Developing Indicators for the Bay of Fundy to Long Island Sound

1. Regional indicators

Regional indicators are used to summarize complex coastal and marine information into a simplified and useful manner without compromising the integrity of the source data. We envision they will serve as "vital signs" and be used to communicate the status and trends of the region's coastal area.

Our request

Based on your knowledge of the local issues and indicators in your area, we are asking you to comment on (1) the leading management issues and (2) potential indicators that could answer questions from leading management issues. We will use the results of this web survey to develop a set of indicators relevant to the coastal area of the northeastern Atlantic region between the Bay of Fundy and Long Island Sound. The results of this survey will be discussed at a workshop in Durham, New Hampshire on January 6-8, 2004. (You can indicate below if you would like to receive the results of this survey or learn more about the workshop.)

1. Leading management issues
Based on your local knowledge, please indicate how important these issues are to you.

	Very Important	Important	Somewhat Important	Not Important
Health of fisheries	○	○	○	○
Contaminants in the food chain	○	○	○	○
Effects of coastal eutrophication	○	○	○	○
Effects of coastal development and land use change on the environment	○	○	○	○
Human effects on aquatic habitats	○	○	○	○
Climate change on the environment	○	○	○	○
Other	○	○	○	○

2. If you checked "Other", please specify the issue here.

[   ]

2. Tell Us About Yourself

We would appreciate it if you would complete the following questions so we have an understanding of whom has completed the survey. All personal information will only be used for this effort and related workshops to this effort.

4. Jurisdiction

○ Massachusetts
○ New Brunswick
○ Nova Scotia
○ Rhode Island
○ Maine
○ Connecticut
○ New York
○ New Hampshire
○ Other (please specify)

[_____]

5. Name

[_____]

6. E-mail

[_____]

7. Scale at which you are working

☐ Harbor
☐ Estuary
☐ Embayment
☐ Open Coastal Waters
☐ Other (please specify)

[_____]

8. Self-description

	Public	Private	Non-governmental	Citizen
Manager	☐	☐	☐	☐
Policy-maker	☐	☐	☐	☐
Scientist	☐	☐	☐	☐
Educator	☐	☐	☐	☐
Other	☐	☐	☐	☐

Address (optional) If you would like to receive written materials on upcoming workshops, please complete the following

9. Street Address

[ ]

10. City

[ ]

11. Jurisdiction/State   **12. Zip Code**

[ ]   [ ]

3. Issue Areas

The remaining survey questions are divided into 6 sections, each section corresponding to one of the following issues areas: fisheries, contaminants, eutrophication, land use change, aquatic habitat, and climate change.

Select an issue area for which you are familiar. When you complete a section, you will be returned to this page, where you can select another issue area. When you have completed all issue areas for which you are familiar, select -- Finish Survey --.

After making your selection, click Next.

* **13. Select an issue area for which you are familiar and then click Next.**

When finished, select --Finish Survey --.

- ☑ Fisheries
- ◯ Contaminants
- ◯ Eutrophication
- ◯ Coastal Development
- ◯ Marine Aquatic Habitat
- ◯ Climate Change
- ◯ -- Finish Survey --

5. Fisheries

Productive fisheries stocks are of vital ecological and economic importance to the northeast U.S. and eastern Canada. Throughout the last several decades, increased efforts to catch commercially and recreationally important fish have caused several species to be overexploited. Moreover, changes in regional ecosystems have caused changes in the types of species found in several areas. As a result people are concerned about the sustainability of marine fish and shellfish populations.

14. How important are the following fisheries issues are?

	Very Important	Important	Somewhat Important	Not Important
The levels of commercial and recreational fish stocks	○	○	○	○
Changes in species composition and biomass	○	○	○	○
Fish harvesting practices on non-target species and habitats	○	○	○	○
Affect of changing fish stocks on coastal communities	○	○	○	○

15. Suggested Additional Fisheries Issues:

a. [   ]

b. [   ]

c. [   ]

16. How useful are the following themes in communicating the status and trends of the fishery?

	Very Useful	Useful	Somewhat Useful	Not Useful
Populations of harvested species	○	○	○	○
• Status of commercial finfish stocks	○	○	○	○
• Status of lobster stocks	○	○	○	○
• Status of forage fish species abundance/distribution	○	○	○	○
• Increase/decrease in species diversity	○	○	○	○
Commercial by-catch of non-target fish species and protected resources	○	○	○	○
Value of commercial landings	○	○	○	○
Days fished by commercial/recreational vessels	○	○	○	○
Catch per unit effort	○	○	○	○
Direct recreational fishing expenditures/multiplier effect in the regional economy	○	○	○	○
Gear deployment information	○	○	○	○
Relative fish abundance	○	○	○	○
Bottom type	○	○	○	○
Shellfish landings	○	○	○	○
Miles of stream open to fish migration	○	○	○	○
Economic contribution of fisheries and related industries in coastal communities	○	○	○	○

17. Suggested Additional Fisheries Themes:

a. [   ]

b. [   ]

c. [   ]

7. Contaminants

Contamination in the world's oceans, rivers, estuaries, groundwater, soil, sediment, and air threatens plants, animals, and the safety of our food supply and clean water. It also may impact the economy, tourism, aquatic and upland habitat and the biological integrity of many marine species. Contaminants of concern can be biological, such as bacteria, which have been cited as the main cause for beach closures (US EPA, 2001) or chemical, such as metals or organic chemicals (e.g., PCBs, PAHs). Many organic chemicals are readily taken up by animals and concentrate at the top of the food chain. Although metals occur naturally in the environment, high concentrations of some metals (e.g., mercury) in fish have resulted in advisories recommending limited consumption of a number of fish species.

18. How important are the following contaminant issues?

	Very Important	Important	Somewhat Important	Not Important
Extent of contamination in the marine environment	○	○	○	○
Lethal and sub-lethal effects of contminants on fisheries and people	○	○	○	○
Changes in the sources of contaminants	○	○	○	○
Fate and transport of contaminants	○	○	○	○

19. Suggested Additional Contaminant Issues:

a. [   ]

b. [   ]

c. [   ]

20. How useful are the following themes in communicating the status and trends of contaminants?

	Very Useful	Useful	Somewhat Useful	Not Useful
Sediment and water contamination levels	○	○	○	○
Tissue contamination levels	○	○	○	○
• clams & mussels	○	○	○	○
• fish	○	○	○	○
• marine birds and mammals	○	○	○	○
Shellfish acreage closed to harvesting	○	○	○	○
Bathing beach closures	○	○	○	○
Loading of contaminants to the marine environment	○	○	○	○
• atmospheric	○	○	○	○
• land-based	○	○	○	○

21. Suggested Additional Contaminant Themes:

a. [   ]

b. [   ]

c. [   ]