



he Tara Iti golf club was decried as an ecological menace when it was going through the permitting process ahead of its 2015 opening. Critics of the private course, built by billionaire investor Richard Kayne and set in the sand dunes north of Auckland, were concerned that plans to remove pine trees would lead to the extinction of the endangered fairy tern, the bird for which the course was to be named.

But once experts were brought in, they discovered that removing the pine trees, as well as creating a significant dune restoration program and trapping the bird's predators, would be its only chance at survival. By having an environmental manager work with the Department of Conservation, the Shorebirds Trust, and others, Jim Rohrstaff, who serves on the board of Tara Iti and helps manage its daily operations, says the fairy tern population has slowly increased—giving hope that it may one day thrive again.

In the grand scheme of climate catastrophe, that might not seem like much, but it's indicative of a growing awareness of a golf club's role as steward not only of the playing surface but also of the environment surrounding the course. "We used to be grass farmers," says Brian Palmer, superintendent of Tara Iti, with a laugh. Now "you've got to be good with grass, but you've got to be a good manager of people and land. I'm not chasing [gophers] like Carl in *Caddyshack*."

Many superintendents would say they've always been mindful of the environment. But pressure has been intensifying from quarters increasingly attuned to green issues—including younger golfers and local communities—to prove the game is not harming the land or, more important, the ground water.

"If sustainability isn't at the top of your mind as a resort or community, you're already behind," says Richard Hywel Evans, the architect for the Cabot properties in Saint Lucia, where the Point Hardy Golf Course is set to open this year.

For years golf courses have tried to



emulate the aesthetics of the world-famous Augusta National Golf Club, whose wall-to-wall green turf and popping pink azaleas set the standard of what a course should look like. That meant dispensing enormous amounts of fertilizer, insecticides, pesticides, and fungicides, known collectively as "inputs."

Developers in the 1980s and '90s who used golf courses as a way to sell real estate wanted the "Augusta look," the green grass and manicured, hardedged bunkers that would be eye candy for homeowners drinking morning coffees on their back patio. These courses were built at an unsustainable pace: According to the National Golf Foundation, the number of courses in the 20 years to 2006 jumped 44%, to 16,000. Since then, the total has decreased 11%, but there are still more golf courses in the US than McDonald's or Starbucks. Imagine the volume of inputs that were introduced to the environment to do this.

Frank Rossi, a Cornell University associate professor of plant science with a focus on turf grass who's been studying the field for 30 years, sees more attention being paid to the environment. "They were building a golf course a day through the '90s, and I could never make sense of the intensity of inputs," he says. "You want to be more environmentally responsible? Manage less land with less stuff. Period."

The aftereffects of that era, of building expensive courses that were expensive to maintain, linger. The courses with the artificially achieved Augusta look helped create a misconception that all golf courses, beneath their lush veneer, are a toxic stew of chemicals.

A 2021 study in the peer-reviewed academic journal *Science of the Total Environment*, which Rossi co-authored, compared the care of golf courses to agricultural practices and found that, while there's much room for improvement, things aren't really dire. More pesticides are used on courses than on the fields that grow produce such as corn and carrots, but apple orchards and vineyards are as much as 80% more toxic than your average fairway.

Course superintendents often cite Pinehurst Resort & Country Club in North Carolina as proof that sustainability can have financial rewards. Ahead of the 2014 US Men's and Women's Open, which were held on consecutive weeks, the resort's owners embarked on a major renovation of its historic No. 2 course to return it to the way it had appeared in the 1940s and '50s.

Among other things, 40 acres of turf were removed: With less grass, there was less to manage and fewer inputs were needed. Maintenance Director Bob Farren says he also stopped overseeding, a water-intensive practice in which rye grass is planted to bloom as Bermuda grass goes dormant to cover the brown spots in the course.

The main motive, at first, was simple economics. Pinehurst was losing players to Oregon's Bandon Dunes Golf Resort and Destination Kohler in Wisconsin, which were newer and had firmer and faster playing surfaces that focused on playability.

Then a curious thing happened: Golfers didn't care if Pinehurst wasn't immaculate—the course was fun again. It proved so popular with players that the resort replicated the approach at two more on-site courses. "When I think about sustainability," Farren says, "I think of the three P's: people, planet, and profit. In all three areas, the renovation was a home run."

Ken Nice, who oversees the courses at Bandon Dunes, agrees that most golfers don't mind some imperfections. "Links golf like we have is probably the most sustainable. Fescue is kind of hands off," he says, noting the slow-growing thick grass used throughout the course. "You don't have to do anything extra to keep it alive and healthy."

Sometimes local governments are the ones pushing golf toward a more sustainable future. In April, the town of Oyster Bay on New York's Long Island harvested more than 3,000 feet of kelp to use as natural fertilizer for nearby courses as part of its "Farm to Fairway" initiative. Real estate conglomerate Discovery Land Co. is spending more than \$8 million on a wastewater treatment facility to irrigate—and get permits for—its new Driftwood Golf & Ranch Club in Texas Hill Country.

Kiawah Island Golf Resort in South Carolina has five courses, including the Ocean Course, host of the 2021 PGA Championship. As a conservancy, Kiawah Island has strict management practices. Because the Ocean Course sits on the coast along an estuary, the resort must monitor runoff. Superintendent Jeff Stone says the course designer, Pete Dye, built it to recapture the irrigation water and filter it through the wetlands that surround the playing corridors.

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The nudge toward sustainability can come from nearby residents, too. The courses at Kiawah are part of the Audubon Cooperative Sanctuary Program for Golf, a certification program that provides environmental guidelines for courses. Bryan Hunter, Kiawah's director of public relations, says groups will ask if the club is Audubon-certified before they'll book outings or events.

In addition to offering guidelines to minimize the use of inputs, the Audubon Society helps courses create more natural habitat areas for wildlife. It will send someone to survey the land and assess which areas don't need managed turf and can instead use native grasses.

Regulations are more strict in the European Union. Last year, when Discovery Land completed its first European residential golf community, CostaTerra in Melides, Portugal, it was allowed to have only 64 acres of managed turf. (Most courses in the US have at least 100 acres, depending on the location and climate.)

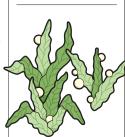
Steve Adelson, a partner with the company, says the lack of usual playing turf has had little to no effect on the golf experience. "The European continent is much more advanced than America in regard to sustainability," he says. He also notes that those regulations were already in alignment with the company's own best practices.

Palmer, Tara Iti's superintendent, says he plans to go even greener at two new public courses, Te Arai North and South, that are opening nearby. He's building a wetland near the maintenance facility to filter the water that cleans his equipment. "Mother Nature is always better," he says.

# Four small steps toward sustainability

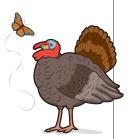
## MAKE WATER WETTER

At Bandon Dunes, superintendent Ken Nice has 500 acres of turf to tend. A common practice now is to use wetting agents, which increase viscosity so the grass is able to absorb and use more of the moisture. The technique ultimately can cut down on the amount of irrigation that's needed.



# FIND NATURAL FERTILIZER

The Town of Oyster Bay implemented a program this April in which sugar kelp is harvested and then pelletized to be used instead of chemicals. When applied to the course, the 100% organic, nutrientdense fertilizer can increase root growth, improve the turf's appearance, and promote seed development.



#### FEED THE ANIMALS

The Cliffs at Mountain Park, built along the banks of the North Saluda River in Marietta. S.C., reduced its amount of managed turf in favor of native grasses along the edges of its nongolfing areas. There's also a program to attract monarch butterflies and 10 acres designated free of pesticides—and golfers-that house turkey feeders.

## RETHINK PESTICIDES

Crystal Springs Golf Course, 15 miles south of San Francisco, has a long list of environmental awards to its name. Near a municipal reservoir, it has to manage chemical runoff. Course superintendent Justin Brimley uses a seaweed extract that helps the turf withstand the stress from heat. wind, disease, and constant mowing.