Weight of Evidence Process for Environmental Assessments

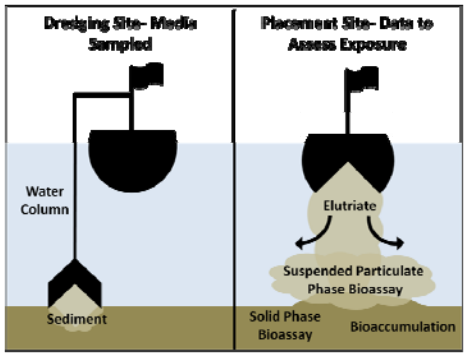
Dredging Operations Environmental Research Program (DOER)

U.S. ARMY CORPS OF ENGINEERS BUILDING STRONG®

Problem

The USACE currently lacks guidance for dredged material evaluations that contain multiple lines of divergent data. The lack of such guidance in many situations restricts our ability to effectively communicate actual risks of dredging and placement activities. Research associated with the Weight-of-Evidence (WOE) approach will develop products that apply and communicate how WOE can be successfully applied to real-world case studies.

Study Description



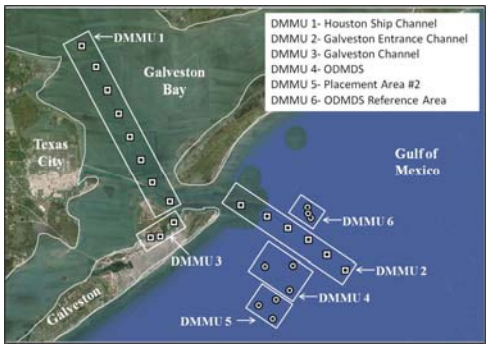
A series of case studies are being developed to demonstrate how WOE can be applied to dredged material evaluations. One approach is to obtain existing data on projects and to reinterpret these data in a WOE context. Another approach is to identify ongoing projects where WOE principles can be applied to guide ongoing sediment management decisions. A key element in the documentation of the case studies is communicating the essential elements of the WOE process, including identifying and documenting how multiple lines of evidence (LOE) can be combined into a WOE synthesis and subsequently used to help assess and manage dredged material. These WOE background materials and considerations will be presented in the products generated for this research.

Products

The goal of the proposed research is to advance a process for assessing multiple LOEs and managing dredged material by using a WOE approach. A WOE primer tech note will introduce the topic to USACE district staff, and a series of case studies will be published in Tech Notes and journal articles illustrating the viability of the approach for assessing and managing risks of dredged material.

Summary

Developing WOE case study examples using real-world dredged material project data will benefit managers by providing a defensible, quantifiable means for supporting decisions that will improve the execution of dredging and placement. This may be especially helpful on controversial projects involving, for example, slightly contaminated sediments and may improve communications with resource agencies, local port authorities, states, and other entities, and increase the Corps' credibility with agencies embracing data-driven risk management techniques.



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

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