

Freshkills Park–North Park Wetland Restoration and Living Shoreline Design

Staten Island, New York



from top: Restored tidal marsh; Coastal grassland at Freshkills

Biohabitats helped New York City’s Department of Parks & Recreation (NYCDPR) restore two acres of coastal wetland habitat within Freshkills Park, a site once known as the world’s largest landfill. This pilot project, which will guide further wetland restoration in the park by demonstrating successful, cost-effective measures for restoring tidal marsh, was

made possible by a grant from the New York Department of State’s Office of Coastal, Local Government & Community Sustainability.

Biohabitats’ transformative salt marsh and coastal habitat restoration design included “living shoreline” stabilization features and ecologically viable wetland habitat and coastal upland grassland. Biohabitats designed the site to function in the face of rising sea levels and other climate change scenarios, and then obtained all of the required permits for construction. Biohabitats also developed the full design and specifications required to put the project out to bid according to NYC protocol.

This pilot project will facilitate future restoration by determining the best methods for tidal marsh restoration around Freshkills Park.

Another element of the project involved a unique experiment. Before restoration construction began, NYCDPR conducted a test to determine if goats would harvest the site’s invasive species, including the dominant common reed (*Phragmites australis*). While the goats did graze on the common reed, the experiment only lasted one month, so the site still required the use of some herbicide in order to clear all invasive plant species before construction began.

A living shoreline, constructed with coir fiber logs, bags of mussels, and trucked-in sand, addresses multiple objectives simultaneously: dissipation of water energy, creation of aquatic habitat, stabilization of the shoreline, and additional erosion control. Native grasses and forbs, such as salt marsh

cordgrass and sea lavender, were then planted to further secure the site and provide additional habitat.

Constructed in the spring of 2012, the restoration at Freshkills Park has already yielded benefits. The park was credited with protecting nearby Staten Island neighborhoods from severe flooding during Hurricane Sandy. The living shoreline and restored tidal marsh will provide ongoing protection for habitat potentially threatened by climate change and sea level rise. It will also improve water quality through greater interface between coastal plants and tidal waters.

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