



Conference paper

## Towards a Unified Vision for Ocean Data Management in Canada: Results of an Expert Forum

### Summary

Sound knowledge and understanding of the oceans is essential for mitigating human impacts on the global environment and for promoting sustainable economic use of the marine environment. Knowledge and understanding depends on access to accurate, rich, available, and integrated ocean data by end-users, including academic researchers, policy and decision-makers, and the general public. A so-called “coordination gap” among Canadian ocean observing initiatives has made access to data by end-users difficult, with data and forecasts collected by various programs and agencies being scattered across a range of web-pages that can be difficult to find and hard to access – or not available at all. This practice paper describes the lessons learned from an Expert Forum on Ocean Data Management (November 18-19, 2015 in Montreal, Canada) that brought together national and international experts and stakeholders to present and evaluate international best practices in managing data from ocean observations, the current state of ocean data collected and managed in Canada, and goals and visions for the future of ocean data management in Canada.

### Abstract

The world’s oceans are a critical part of the Earth system. Sound knowledge and understanding of the oceans is essential for mitigating human impacts on the global environment and for promoting sustainable economic use of the marine environment, including: the safe and sustainable use of natural resources; the assessment of and adaptation to climate change; deep knowledge about complex and interconnected ecosystems; our understanding of the entire Earth system; and health and public safety. Knowledge and understanding, in turn, depends on access to accurate, rich, available, and integrated ocean data by end-users, including academic researchers, policy and decision-makers, and the general public (OSTP 2011). In Canada, ocean data is generated primarily by regional Ocean Observing Systems (OOS’) operating in blue water and coastal areas (OSTP, DFO, & CSA 2011). These regionally-focused activities, while strong individually, have not yet formed a strong national network, resulting in a fragmented ocean sciences sector (OSTP, DFO, & CSA 2011; Wallace et al. 2013). This “coordination gap” has made access to data by end-users difficult, with data and forecasts collected by various programs and agencies being scattered across a range of web-pages that can be difficult to find and hard to access – or not available at all (Council of Canadian Academies 2013). A careful re-examination of data management practices, including how data is shared, accessed, and used, is necessary to ensure that Canada’s ocean data is being leveraged to best support

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scientific excellence, foster collaboration and innovation, and harness oceans data to inform decision-makers and other stakeholders.

Recognizing that goal, an Expert Forum on Ocean Data Management (November 18-19, 2015 in Montreal, Canada) was held to bring together national and international experts and stakeholders to present and evaluate international best practices in managing data from ocean observations, the current state of ocean data collected and managed in Canada, and goals and visions for the future of ocean data management in Canada. The vision that emerged from the discussion was of the formation of a Canadian Integrated Ocean Observing System (CIOOS): An integrated OOS for Canada that would bring together and leverage existing Canadian and international ocean observation data, programs, and projects to generate value-added data products on an open web-based platform that maximizes utility to end-users (e.g., government, science partners, industry, and the public). The proposed system would be comprised of several primarily regional/thematic OOS' already in operation across the country. Regional nodes would also have a mandate to engage smaller groups within their region, ranging from academic research projects and regional science networks to indigenous and local communities.

The aims of this practice paper presentation are to provide an outline of the lessons learned from the Expert Forum, including what stakeholders envisioned for a national integrated OOS and to spark a discussion among the international data management community on the challenges of implementing and maintaining a complex, national framework for ocean observation.

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### **Competing Interests**

The authors declare that they have no competing interests.

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