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# **Understanding the Use and Influence of Publications of Intergovernmental Environmental Organizations: Evidence from an Analysis of Internal Sources**

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#### Abstract

In the global village of the twenty-first century, intergovernmental organizations have significant roles in addressing world-wide problems. Continuing serious environmental degradation, found at the top of the list of major concerns, is drawing growing attention by such organizations. In seeking solutions, they produce thousands of publications in print and digital formats, many of which have policy implications. However, the methods by which the organizations' publication, dissemination, and promotion practices increase awareness, access, and use of this grey literature are understudied. Elucidating these processes is needed to ensure that information has ample opportunities to enter decision making cycles. If policy makers are inefficient in their use of this growing body of grey literature, they may make decisions in an untimely manner, not act at all, or overlook risks that could or should be managed more effectively.

Our research programme is investigating this topic through detailed case studies of intergovernmental and governmental organizations focussed on marine environmental matters. In previous papers we reported on initial citation studies of grey literature of two case study organizations. In this paper we discuss additional findings arising from one of organizations, namely the Gulf of Maine Council on the Marine Environment (GOMC), an intergovernmental organization with a complex governance arrangement guiding its publication practices. The paper presents results based on a preliminary analysis of interviews of personnel associated with GOMC as members of its primary Working Group. Our previous research has focussed on citation analysis to understand uses of grey literature. However, we believe that additional methods, including investigating internal sources, are needed to fully appreciate the fate of grey literature of organizations like GOMC.

Tracking the pathways of grey literature begins with determining the publication and dissemination practices from the perspectives of informed insiders. Data obtained in interviews of the GOMC Working Group members conducted in 2009 highlight a variety of pathways that grey literature can take after publication. The interview data provides insights into factors that influence the practices used to produce, disseminate, and promote awareness of grey literature. Intergovernmental organizations face considerable challenges when they rely heavily on grey literature as their main method of publication. This study emphasizes the importance of grounding an understanding of these issues with the internal knowledge of the organization.

#### Introduction

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There are times when we don't necessarily distribute a physical report, but we're constantly brokering the information that's inside that report (GOMC Working Group Member D).<sup>1</sup>

This recent statement by a scientific member of the main Working Group of the Gulf of Maine Council on the Marine Environment is enlightening. First, because it presents an insider's view of the operation of this environmental, intergovernmental organization. Second, the statement presents an informative perspective about the role publications fulfil in the mandate of this organization. Arising out of a series of in-depth interviews of individuals with a vested interest in the mission of the Council, statements like this shed light on the pathways grey literature publications take once they are produced. In addition, this study demonstrates that the application of interview methodology is effective for gaining insights that are particularly instructive about the value of grey literature published by organizations that aim to influence decision making processes.

An emerging view from the marine environmental field is that the large storehouse of available information, much of it in the grey literature, needs to be more effectively used to solve urgent global issues (Thatje, Laudien, Heilmayer and Nauen, 2007; Wells, 2003). For example, problems of awareness persist, even though most of the new information is now digitally produced and arguably easier to access. It is now recognized that the diffusion, use, and influence of such information are complex and variable processes (de Alwis, Majid, and Chaudhry, 2006; Evans and Reimer, 2009; Healy and Ascher, 1995; Holmes and Clark, 2008; McNie, 2007), and given the problems to resolve, they are a priority for investigation.

<sup>&</sup>lt;sup>1</sup> All of the citations to Working Group Members throughout this paper refer to interviews conducted by Danielle Cossarini in the latter half of 2009.

Governmental and intergovernmental bodies, long known as prolific writers and frequent publishers, contribute to the growing body of information. Since political, economic, and environmental issues frequently transcend regional and national borders, these bodies have often been set up to play significant roles in seeking solutions to today's serious global environmental problems. Hence, thousands of studies are conducted, and tens of thousands of print and digital reports are produced annually, many of which have direct or indirect policy implications. What is poorly documented is whether adequate attention is paid to such reports, which are typically grey literature, and to subsequent advice, both by sponsoring agencies and by other users. Such documentation is needed for accountability and tracking progress on problem resolution.

Our study of intergovernmental organizations is focussing on marine environmental and fisheries information. We are learning how such organizations produce, publish, and disseminate grey literature, and how they promote awareness, access, and use of it. Our goal is to understand how pertinent information produced by these bodies can be more effectively used in decision making processes.

#### **Information Pathways and Framework**

Determining the paths that scientific publications take and developing an understanding of the use and influence of their information content are not trivial tasks. Neither activity is linear and both are likely subject to serendipity and unknown influences. However, we believe that an approach employing various information research methodologies, including citation analysis, document content analysis, online surveys, and interviews, can lead to an appreciable increase in understanding of the use and influence of grey literature. As well, the problem of how to better

utilize existing information usually does not lie with the lack of information, but with its communication. Hence, our research focuses on the interface between production of scientific grey literature and its use primarily in policy and decision-making contexts (see Figure 1). Using this guiding framework, we are developing techniques to measure use and influence, and to identify and mitigate communication barriers.

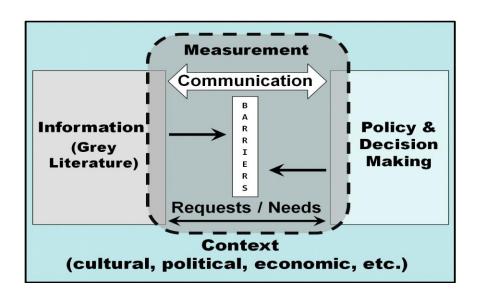


Figure 1: Research Framework

#### The Case: The Gulf of Maine Council on the Marine Environment

The Gulf of Maine Council on the Marine Environment was chosen as a case study organization because of its mandate and its prolific publishing history. It has produced over 300 publications (MacDonald, Cordes, & Wells, 2007), much of which is grey literature, and the Council remains dedicated to the dissemination and communication of timely and credible marine environmental information in order to protect the Gulf of Maine/Bay of Fundy ecosystem. As an intergovernmental organization working at both the state/provincial and federal

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.

GOMC's twenty year history began in December of 1989 when the premiers of Canadian provinces of Nova Scotia and New Brunswick, and the Governors of the American states of New Hampshire, Massachusetts, and Maine came together at the inaugural conference in Portland, Maine to discuss the potential of bi-national cooperation to deal with the environmental degradation of the Gulf of Maine/Bay of Fundy region (MacDonald, Cordes, and Wells, 2007).

The creation of the Council was in response to "both the perceived need for increased institutionalization of patterns of cooperation in the North Atlantic region, and to the desire by state and provincial actors, both governmental and non-governmental, to play a more central role in the process" (Springer in MacDonald, Cordes, & Wells, 2007, p. 32). Currently, GOMC continues to play an important role in the management of the marine environment in the Gulf of Maine and is considered by the American federal government as one of its main coastal programs under the Oceans Commission (MacDonald & Wells, 2009). "Operating since 1989, GOMC has completed three, five-year action plans [and is currently in the middle of a fourth, five year plan]. A working group, several high-level committees, and task forces carry out the work mandated by the Council" (MacDonald & Wells, 2009).

GOMC is an excellent case study organization because of its close attention to the communication and dissemination of marine environmental information to managers, policy-makers, non-governmental groups, industry leaders, and the general public, almost all of which is published as grey literature." In the 17 years of its existence, the Council, working by itself or in collaboration with others, has published widely, including conference proceedings, technical

reports, conference background documents, annual reports, action plans, newsletters, newspapers, magazines, fact sheets, brochures, maps in poster format, and a video" (MacDonald, Cordes, and Wells, 2007, p. 34). As the Internet has become more widely used as a medium for publishing, GOMC has transferred its early publications to its Web site, which includes a comprehensive and evolving list of both old and new publications.

As early as 1992, the Council recognized that "in order to effectively manage the Gulf of Maine as the ecosystem that it truly is, decision-makers must have access to data and information from sources throughout the entire Gulf of Maine system" (Tyler, 1992, p. 4). Since that time, GOMC have continued to make the publication of useable information one of its top priorities; however, GOMC still contends with issues of dissemination and in describing publications for searchability and access (MacDonald, Cordes, & Wells, 2007). Such barriers to diffusion of information could potentially limit the influence of GOMC's publications in the policy sphere and suggests that ongoing attention must be paid not only to the production of useful information, but also to its distribution and accessibility.

#### **Determining Views from the Inside**

Overall, the GOMC's work entails research, ecosystem monitoring, communication and education, and public policy. Research is linked to and integrated through the Regional Association for Research on the Gulf of Maine, currently coordinated by the University of New Hampshire, Durham, New Hampshire, as well as through the facilities of the member institutions. Monitoring is conducted through habitat and contaminant subcommittees. The Council's significant communication agenda is pursued primarily through its website and

publications, and many widely attended workshops on a variety of topics (e.g., monitoring programs, salt-marsh restorations, indicators of environmental change, and climate change). The Council also encourages public policy discussions, through both academic studies and public forums associated with Council meetings (e.g., wind farms, climate change, coastal zonation, and indicators for monitoring). The core work of GOMC is conducted with individual researchers and through the work plans of the member agencies. As shown below, the Council's work has been extensive in scope and prolific.

The Council Secretariat rotates among the five states and provinces on an annual basis, and is chaired by an individual in the host jurisdiction. The Council itself convenes twice a year, in one- or two-day meetings held in the host state or province, and is attended by political Cabinet Ministers, Deputy Ministers, Commissioners, or their representatives. The Council's mandate is carried out primarily through its Working Group, which reports to the Council, and is also chaired by a representative of the host jurisdiction. The Working Group holds quarterly two-day meetings, which are attended by senior policy managers and scientists directly involved in the Council's programs, and the Council's Secretariat. Several committees and subcommittees, which meet at least once per year, report to the Council's Working Group. These committees, e.g., the Habitat, Monitoring, and Public Education and Participation committees, are co-chaired by American and Canadian members. The actual committee structures and agendas are steered by the action plans.

In an earlier stage of our case study we confirmed through citation analysis that GOMC publications have been cited in both the primary literature and by other grey literature, but citation analysis is only one measure of use (MacDonald, Cordes, and Wells, 2007). As

informative as citation data are, such evidence misses measuring the use and influence of information in publications in contexts where citing other work is uncommon or does not occur, or where documentation is proprietary or not generally in the public domain, e.g., ministerial briefing documents, strategic planning papers, action plans, etc. Specifically, citation studies do not completely document information use and influence in public policy and decision making contexts. Other methods are needed to trace out the pathways of information. Further understanding of a document's influence can be obtained through interviews with key informants, as our on-going studies have begun to show (Soomai, 2009; Wells, MacDonald, Cordes, Hutton, Cossarini, and Woods, 2009). For the current stage of our investigation we are applying a qualitative method, which includes an interview protocol, to obtain data that will give additional evidence of the use and influence of GOMC publications that could not have been found otherwise.

#### **Interview methodology**

Briefly, the steps we are taking with interview methodology include the following: 1) development of an interview protocol with about fifteen questions; 2) obtaining ethics approval from the Dalhousie University Social Sciences and Humanities Research Ethics Board to conduct the interviews which take about 60 minutes each to complete; 3) inviting all current and selected previous members of the GOMC Working Group to participate in the interviews; 4) to date 18 Working Group members have been interviewed, representing all levels of jurisdiction in the Council, i.e., provincial and state representatives, and federal representatives from both Canada and the United States. The participants include both men and women, and the

participants include long-standing members of the Working Group as well as newer members; 5) one interviewer has completed each of the interviews either in person (most) or by phone; 6) all of the interviews were audio recorded; 7) transcripts of each interview have been prepared and NVivo software is being employed to aid in coding and analysis of the data. All of the participants have been forthright in their responses to questions, and to protect confidentiality requests, all of the comments included in the remainder of this paper are referred to by a code.

#### **Findings**

In the course of the interviews members of the GOMC Working Group were asked to respond to questions about their role with the Council, their knowledge of the Council and its publications, and mechanisms for distributing or promoting awareness of the Council's publications. Today, we provide an initial analysis of three of the fifteen questions in the interview protocol.

a) How does the current publication process of GOMC work? For example, select a recent report and outline the stages in its preparation and publication.

To launch our study of the Council we found it necessary to first complete an inventory of its publications. Verifying the publications required locating evidence from a variety of sources, including GOMC's annual reports and website, library catalogues, web search engines, article databases, electronic collections, and conference proceedings. The searches also led to the discovery of items published by other organizations with GOMC's support, and evidence of other publications that had effectively vanished, as electronic versions are no longer on the Web and print copies are not in library holdings. This process of discovery showed that a current and

complete inventory, and tracking method, for a group's publications is essential for ensuring their widest awareness, use, and possible influence.

Since, until we documented its output, the Council did not have a comprehensive list of its publications, it is not surprising that the process by which decisions regarding the preparation of those publications is also not well documented. A scan of meeting documents over the past six years reveals that discussion about publications occurred at many meetings. At a meeting in Portsmouth, New Hampshire, this past week (8-10 December 2009), for example, the Working Group discussed plans for a *State of the Gulf of Maine Report*, which is expected to be published in 2010 during the twentieth anniversary of GOMC as a significant account environmental account (GOMC Ad Hoc Task Force for State of the Environment Reporting, 2009; GOMC, 2009).

We believed that it is important to gain an understanding of how decisions about publications are made, since the rationale for a publication and the processes of how it was prepared could have a appreciable bearing on how the publication was promoted and distributed, whether produced in print or digital formats. So, we asked the Working Group members, "How does the current publication process work?" We also asked the participants to select a recent report and outline the stages in its preparation and publication. In their responses, members of the Working Group quickly confirmed that no straightforward publication process was practised. Although one long-time member of the Working Group summed up the process as follows: "...publication is sort of part of a committee, sub-committee work plan process and ... from there it's a matter of the development of it" (Working Group Member A), the publication process as Working Group members described it is considerably more complicated. This slide encompasses

expressed views from all of the interviewees, and, in brief, confirms 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. No matter which path is followed as the idea moves towards publication, Working Group members agreed that:

- preparation of a publication is an iterative process
  - "...you know there was a lot of back and forth in getting that approved" (Working Group Member E)
- each publication requires extensive input and collaboration
  - "...then there was lots and lots and lots of input from lots of people...who helped to provide content....that's true of almost all of the publications that I've been familiar with..." (Working Group Member F)
- each publication receives multilevel approval and possibly peer review.
  - "A publication will be referred to ...the Management and Finance Committee ... and the Outreach Committee..." (Working Group Member H)
  - "...[it's] a very collaborative process ... so collaborative, [with] substantial peer review.." (Working Group Member I)
- even though publication protocols have been developed there is no certainty that consistency in publication practices occurs.
  - "...there's a review process that currently is hard to figure out how to work with.." (Working Group Member K)
  - "...I must admit I' not completed convinced that all the mechanisms that we're trying to use ... are working the way they should." (Working Group Member N)

"...I would say like most organizations it's serendipity. It is the individual who helps put a report together, thinks of ways to disseminate it, in creative ways, in ways that might be responsive to the target audience." (Working Group Member R).

## b) Do members of the GOMC Council and Working Group fulfill a role in distribution of the publications? Please outline that role.

While every interviewee agreed that both the Council and Working Group "... definitely have a role, sometimes it's not as carefully followed" (Working Group Member A). One interviewee stated rather boldly: "I don't think there's a really formalized method you know" (Working Group Member Q). The multi-jurisdictional character of GOMC contributes to the absence of either a formal or single approach to distributing 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. When publications were produced mostly in print format, one member reported that dissemination occurred by "lugging a box of publications around and handing them out to everybody" (Working Group Member M). Digital publications have presented a new means of distributing copies: "I'm an aggressive forwarder" (Working Group Member O) is how one Working Group member described his practice of maximizing personal networks to pass on copies of GOMC's publications. Several interviewees stated they also sent copies of publications through their networks of "professional contacts" (Working Group Member K).

Since members of the Working Group represent different jurisdictions at provincial/state and federal levels, and each "wear[s] ... many hats" (Working Group Member E), opportunities abound to distribute publications within other organizations, in several jurisdictions, at meetings and conferences, to government departments, divisions and branches, as well as to NGOs and universities. The variety of avenues by which Working Group members distribute copies or take steps to advance awareness of publications is quite broad.

Working Group members are well aware of their role and responsibility in bringing GOMC's publications to the attention of a variety of audiences. As one member noted "...it helps the members of this organization to take more ownership by actually doing the personal distribution even though it's a little clunky in terms of how many ... [publications] actually get out..." (Working Group Member E).

In addition to recognizing their role, Working Group members also expressed concern that heavy reliance on informal distribution contributed to weaknesses of the process. Working Group Member H stated that the question of a distribution role was an "excellent" one since "we've run up against this with everything that we've tried to do all the way up to right now trying to get the word out about the *Gulf of Maine Times*" (Working Group Member H). In her view, the distribution process was "hit or miss." In fact, in some instances, many copies of some of GOMC's publications never made it beyond the storerooms of Working Group members.

Member F recounted that when his office moved "about five and half years ago, … [he] purged literally dumpster loads of old Gulf of Maine Council documents" (Working Group Member F). Not only did copies of some GOMC publications languish in their printing shop boxes, one member noted that she "found it was difficult to maintain … [distribution] records for every

publication" within her responsibility (Working Group Member B). Even now that publications are posted on the Council's website, one member classed this distribution "as sort of a minimal, minimal access..." (Working Group Member N). He was "not convinced that that was enough.." Another member summed up the concern as follows:

"...I think ... that sometimes we might print one thousand copies of something and when those thousand copies are gone we conclude that we were 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. You know, ... like many organizations, we under-invest in evaluating whether or not the publications had the desired result" (Working Group Member R).

#### c) Are you aware of any evidence of the use of GOMC publications?

Although Working Group members are very interested in evidence of use of GOMC's publications, as a means of showing "the benefit of the Council" (Working Group Member C), the interviewees often found it difficult to provide explicit examples of use. They could speak generally about use within both their own work environments and somewhat further afield. They knew that the GOMC reports were cited "quite a bit" (Working Group Member A) and quoted in other publications, such as "reports that have been ... [prepared] by the US Geological Survey... on ... aquatic habitats" (Working Group Member K). Frequent requests for some publications and their application in educational contexts (the Gulf of Maine poster showing ocean currents, for example) suggested to members that the publications were used (Working Group Member C).

Further evidence of use came from "snippets" from a GOMC publication on barrier removal (e.g., causeways or culverts) being employed in current projects (Working Group Member Q), and in the requirement that particular research grant recipients must refer to the GOMC's salt marsh monitoring protocol to ensure their grant is in compliance with that protocol

(Working Group Member R). While Working Group members 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. As one Working Group member phrased it, "...normally it's just off [the publication] goes, it could have been deleted, it could have been read, it could have been valued, I don't know...we all push a lot of information out there and hope it .. sticks or its relevant or its used" (Working Group Member O). Another member stated this perspective more concretely:

...we have a five or six page handout on [the] American Eel...and its status in the Gulf of Maine. So, I gave that to our pelagics advisor, fisheries advisor and he found it very informative, a good synopsis and was quite impressed with it ... now he never told me like that changed how I[he] recommended to the minister what our position is on it ... but he found it informative in terms of getting his knowledge, in terms of playing that role as an advisor to the minister on that issue" (Working Group Member C).

Interest in learning more about whether GOMC's publications are used and what influence they have is high among Working Group members. One interview succinctly stated, "you'd think a twenty year old organization would have done more evaluation of the use of its publications...I don't think we've evaluated [use] in the past and impact of any kind of our publications, which is a huge problem" (Working Group Member E). This view was echoed by Working Group Member R: "certainly we have no evaluation procedure, we have no rigorous tracking procedure."

### **Discussion and Conclusion**

Intergovernmental bodies often see their primary responsibility as offering solutions to problems through the production of expert information and reports. They are rarely able to

implement communication strategies, especially when a dissemination role and appropriate personnel are absent in the organization. Once a work is published by an intergovernmental body, attention moves rapidly to other assigned projects rather than allocating additional resources to advertise and disseminate its published work and ensure that it is being used The limited attention to dissemination introduces several challenges. Application of best practices for distribution and promotion of new publications may be outside an organization's general scope and interest. As a consequence, methods for tracing the use and influence of the group's information are rarely put to use.

Making the new information more easily visible and interpretable and its significance more obvious for required decisions and policies is an additional challenge. This matter is a translation issue lying at the intersection of environmental science, communication, policy, and management (Holmes and Clark, 2008; Tribbia and Moser, 2008). It is noteworthy that some intergovernmental organizations have produced communication products developed with their potential users clearly in mind, e.g., GOMC's *Gulf of Maine Times* and fact sheets; various Web sites of UN agencies, such as the United Nations Environment Programme; and reports of the Intergovernmental Panel on Climate Change (IPCC). In some intergovernmental organizations, e.g., GOMC and IPCC, scientists often work closely with communication specialists and science translation writers. Some individuals or organizations work with policy makers directly and continuously, the best example being the IPCC teams of scientists and government policy writers.

An underlying hypothesis of our research is that many of the problems currently facing the marine environment and its living resources could be solved or mitigated by better use of existing information, especially information published as grey literature by intergovernmental organizations, such as GOMC. More generally, grey literature from intergovernmental bodies on marine environmental and fisheries questions is an increasingly significant component of the global knowledge base on these matters. But barriers to the use and potential influence of this literature persist, even with increasingly wide deployment of new sophisticated search engines. Finding what is needed at the appropriate time, whether it be a data base, a primary paper or a technical report, remains a major problem in coastal and ocean affairs (M. Butler, personal communication). In other words, awareness remains a major barrier to the information's effective and widespread communication and use. The use problem is clearly multifaceted.

The relevance of grey literature addressing global environmental challenges, such as that produced by intergovernmental organizations in our studies, warrants research engaging the wider scientific and policy communities. The seriousness of global environmental conditions in this first decade of the 21<sup>st</sup> century demands interdisciplinary attention (Myers, 2009). Our ongoing research on "Environmental Information: Use and Influence" uses such an approach incorporating the fields of information management, marine science, environmental management, and fisheries resource management. This approach is leading to a greater understanding of information life cycles and barriers to the diffusion, use, and influence of scientific information. Insights about communicating the value of such information in grey literature to professional and public audiences are also evolving.

Our continuing research will consider other governmental and intergovernmental organizations in the marine environmental arena, test additional hypotheses about the life cycles of grey literature information, and check the validity of our principal findings and conclusions.

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