Risk Informed Management Approach for Evaluating Potential Dredging Related Effects on Sensitive Habitats

Dredging Operations Environmental Research (DOER) Program

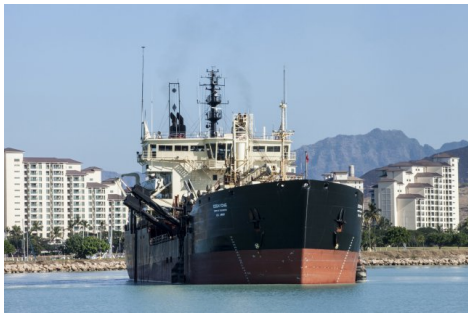
U.S. ARMY CORPS OF ENGINEERS BUILDING STRONG®

Focus Area

Risk Management

Problem

The proposed research will enhance dredging and placement project delivery efficiency and effectiveness, as well as meaningful protection of sensitive aquatic species using sound science within a risk-based approach. In addition, this research will provide enhanced capabilities to advance restoration projects located near coral reef and SAV habitats where the restoration project itself may impact existing reefs or SAV beds, or where the restoration project is aimed at restoring SAV. The results of this research will allow USACE districts to quickly ascertain the expected effects of a dredge or placement project given the species found within and near the project's vicinity and the project conditions, including sediment characteristics, hydrodynamic conditions, and other variables, as appropriate.



The trailing suction hopper dredge Essayons is used by POH to keep Federal navigation channels open in Hawaii ports.

Study Description

This research will develop and apply in practice a risk-informed management approach for evaluating dredging effects on sensitive habitats via the following tasks: 1) conduct a literature review that examines the potential effects of sediments suspended during dredging operations on sensitive habitats, including corals and SAV; 2) Using the information obtained and gaps identified from the literature review, develop a risk-based approach for assessing and managing dredging and placement effects on sensitive habitats; 3) apply draft approach to a case study where concerns regarding dredging and/or placement-related impacts on corals are adversely affecting the restoration and dredging programs (e.g., POH); 4) incorporate findings and apply refined approach to second case study in a separately distinct geographic region (e.g., SAJ) with similar concerns, demonstrating the utility of the tool in practice. An optional fifth task would incorporate the findings and fully developed risk-based approach developed in Tasks 1-4 to help restore sensitive habitat using innovative techniques where sensitive species (e.g., seagrasses) are potentially impacted by dredging activities.

Products

The primary product of this research will be a risk-informed approach that helps USACE Districts manage the effects of sediments resuspended during dredging and placement activities on sensitive habitats, including corals and SAV. In addition to the structured risk-based approach, there will be a number of Technical Notes, Reports and Journal Articles describing various components of this research.

Summary

The project will develop and apply in practice a risk-informed management approach for evaluating dredging and placement effects on sensitive habitats. This approach will more completely inform appropriate risk management strategies, thus more efficiently managing and communicating these risks to stakeholders and regulators.

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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