BIOMONITORING RETROSPECTIVE:

Fifteen Year Summary for

Maine Rivers and Streams

By

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Dedication

This work is dedicated to the smallest creatures, existing at the edges of our awareness. Through them we glimpse intricate realities other than our own, and we are reminded to stay humble.

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Executive Summary

The following Report provides a summary of the results of biological monitoring of benthic macroinvertebrates in rivers and streams, between 1983 and 1998, in the State of Maine, by the Maine Department of Environmental Protection (MDEP). Part I Chapter 1 is a description of various developmental and implementation aspects of the State's biocriteria program, including development of analytical methods and resulting numeric biocriteria, as well as regulatory and reporting applications of the information. Part I Chapter 2 is a synopsis of biomonitoring activities for other waterbody types (e.g., wetlands, lakes and estuaries) and for specific applications (e.g., assessment of non-point source impacts).

Part II of the Report includes nine chapters, organized by major river basin(s), providing an overview of historical findings, biomonitoring activities and results, current status and planned future activities. Each Basin Chapter has an associated Basin Map and Basin Table that present station location information and biocriteria results. Also provided are eleven case studies that elaborate upon biological and water quality findings and management activities for specific sampling locations, over time.

For most of the State's river basins, biological monitoring has demonstrated significant site-specific improvements in the condition of aquatic life since the early 1980's, as the result of improved point source treatment technologies and management (Case Studies 4 and 7). However, in recent years it has become apparent that significant impairment of aquatic life is occurring as a result of non-point source impacts, particularly in urban streams (Part I Chapter 2; Case Studies 1, 2 and 10). Future priorities for the Biological Monitoring Program include an expanded emphasis on the assessment of non-point source biological impacts, development of periphyton indicators of nutrient, aesthetic and biological impacts, and expanded reliance on spatial data integration and analysis .