

GEO Certified® Independent Verification Report



Golf Facility: Sea Pines Resort
Prepared by: Teresa Wade
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Executive Summary

Hilton Head Island is a unique coastal community in the Lowcountry of South Carolina and is home to 22 golf courses. It has hosted the RBC Heritage PGA TOUR event at Harbour Town Golf Links in the Sea Pines Resort since 1969, when Arnold Palmer won the inaugural event. However, it's a golf community like no other. The Sea Pines Resort was the first eco-planned destination in the United States and has become the blueprint for beach developments nationally. All design and development prioritizes the natural environment and places built structures as secondary to the beauty of the serene marshes, beach, lush tree canopy, wildlife and more. While environmental preservation has always been an Island-wide priority, leadership by the Sea Pines Resort is helping transform the community ethos from a preservation focus to long term sustainability. The Resort's offerings include three 18-hole golf courses, 6 restaurants, a four-star 60 room Inn, management of 425 homes and villas, a marina, and miles of beaches and bike trails. Sustainability efforts are championed by Tony Wartko, Director of Facilities Services, under the supervision of Cary Corbitt, VP of Golf and Operations. The Sea Pines Resort achieved its initial GEO Certified designation in 2015. However, in 2016 Hurricane Matthew hit the southeast US, and the Sea Pines Resort sustained the most damage on Hilton Head Island. It brought record rainfall, a tidal storm surge, and heavy winds that reached almost 90 miles per hour; the Island received 11 inches of rain. Fortunately, nearly everyone was evacuated off the Island and there were no fatalities, although other areas weren't as lucky. Hundreds of thousands of trees were downed, and all golf courses were closed for 60-90 days, which was a tremendous hit for the October visitor season. Crews worked around the clock to repair and reopen facilities. In 2017, Hurricane Irma passed through with wind, rain and flooding damage, though not as extensive as with Matthew. In 2018, Hurricane Florence swept from the gulf coast of Florida across land to the east coast of the US, devastating the Carolina coast and all areas in between. Florence also dumped tremendous rain on the Island, but the damage was minimal. Survival and recovery has been the primary focus for Sea Pines Resort since 2015. Each incident called on a team effort for improved resiliency, and evoked new activities and commitment for increased sustainability focus. The Sea Pines Resort teams have risen above these three natural disasters to survive and thrive again.

Nature

The seamless blending of pristinely manicured golf courses with complex ecosystems grab and keep your attention, providing multi-sensory experiences for golfers and non-golfers alike. The winding lagoon system is home to shorebirds, alligators, fish, turtles and lush vegetation, offering beauty and habitat for many permanent and seasonal species. While there is a flurry of activity in the early

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morning to prepare for the day, by mid-day and into the evening, the courses become a serene and quiet respite for all ages of golfers, walkers, bird watchers, bike riders and fishermen.



A notable theme is connectivity of the human and natural environment. Everywhere you look is an example of how shared environments can succeed. The entire food chain exists in every lagoon, from the fierce alligator to the small, petite snowy egret. While there is interdependency for survival, there is a constant calm and peaceful ambience. And then, only a few steps away are clubhouses and restaurants with stellar service, delightful delicacies and every possible amenity for the golfer.

Initial development prioritized the natural environment; current operations have a strong foundation to maintain and build on. Superintendents from all three courses meet regularly to collaborate on issues and opportunities to optimize operations and resources. The Resort's three golf courses lost 800+ trees with Hurricane Matthew in 2016. However, the "cleansing" has proven beneficial to increase air circulation, sun and overall improvement for vegetation health. A select number of palms, oaks, and pine trees (30-40) were replanted to restore the signature layout of the Harbour Town Golf Links.

Extensive areas for natural habitat were incorporated in the original master plan for Sea Pines and contribute to the design, challenge, and experience of each course. Lagoons and marshes with ecosystems wind through every course, alligators sun in the rough, and two rookeries host snowy egrets. In 2015, the courses hosted more than 95 bird boxes for bluebirds and martins. The hurricane damage over the last three years, reduced that number to 50, but restoration of those habitats are in process.

The Resort regularly welcomes the local Audubon Society chapter that engages volunteers to conduct regular bird counts. In pursuit of a closed loop system, food waste and vegetative waste from maintenance efforts is mulched and/or composted and applied back on the property as appropriate. This practice diverts waste from the landfill, but also enhances soil structure to help prevent erosion, runoff and protect habitats and water bodies. The Resort partnered with Experience Green, a local nonprofit organization, to host a Community Walk on Atlantic Dunes (then the Ocean Course) and beach in 2014. It included participants' canine companions and a scavenger hunt to raise awareness about the positive contributions a golf course makes to the environment and the community. Stations included facts about wildlife and its habitat, buffers to protect water quality, a demonstration bee hive and more.

Maintenance efforts have engaged environmentally sensitive practices even before the EPA was formed to regulate them.

The amount of maintained turf aligns with providing the appropriate playing experience for the Resort clientele. All golf holes are bordered by trees, containing all open, maintained space. With the 2016 renovation of the Ocean Course becoming Atlantic Dunes, under the direction of Brook Sentell, Superintendent, maintained turf area was reduced 35%, from 85 to 60 acres. The converted areas

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are now bunkers, dunes, or native areas for indigenous plants.



Celebration Bermuda is the grass species of choice due to its resiliency and compatibility for an extended warm season. It responds well to needs for maintenance, mowing heights and playability, and is suited to the soil constitution. Shade can be a challenge for the Resort with the many live oaks on the property; the Celebration species is also more shade tolerant.

All maintenance practices and operations have strict protocol and monitoring to ensure safety and cleanliness, including multi-lingual instructional signage to minimize mistakes.

All water bodies in the Resort are under authority and standards of the US Army Corps of Engineers. The property's lagoon system is linked to the South Island PSD treatment operation that is mandated by the state to monitor the lagoon water quality daily.

Maintaining a PGA TOUR golf venue in addition to two Resort golf courses requires a lot of equipment, personnel and products. All three courses share a high-tech wash pad system; grass clippings rinsed from equipment are caught by a first filter and go back on the golf course. Three more filter stations separate and remove remaining grass, sediment, silt and pollutants utilizing microbes to further clean the water. It is then treated with UV light to kill bacteria and injected with Hydrogen Peroxide. This output can be used as a liquid mix for applications or dispersed into the lagoon system. An additional filter is being installed at the time of this report to ensure there are no petroleum products remaining in the water prior to its reuse; this proactive effort utilizes the most innovative technology available.

Hazardous materials are securely stored in a designated building on a two-level impervious surface pad to prevent leakage into the ground or storm water drains. Materials are clearly organized to avoid misuse, emergency wash stations are readily assessable, and an Emergency Incident Plan is in place.

With three golf courses serviced from one maintenance area, coordinated systemic efforts for source prevention are prioritized. Spill and emergency preparedness plans are in place and white boards in the break rooms alert staff about issues of concern.

A signature feature of all the Resort's courses is the lush, thick, vegetative buffers along the banks of water bodies and the marsh areas that blend with the course designs. These tall grasses are ideal wildlife habitat, but also protect the water from pollutant runoff. Where tall cord grasses do not buffer the water, the turf is kept at a taller height. Minimization of product application is an ongoing strategic consideration, as well as irrigation schedules and monitoring for weather events to not coincide with product application. Use of more wetting agents in 2018 allowed for reduced irrigation, better soil balance for deeper roots and less fertilizer use. Application of nitrogen on the greens was reduced by 45% from 2017 to 2018 using this strategy. Brook Sentell, Superintendent, has continued focus to shift toward use of more organic versus petroleum fertilizers. He is also

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working with the Resort team to create a worm tea nutrient for the courses that will be produced onsite from Resort waste and using the facility's worm herd. Brook has previously been purchasing a similar product, but hopes this can be available in house in the future for a closed loop.



Resources

Sustainability of the Hilton Head Island community, environment and economy rely on water. While many assume that golf courses strain water resources, this is not so in the unique operation of Hilton Head Island, SC. Courses are a necessary sponge to absorb rainfall, prevent flooding, recharge the aquifer, and are a critical component for filtering wastewater for reuse. The Island was developed with a complex recycled water system that relies on man-made lagoons and golf courses.

The Resort's golf courses are irrigated completely with treated effluent water, and its lagoon system links to the South Island Public Service District's (PSD) treatment operation. The process is a "tertiary treatment," which is aeration, clarification, and disinfection. The recycled water is used only for irrigation or is released back into monitored wetland areas.

All properties must be permitted by the Department of Health and Environmental Control (DHEC) to use recycled water. The South Island PSD is mandated by the state to monitor the lagoon water quality daily.

The lagoon systems provide wildlife habitat and beauty, but also function to sustain water supply and water quality for all.

The water bodies throughout the three Resort golf courses blend recycled, fresh, brackish and salt water that connect to the Atlantic Ocean via the Calibogue Sound, the backdrop to the finishing hole of Harbour Town Golf Links. The impressive process works because the Resort prioritizes harmonizing human efforts with those of the natural environment.

Recycled water is the irrigation source for all three golf courses. But the staff works continuously to reduce consumption and implement technology for continued improvement.

Irrigation systems for all courses were updated in 2015. The project included new infrastructure to maximize water flow and improved accuracy for application and readings. Overall consumption continues to decrease through optimization of the technology. From 2016 to 2017, water consumption decreased by 27.9 million gallons, and in 2018, there was a further reduction of 10.3 million gallons. While the water is all recycled, the reductions also influence reduced energy consumption.

The staff is trained to immediately identify malfunctions with the irrigation system and inspects sprinkler heads daily. Preventive maintenance is scheduled regularly for pumps, and recalibration is performed quarterly. All meters are checked regularly and leaks are repaired immediately. The Resort facilities

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also have low flow and dual flush toilets. All herb gardens in the Resort are irrigated with condensate from air conditioners (2 gallons of water per hour) and is powered a solar panel and pump.

The Sea Pines Resort is in continued improvement mode always. The Heron Point golf course was renovated in 2009, the Plantation Golf Club and LEED Certified Beach Club were completed in 2014, the new Harbour Town Golf Club was completed in 2015, and the Ocean Course became Atlantic Dunes via a full renovation in 2016. Despite the added duties to oversee new projects, the staff is always seeking ways to reduce energy consumption.

The recently constructed Harbour Town Clubhouse was completed just prior to the 2015 RBC Heritage and is approximately 50,000' square. The design provides guests with a plush, but traditional Lowcountry ambience, with advanced technology, including precision control of energy use. Temperatures can be programmed per room with wider ranges of fluctuation. The building has a partial Building Automation System, a TRANE Tracer system, and hot water temperatures can be monitored and programmed. Insights from Facilities Director, Tony Wartko, dictated separating kitchen equipment components, placing condensers outside, away from the refrigerators, eliminating excess heat to the interior space. While the clubhouse has doubled in size, its energy efficiency is greatly improved.

New irrigation systems for all courses were installed in 2015. The system includes a new Flowtronex pump station with Variable Frequency Drive (VFD) technology, as well as a Lynx Control System with individual head control. This increased precision with less pumping, power, water and labor needed. It is estimated that energy consumption was reduced approximately 30%.

In 2015, the Resort worked with Smith Turf and Irrigation on the investment of high performance, high efficiency Toro turf maintenance equipment. The decision to purchase 20 pieces of equipment considered capabilities and performance, but also technology that utilizes a hybrid of fuel and electric power. Many pieces include Toro's Energy Smart design and technology, as well as XP options for increased precision and productivity, and decreased energy consumption.

2018 marked the ninth year in a row that the RBC Heritage was powered with 100 percent Green Power. Through Palmetto Electric Cooperative, Santee Cooper offers energy from clean, renewable energy sources including landfill biogas, solar power and wind power within South Carolina.

The Resort utilizes a small amount of bio-fuels and participates in a local program to convert all used cooking oil to biodiesel. With a steady increase in business over the last three years, the Kilowatt hours have remained fairly flat. This stability attests to increasing efficiency among facilities.

As of 2015 certification, there were plans to intergrate solar power in select locations. In 2017, solar panels were installed atop golf maintenance buildings.

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When touring the property, one can see many efforts to reduce energy consumption. All exterior and some interior lighting is on timers or sensors, and golf carts are charged during off peak hours when demand allows. Skylights provide natural light and ridge vents and garage doors increase ventilation in maintenance buildings. All buildings contain spray foam insulation and all light bulbs are being converted to LED's. Mowing patterns and processes are assessed constantly to minimize labor, time and fuel use. Due to the warm climate, growth controllers are often applied to reduce mowing needs. Programmable thermostats reduce power use, and continuous monitoring of consumption data helps identify trends, poorly performing equipment and more. In 2016, the Harbour Town Inn and Sea Pines Resort Welcome Center were entered and rated by the Energy Star program for ongoing tracking for geographic rating. This annual exercise keeps reduction at top of mind for continued effort. Brook Sentell, Superintendent, is researching equipment options with less hydraulic fluid that may be substituted with electric motors for reels.

The Resort's island location adds travel miles for supplies and products. While produce, food and service needs can often be met by local suppliers, the majority of sourcing is from national suppliers. While sourcing may have its limitations, the Resort is demonstrating stellar success with management of its outputs cross departmentally, including operation of its Welcome Center as Zero Waste.

Accurate data records and tracking systems demonstrate the value and business case for sustainability for the Resort. i2recycle, a local waste solutions company, works closely with the Resort on innovative pilot projects, employee training, as well as handling ongoing waste management needs and tracking. All entities collectively diverted 90 tons of waste in 2011; by 2017, the total has increased to 730 tons. Regular reports detail weights, volumes, commodity rates and more per item, supporting increased investment in future projects.

The "green guru" of Sea Pines Resort, Tony Wartko, Director of Facilities Services, has a personal passion for sustainability, and he prioritizes communication, training and engaging interns and employees to grow a culture of sustainability and develop more "ambassadors for sustainability".

The Sea Pines Resort has an environmental purchasing policy, prioritizes local sourcing, and participates in programs and partnerships to advance sustainable sourcing.

The Resort purchases large volumes of many products; cost and value must be a high priority. Many nonperishable items and national brands are purchased through distributors. Matt Roher, Director of Food and Beverage, is committed to continual improvement not only for sustainability benefits, but to provide the highest quality for guests. The Resort participates in the James Beard Foundation's sponsored Smart Catch program. The program works directly with seafood consultants for responsible purchasing that includes submission of quarterly invoices to track sourcing. The Resort only uses domestic and sustainable shrimp suppliers, which supports a national initiative to eliminate Asian sourced products. Additionally, all baked goods and desserts are prepared in house without preservatives.

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Many seasonal vegetables and all herbs for all restaurants are harvested from onsite gardens. The Resort works directly with local sources including Canewater Farm, Sea Eagle Seafood and Russo Seafood for grains, grits, meals and seafood. Over the next few years, Matt hopes the Resort can attain Smart Catch's highest level of participation, and also source all beef and port from local purveyors and farmers. Tony Wartko oversees an aeroponics and hydroponics greenhouse, which is a pilot project for future onsite sourcing.

Many strategies are used to minimize course inputs, including spot spraying, hand pulling of weeds, and daily and deliberate timing of turf scouting for pest indicators. The weather is closely monitored and considered when scheduling application of products to optimize effectiveness and reduce runoff.

The Resort's waste minimization system is among the most advanced. Recycling is available for all guests and golfers, and staff follows an advanced protocol to divert impressive amounts of waste from the landfill; neither clubhouse has a trash dumpster. This decreases waste hauling costs, bugs, odor and other nuisances associated with food waste. Prioritizing bulk purchasing decreases container quantity; pre and post-consumer food waste is run through a dehydrator or is composted with vermin culture which significantly reduces volume. The worm castings are applied to flower and herb gardens as soil enhancers. Each clubhouse has a cardboard baler and a machine to "cube" what remains as trash into "bales" for efficient and sanitary disposal. The Resort recently added a plastic baler, an innovative mechanism to advance reuse of the commodity. Glass, paper, plastic, coffee, pre-consumer food waste, aluminum, batteries, light bulbs, grass clippings, landscape trimmings, fryer oil, unused bar soap, and pallets are reused or recycled. The Resort partners with the SC Dept of Natural Resources to collect all oyster shells and replant; this program is a cost to the Resort, but the environmental benefits far outweigh the cost, as oysters clean up to 2.5 gallons of water per hour which enhances fish habitat and protect the shoreline. Most recently, the resort began recycling tennis balls; in 2018, approximately 240 balls (30lb) were diverted from the landfill. Extensive, bi-lingual signage is posted in all areas to maximize employee engagement and procedure compliance. Projects in development include glass crushing for reuse and increasing the worm herd for increased waste processing/minimization success.

Community

The Sea Pines Resort is the premier attraction on Hilton Head Island with its signature red and white striped lighthouse. As the Resort is seen by millions through international media coverage of the RBC Heritage golf tournament, it is also viewed as a leader in the local community.

While the Resort caters to providing high value experiences for its guests, it also prioritizes its relationship with the residents of the shared geographic boundaries of the Sea Pines Plantation and the Town of Hilton Head Island. Resort representatives serve in many civic groups and on committees within the Town of Hilton Head Island's government structure. The Resort

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hosts six Junior Golf events, the Ernie Els Autism Benefit, the Junior Heritage, and more to support and advance the game of golf and build community. There are plans to integrate sustainability education into more events hosted at the facility, highlighting via “show and tell” of initiatives at the Resort.

The Resort is one of the area’s largest employers, working with several intern programs and hosting international students for seasonal engagement. Orientation for new employees includes education about natural resource management, waste minimization, energy conservation, and encourages all to contribute to the health and wellness of the property and organization. During the onsite verification visit, John Farrell, Director of Golf, stated that “there are increasing expectations for sustainability success as we gain experience, and there is increased integration and participation by staff at all levels of the organization; its exciting to see our progress in recent years.”

Tony Wartko, Director of Facilities, shares his knowledge and experience through many platforms to educate and inspire hospitality industry leaders. He most recently presented at the Hospitality and LEED conference hosted by the US Green Building Council, as well as presenting at the Carolina Recycling Association meeting. The Resort’s efforts were also featured at the Zero Waste workshop at the 2014 Sustainability in Golf Symposium.

Prior to Hurricane Matthew in 2016, the SPROUT (Sea Pines Resort Optimal Utilization Team) working group was active and making great strides with sustainability initiatives. It will start up again in 2019 to include more leadership team memberships, Brook Sentell, Golf Course Superintendent; John Farrell, Director of Golf; and Matt Roher, Director of Food and Beverage. This representation will promote cross-departmental collaboration, increased efficiency, and discovery of additional sustainable solutions.

Sea Pines Resort sponsors many efforts of Experience Green, a local nonprofit organization that promotes sustainability, and was host to its 2013 and 2014 nationally recognized Sustainability in Golf symposium and Zero Waste Workshop with Community Walk on the Atlantic Dunes golf course. Team members participate in many local, regional and national initiatives including the Sustainability Advisory Committee of Hilton Head Island, the James Beard Foundation sponsored Smart Catch program, The First Tee, PGA Junor Golf Association Advisory, and more. The Sea Pines Resort team collaborates with the RBC Heritage PGA TOUR event to integrate sustainability initiatives for the annual event, which received the GEO Certified tournament designation in 2017.

All land use is carefully planned and regulated with the Town of Hilton Head Island standards. The Resort’s golf course properties do not include any historical sites or cultural heritage.

Tony Wartko, Director of Facility Services, gives regular reports at executive meetings on success of initiatives and proposed projects. Periodic employee newsletters include sustainability successes.

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Conclusion

I, Teresa Wade, independent accredited verifier, recommend the Sea Pines Resort to be awarded the GEO Certified® ecolabel. Through the recovery efforts from recent hurricanes, lessons were learned and improvements made, including updated evacuation plans, emergency operations, raising equipment to higher elevations, changing of construction materials for resiliency, and more. All contribute to increased long term sustainability for the facility. The team is committed to continued improvement and devoting even more resources into sustainability efforts, to be even better prepared for future weather events and more. Upon completion of the onsite visit and interviews with leadership from relative departments, I recommend that The Sea Pines Resort's Harbour Town Golf Links, Heron Point and Atlantic Dunes receive full GEO Certification.

- Integrated waste management processes include recycling, composting, commodity mining, vermin culture, oyster replanting, sustainable purchasing and education
- Recovery and increased sustainable practices after three hurricanes in the last three years.
- Decreased water consumption for golf course irrigation and in the clubhouses
- Measurement and data tracking to support the business case for sustainability
- Lagoon systems provide wildlife habitat and beauty, but also link to the Island-wide water recycling system to provide treated effluent water for irrigation
- Strong community leadership through partner efforts to promote sustainability in golf