

# ECOLOGICAL RISK ASSESSMENT OF METALS IN SMALL CRAFT HARBOUR SEDIMENTS IN NOVA SCOTIA, CANADA



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***This study assesses the potential ecological risk posed by sediment metal contaminants in 31 small craft harbours (SCHs) in Nova Scotia. This can in turn assist harbour managers in evaluating quality and potential risk for various aquatic sites.***

## **APPROACH:**

Data on SCH sediment metal concentrations was collected from various marine sediment sampling reports. Sample collection, preparation, and analyses were conducted in accordance with Environment Canada's Guidance Document on Collection and Preparation of Sediments for Physicochemical Characterization and Biological Testing. This paper particularly focuses on the effects of As, Cd, Cr, Cu, Hg, Ni, Pb and Z.

## **MAIN FINDINGS:**

- Most SCHs exhibit low ecological risk from sediment metal concentrations, with the exception of two harbours (Clarks Harbour and Canso Harbour).
- Risks associated with Cd and Hg were found to be higher in Nova Scotia SCHs than the other metals examined in this study.
- Overall, SCHs sediments in Nova Scotia averaged a 9-10% probability of toxicity.
- Most SCHs were unpolluted to moderately polluted by metals with low ecological risk.