



# Microplastics in Dredged Materials

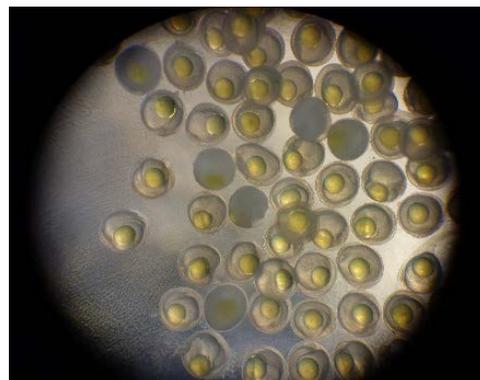
## Dredging Operations Environmental Research (DOER) Program

U.S. ARMY CORPS OF ENGINEERS

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### Problem

Microplastics are increasingly being found in water bodies as a result of widespread use and waste practices. The USACE has observed microplastics in sediments recently collected from Federal navigation channels in New England we routinely dredge. Despite increasing evidence correlating the increase of microplastics being harmful to aquatic life, there is a lack of understanding of the magnitude of the problem from a dredging perspective. A cost and time-effective analytical method is also lacking for detecting microplastics in complex matrices and the USACE and the ERDC need to develop this capability in-house to confirm and validate the nature of the microplastics problem in dredged material. Microplastics may be present in shoaled material routinely dredged by the USACE. However, whether the presence of microplastics may be harmful to aquatic species occurring in ports, harbors, and navigation channels is currently unknown.



### Study Description

The objectives of this research task are to: 1) perform a literature review of recently published studies to better understand the current science on the fate and effects of microplastics in the aquatic environment; 2) develop an in-house capability to detect and quantify microplastics in sediments collected from U.S. waterways; 3) collaborate with Federal partners (especially NOAA and USGS) to leverage funding and microplastics data. These objectives will improve our understanding of microplastic presence in sediments which are growing in importance according to USACE Districts. These findings will help direct future dredging practices at Corps Districts.

### Products

This project will provide a literature review of the available studies to more completely understand the effects of microplastics in dredged material. The project will also develop scientific data for assessing the effects of microplastics so that this stressor can be effectively managed in practice by Corps Districts who might be subject to dredging restrictions in the future. These findings will help direct future dredging practices at Corps Districts.

### Summary

This project will provide a literature review of the available studies to understand the current science on the effects of microplastics in the aquatic environment. The project will assess the presence of microplastics in dredging project sediments and develop techniques to detect and quantify microplastics in sediments so the severity of the problem in existing dredged material can be assessed. Understanding the nature and extent and potential impacts of microplastics in dredged material will allow USACE Districts to apply this knowledge to dredging projects where microplastics are a concern. The USACE dredges approximately 300 million cubic yards of sediment annually so this research has significant potential to be useful to multiple Corps Districts, thereby providing information that can be used as part of ongoing dredging activities.



*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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