

DECIDING WHEN TO INTERVENE

Data Interpretation Tools for Making Sediment Management Decisions Beyond Source Control

Based on a Workshop to Evaluate Data Interpretation Tools used to Make Sediment Management Decisions held at the Great Lakes Institute for Environmental Research at the University of Windsor on December 1-2, 1998

Prepared by: Gail Krantzberg, John Hartig, Lisa Maynard, Kelly Burch, and Carol Ancheta
Sediment Priority Action Committee
Great Lakes Water Quality Board

1999

TABLE OF CONTENTS

[*List of Tables and Figures*](#)

[*Preface*](#)

I. [Executive Summary](#)

II. [Introduction](#)

III. [Synthesis and Findings](#)

The Imperative: Restoring Beneficial Uses
How to Best Interpret the Data

IV. [Concluding Remarks and Recommendations](#)

V. [Literature Cited](#)

VI. Appendices:

[Appendix 1](#) Workshop Format and Agenda

[Appendix 2](#) List of Workshop Participants

[Appendix 3](#) Sediment Assessment and Remediation: Ontario's Approach by Rein Jaagumagi and Deo Persaud

[Appendix 4](#) Thunder Bay Creosote Cleanup: A Case Study in the Application of Ontario's Approach to Sediment Assessment and Remediation by Rein Jaagumagi and Donna Bedard

[Appendix 5](#) Decision-Making for Sediment: Numeric Biological Guidelines by Trefor Reynoldson

[Appendix 6](#) Ecological Risk Assessment Applied in the Saginaw River/Saginaw Bay by Lisa Williams

[Appendix 7](#) The Application of Human Health Risk Assessment Techniques at Sediment Contaminated Sites under the Superfund Program by Marian Olsen

[Appendix 8](#) U.S. Army Corps of Engineers Dredged Material Evaluation and Assessment Procedures by Robert Engler; and Testing and Evaluation Procedures for Great Lakes Dredged Material Evaluations Developed by the U.S. Environmental Protection Agency and the U.S. Corps of Engineers by Jan Miller

[Appendix 9](#) 1994/1995 St. Clair River Sediment Program Defining Spatial Extent and Environmental Conditions by Tim Moran and Scott Munro

- [Appendix 10](#) Trenton Channel/Detroit River Sediment Assessment and Remediation by Russell Kreis
- [Appendix 11](#) A Framework for Interpreting Narrative Sediment Quality Standards by Jim Keating
- [Appendix 12](#) Ecological Risk Assessment for the Contaminated Harbor Sediment Adjacent to the Ashland, Wisconsin Lakefront Property - Kreher Park by Bob Paulson
- [Appendix 13](#) The SED-TOX Index for the Assessment and Ranking of Sediment Hazard Potential: How is it Useful for Decision-Making? by Manon Bombardier
- [Appendix 14](#) Contaminated Sediment: When is Cleanup Required? The Washington State Approach by Teresa Michelsen
- [Appendix 15](#) Application of Computer Modeling and Biomonitoring in Decision Making for the St. Clair River Area of Concern by John Alexander McCorquodale, Maciej Tomczak, and Gordon Douglass Haffner
- [Appendix 16](#) Report from Breakout Group A
- [Appendix 17](#) Report from Breakout Group B
- [Appendix 18](#) Sediment Priority Action Committee Membership
-

List of Tables and Figures

- Table 1. The interrelationships among sediment management outcome indicators and use impairments as defined in the Great Lakes Water Quality Agreement
- Table 2. A matrix of data interpretation tools and references for making a sediment management decision beyond source control to restore beneficial uses as defined in the Great Lakes Water Quality Agreement
- Table 3. A checklist of key elements to consider in making a sediment management decision beyond source control
- Appendix 3
- Table 1. Provincial Sediment Quality Guidelines for metals and nutrients
- Table 2. Provincial Sediment Quality Guidelines for organic compounds
- Appendix 5
- Table 1. Summary of taxonomic composition of benthic invertebrates at Group 2 reference sites and 12 Cornwall test sites
- Table 2. Summary of sediment quality based on invertebrate community structure, sediment toxicity, and sediment chemistry
- Appendix 6
- Table 1. Components of the Saginaw Natural Resource Damage Assessment Settlement
- Appendix 12
- Table 1. PAH sediment concentrations and related toxicity units at the study sites
- Figure 1. A generalized flowchart which can be used to help make a sediment management decision regarding whether or not to take action beyond source control
- Appendix 3
- Figure 1. Application of Provincial Sediment Quality Guidelines to sediment assessment