



# In-Situ BU of Contaminated Sediments: Leveraging Dredged Sediment for Enhancing Aquatic Habitats

## Dredging Operations Environmental Research (DOER) Program

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

### Focus Area

Risk Management

### Problem



*Rendering of nearshore wetland habitat covering contaminated sediment.*

USACE needs locations for beneficial use (BU) of clean dredged material. Impacted but remediated aquatic sites require additional restoration for ecological functions to be restored. In water sediment remediation sites (whether marine or fresh water, conducted by various agencies under various authorities) typically result in a capped area or a physically stabilized (via in-situ stabilization -ISS) area that contains any residual contaminants. These capped and stabilized areas do not support adequate habitat functions since the benthic environment has been degraded, first by chemical contamination and then by active remediation (in-situ stabilization results in a hardened bottom that does not support a benthic ecosystem). Clean dredged material can be used beneficially as the basis to restore the aquatic ecosystem on top of the remediated area. Habitat Uplift is one term used to describe this approach.

### Study Description

The PIs will work with USACE Districts and state and federal agencies (e.g., States, USEPA GLNPO, etc.) to identify one or more sites where the approach can be applied. Ideal project sites are those where remediation is complete, using in-situ stabilization or capping, and where additional dredged material can be used to create new habitat and improve existing habitat conditions by placing clean dredged material over the remediated area. Specific activities would include identifying suitable site(s) for habitat uplift; establishing options for habitat uplift; aligning projects with stakeholders and regulatory agencies; and develop a 60% design.

### Products

In FY24 the PDT drafted a journal article titled "Identification of Beneficial Use of Sediment and Habitat Restoration Needs at Contaminated Great Lakes Coastal Areas." The article is being submitted for publication in the WEDA Journal of Dredging. The PDT held several virtual outreach meetings with agency and stakeholder personnel. A site was selected for the development of a conceptual site model. A site visit is planned for April/May 2025. In June 2025 the PDT will present a paper on the project at WODCON. A technical report is planned for FY26.



*Balancing operational and environmental initiatives and meeting complex challenges of dredging and dredged material placement in support of the navigation mission.*

Burton Suedel

ERDC Environmental Laboratory • Burton.Suedel@usace.army.mil

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### Summary

This project will address the USACE 70/30 BU goal by providing systematic, large-scale opportunities for BU of dredged material. Simultaneously, this project will support aquatic ecosystem restoration and navigation missions. Of note is that many sediment remediation projects are located near urban areas where aquatic and wetland habitat is scarce, and dredging is imperative for maintaining harbor functions. Marrying habitat restoration with dredged material will help support both these USACE missions. Identifying and demonstrating in-water BU will help support cost effective dredged material management. This project will support ecosystem restoration while building relationships and opportunities across agencies, which will in turn expand future options for interagency collaborations and BU.

### Research Products

Product Type	Product Title
Conference Presentation	Presented "Identification of Beneficial Use of Sediment and Habitat Restoration Needs at Contaminated Great Lakes Coastal Areas" at the Battelle Contaminated Sediments Conference in Jan 2025 in Tampa, FL.



*Balancing operational and environmental initiatives and meeting complex challenges of dredging and dredged material placement in support of the navigation mission.*

