



PIANC

EnviCom

Report of WG 8 – January 2006



Biological Assessment Guidance for Dredged Material

INTERNATIONAL NAVIGATION ASSOCIATION

- 1. PREFACE**
 - 1.1 Terms of Reference
 - 1.2 Acknowledgements
 - 1.3 Members of PIANC EnviCom Working Group
- 2. INTRODUCTION**
 - 2.1 Scope
 - 2.2 International Perspective
 - 2.3 The Need for Biological Testing
 - 2.4 A Framework for Biological Assessment of Dredged Material
- 3. DECISION-MAKING FRAMEWORK**
 - 3.1 Framework Overview
 - 3.2 Initial Assessment
 - 3.3 Primary Assessment
 - 3.4 Secondary Assessment

3.5	Conclusions of the Secondary Assessment
3.6	Monitoring
4.	TYPES OF BIOLOGICAL TESTS
4.1	Measuring Exposure and Effects in the Field: Linking the Data to the Sediment
4.2	Measuring Exposure and Effects in the Laboratory: Matching Biological Tests With Exposure Pathways
4.3	Test Exposure Periods and Endpoints
4.4	Histopathology
4.5	Biomarkers of Effect and Exposure
5.	DEVELOPING BIOLOGICAL TESTS FOR REGULATORY USE
5.1	Who Develops Biological Tests ?
5.2	A Framework for Guiding Test Development
5.3	When is a Biological Test Ready to Use in Decision-Making ?
6.	QUALITY ASSURANCE/QUALITY CONTROL
6.1	Establishing Data Quality Objectives
6.2	Ensuring Sample Integrity
6.3	Use of Standard Operating Procedures
6.4	Taxonomic Verification of Test Species Identity
6.5	Test Organism Condition
6.6	Test Performance Conditions
6.7	Modifying Factors
6.8	Sound Data Management Procedures
7.	INTERPRETING THE RESULTS OF BIOLOGICAL TESTS
7.1	Developing Lines of Evidence
7.2	Analyzing Test Data
7.3	Developing Cause-and-Effect Information
7.4	Integrating Lines of Evidence into a Weight-of-Evidence Decision
8.	UNCERTAINTIES AND FUTURE DEVELOPMENTS
8.1	Future Developments
9.	ROLE OF BIOLOGICAL TESTING IN MONITORING
9.1	Design of Monitoring Programs to Determine the Impact of Dredged Material Disposal
10.	CONCLUSIONS
11.	REFERENCES
12.	APPENDIX: CASE STUDIES