

**Gulf of Maine
State of the Environment Reporting**

State of the Gulf of Maine Report Workplan

Prepared by
GOMC *Ad Hoc* Task Group for State of the Environment Reporting

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Members of the *Ad Hoc* Task Group for State of the Environment Reporting:

Jay Walmsley (DFO), Chair

Tim Hall (DFO), Working Group Champion

Paul Boudreau (COINAtlantic)

John Brawley (Consultant)

Heather Breeze (DFO)

Laurel Col (NOAA)

Paul Currier (NH Department of Environmental Services)

Jennifer Hackett (DFO)

Russ Henry (NB Department of Agriculture, Fisheries, and Aquaculture)

Liz Hertz (Maine State Planning Office)

Justin Huston (NS Department of Fisheries and Aquaculture)

Steve Jones (University of New Hampshire)

Janet Nye (NOAA)

Kathryn Parlee, ESIP Co-Chair (Environment Canada)

Michele Tremblay, GOMC Co-ordinator

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1 Introduction

At the June 2009 meeting of the Gulf of Maine Council (GOMC), the Council established an *Ad Hoc* Task Group on State of the Environment Reporting. The main objective of the Task Group was to develop a practical workplan to develop a *State of the Gulf of Maine Report*, based on the framework presented in the Scoping Document (Walmsley 2009).

The workplan is based on the premise that the first version of the *State of the Gulf of Maine Report* will be ready for the June 2010 celebrations of the 20-year anniversary of the Council. The development of the report will be ongoing incrementally after that.

2 Report Products

The *State of the Gulf of Maine Report* will be a modular document (Figure 1). The main products are:

1. Context Document
2. Theme Papers
3. Website.

A wiki will not be established for reporting purposes yet, although the need will be re-evaluated at a later stage.

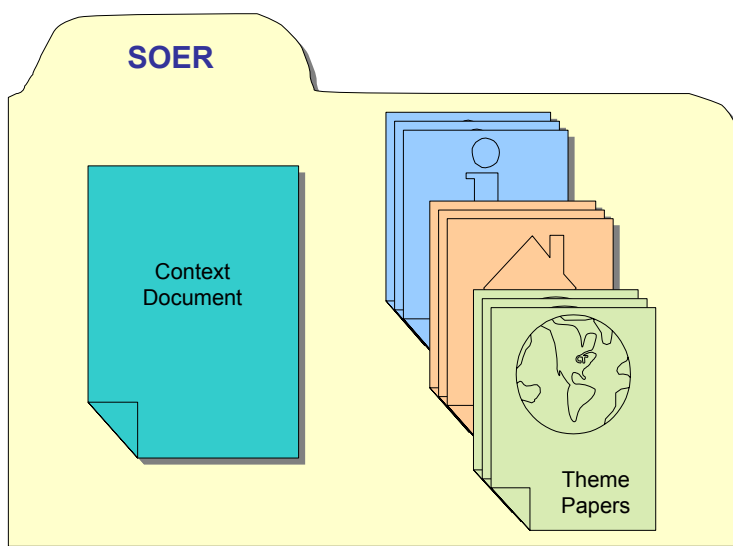


Figure 1: Proposed Gulf of Maine SOER Structure.

2.1 Context Document

The context document will be a relatively static document that provides an overview of the Gulf of Maine. It is intended as an introduction to the *State of the Gulf of Maine Report*. The information provided in this document will be the type of information that rarely changes, such as the boundaries of the area under discussion, the size of the watershed, history of the watershed, etc. A draft table of contents for the document is provided in Appendix A.

A contractor, Colleen Thompson, has been hired by DFO to develop a first draft of the context document by early December 2009. The document will be subject to a review process similar to that used for the theme papers (see Section 2.2). The final document will be ready for publishing on the website by May 2010.

2.2 Theme Papers

The theme papers will provide an evaluation of priority issues that are of interest in the Gulf of Maine. The intention is that the theme papers can be regularly updated at a time interval appropriate for each issue, without having to update the rest of the report. An incremental approach will be taken to develop the theme papers, with the first three theme papers ready for publication on the website by May 2010. The remainder will be developed in the 18 months following the 20-year celebrations.

A short list of theme papers, based on the six ESIP priority areas, has been identified by the Task Team and Working Group (Table 1).

Table 1: Short List of Theme Papers for State of the Gulf of Maine Report

Priority Area	Theme Paper
Climate Change	Climate Change and its Effect on Humans
	Climate Change and its Effect on Ecosystems, Habitats and Biota
Fisheries and Aquaculture	Aquaculture in the Gulf of Maine
	Commercial Fisheries and Fish Stock Status
Coastal Development	Land Use and Coastal Development
Contaminants	Toxic Contaminants
	Microbial Pathogens and Toxins
Eutrophication	Eutrophication
Aquatic Habitats	Coastal Ecosystems and Habitats
	Offshore Ecosystems and Habitats
	Watershed Status
Other	Invasive Species
	Species at Risk
	Emerging Issues.
*Note: Titles provided are not final	

More detail on the content of the theme papers and the ESIP indicators appropriate to each is provided in Appendix B.

2.2.1 Authorship

Authors for theme papers should be technically competent (having some recognized expertise in the subject matter) and have the ability to write well. Institutional authorship will not be encouraged, with the exception of GOMC committees. GOMC member organizations and committees have been requested to identify possible paper authors, and any resources that they are willing to commit to the process. Authors for the three of four papers that will be developed for the June 2010 celebrations will be identified by end December 2009. Thusfar, we have interest in

authorship or support of papers from Julia Knisel (Massachusetts Office of Coastal Zone Management), Peter Wells (BoFEP), Steve Jones (University of New Hampshire), Jocelyne Hellou (DFO, Science Branch) and Janet Nye (NOAA).

2.2.2 Review process

A review process will be put in place to ensure that the theme papers are of the highest technical quality; that language used in the papers is appropriate for the target audience, and that the publication requirements of the GOMC are met (Table 2). One or more peer reviewers will be chosen for each paper. Peer reviewers will be chosen as leaders in their field.

Table 2: Theme Paper Review Process

Task	Participants
Review of draft table of contents	Editorial Committee
Editorial Committee and peer review	Peer reviewers Editorial Committee
Secretariat Team review	Secretariat
US or Canadian Gulf of Maine Association review	US or Canadian Gulf of Maine Association
Outreach Committee review	Outreach Committee
Approval by Working Group	GOMC Council Working Group
Approval by Council	GOMC Council

It is recommended that an Editorial Committee be established for the period from December 2009 to June 2010. The establishment of a more permanent committee can be considered after that period.

2.2.3 Structure

The structure for the theme papers will be based on the Driving Forces-Pressures-State-Impacts-Response (DPSIR) framework, as recommended in the Scoping Document. Jay Walmsley will assist authors with the development of the table of contents for each paper, which will be reviewed by the Editorial Committee before writing commences. Theme papers will be no more than ten pages in length.

2.3 State of the Gulf of Maine Web Portal

The development of the web portal is critical to the distribution of the *State of the Gulf of Maine Reports*. It is the key to making the SOER available to Council member organisations and to the public. The Council already hosts a website that provides ease of access to documents for members and the public alike. The State of the Gulf of Maine Web portal will become a sub-domain on the Council website (e.g., <http://www.gulfofmaine.org/stateofthegulf>).

Theresa Torrent-Ellis of the Maine State Planning Office has offered to include the design of the SOER website in a current contract with Jim Cradock (Yellahoose), who is designing the GOM Times website. A draft design will be available at the end of 2009. Website development will also be through Jim Cradock.

3 Target Audience Reporting Requirements

Identification of the target audience allows the document or products to be customised to accommodate their needs and requirements. A workshop on *Communications Opportunities Associated with the State of the Gulf of Maine Report* was held on Wednesday 7 October 2009 as part of the RARGOM Conference. The participants identified the target audiences for the *State of the Gulf of Maine Report* and some of the reporting requirements.

3.1 Target Audience

The target audience for the *State of the Gulf of Maine Report* was identified as: *professional agency staff*. This included all agencies with an interest in the Gulf of Maine, including government (all levels), industry, NGOs etc. Professional staff could include, but not be limited to, data managers, researchers, program managers, project managers/coordinators, policy analysts/advisors, education/outreach/communications officers and consultants.

Many professionals within this audience provide information to other users in a form that is understood by that secondary audience. For instance, a policy analyst might take information from the *State of the Gulf of Maine Report* and transform it into a ministerial brief. An education outreach specialist might use the same information to develop a community education brochure. The report will not be able to meet the needs of all the secondary users, but should be able to meet the needs of the primary target audience (i.e., professional staff).

3.2 Target Audience Preferences and Needs

3.2.1 Preferential Access and Use of Information

The following methods of accessing information are used preferentially:

- Personal communication with a professional network (by phone or e-mail or in person);
- Google Search, which is often used as an initial search tool, but interest wanes if the search does not turn anything up on the first page;
- Other internet search tools (e.g. Waves, COINatlantic) are also utilised.

The credibility of information is considered a key criterion for its use.

3.2.2 Preferred Information Format

Preferred information format varies considerably between members of the target audience, due mainly to the diversity of needs. In general, most members of the target audience prefer information that has been synthesised (i.e., not raw data) from credible sources, with data sources correctly referenced.

Some of the ideas for presenting information include:

- Use of maps, particularly using geographically referenced data;
- Format that allows easy printing, as well as online reading (e.g., pdf);
- Visually displayed information or data as “information snapshots” (e.g. maps, pie charts, bar graphs, trend analyses);
- The Web was the preferred dissemination medium;
- Summary information was considered useful;

- A common language lexicon needed to be used throughout (i.e., avoid jargon).
- Searchable report (e.g., 50-page pdf should be searchable by key word);
- Hyperlinks, which are important in leading the readers through the document.

3.3 Marketing

Ideas regarding marketing have been put forward by the workshop participants. Further consideration of marketing requirements is needed. Comments included the following:

- There was a need to connect with people's values (i.e., best information does not prevail, but the best story does). This may be achieved through vignettes or factoids or personal anecdotes that draw the reader into the document, making it "real".
- Document and market the credibility of the information (who we bring in to inform this process was considered essential).
- There need to be outreach materials produced in addition to the technical report;
- There may be a need for training (e.g., Gulf of Maine "circuit rider") - working with users to see how they use the products.
- May consider a marketing campaign for the Gulf of Maine (e.g., commercials; 30-second sound bites; use Gulf of Maine personalities).
- Website design will be key to drawing people to the site (may be limited by current web design).

4 Schedule and Budget

The proposed schedule and an indicative budget are provided in Table 3. There is currently financial and in-kind support for the development of the *State of the Gulf of Maine Report* from Fisheries and Oceans Canada, US Geological Survey, Maine State Planning Office, Massachusetts Office of Coastal Zone Management and the National Oceanic and Atmospheric Administration.

Table 3: Budget for State of the Gulf of Maine Report

Task	Proposed Schedule	Indicative Budget (US \$)	Funds Secured (US \$)
YEAR 1: JUNE 2009 – JUNE 2010			
Workplan			
Development of Workplan	December 2009	\$6,000	In kind support provided by Task Group Members
Context Document			
Drafting of Context Document	April 2010	\$14,000	\$9,000 contract (DFO) \$5,000 in kind support (DFO)
Layout of Context Document	May 2010	\$4,000	
Theme Papers			
Drafting of Theme Paper 1	April 2010	\$4,000	DFO ¹
Drafting of Theme Paper 2	April 2010	\$4,000	In kind support (MA Office of Coastal Zone Management) ¹
Drafting of Theme Paper 3	April 2010	\$4,000	DFO ¹
Layout of Theme Papers	May 2010	\$5,000	

Website			
Website Design	December 2009	\$5,000	Undertaken under contract to Maine State Planning Office as part of GOM Times contract.
Website Development	June 2010	\$5,000	
Project Management			
Project Co-ordination	Ongoing	\$10,000	In kind support (DFO)
Annual Total		\$61,000.00	\$47,000²
YEAR 2: JUNE 2010 – JUNE 2011			
Theme Papers			
Drafting of Theme Paper 4	July 2010	\$4,000	In kind support (MA Office of Coastal Zone Management) ¹
Drafting of Theme Paper 5	July 2010	\$4,000	
Drafting of Theme Paper 6	Aug 2010	\$4,000	
Drafting of Theme Paper 7	Sept 2010	\$4,000	
Drafting of Theme Paper 8	Oct 2010	\$4,000	
Drafting of Theme Paper 9	Dec 2010	\$5,000	
Drafting of Theme Paper 10	Feb 2011	\$5,000	
Drafting of Theme Paper 11	March 2011	\$5,000	
Drafting of Theme Paper 12	April 2011	\$5,000	
Layout of Theme Papers	As required	\$13,500	
Website			
Website Maintenance	Ongoing	\$5,000	
Communications			
Marketing Material	As required	\$5,000	
Project Management			
Project Co-ordination	Ongoing	\$10,000	In kind support (DFO)
Annual Total		\$63,500.00	\$14,000
YEAR 3: JUNE 2011 – JUNE 2012			
Theme Papers			
Drafting of Theme Paper 13	July 2010	\$6,000	
Drafting of Theme Paper 14	July 2010	\$6,000	
Updating of Theme Paper (as appropriate)	Aug 2010	\$2,000	
Updating of Theme Paper (as appropriate)	Sept 2010	\$2,000	
Layout of Theme Papers	As required	\$6,000	
Website			
Website Maintenance	Ongoing	\$5,000	
Project Management			
Project Co-ordination	Ongoing	\$5,000	In kind support (DFO)
Annual Total		\$27,000.00	\$5,000
SUBSEQUENT YEARS			
Theme Papers			
Updating of Theme Paper (as appropriate)	Aug 2010	\$2,000	
Updating of Theme Paper (as appropriate)	Sept 2010	\$2,000	

Layout of Theme Papers	As required	\$3,000	
Website			
Website Maintenance	Ongoing	\$5,000	
Project Management			
Project Co-ordination	Ongoing	\$5,000	
Annual Total		\$12,000.00	\$0
Notes:			
1 Tentative funding			
2 USGS has also offered to support the development of the State of the Gulf of Maine Report. The amount of funding available is currently unknown.			

5 References

Walmsley J. 2009. Gulf of Maine State of the Environment Reporting: Scoping Document. Final Report. June 2009. Gulf of Maine Council on the Marine Environment. 22 pp + appx.

APPENDIX A
Context Document Draft Table of Contents

Contents

1	Introduction
2	The Gulf of Maine Study Area
2.1	Natural Conditions in the Gulf of Maine
2.1.1	Geology, Geomorphology and Sedimentology.....
2.1.2	Oceanographic Conditions.....
2.1.3	Ecosystems, Habitats, Fauna and Flora
2.2	Socio-Economic Overview
2.2.1	Historical Context
2.2.2	Demography.....
2.2.3	Economic Overview
2.2.4	Resource Use and Environmental Pressure
3	Environmental Management in the Gulf of Maine
4	State of the Gulf of Maine Report
4.1	State of the Environment Reporting.....
4.2	Reporting Framework
5	Reference

APPENDIX B

Theme Paper Details

Appendix B Theme Papers for the *State of the Gulf of Maine Report*

Priority Areas	Theme Papers	Content	ESIP Indicators
Climate Change	Climate Change and its Effect on Humans	- Provides basic information on status and trends that are appropriate to the topic; - If possible, modeling results can be included as well as empirical data; The focus is on the impacts of climate change (sea level rise; storm events) on coastal communities; - Social and economic impacts should be discussed; - This includes impacts on infrastructure, livelihoods, lifestyle etc.; - Includes cumulative effects	<ul style="list-style-type: none"> • Precipitation trends and anomalies • Mean sea level rise • Air temperature trends and anomalies
	Climate Change and its Effect on Ecosystems, Habitats and Biota	- Provides basic information on status and trends that are appropriate to the topic; - If possible, modeling results can be included as well as empirical data; The focus is on the impacts of climate change on ecosystems (rather than humans) - Includes both coastal and offshore habitats; - Should include a discussion on the effects of sea temperature rise and salinity changes; - Should include coastal effects of sea level rise; - Includes cumulative effects	<ul style="list-style-type: none"> • Precipitation trends and anomalies • Mean sea level rise • Air temperature trends and anomalies • Sea surface temperature
Fisheries and Aquaculture	Aquaculture in the Gulf of Maine	- Status and trends in the aquaculture industry; - Provides economic evaluation; - Should provide assessment of impact on the ecosystem; - Introduce stewardship concepts	<ul style="list-style-type: none"> • Production/leased areas per area for finfish, shellfish, aquaculture • Economic value of aquaculture
	Commercial Fisheries and Fish Stock Status	- Focus is on the changes in commercial fisheries over time; - Includes economic value of fisheries; - Includes aquatic plant harvesting; - Includes changes in catch (tonnes & value) and in species caught; - Include analysis of licensing; - Status and trends of commercial stocks; - Includes assessment of changes in trophic structure; - Includes responses (e.g. habitat restoration efforts, stewardship, US-Canada collaboration etc.) - If possible, provides an integrated assessment of how changes have affected human communities; - Includes cumulative effects	<ul style="list-style-type: none"> • Economic value of fisheries • Proportions of stocks at or above targeted abundance or biomass • Mean length of fish for everything sampled.
Coastal Development	Land Use and Coastal Development	- Provides land use/land cover information, preferably showing changes over time; - Changes in development patterns; - Includes population demographics and social indicators; - Property values; - Includes impervious surfaces; - May include impacts on access and working waterfronts; - Includes cumulative effects; May need to have urban/rural divide	<ul style="list-style-type: none"> • Population density • Employment density • Impervious surfaces • Point sources
Contaminants	Toxic Contaminants	- Includes heavy metals, PCBs, PAHs and POPs; - Provides information on pollution sources, fate and transport of pollutants (water and sediment quality); - Should include information from musselwatch; - Effects of multiple stressors (cumulative effects); - Food chain impacts	<ul style="list-style-type: none"> • Point sources • Sediment triad data • Mussel tissue data;
	Microbial Pathogens and Toxins	- Includes effect on public health/humans and impact on organisms; - Provides information on pollution sources, fate and transport of pollutants (water and sediment quality); - Includes impacts such as shellfish closures and beach closures; - Include cumulative effects	<ul style="list-style-type: none"> • Mussel tissue data • Shellfish sanitation data

Eutrophication	Eutrophication	- Includes pollution sources, fate and transportation; - Includes impacts and implications; - Include cumulative effects	<ul style="list-style-type: none"> • Calculated N/P load • Secchi depth • Dissolved oxygen • Chl a concentration
Aquatic Habitats	Coastal Ecosystems and Habitats	- Status and trends; - Focuses on issues of concern and restoration efforts; - Includes information on monitoring as part of responses; - Include cumulative effects	<ul style="list-style-type: none"> • Extent and distribution of eelgrass • Extent and distribution of salt marsh • Location of tidal restrictions
	Offshore Ecosystems and Habitats	- Status and trends; - Focuses on issues of concern; - Includes information on monitoring as part of responses; - Include cumulative effects; - Includes George's Bank ecosystem status (may be a sidebar)	
	Watershed Status	- Focus is on the status of ecosystems in watershed in the GOM (i.e. watershed health); - Includes water quality and riparian status; - May include sources of pollution; - Provides information, if possible, on health of estuaries; - May include impervious surfaces; - Include cumulative effects	
Other	Invasive Species	- Status and trends - Includes sources and impacts; - Include cumulative effects	
	Species at Risk	- Status and trends in species at risk, including birds, fish, marine mammals; - Includes threats and management strategies; - Include cumulative effects	
	Emerging Issues	- Identify and discuss emerging issues	