# Quantifying placement impacts to sensitive and T&E species

Dredging Operations Environmental Research (DOER) Program

U.S. ARMY CORPS OF ENGINEERS BUILDING STRONG®

## Focus Area

Environmental Resource Management

## Problem

A nationwide barrier to expansion of innovative placement of beneficial material is the perceived risk to local Sensitive, Threatened or Endangered Species (TES) and associated habitat. Often, appropriate data are not available to evaluate risk, leading state and resource regulators to rely on scientific intuition and conjecture, then proceed with the cautionary principal. This delays and limits USACE ability to expand on innovative placement projects and reduces USACE progress to meeting the 70% Beneficial Use goal. We propose to evaluate potential upcoming in-water placement and thin layer placement projects through an inventory analysis to identify candidates for a targeted experiment quantifying placement impact to local TES (flora/fauna) or habitats of concern.

## Study Description

To provide empirical data on the impacts of in-water placement on selected sensitive and TES, we are using a three-part approach.

1. ***In situ* placement impact study, James River VA.** ERDC will conduct a Before-After Control-Impact (BACI) study on fish and benthic invertebrates focused on a placement area within the James River. We will observe and quantify impacts to fish species and collect benthic invertebrates. The “After” samples will be taken three and ten weeks after placement is completed. This will help determine both impacts and recovery rates. This study will be replicated a second year and results from will be integrated into a journal article.

2. ***In situ* mussel survival study in Mississippi river.** ERDC and the MVP will work collaboratively to determine whether an in-water placement effort (likely in Pool 10, UMR) is feasible for assessing the impacts to threatened mussels and their habitat.

3. **Lab experiments.** We propose to conduct an experiment that will test the survival of blue crabs buried at various sediment placement depths and deposition rates. This mesocosm study will be conducted at the Rice River Center, VA. The depths will mimic dredged material placement conditions that commonly occur throughout the Chesapeake Bay.

## Products

Journal articles, technical reports and webinars will be forthcoming in outyears.

## Summary

The main objectives of this research task are to provide empirical data on the impacts, or lack thereof, of in-water placement on selected sensitive and T&E Species and to provide those data to USACE districts to help alleviate concern by resource managers.

*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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**Research Products**

| Product Type | Product Title |
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