



Field Validation of Chronic Sublethal Dredged Material Toxicity Tests

Dredging Operations Environmental Research (DOER) Program

U.S. ARMY CORPS OF ENGINEERS

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Problem

Current regulatory requirements governing the disposal of dredged material in the ocean require the USACE and USEPA to evaluate the potential for unacceptable long-term or chronic environmental effects. As a consequence of this requirement the USACE has invested significant resources in the development of two test protocols (i.e. 28-day chronic sublethal tests with the marine polychaete worm *N. arenaceodentata* and the estuarine amphipod, *L. plumulosus*) for the evaluation of longer-term sublethal effects. Prior to regulatory implementation it is incumbent on the USACE to demonstrate the consistency and quality of predictions these test provide and establish whether or not results from standard 10-day acute lethality tests are sufficiently protective of chronic sublethal effects observed in the field.

Study Description



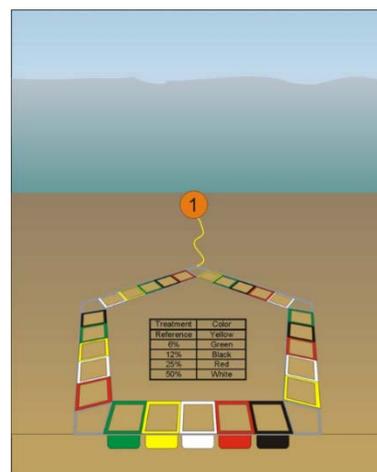
This one year effort will disseminate results and findings from a multi-year field validation study evaluating efficacy of standard 10 day acute amphipod toxicity tests and more recently developed 28 day chronic sublethal, laboratory-based, sediment toxicity tests in predicting observed effects in the field. Although results of the study (conducted between 2002 and 2006 under a Broad Agency Agreement) were previously summarized in a technical report and used as the basis to finalize current test protocols for establishing suitability of material for Ocean disposal under MPRSA, study results were never disseminated more broadly or published in the peer reviewed literature. Publication in the peer reviewed literature will provide broad dissemination of the study findings to the technical and scientific community and establish the technical basis for defense against any potential future technical or legal challenges.

Products

Results of the four year field validation study will be summarized in a manuscript entitled, "Results of a multi-year field validation study evaluating 28-day chronic sediment toxicity tests with the polychaete worm, *N. arenaceodentata* and the amphipod *L. plumulosus*" to be submitted to a scientific journal for subsequent publication.

Summary

Goal of this project is to more broadly disseminate results of a multiyear field validation study through publication of the study's findings in the peer reviewed literature.



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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