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Mitkowski: "I often examine many samples during May, looking to see if the pathogen is present and trying to gauge its activity and spread."

ease in the past will generally go about treating it preventatively, but an early diagnosis requires laboratory analysis," he adds. "I often examine many samples during May, looking to see if the pathogen is present and trying to gauge its activity and spread."

Dr. Frank Wong, green solu-

tionist says. "Summer patch can be very difficult to diagnose, he reiterated, and the disease being present doesn't necessarily mean it's the cause of the turf trouble.

"It's very frustrating for superintendents," Wong says. "They can send in a [turf] sample and there's a high probability of

For example, Wong says to consider two courses that may both be 20 percent infected. The one with a low height of cut and minimal irrigation can see more symptoms than the other with a higher height of cut and more water used. Avoiding fast-and-firm conditions is important in minimizing damage and encouraging recovery.

Dr. Jill Calabro, regional field development manager and plant pathologist for Valent Professional Products, echoed Wong's suggestion to focus on plant health – raise mowing heights and water deeply and infrequently, which encourages root growth – once summer patch has been spotted. She doesn't paint a pretty picture of the turf bouncing back in season, though.

"You can't reverse the damage," Calabro says. "Once it's done, the damage is done."

Calabro recommends investing in soil tests once or twice a year. An early test will provide a starting base, while assessing again later in the season will bookend the battle and provide valuable information for future seasons.

"They're inexpensive, but can tell you so much about what's

going on," she says. "And most university labs will provide recommendations with the test results."

If you seek help from a lab, Wong says it's "buyer beware" with the information you get back.

"Diagnostic labs can vary in quality," he warns. "At the bare minimum, they should be able to identify if you have the pathogen. The good labs can help you put two and two together."

Stressing that avoiding summer patch requires regular treatments throughout the season. Lane Tredway, technical manager for Syngenta for the southeastern United States, leaves room for hope if the disease shows up. "It's not too late, but very difficult to manage summer patch on a curative basis," he says. "A preventative strategy is absolutely necessary."

McMorrow receives samples of summer patch from any places that *Poa annua* is grown – mostly in the northern and western states and sometimes in the transition zone.

The disease is driven by heat and high soil water content, Mitkowski says. If these two factors are present, summer patch can

## "The pathogen attacks plant roots and moves relatively slowly, gaining speed as soil temperatures rise above 65-70 F."

– Nathaniel Mitkowski, University of Rhode Island

tions specialist for Bayer's professional turf and ornamentals business, says golf courses are at risk of summer patch when soil pH is higher than 7.5, with the highest risk coming when levels reach 8-8.5. He recommends maintaining a range of 6-6.5, which admittedly is easier said than done.

While a preventative practice of DMI or strobilurin – targeting the crown and upper root area – every 28 days offers the most "bang for the buck," according to Wong, if pH gets too high, a shot of ammonium sulfate may lower the levels.

finding summer patch. [But] it's not always the presence of the pathogen that's causing the primary damage."

Once another disease has been ruled out, Wong suggests putting a curative application down, which can arrest the pathogen and stop the spread of summer patch. Note, it's not back to business as usual, however.

"You still have to use good agronomic practices to allow for recovery," Wong says. "It's unrealistic to spray the fungicide and then go back to the same agronomic practices and expect recovery."

## When to watch for summer patch

Spring is the best time to begin preventative applications for summer patch

"I find that summer patch can become active even when soil temperatures hover around 55 degrees Fahrenheit," says Turf Diagnostic's Jennifer McMorrow. "This is much earlier than we used to treat for summer patch. Ten to 15 years ago, it was common to treat for summer patch in June, July and August. However, most of my samples with active summer patch were coming in to the lab in May and September. We were missing the beginning and the end of the window. Superintendents in California may even have a larger window than these five months."

Referring to spring core aeration as "absolutely vital," Dr. Frank Wong, green solutions specialist for Bayer's professional turf and ornamentals business, says the battle is maintaining the root once soil temperatures reach the high 70s or low 80s – a time when the roots stop growing. "You're behind the eight ball if you have shallow root growth in the summer," he says.

Once a summer patch outbreak is under control, it would be nice to know there's something that can be done late in the season to get a jump start on the next season. According to McMorrow, she is unaware of that magic bullet, but all hope isn't lost.

"I have not found a fall application of fungicide to be helpful in deterring the disease the next year," she says. "However, this is assuming that the plants going into the winter months are not infected with summer patch. In addition, many of the systemic fungicides we use for snow mold control will also clean up summer patch in the fall as long as the fungicide is watered in and has upward mobility."

Prevention is paramount, but superintendents need to look at the bigger picture when ensuring their course does not fall victim to summer patch.

"Preventative fungicide applications are critical to keeping this disease in check, however, manipulation of the turfgrass environment will provide the best results in minimizing disease pressure," says Nathaniel Mitkowski, University of Rhode Island associate professor, plant sciences and entomology. "Summer patch prefers hot, wet soils.

Improving drainage, increasing air movement and increasing soil oxygen can all slow disease activity. Anything that can increase rooting depth will also slow summer patch damage.

"In addition, keeping a lookout for other diseases that may also kill plant roots and exacerbate summer patch symptoms is also important," he adds. "Cool-season root pythium is very common on annual bluegrass and often results in an early season root rot. If this disease is controlled early, plant roots will have a better ability to resist summer patch. Nematodes can also cause shallow rooting and reducing their populations will improve plant rooting.

No matter what you do, starting early and focusing on root health can significantly improve your chances of withstanding a summer patch infection."



be very aggressive.

"The most aggressive cases of the disease I have seen usually come from an area that covers Illinois to southern New England, with the Midwest having particularly severe problems with the disease over the past few years," he says. "As with any disease, weather conditions can exacerbate activity. The Midwest has seen some very hot, very wet summers recently and this will increase disease incidence and aggressiveness."

On the course, specifically, Mitkowski says summer patch can be found anywhere annual bluegrass or Kentucky bluegrass grow, but is most severe on putting greens because the damage it causes is more obvious.

"There are a variety of reasons for this, but specifically, any blemish at putting green height is more noticeable than on higher heights, and the diversity of grasses on Northern putting greens is low (creeping bentgrass and annual bluegrass) compared to a wide variety of grasses on other surfaces that may have moderate to complete resistance," he says. "If a putting green is a 50/50 annual bluegrass/creeping bentgrass mix, 50 percent of the green is susceptible to the disease." GCI

*Rob Thomas is a Cleveland-based freelance writer and frequent GCI contributor.*

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## SAY CHEESE!

**W**hen it comes to your golf course, a picture truly is worth a thousand words. Quality photography is an essential tool for the smart superintendent who wants to document how a maintenance project is progressing, keep track of seasonal changes, show before-and-after situations and make important presentations to committees and ownership.

Despite advances in technology, taking good course photos is more than snapping away with your iPhone. It takes skill and some tricks of the trade to take photos that effectively show members what needs to be done, what's not working (disease, poor root systems, architectural and design issues), and where the club needs to be spending its money (trees, traffic patterns, wear and tear).

So I asked two of the world's best golf course photographers – Joann Dost ([joanndost.com](http://joanndost.com)) and Larry Lambrecht ([golfstock.net](http://golfstock.net)) who take those spectacular pictures you see in magazines, advertising, and calendars – for some tips to help us amateur shutterbugs.

### WHAT'S THE BEST TIME OF DAY TO PHOTOGRAPH A COURSE?

**JD:** In early-morning or evening light; approximately the first 2-3 hours of the morning and the last 2-3 hours of the evening. If your course is heavily wooded, you may have to wait for the sun to get higher in the sky for good results.

If possible, shoot a course during the edges of storms: You're blessed with the most dramatic light, which can turn even the most nondescript hole into a visual gem.

### WHAT FEATURES DO YOU LIKE TO PHOTOGRAPH?

**JD:** I always try to show the hole

with the flag in the green, but it's not always possible, say I'm shooting from the tee box and the hole is a dogleg. A golf course looks best from a few feet up, so I travel with a special ladder that attaches to a cart and allows me to position the camera 12 to 14 feet above the ground. At this height, I'm able to see most of the subtleties in the design. And I always try to have a point of interest in the foreground: It leads the eye into the image and allows the viewer to travel through the design of the hole.

I shoot holes from different angles, not necessarily the way it's played. For instance, the 18th at Pebble Beach looks spectacular from behind the green and slightly elevated. Be creative to make the image stand out. **LL:** I try to shoot from the golfer's perspective. However, the needs of the club and the superintendent don't always fit this view. The superintendent has to review the purpose of the vision he is trying to project, whether it's irrigation, tree clearing, bunker removal, or cut lines in the fairways. If you're taking the photos, spend some time on the site first and pick the best time of the day to enhance your project.

### WHEN AT A COURSE, WHAT DO YOU NEED FROM THE SUPERINTENDENT TO DO YOUR JOB?

**JD:** I need to know the maintenance schedule so I don't arrive when something major is happening, such as green aerification or top dressing. Then I keep the superintendent informed on what I'm doing so I can get out in front of the crew in the morning and keep working into the evening without the sprinklers going off or other maintenance issues in my shots.

The real balancing act is working between maintenance and normal



play. When I'm on site for a photo shoot, over three or four days I'll go around a course at least 10 times a day learning the maintenance short cuts and subtle nuances. In shooting mode I need to be able to get to the correct position as quickly as possible, depending on the light. Time is of the essence, so when you are well prepared and understand the layout you can be so much more productive.

I try to take shots with the superintendent and owner in mind. It is their course and I want to make it look the best I can for them, consequently it helps to be able to go around the course with the superintendent and/or owner to see what he wants to show or not show. I don't like to rely on PhotoShop to correct problems in the field. I try and correct things before I shoot. If a bunker is not raked, I have a leaf rake with me so I can rake it.

**LL:** In this age of computers, there isn't anything that gets in the way of taking a good shot with the right light. Software today in the right hands can fix ground under repair, divots, remove golfers, rakes, signs, and power lines. But remember, the most important features of a good photo are the composition and the lighting of Mother Nature. Those are things a computer cannot accomplish. **GCI**

For more great photography tips from Joann Dost and Larry Lambrecht, check out the app version of this issue.

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# AFTER SANDY

Left in ruin, Long Island courses struggle to recover after the most devastating storm in modern memory.

by John Torsiello

**O**n the eve of her arrival, Kevin Stanya watched the weather forecasts about a hurricane developing off the East Coast and he knew it was going to be bad.

In fact, the late-October event we simply refer to today as Superstorm Sandy turned out much worse for Stanya, superintendent at Inwood Country Club in Inwood, N.Y., on Long Island, and other area golf course facilities as they absorbed the brunt of the freakish late-autumn storm.

While Sandy's overall fallout was far worse elsewhere along the New York, New Jersey and Connecticut coastlines, as the storm devastated low-lying areas, ruined neighborhoods and businesses and claimed lives, it left several golf courses in ruins on Long Island. Many are still recovering. In fact, Middle Bay Country Club in Oceanside declared bankruptcy in January and closed. At the time, the storm's damage to the course and its members' personal lives was a cost too much to bear.

"The day after the storm, when I arrived at the club, our entire equipment fleet was under five feet of water and was completely ruined," says Stanya. The damage and cleanup, he estimates, may eventually top \$3 million. "My entire office, including my central control for my irrigation

system and all of my field controllers, were wiped out, totaling over \$135,000. The club's quarters, which houses the staff, was completely underwater and had to be rebuilt. We also had more than 100 trees down and salt water lying in the course's low areas. The club's beach club and main clubhouse also sustained significant damage."

Tim Benedict experienced a similar scenario from Sandy's wrath.

"Every building on the club's grounds was affected and we are still trying to get everything up and running," says the superintendent at The Woodmere Club in Woodmere. The entire bottom floor of the clubhouse that houses the men's and ladies locker room, men's card room, bridal site, 19th-hole bar, nautilus room, weight room, boiler room, electric room and building superintendent's office all took six feet of water. Benedict's maintenance shop, which includes an office, took a whopping six and a half feet of water, along with the pool building, tennis facility, golf course bathroom and a halfway house. "The golf course was almost completely submerged but most of it drained off quickly," he says. "Our irrigation controllers were lost and one of two pump houses were compromised."



A Woodmere Club's foreman powerwashes the silt off of No. 11 and No. 16.

“The day after the storm, when I arrived at the club, our entire equipment fleet was under five feet of water and was completely ruined.”

– Kevin Stanya,  
Inwood Country Club



A boat washed up on the course at Seawane.

Brian Benedict, superintendent at The Seawane Club in Hewlett, estimates Sandy inflicted around \$1 million in damage and clean-up costs.

“We lost a 500-gallon pump station that took six feet of water, 10 Toro VP satellites, and our shop took 18 inches of salt water, damaging or destroying \$600,000 in equipment,” he says.

Sandy storm caused 60 acres of salt water flooding at The Seawane Club with six greens under water for two tidal phases. Treelines around the property were all uprooted, necessitating six months of in-house clean up that was still not complete in early May. Nine docks ran aground and had to be cut up and carted away, four boats got free and ran aground on Seawane's 13th hole and had to be hauled away, and 175 trees were lost to wind damage and uprooting.

Other clubs hard hit by Superstorm Sandy included Rockaway Hunting Club, located in Cedarhurst, only a few miles from some of the areas hardest hit by the massive and powerful storm that packed hurricane force winds and torrential rain. The pro shop and clubhouse were spared by flood waters and wind, but sections of the course were under water and a boat was reported floating in the middle of the club's 15th fairway at the height of the storm.

Middle Bay Country Club suffered a reported \$3.5 million in damage and about a third of the club's approximately 230 members left after the storm because of damage to their homes and businesses. The club estimated it was about \$1.2 million short of what it needed to rebuild its devastated property and the club's board and members decided that was more than they could financially handle. There have been reports that the club will be purchased and reopened but its future is unclear at this point.

It took superintendents and their staffs several weeks to assess and then start tackling the massive cleanup efforts following the storm.

“It took about two weeks to really get working since we had no equipment and had to wait until we could borrow some stuff,” says Stanya, who added he “was in a funk” after losing everything he owned when a house he was renting in Long



Damage to Seawane's No. 13 fairway. As it dried out a salt layer formed on top.



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Left: Woodmere's Timothy J. Benedict, CGCS, standing in his office door with all the storm debris outside. Right: No 2 green at Seawane a few days after Sandy.



Beach, N.Y. was attacked by the storm.

"Prioritized lists were made and we have been knocking items off the list for months. It will be probably a year until we get back to some sense of normalcy," says Brian Benedict. "We took so much salt water the damage was incredible. Between the flooding to the grass, pump station flooding, equipment damage and building structures it's going to be a long, long summer. The organizing of contractors, tree crews, and our greens crew has been an overwhelming task to say the least."

Tim Benedict is "preaching patience" to Woodmere's membership.

"We sustained compromising salt damage to four greens (which were still closed in early May). Damage is two-fold from this event," he says. "Strangely, it's the turf where the drainage is that suffered the most. One would think the salt would immediately flush and the turf would recover. This is not the case. It's almost like those plants had the salt water more available, which shocked them and then the winter desiccation finally had its way with the plants. The same happened with my backyard, the only thing that lived was the compacted turf where the ride-on machine operator enters and exits the yard. I also have two fairways that are slow to recover but I see them starting to push growth."

Stanya, now mostly out of his personal funk, reports "a lot of

dead turf in the low lying areas and very high salt levels at Inwood.

"It has taken a while for the turf to begin shooting new roots but I am beginning to see signs of growth," he says. "I am very positive and believe I can make everyone forget about the storm by Memorial Day weekend."

The response from club management and members has been admirable. "The membership has been great," he says. "A few days after the storm the president of the club, Peter Davidson, came to me and asked what we needed to be open in the spring. We sat down and discussed it and he told me to do whatever it takes to get it done. Repairs were obviously costly and about 15 members laid money out to get the work done until the insurance company reimbursed us. I am very lucky to have a fantastic membership."

Brian Benedict says Seawane's membership has also been understanding of the unique situation.

"The members have been very good with the limited holes available," he says. "We had 11 holes open for play (in the spring) and the members will be playing a composite course for awhile. They have been very supportive and understanding as many of their homes were affected by the superstorm, as well."

Courses near the ocean on Long Island have been through this before, but nothing that compared to the damage unleashed by Sandy.