and turfgrass science at Purdue University. "Consider why it is there and perhaps in many situations it is the best choice/species for that area, wet root zones, shaded areas (ABG is more photosynthetically efficient than bentgrass). Also, if you are on a program like a medication for a chronic problem, once you stop the problem is likely to return. So have a long-term plan."

ments and may over-treat their turf in the zealous urge to attack *Poa*."

"Most of the wild stuff I've heard has been about superintendents' attempts to control *Poa*," says Turgeon. "Lots of herbicides and acidifying materials have been used for this purpose, often with disastrous results. If you want to control it, you have to provide conditions that are highly favorable for the desired turfgrass. Herbicides can be helpful, but they can never substitute for a balanced and commonsensical cultural program. If you want to manage it, you have to provide conditions that are highly favorable for this turfgrass."

Askew asks superintendents to know the plant. Understanding when *Poa annual* goes to seed, when germination is likely going to occur, and what biotypes superintendents have at their facility gives them a better understanding of how to properly manage *Poa annua*. "*Poa* is about as diverse and as finicky a plant as there is, and management is going to come down to a micro level," he says. "What your neighbor does to keep the *Poa* alive (or to suppress it) is probably not going to be the best recipe for managing the *Poa* at your course."

On new greens, adopt a preventative program that uses the latest in PGR technology, and supplement that program with hand picking and foam dabbing. *Poa annua* germinates all year, but when the grass is germinating most in the fall, avoid compaction with lighter mowers, don't apply phosphorous fertilizer, and irrigate infrequently to prevent surface moisture that aids seedling survival. GCI

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## CHANGES TO THE “OLD COURSE”

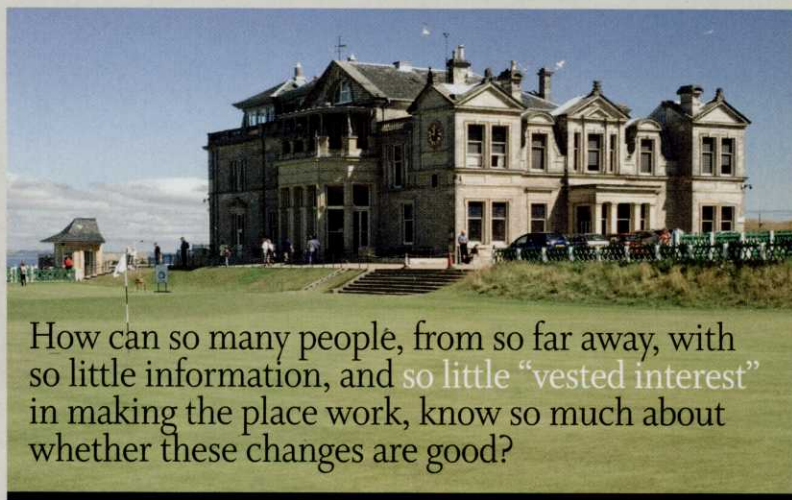
**T**he recent uproar on changes to the Old Course at St. Andrews makes me want to weigh in from this “Bully Pulpit” with a stern, unequivocal: “I can see both sides.”

R&A chief executive Peter Dawson says there is “too much hysteria” surrounding the Old Course changes, and I tend to agree. Much of the outcry came quickly, and from sketchy information. Most were understandably against change on preservation principles alone. That is quite understandable, given that the Old Course is so special and unique.

Both change and fear of change have been constant at St. Andrews. In most cases, changes have obviously gained acceptance over time. Is it different now, just because we are more aware of them from the Internet? How can so many people, from so far away, with so little information, and so little “vested interest” in making the place work, know so much about whether these changes are good?

This sentiment factors in my love of St. Andrews dating to my first visit in 1980, so much so that I named my son “Andrew.” No doubt, St. Andrews is a “museum piece” and window into what golf was like in the beginning. However, as romantic as the idea of playing the same course Old Tom Morris did is, the reality is all golf courses – even historic ones – are constantly evolving and changing. Years ago, the St. Andrews superintendent told me they had filled in many bunkers over the years, often in the middle of the night. Even in an era generally less attuned to architectural preservation, he knew: There would be much complaining about changes if known in advance; and most would not notice the changes and/or would soon forget them if they did.

This year, the first point has occurred. We will have to see if the sec-



How can so many people, from so far away, with so little information, and so little “vested interest” in making the place work, know so much about whether these changes are good?

ond also occurs, but based on history, I think it will. I suspect the process and complaints regarding changing the Old Course were nearly similar, whether in 1612, 1812, or 2012.

Most books about St. Andrews document the many changes at the Old Course. There was uproar when “Old Tom” converted fairways from heather to turf. The course reversed its routing, which is perhaps the most radical change ever. When I first played there in 1980, locals were lamenting that the new irrigation system had ruined the course forever.

It’s always valid to question whether these changes will prove acceptable. Should any change mostly promote modern “tournament fairness” over tradition? Most importantly, will these changes “open the floodgates” for wholesale future design changes?

However, unlike some, I presume the brain trust there asked those questions before proceeding. While it’s easy to romanticize Old Tom Morris as infallible, while presuming current leaders can do little right, they do have responsible people in place. As is often said in politics, a difference in opinion is not a difference in principle. Even if we disagree with some

changes, we must presume those in charge have the best intent.

In my view, filling a large depression in the 7th fairway fixes perpetual maintenance problems, and is easily justified. (With all the divots, it probably looks worse now than when sheep huddled there against winter winds.) Removing rarely used fairway bunkers reduces maintenance, speeds play, and has occurred before many times.

Most of the design changes are also understandable; unless your perspective is against any change at all. Granted, a few made from the Tour Pro’s point of view risk turning the Old Course into “TPC St. Andrews.” For instance, I don’t favor lowering the fairway ridges formerly blocking the view of the 4th green to promote the modern concept of “full vision to the green” from the left. That takes away the traditional advantage of “playing far right as you dare.”

Change is inevitable, and even with many changes over the centuries, the Old Course still serves both a worldwide public and the occasional tournament. Most importantly, it would still be recognizable to Old Tom Morris, and that is a wonderful testament to the Old Course’s greatness. **GCI**



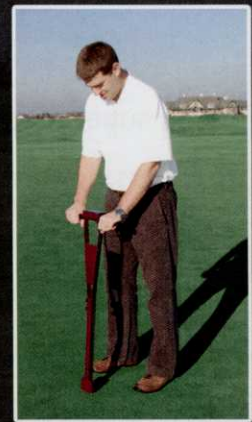


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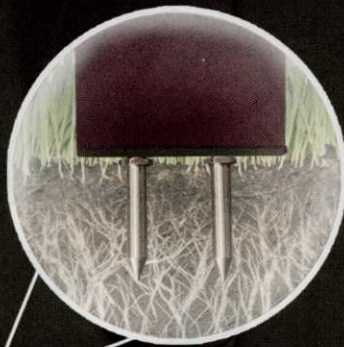
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Many superintendents are now topdressing with finer sand to save time and resources on managing sand left on top of greens. But can it negatively impact the soil over time?

**A** study published last fall in the USGA Green Section Record by Dr. James Murphy, extension turf specialist in the department of plant biology and pathology at Rutgers University, indicates many superintendents are using finer sand when topdressing to ease the burden of dealing with sand particles left on greens.

Murphy states many superintendents are selecting sand that contains no fine gravel (2 to 3.4 mm particle size diameter) or very coarse sand (1 to 2 mm) to improve incorporation of topdressing. The latest trend, he states, is to use sand that doesn't contain coarse sand (0.5 to 1 mm), which according to the report further improves incorporation, especially when this sand is dry.

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By Jason Stahl



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There is some thinking that sand size could negatively change the physical properties of the thatch layer of a green.



## Getting Dirty

A trend Christian is seeing is superintendents “dirtying up” their sand more with organic material to prevent their greens from drying out too quickly – a more frequent occurrence with the extreme summers of late.

“One thing that was brought up to me not too long ago is that, when they do testing in labs, everything is based on 30 centimeters of suction, and that’s 12 inches of rootzone,” says Christian. “The problem, though, is that with everyone adding sand, their greens are 14 to 16 inches deep, but they’re still basing their measurements on a 12-inch rootzone. The greens are getting drier and drier as they add more and more sand to the top because that spent water below the surface is getting lower and lower and there’s less tension on the sand on the top. It’s getting pulled quicker to the bottom and therefore the top dries out more quickly.”

Superintendents are telling Christian, “I can’t keep my greens wet, I can’t keep them wet,” and his advice is to probe them to see how deep they are. Then, there are two options: dirty their sand up with organic material, or change the sand size, being aware that choosing too fine a sand can create a whole new set of problems.

think again. Murphy says there are potential issues with this strategy, mainly that this size of sand could negatively change the physical properties of the thatch layer of a green.

Steve Christian, account manager/consultant with Dakota Peat, has seen that negative impact firsthand, especially with superintendents who use finer

sand on Ultradwarf greens.

“With Ultradwarf, [superintendents] are trying to use finer sand all the time as tight as they are, but they have to be really careful,” says Christian. “If the greens were built out of USGA sand and then they topdress with this light sand for five or six years, it can create a perched water table on top of the USGA

sand. The salts will then stay on top and create a lot of issues.”

Christian tells a story about a course he analyzed a core sample for after it had trouble with its greens. The greens had been built with concrete sand, but then, after 15 years of topdressing, they had five to six inches of USGA material on top of coarse materials. An extremely wet summer came, and all of a sudden the greens wouldn’t drain.

“They were blaming the water being muddy and all these other issues, but the real issue was that they had a perched water table,” Christian says. “In that situation, you’re pretty much done. You have to aerate aggressively with 10-inch tines two to three times per year to get enough height on your column so you can get some drainage.”

To avoid trouble, Christian says many superintendents are opting for a “combo platter” of sand when topdressing and aerifying.

“A lot of guys are using this fine sand for light infrequents. Then, when they do their core aeration, they’re going in with

USGA sand because it has greater porosity and opens things up better and keeps it closer to spec.”

Murphy’s study confirms that superintendents are using this “combo platter,” but it doesn’t go so far as to say it’s effective.

“The concept is to manage any potentially negative effects by coring out the mat layer containing finer sand and replacing it with coarse sand backfill,” Murphy says. “It is not clear whether this ‘dual-sand’ concept will be sufficient to offset any negative effects of the finer sand, presuming the negative effects actually occur.”

Another potential issue with using “uniformly graded sand,” or sand with particles of a similar size after large particles have been taken out, is that there can be instability problems where the sand can shift under normal traffic conditions.

“The extent to which these concerns are actually a problem in the context of topdressing is not fully understood,” Murphy explained in his report. “For example, some finer sand, despite being uniformly graded,