

## Action Plan layout for December Meeting

### Notes regarding the Action Plan:

1. This draft contains all of the final text, which was reviewed and revised based on all feedback received from the Working Group and CAG.
2. The text has been placed into a page layout to show a close approximation of how the text will appear on the page. Images will be added to the layout, now that the text is finalized.
3. The text in this draft has not been proofread. It may still contain typographical errors. These will be corrected as part of the final production process.

## Executive Summary

The Gulf of Maine Council on the Marine Environment Action Plan 2007–2012 describes the goals, outcomes, and activities that the Council will pursue through its committees and partnerships in the next five years. The Action Plan focuses on key issues that Council members—representing federal, state, and provincial governments, non-profit organizations, and business interests—identified as priorities for which they have pledged support and that require or benefit significantly from regional collaboration.

The governors and premiers of the five states and provinces that border the Gulf of Maine—Massachusetts, New Hampshire, Maine, New Brunswick, and Nova Scotia—established the Council in 1989 as a regional entity with a mission to “maintain and enhance environmental quality in the Gulf of Maine and to allow for sustainable resource use by existing and future generations.”

The Gulf of Maine Council on the Marine Environment Action Plan 2007–2012 was developed by incorporating public input and the findings of numerous studies, workshops, and key policy developments, including the Gulf of Maine Summit, Canada’s Oceans Action Plan, and U.S. Ocean Action Plan. The Action Plan 2007–2012 builds on the results of the Council’s previous five-year action plan (2001–2006) and activities under two earlier action plans in the 1990s.

The Gulf of Maine Council on the Marine Environment Action Plan 2007–2012 contains three overarching, long-range goals:

- Goal 1 Coastal and marine habitats are in a healthy, productive, and resilient condition.**
- Goal 2 Environmental conditions in the Gulf of Maine support ecosystem and human health.**
- Goal 3 Gulf of Maine coastal communities are vibrant and have marine-dependent industries that are healthy and globally competitive.**

The Council is committed to these long-term goals, recognizing that it will take many years to fully realize them.

Detailed information about the Council’s activities is available in the multi-year Work Plan at [www.gulfofmaine.org](http://www.gulfofmaine.org).

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## Preface

The governors of Maine, Massachusetts, and New Hampshire and the premiers of New Brunswick and Nova Scotia created the Gulf of Maine Council on the Marine Environment in 1989 as a regional forum with a mission to “maintain and enhance environmental quality in the Gulf of Maine and to allow for sustainable resource use by existing and future generations”.

The Gulf of Maine Council on the Marine Environment Action Plan 2007–2012 describes the goals, objectives, and activities identified by the Council’s members—representing federal, state, and provincial governments, non-profit organizations, and business interests—as priorities for which they have pledged support.

Many public, non-profit, and commercial activities to maintain and enhance environmental quality are occurring throughout the Gulf, carried out effectively and passionately by countless advocates. The Council seeks to build on this work and to serve as a regional catalyst to address priority issues that require or are significantly enhanced by regional collaboration.

As part of the process to identify and clarify the goals and objectives for the Action Plan, the Gulf of Maine Council

- reviewed its progress and accomplishments over the past five years,
- analyzed more than fifty recent consensus-based publications produced by public and non-profit organizations around the Gulf of Maine,
- reviewed the proceedings of major conferences,
- convened the Gulf of Maine Summit in October 2004,
- consulted Canada’s Oceans Action Plan and the U.S. Ocean Action Plan, and
- conducted a Web-based survey of government and non-government representatives.

Further, the Council placed an emphasis on the following elements.

- 1. Enhance accountability.** The Action Plan identifies three long-range goals to be achieved via specific long-term outcomes (changes in environmental conditions), mid-term outcomes (changes in people’s behavior), and short-term outcomes (changes in people’s knowledge

or awareness). Performance measures will enable decision-makers and citizens to gauge the progress of the Council and its partners in pursuing these outcomes and goals.

- 2. Continue to engage partners.** The Action Plan identifies activities that will be conducted to achieve the goals and outcomes. Many of the activities will require collaboration among public and private partners to be successful. The Council will initiate and foster partnerships throughout the region.
- 3. Leverage resources for shared benefits.** The Council is an advisory and collaborative forum with no ongoing, secure funding. However, it is effective in leveraging public and private resources for the benefit of the Gulf’s ecosystem. Transboundary sharing of knowledge, resources, and funding is a cornerstone of the Action Plan.

### Public Input Guides Council Priorities

The Council sought public comment on possible 2007-2012 priorities. Nearly three-quarters of the respondents indicated that the most important role for the Council is to protect and conserve coastal and marine habitats. Their primary concerns were that the effects of land-based activities on coastal habitats should be minimized, that regionally significant marine habitats should be managed in a way that maintains ecological integrity, and that coastal habitats should be restored to support ecological and economic values. The Council incorporated this public input to help identify the goals and priorities for the Gulf of Maine Council on the Marine Environment Action Plan 2007–2012.



## Gulf of Maine Proclamation: Committing to Change

For 15 years the Governors' and Premiers' Gulf of Maine Council on the Marine Environment has sustained a solid foundation of international collaboration. It recognizes a shared duty to maintain and enhance environmental quality in the Gulf of Maine to allow for sustainable resource use by existing and future generations. In doing so it has focused on the region's priority management issues, namely the protection of coastal and marine habitats, protection of human health and ecosystem integrity, and the sustainability of maritime activities.

In cooperation with our federal partners we are taking a strategic approach that enables us to address immediate problems, while at the same time ensuring a sustainable environment for future generations. We envision a Gulf of Maine ecosystem where people make responsible decisions about the environment and economy based on a strong information base.

WHEREAS, traditional and emerging maritime activities in the Gulf of Maine contribute significant economic and social benefits to our respective jurisdictions;

WHEREAS, business leaders, governments, the non-profit community, and the public need sound and accessible information to build community capacity and strengthen decision-making and sustainable development in the Gulf of Maine and its watershed;

WHEREAS, our pursuit of ecosystem-based management requires an assessment of the state of the Gulf of Maine ecosystem using science-based indicators that characterize its condition, the stresses upon it, and the corresponding human responses;

WHEREAS, with over 300 monitoring programs in the Gulf of Maine, there is a pressing need to integrate traditional environmental monitoring and experience with emerging ocean observing tools so as to better respond to urgent management issues and support regional sustainable development initiatives; and

WHEREAS, private and public sector initiatives relating to conservation, protection and restoration are effectively impacting the Gulf of Maine watershed and contributing to its' sustainability.

THEREFORE, we the Governors of Maine, Massachusetts and New Hampshire and the Premiers of New Brunswick and Nova Scotia do hereby reaffirm our commitment to work collaboratively and toward this end direct the Gulf of Maine Council on the Marine Environment to:

### *1. Provide Timely and Responsive Information to Decision-makers*

Promote the rapid and efficient distribution of information needed by the region's policy-makers to effectively manage the Gulf's coastal resources by: facilitating the effective integration and expansion of selected monitoring, mapping and observing programs in the region; disseminating science-based indicators that communicate the status and trends of the Gulf of Maine ecosystem; and facilitating the production of State of the Environment reports that describe the condition, pressing issues and management options in the Gulf of Maine/ Bay of Fundy.

### *2. Accelerate Transboundary Habitat Conservation, Protection and Restoration*

Accelerate habitat conservation, protection and restoration through the sharing of coastal and ocean management best practices, enabling stakeholders to learn from the experiences of others and tailor the best practices to their area.

### *3. Support Sustainable Maritime Activities*

Support sustainable maritime activities by developing and promoting Best Management Practices for resource based activities and identify marine research needs in order to address pressing management issues and support economic development opportunities.

Signed this 27th day of October, 2004.

  
Governor John Baldacci  
Governor of Maine

  
Governor Craig Benson  
Governor of New Hampshire

  
Premier Bernard Lord  
Premier of New Brunswick

  
Premier John Hamm  
Premier of Nova Scotia

  
Governor Mitt Romney  
Governor of Massachusetts



**Resolution of Support by the Federal Partners**  
to the  
**Gulf of Maine Council on the Marine Environment**  
November 2006

THE FEDERAL PARTNERS of the Gulf of Maine Council on the Marine Environment, having worked collaboratively with the Council during its first decade and a half of operation toward the long-term sustainability of this shared ecosystem:

*Recognizing* this shared responsibility to maintain and enhance environmental quality in the Gulf of Maine and to allow for sustainable resource use by existing and future generations;

*Wishing* to respond to the encouragement by the Governors and Premiers in their Gulf of Maine Proclamation for the Federal Partners to reaffirm their commitment to the Gulf of Maine Council and to continue to work with the States and Provinces in their efforts to protect the ecosystems of the Gulf of Maine;

**INTEND AS FOLLOWS**

*To continue to support* the goals, measurable objectives and priority actions articulated in the Gulf of Maine Council Action Plans to the extent that they are consistent with domestic law and policies, and can be executed within available appropriations;

*To continue to actively participate* on the Council and, where possible, provide staff members to participate on the Council's Working Group and Committees;

*To continue collaborative work* with the Gulf of Maine Council and other partners in the region to set and deliver on annual and long-term priorities for action;

*To coordinate across sectors* represented on the Council to enhance our ability to accelerate implementation of Federal statutory and policy responsibilities by entering into effective partnerships and improve federal interagency coordination;

*To actively pursue and advise* the Council of opportunities for Federal support;

*To develop scientific initiatives and projects* in cooperation with the Council, consistent with priorities of the U.S. and Canadian Oceans Action Plans.

While not committing the Federal Agencies to specific investments, this Resolution of Support encourages the Federal Agencies to continue their support for and participation in the Council to succeed in addressing issues that must be solved at a regional scale.

**Carol Ann Rose**  
Regional Director of Oceans & Habitat  
Department of Fisheries and Oceans  
Canada, Maritimes Region

**Jacqueline G. Olsen**  
Director, Integrated Ecosystems  
and Public Education  
Environment Canada

**William Hogarth**  
Assistant Administrator for Fisheries  
U.S. National Oceanic and  
Atmospheric Administration

**Jack Dunnigan**  
Assistant Administrator for  
Ocean Services and Coastal  
Zone Management  
U.S. National Oceanic and  
Atmospheric Administration

**Marvin Moriarty**  
Regional Director, Northeast Region  
U.S. Fish and Wildlife Service

**David P. Russ**  
Regional Executive, New England Focus Area  
U.S. Geological Survey

**Robert W. Varney**  
New England Administrator  
U.S. Environmental Protection Agency

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## Overview: The Gulf of Maine Council

### A U.S./Canada Partnership

The Gulf of Maine Council on the Marine Environment is a U.S./Canada partnership of government, non-profit organizations, and business interests. The Council works to maintain and enhance environmental quality in the Gulf of Maine to allow for sustainable resource use by existing and future generations. The Council organizes conferences and workshops on priority issues; conducts integrated environmental monitoring and data synthesis; conducts policy analyses; provides grants and awards; accelerates the transfer of science to management; raises awareness about the Gulf; and connects people, organizations, data, and information in the region.

The governors and premiers of the five states and provinces that border the Gulf of Maine—Maine, Massachusetts, New Brunswick, New Hampshire, and Nova Scotia—created the Council in 1989 as a regional forum to exchange information and engage in long-term planning. The Councilors are leaders of state, provincial, and federal agencies; non-government organizations; and the private sector. The Council fosters consensual decision-making and collaboration among a wide range of parties with an interest in the Gulf. Its meetings are open to the public, and its five-year action plans incorporate diverse public input.

Representatives of government agencies, academia, businesses, and non-profit organizations participate in the Council's committees. Each year, one of the five states and provinces serves as the Secretariat, taking the lead to coordinate the Council's work. Contract staff located around the region work with the Council and its committees to help accomplish its goals. The Council is administered by the non-profit 501(c)(3) U.S. Gulf of Maine Association and the Canadian Gulf of Maine Association.

### Guiding Principles

Four principles help to guide the Council and participating agencies in their decisions involving the Gulf of Maine ecosystem. Each principle is congruent with other international protocols, as well as state, provincial, and national legislation in Canada and the United States.

#### **Ecologically sustainable development:**

The Council seeks to meet the region's current social, cultural, and environmental needs without compromising the needs of future generations. Working in partnership with others, it strives to sustain ecological processes and enhance the region's quality of life.

#### **Ecosystem-based planning and management:**

The Council supports collaborative management that integrates economic, social, and ecological values and objectives, emphasizing natural rather than political boundaries.

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#### **Environmental protection through precaution:**

The Council supports conservation of the coastal and marine environment, and urges its members to proceed with caution when scientific information is incomplete to avoid environmental degradation.

#### **Public information and participation:**

The Council is committed to a participatory process that informs and engages the public in setting priorities.

#### **Vision for the Future**

The Council was formed in recognition of the need for natural resource management spanning political and bureaucratic boundaries. In the next five years, as outlined in this Action Plan, the Council will advance ecosystem-based approaches to management. Building on its past accomplishments, the Council intends to continue supporting region-wide information gathering and sharing (e.g., seafloor mapping, environmental monitoring, science translation to management, indicators, state-of-the-environment reporting), public outreach and education, habitat restoration, and addressing key science and policy gaps.

The Council will continue to foster innovative approaches to sharing information and enhancing collaboration. By working together in a regional forum, the states, provinces, and federal agencies learn from each other, try new approaches, and coordinate their efforts. As a result, they become better stewards of the resources for which they are responsible.

The Council will continue to nurture strong partnerships among local, regional, and national organizations that are responsive to issues of regional concern. Wherever appropriate, the Council will participate and assist these groups, often seeking to build their capacity by creating strategic alliances.

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## Role and Sphere of Influence

- As a transboundary organization, the Gulf of Maine Council is uniquely positioned to focus on issues that require or benefit significantly from regional-scale collaboration.
- The Council’s work often involves collaboration not only at state and provincial levels, but at municipal, national, and bi-national levels.
- While the Council does not have direct regulatory or policy-making authority of its own, its goals and objectives are congruent with state, provincial, and federal priorities. The Council promotes progress toward common goals.
- The Council’s work focuses on complex natural and socioeconomic systems, making it a challenge to attribute particular outcomes to the organization’s efforts. However, assessing results is essential for continued success.
- A strength of the Council is that it is a coalition of people from many groups. However, this organizational structure can result in the Council’s role being camouflaged, as initiatives may occur under the banners of member and partner organizations.
- The Council reports on regional progress toward the goals in this Action Plan. This recognition will identify the lead organizations, including direct activities of the Council, its partners, and the work of others.

### Signature Activities

Between 2007–2012 the Council will support several signature activities that it is uniquely positioned to perform as a Canada/U.S. organization with a singular focus on the Gulf of Maine. Examples of these include environmental monitoring, state-of-the-environment reporting, habitat restoration, and communication on gulf-wide issues.

## Primary Audiences of the Gulf of Maine Council

Audience	Description
Premiers and governors	The region’s governors and premiers, their staff, and regional organizations that they have formed.
Coastal lawmakers	Legislators and elected officials at the federal, state, and provincial levels who have financial and legislative responsibility for coastal and marine issues.
Coastal decision makers	Senior management in agencies, non-profits, and businesses.
Coastal managers	Policy and science representatives in agencies, non-profits, and businesses.
Academics	University scientists and other scholarly researchers.
Gulf residents and visitors	People who live, work, and play in the Gulf of Maine region.
Marine-dependent industries	Businesses, individuals, and organizations that derive most of their income from activities tied to the marine environment.
Science community	Individuals and organizations involved in research, monitoring, ocean observing, and assessment.

## **Signature Activities of the Council**

### **GulfofMaine.org**

The Council's Web site offers a broad range of Gulf-related information and tools. Examples include the People Finder, a database with contact information for thousands of individuals involved in Gulf issues; the Directory, a database of hundreds of non-governmental organizations; the KnowledgeBase, containing documents, maps, and other information; the Gulf of Maine Times; meeting information; interactive mapping tools; and grant application materials.

### **Gulf of Maine Times**

[www.gulfofmaine.org/times](http://www.gulfofmaine.org/times)

Launched by the Council in 1997, the Gulf of Maine Times is a free quarterly newspaper reaching a circulation of 10,000 scientists, resource managers, educators, environmental non-profit workers, and the general public. Through feature articles, profiles, book reviews, and essays, the Gulf of Maine Times educates readers about social, environmental, and scientific issues that impact the Gulf's complex ecosystems.

### **Gulfwatch Contaminants Monitoring Program**

[www.gulfofmaine.org/gulfwatch](http://www.gulfofmaine.org/gulfwatch)

Since 1993, Gulfwatch has measured contaminants in blue mussels (*Mytilus edulis*) to assess the types and concentration of contaminants in the coastal waters of the Gulf of Maine. Organized and administered by the Council, it is one of the few monitoring programs to be coordinated across international borders.

### **Gulf of Maine Council Action Plan Grants**

[www.gulfofmaine.org/council/opportunities](http://www.gulfofmaine.org/council/opportunities)

The Gulf of Maine Council offers grants to citizen groups and community organizations to pursue projects that support its priority goals.

### **Habitat Restoration Grants Program**

<http://restoration.gulfofmaine.org>

Between 2002 and 2006, the Gulf of Maine Council on the Marine Environment/National Oceanic and Atmospheric Administration (NOAA) Habitat Restoration Grant Program provided \$1.4 million in competitive grants to community-based organizations in Massachusetts, New Hampshire, Maine, New Brunswick, and Nova Scotia, leveraging \$3.9 million in matching support. The 56 projects contributed to the restoration of salt marshes; rivers, lakes, and other habitats for sea-run fish; shellfish habitats and populations; and shoreland (riparian) habitats.

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## Value of the Marine Economic Sector

### Nova Scotia

Annual output: \$2.62 billion

Percentage of provincial gross domestic product: 10

Percentage of direct household income: 5

Employment: >30,000 direct full-time jobs

Source: Gardner, M., R. Fraser, M. Milloy, J. Frost. *Economic Value of the Nova Scotia Ocean Sector*. 2005.

### New Brunswick

Total direct impact (1995–97): \$610 million

Percentage of provincial gross domestic product: 4.3

Percentage of direct household income: 4.1 (\$370 million)

Percentage of total household income: 9.2 (\$820 million)

Source: Mandale, M., M. E. Foster, P.Y. Chiasson. *The Economic Value of Marine-related Resources in New Brunswick*. 2000.

### Maine

Major sectors: Construction, living resources, ship/boat building, tourism/recreation, transportation, minerals

Employees: 45,685

Annual wages: \$1.2 billion

Largest sectors (employees): Tourism/recreation (30,603), ship/boat building (12,101)

Largest sectors (wages): Ship/boat building (\$667 million), tourism/recreation (\$470 million)

Source: Colgan, C. *The National Ocean Economics Program*. 2004.

### New Hampshire

Major sectors: Construction, living resources, ship/boat building, tourism/recreation, transportation, minerals

Employees: 14,005

Annual wages: \$587 million

Largest sectors (employees): Tourism/recreation (8,336), transportation (5,157)

Largest sector (wages): Transportation (\$436 million), tourism/recreation (\$130 million)

Source: Colgan, C. *The National Ocean Economics Program*. 2004.

### Massachusetts

Major marine sectors: commercial seafood, transportation, tourism/recreation, science/technology, construction/infrastructure

Estimated total annual marine output: \$14 billion

Estimated total payroll marine: \$4.3 billion

Estimated secondary coastal employment: 147,000

Coastal economy was 37% of gross state product in 2004

Source: University of Massachusetts/Donahue Institute. *An Assessment of the Coastal and Marine Economies of Massachusetts*. 2006.

Data were compiled from different sources that varied in their methods and the years analyzed. Data for Massachusetts, New Brunswick, and Nova Scotia include those jurisdictions' entire coasts, not just their coasts on the Gulf of Maine.





Maine

New Brunswick

Nova Scotia

Gulf  
of  
Maine

#### **Non-Market Values of the Gulf of Maine**

In addition to goods and services that are traded in the marketplace, such as seafood and marine transportation, the Gulf of Maine's coastal and marine ecosystems generate goods and services that are not easily quantified:

- processes that influence climate and biodiversity,
- wetlands and dunes that protect lands during storms,
- nutrient cycling,
- control of diseases and pests,
- carbon sequestration,
- waste recycling and storage,
- recreation,
- educational opportunities,
- spiritual enrichment, and
- aesthetic experiences.

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## **Accomplishments from the Gulf of Maine Council on the Marine Environment Action Plan 2001–2006**

Every five years, the Gulf of Maine Council creates an action plan that provides a framework for the Council's activities for the next half decade. Each action plan outlines the goals, outcomes, and activities that the Council will pursue through its committees and partnerships. Under the three goals of the Gulf of Maine Council on the Marine Environment Action Plan 2001–2006, the Council facilitated regional progress on the issues of habitat protection and restoration, ecosystem integrity, and sustainable maritime activities.

### **Goal I (2001–2006): Coastal and marine habitats throughout the Gulf of Maine are healthy and support the Gulf's diversity of plant and animal species.**

Examples include:

- Between 2002 and 2006, the Gulf of Maine Council on the Marine Environment/National Oceanic and Atmospheric Administration (NOAA) Habitat Restoration Grant Program provided \$1.4 million in competitive grants to community-based organizations in Massachusetts, New Hampshire, Maine, New Brunswick, and Nova Scotia, leveraging \$3.9 million in matching support. The 56 projects contributed to restoration of salt marshes; rivers, lakes, and other habitats for sea-run fish; shellfish habitats and populations; and shoreland (riparian) habitats. The program trained a hundred volunteers to monitor salt marshes and invasive species. The Gulf of Maine Habitat Restoration Strategy, developed by the Council and its partners, has guided the grant-making program. For more information: <http://restoration.gulfofmaine.org>.
- The Council produced and distributed the Gulf of Maine Marine Habitat Primer in 2005. The primer enhances understanding of marine habitats in the Gulf of Maine; provides background needed to make more informed decisions on human uses, management, and conservation; and provides an initial step toward a habitat conservation strategy for the Gulf of Maine. The primer is intended as a useful tool for resource managers, planners, legislators, conservation commissioners, NGO staff members, and others seeking a better understanding of marine habitats from Massachusetts to Nova Scotia. For more information: [www.gulfofmaine.org/habitatprimer](http://www.gulfofmaine.org/habitatprimer).

- Mapping the Gulf of Maine's seafloor is an essential step for ecosystem-based management of the region's marine environment. The Council helped form the Gulf of Maine Mapping Initiative (GOMMI), a U.S./Canada partnership of government and non-governmental organizations to conduct comprehensive seafloor imaging, mapping, and biological and geological surveys. GOMMI grew out of a mapping workshop in October 2001 that was sponsored by the Gulf of Maine Council and the National Oceanic and Atmospheric Administration. GOMMI is a subcommittee of the Council and is guided by a peer-reviewed strategic plan, *Gulf of Maine Mapping Initiative: A Framework for Ocean Management*. For more information: [www.gulfofmaine.org/gommi](http://www.gulfofmaine.org/gommi).
- The Council in partnership with the U.S. Environmental Protection Agency convened the Northeast Coastal Indicators Workshop in 2003. The workshop brought together some 90 scientists and managers to develop ecosystem indicators applicable to the northeast coastal region from New York to Nova Scotia. Building on the workshop, leaders from the Gulf of Maine region formed the Ecosystem Indicator Partnership (ESIP) with support from the Gulf of Maine Council. As a committee of the Council, ESIP began development of indicators for the Gulf of Maine region and integrating regional data for a new Web-based reporting system for marine ecosystem monitoring. The indicators focus on coastal development, contaminants and pathogens, eutrophication, aquatic habitat, fisheries and aquaculture, and climate change. For more information: [www.gulfofmaine.org/nciw](http://www.gulfofmaine.org/nciw).
- In 2001, the Council led efforts with the U.S. Federal Aquatic Nuisance Species Task Force to form the Northeast Aquatic Nuisance Species (NEANS) Panel. The NEANS Panel addresses issues and concerns relative to the freshwater and marine resources of its member states. Panel members represent state, federal, and provincial governments, academia, commercial and recreational fishing interests, recreational boaters, commercial shipping, power and water utilities, environmental organizations, aquaculture, nursery and aquarium trades, tribal concerns, lake associations, and the bait industry, among others. The Panel has four working committees: Communications, Education, and Outreach; Policy and Legislation; Science and Technology; and Shipping. For more information: [www.northeastans.org](http://www.northeastans.org).

**Goal 2 (2001–2006):  
Contaminants in the Gulf of Maine are at sufficiently low levels to ensure human health and ecosystem integrity.**

Examples include:

- The Gulfwatch Monitoring Program provides managers with information that they need to protect marine resources and human health. At nearly 60 sites around the Gulf of Maine, Gulfwatch measures contaminants including polycyclic aromatic hydrocarbons, polychlorinated biphenyls, chlorinated pesticides, and metals. For more information: [www.gulfofmaine.org/gulfwatch](http://www.gulfofmaine.org/gulfwatch).
- The New Hampshire Shellfish Program uses Gulfwatch data for evaluating the contamination of estuarine and coastal waters where shellfish are harvested for consumption. The concentrated monitoring program in New Hampshire develops baseline data for containments, determines the impact and fate of spilled oil in the Great Bay estuary, and establishes a petroleum-contamination baseline for assessing oil spill damage. Sampling sites include areas of critical habitat along New Hampshire's coast.
- The Massachusetts Bays Program used Gulfwatch's sampling program design to evaluate contaminant loading in Cohasset Harbor, after lobstermen noticed elevated mortality of lobsters in the inner harbor. Concerned about contamination from sewage discharges or non-point source pollution, a citizen group brought their concerns to the Massachusetts Bays Program. Staff collected water samples that were analyzed and compared with other Gulfwatch data. Gulfwatch has increased awareness among local governments of the availability of data and information on marine contaminants.
- At the regional level, Gulfwatch has contributed to expanding efforts in marine environmental monitoring, indicators, and environmental reporting around the Gulf of Maine. In addition, habitat restoration projects have used Gulfwatch data to evaluate the condition of rivers and estuaries and the implications of removing dams and other barriers.
- The Council sponsored a workshop on sewage management in April 2002 at the Bedford Institute of Oceanography in Nova Scotia. Hosted by the Nova Scotia Department of Environment and Labour, the workshop explored issues related to the management of sewage and wastewater impacts in the Gulf of Maine and produced a set of recommended actions for the Council and other groups engaged in the issue.
- Canadian and U.S. water quality managers and

scientists from the Gulf of Maine region convened in 2001 to discuss the status and impacts of nitrogen loading. Sponsored by the Council, the workshop produced twenty-four recommendations to the region's governments regarding nutrient assessment, monitoring, and prediction; control strategies; and policy, regulatory, and implementation issues.

**Goal 3 (2001–2006):  
A marine research and monitoring strategy and a nature-based tourism strategy are developed and implemented.**

Examples include:

- The Gulf of Maine Council co-organized a two-day workshop on sustainable tourism in October 2003, resulting in establishment of the Sustainable Tourism Task Force (SSTF). Approximately 50 members of the Gulf of Maine's tourism industry adopted a working definition of sustainable tourism and eight guidelines for sustainable tourism development. As one of the outcomes of the event, the National Geographic Society's new geo-mapping program identified the Gulf of Maine as a possible project site, and two articles related to the Gulf of Maine appeared in National Geographic Traveler magazine.
- Participants in the Gulf of Maine Summit in 2004 saw the results of the first geomapping efforts. Presentations highlighted businesses in the region that had successfully implemented sustainable tourism practices. Next steps include a region-wide effort to promote the application of the guidelines for sustainable tourism development and helping to establish standards for a national sustainable tourism certification program.

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## Council Highlights 2001–2006

### Strategies and Summaries

- Cross-border Indicators of Climate Change Over the Past Century: Northeastern United States and Canadian Maritime Region (2006)
- Salt Marshes of the Gulf of Maine: Long-term Monitoring to Assess Human Impacts and Ecological Condition (2005)
- Gulf of Maine Marine Habitat Primer (2005)
- Improving Links Between Science and Coastal Management: A Survey to Assess Science and Technology Needs in the Gulf of Maine (2004)
- Gulf of Maine Habitat Restoration Strategy (2004)
- A Survey of Coastal Managers' Science and Technology Needs Prompts a Retrospective Look at Science-Based Management in the Gulf of Maine (2004)
- In Pursuit of Data: Populating the Coastal Development Indicators (2004)
- Gulf of Maine Mapping Initiative: A Framework for Ocean Management. Includes a needs assessment to document user priorities (2004)
- The Tides of Change. An Environmental Report on the Gulf of Maine and Bay of Fundy (2004)
- Gulfwatch: Monitoring Chemical Contaminants in Gulf of Maine Coastal Waters (2003)
- Mapping the Undersea Landscape: Using Seafloor Maps to Improve Management of the Gulf of Maine (2003)
- Ocean Zoning for the Gulf of Maine: A Background Paper (2003)
- on Molluscan Shellfish Safety. Henshilwood, B., T. Deegan, T. McMahon, C. Cusack, S. Keaveney, J. Silke, M. O'Conneide, D. Lyons, and P. Hess (Eds.). Galway, Ireland, June 14th-18th, 2004. The Marine Institute, Rinnville, Oranmore, Galway, Ireland.
- Wells, P. G. 2003. Assessing Health of the Bay of Fundy: Concepts and Framework. *Marine Pollution Bulletin* 46(9):1059–77.
- Jones, S. H., M. Chase, J. Sowles, P. Hennigar, N. Landry, P. G. Wells, G. C. H. Harding, C. Krahforst and G. L. Brun. 2001. Monitoring for Toxic Contaminants in *Mytilus edulis* from New Hampshire and the Gulf of Maine. *Journal of Shellfish Research* 20:1203–1214.
- Chase, M. E., S. H. Jones, P. Hennigar, J. Sowles, G. C. H. Harding, K. Freeman, P. G. Wells, C. Krahforst, K. Coombs, R. Crawford, J. Pederson, and D. Taylor. 2001. Gulfwatch: Monitoring Spatial and Temporal Patterns of Trace Metal and Organic Contaminants in the Gulf of Maine (1991–1997) with the Blue Mussel, *Mytilus edulis* L. *Marine Pollution Bulletin* 42:490–504.

### Workshops and Workshop Reports

- Marine Habitats in the Gulf of Maine: Assessing Human Impacts and Developing Management Strategies (2005)
- Gulf of Maine Summit: Committing to Change (2004)
- Northeast Coastal Indicators Workshop (2004)
- Atlantic Northeast Coastal Monitoring Summit (2002)
- Council Public Forum on Coastal Development
- Sewage Management in the Gulf of Maine: Workshop Proceedings (2002)
- Managing Nitrogen Impacts in the Gulf of Maine: Workshop Report (2001)
- Gulf of Maine Marine Habitat Characterization and Mapping: A Workshop Report and Strategy for Ocean Mapping in the Gulf of Maine (2001)
- Aquaculture Remediation Workshop (2001)
- Environmental Quality Monitoring Workshop: Summary Report (2001)

### Journal Articles

- Jones, S. H., L. White, P. Hennigar, P. Wells, C. Krahforst, G. Harding, J. Aube, G. Brun, J. Schwartz, M. Chase, P. Vass, N. Landry and J. Stahlnecker. 2006. Spatial and Temporal Trends of Chemical Contaminants in Tissues of the Blue Mussel, *Mytilus edulis* L., in the Gulf of Maine: 1993–2001, pp. 373-385, *In*, Molluscan Shellfish Safety. Proceedings of the 5th International Conference

### Initiatives and Projects

- Habitat Restoration Grants Program operated by Gulf of Maine Council/National Oceanic and Atmospheric Administration Habitat Restoration Partnership.
- Action Plan Grants Program supported community organizations around the Gulf of Maine for projects relating to the action plan's goals.
- Gulfwatch assessed chemical contaminants in the Gulf of Maine's coastal waters.
- Gulf of Maine Times educated readers about social, economic, environmental, and scientific issues.
- Science Translation Project helped accelerate the transfer of scientific findings to coastal decision-makers.

### Web Pages and Interactive Tools

- Gulf of Maine Council Web site was redesigned and expanded to facilitate regional communication and provide interactive tools.
- Environmental Monitoring Program Locator developed to provide online, searchable access to inventory of more than 250 Gulf of Maine monitoring programs.
- NGO Directory database created to facilitate collaboration among more than 600 non-government organizations in the region.
- Interactive map built for Ecosystem Indicator Partnership (ESIP) to show where monitoring occurs.
- Web-based map, contaminants database, and graphing tools developed for Gulfwatch Monitoring Program.
- KnowledgeBase bibliographic database established with geospatially searchable information on priority issues.
- Gulf of Maine Habitat Restoration Web Portal launched with an atlas of tidal restrictions and other information for restoration practitioners.

PHOTO

## Goals for 2007–2012

The Gulf of Maine Council on the Marine Environment Action Plan 2007–2012 focuses on three bold and ambitious goals identified by the people living and working around the Gulf of Maine.

- Goal 1 Coastal and marine habitats are in a healthy, productive, and resilient condition.
- Goal 2 Environmental conditions in the Gulf of Maine support ecosystem and human health.
- Goal 3 Gulf of Maine coastal communities are vibrant and have marine-dependent industries that are healthy and globally competitive.

Using logic models (see box, below), the Council established short-, mid-, and long-term outcomes toward the goals, and activities to accomplish the outcomes. The Gulf of Maine Council on the Marine Environment Action Plan 2007–2012 provides a broad description of the goals, outcomes, and activities. Detailed information is available in the Work Plan at [www.gulfofmaine.org](http://www.gulfofmaine.org).

Performance measures and assessment procedures to measure progress toward the outcomes and goals are under development and can be found on the Council's Web site.

The goals and results that this Action Plan seeks to accomplish are taken from the statutory mandates of the region's government agencies. They work through the Council to address these mandates in a timely and cost-effective manner.

Canadian and U.S. federal agencies with statutory responsibilities in the coastal and marine environment are members of the Council and have a vital role in implementing this Action Plan.

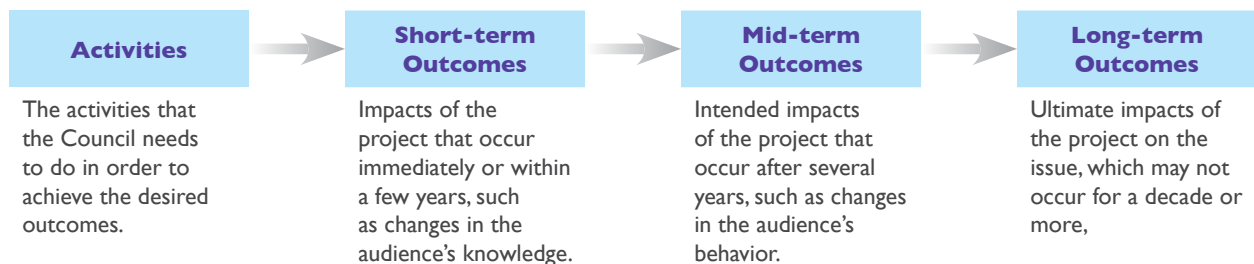
## PHOTO

### What Is Ecosystem-based Management?

Ecosystem-based management is an integrated approach to management that considers the entire ecosystem, including humans. In the past, management strategies have often focused exclusively on single species, which often has not been successful because complex interactions of species and environmental processes result in ecosystem changes. Now many organizations are adopting an ecosystem-based approach to policy and management. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive, and resilient condition so that it can provide the services humans want and need.

### The Pieces of a Logic Model

Logic models are valuable tools for planning, goal setting, and evaluation. As defined on the NOAA Web site, logic models are "a systematic and visual way to present and share your understanding of the relationships among the resources you have to operate your program, the activities you plan to do, and the changes or results you hope to achieve." The Council used logic models as a framework for developing the Action Plan.



Source: NOAA Coastal Services Center

# Goal I: Protect and restore habitats

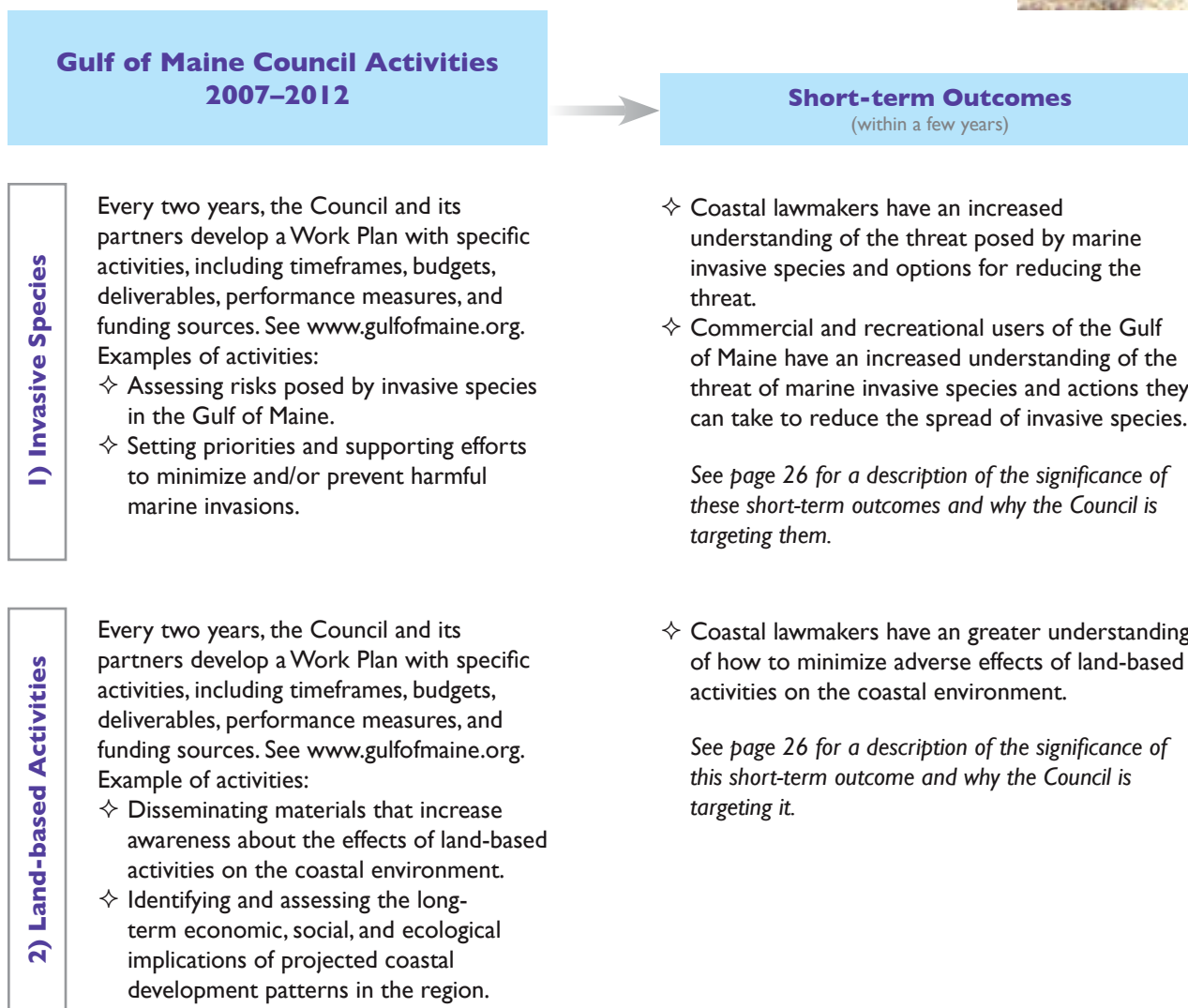
Coastal and marine habitats are in a healthy, productive, and resilient condition.



This goal focuses on four interrelated issues that affect the health of the Gulf of Maine, its watershed, and the marine economic sector.

- 1) **Invasive Species.** Non-native plants and animals pose a major threat to the ecosystem and economic uses of the Gulf.
- 2) **Land-based Activities.** Human activities on land can lead directly or indirectly to degradation of the Gulf of Maine.

*Continued on page 20*





Peter H. Taylor/Waterview Consulting

### Mid-term Outcomes

(after several years)

- ❖ Coastal policy makers enact effective regional policies and programs to minimize adverse impacts of marine invasive species.
- ❖ Regulators implement legal instruments to minimize adverse impacts of marine invasive species.
- ❖ Users of the coastal and marine environment enact best practices to minimize adverse impacts of marine invasive species.

- ❖ Coastal lawmakers enact, implement, and evaluate legislation that prevents land-based activities from adversely affecting the coastal environment.
- ❖ Municipal governments are continuously improving local planning tools and making infrastructure investments that minimize adverse impacts on the coastal environment.
- ❖ Watershed residents and businesses seek to minimize the effect of their land use decisions on the coastal environment.

### Long-term Outcomes

(after a decade or more)

- ❖ The adverse effect of marine invasive species on the coastal environment is minimized.

- ❖ The impact of land-based activities on regionally significant coastal habitats is minimized.

# Goal I: Protect and restore habitats

Coastal and marine habitats are in a healthy, productive, and resilient condition.

Continued from page 18

**3) Habitat Restoration.** Habitats damaged by past human uses can be restored so they contribute to a properly functioning ecosystem. (The Council focuses its efforts on regionally significant coastal habitats. These are habitats that support priority, gulf-wide plant and animal species and that meet certain ecological and social criteria as identified by the Council.)

**4) Marine Habitat Conservation.** Developing and applying integrated, holistic approaches to management and policy is essential.



## Gulf of Maine Council Activities 2007–2012

## Short-term Outcomes (within a few years)

### 3) Habitat Restoration

Every two years, the Council and its partners develop a Work Plan with specific activities, including timeframes, budgets, deliverables, performance measures, and funding sources. See [www.gulfofmaine.org](http://www.gulfofmaine.org). Examples of activities:

- ✧ Disseminating information on the need for coastal habitat restoration.
- ✧ Funding restoration activities.
- ✧ Creating tools that managers need to accelerate habitat restoration.

- ✧ Non-profit organizations working to conserve coastal lands have an increased understanding of the need to restore and monitor regionally significant coastal habitats.
- ✧ Local, non-profit, and corporate sources are aware of the need to increase funding for the restoration of regionally significant coastal habitats on public and private lands.

See page 26 for a description of the significance of these short-term outcomes and why the Council is targeting them.

### 4) Marine Habitat Conservation

Every two years, the Council and its partners develop a Work Plan with specific activities, including timeframes, budgets, deliverables, performance measures, and funding sources. See [www.gulfofmaine.org](http://www.gulfofmaine.org). Examples of activities:

- ✧ Communicating how ecosystem-based management can be accelerated in the Gulf of Maine.
- ✧ Developing the ecosystem-based tools that managers need.
- ✧ Building the capacity of managers for integrated approaches to management.

- ✧ Coastal lawmakers, decision-makers, and managers working at the Gulf of Maine scale have an increased understanding of how to apply ecosystem-based management to conserve and protect Gulf of Maine habitats and resources.

See page 26 for a description of the significance of this short-term outcome and why the Council is targeting it.



Peter H. Taylor/Waterview Consulting

**Mid-term Outcomes**  
(after several years)

- ✧ Partners leverage and invest funds in restoration of regionally significant coastal habitats (RSCH).
- ✧ Non-government organizations increase funding for restoration.
- ✧ Practitioners implement regional restoration monitoring standards.
- ✧ Government agencies incorporate RSCH priorities into restoration plans.
- ✧ Communities are more involved in restoration.
- ✧ Public agencies and non-government organizations have better technical and financial capacity to undertake restoration.
  
- ✧ Managers and regulators implement effective marine management initiatives and programs.
- ✧ Watershed residents demonstrate increased stewardship of the marine environment.

**Long-term Outcomes**  
(after a decade or more)

- ✧ Impaired regionally significant coastal habitats (RSCH) are restored to support the desired functions and values of those habitats. (Regionally significant coastal habitats are those areas that support priority, gulf-wide plant and animal species that meet certain ecological and social criteria as identified by the Council.)
  
- ✧ Ecosystem-based management of regionally significant marine habitats maintains ecological integrity.

## **Goal 2: Environmental and human health**

### **Environmental conditions in the Gulf of Maine support ecosystem and human health.**

This goal focuses on preventing and reducing water pollution. Many pollutants enter the Gulf of Maine and its watershed from licensed or permitted point-source discharges, non-point sources, and atmospheric deposition. Individually and cumulatively, these sources affect the ecosystem and in some cases limit human use of the Gulf's resources.

Regional collaboration is needed to strengthen the laws and programs that limit the release of important pollutants such as mercury, sewage, and excess nutrients. People living throughout the watershed have an important and lasting impact on the Gulf of Maine. Increasing the awareness of adults living in the watershed about the effect of their lifestyle choices on the marine environment is an important first step.



#### **Gulf of Maine Council Activities 2007–2012**

Every two years, the Council and its partners develop a Work Plan with specific activities, including timeframes, budgets, deliverables, performance measures, and funding sources. See [www.gulfofmaine.org](http://www.gulfofmaine.org). Examples of activities:

- ✧ Conducting contaminant and habitat monitoring.
- ✧ Providing information about priority contaminants and how lifestyle choices affect the condition of the marine environment.
- ✧ Responding to managers' needs for state-of-the-environment reporting and ecosystem indicators.

#### **Short-term Outcomes** (within a few years)

- ✧ Coastal lawmakers have increased knowledge about the need to reduce releases of priority pollutants that affect the Gulf of Maine.
- ✧ Adults living in coastal communities of the Gulf of Maine have increased awareness about how their lifestyle choices affect the condition of the marine environment.

*See page 27 for a description of the significance of these short-term outcomes and why the Council is targeting them.*



Peter H. Taylor/Waterview Consulting

### Mid-term Outcomes

(after several years)

- ❖ Coastal lawmakers enact consistent standards and guidelines that reduce contaminant releases.
- ❖ Residents of the Gulf of Maine's watershed implement voluntary lifestyle actions to reduce their use and release of contaminants.

### Long-term Outcome

(after a decade or more)

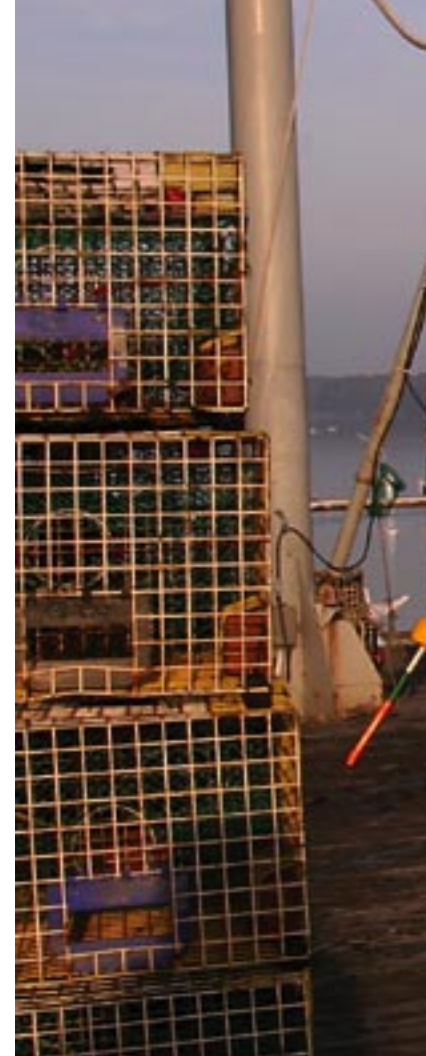
- ❖ Environmental conditions of the marine environment improve as contaminant releases are reduced.

### Goal 3: Support vibrant communities

**Gulf of Maine coastal communities are vibrant and have marine-dependent industries that are healthy and globally competitive.**

This goal addresses several aspects of the economic well-being of towns and cities along the coast of the Gulf of Maine:

- The Council views the leaders of marine-dependent industries as key decision-makers in ensuring a healthy and productive Gulf of Maine. It values and needs their active participation in Council subcommittees, forums, and other activities to develop effective regional initiatives.
- The Council believes that the value of natural capital needs to be incorporated into provincial and state statutes, policies, and programs. ✧ Marine-dependent industries, particularly sustainable tourism, finfish aquaculture, and commercial bivalve shellfish harvesting, need to continually innovate to remain competitive and support vibrant coastal communities.
- Working waterfronts are essential to marine-dependent industries and often define the character of coastal communities.
- Increasing the use of alternate energy sources is critical for economic growth, energy stability, and environmental quality in the Gulf of Maine region.



#### Gulf of Maine Council Activities 2007–2012

Every two years, the Council and its partners develop a Work Plan with specific activities, including timeframes, budgets, deliverables, performance measures, and funding sources. See [www.gulfofmaine.org](http://www.gulfofmaine.org). Examples of activities:

- ✧ Strengthening marine-dependent industry participation in Council tasks.
- ✧ Promoting communication about methodologies and case studies for incorporating natural capital valuation and socio-economic concepts into ecosystem-based management initiatives.
- ✧ Collaborating with local partners to ensure that working waterfronts remain viable.
- ✧ Increasing public awareness about alternative energy sources and fuels.

*See page 27 for a description of the significance of the short-term outcomes and why the Council is targeting them.*

#### Short-term Outcomes (within a few years)

- ✧ The level of participation in Council activities by marine-dependent industry representatives is increased.
- ✧ Coastal lawmakers have an increased understanding of the relevance of incorporating natural capital concepts in coastal decision-making. Natural capital is a term for the natural resources, habitats, ecological processes, and other non-human-created infrastructure that often are not fully considered in economic valuation and decision-making.
- ✧ Gulf-wide industry-specific collaboration results in greater awareness of applicable best practices.
- ✧ Coastal lawmakers have increased awareness of creative approaches to protect and manage the working waterfront infrastructure that marine-dependent industries require to remain competitive.
- ✧ Adults living in the Gulf of Maine’s watershed have an increased awareness of products and services developed with alternate energy sources or fuels.



Peter H. Taylor/Waterview Consulting

**Mid-term Outcomes**  
(after several years)

- ❖ Marine-dependent industries are utilizing renewable and non-renewable resources in ways that maintain ecosystem integrity.
- ❖ The public is willing to pay a fair price for marine products and services that are produced using sustainable practices.
- ❖ Marine-dependent industries accelerate the adoption of practices to become even more sustainable.
- ❖ Government and marine-dependent industries are working collaboratively to address social, cultural, environmental, and economic concerns.
- ❖ The value of coastal natural capital is incorporated into federal and provincial/state decision-making via laws, policies, and programs.

**Long-term Outcomes**  
(after a decade or more)

- ❖ Coastal communities are supportive of marine-dependent industries, and the industries are implementing innovative, sustainable best practices that position them favorably for the future.
- ❖ Marine-dependent industries are sustainable and competitive in global markets.

## Significance of the Short-term Outcomes

### Goal 1: Protect and restore habitats

#### Invasive Species

**Outcome:** Coastal lawmakers have an increased understanding of the threat posed by marine invasive species and options for reducing the threat.

Invasive species are considered one of the greatest threats to coastal environments and can substantially alter the abundance, diversity, and distribution of many native species. The availability of habitat and absence of natural predators and competitors can lead to runaway growth that overwhelms other species. Unlike many forms of pollution that degrade over time, invasive species can persist and increase. The spread of non-indigenous plant and animal species poses a significant threat to the ecosystem and human uses of the Gulf of Maine. The introduction of invasive species into ports, coastal areas, and watersheds has damaged marine ecosystems around the world, costing millions of dollars in remediation, monitoring, and ecosystem damage.

**Outcome:** Commercial and recreational users of the Gulf of Maine have an increased understanding of the threat of marine invasive species and actions they can take to reduce the spread of invasive species.

Many people rely on the Gulf of Maine for their livelihood and recreation. Through their actions, commercial (e.g., fishers, shipping companies, marine tradespeople, etc.) and recreational (e.g., fishers, boaters, beachgoers, etc.) users can assist in preventing and reducing the spread of invasive species. They can also detect and report the occurrence of unfamiliar species so that others are able to eradicate or contain harmful invasives.

#### Land-based Activities

**Outcome:** Coastal lawmakers have an increased understanding of how to minimize adverse effects of land-based activities on the coastal environment.

Throughout the Gulf of Maine, the patterns of land development, often in scattered and unplanned clusters of homes and businesses, have an important affect on the coastal environment. Urban and suburban sprawl increases the need for infrastructure such as roads, bridges, and sewers, degrading the coastal environment while often making fragile or hazard-prone areas more accessible to development. The volume of polluted runoff from urban and suburban areas is exacerbated by increases in impervious surfaces, such as roads, parking lots, sidewalks, and rooftops. Contaminants from these non-point sources combine with point sources and atmospheric deposition. These activities over time are adversely affecting ecosystem health and people's ability to use the coastal environment.

#### Habitat Restoration

**Outcome:** Non-profit organizations working to conserve coastal lands have an increased understanding of the need to restore and monitor regionally significant coastal habitats.

Throughout the Gulf of Maine, there are plant, fish, and wildlife habitats of regional significance. These special areas are unique within the Gulf of Maine ecosystem and often support a host of species that require transboundary cooperation to manage effectively. (See Gulf of Maine Habitat Restoration Strategy, October 2004.) Human activities have degraded some of these regionally significant coastal habitats, and it is timely to accelerate the pace of restoration. Important work is underway throughout the region to protect and restore some of our most precious lands. Often leading these efforts are local land trusts, watershed associations, friends groups, and provincial- or state-wide public and non-profit organizations that are partnering in effective ways. A critical first step is to increase the capacity of these organizations to organize, manage, and monitor restoration projects.

**Outcome:** Local, non-profit, and corporate sources are aware of the need to increase funding for the restoration of regionally significant coastal habitats on public and private lands.

The restoration of coastal habitats is necessary to meet the region's biological and socio-economic needs. Restored habitats provide communities with opportunities for sustainable commercial fishing, recreation, and nature-based tourism. Critical biological needs are also addressed when the functions and values of coastal habitats, degraded by years of human activity, are restored. Presently the amount of degraded habitat in the Gulf of Maine region far exceeds the financial resources available for habitat restoration. Further, federal funds for restoration far exceed funds from other sources. More lands could be restored if additional non-federal funding sources were available.

#### Marine Habitat Conservation

**Outcome:** Coastal lawmakers, decision-makers, and managers working at the Gulf of Maine scale have an increased understanding of how to apply ecosystem-based management to conserve and protect Gulf of Maine habitats and resources.

Government and non-government organizations (e.g., commercial fishermen and marine trade organizations, environmental organizations) are responsible for designing and implementing coastal and marine conservation initiatives throughout the Gulf of Maine. These decision-makers need a strong understanding of how the Gulf's ecosystem functions and the conservation options available to protect ecosystem functions and values. Given the recent renewed commitment of the federal governments in Canada and the United States to pursue ecosystem-based approaches, it is timely for the Council to increase awareness about these approaches.

## Goal 2: Environmental and human health

**Outcome: Coastal lawmakers have increased knowledge about the need to reduce releases of priority pollutants that affect the Gulf of Maine.**

Releases of priority pollutants to the waters of the Gulf of Maine, including its watershed, occur through licensed and/or permitted point source discharges, non-point sources of pollution (e.g., stormwater, agriculture, silviculture, marinas) and atmospheric deposition. Individually and cumulatively, these sources have detectable effects on the ecosystem and in some instances limit human use of the Gulf's resources. Given the Gulf's oceanographic characteristics, the region's coastal lawmakers need to work collaboratively to strengthen the laws and programs affecting the releases of priority pollutants (e.g., mercury, sewage, nutrients). A first step is to ensure that lawmakers are aware of the need to reduce these pollutants.

**Outcome: Adults living in coastal communities of the Gulf of Maine have increased awareness about how their lifestyle choices affect the condition of the marine environment.**

People living throughout the watershed have an important and lasting impact on the Gulf of Maine. For example, the lifestyle choices they make affect the type and amount of solid waste they generate, their use of household chemicals, their choices of daily transportation options and resulting emissions, the location and the patterns of development, and the way they attend to their lawns and yards. Increasing the awareness of adults living in the watershed about the effect of their lifestyle choices on the marine environment is a first step in reducing the cumulative effects of these activities on the Gulf of Maine.

## PHOTO

## Goal 3: Support vibrant communities

**Outcome: The level of participation in Council activities by marine-dependent industry representatives is increased.** The Council views the leaders of marine-dependent industries as key decision-makers in ensuring a healthy and productive Gulf of Maine. Thus it needs their active participation in Council subcommittees, forums, periodic Web-based inquiries, and other activities to develop effective regional initiatives.

**Outcome: Coastal lawmakers have an increased understanding of the relevance of incorporating natural capital concepts in coastal decision-making.**

The term "natural capital" describes the natural system that provides space, substratum, and renewable and non-renewable resources that support and regulate the physical, biological, and chemical processes in the coastal zone. The ongoing replacement of natural capital by physical capital (i.e., the built environment) may not be sustainable. Further, the non-monetary value of open landscapes and functioning ecosystems is not fully considered in economic valuation and decision-making. A way to begin addressing this issue is by working to incorporate natural capital valuation into provincial and state statutes, policies, and programs.

**Outcome: Gulf-wide industry-specific collaboration results in greater awareness of applicable best practices.**

Marine-dependent industries—particularly sustainable tourism, finfish aquaculture, and commercial bivalve shellfish harvesting—need to continually innovate to remain competitive and support vibrant coastal communities.

**Outcome: Coastal lawmakers have increased awareness of creative approaches to protect and manage the working waterfront infrastructure that marine-dependent industries require to remain competitive.**

The Gulf's working waterfronts consist of sites or facilities that provide physical access to the sea for commercial use, as well as related infrastructure and services. These areas are essential to our marine-dependent industries and often define the character of coastal communities. Provincial and state lawmakers, local officials (e.g., town councilors, selectmen, municipal, local service district representatives), and planning authorities are often searching for creative ways to protect and maintain these working waterfronts.

**Outcome: Adults living in the Gulf of Maine's watershed have an increased awareness of products and services developed with alternate energy sources or fuels.**

Increasing the use of alternate energy sources is essential for economic growth and energy stability in the Gulf of Maine region. It is also critically important to lessen reliance on fossil fuels in order to reduce the associated environmental impacts such as climate change and air pollution. Developing markets for products and services produced with alternate energy sources is a key step in promoting their use.

## GLOSSARY