

Shade:

Turfgrass Enemy No. 1

By Joel Jackson

Have you ever been kept in the dark about what's happening at work? Without all the facts you may find yourself heading in the wrong direction, duplicating effort, minimizing productivity, wasting time and money. That may be a big stretch for an analogy for what's happening to your turfgrass that is in heavy, persistent shade, but it's not too far off the mark.

The North American version of the game of golf, which originated on the mostly treeless, windswept, coastal areas of Scotland, has golf

courses snaking through hardwood wetlands and evergreen forests as well as open links lands. When golf gets woody, turfgrass gets in trouble. Shame on designers and/or owners who insist on tucking a green in a location so protected by trees that air circulation and sunlight are minimized. That green is doomed to a shaky existence and the members will not like the resulting thin, always-near-death putting surface.

To add insult to injury, sunny, open and airy golf courses are often planted with trees for screening purposes and for memorializing members who have passed away. The placement of these trees

is often done without due diligence for the growth habit of the tree and its potential future impact on the turfgrass... especially in critical areas like greens and tees which get lots of wear and tear from foot traffic and equipment.

Let me make it perfectly clear for those who have forgotten their 10th grade biology class: Green, growing plants (including turfgrass) need, require, must have sunlight. They live, grow and make their own food through the process of photosynthesis. A really big clue here is the prefix *photo*, meaning "light." The scientific definition of photosynthesis has to do with the production of chloro-



It is nearly noon and this patch of thin, ugly turf still in the shadow of a tree dramatically shows the effects of shade on the health and vitality of turfgrass maintained at putting-green heights. Photo by Joel Jackson.



The Tifway 419 bermudagrass on this tee at the Gainesville G&CC is in constant shade in the fall and winter. The turf can't bear up under the low light conditions and the wear from traffic. Photo by Joel Jackson.

phyll (that green color golfers really love). It goes on to say that chlorophyll is a result of the combination of nutrients, oxygen, and water *in the presence of sunlight*. Get it yet? No sunlight. No chlorophyll. No healthy turfgrass.

A superintendent can mow, feed, water, aerify, spray, spike, topdress, install fans and subsurface blowers, but without sufficient light, it is an exercise in futility. A golf course that has high expectations for its turf conditions must provide the will and the commitment to let the superintendent find a way to get sunlight to the turfgrass. Of course you could roll out a bank

of grow lights like Augusta National does, but some nearby residents might object to the glare at night. And then there's mole crickets, but that's another story.

If it's a case of trees (shade and roots) versus turfgrass, trees will win. There is really only one solution: *remove* the shade-making trees or *severely prune* the canopies and roots to allow adequate sunlight to get to the turfgrass. Tree roots also compete for water and nutrients when left to encroach into turf areas, making the grass plants weak and susceptible to drought, diseases and traffic damage. If a club member is reading this article and

doesn't believe me or his superintendent, then he should hire a company to come in and track the shade patterns on the course. If those chronically thin turf areas aren't defined by the shade lines, I'll buy you a beer. Bite the bullet and let the staff cut down or cut back some of the offending trees and watch the miracle of life take place.

I've heard the story over and over of how the turf recovered once the shade was removed, but getting past stubborn club members or local tree removal ordinances is often a long and protracted battle. So let's make a deal: if the superintendent, the USGA agronomist, and the private consultant tell you that persistent shade is keeping your turfgrass thin - but you won't accept their professional experience and knowledge - then please don't beat up on the superintendent and keep harping on the thin, ugly bare patches on the golf course. You have the solution in your hands and it is as simple as - let there be light!

Sunlight is the main ingredient, but you should also be aware that the shade keeps the turf moist longer and fosters a disease condition. That's why some courses install fans: to circulate air blocked by the trees and dry the surface.

And then there is the matter of the tree roots. I have been bashing trees (really only the ones next to key turf areas) but they too need air, light, water and nutrients just like any plant, so it's just a natural battle for survival of the fittest.

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Solutions to Shade Problems

If you are Augusta National, hosting the Masters tournament and earning millions in merchandise revenue and television fees, then maybe you can afford to set up and dismantle “grow lights” on your shady greens to provide the needed light for the turfgrass to survive in the perpetual shade of those towering Georgia pine tree. Chances are your club would not go to that expense, so what are your options?

Outside Contractors: Hire professional arborists on an annual basis to properly prune and thin tree canopies to let sunlight and air reach the putting surface. Greg Pheneger at the Johns Island Club says they have two crews that come in twice a year not only to trim the branches but also to prune the roots that grow back into the greens and fairways within six months of pruning. Pheneger also has to get a permit to remove trees when that is the only option, which requires a site visit by the local authority to get approval. Try removing 200. The officials finally realized that the residential rule on tree removal didn't really fit the needs of trying to grow a sports-playing surface. A home lawn is not a putting green.

In House: If you feel confident that your crew has the ability to take down a 60-foot pine or oak tree without it falling on the green or - heaven forbid! - a house along the course, then proceed. Some courses purchase bucket trucks and go through the course each year to prune not only for shade problems, but also to trim palm trees and other large canopied



On another shaded tee at the Gainesville G&CC, Superintendent Buddy Keene installed zoysiagrass and improved the appearance and durability of the playing area. Photo by Joel Jackson.

trees to reduce wind damage effect and debris. Using loader buckets and tall ladders are risky alternatives, and it takes a lot of study to determine which limbs to prune or trees to drop, since the sun moves north and south with the seasons.

You can spike, aerify, fertilize, top dress and fertilize and spray fungicides over and over on the thin turf to combat the damp low-light growing conditions. In the case of some tees and roughs, there is the option of using more shade-tolerant grass varieties like zoysiagrass. Buddy Keene has had some success with zoysia on one of his tees at the Gainesville Golf and Country Club that is in shade almost all day in the fall and winter. Before

installing one of the many zoysia varieties, it pays to try some test plots of the grass and see which variety handles your maintenance programs the best.

If the light intensity is marginal and a lot of tree removal is not necessarily called for or even possible (the trees may be on private property near the course), then the installation of fans may help improve conditions by speeding up the drying time of the dew or rainfall in the shady areas. Fans are a compromise and sometimes have to be mounted in fairly obvious areas in order to be effective. Some people are swearing by the underground air systems to blow or suck air through the root zone to keep the soil drier to prevent disease conditions.

Consultants: There are companies that will come and photograph shade patterns and then put them in a computer model to show you and the club members how the shade patterns change with the season and how thin-turf-area problems correlate directly with those shade patterns. Of course you could do the same thing with a digital camera, but sometimes clubs like to pay big money to consultants instead of listening to their superintendent who already knows shade patterns affect turf quality.

Golfers, take your pick: trees or turf. You can't have championship greens with good putting surfaces and thick fairways as long they languish in the shade. You can either play golf or go for a walk in the woods, or put up with thin, bumpy turf and quit complaining.

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