

THIN-LAYER PLACEMENT PROJECT SHEET



Sachuest Point National Wildlife Refuge

July 2017

Location: Sachuest Point National Wildlife Refuge

Type: Habitat restoration

Area: 11 acres of TLP in 400-acre tidal marsh complex along Rhode Island coast

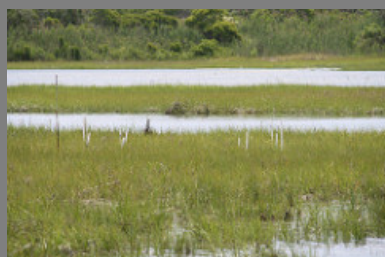
City: Middletown

County: Newport

Main Agencies: USFWS, The Nature Conservancy, Town of Middletown, RI, Save The Bay, Norman Bird Sanctuary, RI Natural History Survey

State/Province: Rhode Island

Country: United States



Credit: Tom Sturm/USFWS



The Providence Journal/Steve Szydlowski

Background

The Sachuest Point National Wildlife Refuge (NWR) is administered by the U.S. Fish and Wildlife Service as part of the Rhode Island National Wildlife Refuge Complex. This 242 acre refuge supports migratory birds as a stopover site and habitat for federally listed bird species such as the saltmarsh sparrow and piping plovers.

The Sachuest Point NWR contains approximately 37 acres saltmarsh around the Maidford River. The Maidford River Saltmarsh Restoration Project encompasses 11 acres of tidal salt marsh where elevation of the marsh prevented proper drainage at low tide. Development, redirection of the Maidford River, and storm impacts have accelerated marsh degradation due to sea level rise and lack of mineral sediment deposition. The marsh is experiencing a relative sea level rise of 0.28 cm y⁻¹, a rate that is almost two times the estimated marsh accretion rates of 0.15 cm y⁻¹. Storm surge and erosion have also led to marsh degradation. The main objective of the Maidford marsh restoration project is to mitigate storm impacts, i.e. flooding, vegetation death, and marsh break up, and enhance marsh habitat for endangered bird species through thin layer placement of dredged material.

Project Description

The addition of sand to 11 acres of tidal marsh occurred in winter 2016 with a project cost of \$644,000. Eleven thousand cubic yards of sand were spread across the marsh using mechanical methods to target marsh elevation ranging between 2.2 and 2.3 NAVD88. This target elevation range is on the high end of the elevation range for *Spartina patens*. This target elevation resulted in thin layer applications with thicknesses ranging from 2.5 cm to 30 cm. The addition of sand to the marsh has improved marsh drainage, alleviated flooding of nearby roads, and improved habitat necessary for

the growth of salt marsh plants critical for Saltmarsh Sparrow nesting. Plugs of marsh grasses were planted in May 2016 in locations where thin layer deposition applications were greater than 10 cm.

Findings

Re-vegetation is slowing occurring in the marsh areas that received sand applications. Extensive monitoring prior to restoration and construction was completed and will continue as the saltmarsh recovers. Monitoring efforts include water level, porewater salinity, marsh elevation, marsh accretion, vegetation species composition, abundance, and community, vegetation height and stem density, invasive species control, nekton species composition and abundance, and water quality.

References

Center for Ecosystem Restoration. 2015. Maidford saltmarsh restoration draft project description. Prepared for USFWS Rhode Island National Wildlife Refuge Complex.

Kukkner, A. 2017. Two projects are under way in R.I. to raise salt marshes threatened by environmental change. Providence Journal. Accessed 22 February 2017. <http://www.providencejournal.com/news/20170115/two-projects-are-under-way-in-ri-to-raise-salt-marshes-threatened-by-environmental-change>.

US Fish and Wildlife Service. Maidford River saltmarsh restoration project- public comments sought. News Release, 3 November 2014.

US Fish and Wildlife Service. Raising up marshes in the race against sea-level rise. US Fish and Wildlife Service Website. Accessed 22 February 2017. <https://www.fws.gov/hurricane/sandy/feature.cfm?id=114878111>.

US Fish and Wildlife Service. Protecting Property & Helping Coastal Wildlife. Hurricane Sandy Recovery Website. Accessed 22 February 2017. <https://www.fws.gov/hurricane/sandy/projects/KeyHabitats.html>.

Point of Contact

Jennifer White, Ph.D.
Hurricane Sandy Resiliency Coordinator
U.S. Fish and Wildlife Service
jennifer_white@fws.gov
401-439-8200



US Army Corps
of Engineers®

Main Agencies:

Funding for this project has been provided by:



**U.S. Fish & Wildlife Service
The Nature Conservancy**

Information on thin layer placement (TLP) case studies has been compiled as part of a DOTS/EWN project to provide a source of information, knowledge, and experience on TLP of sediment or dredged material in aquatic environments. The Thin Layer Placement Website and Map-Portal are funded by the US Army Engineer Research and Development Center (ERDC). The POC for the Thin Layer Placement Website and Map-Portal is:

- Damarys Acevedo-Mackey, PE
Damarys.Acevedo-Mackey@usace.army.mil, 601-634-4845



**US Army Corps
of Engineers®**