

# Green Section Record

## REGIONAL UPDATE

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*Regularly submitting intact soil cores for testing helps track putting green performance trends over time to determine if reconstruction is needed.*

## TO REBUILD OR NOT TO REBUILD

BY ADDISON BARDEN | AGRONOMIST, SOUTHEAST REGION

Most putting greens have an expected life span that can range anywhere from 10 years to more than 100 years. Why is the range so big? Well, course location, grass type, playing condition expectations and maintenance practices all play a role in how long putting greens are able to support a healthy, high-quality putting surface.

Approaching the decision to rebuild putting greens is never easy. It's costly and, perhaps most concerning, disruptive. Regrassing the surface, stripping accumulated organic matter, or complete rebuilds can be so intrusive to golf and revenue that courses never opt to upgrade their greens, even if they're having problems with putting green performance. Given the obvious concerns about putting green renovation, it's important to identify the underlying issues you are trying to address before a project begins. If you're

lucky, you may find that a year or two of aggressive aeration will solve your problems instead of a more disruptive project.

To identify the core issues, extensive testing should be performed on multiple greens. At a minimum, select a good, average and poorly performing putting green to sample from. Always test the same greens at the same time of year to remain consistent. But, what kind of testing should be performed?



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## Physical Particle Analysis

A physical particle analysis of intact soil cores that reach the original rootzone for sand-based greens or the subsoil for pushup greens is imperative to identify organic matter (OM) concentrations and particle size distribution (PSD) at various depths. Infiltration rate, soil porosity, pH and water-holding capacity should all be included in these tests. Results can indicate whether the issue lies in the upper portion of the rootzone and can be addressed with more aggressive core aeration and sand topdressing.

## New Rootzone Compatibility

When adding new rootzone material to a putting green, it's important to match the existing soil and new mix as closely as possible. Many soil testing labs can determine a good match as long as both soils are submitted. You do not want to create soil layering issues by adding incompatible material over the top of existing soil because this will be very difficult to remedy in the future.

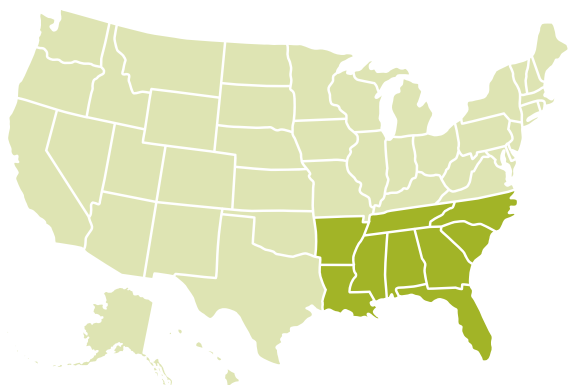
## Gravel Layer Analysis

If your greens have a gravel layer, it should be inspected to check the depth of the sand rootzone and quality of the gravel-rootzone interface. Although rare, an impermeable iron layer can develop at this interface when acidic rootzones are used on top of alkaline gravel layers due to iron oxidation. A 2-inch PVC pipe can be used to remove a soil core that reaches from the surface to gravel layer. It can then be cut in half with a band saw or similar tool to study the rootzone depth and gravel interface.

## Ground Penetrating Radar

Ground penetrating radar services can be contracted to identify where drain pipes are located and the general condition of the drain pipe – i.e., intact or crushed. Sonar can also help identify the approximate depth of the rootzone but is not as accurate as physically removing a core. Lastly, radar can be used to identify the original perimeters of the putting green.

The information gleaned from these and other tests can help save a facility tens if not hundreds of thousands of dollars in unnecessary construction expenses. Furthermore, and most importantly, testing correctly identifies the root cause of any issues so that they are addressed.



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## **SOUTHEAST REGION AGRONOMISTS:**

Chris Hartwiger, Director, USGA Course Consulting  
Service, [chartwiger@usga.org](mailto:chartwiger@usga.org)

Steve Kammerer, Ph.D., Regional Director, [skammerer@usga.org](mailto:skammerer@usga.org)

Addison Barden, Agronomist, [abarden@usga.org](mailto:abarden@usga.org)

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