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SEAWORLD SAN ANTONIO

## SeaWorld Turtle Reef Marsh

San Antonio, Texas



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*The first of its kind in an American zoological facility, an engineered salt marsh naturally enhances a sea turtle life support system.*

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### **SERVICES**

Engineer & Design  
Evolve

**M**ore than an exhibit, SeaWorld San Antonio's Turtle Reef Marsh is an immersive experience that enables guests to have up-close encounters with loggerhead, hawksbill, and green sea turtles, while learning about their habitat, life cycles, vulnerability, and conservation. It also embraces an environmental ethic in the way it operates.

Large aquatic exhibits like Turtle Reef's 126,000-gallon saltwater habitat typically require substantial 'life support systems' that mechanically circulate, filter, and disinfect the water. While they provide excellent water quality, these systems require significant energy and cost to build and operate. For Turtle Reef, SeaWorld sought a solution that would reduce the demand on the life support system while also adding ecological benefits.

Working alongside Sea World scientists, Biohabitats and the engineers at TJP developed a nature-based solution: a 2,200-square-foot engineered salt marsh filtration system. Densely planted with *Spartina alterniflora*, a marsh grass commonly found in the South, the marsh wraps around a portion of the turtle pool, forming an integral part of both the Turtle Reef experience and its water quality solution. Mimicking the natural function of coastal marsh, the system biologically removes excess nitrogen from water, eliminating the need to do so chemically through the life support system. Biohabitats employed an ecological engineering approach to mimic the tidal action of natural wetlands by intermittently dosing the engineered salt marsh by gravity to allow for periods of inundation and draining. This tidal action, combined with the planted treatment media (gravels), can remove massive quantities of nutrients.