

Beneficial Use of Dredged Material

Deal Island BUDM Thin Layering

KEY METRICS

1.7-2.29 ft

Target elevation

161,306 cy

Dredge volume place

750,600 plugs

Plantings

72.5 acres

Placement area

PROJECT DESCRIPTION

Sustainable Science served as independent environmental monitor and ecological engineer for Maryland's Deal Island WMA Beneficial Use of Dredged Material project, where tidal creek erosion and elevation loss were degrading 70 acres of salt marsh and threatening the impoundment berm. With USACE Baltimore District, Wicomico County, Maryland DNR, and Audubon Mid-Atlantic, the firm collected a year of tide data, surveyed vegetation elevations, and performed settlement analyses to set a 1.8-2.29 ft NAVD88 target platform for Saltmarsh Sparrow nesting habitat. Its tidal ditch plug and straw bale containment details retained fine-grained sediment during placement, and it provided bathymetry, volume tracking, and field evaluation throughout construction. Cottrell Contracting dredged the Lower Wicomico River federal navigation channel and pumped over 160,000 cubic yards through 12 miles of pipeline, completing placement in December 2023. Post-placement drone LiDAR delineated planting zones for over 750,000 marsh plugs installed in 2024-2025, and settlement, tidal, and LiDAR monitoring continues through 2026. Construction cost about \$15 million, fully funded by USACE Navigation O&M.

PROJECT DETAILS

-  Client
Wicomico County Public Works
-  Location
Deal Island, Maryland
-  Dates
2020 - 2026
-  Construction status
Construction complete
-  Construction value
\$15M

SERVICES

Construction monitoring, Thin layer design, Containment design, Regulatory compliance, Settlement monitoring, Tidal monitoring

STAKEHOLDERS

USACE, MDE, Wicomico County, MDNR, Audubon, Cottrell Contracting

HIGHLIGHTS

- Reused ~160,000 cy of dredged material via thin layering
- Enhanced/created 72.5 acres of tidal marsh habitat
- Installed over 750,000 tidal marsh plugs



Thriving marsh, creeks, and pannes



Diverse marsh vegetation from above



Continuous high marsh and tidal creeks



Lush cordgrass edge and high marsh