

# Thin Layer Placement of Dredged Material – A Web-Based Repository of Resources and Case Studies



## Reference Slides

**Damarys Acevedo-Mackey, PE**

**Trudy J. Estes, Ph.D., PE**

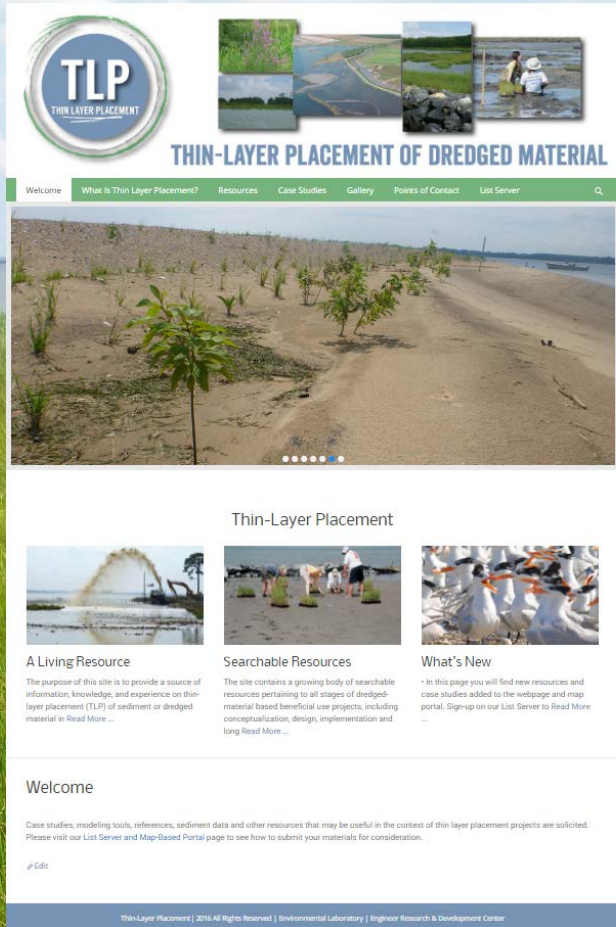
Environmental Laboratory

31 August 2015 at 1:00PM CDT



# TLP Website

<https://tlp.el.erdc.dren.mil/>



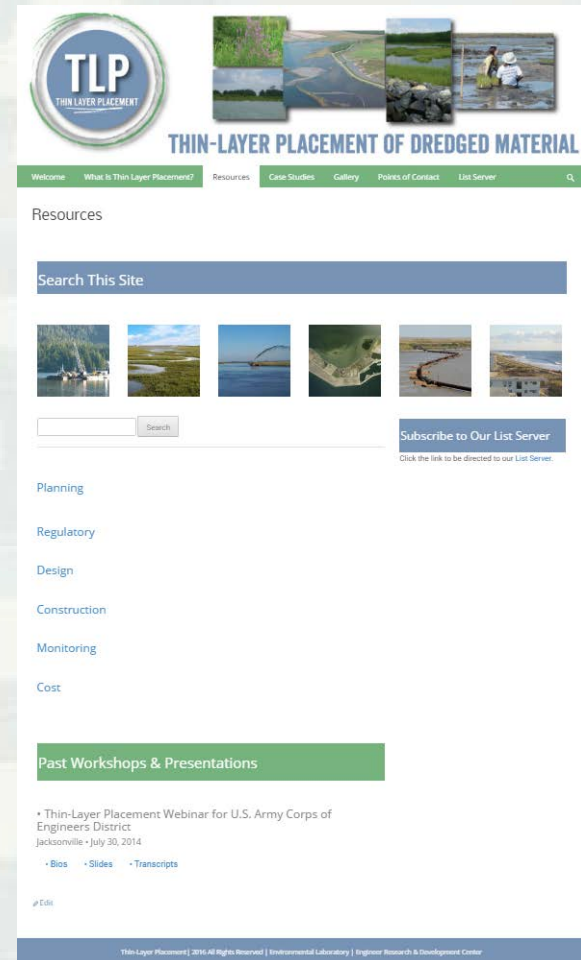
## Current features:

- Relevant literature
- Case studies – fact sheets, photo galleries, map-based database and project documentation/data
- Event tracker
- List server
- Contributor portal



# TLP Website - Resources

- ~200 resources
- Search by relevance
- Resources summaries
  - ▶ How does it apply?
  - ▶ What you will find here?
- Quick category searches
  - ▶ Organized by project stage
- Workshops and presentations



# TLP Website - Resources



## THIN-LAYER PLACEMENT OF DREDGED MATERIAL

Welcome   What Is Thin Layer Placement?   Resources   Case Studies   Gallery   Points of Contact   List Server  

### Wetlands Engineering Handbook

August 21, 2016   TLP   Edit

**Authors:** Hayes, D. F., Olin, T. J., Fischenich, J. C., and Palermo, M. R.

**Year:** 2000

**Reference:** Hayes, D. F., Olin, T. J., Fischenich, J. C., and Palermo, M. R. (2000). "Wetlands Engineering Handbook," ERDC/EL TR-WRP-RE-21, U. S. Army Engineer Research and Development Center, Vicksburg.

**Summary:** This handbook discusses engineering procedures for establishing necessary hydrologic conditions, geotechnical design, and soils handling for site modification, selecting appropriate vegetation and planting schemes, and establishing substrate conditions conducive to the desired functions. Soil handling includes: loosening or compaction to control soil density, protection of the soil structure, and creating layers with scarification techniques. Substrate conditions include: texture, structure, density, compaction, fertility, salinity, pH, and permeability. The document also discusses baseline assessments of existing site conditions, monitoring strategies to determine long-term success, and contracting considerations.

**What You Will Find Here:** Planning p. 1-iii, Site Investigation p. 2-iii, Design p. 3-iii, p. 4-iii, p. 5-iii, p. 6-iii, Construction p. 7-iii, Monitoring p. 8-iii,

**Link:** <http://www.csu.edu/cerc/researchreports/documents/WetlandsEngineeringHandbookUSACE2000.pdf>

■ Construction, Design, Monitoring, Planning   Construction, Design, Monitoring, Planning, Site Investigation

← Previous  
Evaluation of Regional Sediment Management Actions Using Government Shallow Draft Dredges

Next →  
Laguna Madre

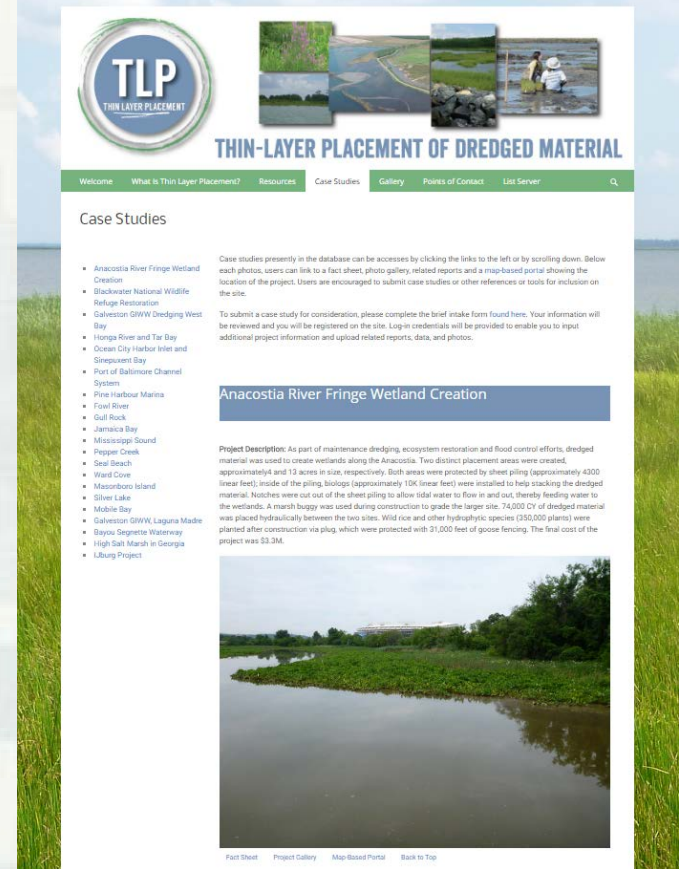
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# TLP Website – Case Studies

- ~21 case studies
- Factsheets
  - ▶ Background
  - ▶ Project Description
  - ▶ Findings
  - ▶ References
  - ▶ Agency/company logo and authorship
- Project Gallery



**More extensive info available in Map-Based Portal...!**



# TLP Website – Case Studies

## Project Summary

**Seal Beach**

Location: Orange County, Seal Beach, CA, US  
 Year: 2016  
 Project Type(s): Marsh nourishment/habitat restoration

**Project Description:** The Seal Beach NWR's cordgrass dominated salt marsh habitat has been adversely affected by subsidence and sea level rise. The main objective of the Seal Beach project is to improve habitat quality and facilitate sea level rise (SLR) adaptation. An 8 to 10 in. thin layer of dredged material will be placed over 10 acres of a low elevation salt marsh in Dec-Jan 2015/2016. Approximately 10,000 to 13,500 CY of clean dredged material from the Main Channel West of Sunset Harbor will be placed on the site via rainbow sprayer, open pipe, or end-of-pipe baffle impingement. The dredged material placement is expected to take from 4 to 6 weeks. Monitoring of vegetation, sediment dynamics, elevation, invertebrates and birds communities, and wetland biogeochemistry is planned pre and post placement.



Fast Street | Project Gallery | Map-Based Portal | Back to Top

## Factsheet

**THIN-LAYER PLACEMENT FACTSHEET**

**Seal Beach National Wildlife Refuge**

August 2016

**Location:** Seal Beach National Wildlife Refuge  
**Type:** Habitat restoration  
**Area:** 8 acres of TLP plus 6 acres of "buffer" in a 965-acre marsh site  
**City:** Seal Beach  
**County:** Orange  
**Main Agencies:** USFWS, OC Parks, CA Dept. of Fish and Wildlife, California Coastal Conservancy, USACE, Naval Weapons Station Seal Beach, CA State Lands Commission, UCLA, USGS, CSULB, Chapman University  
**State/Province:** California  
**Country:** United States

**Background**

The Seal Beach National Wildlife Refuge (NWR) is administered by the U.S. Fish and Wildlife Service as part of the National Wildlife Refuge System and is collocated within the boundaries of Naval Weapons Station Seal Beach. This 965-acre refuge is dominated by tidal salt marsh that supports the third largest breeding population of the federally endangered light-footed Ridgway's rail.

The thin-layer Salt Marsh Sediment Augmentation Pilot Project encompasses an area of 8 acres of low salt marsh in the center of the refuge. It is the first known application of TLP on the west coast of the US (Coastal Conservancy 2014). The site's cordgrass-dominated salt marsh habitat has been adversely affected by subsidence, sea level rise, and alteration of natural sediment inputs. The site is experiencing a relative sea level rise (SLR) of 6.23 mm/yr, a rate three times higher than that of similar southern California marshes not affected by subsidence. The main objective of the project is to improve habitat quality by raising the marsh elevation and improving cordgrass heights, and to determine the effectiveness of TLP as a regional SLR adaptation strategy.

**Project Description**



A 10 inch (plus/minus and average of 2 inches), thin layer of dredged material was placed over 8 acres of low elevation salt marsh from Dec 2015 to Mar 2016. This site has the lowest mean elevation (1.34 m relative to NAVD88) and mean elevation relative to MHW (0.01 m relative to NAVD88) of 8 CA marshes where survey-grade elevations were conducted by USGS (Tatekawa et al. 2015). Approximately 17,000 CY of clean dredged material from the Main Channel West of Sunset/Huntington Harbour was placed on the site via rainbow sprayer, and end-of-pipe baffle impingement. A hay bale barrier and a 6-acre vegetated buffer was maintained between the TLP site and adjacent channels in order to reduce

Engineer Research and Development Center  
 Dredging Operations Technical Support Program

ERDC/EEL XXX-F-09-XXX  
 August 2016

## Gallery


Seal Beach

✎ Edit

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Funding for this project has been provided by:



U.S. Fish & Wildlife Service - 2015 Cooperative Recovery Initiative Grant  
 California Coastal Conservancy Grant  
 Orange County, OC Parks - Sediment and Application Contract  
 California Department of Fish and Wildlife - Greenhouse Gas Reduction Program  
 U.S. Army Corps of Engineers - Ecosystem Management & Restoration Research Program

