

The USGA Green Section Record



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The Putting Green Performance Pyramid

A framework for putting green performance

by [Chris Hartwiger](#), senior agronomist

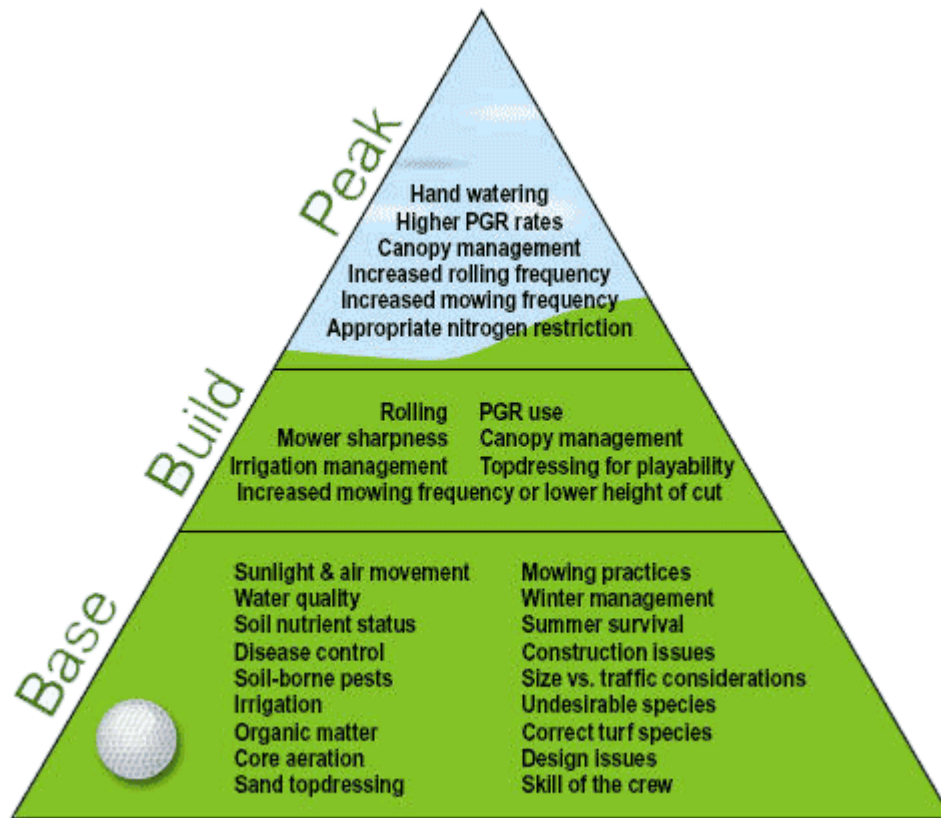


Figure 1: The Putting Green Performance Pyramid

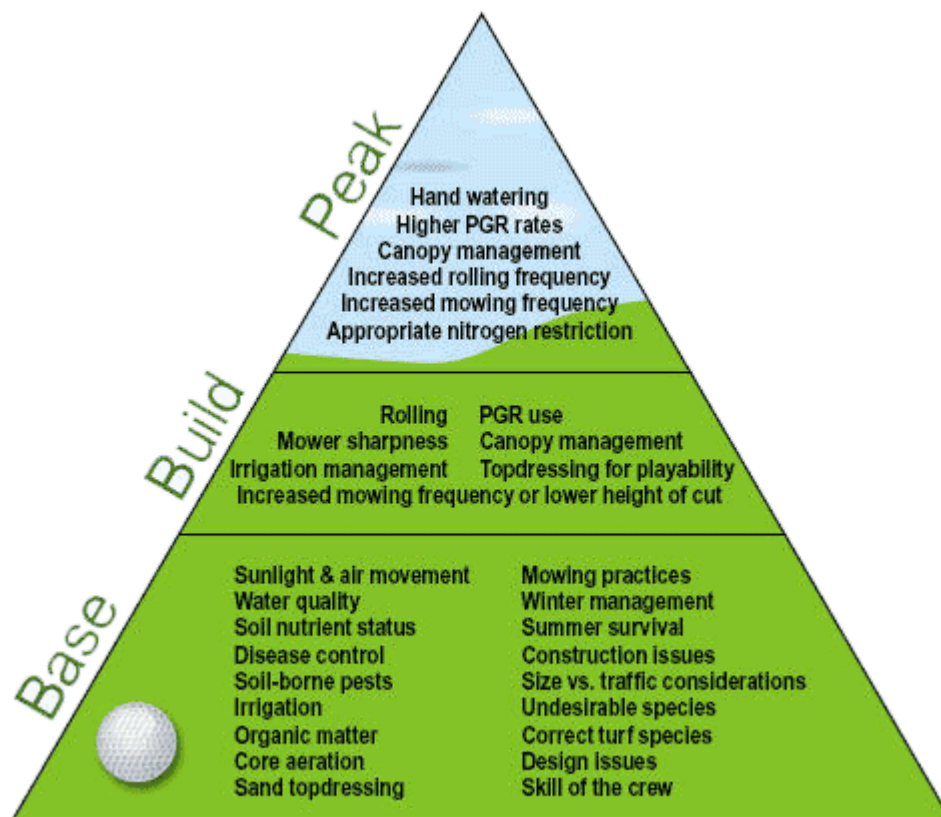


Figure 1: The Putting Green Performance Pyramid

Inevitably, the comparison of putting green conditions between rival clubs is a topic of conversation on many USGA Turfgrass Advisory Service visits. Clearly explaining why the putting greens perform, or don't perform, at a golf course is not an easy conversation between an agronomist and a course official. The course official is

searching for the one thing that makes a difference, while the agronomist must respectfully explain that there are many factors that contribute to the performance of a putting green.

Over the past year, the Southeast Region has started using a new method to help explain putting green performance that seems to resonate with both course officials and superintendents. We call it the Putting Green Performance Pyramid, shown graphically in Figure 1. [Take a moment to study it and then read the rest of this article.](#)

2011 Golf Industry Show

Ensuring sustained facility and industry success

by [GCSAA](#)



The 2011 Golf Industry Show and education conferences will be held in Orlando, Fla., Feb. 7 - 11, 2011. Designed for owners and operators of golf facilities, golf course management professionals and club officials, this event is key to sustained facility and career success.

Featuring more than 600 exhibitors, it is the industry's largest showcase of cutting-edge products and innovative ideas. This event provides the attendee face time with technical specialists, answers to product questions and hands-on demonstrations of the latest product innovations on the market.

Attendees will also find education sessions focused on the issues facing golf facilities. Topics range from the ups and downs of hosting a major golf championship to generating revenue while minimizing expenses to technology solutions for your turf. On Friday, Feb 11, the USGA will present a session that highlights the lessons learned and changes witnessed in the turfgrass management field.

From the show floor to the classroom, this event promises to equip every attendee with the knowledge, products and techniques necessary to continue on the path to profitability, ensuring an unrivaled return on investment. For more information or to register now, visit www.golfindustryshow.com.

USGA-Sponsored Research You Can Use

Nutrient and pesticide losses from bermudagrass fairway turf

by Dr. Gregory E. Bell and Kyungjoon Koh, Oklahoma State University

The grass growing on golf courses can help filter runoff water from storms. However, severe storm events need consideration when applying pesticides and fertilizer to golf courses. Research investigating the fate of pesticides and fertilizers applied a few hours before severe storms indicates that these products can move off the golf course in runoff water. Good turf management decisions will prevent the loss of pesticides and fertilizer in runoff water.

[Read the written summary](#)

[Watch a short video about this project](#) (no recording key is required)

Related research and links

[Reducing Pesticide and Nutrient Runoff from Fairways Using Management Practices](#)

Scientists at the University of Minnesota investigate how superintendents play a key role.

[Buffer Strips, Runoff, and Leachate](#)

Research compares nutrient loading in runoff and leachate when buffer strips are used alongside golf course fairways.

[Optimization of Vegetative Filter Strips for Mitigation of Runoff from Golf Course Turf](#)

[Managing Golf Course Roughs to Reduce Runoff](#)



Protecting the quality of golf course water features is an important role for superintendents. Research continues to indicate that phosphorus is the nutrient of most concern. Superintendents need to be judicious in their use of phosphorus fertilizers and care should be taken to minimize runoff to surface waters.

Green Section Regional Updates



Florida Region - Jack Frost is Already Nipping

by [Todd Lowe](#), agronomist

Our region has already experienced two days of frost and several nights of low soil temperatures that have caused bermudagrass and seashore paspalum to lose color. As John Foy reported in the previous Florida Regional Update, weather predictions for this winter are for colder and drier conditions than usual, and so far these predictions are accurate.

Bermudagrass generally goes completely dormant in North Florida during the winter months, but most of our region remains warm enough to experience some turfgrass growth and a light green color. Temperature has the greatest impact on turf quality on Florida golf courses, as lower soil temperature causes decreased growth and color, while warmer temperatures encourage turf growth. [Read the rest of this update.](#)



North-Central Region - Carbon Copy

by [Bob Vavrek](#), senior agronomist

Yogi Berra said "it's d♦j♦ vu all over again" and that appears to be what we are experiencing across the upper Midwest this December with respect to weather conditions conducive to winter injury. The coldest day of last winter (single digits)

occurred during mid December and several nights this December have already dipped well below zero.

Courses fortunate enough to have deep snow cover prior to the onset of frigid temperatures will have less to worry about versus courses in the Milwaukee area where only a dusting of snow was present to insulate the turf. To make matters worse, nearly an inch of rain preceded a rapid 20 degree drop in temperature that defined the first classic "thaw-freeze" event of the winter. [Read the rest of this update.](#)



Mid-Atlantic Region - Reflections from 2010 - Thoughts for 2011

by [Stanley J. Zontek](#), director

It's the time of the year when all of us take a few minutes to reflect on the past year, although many of us wait until 2010 is officially over to begin thinking about next year. Several thoughts come to mind as we are in that transition period. [Read the rest of this update.](#)



Southeast Region - Ultradwarf Bermudagrass Putting Green Conversion - Q&A

by [Chris Hartwiger](#), agronomist, and [Patrick O'Brien](#), director

The winter months are a good time to reflect on topics, trends, and discussions from the previous season. Ultradwarf bermudagrasses continue to be the major story in the SE Region with on-going conversions from bentgrass to an ultradwarf. In this article, we will review some common questions or comments we receive. [Read the rest of this update.](#)



Northwest Region I - Walking 'Round in Winter Wonderland

by [Derf Soller](#), agronomist

Or maybe not. Throughout the vast Northwest Region some golf course superintendents are enjoying winter conditions on their courses and others aren't quite so lucky. Lucky, you say? The majority of golf courses in the Rocky Mountains actually look forward to a good snow cover to help protect the turf from the harsh conditions of the winter months.

The return trip from the 57th Annual Rocky Mountain Regional Turfgrass Association Conference & Trade Show took me from a warm and dry front range through greater-than-normal amounts of early season snow in the high country. While skiers are happy, many of the superintendents and their staffs again were busy charging-up irrigation systems to irrigate dry, exposed turf. And I left Denver wishing I had snow tires on my vehicle. [Read the rest of this update.](#)



Northwest Region II - The 12 Days of Christmas - Golf Course Superintendent Version

by [Larry Gilhuly](#), director

On the first day of Christmas my players gave to me
Unrealistic expectations green to tee.

On the second day of Christmas my players gave to me
Too many ball marks
with unrealistic expectations green to tee.

On the third day of Christmas my players gave to me
Three broken rakes,
Too many ball marks
with unrealistic expectations green to tee.

[Read the rest of this update.](#)



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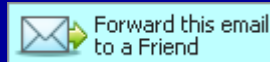
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USGA Green Section
P.O. Box 708
Far Hills, NJ 07931-0708
908.234.2300



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