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# Communicating Scientific Information for Environmental Solutions: A Knowledge Management Perspective

**Danielle M. Cossarini**  
Dalhousie University, Halifax NS

## **Abstract:**

This paper discusses findings from research on the publication practices of the intergovernmental Gulf of Maine Council on the Marine Environment. Interviews with members of the main Working Group were used to gain further understanding of the production, distribution, and use of marine scientific information in policy decisions.

## **1. Introduction**

Intergovernmental organizations, which can facilitate communication and build working relationships between national governments, have the capacity to provide solutions to some of the world's most serious problems. Environmental degradation has become a priority for many such organizations, and in seeking solutions they produce thousands of scientific publications with policy implications in print and digital formats. The production, distribution, and use of this environmental science information has been understudied (McNie, 2007), which is a matter of concern for managing scientific knowledge, specifically in policy-making spheres. This paper is part of the research program, *Environmental Information: Use and Influence*, which is using detailed case studies to investigate intergovernmental and governmental organizations focussed on marine environmental matters. In a previous paper, the research initiative reported on citation studies of environmental literature produced by one of the case study organizations (MacDonald, Cordes, and Wells, 2007). Additional methods, including investigating sources internal to this organization, are needed to fully appreciate the fate of scientific publications in intergovernmental bodies. Taking a knowledge management perspective, this paper discusses findings from a study of the Gulf of Maine Council on the Marine Environment (GOMC), one of the intergovernmental cases which has a complex governance arrangement guiding its publication practices.

The Gulf of Maine Council on the Marine Environment was chosen because of its mandate and its prolific publishing history. It remains dedicated to the dissemination and communication of timely and credible marine environmental information in order to protect and enhance the environmental quality of the Gulf of Maine/Bay of Fundy ecosystem (Gulf of Maine Council on the Marine Environment, 2007; Tyler, 1992). With input from state/provincial and federal government levels of Canada and the United States, GOMC is well positioned to disseminate information regarding the Gulf to decision makers on both sides of the border.

## **2. Research Questions**

This paper analyzes the flow of marine scientific information from the perspective of the primary Working Group of GOMC and addresses how such organizations produce, publish, and disseminate information, and how they promote awareness, access, and use of it. Specifically, this paper presents an analysis of data addressing the following questions:

- I. From the perspective of Working Group members, how are GOMC's publications produced and do GOMC's publication practices contribute to the mandate of the organization?
- II. How are GOMC's publications distributed/disseminated and do members of the Working Group consider this activity to be important?
- III. What evidence of the use of the publications can members of the GOMC Working Group report?

## **3. Methodology**

In order to increase understanding of the use of GOMC publications and their influence on public policy, in-depth interviews were conducted with 19 key GOMC Working Group members. This group was selected because of their knowledge of the structure and function of the organization, as well as their regular involvement with information production. Interviews allowed the Working Group members to express, in their own words, the value of the organization's publications, their real world usefulness, and the dissemination challenges that may be faced by such an organization.

The following steps were taken: 1) development and testing of an interview protocol; 2) obtaining ethics approval from the Dalhousie University Social Sciences and Humanities Research Ethics Board to conduct the interviews which took about 45 minutes each to complete; 3) inviting all current and selected previous members of the GOMC Working Group to participate in the interviews; 4) interviewing 19 Working Group members representing all levels of jurisdiction in the Council, i.e., provincial/state and federal representatives from both Canada and the United States. The participants include both men and women, and long-standing members of the Working Group as well as newer members; 5) each of the interviews were conducted either in person or by phone by one interviewer (Danielle Cossarini); 6) all interviews were audio recorded; 7) transcripts of each interview were prepared and NVivo software aided in coding and analysis of the data; and 8) content analysis of GOMC documents was conducted to triangulate (confirm) interviewee responses.

## **4. Analysis**

The interview data provides insights into factors that influence the practices used to produce, disseminate, and promote awareness of environmental information. It seems clear that Working Group members' ideas about GOMC's publication practices are fragmented. When asked how

the current practices work, interviewees expressed numerous different viewpoints, suggesting that there is no single path from idea to publication. Ideas for a publication may originate in a variety of contexts, ranging from expressions by an individual, to discussion in a meeting of a committee, a subcommittee, the Working Group, or the Council itself, which consists of political Cabinet Ministers, Deputy Ministers, Commissioners, or their representatives.

Similarly, when questioned about the role that Working Group members fulfill in the distribution of publications, interviewees expressed different opinions on the issue when they discussed their highly individualized dissemination methods. The multi-jurisdictional character of GOMC contributes to the absence of a formalized approach to distribute both print and digital publications. Nonetheless, a variety of methods are employed, if not always applied in every instance. The informality of the dissemination activities allows individual members of the Working Group to be creative in how they promote awareness of the publications.

The fragmentation of responses seems to lessen when interviewees were questioned about the evidence of use of GOMC publications. Many Working Group members spoke generally about use within both their own work environments and somewhat further afield. While they believed that awareness of GOMC publications was high among the sizeable number of individuals who are associated with the Council in a variety of capacities, the degree to which that awareness extends beyond those individuals was a matter of interest but uncertainty. Interviewees often expressed concern over the lack of evaluation measures employed by the Council to assess the influence of its publications. They were able to provide examples of the use of GOMC's publications, but were unable to state if such usage influenced a person's actions or thoughts on the subject. Measuring the influence of a publication is a significant challenge and may be related to best practices in the production and dissemination of information.

## **5. Conclusion**

Intergovernmental organizations often face considerable challenges in promoting the dissemination and awareness of publications regarding the state of the environment. Though they have the potential to facilitate communication and promote knowledge transfer among major stakeholders about problems of global significance, they frequently do not have a clearly outlined dissemination strategy, or the resources and personnel to promote the flow of information. This paper emphasizes that a better understanding of an organization's ability to manage and disseminate the knowledge contained within a publication, as well as ascertain the influence that a publication has, can be obtained through interviews with informed insiders. Such insights into the pathways of information flow are particularly instructive about the value of marine environmental information published by organizations that aim to influence decision-making processes.

## **6. References**

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