

PEACE AND PLENTY BEACH RESORT

Peace and Plenty Beach Resort Natural Wastewater Treatment

Great Exuma, Bahamas



from top: Subsurface flow constructed wetland immediately after planting; Bioballs and gravel wetland treatment media

Replacing an outdated septic system helps beach resort protect coastal water quality while creating a site amenity.

Peace and Plenty Beach Resort, located on Great Exuma, Bahamas, is a small, 16-room beach resort with 10 employees that has a 36-seat restaurant with bar and a laundry. The original septic tank treatment system relied on an injection well for disposal of wastewater. To replace this system while also better protecting beachside water quality, Biohabitats provided engineering design support to John Todd Ecological Design for a natural wastewater treatment system. The new, upgraded system consists of a primary treatment tank, a subsurface flow constructed wetland planted with native vegetation, a recirculating sand filter, and subsurface

land application to slowly disperse and reuse effluent on a portion of the site's landscaping. At 100% occupancy, the estimated wastewater flow is approximately 3,000 gallons per day. The system treats this flow while it protects groundwater and marine water quality by discharging only high quality effluent with low levels of nitrogen and phosphorus through the land application system—a vast improvement over many typical beachside resort wastewater management strategies. It also provides an aesthetic amenity to the resort.

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