

# THIN-LAYER PLACEMENT FACTSHEET



## 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 Szydowski

### 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 depths 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

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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

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### Point of Contact

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**Main Agencies:**

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**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). POCs for the Thin Layer Placement Website and Map-Portal are:

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