



GREEN SECTION RECORD



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2012 USGA Green Section Education Conference

If you were unable to attend the Green Section Education Conference at the 2012 Golf Industry Show we have good news!

by the USGA Green Section staff

For the 35th consecutive year, the annual Green Section Education Conference was held in conjunction with the 2012 Golf Industry Show (GIS). This year's program, held on March 2, addressed the theme, "Improving Your Golf Course Management Odds." The Green Section's staff totals 420+ years of experience, and the session highlighted some of the lessons learned and changes witnessed in the turfgrass management field.

We are conscious of the fact that economic challenges have made it more difficult for people to attend the GIS, and, with this in mind, we are sharing the Green Section presentations in this publication. Over the coming weeks you will find written summaries of the presentations and links to the video of the actual conference presentations. **This is the third presentation in the series.**

In this recorded video, David Oatis, director of the Northeast Region, shares how things would be different if he were the Emperor of Golf for a day.

[Watch the video](#)



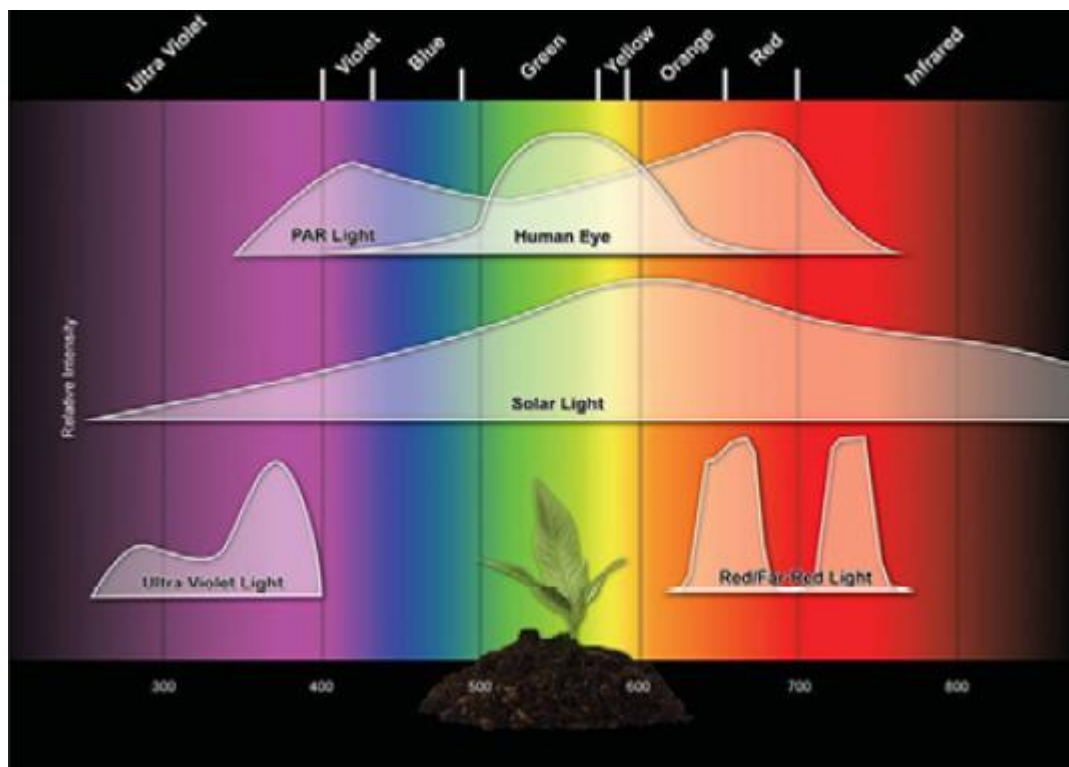
Made In The Shade or Mud In The Shade?

Sunlight assessment is a key to success with ultradwarf bermudagrasses

by [Chris Hartwiger](#), agronomist, Southeast Region

Trees and turfgrass are like brothers. Give them ample space to grow and they get along just fine. Put them together in a small bedroom and the bigger one is going to dominate. Just like finding a proper distance between brothers is a key to harmony, trees and turf must have adequate space, too. If they are too close together, the trees will outcompete turfgrass for growth-related resources like sunlight, water, and nutrients. Spaced appropriately, trees and turf will get along just fine, too.

Ultimately, finding the proper distance to allow both trees and turf to flourish is an agronomic challenge on many golf courses.



Ranges of light absorption for photosynthesis in plants. Note that the area where visible light for humans is greatest, it is of least value to plants. Therefore, light levels detected by the eye are not a good predictor of light levels used by plants for photosynthesis.

In the Southeast Region, most golf courses have identified and corrected shade problems through trial and error. This could be called "after the fact" or "reactive" shade management. It typically works this way. Certain putting greens on a given course develop poor turf quality over a period of years. Shade is identified as a limiting factor. Protests about protecting the trees ensue. The protesters eventually capitulate under the weight of factual evidence and the desire to have acceptable turf quality on the putting greens. Trees are removed, and turf quality on the putting greens improves. All in all, this model has worked well, and today many golf courses have dealt with their shade issues.

The recent trend in the Southeast to replace creeping bentgrass on putting greens with an ultradwarf bermudagrass does not lend itself to an "after the fact" or "reactive" shade management program because ultradwarfs do not tolerate shade well. A "before the fact" or "proactive" shade management program is desired because officials at courses want to know if their putting greens receive enough sunlight to sustain an ultradwarf bermudagrass. This article will help golf courses assess shade levels on their putting greens prior to a conversion from bentgrass to an ultradwarf. Golf courses with an ultradwarf presently will be able to use this information in case there is a need to address existing shade problems. In this article, some basics of plant physiology are reviewed, and important terms that will be used during site assessment are defined. Practical tips for proactively addressing shade will be presented.

[Read the rest of this article](#)

Phosphorus Remediation

Improving water quality with phosphorus removal structures

by Chad Penn, Greg Bell, Jason Warren, and Josh McGrath

The USGA continues to examine and support innovative ways to reduce the environmental impact of golf courses. Previous research indicated that phosphorous can be found in runoff and tile drainage water leaving golf course

properties. The transport of phosphorus (P) from soils to surface waters is a major cause of eutrophication (i.e., enriched with dissolved nutrients and lacking oxygen). Eutrophication results in algal blooms, excessive aquatic plant growth, low dissolved oxygen levels, and potential fish kills. Phosphorus is more important than nitrogen in this regard because P is the most limiting nutrient for aquatic life.

There are two main forms of P, particulate P and dissolved P, which are transported to surface waters via surface runoff and subsurface flow. Particulate P is sorbed onto soil particles and it is not 100% available after it reaches a water body.

Controlling erosion eliminates particulate P transport. Dissolved P is 100% bio-available upon reaching a

water body, and erosion control does little for reducing its movement. Controlling dissolved P losses from suburban and urban landscapes is especially challenging when soil P accumulates due to several years of P fertilization beyond plant needs. Even after cessation of P fertilization and implementation of traditional best management practices, dissolved P will continue to leak out of high-P soils for many years.



The completed phosphorus removal structure filled with steel slag, a byproduct of the steel production industry.

Dr. Chad Penn, Associate Professor, Soil and Environmental Chemistry, Department of Plant and Soil Sciences, Oklahoma State University. Dr. Greg Bell, Huffine Endowed Professor of Turfgrass Science, Department of Horticulture and Landscape Architecture, Oklahoma State University. Dr. Jason Warren, Assistant Professor, Soil and Water Conservation, Department of Plant and Soil Sciences, Oklahoma State University. Dr. Josh McGrath, Assistant Professor, Department of Environmental Science & Technology, University of Maryland.

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Origin of Roping

How did the practice of using ropes on the course come to be?

an excerpt from Robert Sommers' book, "Golf Anecdotes"

Contrary to popular belief, roping golf courses came about not to give players more room but to discourage fans from scrambling for tees.

The wooden-peg tee we know today was patented in 1922 by Dr. William Lowell, a dentist from Maplewood, New Jersey, and a member of the Plainfield Country Club. Dr. Lowell originally made his tees with gutta percha, but because it was too brittle he eventually switched to white birch. Lowell painted the tees green at first, but he changed to red after a time, hence the name "Reddy tees."

Lowell eventually persuaded Walter Hagen and the trick-shot artist Joe Kirkwood to use them. Playing at the Shennecossett Club, in Groton, Connecticut, Hagen and Kirkwood strutted around the course with bright red tees stuck behind their ears. They'd leave them behind on each tee, and kids would scramble, grabbing them for souvenirs. The kids became so troublesome the club roped off both tees and greens to control the gallery.

In taking out his patent, Dr. Lowell had used his family lawyer rather than a patent attorney. Consequently, by 1926 more than 200 different brands were being marketed by competitors, and even though Dr. Lowell sued, his patent had been written so loosely he couldn't claim exclusive rights.

["Golf Anecdotes - From the Links of Scotland to Tiger Woods"](#), by Robert Sommers, Oxford University Press, Copyright 1995



Regional Updates

The USGA Green Section agronomists see an amazing variety of issues and challenges as they visit golf courses across the country. Be sure to read the highlights of each region since many of the topics covered apply to courses everywhere.



Mid-Atlantic Region

Ahead Of The Game In Every Regard

- "Normal" weather returns?
- *Hyperodes* weevils (ABW) on the move
- Waitea Patch (or brown ring patch) has been active on several courses.

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Southeast Region

Melbourne, Australia To Macon, Ga.: Is Minimalist Bunker Maintenance Coming Next To Your Course?

Great ideas can come from distant lands or your backyard. While watching the President's Cup at Royal Melbourne in Australia last fall, we were struck by their method of bunker maintenance. It appeared that only the bottoms of the bunkers were raked daily. The high faces of the bunkers were smooth. Although we have never been to Australia, we have been told that at many courses in Australia the edges of the bunkers are either broomed or groomed with the back side of a rake or even a squeegee. The end result is a firm, crusted sand that does not lend itself to fried egg lies in the faces. In other words, most golf balls will roll into the areas that have been raked.

Imagine our surprise when we noticed the same type of bunker maintenance was being employed at a very affordable, daily fee course in Macon, Ga. - The Bowden Golf Course. However, the primary intent at Bowden is not to prevent fried-egg lies but rather save precious labor hours and budget dollars.

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North Central Region

Managing Change Requires Flexibility

While there have been a few recent pullbacks from warmer than normal weather this spring, golf course maintenance throughout the North Central Region remains two to four weeks ahead of normal. This is good for play and revenue, but it comes with added costs and requires adjustments in funding. Increased mowing, disease, insect and weed activity are confirming the earlier than normal start, as are topdressing and aeration needs.

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Northeast Region

Slow Recovery From Core Aeration And A Lot Of Divots

- Core aeration timing issues
- Early play means early and heavy divot traffic
- Tee size and construction suggestions

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Northwest Region

No March Or April Showers, But Still May Flowers

- Early play challenges off-season staff
- Moisture meters can quickly pay for themselves
- Early *Poa annua* flowering and seedhead production

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USGA Green Section - Turf Advisory Service

For more than 80 years, the USGA Green Section's sole mission has been to collect and distribute information on proper construction and maintenance of golf courses.

First started in 1953, this service permits individual facilities to reap the benefits of on-site visits by highly skilled USGA agronomists located in Green Section offices throughout the country. Each agronomist visits more than 100 courses annually. Their experience helps golf course staff and officials produce the best possible golf turf for the dollars that can be spent. The TAS's purpose is not to tell anyone how to run a golf course or what products to buy. Rather, it seeks to bring a wealth of information and an impartial yet concerned perspective regarding turfgrass growth requirements, how these requirements might best be managed for golf, and ideas that other golf courses have found to be beneficial.

The Turf Advisory Service is used by the biggest and smallest golf courses. Golf keeps America beautiful, and day after day, year after year, the Green Section helps golf courses produce better turf for better golf. Your golf course should be a TAS subscriber.

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The Green Section agronomists are the most knowledgeable, respected, and impartial golf-turf consultants in the world. Backed by the USGA, the Green Section's services provide dependable recommendations that course officials can count on.

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