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# COMMUNITY-BASED WATERSHED MANAGEMENT

## LESSONS FROM THE NATIONAL ESTUARY PROGRAM

FEBRUARY, 2005

# Chapter 1: The National Estuary Program (NEP)

## INTRODUCTION

Estuaries are unique areas where freshwater from rivers mixes with saltwater from the ocean. These bays, sounds, lagoons, and other waterbodies are among the most biologically productive places on earth, comparable to rainforests and coral reefs. In addition to providing habitat for a wide variety of fish and wildlife, including many endangered and threatened species, estuaries provide substantial economic benefits to the nation. Our ability to sustain commercial fisheries, recreational fisheries, tourism, and related activities depends upon healthy estuary ecosystems. For example, the economic value of commercial fisheries supported by estuaries is at least \$19 billion annually.<sup>1</sup>

Estuarine and coastal watersheds (areas of land that drain into a coastal body of water, such as an estuary or bay) are among the most aesthetically appealing areas in the nation. They are also among the most densely developed. This narrow fringe of land, which comprises 17 percent of the land area of the United States, is home to more than 53 percent of the nation's population. America's coastal population will grow to more than 127 million people by 2010—an increase of more than 60 percent in only fifty years.<sup>2</sup>

This preference for the coasts has created pressures that threaten the very resources that

### NEP PRINCIPLES IN CHAPTER 1

- The NEP is built on four cornerstones:
  - 1) a focus on watersheds as the basic management units,
  - 2) sound decision-making is based on good science,
  - 3) a collaborative approach to problem solving, and
  - 4) the inclusion of the public.
- The NEP's community-based watershed approach can be adapted for a variety of environmental management situations, including both coastal and non-coastal watershed initiatives.
- The four phases of the NEP process—establishing a governance structure, linking good science and sound management, developing the Management Plan, and implementing the Management Plan—are flexible and need not occur sequentially.

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1 U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service. *Estuaries of the United States: Vital Statistics of a National Resource Base*. Washington: U.S. Department of Commerce, 1990.

2 U.S. Department of Commerce, National Ocean Service. *Fifty Years of Population Change Along the Nation's Coast: 1960-2010*. Washington: U.S. Department of Commerce, 1990.

attract people to these areas. These pressures include increased loadings of nutrients, toxic chemicals, and pathogens that strain the assimilative capacity of our estuaries and coastal areas and cause the degradation and loss of critical habitats and species that make these areas precious and economically valuable. This chapter discusses the origin of the NEP, describes the four cornerstones or principles of the NEP, outlines the NEP process, and discusses the applicability of the NEP approach to other watershed management efforts.

### ORIGIN

Modeled after the U.S. Environmental Protection Agency's (EPA) Great Lakes and Chesapeake Bay programs, the NEP was designed to restore and maintain the integrity of estuaries and their watersheds. As called for in Section 320 of the Clean Water Act, the NEPs conduct long-term planning and management to address the complex factors that contribute to the deterioration of estuaries, such as increasing development along our coasts. (See **Appendix A** for the Clean Water Act, Section 320.)

EPA periodically calls for nominations into the NEP from state governors. If an estuary faces significant risks to its ecological integrity, contributes substantially to commercial activities, would benefit greatly from comprehensive planning and management, and meets several other criteria, EPA may include it in the program. EPA has accepted 28 estuaries into the NEP since 1987 and all of these NEPs have completed their Management Plans. **Figure 1.1** shows the 28 NEPs, their watersheds, and their study areas. (See **Appendix B** for summary information on each of the 28 NEPs, including each program's Web site address.)

Once an estuary is accepted into the NEP, a Management Conference is formed by EPA to provide the local decision-making framework for the estuary. The Management Conference is a collection of committees that guides the program. The Management Conference typically includes local governments, affected businesses and industries, public and private institutions, nongovernmental organizations, the general public, and representatives from EPA, other federal agencies, state governments, and interstate or regional agencies. In addition to being a Management Conference participant, EPA provides financial and technical assistance, and reviews program performance. The Management Conference defines program goals, identifies the causes of the estuary's environmental problems, and designs actions to protect and restore habitats and living resources. These action plans come together in a Management Plan which serves as a blueprint for protecting and restoring the estuary. Developing the Management Plan is a three to five year process that involves convening stakeholders and reaching consensus on solutions.

## THE CORNERSTONES OF THE NEP

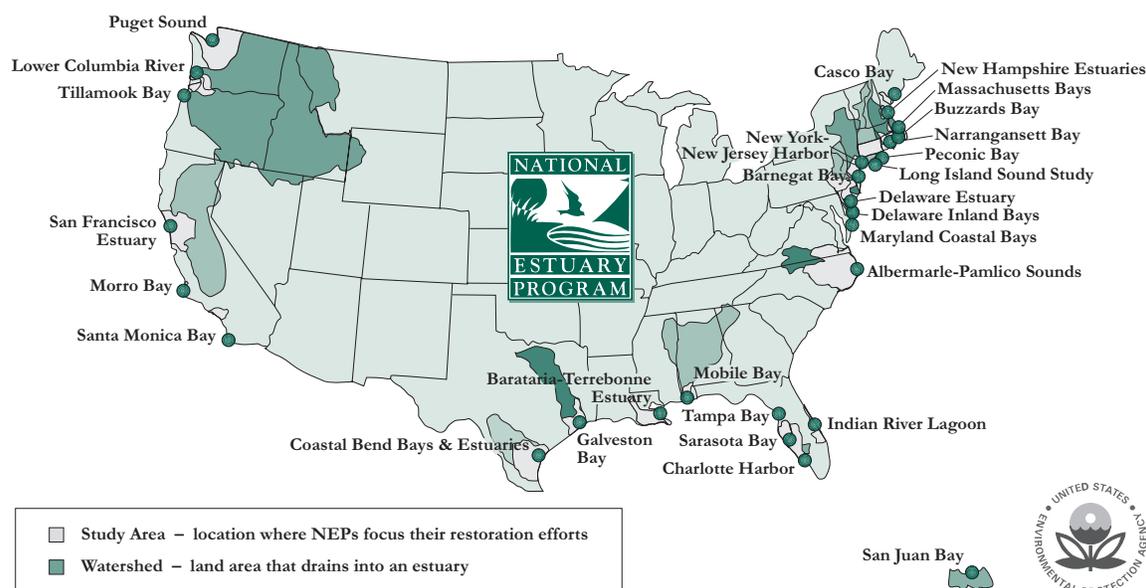
The fundamental principles that guide the NEP evolved from its place-based environmental management predecessors such as the Chesapeake Bay Program. The four cornerstones of the NEP are to:

- focus on watersheds,
- integrate science into the decision-making process,
- foster collaborative problem solving, and
- involve the public.

### Cornerstone 1: Focus on watersheds.

Because environmental problems do not conform to political jurisdictions, the NEPs define their management areas according to watershed boundaries and the ecosystems within them. Focusing on these hydrologically-defined geographic areas helps the NEPs achieve an effective mix of point source pollution and polluted runoff controls, as well as land preservation and other measures to protect and restore water and other natural resources. By considering all sources of pollution in the watershed, the NEPs are better able to set priorities and concentrate on those activities necessary to produce tangible improvements in water quality and habitat. Focusing on watersheds also results in more effective and efficient coordination among stakeholders working to improve water quality.

**Figure 1.1: The 28 National Estuary Programs, their study areas, and surrounding watersheds**



**Cornerstone 2: Integrate science into the decision-making process.**

Decision-making should be based on the best information and science available. Sound science provides objective information that informs debate, produces data on the status and trends of the estuary, and furnishes a basis for policies and programmatic decisions. The NEPs employ sound scientific data, tools, and techniques to assess the natural resources and the communities that depend upon them and to set goals and identify environmental objectives. Science is also used by the NEPs to develop management options and action plans, implement solutions, evaluate the effectiveness of actions, and revise plans. NEP stakeholders and partners play a key role in identifying problems to be assessed and collecting the scientific data needed to form conclusions. The NEPs apply science in an iterative fashion to encourage partners to set goals and targets and to make maximum progress based on available information, while continuing analysis and verification in areas where information is incomplete. By basing decisions on sound science, the NEPs are viewed as credible sources of information.



**Cornerstone 3: Foster collaborative problem solving.**

As an environmental management approach, collaboration involves creating a shared vision and joint strategies to address concerns that go beyond any particular interest or stakeholder. By ensuring that stakeholders responsible for and interested in the management and use of the estuary are involved in the process, the NEPs have achieved successful collaboration. The NEP director and staff serve as facilitators that balance conflicting estuary needs and uses without compromising the environmental goals of restoration and protection of the estuary. The NEP ensures that decisions are made with the input of stakeholders and that all options, suggestions, and opinions are treated as worthy of consideration. Decisions are made through the NEP governance structure which provides the forum for bringing together diverse stakeholders to identify issues, develop management actions, and resolve conflicts. The governance structure provides the platform for collaborative decision-making and reflects the unique problems, citizen concerns, and other characteristics of the watershed. The NEPs have found that this collaborative approach helps overcome the obstacles to cooperation, such as different statutory and budgetary responsibilities and the costs of sharing information and coordinating program efforts.

**Cornerstone 4: Involve the public.**

The NEPs are guided by the principle that stakeholders in the watershed ought to have a meaningful role in shaping the program and substantive opportunities to participate in its activities. The NEPs strive to facilitate a constructive dialog in which the range of stakeholders in the watershed are given opportunities to help define estuary problems, set priorities, and implement solutions that they feel are relevant. This means that the NEPs seek to engage not only governmental entities, but the general public, nonprofits, businesses, and universities as well. This community-based approach has a high likelihood of long-term success because ownership of the solutions extends to community members who must play a role in achieving them. Strong citizen involvement programs result in support for the funding of implementation projects and changes in day-to-day behaviors in the watershed that affect the estuary. An informed and involved public is often the NEPs' most valuable asset for mustering the critical support needed to implement such actions as sewage treatment upgrades, sediment controls, and habitat restoration.

These basic principles—focusing on watersheds as the basic management unit, linking good science with sound decision-making, solving problems collaboratively, and involving the public—are themes that underpin the NEP and guide the NEP's approach to watershed management.

**APPLICABILITY OF THE  
NEP APPROACH**

The principles, examples, and lessons learned contained in this handbook are relevant not only to the NEPs but to other watershed organizations, including local governments, nonprofits, and others who are working to establish, implement, and evaluate watershed protection and restoration efforts. While the NEPs are home to certain elements not found in non-coastal areas, such as the presence of salt water ecosystems, and receive funding and organizational support from EPA, this handbook can be successfully applied without the presence of these elements. For example, the checklists and other methods used by NEPs to assess the effectiveness of existing institutions to manage water quality problems can be used by inland watersheds. Similarly, the governance structures of the NEPs can be applied to other watershed organizations. The NEPs are located in federal and state agencies, local governments, nonprofits, and other organizations just as other watershed organizations are found in a variety of institutional settings. Whether working in coastal or non-coastal areas, watershed organizations can learn from the NEPs' innovative approaches to integrating science and management, fostering collaborative decision-making, and involving the public.

The remainder of this document is organized according to the following four phases of the NEP approach:

- Phase 1: *Establishing a Governance Structure***—Convening the Management Conference and establishing a structure of committees and procedures for conducting the group’s work. (Chapter 2)
- Phase 2: *Identifying Problems and Solutions***—Assessing the condition of the estuary to determine its health, problems facing the estuary, trends for future conditions, and the priority problems to be addressed, as well as assessing the effectiveness of existing management efforts to protect the estuary. (Chapter 3)
- Phase 3: *Developing the Management Plan—A Blueprint for Action***—Describing the state of the estuary, developing detailed strategies for actions to address the problems of the estuary, monitoring and funding Management Plan implementation, and assessing environmental results. (Chapter 4)
- Phase 4: *Implementing the Management Plan***—Carrying out actions, monitoring estuary conditions, reviewing progress, and redirecting priorities or efforts where appropriate. (Chapter 5)

Each chapter includes specific examples that demonstrate how the 28 NEPs have applied this community-based approach since the program’s inception in 1987.