# Golf: Doing its Part to Protect the Environment

The golf industry is committed to environmental responsibility in the design, construction and management of golf courses. The game's leading organizations have invested considerable resources in this effort and are now driving the game toward sustainability. The WE ARE GOLF coalition supports these initiatives, which include research, education and innovative practices that are dedicated to providing long-term benefits to the communities where golf courses are located. With a shared goal of elevating golf's environmental consciousness, course managers and developers around the country are committed to continually improving their efforts to conserve water, protect water quality, preserve natural habitats, save energy and reduce pollution.

An important partner in the industry's push to promote environmental stewardship is the Golf Course Superintendents Association of America (GCSAA) and its philanthropic organization, the Environmental Institute for Golf. Since 1995 the GCSAA has been a productive member of the US Environmental Protection Agency's (EPA) Pesticide Environmental Stewardship Program. These efforts have not gone unnoticed:

> GCSAA has been a leader in expanding the conversation beyond the element of sustainability and wrapping in informationabout the practices of superintendents. What bigger commitment than to step up and put yourself out there and collect the best data you can about your baseline just to get that conversation started?
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> **Tom Brennan, Deputy Director of the EPA's Science Advisory Board, in an interview with *Golf Course Management* magazine**

> The golf industry has made very significant strides in areas like water and energy conservation and reuse, reduction of areas in turfgrass, preservation of native vegetation, habitat protection, wetlands conservation, recycling, wastewater treatment, fertilizer reduction, integrated pest management and storm water runoff management, just to name a few. The integration of these principles at any specific course is really leading to those courses having a lighter environmental footprint.
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> **Rob Wood, Director, Chesapeake Bay Program Office, EPA, in an interview on Golf Channel's "Morning Drive"**

## Conserving Water on Golf Courses

- 65% have upgraded their irrigation systems in the last 10 years.
- 92% use wetting agents to aid in water retention and efficiency.
- 78% use hand-watering techniques to increase precision.
- 69% report keeping turfgrass drier than in the past.
- Fewer than 15% utilize municipal water supplies.

## Combating Soil Erosion:

- Nearly 6 billion tons of soil erode each year, costing $6 to $16 billion a year. Turfgrass prevents erosion by binding soil through its network of roots.
- Healthy turf areas significantly reduce runoff by absorbing rainfall.

## Providing Green Space

- Green space: 2,020,060 acres in the US alone.
- Cooling power: temperatures over golf courses are 10 to14 degrees cooler than urban areas on a summer day.
- Golf courses are home for many important species and provide elements of natural habitat, buffer strips and wetlands that protect natural resources.

## Benefiting the Environment:

- 2,500 square feet of turfgrass releases enough oxygen for a family of four to breathe.
- New varieties of turfgrass are available where lower-quality, salty water can be used for irrigation.
- Turfgrass is home to micro organisms that feed off pollutants and purify the water.

## Saving Energy at Golf Facilities

- 77% have made changes such as temperature control and charging equipment during nonpeak hours.
- 71% have made mechanical changes such as using Energy Star-rated furnaces, efficient water heaters, low-flow faucets, irrigation controller updates and T-8 lighting.

# Environmental Case Studies

## Newport Dunes Golf Club – Port Aransas, Texas (Environmental Management)

Newport Dunes is located in Port Aransas, Texas – a barrier island adjacent to the Padre Island National Seashore that is a major US bird migratory location. Environmental management and stewardship were top of mind in the initial design of the Arnold Palmer course and continue to be key factors in ongoing operations.

The course was constructed on 200 acres, with at least 120 acres converted to native vegetation to provide transit points for wildlife. These areas are no entry, no mow, and no pesticide use areas where the facility planted more than 20,000 native plant materials, including 5,000 endangered species. In addition, 80 percent of the course's lake banks are not maintained in order to provide shoreline habitat for bird species. The integrated use of native areas and lake management allows many local species to call Newport Dunes home – more than 100 species of birds have been identified on the course.

Because of the course's proximity to the Gulf of Mexico and the Laguna Madre bay system, particular care had to be paid to water management and the elimination of potential fertilizer and pesticide runoff. The 80 acres of turfgrass at the facility consist of species selected to best correspond with the club's water management program and specific environmental conditions. To address soluble nitrates in the course's water source, which could serve as a potential pollutant, a series of perforated pipes were installed to capture excess irrigation water and mechanically pump that water into a storage tank for reapplication on the course.

## The Bear Trace at Harrison Bay – Chattanooga, Tennessee (Wildlife Habitat Management)

The Bear Trace at Harrison Bay is an 18-hole Jack Nicklaus Signature golf course located near Chattanooga, Tennessee and operated by Tennessee's Department of Environment and Conservation. A compelling example of what can happen when best practices in wildlife habitat management are followed, the course became an Audubon Cooperative Sanctuary in 2008 and has been exploring new ways to improve and enhance its environment.

Consulting with GCSAA member David Stone, the goal was to create a habitat that would encourage wildlife to visit and flourish. The Bear Trace is now home to wild turkeys and has also been viewed worldwide through two webcams documenting the breeding activities of a pair of bald eagles that recently nested on the course.

## Tournament Players Club at Summerlin – Las Vegas, Nevada (Resource Efficiency)

The Tournament Players Club at Summerlin is located on 230 acres of Las Vegas desert at an elevation of 2,700 feet. Through a variety of measures, the facility has increased its efficiency and reduced the use of inputs. Among the innovations used to achieve this goal are:

- Time of use lock outs. A special feature has been installed that only allows water to be recirculated during hours when golfers are on the course and automatically shuts down club generators and compressors, saving 50 percent in electrical costs.
- Programmable thermostats. Course managers have installed new thermostats that can be turned up at night to save electricity.
- Recirculating wash rack. The maintenance shop is equipped with a recirculation wash rack where employees use recycled water to rinse debris from equipment.

## On the Fairway, New Lessons in Saving Water


Mindful that global warming could provoke more and longer dry spells, state governments are increasingly consulting golf courses on water strategies. In Georgia, golf course managers have emerged as go-to gurus on water conservation for both industries and nonprofit groups. Marriott International is applying lessons learned at its golf course here to its resort properties in other states. Habitat for Humanity is landscaping front yards with drought-tolerant plants recommended by golf superintendents…Water is just one area where golf courses and environmentalists may find a rapprochement, said Anthony L. Williams, director of grounds at Marriott's Stone Mountain public courses just outside Atlanta.