



Site Navigation

- Cleanups, Remediation
- Emergency Response
- Licensing
- Permits, Registrations
- Preventing Pollution
- Recycling
- Reporting
- Rules

- Data
- Forms
- Maps
- Public Notices
- Publications
- Records
- Webcasts

- About Us
- Contact Us

How 's our Customer Service? Please fill out our Customer Satisfaction Survey

You are here: Home → Publications → Periodicals → Natural Outlook → Spring 2005 → Links with the Environment

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Links with the Environment

Some Texas golf courses get high marks from Audubon International. These eco-friendly courses have taken precautions to preserve natural areas, conserve water, and protect water quality.

Golf courses go easy on the land and welcome native habitats into their design

In this story:
[Going Natural](#)
[A New Stance](#)

At the Tierra Verde Golf Club in Arlington, spotting a bobcat near Hole No. 9 isn't all that unusual. In fact, it's par for the course.

In Austin, when golfers at Barton Creek Resort's Fazio Canyons course talk about "birdies," they could be referring to golden-cheeked warblers, an endangered species that makes its home not far from the greens.

At these golf courses, visitors not only play 18 holes, they get a back-to-nature experience.

Both have been accepted into Audubon International's prestigious Signature Program, which recognizes developments designed and maintained in an environmentally responsible manner. The environmental education organization works with golf course superintendents to address concerns about water quality, energy and water conservation, pesticide use, and preservation or restoration of wildlife habitats.

Of the 848 golf courses in Texas, 92 are Audubon members. Only two have completed the multistep process to be admitted into the Signature Program; another 11 have qualified for the Cooperative Sanctuary Program for existing properties that convert to sustainable resource management.



Padre Isles Country Club in Corpus Christi underwent a major conversion in the late 1990s, adopting an environmentally responsible manner of managing the golf course and its natural areas. Now wildlife and migratory fowl share the fairways with golfing enthusiasts./Photo by Carrie Robertson/Third Coast Photo



The wooded areas and waterways of Tierra Verde make a suitable home for this barred owl./Photo by Tierra Verde Golf Club

Officials with the nonprofit say they started the programs due to the growing popularity of the sport and the fact that golf courses consume more and more open space. Converting raw

land into lush green fairways often occurs with substantial water use and heavy applications of pesticides and fertilizers, which can harm local wildlife and affect the water quality of creeks, lakes, and groundwater.

"The problem has been that everyone looks at golf courses based on what they see on TV--brilliant green courses that are manicured and planted with flowers that may not even belong in that part of the country," said Nancy Richardson, a program director in the Audubon's Kentucky branch. "What we're trying to do is

address golf as well as the environmental results. Our goal is to see course designs based on factors like climate and turf grasses that are appropriate for the area."

Golf course superintendents who participate in the Audubon programs say the eco-friendly approach is appealing to players who like the more natural look and the added challenges to the game. They report it also makes good business sense.



The fairways at Tierra Verde Golf Club are wide by design to keep players out of the natural habitat areas. The course, which is owned and run by the city of Arlington, was the first in Texas to be built according to Audubon International's environmental standards./Photo by Tierra Verde Golf Club

[Back to the top](#)

Going Natural

In Arlington, Tierra Verde encompasses 257 acres, but only 92 acres are irrigated. The remainder of the municipal golf course remains as natural areas that serve as interconnected wildlife corridors. Maintaining these habitats requires minimal water and, for that matter, labor.



Bushy bluestem grass lines a detention pond at Tierra Verde's Hole No. 16 to filter incoming runoff./Photo by Tierra Verde Golf Club

"Our staff is very committed to this approach," said Evonne Sandas, director of golf since the course opened in 1998. "This golf course was the first in Texas to achieve the Signature designation, and the first municipal course in the world to do so. It's now our business philosophy."

Rather than relying on synthetic fertilizers, Tierra Verde uses pasteurized poultry manure, corn gluten, and liquid organic materials. An aerobic compost tea is brewed by staff and sprayed on plants to suppress disease. Water runoff is directed through biofilters around the premises and into a series of detention ponds. Twice a year, the course ponds are tested for water quality.

In the maintenance building, equipment is washed with recycled water. The facility has skylights and adequate insulation to reduce electricity use.

Sandas said she disproved initial predictions that the environmental approach would be unaffordable. "We've actually saved a lot of money by designing the course with sustainable principles in mind. Over time, the results are longer lasting. It just makes sense that if you emphasize water conservation, then at the end of the day you have water and energy savings."

Also, the staff is about 30 percent smaller than those at comparable courses, she estimated.



Less than one-third of the 230-acre Fazio Canyons course is maintained for golfing. For the 69 acres that are in play, Barton Creek Resort draws irrigation water from sedimentation ponds, Lake Austin, and treated effluent./Photo by Barton Creek Resort & Spa



Natural areas surround every hole at Fazio Canyons in Austin. These low-maintenance sections of native trees, grasses, and wildflowers need no irrigation./Photo by Barton Creek Resort & Spa

Meanwhile, players at Tierra Verde get to observe more than 100 species of birds and migratory water fowl, and catch occasional glimpses of roadrunners, gray fox, cottontail rabbits, and coyotes.

In Austin, Audubon officials were involved with construction of the Fazio Canyons course before any dirt was moved. "They also remained involved during construction," recalled Anne Hickman-Hudgins, environmental landscape coordinator at Barton Creek Resort & Spa.

"Part of the deal was we agreed to minimize the impact of construction. The building of a spring grotto, for example, was done with hand labor, no construction equipment. It took longer, but the end result is that we didn't destroy anything," she said.

Because the course is located in the contributing zone of the Edwards Aquifer, more than 250,000 linear feet of silt fencing was used during construction at a cost of about \$500,000, she said.

To meet the standards of the Signature Program, the club hired a botanist to inventory the native grasses, wildflowers, trees, mammals, insects, reptiles, and mammals located on the undeveloped land.

When golden-cheeked warblers were found nesting, a wildlife biologist was brought in to check the property each day. "Once we discovered that endangered birds were nesting close to a pond we planned to make a part of Hole No. 2, construction was halted for six months until all the birds had fledged," Hickman-Hudgins said.

Of the 230-acre course designed by golf architect Tom Fazio, only 69 acres are maintained for golfing. The rugged



With 40 acres of water, the Padre Isles Country Club has installed biofilters along the perimeters of the man-made lakes. These thick bands of native grasses prevent fertilizers or pollutants from reaching the water, and they serve as a cover for wildlife./Photo by Carl Suding

Hill Country property with rock bluffs and spring-fed creeks is populated by deer, wild turkeys, coyotes, wild hogs, and bats. Mountain lion tracks can be found in early morning.

Landscaping has capitalized on native plants, such as lantanas and salvias, that do not demand much water. The native grasses are good for water filtration and serve as a food source for wildlife.

To conserve water, sedimentation ponds capture runoff, which is then transferred to irrigation ponds and used to water the course.

The Barton Creek course has to submit an annual report on Fazio Canyons, and an Audubon representative conducts a site audit every two years.

[Back to the top](#)

A New Stance

The Padre Isles Country Club in Corpus Christi is an example of a golf course that operated traditionally for two decades, then changed its entire approach toward course upkeep and management. The club has been certified as an Audubon Sanctuary member since the late 1990s.

The conversion meant returning 10 acres of manicured, landscaped grounds to a natural state, said Carl Suding, co-owner and golf course superintendent. The property of 186 acres now includes 60 acres of natural habitat and 40 acres of lakes. The changeover brought increased numbers of migratory fowl, he said, noting that "a family of sandhill cranes comes back every year and lives near the driving range. They're very friendly."

Hérons, ducks, ospreys, and egrets forage undisturbed on small islands in the lakes.

Rather than broadcast spraying for weeds, staff now does spot treatments with the "least toxic" pest control products, said Suding. Buffers of native plants and grasses line the perimeter of lakes to divert runoff. Lake water is recycled into the irrigation system.



A family of sandhill cranes winters each year in a deep rough at Padre Isles—one of 47 species of birds documented at the golf course./Photo by Carl Suding

Suding estimates that being an environmental steward saves the club about \$100,000 a year. "We've reduced water usage, fertilizer, mowing, equipment, and manpower. As an added feature, most players are very supportive because they love the wildlife and habitat areas."

The players also say the course is more challenging with the added water and habitat features.

That's all right with Suding: "We figure it's better to be one of the more challenging courses than to be one of the easier ones."

He said ecologically sound management has been endorsed by the United States Golf Association and the Golf Course Superintendents Association of America.

[Back to the top](#)

Texas Golf Courses Certified by Audubon International

Abilene
Mesquite Grove Golf Course,
Dyess Air Force Base

Arlington
Tierra Verde Golf Club
and sports center*

Austin area
Barton Creek Resort & Spa:
Fazio Canyons*
Fazio Foothills/Crenshaw Cliffside
and Palmer Lakeside courses
The Clubs of Lakeway

Corpus Christi
Padre Isles Country Club

Houston area
Kingwood Country Club, *Kingwood*
Lakeside Country Club, *Houston*
The Club at Carlton Woods, *The Woodlands*

Fort Worth area
Timarron Country Club, *Southlake*

San Antonio area
Hyatt Regency Hill Country Resort
La Cantera Golf Club

*Tierra Verde and Barton Creek's Fazio Canyons are the only courses admitted into Audubon's Signature Program (bronze level). The Links at West Fork, a new golf course in Conroe, has applied for certification in this program. The remaining courses listed above are in the Cooperative Sanctuary Program.

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