

BIOMONITORING RETROSPECTIVE:

Fifteen Year Summary for Maine Rivers and Streams

By

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The Nature Conservancy*

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.

TABLE OF CONTENTS

Dedication	ii
Acknowledgements	x
Authorship and Credits	xi
Executive Summary	xii

Part I

PROGRAM SUMMARY CHAPTERS

CHAPTER 1

BIOLOGICAL MONITORING PROGRAM SYNOPSIS

PREFACE	2
INTRODUCTION AND BACKGROUND	3
Program Synopsis: Development of Biological Criteria	3
Biological Information to Assess Environmental Quality	3
Milestone Experiences	6
COST ESTIMATES AND RESOURCE REQUIREMENTS	10
Numeric Aquatic Life Criteria Development and Program Implementation Costs	11
Annual Monitoring and Program Maintenance Costs	11
USE AND APPLICATIONS	12
Water Quality Classification	12
Monitoring and Assessment	12
Surface Water Ambient Toxics Program Reporting	14
Permitting, Licensing and Compliance Activities	14
Wastewater Discharge Licensing	15
Hydro-electric Project Licensing	15
BIOLOGICAL EFFECTS OF HYDROPOWER IMPOUNDMENT	16

DATA COLLECTION AND ANALYSIS	20
Classification Attainment Evaluation	20
Data Collection Methods	20
Data Analysis Methods	22
Quality Assurance	22
Non-Point Source Screening Tool	23
Data Collection Methods	23
Data Analysis Methods	24
Geographic Information System	24
CHAPTER 2	
RELATED BIOLOGICAL MONITORING ACTIVITIES AND PROGRAMS	25
Preface	26
BIOLOGICAL ASSESSMENT OF NON-POINT SOURCE IMPACTS ON SMALL STREAMS: <i>The Non-Point Source Screening Tool</i>	27
Introduction and Background	27
Purpose	28
Priority Waterbodies	29
Non-Point Source Biomonitoring Activities	30
Case Study 1 <i>Detection of Urban Non-Point Source Impacts, Capisic Brook</i>	31
Case Study 2 <i>Urban Non-point Source Impacts: Percent Watershed Imperviousness and Aquatic Life Classification Attainment</i>	33
BIOLOGICAL ASSESSMENT OF FRESHWATER WETLANDS	37
Introduction and Background	37
The Need for Wetland Bioassessment	37
Wetland Bioassessment Pilot Project	39
Methods	39
Regulatory Context	41
BIOLOGICAL ASSESSMENT OF LAKES	43
Introduction and Background	43
Legislative Considerations	43
Bioassessment Opportunities	45
Bioassessment Pilot Project	45
Current Bioassessment Development	47
Future considerations	48
BIOLOGICAL ASSESSMENT OF THE MARINE AND ESTUARINE BIOLOGICAL COMMUNITY	49

Introduction and Background	49
The Marine Environmental Monitoring Program	50
Marine Biological Assessment	51
Applications of Marine Biological Assessment	52
1 Salmon Pen Aquaculture Monitoring	52
2 Functional Assessments for Maine's Resources	53
Protection Act (NRPA) Permitting	

PART II

RIVER BASIN SUMMARY CHAPTERS	54
CHAPTER 1 ST. JOHN, AROOSTOOK, AND MEDUXNEKEAG	55
Introduction	56
Geography	56
Basin Summary Statistics	57
Overview of Biomonitoring Activities	58
<i>Case Study 3: Suspected Toxic Impacts of Agriculture Dudley Brook</i>	60
CHAPTER 2 MATTAWAMKEAG AND PISCATAQUIS	62
Introduction	63
Geography	63
Basin Summary Statistics	64
Overview of Biomonitoring Activities	65
CHAPTER 3 EAST, WEST AND LOWER PENOBSCOT	68
Introduction	69
Geography	69
Basin Summary Statistics	69
Overview of Biomonitoring Activities	70
Historical Perspective	72
<i>Case Study 4: Long Term Monitoring of Water Quality Improvement- Penobscot River</i>	74
Current Status and Issues	75
Future Needs	76
CHAPTER 4 UPPER AND LOWER KENNEBEC AND DEAD RIVER	77
Introduction	78
Geography	78
Basin Summary Statistics	79
Overview of Biomonitoring Activities	79
Historical Perspective	80
Current Status and Issues	81

Future Needs	82
Case Study 5: <i>Long term monitoring of a point source : East Branch Sebasticook R.</i>	82
CHAPTER 5 UPPER AND LOWER ANDROSCOGGIN	86
Introduction	87
Geography	87
Basin Summary Statistics	87
Overview of Biomonitoring Activities	88
Historical Perspective	89
Case Study 6 <i>Detection of Impacts of Contaminated Groundwater</i>	90
Case Study 7 <i>Adaptive Management Feedback Loop to Reduce Toxicity, Thompson Lake Outlet Stream</i>	90
Current Status and Issues	92
Case Study 8 <i>Expert Judgement Determination of Alteration Due To Natural Causes, Little Androscoggin River</i>	93
Future Needs	94
CHAPTER 6 ST. CROIX AND NORTH COASTAL	95
Introduction	96
Geography	96
Basin Summary Statistics	97
Overview of Biomonitoring Activities	98
CHAPTER 7 SHEEPSCOT	100
Introduction	101
Geography	101
Basin Summary Statistics	102
Overview of Biomonitoring Activities	102
Case Study 9 <i>Natural Variability at a Long-Term Ambient Monitoring Station, Sheepscot River</i>	103
CHAPTER 8 PRESUMPSCOT	108
Introduction	109
Geography	109
Basin Summary Statistics	110
Overview of Biomonitoring Activities	110
Historical Perspective	111
Current Status and Issues	112
Biological Impacts Associated with Human Activities	112
Future Needs	113
Case Study 10 <i>Investigation of Impacts from Multiple Sources of Toxic Contamination, Goosefare Brook</i>	114
Case Study 11 <i>Biocriteria as a TMDL Modeling Endpoint, Presumpscot</i>	118

CHAPTER 9 SACO AND PISCATAQUA	123
Introduction	124
Geography	124
Basin Summary Statistics	125
Overview of Biomonitoring Activities	126

List of Tables

Table 1	Maine's narrative aquatic life and habitat standards for rivers and streams	9
Table 2	Definitions of terms used in Maine's Water Classification law.	9
Table 3	Waters not attaining biological standards affected by hydropower impoundments	19
Table 4	Relative magnitude of potential human impacts to inland waters of Maine	13
Table 5	Every five year rotating basin assessment schedule	14
Table 6	Relationship between watershed imperviousness and aquatic life classification attainment	32
Table 7	Values for water chemistry parameters in Capisic Brook above and below Portland, Maine	36
Table 8	The classification of Maine lakes, Title 38 Section 465-A	44
Table 9	Summary of variables used for the trial lake classification analysis and reference lake selection	46
Table 10	Four suitable phytoplankton metrics	46
Table 11	Scoring for two viable zooplankton metrics	47
Table 12	Maine aquatic life and habitat standards for marine and estuarine waters	51
Table 13	Summary statistics for selected variables for the Sheepscot River at North Whitefield, 1984-1997 and complete biomonitoring dataset	103
Table 14	Values for water chemistry parameters in Goosefare Brook in the vicinity of Exit 5 of the Maine Turnpike in Saco, Maine	115
Table 15	Summary of TSS TMDL Calculations for the Presumpscot River	121

List of Figures

Figure 1	Immature mayfly nymph	4
Figure 2	Freshwater fingernail clams	4
Figure 3	Stonefly nymph	6
Figure 4	Chironomid midge larvae	6
Figure 5	Nets of caddisfly larvae	8
Figure 6	Rock-filled basket	21
Figure 7	Rock-filled riffle bag for sampling streams less than 10 cm deep	21
Figure 8	Remote-retrievable rock-filled cone for sampling non-wadeable rivers	22

Figure 9	Enclosing funnel for cone retrieval	22
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Figure 10	Box plots showing values of the Hilsenhoff Biotic Index for Capisic Brook above and below urbanized areas in Portland, Maine	34
		35
Figure 11	Comparison of differences in community structure in Capisic Brook above and below urbanized areas in Portland, Maine	
Figure 12	Box plots showing values of the variables Richness, EPT and EP for Pattee Brook and Dudley Brook as compared to the distribution of all values for all sites within a given class in the MDEP Biological Monitoring Program database.	61
Figure 13	Box plots showing values for 3 biological community variables from Sta. 84, the Piscataquis River below Guilford, between 1984 and 1990, as compared to the distribution of all values for all sites within a given class in the MDEP Biological Monitoring Program database	67
Figure 14	Box plots showing values for 9 biological community variables from Sta. 129, the Penobscot River below Lincoln Pulp and Paper, between 1974 and 1996, as compared to the distribution of all values for all sites within a given class in the MDEP Biological Monitoring Program database	75
Figure 15	Changes in total abundance values in the East Branch of the Sebasticook River (Station 20) from 1983-1997	84
Figure 16	Changes in richness values in the East Branch of the Sebasticook River from (Station 20) 1983-1997.	84
Figure 17	Sheepscot River at North Whitefield: Annual variability in selected biological community attributes and mean August flows between 1984 and 1997	105
Figure 18a	Variability of selected community structure attributes for the Sheepscot River at North Whitefield, 1984-1997 as compared to variable distributions for four water quality classification clusters.	106
Figure 18b	Variability of selected community structure attributes for the Sheepscot River at North Whitefield, 1984-1997, as compared to variable distributions for four water quality classification clusters	107
Figure 19	Box plots showing values of community structure variables (a.) total abundance; b.) richness; c.) EPT) for the Goosefare Brook at four sites above and below the Turnpike and industrialized areas in Saco. Values are compared to the distribution of all values for all sampling events within a given class in the Maine DEP Biological Monitoring Program database	116
Figure 20	Community structure differences between sites on Goosefare Brook above and below industrial development and the Maine Turnpike in Saco, Maine	117
Figure 21	International Paper Loads Pro-rated to Androscoggin River	121
Figure 22	SDW Loads Pro-rated to Presumpscot River 30Q10	122
List of General Maps		129
	Map 1 River and Stream Biological Monitoring Stations in Maine	130

Map 2 Wetland Biological Monitoring Stations in the Casco Bay Watershed	131
List of Basin Tables	132
1 St. John, Aroostook, and Meduxnekeag	133
2 Mattawamkeag and Piscataquis	136
3 East, West and Lower Penobscot	138
4 Upper and Lower Kennebec and Dead River	142
5 Upper and Lower Androscoggin	146
6 St. Croix and North Coastal	150
7 Sheepscot	152
8 Presumpscot	153
9 Saco and Piscataqua	157
List of Basin Maps	159
.:ArcView Data Coverages and Sources	160
1 St. John, Aroostook, and Meduxnekeag	
2 Mattawamkeag and Piscataquis	
3 East, West and Lower Penobscot	
4 a Upper Kennebec and Dead Rivers	
b Lower Kennebec	
5 Upper and Lower Androscoggin	
6 St. Croix and North Coastal	
7 Sheepscot	
8 Presumpscot	
9 Saco and Piscataqua	
Appendices	171
1 Algorithms for variables used to compute the linear discriminant models	172
2 Interpretation of box plot data	179
3 Aquatic life classification attainment report	180
4 Biological Monitoring Program staff	184
References	186

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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 .