



Starting with a practice green in 1994, The Landings Club in Savannah, Ga., was the first U.S. golf course to plant TifEagle ultradwarf bermudagrass. Pictured is the Arthur Hills-designed Palmetto Course. Photos courtesy of Sam Williams

Those teenage years

TifEagle is coming of age at two Georgia courses that were early adopters, outgrowing some of the unruly behavior of earlier ultradwarf varieties.

Sam Williams

Think back to 1994. Bill Clinton was president. Unemployment was only 6.1 percent. Dallas defeated Buffalo 30-13 in the Super Bowl.

That was four years before TifEagle was officially released by the University of Georgia. That's when Ralph Hinz, then the head superintendent for The Landings Club in Savannah, Ga., agreed to evaluate the brand-new TifEagle ultradwarf bermudagrass on one of his two practice greens. Not surprisingly, he also put in 10,000 square feet of Champion for evaluation on the other practice green shortly thereafter. Good superintendents don't take chances. Good superintendents do their homework.

Good turfgrass breeders also do their homework, and that's why TifEagle breeder Wayne Hanna, Ph.D., set up TifEagle evaluations at 26 distinct golf course locations throughout the United States, South America and the Caribbean to receive reliable data from a wide range of climates, conditions and management regimes.



After evaluating both grasses, Hinz gave the nod to TifEagle, and the club embarked on a program to convert from Tifdwarf to TifEagle greens beginning with the Plantation Course in 1998. Allan Pulaski, who took over after Hinz retired, continued the TifEagle conversion program and personally managed the grow-in on the Magnolia Course in 1999. With almost a full year of TifEagle experience under his belt, Pulaski felt comfortable with the management and thatch challenges this new grass presented.

Hinz, who was a GCSAA member for 20 years, has the distinction of being the very first superintendent to manage TifEagle, and much of the research data from his Oakridge test green was included in the official TifEagle release document. He also managed the first full 18 holes of TifEagle. Not that everything went smoothly from the get-go. Earl Elsner, the former director of the Georgia Seed Development Commission, recalls, “Dr. Hanna actually brought over TifEagle plugs from Tifton in little clay pots and planted the plugs on 12-inch centers. A year or so later, when Wayne and I visited to take a quick look at the green, we saw light green spots over the entire putting surface. So we thought, ‘Is this grass already going to hell in a handbasket?’”

Closer inspection showed that all of the original plugs were being scalped, and several topdressings resolved the problem.

TifEagle, which Hanna released in the spring of 1998 after 10 years of testing and evaluation, is the third generation of bermudagrass varieties developed exclusively for golf greens at the Coastal Plains Experiment Station in Tifton, Ga. While Tifgreen was the first bermudagrass variety bred specifically for golf greens and Tifdwarf became the standard for Southern putting greens for three decades, TifEagle was bred to meet the challenges faced by today’s golf superintendents and the expectations of a new generation of golfers.

Today, the original TifEagle test green is still producing an excellent putting surface and is as uniform as the first day it opened for play 17 years ago.



Top: Earl Elsner (far left) discusses encroachment prevention measures with the course superintendents at The Landings Club — (from left) Aaron Saunders; Erik Carson; Tyson Helsel; Chris Steigelman, CGCS; and Mike Perham, CGCS, director of golf course and grounds maintenance. **Bottom:** Berry Collett, CGCS, is director of golf maintenance for Sea Island GC, St. Simons Island, Ga., where he manages TifEagle greens planted in the late '90s.



The greens on the Marshwood Course, like all the others at The Landings, are painted rather than overseeded for winter play.

Early fears

When the ultradwarfs first came out in the late '90s, many were expecting the same kinds of problems, such as poor playability due to age and general decline, they were having with Tifdwarf.

"We were used to topdressing Tifdwarf once or twice a year, and Dr. Hanna was recommending frequent light topdressings every week, or at least every two weeks," recalls Mike Perham, CGCS, who took over as director of golf course and grounds maintenance for The Landings in August of 2004. "The evolution of how we manage our putting greens has been dramatic. Now we're routinely out verticutting or grooming our greens four days a week throughout the entire summer."

The Landings was part of a learning curve. A lot of other superintendents picked up on what they were doing and incorporated the same things into their management programs. "Yes, they went to school on us," adds Perham, who's been a member of GCSAA for 33 years, "but that's good, because we were getting most of it right."

"I keep going back to that original 1994 practice green, which was overseeded the first 14 years," Perham continues. "If there had been any contamination, wouldn't we have been moving it all over the green just in the process of changing hole locations during the winter months? We wouldn't have seen it, either, because the overseeding would have masked it, but come warm weather, we would be looking at a real problem. We'll go over and look at it today. It's still as uniform as can be."

The Landings is a private gated golf community with about 8,500 residents and 4,000 home sites 12 miles from Savannah on 6,500-acre Skidaway Island. Perham has put together one well-oiled machine there: four clubhouses, six courses, four superintendents and more than 160,000 rounds of golf a year. That demands coordination, cooperation and a lot of elbow grease. Perham orchestrates the day-in, day-out activities of the entire operation with help from his team of four superintendents. Chris Steigelman, CGCS and a nine-year GCSAA member, is superintendent for the Arthur Hills-designed Palmetto Course and the William Byrd-designed links-style Plantation Course. Tyson Helsel is the GCSAA Class A superintendent for Marshwood, an Arnold Palmer/Frank Duane design, and Magnolia, an Arnold Palmer/Ed Seay creation. Aaron Saunders takes care of the newly renovated \$7.7 million Deer Creek Course, originally designed by Tom Fazio, while Erik Carson, the newest member of the team and a four-year GCSAA member, has the Arthur Hills-designed Oakridge Course.

Steigelman and his colleagues are big fans of painted greens. "When I arrived in 2004 ... during my first winter, we still overseeded a couple of the TifEagle courses,

but we gradually moved completely away from overseeding," he says. "We haven't overseeded for the last four or five winters. We couldn't be happier, and, more importantly, our members are happy too."

All of the greens on all of The Landings courses are now painted.

The encroachment issue

With the exception of Deer Creek and Marshwood, which were completely rebuilt to USGA recommendations, all of The Landings greens have basically the same original profiles, including Oakridge, which is a true "no-till." Perham explains, "You've got to remember that when they started the first conversions here, no-till wasn't even a viable concept, so at Plantation, Palmetto and Magnolia they stripped off the old grass, roto-tilled new sand in to amend the original soil, floated the greens back out, fumigated and then grassed."

At Plantation, the first course to go all TifEagle, the process wasn't exactly seamless, recalls Elsner: "I remember getting a call from Ralph early one morning and especially what he said: 'This isn't going to work. These sprigs won't grow and a lot of them are already dead.' So I dropped everything and drove five hours down to Savannah to have a look. It turned out to be a shipping problem."

Elsner says that at certain times of the year and under certain conditions, microbial respiration causes significant heat buildup in truckloads and boxes of sprigs, and the stolons were dying. Sealing sprigs in plastic bags prevents excessive heat buildup and that's now common practice.

Some of the older greens are experiencing encroachment from the collars into the actual playing surfaces, especially on Plantation and Palmetto.

"It's not that the grass has morphologically changed," says Perham. "I think we've introduced off-types into the putting surface through our aggressive cultural practices, and on a day-in day-out basis, we're spreading the contaminant and only making the situation worse."

Now it's decision time for Perham and the membership.

"On Palmetto, where the contamination is getting out of hand, we feel that our only solution is to re-grass," he says. "We tried to plug out the contamination on one green, probably three years ago, but we didn't take out enough area. One side is still clean, but the level of the contamination on the other side now tells me that it's just not economically practical to keep plugging. It's so labor intensive, not to mention how disruptive it is to the playing surface."

Everybody agrees that the encroachment started when Palmetto's greens were grassed in 2001. At that time, no one was worried about anything competing with TifEagle, so they didn't take precautions.

"When we started with the ultradwarfs, the early data indicated that Tifway was not going to compete with TifEagle, but obviously there are some grasses out there that can," Elsner says. "The greens here that are surrounded with true-to-type Tifway have only minor encroachment and no contamination, while the greens surrounded with Tifgreen types have more evidence of contamination."

When Perham took over in August 2004, he saw the problem right away.

"As (Elsner) has pointed out, the problem is growing exponentially," he says. "You can see it literally growing over the top of the TifEagle. At some point we're going to re-grass these greens. We'll no-till. And we will definitely fumigate."

Lessons learned

Well before his new greens will ever be in place, Perham has been working on a routine to keep them clean, and has already integrated the following steps into his course-wide management plan:

- Areas intended to be maintained as collars will also be fumigated, "because that's where the problem is coming from," Perham says.
- An edging program will be implemented to protect the greens or collars from encroachment.
- Changes in how the crews aerify and vertical mow will be made to avoid inadvertently introducing the fairway and collar grasses into the putting surface.



Collett oversaw the renovation of Sea Island's Retreat Course with TifEagle greens shortly after his arrival in 2000.

Edging is a big help, Helsel points out. "We're four or five years too late on my courses, but you can really see a difference over on Deer Creek, where (Saunders) began edging as soon as his new TifEagle greens were established," Helsel says. "He has zero contamination problems. Once that contamination takes hold, with the rhizomes so deep down, you're fighting a losing battle."

Saunders adds, "From the get-go my new greens have been stick-edged. We're using a traditional stick edger with a roller-blade, and basically run it around between our Tifdwarf approaches and Celebration. We still have a few runners that we have to pull out manually, mostly Celebration contamination in the Tifdwarf surrounds."

The Landings crew is quick to point out that they're not criticizing how their predecessors managed the TifEagle. "You just hope to learn from your mistakes and do your best to pass that information along so other superintendents don't make the same mistakes you did," reflects Steigelman.

The Landings has been dealing with TifEagle longer than anybody. Elsner thinks the contamination problem originated in the fairways. "If you've got a grass, or a mixture of grasses, in the fairway that's aggressive enough, it gradually moves into the collars, and from the collars into the greens. You're seeing very little encroachment on the courses that have pure Tifway fairways. It's all about what happens when you butt two grasses up against each other, especially grasses that have different growth responses and levels of aggressiveness."

Adds Perham, "When Tom Fazio re-did Deer Creek for us in 2009, we had a lot of discussions with his design team. We were all in agreement that we were going to put TifEagle on the greens and Celebration in the fairways, but what were we going to put in the collars between the TifEagle and Celebration? I think we made the right choice with Tifdwarf."

Fazio made most of Deer Creek's Tifdwarf chipping areas extremely wide — more than double the acreage of the TifEagle greens.

"We don't see an encroachment issue there, but when we hosted the State Amateur last year, some of the tournament officials couldn't tell where the green edge was," Perham says. "They were worried that the players wouldn't know when it was OK to pick up and mark a ball."

"Everybody realizes now that the final battle line to maintain putting surface uniformity is at the intersection of your greens and collars, unless, of course, you take your TifEagle and expand it out beyond the putting surface. When you do that, at least you're moving the problem further out and away from the green. But that may bring other issues about managing an ultradwarf at collar height. At Deer Creek,

tion seems to be a good match-up.

Thatch and other matters

Prior to hosting the McGladrey Classic, a televised PGA event, last October, Sea Island stepped up its verticutting and sanding, using a fine (#65) sand.

"We're just basically dusting them," Collett says. "We also core-aerify with coarse sand and that helps prevent potential layering problems. The fine sand is good because it works its way into the dense canopy better than the traditional #40 to #50 sand."

Especially in preparing for the televised event, Collett says his main concern with his 13-year-old greens was grain and firmness, which he addressed with multiple, early-morning passes with the verticutter as well as morning and afternoon topdressings.

"I didn't think we could get them that firm, but they were really, really good, with virtually no grain," he recalls. "As an everyday practice, that would be hard to keep up at a resort. At Ocean Forest, our private course, we close on Mondays, so we can verticut and topdress those greens a lot more — once a week at least. And now that we see how this finer sand is working, we're going to start using it on all of our greens."

Aerification is the big tool in the thatch/organic matter battle, and Sea Island aerifies twice a year (June and August). Collett says he typically applies 1 to 1½ pounds of ammonium sulfate before coring with ⅝-inch tines set "as close together as we can get, about an inch apart," and then "loads the sand on."

"A couple of days before we open back up, we double-verticut at about an eighth of an inch deep to smooth them out," he adds. "We recently started using the smaller ⅜- and ¼-inch tines. We go out and aerify, blow them off, roll them and that's it."

Collett keeps track of his greens' organic matter levels by regularly sampling the soil's physical properties, and he's happy with the numbers.

"I used to look at that organic matter and get those physical properties reports

and get scared to death, but when you think about it, any grass is going to build up organic matter," he says. "We're right at 13 years old, and I'm thinking we might be able to get 20 years out of these greens. Maybe more. We also do a good bit of needle-tine and solid-tine aerifications ... just to get them to perk a little bit more water and get a little more oxygen to the root system."

Collett doesn't use lot of Primo, but says he plans to increase applications on one or two courses this year.

"We did a little spraying here and there when we were concentrating on the tournament, but I think you tend to create more of a grain problem with Primo than not. With verticutting and aggressive brushing, we're able to do a good job without a full-fledged Primo program."

Opting to overseed

Sea Island overseeds all but two greens the touring pros use for practice, with transition beginning by late April.

"We have to overseed ... because we're a resort, and people expect green grass," Collett says. "A lot of what happens at the Sea Island Club depends on the weather. Regardless of the weather, we usually get a lot of play in the fall and significant play in the winter. Cup placement becomes a real problem, especially during cold winters like we had (last) year. The cups wouldn't heal."

"You might look at painted greens in the spring and fall and say, 'Man these are perfect,' but then comes winter and it's a different story. We found out after taking everything into consideration, we're better off overseeding."

They haven't had any transition problems to speak of with their TifEagle, Collett says, adding, "We try to time our first spring fertilizer application when the bermudagrass is geared up and ready for it. In effect we're almost growing the *Poa trivialis* and bentgrass to death. The only time I've ever had any transition problem was year before last, when we got so cold. When it gets that cold, everybody can have problems. A lot of courses had to re-sod some of their ultradwarf greens."

Been there and done that

This has been a profile of two premier golf clubs along the Georgia coast, both with long TifEagle histories, and each with somewhat different management philosophies. Perham and his Landings Club team are painters, while Collett and his Sea Island Club superintendents are overseeders. Both approaches are working well, and although contamination problems can be found on some of the older greens, that's a result of early management theories that have since been fine-tuned. The lessons learned are here for every interested superintendent to take advantage of:

- Start the contamination battle as soon as you install any new greens grass.
- Install contamination barriers or set up an aggressive edging schedule.
- When you aerify and verticut, be careful not to facilitate the migration of grass varieties.
- Make informed choices about which turfgrass varieties you butt up against each other. Perham and Collett both believe that a TifEagle-Tifdwarf combination makes the most sense.
- Develop a sound program to manage your thatch and organic matter.

Superintendents who pay attention to these details can look forward to having some well-behaved teenage greens of their own, and quite possibly some they can be proud of well into their twenties.

Time will tell.

GCM

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On Sea Island's Seaside (pictured here) and Frederica courses, even the tees are planted with TifEagle.

the real battle is where the dwarf-Celebration line occurs. It's almost like you've got to pick your poison. It's a battle that you're going to have to fight to maintain clean greens and keep the different grasses separated."

Thatch and organic matter management

Aerification is the key element of Perham's organic matter and thatch management program. The Landings superintendents follow recent USGA recommendations to use different combinations of tine spacings and sizes.

"Weather permitting, we aerify twice a year, which impacts about 20 percent of a green's surface area. That's our goal," Perham says. "Our first aerification is usually in late May or early June, and we come back with a second round in early August. We want plenty of recovery time to get our canopy healthy again before fall arrives. We need healthy grass going into the winter season because we don't overseed; we paint our greens."

Aerification is followed by topdressing with a fairly coarse sand (#25) to try to keep the profile open. To reduce recovery time, crews mount verticutting heads on triplex mowers and double-verticut with the cutting depth set slightly lower than usual following the spring and summer aerifications.

Normal maintenance includes vertical mowing once or twice a week and using a much finer topdressing sand.

"It's more like a light dusting than a true topdressing," Perham explains, "What we've found with the #65 is that it gets down into the grass canopy much better than the old #45 or #55 sand that we were using. We don't have as much damage to our mowers, either.

"With the #65 we usually just water it in, or if we go a little bit heavier, we'll roll our greens and follow that with an overhead irrigation to help move it down into the canopy. We've been using the finer sand for just about a year now, and everybody agrees it's also helped our greens firm up quite a bit."

The weather dictates Perham's plant growth regulator applications.

"We typically start with 2 ounces of Primo per acre sometime in early to mid-March, when the air and soil temperatures start to warm up," he says. "As soon as we see that our grass is really starting to grow and know for sure that spring is here, we'll switch from once a week at 2 ounces per acre to twice a week at 2 ounces per acre. As growth continues, we gradually increase our Primo rates until generally by mid-May we're spraying 4 ounces per acre twice a week. That's our schedule all the way through Labor Day."

The weather in coastal Georgia tends to cool down in September, but because day-length also drives TifEagle growth, Perham starts "backing off" Primo applications until stopping them around Thanksgiving. The TifEagle is dormant from early December through about mid-February.

"We adjust every year," Perham says. "We just follow the weather and let Mother Nature dictate when we'll be applying PGRs on the greens."

More TifEagle grows up in Georgia

About 90 miles south of Savannah on St. Simons Island, Berry Collett, CGCS, director of golf maintenance for Sea Island Golf Club, has also had a long and successful relationship with TifEagle. When Collett arrived at the facility in 2000, the Seaside Course (1999) and Plantation Course (1998) had both just been renovated and planted with TifEagle.

"One of my first assignments was the renovation of the Davis Love-designed Retreat course," says the 23-year GCSAA member. "Then we built Frederica, and three years ago we renovated Ocean Forest, where we hosted the Walker Cup — all TifEagle. And to be honest with you, we stayed with TifEagle because we've been so successful with it."

Collett says that on Seaside and Frederica, even the tees are TifEagle, and the golfers say they love it.

Sea Island installed encroachment barriers during each of the renovations, and Collett doesn't have the encroachment problems they're seeing up at The Landings.

"I attribute that to the barriers, which I think are better at keeping the rhizomes out because they're down so deep. If you're only managing the top, sooner or later your problem is going to go down, across and up. I definitely think those barriers have helped limit encroachment, especially where we had Tifway right up against our TifEagle greens."

On Frederica, where Collett says they needed to put a less aggressive grass in the collars, the TifEagle-Tifdwarf combina-