

THIN-LAYER PLACEMENT PROJECT SHEET



Wetland Restoration at Avalon Marsh

August 2026

Location: Avalon Marsh, New Jersey

Type: Marsh Restoration

Area: 52 Acres

City: Avalon, New Jersey

County: Cape May County, New Jersey

Main Agencies: US Army Corps of Engineers (USACE), National Estuarine Research Reserve

State/Province: New Jersey

Country: USA



Thin layer sediment placement site at Avalon Marsh to restore shoreline edge and fill pannes. Photo taken from NJDEP Office of Dredging and Sediment Technology (Pecchioli 2015).

Background

The Avalon marsh system is located in Avalon Borough and managed by the New Jersey Department of Environmental Protection (NJDEP). These salt marshes are dominated by *Spartina alterniflora* and *Spartina patens* and play a critical role in coastal protection, nutrient cycling, and habitat provision for fish and migratory birds (USDA n.d.). In past years, the region experienced widespread marsh degradation due to sea level rise, reduced sediment supply, mosquito ditching, and increased tidal inundation.

As a result, portions of the Avalon marshes experienced significant interior ponding and vegetation dieback, forming pannes due to elevation loss. The thin layer placement (TLP) project was implemented as part of a regional strategy to enhance marsh resilience by increasing surface elevation and restoring vegetation, while also evaluating TLP effectiveness under mid-Atlantic tidal and sediment conditions (USACE 2015).

Project Description

The Avalon TLP project involved the application of dredged sediment across approximately 52 acres of degraded marsh platform. The project was conducted in two Phases. Sediment was sourced from nearby navigation and lagoon dredging operations and transported hydraulically to the site. Placement was conducted between 2014 and 2016, with an average thickness of approximately 3 to 6 inches on the existing marsh platform, tailored to achieve elevations within the optimal growth range for marsh vegetation (TNC 2021).

In early January 2015, approximately 5,000 CY of predominantly fine-grained sediment was placed on seven acres of marsh (Phase I). Between November 2015 and March

2016, 50,000 cubic yards of fine-grained dredged material were placed on approximately 45 acres of the marsh

(Phase II). Beginning in 2016, monthly monitoring via visual observation was conducted to evaluate vegetation, soil physical properties, nutrient status, and microbial activity (Berkowitz et al. 2017). As a result, vegetations die-offs were observed which led to adaptive management actions to optimize site recovery (TNC and NJDEP 2021).

Findings

Findings from post monitoring efforts showed that while the immediate application of dredged sediment initially increased the overall marsh elevation, the physical properties of the soil was altered, and existing vegetation was temporarily buried. However, the site demonstrated substantial recovery and health improvements in native salt marsh vegetation, primarily *Spartina alterniflora*, which successfully recolonized the newly placed sediment layer. More information regarding the outcome of this effort can be found in VanZomeran et al 2018 and Harris et al 2021.

References

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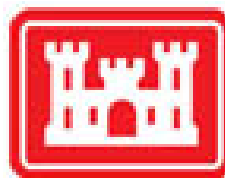
Points of Contact

U.S. Army Corps of Engineers – Philadelphia District
Project Management Office
<https://www.nap.usace.army.mil>
Phone: (215) 656-6500
<https://www.nap.usace.army.mil/Missions/Civil-Works/>

New Jersey Department of Environmental Protection
Joel Pecchioli
Email: joel.pecchioli@dep.nj.gov
Phone: (609) 984-9766

Main Agencies:

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- Damarys Acevedo-Acevedo, PE
Damarys.Acevedo-Acevedo@usace.army.mil, 601-642-4375
- Catherine Thomas, PhD
Catherine.C.Thomas@usace.army.mil, 601-634-3797



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