

Engineering With Nature Project Fact Sheet



Title

21st Avenue West Living Shoreline (Duluth/Superior Harbor)

Background

The USACE Detroit District has initiated a pilot project for the restoration of shoreline habitat in the Duluth/Superior Harbor Great Lakes Area of Concern (AOC) that includes the beneficial use of navigation channel dredged material. The goal of the habitat restoration is to remove beneficial use impairments from the St. Louis River/Great Lakes AOC.

Objectives

The objective of this project is to identify and develop low-cost, shallow-water dredged material placement methods, utilizing both engineered and natural processes. These methods will maximize the habitat value of the dredged material used for AOC habitat restoration projects. Finding cost-effective approaches for material handling that achieve the desired habitat is critical for development of future shoreline habitat restoration projects in the Great Lakes.



Approach

A pilot-scale demonstration project will be conducted at the study site over a three-year period, beginning in August 2013. This project will evaluate alternative engineering approaches to achieve a variety of habitats that promote colonization by desired submerged and emergent aquatic plants, macroinvertebrates, and fish species. Currents at the study site are being analyzed so that their natural circulation can be used to determine optimal placement of sediment to promote creation of a diverse shoreline habitat using natural sediment transport processes.

Outcomes

Cost-effective engineering methods for shallow-water placement of dredged material that maximize habitat value will be identified for future habitat restoration projects. A shallow-water placement/estuary hydraulic model is being developed and validated in conjunction with this project. The model can be adapted and applied to other habitat restoration projects in the St. Louis River Estuary AOC and to other habitat restoration projects in the Great Lakes. The pilot demonstration project will be conducted in the FY13-FY15 timeframe to coincide with final design of the full-scale project scheduled to begin in FY16.

Point of Contact: Joe Kreitinger, Ph.D.
Joseph.P.Kreitinger@usace.army.mil; 607-266-0217