



around the golf course. This inventory should be viewed as a living document that will change often. Over time, the inventory will help document your wildlife enhancement successes through the sightings of new animals on your course.

Next, inventory the trees, shrubs, flowers and other native vegetation on the course. These are important to know because they provide shelter and food sources for many of the animals you want to help support and enhance. Certain animals are drawn to areas because of specific trees and plants. This information is vital to a successful program so your level of habitat manipulation can be precise.

STEP THREE – Make a Clear and Flexible Plan

The phrase “wildlife enhancement” is a lot like the phrase “turf management”; rather vague in nature and encompassing a vast amount of different concepts. You need to clearly decide what it is you want to accomplish with your wildlife-enhancement program. Do you want to simply attract more birds? Do you want to encourage smaller animals for the birds of prey on

your course? Do you want to add an area for watching bird feeders? Each of these plans requires drastically different steps to accomplish the desired goal. I suggest you start small and work your way up to larger programs only after having some success and gaining that all-important confidence boost that comes with doing something new. Rather than feel you’re taking on a monumental task, you should chip away at what you want to do.

Once you decide what your enhancement plan is, do yourself a favor and make it as flexible as possible. Wildlife enhancement is not an exact science. There are countless variables to take into account that will affect your program. What works one season may not work the next and vice versa. Always be open to experimenting with new ideas that make sense to you. Making a wildlife-enhancement program too strict will only diminish your chances of finding success.

STEP FOUR – Go Native

In most cases, wildlife-enhancement programs include planting or transplanting a variety of plants. Try to always use native species. They’re naturally hardy to your geographic area and rarely pose a problem of spreading to create a nuisance situation. The same philos-

ophy also applies to trees and shrubs. Diversity is the key element of a wildlife-enhancement program.

Be careful not to interfere too much with the natural landscape. The optimum look you want is natural, and too much tinkering with an area will give it an overly manicured appearance. This is a prime example of the less-is-more mentality. Remember to think of your wildlife-enhancement program as tweaking your ecosystem, rather than giving it a complete makeover.

No matter what level of wildlife enhancement you want to incorporate at your golf facility, these basic steps are a good place to start. Obviously, you’ll discover what works for you. You’ll also find that most programs will garner some serious support from members and surrounding homeowners. While that’s not the primary reason for beginning a wildlife enhancement program, it certainly doesn’t hurt you, your course or our industry. ■

Gray is superintendent and general manager of the Marvel Golf Club in Benton, Ky. He’s the only two-time overall winner of the Environmental Leaders in Golf Awards and the 2008 Winner of Rain Bird’s Intelligent Use of Water Award.

Murphy's

of Golf Course Maintenance

Now that the pressure has eased somewhat for the poor souls who tend turfgrass, allow me to introduce someone who undoubtedly paid a visit to you at one time or another this year.

This is someone who shows up at the most inopportune times, like when the heat is on, the grass is dying and you don't have a second to spare. He lurks in the shadows until . . . BAM! . . . a head blows out and floods a fairway.

Or maybe he's involved in the three days of rain in the middle of your aeration schedule, or the hydraulic leak from the fairway mower when you're getting ready for the member-guest.

I'm not talking about salespeople. On the contrary, I've known salespeople who have shown up in these times of trouble and cancelled their next couple appointments so they could help out.

This someone is sneaky and sinister.

No doubt you all know him. He's the inventor of — and lord over — the minor setback.

He's the quintessential pessimist, ready at any time to make your job just that much more difficult than it already is.

I'm afraid I have no photographs of him, as he is a faceless entity, yet he leaves behind something we all know and dread: his credo.

Why is it this sinister someone always shows up at the most inopportune times?

By Jim Black,
Contributing Editor

His name is Murphy. And here, for the first time, I share with you Murphy's Laws of Golf Course Maintenance:

Murphy and Irrigation

We haven't nicknamed it "irritation" for nothing. From the pumphouse all the way down to the misters in the flowerbeds around the clubhouse, your irrigation system is a veritable playground for our hero. Let's examine:

LAW — No matter how many things you load on to your utility vehicle and take to the site of an irrigation break, the



Murphy appeared at the U.S. Open, where Bethpage Black Superintendent Craig Currier (right) had to deal with several days of rain.

Laws

thing you need most will be waiting for you back at the shop.

LAW — In the process of trying to locate the source of the lake water that's bubbling up out of the middle of a fairway, you'll undoubtedly be piling the dirt right on top of the place where you should be digging.

LAW — In order to repair your next irrigation break, you'll have to allot yourself one extra day. Why? Because no matter how many slips, elbows, T's, and knock-on couplings you have on the shelf, you will inevitably have to order something else for this particular repair.

LAW — Ironically, you may find that some of the best grass on the course is in a location where you have an irrigation problem.

LAW — Most major irrigation breaks will happen between 3 o'clock Friday afternoon and 6 o'clock Monday morning.

Murphy and Staff and Equipment

If your equipment has any age on it, Murphy is there waiting patiently to remind you in his own special way that you need new equipment that your club is unwilling or unable to purchase. And your crew? I've no doubt they're part of Murphy's extended family.

LAW — When you do take delivery of a new piece of equipment, two of your oldest pieces of equipment will break down for good.

LAW — Most equipment malfunctions requiring a tow-in will happen at the furthest point from the shop.

LAW — Any piece of equipment that enters a pond will do so in such a way as to require diving, not just wading.

LAW — The most urgent time of the year

that you need something from a supplier will be precisely at the same time they have closed for inventory.

LAW — The closer you get to holiday week-ends, the greater the chances for stomach virus outbreaks among your crew.

LAW — The more urgent the project, the greater the need for your crew to "swing by" the clubhouse for another free soda.

Murphy and Club Politics

Sometimes it doesn't matter how well you play "the game," you find yourself on the losing end of the stick anyway.

LAW — The board member you have your next big argument with will undoubtedly be elected the next club president.

LAW — Once in awhile, you have to meet with the owner or an influential club member. You'll remember that meeting is in five minutes — right after you've dug up a break and find yourself covered in dirt and mud.

LAW — The more prepared you are for your next aeration project, the greater the chance a tournament will be scheduled on top of it.

LAW — If you're responsible for golf car maintenance, the only golf car that will break down, get a flat, or run out of gas during an important tournament is the one driven by the person who decides where next year's tournament is held.

Murphy and the Weather

Everyone has a favorite saying about the weather. The one I prefer is, "If you don't like the forecast, just change the channel until you find one you do like."

LAW — In New York during the U.S. Open last June, the chances of rain stopping were directly proportional to

the chance of the next front coming through with more heavy rain.

LAW — Out West, just when you thought you had enough 100-degree days in a row, the forecast was for 105.

LAW — In the mid-Atlantic transition zone states, whenever the forecast was for a 90 percent chance of showers, your course was in the 10 percent.

LAW — [Insert law for your particular geographic region here].

This is not a definitive list of Murphy's Laws. As a matter of fact, I have plans for part two, but I'll need your help. We want to hear from you about your own experiences with our anti-hero, Mr. Murphy. Just drop me an e-mail at greenkeeperjim@yahoo.com. ■

Jim Black is a contributing editor to Golfdom.

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Out With the **OLD**, In With the **NEW**

A culmination of others' ideas helps form Town and Country Club's new environmentally friendly turfgrass management center

By John Walsh, Contributing Editor

IT WAS ACTUALLY YEARS IN THE MAKING. It has a bit of Augusta, a dash of Shinnecock, a pinch of Hazeltine and a sprinkle of various other maintenance facilities throughout the world.

I'm talking about the new, environmentally friendly turfgrass management center at the oldest club in Minnesota — Town and Country Club in St. Paul, established in 1888. (To read the details about the environmental friendliness of the building, see sidebar on page 66.)

Certified Superintendent Bill Larson, who has been at TCC for 20 years, and his crew of six full-timers and as many as 25 part-timers had been working out of an old, 9,000-square-foot maintenance building (built in 1976), which was basically a steel-pole barn. According to Larson, it needed to be replaced because:

- there was a lack of ventilation;
- it was too small for the staff;



1 The turfgrass management center is comprised of two buildings, totaling 18,500 square feet. 2 The WaterStax system separates clippings and solids from water. 3 There is much more space in the new maintenance facility for equipment and employees.



- there was inadequate office space;
- drainage was a problem;
- there was only one bathroom;
- there were no locker rooms;
- the building was too cold in the winter and there weren't enough heated areas;
- it was located in a landing area surrounded by nets;
- lighting was poor; and
- there were code issues with the city and state.

"It wasn't a good place for employees," Larson says.

The club has been involved in a long-range plan to renovate or rebuild its facilities, starting with the swimming pool and tennis center, which are complete; followed by the turfgrass management center, which is complete; followed by the halfway house and clubhouse. The last two projects won't be done until after 2014, which is when the new \$2.3-million turfgrass management center will be paid off.

The new maintenance building project started in September 2008 and finished last May. First, the four buildings making up the old maintenance facility — one heated building and three pole barns separate from that — were torn down. Larson stored the equipment in the basement of an auto dealership (the owner is a club member) during the winter while the new building was built.

"We planned for this, so the mechanic started winterizing the equipment early," he says. "We tried to get as much equipment as possible off site."

There was a short period of time (about a month and a half) after the project started and before the season ended during which Larson and his staff used a makeshift building — a fence surrounding the equipment with a roof overhead — for storing equipment.

The new 18,500-square-foot turfgrass management center, which is located dead center on the golf course, is comprised of two buildings — a 6,000-square-foot enclosed two-story cold-storage building and a 12,500-square-foot heated maintenance building. The lower level of the cold-storage building houses greens covers and items not used daily, such as aerifiers.

Larson helped design the building, using ideas from other maintenance buildings he saw after years of traveling to golf courses throughout the world — Augusta National, St. Andrews, Shinnecock Hills, and clubs in Canada and Palm

Continued on page 66

In With the New

Continued from page 65

Springs. Larson's mechanic, assistants and area superintendents also provided input.

The automated lubricant dispenser in the lube room came from Augusta; the half-moon bay sink in the mud room that allows three people to wash their hands at the same time came from nearby Dellwood Hills Golf Club; and the sprawling tabletop that creates more work space for two assistants and a horticulturalist instead of three individual desks also came from Dellwood. Additionally, Jim Nicol, the superintendent at Hazeltine National Golf Club, suggested porcelain tile in the office, hallways and bathrooms because it doesn't show wear patterns and is classier than linoleum.

Larson also took one idea from his son's kindergarten class — an interactive SMART board, which is a computerized whiteboard tied to his assistant's computer.

"The long-range planning committee, which has members on it, wanted to do it right the first time," Larson says. "We gave them options for what to cut, but they decided not to. We got pretty much everything we asked for." ■

Walsh is a contributing editor to Golfdom and is based in Bay Village, Ohio.

A 'Green' Building

The new turfgrass management center at the Town and Country Club in St. Paul, Minn., is environmentally friendly. Here's what makes it so:

- 1. WaterStax system** ■ Microbes digest all petroleum and pesticide residues. ■ Clippings and solids are separated from water. ■ Water leaving the system is cleaner than gray water.
- 2. Lighting and utilities** ■ Office lights are on motion sensors and timers. ■ High-efficiency light bulbs and fixtures. ■ Switches are wired to turn off lower-use work areas. ■ 93 percent efficient forced-air heaters (old industry standard was 80 percent efficient). ■ In-floor heat. ■ Outdoor lighting is on timers. ■ Bathroom fans are on timers to turn off during nonworking hours. ■ Dyson Blade hand dryers are paperless.
- 3. Water** ■ Drip irrigation around building landscaping. ■ Variable speed drives on wells reduce electrical use. ■ Use of native grasses means no input landscape.
- 4. Building** ■ 12-inch concrete walls — 3 inches of concrete, 6 inches of insulation, 3 inches of concrete. ■ Roof contains 5 inches of Styrofoam insulation to reduce heat loss. ■ Built into hillside reduces heat loss.
- 5. Paint booth** ■ Prevents paint fumes and overspray from emitting into the environment.
- 6. Watershed** ■ 48-inch pipe that's 250 feet long holds and controls storm water. ■ Water feeds from large pipe to smaller pipes/percolation areas. ■ No direct dumping into the Mississippi River.

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October THIS MONTH'S HEALTH TIP



Lost dogs without tags usually end up being put to sleep at the shelter when they lose their way home. Even worse off are the dogs that never had homes to begin with. There aren't enough good homes for all the dogs out there, so have your dogs spayed or neutered, and do not allow them to breed. In America, 4 million cats and dogs are euthanized every year. That's far too many! If you want another dog, consider adopting one.

Jake. His owner is Greg Hill, superintendent at The Ridges Resort & Club in Hayesville, N.C. (Photo by: Curtis Miller)



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TURFGRASS TRENDS

TRANSITION ISSUES

Exploring the Ecology Behind Springtime Turfgrass Transition

Impact of annual and perennial ryegrass examined in process *By Charles Fontanier and Kurt Steinke*

In order to provide prime playing conditions throughout the winter, golf courses and sports fields in the southern United States frequently overseed warm-season turf with cool-season species such as annual and perennial ryegrass.

During late spring, the ryegrass is expected to transition out while the warm-season turf greens up (Horgan and Yelverton 2001). However, newer cultivars of ryegrass are more heat, drought and traffic tolerant. As a result, newer ryegrass cultivars compete with warm-season turf longer into summer than previous selections. The competition for light and nutrients during late spring and early summer can inhibit warm-season turf regrowth. For many Southern turf managers, the inhibition of warm-season turf growth has increased the management difficulties involved during spring transition (Richardson 2004).

Cultural practices that disrupt the playing surface such as scalping and vertical mowing have traditionally been used to speed up spring transition, but these practices can be labor intensive and often cause additional harm to the already stressed warm-season turf (Mazur and Wagner 1987). Superintendents have also resorted to utilizing transitional-aid herbicides to hasten the removal of ryegrass in the spring. However, tight budgets and the move to lower-input, sustainable turfgrass systems has reduced the viability of using transitional-aid herbicides over large turf acreages in some cases.

To combat poor spring transition of cool-season turfgrasses, seed companies have developed overseeding mixes, which utilize both perennial ryegrass and improved turf-type cultivars of annual ryegrass (S.O.S. Program, Barenbrug USA, 2008). Annual ryegrasses have been used for Southern overseeding in the past, but were generally too coarse and upright for high-quality turf.

In addition, annual ryegrasses were prone to transitioning before the warm-season turf had sufficient time to regrow. Improved annual ryegrasses are more prostrate and persist longer into the spring season than older annual ryegrass selections. Despite the lengthened lifespan, improved annual ryegrasses continue to transition out sooner than the new perennial ryegrasses.

The improved annual ryegrass cultivars are more heat, drought, and traffic tolerant than older cultivars. But due to the nature of an annual lifecycle, they're destined to transition by the end of the cool season. Mixing both improved annual

Continued on page 68

IN THIS ISSUE

- **Timing Is Everything With Spring Transition**
Here are some tips from research and practical findings to aid superintendents with overseeding.70

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Continued from page 67

and perennial ryegrasses together is thought to provide the benefits of rapid germination and establishment (from annual ryegrass) while still allowing for superior quality and spring persistence (from perennial ryegrass). The mixes are designed to allow for optimum spring transition that can be manipulated according to the climatic zone.

In theory, as annual ryegrass begins to transition out during spring, small voids are created in the overseeded turf canopy which allow increased light penetration and space for warm-season turfgrass regrowth. During this same time period, perennial ryegrass may provide a continuous green turfgrass canopy until the warm-season turf can resume as the dominant canopy species.

By varying seed ratios, a turf manager may be able to customize the speed of transition while minimizing additional inputs. Little research is available evaluating improved turf-type annual ryegrasses for winter overseeding and spring transition into warm-season turfgrasses.

A field study was conducted to test newly available overseeding mixtures on bermudagrass, fine-textured zoysiagrass and seashore paspalum. The overseeding treatments included annual ryegrass (100 percent Panterra), perennial ryegrass (100 percent Premier II), and a 50-50 mix of annual (Panterra) and perennial (Peak/Premier II) ryegrass.

Results demonstrated excellent establishment rates and turf quality across overseeding mixes. Annual ryegrass quality peaked in late February while perennial ryegrass quality peaked in late April. Turfgrass quality of the 50-50 mixture of annual to perennial ryegrass peaked during mid-March.

Turf quality was acceptable throughout April across overseeding treatments. Although all overseeding mixes reduced the shoot density of warm-season turf, spring recovery was most rapid among treatments containing annual ryegrass. Rapid recovery was most noticeable in zoysiagrass plots,

Figure 1. Zoysiagrass Shoot Density

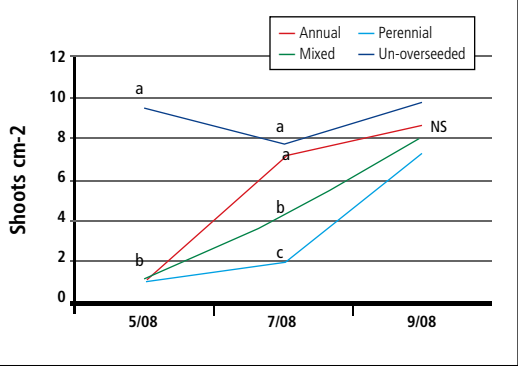
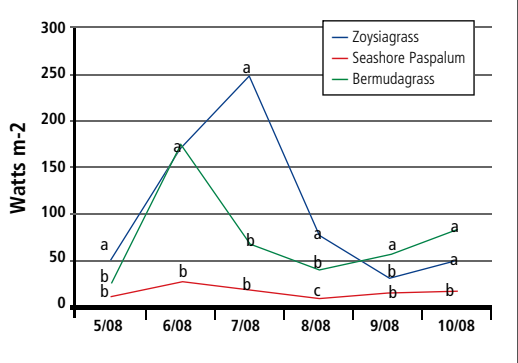


Figure 2. Light Entering Canopy




which contained the greatest shoot density in annual and non-overseeded plots. The annual and perennial ryegrass mixture had the next-greatest density, followed by the perennial ryegrass plots (Figure 1).

Despite a lack of ryegrass presence in July, overseeding continued to impact warm-season turf as bermudagrass clippings were reduced by 61.6 percent, seashore paspalum clippings declined by 31.7 percent and zoysiagrass clippings declined by 76.3 percent compared to control plots.

Seashore paspalum easily transitioned into the growing season. By early summer, turf quality, shoot density and growth rate displayed minimal impacts from ryegrass overseeding treatments.

Seashore paspalum blended well with both annual and perennial ryegrasses throughout the spring transitional period. Bermudagrass transitioned well but not as quickly as seashore paspalum and was



QUICK TIP

It's hard to ignore a disease on your course that can span up to 20 feet in diameter and be even more difficult to control if not taken care of early. When large patch invades zoysiagrass, damaged areas are slow to recover and weeds invade the thinned areas of patch. Not treating it can open the door to many more issues. Bayer has two large patch fungicides — Triton FLO® and Prostar — that prevent infection of the disease before the problem becomes, well, a large one. Your early-fall applications will not only avoid infection this season, but can also suppress or delay spring symptoms — another check in the easy column. Visit BackedByBayer.com for more information.



The improved annual ryegrass cultivars are more heat, drought and traffic tolerant than older cultivars.

affected by overseeding mixture.

Overseeding combinations containing annual ryegrass allowed for a more rapid transition than perennial ryegrass, but differences in color and texture between bermudagrass and annual ryegrass reduced turf quality during periods of active growth.

Zoysiagrass poorly transitioned across all overseeding treatments and summer turf quality was greatly reduced by winter overseeding. Although winter overseeding provided excellent turf quality under the moderate temperatures of early spring, plots displayed substantial browning during late spring and early summer. During this late-spring and early-summer period, zoysiagrass did not penetrate through the ryegrass turf canopy. Due to poor regrowth, zoysiagrass was not able to mask the discoloration of the dying ryegrass canopy.

Perennial ryegrass maintained good color and quality into June, but a lack of zoysiagrass regrowth caused bare soil to be present throughout July and parts of August. Figure 2 illustrates the transition rates seen in different warm-season turfgrass canopies as measured by light penetration beneath the turfgrass canopy. As the warm-season turfgrass recovers during the growing season and the ryegrass simultaneously transitions out, voids in the turfgrass canopy initially allow additional light penetration for warm-season turf regrowth. The spaces created in the canopy are eventually filled in with the growing warm-season turf as demonstrated by light penetration returning to typical early-season penetration levels.

Annual ryegrasses provided acceptable turf quality for winter overseeding. The mix

of annual and perennial ryegrasses improved color and texture compared with annual ryegrass alone. Due to a more rapid decline in spring, improved annual ryegrasses show promise for further developing transitional spring overseeding programs without additional inputs.

Seashore paspalum provided the most efficient spring transition and wasn't substantially impacted by overseeding. Due to its poor winter color, seashore paspalum may be a good candidate for overseeding using either annual or perennial ryegrasses. Bermudagrass transitioned acceptably well under all treatments but blended poorly with annual ryegrass while both were actively growing. Although quality was acceptable in annual ryegrass plots, mixed and perennial ryegrasses may be preferable for overseeding bermudagrass turf areas. Zoysiagrass can be overseeded successfully, but summer quality was severely reduced by both annual and perennial ryegrasses.

Overseeding is not recommended for zoysiagrass, but if it's a necessity annual ryegrass may prove to be the best option.

Charles Fontanier is a graduate student in the soil and crop sciences department at Texas A&M University. Kurt Steinke is a TAMU faculty member in turfgrass ecology. You can reach Fontanier at chuuuch@neo.tamu.edu.

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Timing Is Everything With Spring Transition

Here are some tips from research and practical findings to aid superintendents with overseeding

By John Willis and Shawn Askew

Whether you like it or not, overseeding bermudagrass is a necessity for some golf course superintendents and athletic field managers. Clientele using the overseeded playing surface see the result of much time and effort through early spring and summer without fully realizing the agronomic and financial sacrifice associated with the practice of overseeding. Most often, establishing the overseeded grass is the easy part. But failure to remove overseeded perennial ryegrass weakens bermudagrass extensively and disrupts uniformity and playability of fairways and athletic fields.

Spring transition is very important for bermudagrass health, and most often herbicides are used to selectively control the overseeded grass. This article highlights various research and practical findings that can aid turf managers dealing with the issues of spring transition.

Sometimes, spring transition and bermudagrass growth can be mediocre as it was for most superintendents in the upper transition zone during the spring of 2008. But with few cold snaps, gradually warming temperatures allowed bermudagrass to grow well. It was far from a worst-case scenario for the transition zone, considering that in many years nighttime temperatures stay cooler, and at least one and often two cold snaps occur that can bring bermudagrass growth to a screeching halt. All too often these cold snaps occur immediately after an herbicide application to selectively control the overseeded grass.

Athletic field managers who are finished with all spring events don't have as

many worries when spring transition comes around. Their only worry is growing a strong bermudagrass base, so perennial ryegrass can be removed as early as possible to allow bermudagrass to have a long growing season. If no one is going to see it, who cares what it looks like.

But golf course superintendents, who must have an aesthetically pleasing spring transition, are in a different boat. Controlling the overseeded grass too early can lead to as many as four weeks of ugly, thin bermudagrass in their situations if a cool, wet period occurs after the transition aid is applied.

There's another reason to wait for warm periods to selectively control perennial ryegrass. Research at Virginia Tech has found that some herbicides' effectiveness toward perennial ryegrass is greatly reduced by cool

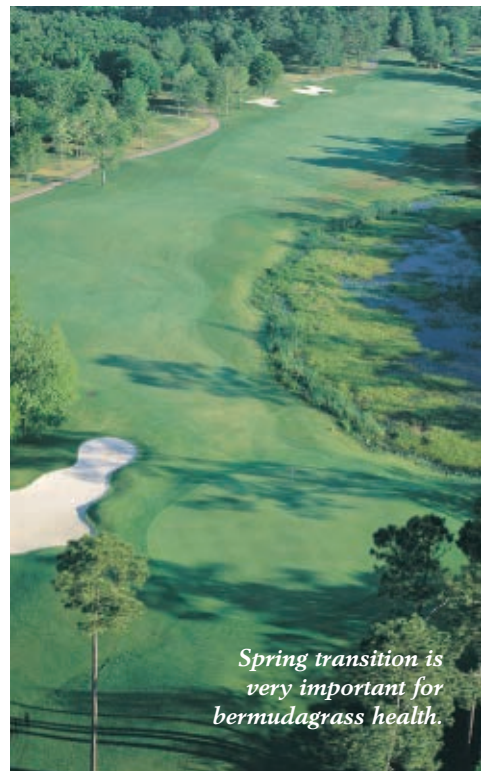
Continued on page 72



JOHN DEERE

QUICK TIP

After a long day on the course, be sure to give your utility vehicle a thorough cleaning to maximize component life. Unless your vehicle is equipped with sealed bearings, follow the greasing recommendations per the operator manual to purge water and contaminants from the bearings. Maintain proper tire pressure to optimize machine footprint and enhance tire life. For more information on utility vehicle maintenance, contact your local John Deere Golf sales representative or visit www.johndeere.com



Spring transition is very important for bermudagrass health.

PHOTO BY: MIKE KLEMME