

## BOOK REVIEW

***Science, Information, and Policy Interface for Effective Coastal and Ocean Management.* B.H. MacDonald, S.S. Soomai, E.M. De Santo, & P.G. Wells. Eds. CRC Press, Boca Raton, FL, 474 pp.**

Any book entitled “Science, Information, and Policy Interface for Effective Coastal and Ocean Management” is guaranteed to attract the attention of a wide, and curious, audience. Integrated Coastal and Oceans Management (ICOM) is a highly topical international issue. All governments (international, federal, provincial, municipal), economic sectors, and communities, are constantly pressurized by a multitude of interacting issues concerning policy, legislation, and operations on the use of resources in coastal and ocean areas. Accordingly, it is important for all of these entities to organize themselves (both individually and collectively) to produce, receive and act on information of common interest. In Atlantic Canada we have seen many provincial, federal, academic, and community programs and plans aimed at contributing to the process of integrating and coordinating policy on coastal and marine issues. Some examples include: Coastal 2000 (Nova Scotia Land Use Committee, 1994), Gulf of Maine Council on the Marine Environment, Eastern Scotian Shelf Integrated Management Plan (DFO 2007; McCuaig and Herbert 2013), Atlantic Coastal Zone Information Steering Committee (ACZISC), and the Bay of Fundy Ecosystem Partnership). Science and information flow for decision-making has formed a prominent part in all of these programs. The oceans surrounding Nova Scotia (The Gulf of Maine, Northumberland Strait, Bay of Fundy, and the Scotian Shelf) rank amongst some of the best studied and monitored marine areas in the world. The region has many well-known commercial, research, academic, educational, government and non-government organizations involved in the generation and use of information for management of ocean and coastal resources. Despite this, the ICOM process, with its much-anticipated outcomes (IOC 2006), does not seem to have made much progress in Canada (DFO 2012 – [dfo-mpo.gc.ca/ae-ve/evaluations/11-12/IOM-eng.htm](http://dfo-mpo.gc.ca/ae-ve/evaluations/11-12/IOM-eng.htm)). This might be explained by the diverse information requirements, and the characteristics of the numerous ICOM policy interfaces that are presented in this book.

That said, let's look at the book and see what it is about. Comprising a collection of 19 review-style articles, it is a product of the Environmental Information: Use and Influence Research Program operating out of Dalhousie University, Halifax. It originated in part from a session on information and evidenced-based policy that was convened at the 2014 Coastal Zone Canada Conference in Halifax, Nova Scotia. The editors and contributors to the book represent a diverse group, consisting of active researchers as well as individuals who have had many years of experience at the highest levels of international and national government policy development. The book presents a mix of international, and Canadian, insights with the authors coming from almost all corners of the globe (USA, UK, Canada, Holland, Italy, New Zealand, Australia and Morocco).

The book is presented as four separate parts. The first section by the editors gives an introductory discussion of the meaning of ICOM which centers around the International Oceanographic Commission (2006) definition of "a dynamic multidisciplinary, iterative and participatory process to promote sustainable management of coastal and ocean areas balancing environmental, economic, social, cultural and recreational objectives over the long term". The editors state that the purpose of the book is to deal explicitly with the role of scientific information in the policy making process critical to ICOM. To this end they present schematic models (Fig 1.1 and 1.2) that outline the basic characteristics of a science-policy interface and the players who are involved in the production, transfer and use of information.

The second section consists of 9 somewhat unconnected papers that present perspectives on theory and practice with topics that include: the role of science; global ocean governance; risk; fisheries, shipping and tourism; stakeholder searches; network analysis; research design; science and public policy; and measuring awareness, use and influence of information. Although presented as being conceptual, several of them also present useful case study examples to demonstrate the application. The chapter by Coffey and O'Toole (Chapter 3) presents a thought-provoking review of models relating research with different policy approaches. Rice, in Chapter 4, shares his thoughts and experiences from participating as an advisor in the development of UN international ocean governance. The closing chapter of this section (Chapter 11) by Soomai *et al.* contains a description of qualitative and quantitative methods for measuring information retrieval and application. It is interesting to note that they conclude that no

single scientometric method will give a complete understanding of how information is used at the science-policy interface.

The third section contains a collection of seven case study reviews covering a mixed bag of topics including: Canada's State of the Scotian Shelf report; effects of ocean shipping; health knowledge; ACZISC; a career-based perspective of a Canadian government official; the United Nations FAO; and Ecology Action Centre activities. Of these, a highlight is the paper of Wells (Chapter 16) that presents a career-based perspective of some 40 years' experience in the Canadian Department of Environment, and demonstrates that science has indeed played a key role in defining policy in many aspects of ICOM. The papers on ACZISC (Chapter 15) and the Ecology Action Center (Chapter 18) accentuate the enormous service that these non-governmental organizations play in Nova Scotia towards ensuring awareness and flow of information that might be useful in the setting of policy. The paper on health knowledge is somewhat out of place given the subject of this book, but does indicate that there is common ground with other fields.

The final section attempts to make use of the material in the book to give a rationale for a way forward, particularly on information and communication approaches. The editors call for a need to better understand how to use existing information for decision-making in ICOM. I have worked for 40 years in science as a student, researcher, academic lecturer, research program administrator, and consultant. This has included work for governments (UN, federal, provincial and local) in South Africa, UK, Australia, Denmark, Canada, and many countries on the African continent. I have published many peer-reviewed articles and endless evidence-based gray reports on a multitude of policy-related topics (lake ecosystems, eutrophication, watershed management, indigenous plant use, mass algal culture, wetlands, hazardous waste, coastal and oceans management, species at risk, ocean noise, program evaluation, and climate change). It is sad to report that few, if any, of these have yet borne fruit and I cannot claim to have had any major influence on policy or practice, despite the issues being real. Upon reflection I have concluded that the governmental custodians of the resource, who supposedly should be acting as impartial organizers of the policy interfaces, have for a variety of reasons often or always played a biased role in the flow and use of the information provided. Most governmental decision-makers are highly skilled and experienced in the use of information,

and are supported by a resilient culture of departmental screening. In my opinion, it's not just about learning how to use information, but rather about ensuring that the information is made available to all parties involved in ICOM. The control of information flow within, between, and from government departments, is a core potential ICOM barrier that needs research and attention.

Does this book merit the attention that the title promises? I feel that it has a considerable amount of useful concepts, perspectives, and case studies that most marine scientists and decision-makers will benefit from. However, as with most books that are made up of a collection of review-style conference and invited papers, it does not provide a complete picture of ICOM. There is a predominance of offshore ocean-related aspects with minimal content on the coastal situation where marine-land interactions make policy interfacing even more complex. It is a pity that the book has not been able to accommodate reviews of some key topics such as ICOM indicators, government structures, and formal evaluation approaches. The book does not make easy reading with many long detailed chapter introductions and paragraphs with considerable overlap and repetition. Nonetheless, most chapters can be viewed as stand-alone and thus the reader can be selective in coverage. It is not a cover to cover book for the time-constrained politician or decision maker who is looking for a quick recipe or silver bullet for solving any specific policy issue or approach. ICOM policy connoisseurs will find a wealth of perspectives, material and useful references; the book will be extremely useful in academia for undergraduate and postgraduate research students.

## REFERENCES

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