



2000

## NHEP Management Plan 2000

New Hampshire Estuaries Project

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NEW HAMPSHIRE  
ESTUARIES PROJECT

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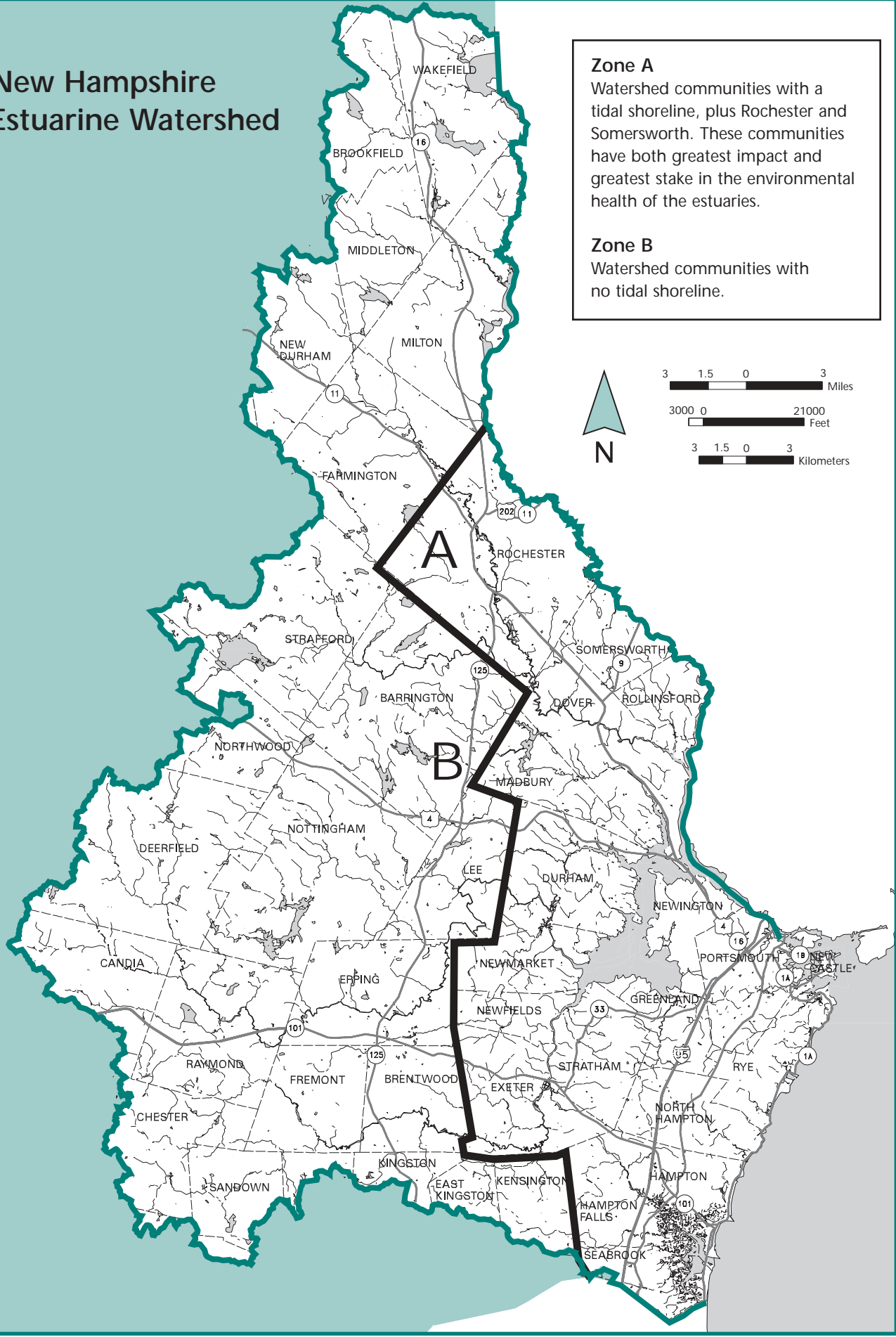
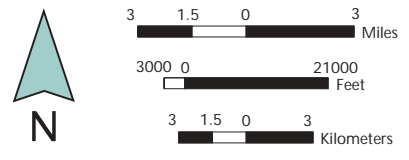
# MANAGEMENT PLAN

2000

# New Hampshire Estuarine Watershed

**Zone A**  
Watershed communities with a tidal shoreline, plus Rochester and Somersworth. These communities have both greatest impact and greatest stake in the environmental health of the estuaries.

**Zone B**  
Watershed communities with no tidal shoreline.



NEW HAMPSHIRE  
ESTUARIES PROJECT

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# MANAGEMENT PLAN



New Hampshire  
Estuaries Project

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2000



# ACKNOWLEDGEMENTS

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*A Technical Characterization of Estuarine and Coastal New Hampshire*, edited by Dr. Stephen H. Jones, Jackson Estuarine Laboratory, University of New Hampshire, 1999 is the source of charts, graphs, and much of the technical information found in this Management Plan.

*Regulation and Management, A Base Program Analysis* authored by Carl Paulsen, 1999, is the source of policy and management information found in this Management Plan.

This Management Plan and more information about the estuaries is available on the New Hampshire Estuaries Project website: [www.state.nh.us/nhep](http://www.state.nh.us/nhep)

For copies of the *Management Plan*, *Technical Characterization*, *Base Programs Analysis*, *State of the Estuaries Report*, and the *Executive Summary for the Management Plan*, contact the N.H. Estuaries Project office in Portsmouth.

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# PREFACE

This Comprehensive Conservation and Management Plan of the New Hampshire Estuaries Project presents a broad framework and specific list of actions to protect and enhance the environmental quality of the estuaries of the State of New Hampshire. It is intended to be a guide for all who use, enjoy, or care about the state's estuarine resources.

The NHEP Management Plan addresses the environmental quality of the entire watershed draining to New Hampshire coastal waters, but focuses action efforts on the lands surrounding the Great Bay and Hampton-Seabrook Estuaries. Due to the national significance of their natural resources, the New Hampshire estuaries were selected for assistance and support from the National Estuaries Program. Although these estuaries are by no means pristine, much progress has already been made in correcting problems. Upgrades to sewage treatment plants, reopened shellfish beds, restoration of degraded salt marshes, increased acreage of permanently protected habitat, and improved planning for future development all indicate the power of partnerships forged at the local level. This Management Plan builds on these improvements and partnerships and focuses on this positive direction.

From its start, the New Hampshire Estuaries Project has aimed for real improvements to the environment. The idea that the only legitimate reason for planning is to prepare for implementation was often mentioned at NHEP meetings. Thus, the planning phase of the project was guided by the principle that enthusiasm for implementation would not be generated by volumes of scientific studies on every environmental issue, but by clear demonstrations of problems and solutions at the local level. The common theme of NHEP work was improvement and protection of estuarine water quality – the foundation of the estuaries' value as wildlife habitat, as a recreational resource, and as a key element to the Seacoast economy. Shellfish were chosen as a tangible, easily understood indicator to measure improvements to water quality.

A diverse group participated in the development of the Plan, with considerable input from the public along the way. The Plan is the result of a three-year, collaborative process that required countless meetings, long discussions, creative thinking, and hard-won compromises. The Action Plans crafted by these volunteers are practical, realistic, and ready for implementation. This document could not have been produced without their patience and dedication.



The Management Plan outlines actions formulated around five themes:

- 1 Water Quality
- 2 Land Use, Development, and Habitat Protection
- 3 Shellfish
- 4 Habitat Restoration
- 5 Public Outreach and Education

Actions are largely intended to either prevent problems, identify and correct problems, or educate and involve specific target audiences. The actions are not presented as activities to be implemented solely by the NHEP; rather, they are intended as a guide for government agencies, recreational users, businesses, educators, and members of the public who have worked, and will continue to work, toward the over-arching goal of a clean, healthy estuarine environment. The Plan includes suggested funding and provisions for monitoring progress over the long term.

This is an ambitious plan. While some actions can be implemented immediately, others require more time. Over the next several years, we will continually evaluate the state of the estuaries, measure progress, and adjust the actions to accommodate current realities. With the enthusiasm and stewardship of all who live near, work on, or simply enjoy the estuaries and their bountiful resources, we will achieve our goal of protecting these priceless resources for generations to come.

The following is a summary of actions that will help us achieve our goal.



# ACTION PLANS

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## WATER QUALITY ACTION PLANS

### Wastewater Treatment Facilities

4-17

- WQ-1 Evaluate Wastewater Treatment Facility impacts on estuarine water quality, and seek practical options at the state level for secondary and tertiary or alternative treatment where appropriate.
- WQ-2 Evaluate the suitability of UV alternatives to chlorine in wastewater post-treatment for the Seacoast communities.
- WQ-3 Prioritize and then upgrade facilities to reduce bacterial pollution from hydraulic overloading of Seacoast wastewater treatment facilities (WWTFs).

### Illicit Connections in Urban Areas

4-26

- WQ-4A Establish on-going training and support for municipal personnel in monitoring storm drainage systems for illicit connections.
- WQ-4B Assist Seacoast communities in completing and maintaining maps of sewer and stormwater drainage infrastructure systems.
- WQ-4C Eliminate illicit connections in Seacoast communities.

### Illegal Direct Discharges

4-33

- WQ-5 Conduct shoreline surveys for pollution sources.
- WQ-6 Promote collaboration of state and local officials (conservation commissions, health officers, building inspectors, et al.) to locate and eliminate illegal discharges into surface waters.
- WQ-7 Provide incentives to fix or eliminate illegal direct discharges such as grey water pipes, failing septic systems, and agricultural runoff.

### Stormwater

4-40

- WQ-8 Research the effectiveness of innovative stormwater treatment technologies for existing urban areas in New Hampshire, and communicate the results.
- WQ-9 Ensure that water quality and quantity impacts from new development or redevelopment are minimized to the maximum extent practical at the planning board stage of development.
- WQ-10 Research the use and effectiveness of the Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire. Revise, publish, and promote the Handbook.





**Permitted Discharges** 4-47

WQ-11 Revise state industrial discharge permit criteria in response to new processing technology, and re-evaluate existing permits.

**Oil Spills** 4-49

WQ-12A Acknowledge and support the oil spill prevention and response activities of the Piscataqua River Cooperative.

WQ-12B Enhance oil spill clean up efforts through pre-deployment infrastructure and development of high-speed current barriers.

**Septic Systems** 4-53

WQ-13 Provide septic system maintenance information directly to shoreline property owners, and to other citizens of the Great Bay and coastal watersheds to help improve water quality.

WQ-14 Encourage the use of innovative alternative technologies for failing septic systems to help improve water quality.

**Air Quality** 4-57

WQ-15 Support efforts to reduce deposition of atmospheric pollutants through eliminating loopholes in current laws, encouraging the construction of more efficient power plants, and encouraging energy conservation.

**Water Quality Funding** 4-59

WQ-16 Find funding sources for key strategies.

**Water Quality Outreach** 4-61

WQ-17 Coordinate public tours of wastewater treatment facilities

WQ-18 Support and coordinate stormwater technical workshops.

WQ-19 Stormwater Awareness: Support and expand stormdrain stenciling programs.

WQ-20 Conduct estuarine field day for municipal officials.

**LAND USE AND HABITAT PROTECTION ACTION PLANS**

**Future Development/Impervious Cover** 5-19

LND-1 Prepare a report of current and future levels of imperviousness for the subwatersheds of the New Hampshire coastal watershed.

LND-2 Implement steps to limit impervious cover and protect streams at the municipal level.

LND-3 Conduct research in coastal NH watersheds to examine the relationship between percent impervious cover and environmental degradation.



- LND-4 Prevent the introduction of untreated stormwater to wetlands by supporting the development of NH Minimum Impact Development Guidelines.
- LND-5 Support the Natural Resource Outreach Coalition (NROC), a municipal decision-maker land-use planning outreach method modeled after the successful University of Connecticut Cooperative Extension “Non-point Education for Municipal Officials” (NEMO) program.

## **Sprawl**

**5-31**

- LND-6 Minimize urban sprawl in coastal watersheds.
- LND-6A Develop a regional pilot partnership to create a smart growth vision among Towns and Regional Planning Commissions in a single estuarine watershed.
- LND-6B Conduct a comprehensive review of the 43 towns within the estuaries and coastal watershed area to determine land-use policies that affect sprawl.
- LND-6C Develop and maintain a comprehensive database or library of new smart growth funding programs.
- LND-6D Develop a science-based handbook and video on the nature, causes, and remedies of sprawl for audiences in the coastal New Hampshire watershed area.
- LND-6E Actively participate and contribute to the development of new smart growth planning tools with particular emphasis on provisions that protect estuarine water quality.
- LND-6F Aggressively assist communities that embrace a strong smart growth philosophy to conduct comprehensive reviews, identify sources of funding, provide public education, and implement new land-use tools.

## **Tidal Wetlands**

**5-46**

- LND-7 Complete rulemaking and begin implementation of the Recommended New Hampshire Wetland Mitigation Policy for NH DES, prepared by the Audubon Society of NH and the Steering Committee on Wetlands Mitigation.
- LND-8A Strengthen enforcement and effectiveness of the state tidal buffer zone (TBZ) through outreach to local officials and tidal shoreland property-owners.
- LND-8B Amend state tidal buffer zone (TBZ) regulations to include regulation of deck construction.
- LND-9A Reduce the quantity, improve the quality, and regulate the timing of stormwater flow into tidal wetlands through policy changes at the NH DES Wetlands Bureau.
- LND-9B Reduce the quantity, improve the quality, and regulate the timing of stormwater flow into tidal wetlands through changes to the NH DES Site Specific Program.



- LND-10 Using the Coastal Method and other techniques, identify and restore additional restorable tidal wetlands.
- LND-11 Create a list of potential wetland restoration projects that could be used for wetland mitigation projects, and distribute the list to state agencies and Seacoast municipalities.
- LND-12 Pursue restoration funding from the NH DOT, USDA/NRCS, US F&WS and other sources.

**Shorelands 5-57**

- LND-13 Provide a framework specific and appropriate to the New Hampshire Seacoast for defining and delineating urban and non-urban shoreland areas.
- LND-14 Develop and implement an outreach program to encourage and assist communities in developing and adopting land use regulations to protect undisturbed shoreland buffers.
- LND-15 Support land conservation efforts in shoreland areas.
- LND-16 Improve enforcement of the state Comprehensive Shoreland Protection Act and other applicable shoreland protection policies through outreach efforts to local officials and shoreland property-owners.
- LND-17 Provide incentives for the relocation of grandfathered shoreland uses.

**Groundwater 5-68**

- LND-18 Locate and quantify quantity and quality of groundwater inflow to the estuaries.
- LND-19 Locate, reduce or eliminate, and also prevent groundwater contaminants.

**Freshwater Wetlands 5-72**

- LND-20 Develop and implement a Wetlands Buffer Outreach Program for planning boards.
- LND-21 Prevent the introduction of untreated stormwater to freshwater wetlands by enacting legislation giving NH DES authority to regulate stormwater discharge to wetlands.
- LND-22 Prevent the introduction of untreated stormwater to wetlands by strengthening municipal site plan review regulations.
- LND-23 Prevent the introduction of untreated stormwater to wetlands through an increased understanding of stormwater impacts on wetland ecology.
- LND-24 Work with NH DES to encourage adoption of a state wetlands mitigation policy.



- LND-25 Encourage municipal designation of Prime Wetlands and 100-foot buffers (or equivalent protection).
- LND-25A Create a traveling Prime Wetlands Display.
- LND-25B Provide training and project assistance for towns interested in utilizing the Method for the Comparative Evaluation of Non-tidal Wetlands in New Hampshire.
- LND-25C Work with local planning boards and conservation commissions on regulatory approaches to wetlands conservation.
- LND-25D Create and/or enhance local land conservation programs with emphasis on high value wetlands and buffers.

## Habitat Protection

5-86

- LND-26 Support implementation of state and federal land protection programs (e.g., Conservation and Reinvestment Act, Land and Community Heritage, Teaming With Wildlife, Land and Water Conservation Fund, Coastal Initiative Program, Farmland Preservation Program).
- LND-27 Support the efforts of the Great Bay Resource Protection Partnership.
- LND-28 Encourage towns to dedicate current-use change tax penalties to conservation commissions for the purpose of natural resource acquisition, easements, restoration, and conservation land management.
- LND-29 Provide technical assistance in land protection and management to regional land trusts and municipal conservation commissions.
- LND-30 Develop and encourage use of biomonitoring standards to evaluate water quality.
- LND-31 Use results of biomonitoring and water quality monitoring to prioritize watershed areas for protection and remediation.
- LND-32 Encourage municipalities to incorporate wildlife habitat protection into local master plans by promoting NH Fish and Game's *Identifying and Protecting Significant Wildlife Habitat: A Guide for Towns* and other activities.
- LND-33 Develop a model local planning approach to encourage the identification and maintenance of contiguous habitat blocks.
- LND-34 Encourage appropriate buffers around important wildlife areas and rare or exemplary natural communities.
- LND-35 Maintain current-use program.
- LND-36 Encourage conservation easements.



## SHELLFISH RESOURCES ACTION PLANS

### Shellfish Sanitation Management

6-11

- SHL-1 Implement National Shellfish Sanitation Program guidance to develop an FDA-certified shellfish program.
- SHL-2 Identify sources of and reduce or eliminate contaminants in the New Hampshire estuaries watersheds.
- SHL-3 Institute land-use practices in estuarine watersheds that improve water quality and shellfish habitat.
- SHL-4 Enhance funding to maintain a comprehensive shellfish program.
- SHL-5 Regularly collect and monitor water quality to identify sources and reduce or eliminate contaminants.
- SHL-6 Periodically collect and monitor shellfish tissue samples as appropriate for toxins and biotoxins.

### Shellfish Resource Management

6-22

- SHL-7 Maintain an ongoing shellfish resource assessment program.
- SHL-8 Develop and implement a plan for shellfish resource enhancement and habitat restoration.
- SHL-9A Decrease shellfish resource depletion and increase productivity with stricter state penalties for illegal harvesting.
- SHL-9B Increase outreach and education about methods to control shellfish predators.
- SHL-9C Explore alternative recreational shellfish harvest methods.
- SHL-9D Increase productivity by discouraging the harvest of immature shellfish.

### Shellfish Outreach

6-36

- SHL-10 Provide information regarding public access to shellfish beds through distribution of maps/booklets.
- SHL-11 Establish Bounty of the Bay shellfishing field education program.
- SHL-12 Develop and maintain a shellfisher license information database for use in outreach activities.
- SHL-13 Update materials and improve distribution of shellfish-related information.
- SHL-14 Provide for direct citizen involvement in NH shellfish management decisions.

### Shellfish Aquaculture

6-48

- SHL-15 Evaluate and address barriers to aquaculture and promote environmentally sound aquaculture practices.



## HABITAT RESTORATION ACTION PLANS

### Shellfish Restoration 7-13

- RST-1 Develop and implement a plan for shellfish resource enhancement and habitat restoration activities to achieve a sustainable resource contributing to a healthy environment.

### Wetland Restoration (Tidal) 7-14

- RST-2 Using the coastal method and other techniques, identify and restore additional restorable tidal wetlands.
- RST-3 Continue to restore the restorable tidal wetlands listed in the natural resources conservation service report, *Method for the Evaluation and Inventory of Vegetated Tidal Marshes in New Hampshire*.

### Habitat Restoration 7-19

- RST-4 Identify and implement habitat restoration projects in other important non-tidal habitat areas, such as uplands and freshwater wetlands.

### Wetland Restoration 7-21

- RST-5 Create a list of potential wetland restoration projects that could be used for wetland mitigation projects, and distribute the list to state agencies and seacoast municipalities.
- RST-6 Pursue restoration funding from the NH DOT, USDA/NRCS, US F&WS, and other sources.

## PUBLIC OUTREACH AND EDUCATION ACTION PLANS

### General Outreach 8-11

- EDU-1 Utilize the media to enhance educational efforts.
- EDU-2 Work with the seacoast newspapers to establish a monthly newspaper column devoted to coastal natural resource issues.
- EDU-2a Develop an agreement with Strafford County UNH Cooperative Extension to enable the NHEP outreach project team to contribute coastal natural resource information to the UNH Cooperative Extension column in Foster's Daily Democrat.
- EDU-3 Establish and fund a technical assistance grant program to promote and fund projects that support the NHEP management plan.
- EDU-4 Maintain and expand the New Hampshire estuaries project's shoreline property-owner database.

### Volunteer Involvement 8-21

- EDU-5 Support volunteer organizations active in water quality, habitat, or other estuarine watershed natural resource issues.



