

Tidal Wetland Mitigation for Cox Creek Dredge Disposal Containment Facility

Baltimore, Maryland



To satisfy Section 404 Clean Water Act wetland permit conditions, the Maryland Port Administration (MPA) was required to mitigate wetland and open water impacts associated with the rejuvenation of the Cox Creek Dredge Disposal Containment Facility. The facility, which is surrounded by water on three sides, was initially created to service the dredging needs

of the Patapsco River and Baltimore's Inner Harbor. The Maryland Environmental Service, working for the MPA, retained Biohabitats as a key design member to assist with the design and construction of a 12-acre tidal estuarine mosaic of open water and emergent marsh.

Biohabitats performed site assessments and designed

This project resulted in 12 acres of restored habitat for fish and migratory bird species, and enhanced relationships between MPA and the regulatory community.

and conducted a monitoring study to evaluate biological, physical and chemical conditions to support the development of restoration plans. Biohabitats assessed tidal hydrology and sediment transport to properly size the tidal connection to the Patapsco River.

Biohabitats also developed a comprehensive invasive species management program to treat and manage common reed (*Phragmites australis*) that threatened to overtake the restored marsh. After preparing design and construction drawings, specifications and a cost estimate, Biohabitats provided permitting assistance and oversaw construction of the marsh, which was implemented as a design-build project. Biohabitats also helped coordinate a volunteer planting effort with the National Aquarium in Baltimore.

Within a month of project completion, Hurricane Isabel hit Baltimore with an eight-foot tidal surge, tearing out goose exclusion fencing, pushing river debris (e.g., tree trunks, boats, etc.) across the site, and dramatically altering the sediment transport conditions. Biohabitats continued the monitoring program and used pre- and post-Isabel physical, chemical and biological monitoring data to identify site problems and remediation solutions. The post-hurricane monitoring revealed the restored marsh to be resilient with limited need for remedial measures.

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