

# From Science to Policy Making: Investigating the Use and Influence of Marine Environmental Grey Literature

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## Abstract

Our research studies the influence of information published as grey literature by four governmental marine environment and resource organizations. Results from a suite of research methodologies (citation analysis, content analysis of public policy documents, interviews of key informants in public sector management, and surveys) are enhancing our understanding of the production, diffusion, and use of such information.

## Introduction

- There is wide recognition that the world's marine ecosystems are at risk due to overexploitation and various human pressures.
- Numerous environmental and resource studies could inform policy makers who must make timely decisions, manage risks effectively, and take action when warranted.
- Many governmental agencies publish in grey literature formats.

Publications of four organizations are being studied:

**GESAMP** (UN-Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection)

**GOMC** (Gulf of Maine Council on the Marine Environment)

**FAO** (UN-Food and Agriculture Organization)

**Environment Canada**

## Guiding Questions

What have the four organizations published, where, and how?

What is the evidence of distribution and use of these publications?

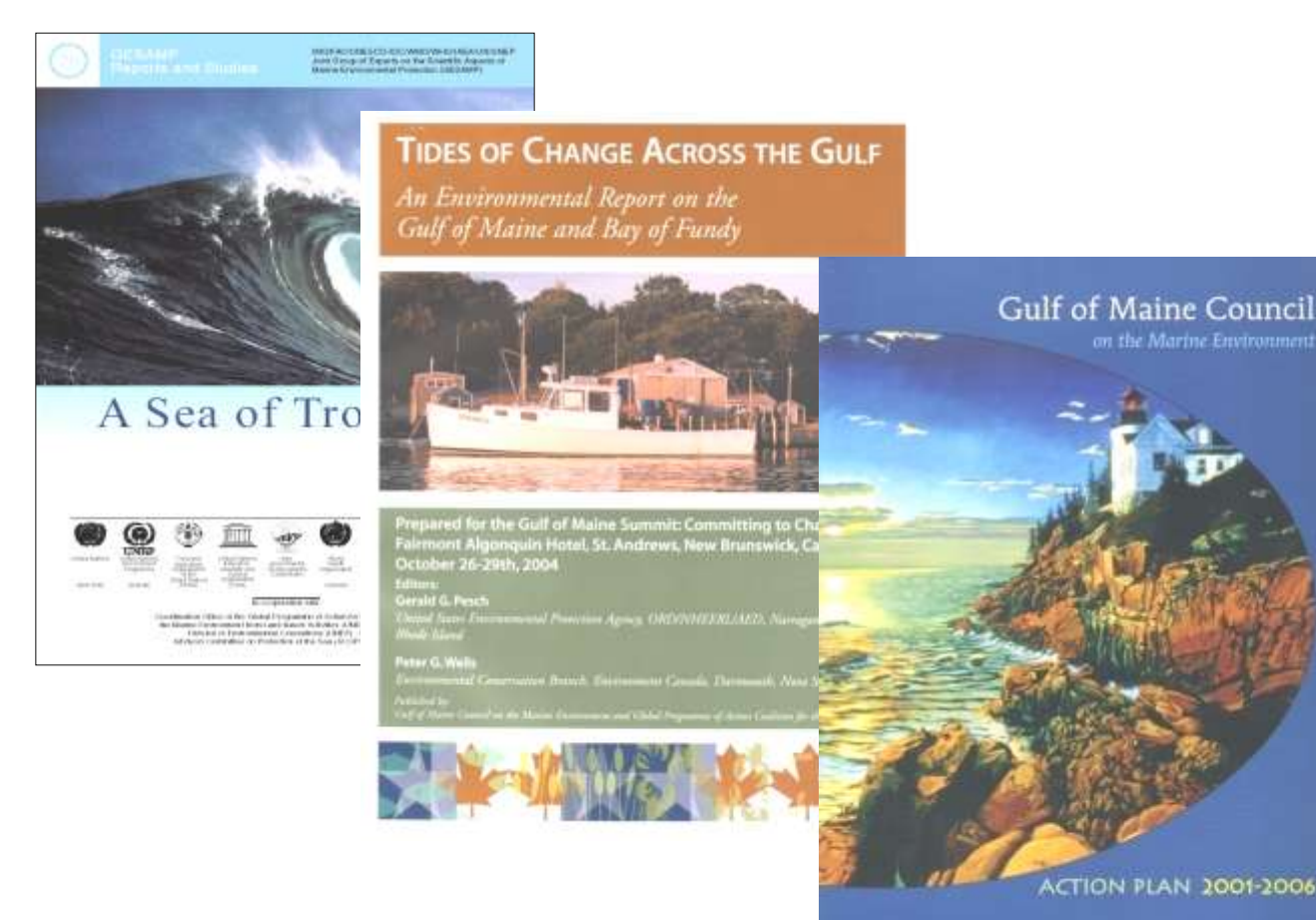
What methods can be developed for evaluating the influence of grey literature on decision making in environmental fields?

How can marine environmental information in grey formats be more influential in decision making?

## Methods

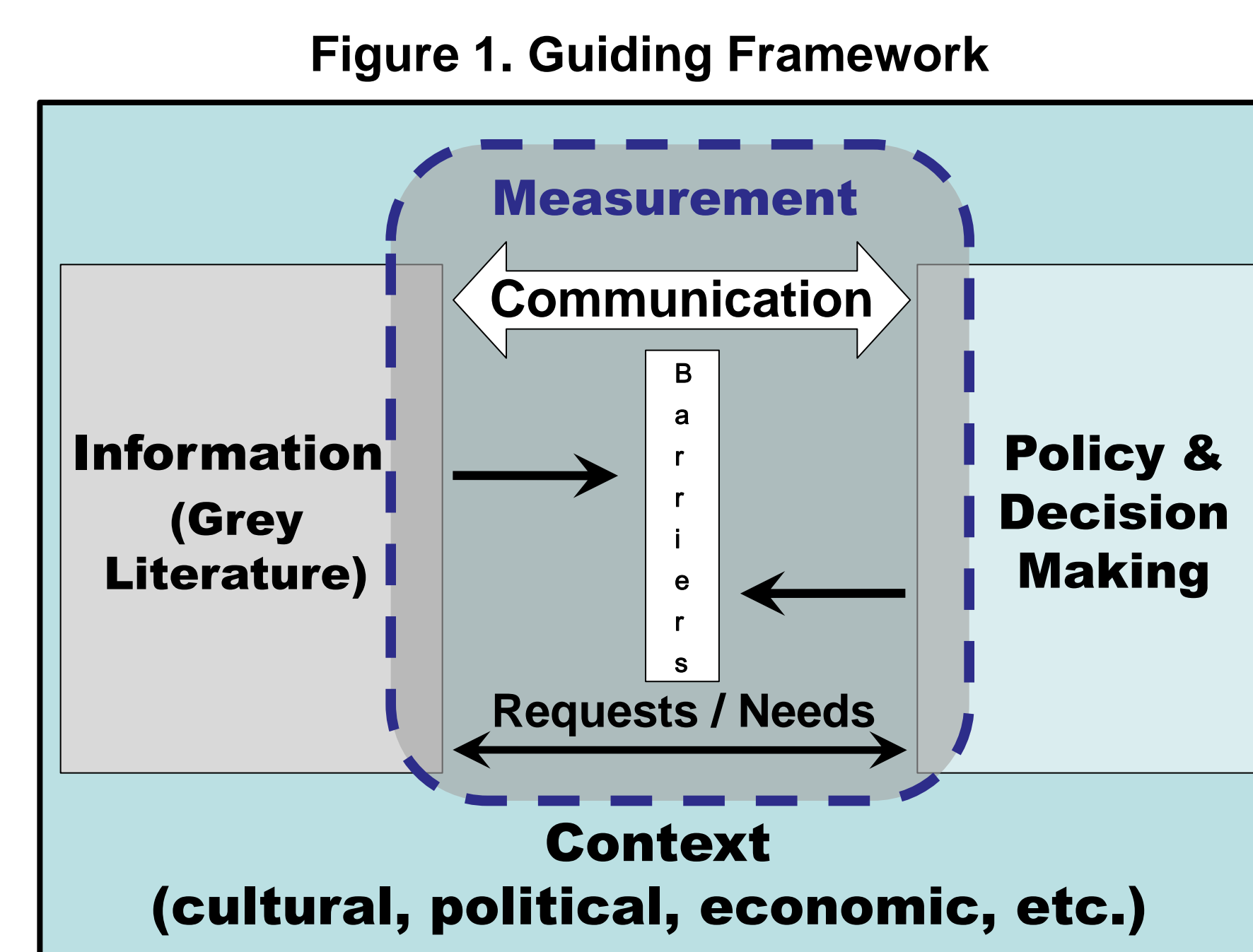
Our methods have included:

- Creation of databases of three organization's publications and citations.
- Analysis of citations to determine
  - Sources, frequency, and patterns over time.
  - Geographic location of citing authors.
  - Subject areas of citing publications.
- Content analysis of publications for characteristics promoting distribution and awareness.
- Surveys of stakeholders to determine information pathways.



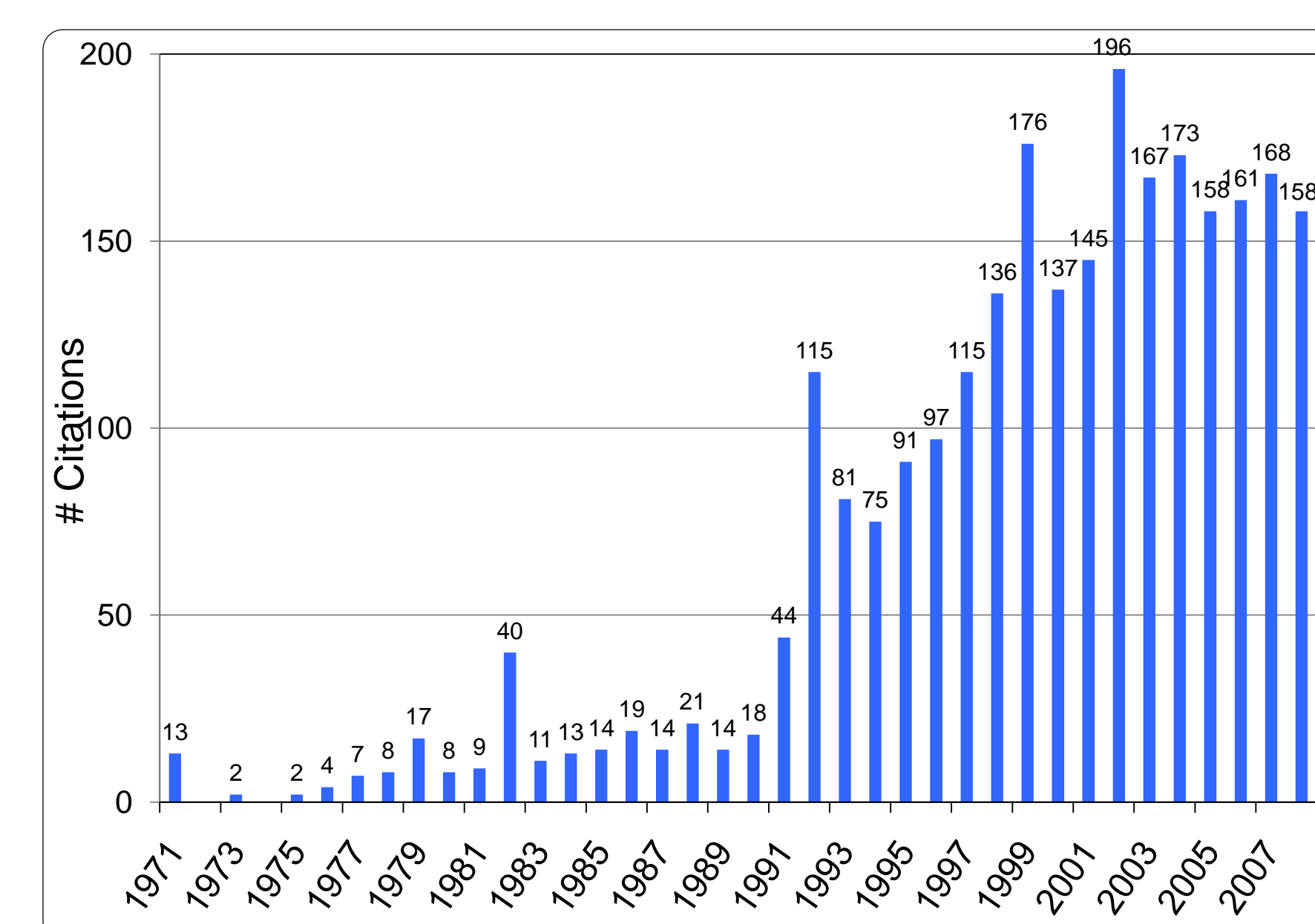
## Results

Our research is guided by the framework outlined in Figure 1.



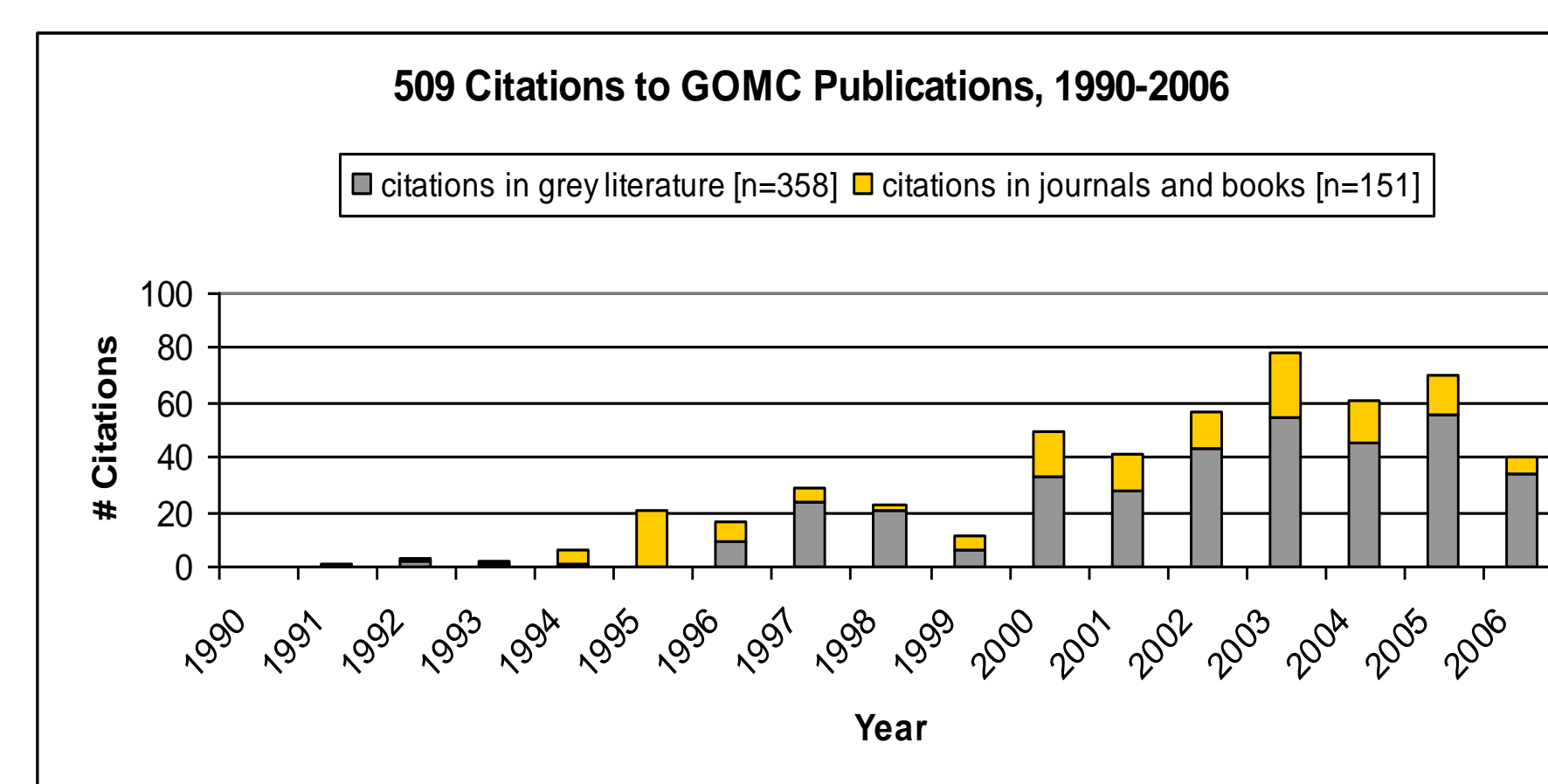
Citation data extracted from Web of Science shows increased use of GESAMP reports over time (Figure 2).

Figure 2. Frequency of Citations to GESAMP Publications



Citation data extracted from Web of Science and from the Internet also shows increased use of GOMC reports over time (Figure 3).

Figure 3. Frequency of Citations to GOMC Publications



Citations to GESAMP's publications from Google Scholar and Google represent influence (e.g., online reports or papers) or are superfluous (e.g., publication lists or online library catalogues). Google Scholar citations (Table 1a) represent influence more often than Google citations (Table 1b).

Table 1a. Citations Located With Google Scholar

Most Cited GESAMP Reports	Google Scholar Hits	Citations Showing Influence	Superfluous Citations
Top 5	352	352	0
Next 5	235	232	3
Total	587	584	3
Percentage		99.5	0.5

Table 1b. Citations Located With Google

Most Cited GESAMP Reports	Google Hits	Citations Showing Influence	Superfluous Citations
Top 5	253	186	67
Next 5	215	164	51
Total	468	350	118
Percentage		74.8	25.2

New insights into the distribution and use of GOMC are revealed through interviews of the Working Group members responsible for the production of reports (Figure 4).

Figure 4. Sample Response from GOMC Interviews

"...when those...copies are gone, we conclude that we are successful in disseminating the report. We rarely have the opportunity to go back and evaluate whether or not those people that got it, read it, used it, found it of any value... like many organizations, we under-invest in evaluating whether or not the publications had the desired result."

Scientific Member of GOMC

## Discussion & Next Steps

- Our results clearly demonstrate use and influence of publications of two of the intergovernmental organizations, GOMC and GESAMP.
  - Multiple data sources are needed to build a comprehensive understanding of use and influence of the information published by these groups as grey literature.
- Our current research includes:
- Extending citation analyses of all four organizations.
  - Interviewing public sector managers in Canada, US, the Caribbean, and other countries regarding use of grey literature.
  - Developing methods for evaluating the influence of such literature on decision making in environmental fields.

## Recent Presentations & Publications

Hutton, G.R.G. (2009). *Developing an inclusive measure of influence for marine environmental grey literature* (Master's thesis). Dalhousie University, Halifax, Nova Scotia, Canada.

MacDonald, B.H., Wells, P.G., & Cordes, R.E. (2008). Who reads and uses grey literature? The case of publications of two intergovernmental environmental groups. Paper presented to Society for the History of Authorship, Reading and Publishing, Oxford Brookes University, Oxford, 25 June 2008.

Soomai, S.S. (2009). *Information and influence in fisheries management: A preliminary study of the shrimp and groundfish resources in the Brazil-Guianas continental shelf*. (Master's project). Dalhousie University, Halifax, Nova Scotia, Canada

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People, Portals, and Pathways: Managing Information Globally, IWB 2010, Dalhousie University, 11 February 2010