



MASSACHUSETTS
BAYS PROGRAM

STATE *of* *the* BAYS



DECEMBER
2010





About the

MASSACHUSETTS BAYS PROGRAM

The Massachusetts Bays Program is a partnership of citizens, communities, and government that strives to protect and enhance the coastal health and heritage of Massachusetts and Cape Cod Bays. To achieve our vision of a balanced and healthy environment, we:

- Provide support and assistance for local action*
- Cultivate environmental education and stewardship*
- Develop science-based initiatives to help solve management challenges*
- Facilitate cooperation on local and region-wide projects and programs.*

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**NATIONAL
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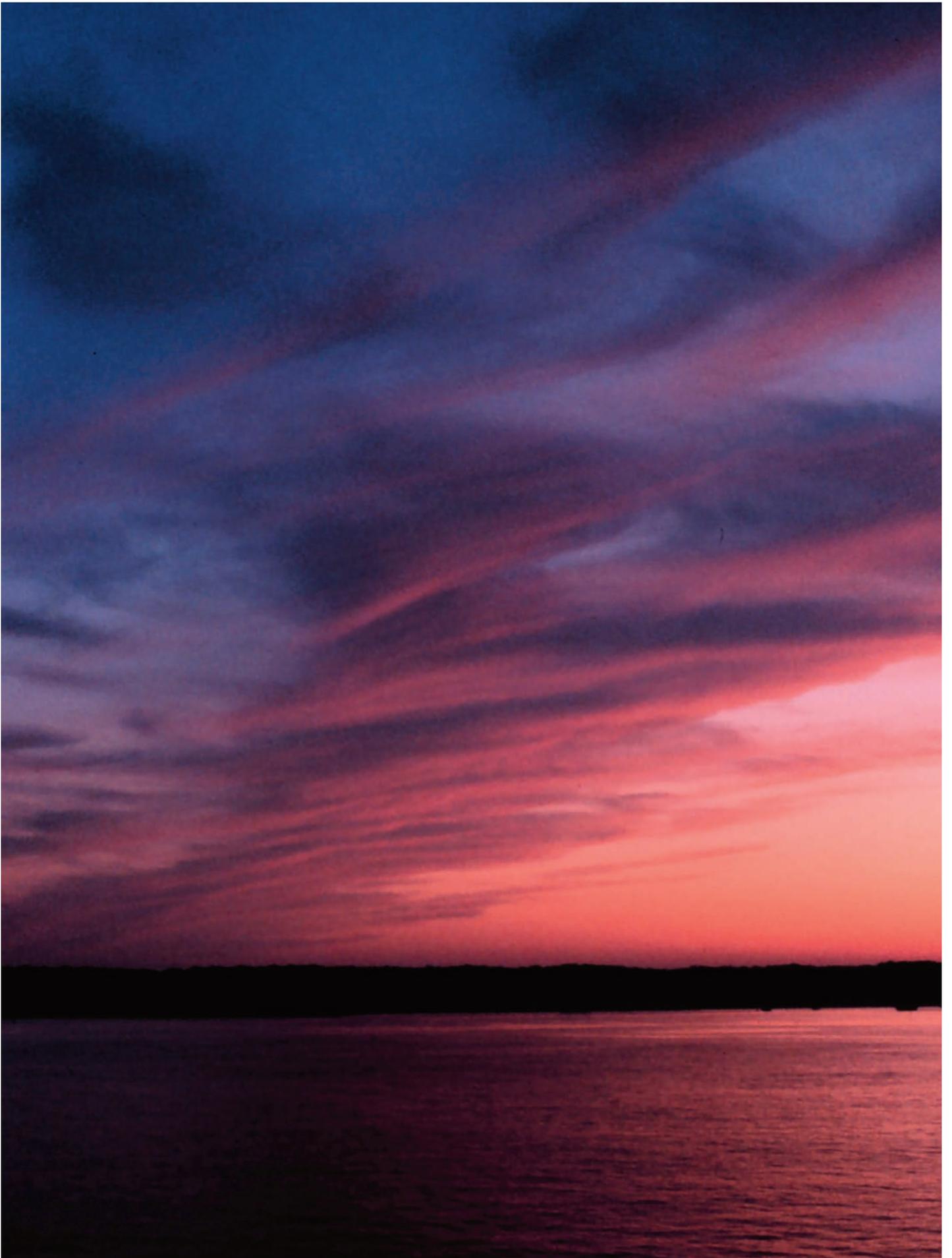




Photo: S. Weigel

ACKNOWLEDGEMENTS

The Massachusetts Bays Program and its staff would like to thank the many contributors who made this 2010 State of the Bays Report possible. The time that each author and editor invested in creating such a report convey the deep commitment on the part of a wide variety of organizations and individuals to the health of Massachusetts and Cape Cod Bays. These contributions are reflective of the collaborative nature of the Massachusetts Bays Program and the National Estuary Program system as a whole. Each of the authors who participated in this process is credited within their respective submittals in this report.

We would also like to thank Arden Miller of the Massachusetts Office of Coastal Zone Management for her design, layout, and editorial assistance, and Regina Lyons of the U.S. Environmental Protection Agency for her extensive editorial review and contributions. The State of the Bays 2010 project team at the Massachusetts Bays Program included Christian Krahforst, Carole McCauley, Prassede Vella, and Jay Baker.

All photos courtesy of Massachusetts Bays Program or Office of Coastal Zone Management staff or NOAA photo library .





TABLE OF CONTENTS

INTRODUCTION	1
WATER QUALITY	5
Q1 How has the diversion of the MWRA sewage discharge affected conditions in Boston Harbor?.....	7
Q2 What are the impacts of the MWRA discharge to Massachusetts and Cape Cod Bays?.....	11
Q3 What conditions contribute to harmful algal blooms in Massachusetts Bay?.....	15
Q4 What levels of contaminants have been found in blue mussels in the Massachusetts and Cape Cod Bay regions?.....	19
Q5 Is it safer to swim at Massachusetts beaches than it was five years ago?.....	25
Q6 How many CSOs remain in the Massachusetts Bay Program's planning area?.....	29
Q7 How have the amount and quality of point source pollution discharges changed in Massachusetts and Cape Cod Bays?.....	33
SPECIAL TOPIC: No Discharge Areas	37
SPECIAL TOPIC: National Coastal Condition Assessment	39
LIVING RESOURCES	41
Q8 Has eelgrass habitat in Massachusetts and Cape Cod Bays changed over time?.....	43
Q9 How much wetland habitat has been restored within the estuaries of Massachusetts and Cape Cod Bays?.....	47
Q10 How are shellfish landings changing in Massachusetts and Cape Cod Bays?.....	51
Q11 What is the state of diadromous fish in Massachusetts and Cape Cod Bays?.....	55
Q12 Have there been any observed changes in the fisheries of Massachusetts and Cape Cod Bays?.....	59
Q13 Are threats from marine invasive species increasing in Massachusetts and Cape Cod Bays?.....	63
SPECIAL TOPIC: Horseshoe Crabs	69
HUMAN USES AND PLANNING	71
Q14 How is human population distributed among the MBP communities and how does it compare state-wide?.....	73
Q15 How much of the Massachusetts Bays region is covered by impervious surface?.....	75
Q16 How much of the Massachusetts Bays region is protected from development?.....	79
Q17 What patterns of coastal development have taken place within the Massachusetts Bays region?.....	81
SPECIAL TOPIC: Status of liquid natural gas transport in Massachusetts	83



LETTER FROM THE DIRECTOR

December 2010

Dear Reader,

If you are reading through this State of the Bays Report, you likely have some meaningful connection to the Massachusetts coast. Whether that connection is your profession, a place to vacation, or a home in a coastal community, most of us have some affinity for the coast – some important link to the shoreline and its surrounding areas.

With that connection naturally comes some personal measure of the quality of our bays and ocean environments. We all have our favorite beaches, places to fish, or to launch a kayak. Whether you've thought about it or not, there's probably some formula that you use to assign value to those places. It may simply be proximity to your home or to local amenities, but it probably also has something to do with the quality and character of that spot. What does it look like? Does it feel "natural" when you are there? Is it clean? All of these factors, and probably many others, go into choosing your preferred places along the coast, and making judgments about whether they are fitting for your intended uses.

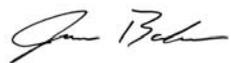
The Massachusetts Bays Program (MBP) and our partners have developed this State of the Bays report to shed some light on some of these values. The MBP works with coastal communities to protect and enhance the health of coastal environments. This report attempts to examine the degree to which our coastal systems are healthy, and to explain how we measure our progress in protecting and enhancing our coastal resources.

In the following pages we summarize the status and trends of a range of coastal resources within Massachusetts and Cape Cod Bays using 17 measures, or indicators, of coastal condition. These indicators are used to describe the quality of coastal resources such as salt marshes, seagrass, and other estuarine habitats. They assess the extent to which our coastal waters are clean and usable for fishing and recreation and provide suitable habitat for aquatic life. And they also address the degree to which a variety of human factors, such as land use and pollution discharges, can and do threaten the health and related values of these resources.

As you'll read in the following sections, we are making progress in protecting and restoring the health and quality of Massachusetts and Cape Cod Bays. However, it is clear that our coastal resources continue to face serious threats from coastal development, habitat loss, contamination of waterways, invasive species, and other human-induced impacts to coastal systems. The MBP has developed this report not only to monitor the state of the bays, but also to help in identifying and prioritizing needs for our program and our partners to focus on.

As you read on, I invite you to reflect on the connection between the quality of coastal conditions reported here and your own measures of coastal health. Thank you for your interest in the health of our shared coastal resources.

Sincerely,



Jay Baker, Director



INTRODUCTION



Home to a diverse array of species and habitats, an estuary is a unique environment where fresh water from rivers mixes with the salt water of the sea. Being mindful of the value of estuaries, how does the Massachusetts Bays Program measure the effectiveness of efforts designed to improve or preserve the environmental integrity of our estuarine resources? One way is by tracking the status and trends of critical environmental indicators, which is the focus and intent of the State of the Bays report.



INTRODUCTION

Collectively, the coastal resources described in this report have many values and provide numerous services, many that relate directly to human quality of life. Estuaries, where fresh water from rivers meet and mingle with the sea, provide habitat for vast numbers of species, including many that are commercially valuable. Estuarine resources offer substantial shoreline protection from storm surge and flooding events. They are often used for recreational purposes such as boating, fishing, diving, birding, and beach-going, and they provide the basis for a vast array of commercial industries.



Photo: S. Gersh

Despite these values, many of which have benefits that serve people well beyond our region, there are numerous threats to coastal resources, most of which originate in human activity. Pollution, encroaching development, and overuse of resources are taking their toll. In Massachusetts, coastal habitats have suffered losses for hundreds of years due to these pressures. Although legislation enacted in past decades has done much to stem the degradation of some of these critical habitats, current and emerging threats exist. In 1987, an Act of Congress established the National Estuary Program (NEP) as an effort to address problems facing estuaries of national importance. The U.S. Environmental Protection Agency (EPA), which oversees the NEP, is directed by the Clean Water Act (CWA) to attain or maintain water quality in estuaries, including both water supply and water-dependent habitats and species such as fish, shellfish, and other wildlife.



Photo: B. Warren

THE PROGRAM

The Massachusetts Bays Program (MBP) is one of 28 programs in the NEP system. Governed by a Management Committee, whose members represent public and private interests, the program represents a collaborative effort of partners working towards common objectives. The program's work is guided by a Comprehensive Conservation and Management Plan, which is updated periodically to reflect accomplishments as well as shifting needs and priorities.

MBP serves 50 coastal communities that are grouped into five MBP regions: the Upper North Shore, Salem Sound, Metro Boston, South Shore, and Cape Cod (See map on inside back cover). Each region is served by a regional coordinator who is hosted by non-profit organizations or regional planning agencies. These coordinators play a vital role in providing direct assistance to the communities within their regions on issues related to the work and objectives of the MBP.

STATE OF THE BAYS

With all of the values of, and threats to coastal resources, how does the MBP measure the effectiveness of its work and the work of our partners in improving the quality of the region? One way is through the tracking of environmental indicators. In 2004, the MBP issued its first State of the Bays report, summarizing the status of 16 indicators that had been identified as characterizing the health of the region's estuaries and bays. This edition of State of the Bays documents the status of and trends within many of the same indicators and provides additional information on relevant topics of interest to the bays and to the program.

The selected indicators are representative of the system and its values, but are by no means comprehensive. In tracking these broad indicators, MBP management decisions will be informed by a deeper understanding of changing environmental conditions. It is our goal in tracking these indicators, that the results of the MBP partner and citizen contributions will be reflected through improved conditions and environmental quality of the MBP region. In the following pages, we report on the status of 17 indicators of the health of Massachusetts and Cape Cod Bays. These indicators have been divided into three major categories:

- Living Resources, which reports on the status of important coastal habitats within Massachusetts Bays as well as the species they support
- Water Quality, which reports on the chemical and physical characteristics of coastal waters in relation to key management practices
- Human Uses and Planning, which reports on several metrics of human population, development patterns, and their potential impact on coastal systems.

Each section has been developed by MBP staff and our many partners within state and federal agencies, local non-profit organizations, and academic institutions. The number of authors and contributors reflects the collaborative nature of MBP, as well as the importance of partnerships for addressing some of the challenging environmental issues we face.

Finally, you will find that this State of the Bays Report includes case studies related to important environmental issues and impacts that have emerged over the past decade(s). These case studies are intended to make a direct connection between the indicators of ecosystem health and specific environmental issues we face today.

For more information on the Massachusetts Bays Program, our region, and our activities, and to download the 2004 State of the Bays Report, please visit <http://www.massbays.org>.

