

deciding on a product to treat the trees, the city needed to decide the application method for the program. Aerial spraying was considered but not prudent because of the liability of drift and off-target movement of the product.

The city also looked into soil drenching the product, but chose not to because it didn't fit the city's integrated pest management program and it's committed to implementing as many integrated pest management strategies as possible.

The city decided to use a tree growth regulator via tree injection. A certified arborist on staff

handles the injections according to manufacturer label rate and recommended timing. But before applying the tree growth regulator, the trees needed to be inspected first. If trees are in a weak growing condition or if they're in decline, they shouldn't be treated. The city first applied the tree growth regulator on Eucalyptus and Shamel Ash trees.

By applying the growth regulator via injection, the city:

- Protects the environment;
- Doesn't place a pesticide in contact with golfers;

- Doesn't have to worry weather conditions negatively affecting the treatment;
- Eliminates pesticides entering the air or soil;
- Eliminates pesticide odor from emanating into the air; and

- Is able to treat all needed trees quickly.

The tree growth regulator (flurprimidol) provides control as long as five years. The tree growth regulator program starts at the time of bud break and continues into May.

However, tree growth regulators aren't for every tree. The city doesn't apply tree growth

IMPACT ON THE BUSINESS

Preconditioning trees pays off

BY CINDY CODE

When it comes to maintaining golf courses, tree care generally isn't what superintendents like to do most – unless quick action is needed to remove trees ravaged by a storm or devastated by insect or disease damage.

While trees are often cited interfering with turf quality and golfer site lines, a proactive tree program and philosophy can add significant

beauty and charm to a golf course.

Just ask Mike Fabrizio, CGCS, director of grounds and golf maintenance for Daniel Island Club's Ralston Creek and Beresford Creek courses in Charleston, S.C. Ralston Creek recently was recognized by the National Arbor Day Foundation for its environmental leadership in tree preservation.

Fabrizio has learned much about

trees in his eight-plus years at Daniel Island. Before his involvement with the Ralston Creek course, he arrived on the scene four months before construction began on Beresford Creek, which was designed by Tom Fazio. This course, too, received the Arbor Day award in 2003.

"It's definitely a tree philosophy around here," Fabrizio says. "Everyone from the developer, who is environmentally conscious, to the architects and everyone throughout the island. Every neighborhood has a park associated with it. Trees definitely give the course a more mature look even when they're brand new. It shows that trees can coexist in a golf environment and enhance it."

Fabrizio's background is turf, but he has surrounded himself with tree experts. He says he's been fortunate to work with Ken Knox of Hendersonville, N.C.-based Tree Doctor. Knox is a consulting arborist who visits courses annually to inspect and diagnoses trees. Fabrizio also has worked with Theo Meade, a local arborist, for about 30 years.

"They both have a passion for trees and help us out tremendously," Fabrizio says. "They catch problems

earlier than I ever would."

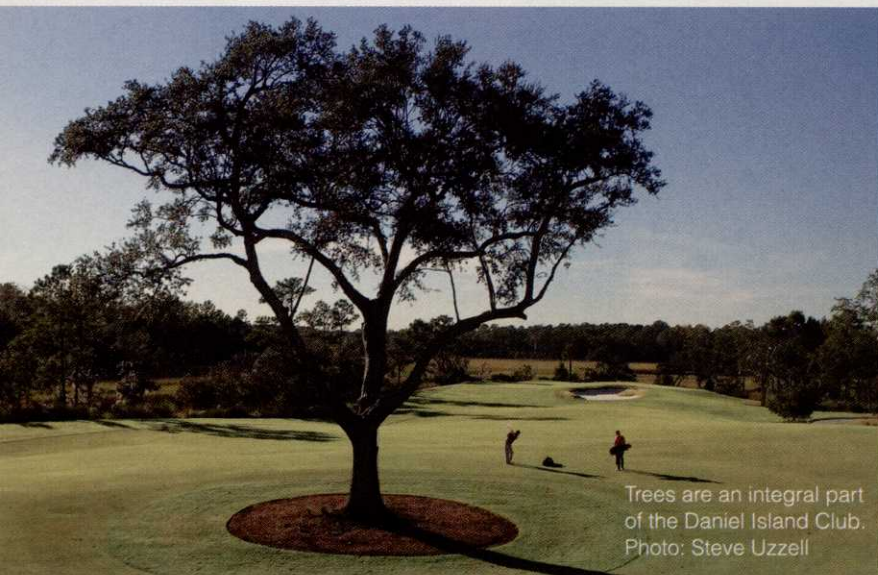
Fabrizio's maintenance budget for grounds and the two courses is about \$2.8 million. Trees alone account for about \$60,000 to \$65,000 annually, primarily for pruning and fertilization. Additional dollars are allocated for tree maintenance if a large tree dies or is struck by lightning.

Larger trees on the course are deep-drilled and aerified annually and fertilized every three to four years. New or recently transplanted trees are fertilized every year. Aside from fertilization, most treatments are curative rather than preventive. An exception is nursery trees susceptible to spider mites.

Small jobs are done in-house while all major pruning, aeration and fertilization are done by an arborist.

Fabrizio spends about \$30,000 to \$35,000 in the spring for mechanical and tree health care. The course's oak trees are pruned to remove heavy foliage that makes trees susceptible to wind damage. They'll also reduce tree canopies to protect turf health if they find they're encroaching on the turf.

The developer and golf course architect, Rees Jones, began working two years before construction started



Trees are an integral part of the Daniel Island Club. Photo: Steve Uzzell

Using plant growth regulators on trees can reduce or eliminate the need for heavy equipment to remove or prune trees. Photo: Mike Ventura



on Ralston Creek to plan a course routing that would impact a minimal number of trees. Preconstruction work included stress conditioning. Root pruning began in the fall of 2003, and the course opened in the spring of 2006.

Arborists removed unnecessary foliage off the top and dead wood from the interior to lighten the trees. Roots on the top 12 inches around trees are pruned. These areas develop small fibrous roots that aid nutrient and water uptake and help trees adapt to new locations.

Fabrizio spent about \$100,000 on preconditioning the trees. Even the trees on the course that weren't moved were pretreated to withstand environmental stresses associated with the dirt moving and shifting all around them.

Once construction was under way, crews transplanted 42 oak trees and about 100 pine trees to other areas of the course. Some oaks were at least 60 years old and had trunks as large as 31 inches wide, requiring one of the nation's largest tree spades to help with the transplanting process.

Dallas-based Environmental Designs was hired to relocate the

trees. They designed a 144-inch tree spade that had to be put together on-site for the project. Standard tree spades are between 90 to 100 inches.

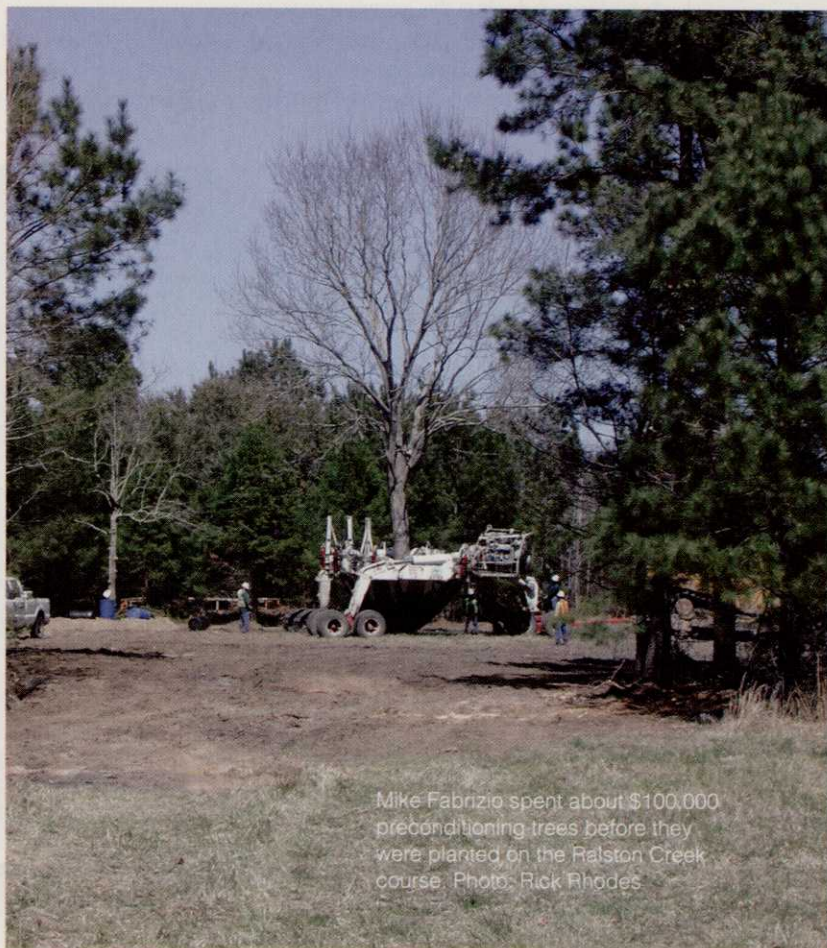
The majority of the trees survived the move, and less than a half dozen died, Fabrizio says.

"I can't stress enough about preconditioning," he says. "It's the third time I've done it, and it's \$100,000 well spent."

In addition to saving trees on the golf course, the Daniel Island Co. has planted more than 16,000 trees on the 4,000-acre island since development 10 years ago.

Fabrizio attributes much of the success to the fact that the corridors are 50 feet wider than most and wider corridors allow one to keep trees and still have healthy turf. Traditional 200-foot-wide corridors force trees to be crammed in resulting in too much shade in the play area.

"With our wide corridors, trees aren't a detriment to golfers," he says. "Sometimes I don't think they realize they're there or appreciate them. The course looks like it's been there for a long time. They take the trees for granted." GCI



Mike Fabrizio spent about \$100,000 preconditioning trees before they were planted on the Ralston Creek course. Photo: Rick Rhodes