



US Army Corps
of Engineers®

Niagara River Benthos Sampling Toxics Area of Concern



Figure 1: Sites throughout the study area.

Project Location: The Niagara River is a 37-mile river connecting Lake Erie to Lake Ontario and has been designated a binational Area of Concern (AOC). The U.S portion of the Niagara River is located in Erie and Niagara counties of western New York and extends from Smokes Creek near the southern end of the Buffalo Harbor (Lake Erie), north to the mouth at Old Fort Niagara at Lake Ontario. Seven major tributaries feed the upper Niagara River from the eastern New York State including (from south to north) Smokes Creek, Buffalo River, Two Mile Creek, Scajaquada Creek, Tonawanda Creek, Cayuga Creek, and Gill Creek.

Description of Problem: The physical characteristics of this portion of the river have been significantly altered over the last century by development and industry.

Chemical contamination includes polychlorinated biphenyls, mirex, chlordane, polycyclic aromatic hydrocarbons, dioxin and other contaminants. Combined wastewater and storm water systems in the cities of Buffalo and Niagara Falls discharge during rainfall events. The resulting contamination has resulted in a Beneficial Use Impairment associated with degradation of benthos for the Niagara River and its tributaries.

Project Description: This multi-year effort incorporates multiple lines of evidence and ecological risk assessment to characterize the risk posed by contaminants in sediment to the aquatic environment. Techniques will include physical and chemical characterization of sediments found in the main stem and tributaries of the Niagara River. This project will also provide GIS mapping of sediments located in the Niagara River and an assessment of the benthic community in the river. These actions supplement the existing screening criteria for sediment analysis.

The 2020 phase of the project also included data collection and analysis within the Erie Basin Marina and the Black Rock Channel. The 2021 phase of the project included final analysis of the data and project closeout.

Partners and Collaborations: New York State Department of Environmental Conservation (DEC), United States Geological Survey (USGS), City of Buffalo

Project Benefits: The project will provide achievable targets for BUI removal from the Niagara River AOC and locations where efforts can be focused to ensure maximum return on investment. In addition, the use of best available science (chemical characterization, and measured toxicity, and benthic impacts due to existing sediment) will provide the Federal Government and partners a way to prioritize ecosystem management actions in the Niagara

River Area of Concern.

Project Status: Year 2 sediment sampling was completed in September 2018. Evaluation and risk assessment of sediment was undertaken FY19-FY21

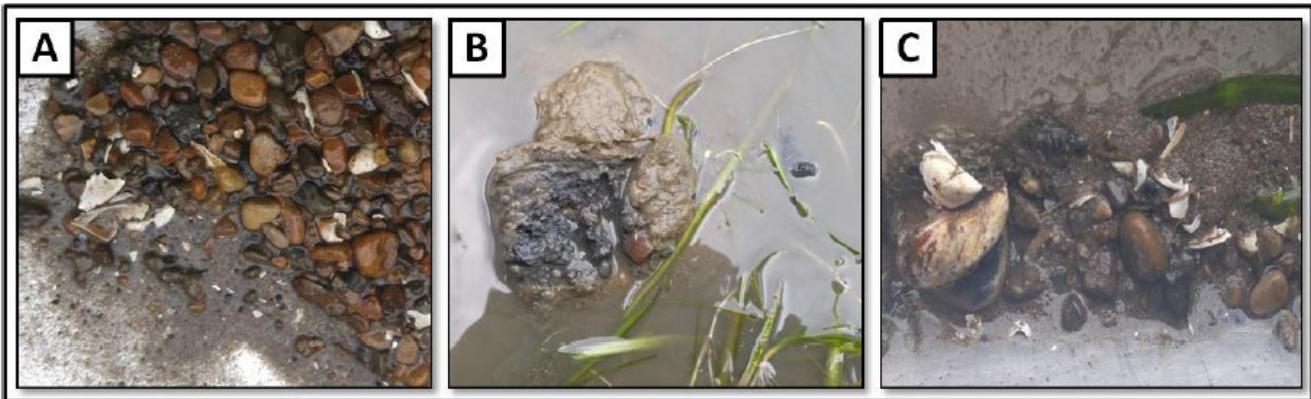


Figure 2: Examples of grab sediment samples. A) typical coarse-grained sediment, B) fine grained muddy sediment and C) muddy sediment with gravel

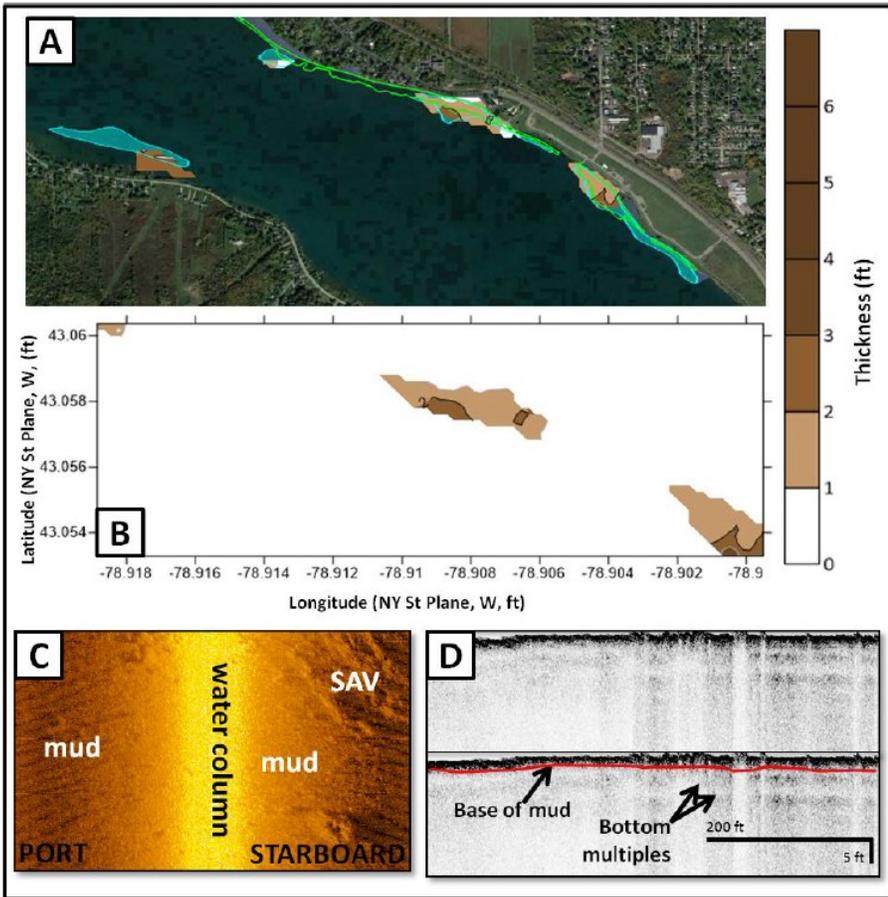


Figure 3: Results of sediment analysis for one study area.

Measure of Progress	Project Output
1.1.2 Area of Concern Beneficial Use Impairments Removed (cumulative)	1
2.2.2 Number of tributary miles protected by GLRI-funded projects	14 miles

Project Milestones	
QAPP developed	JUNE 2018 (A)
Sediment evaluation	MAY 2018 (A)
Year 2 Sampling	SEP 2018 (A)
Year 3 Sampling	AUG 2020 (A)
Project Report Compilation	AUG 2020-MAR 2022
Project Closeout	AUG 2022

Estimated Project Costs	
Federal	\$1,970,000
Non-Federal	\$0
Total	\$1,970,000

Project Budget	
FY 2018	\$750,000
FY 2019	\$160,000
FY 2020 (Niagara River)	\$80,000
FY2020 (Erie Basin Marina)	\$300,000
FY2020 (Black Rock)	\$500,000
FY2021	\$90,000
FY2022	\$90,000

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