Focus Area

Dredged Material Management - DMM

Problem

Expanded beneficial use of dredged materials is limited largely by uncertainty about the potential success and engineering techniques available to create successful conditions. Historical reports have produced useful reports, but these results need reconfirmation and more readily available distribution in order to improve utilization.

Study Description

This study will focus on identification of current capabilities for beneficial use of dredged materials and expected benefits of a machine learning method for identifying dredge material benefits. The study will have 3 primary objectives: Identify the capabilities and availability of data in the OpenGround Cloud library, 2) Training of decision tree machine learning model based on OpenGround Cloud database, 3) Drafting of workflow for creation of future machine learning tools.

Products

Machine Learning Workflow (Q2 FY26) – Workflow for creating machine learning models using OpenGround Cloud

Technical Note (Q4 FY26) – Detailed note on the capabilities of the machine learning model

Summary

A detailed method for predicting and recommend beneficial uses of dredged material will guide future utilization to meet USACE beneficial use goals. This research topic will identify the capabilities of currently available dredge material databases, test those capabilities with a decision tree machine learning model, and draft a workflow for the creation of future machine learning tools. This research topic will increase USACE understanding of the utilization of dredge material and the appropriateness for machine learning models to assist in decision making.

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