MEOPAR
MARINE ENVIRONMENTAL OBSERVATION PREDICTION & RESPONSE NETWORK

MEOPAR Data Management Workshop
Executive Summary
Montreal, QC
March 24 & 25, 2014

Background and Purpose

One of the key findings of the recent Canadian Council of Academies report on "Ocean Science in Canada: Meeting the Challenge, Seizing the Opportunity" concerned ocean observation and, especially, data management. The Expert Panel noted that "Canada has several world-class systems for ocean observation and monitoring; however, challenges exist in achieving geographical coverage and integration of data management." They noted a specific challenge "with regard to data integration and accessibility through the use of modern data portals."

One of MEOPAR's 7 strategic goals concerns information and knowledge exchange, specifically "to improve sharing of information and knowledge between communities, private and public sectors, non-governmental organizations, academia and government in order to improve response capability and resilience in the face of changing patterns of risk in the marine environment."

MEOPAR's Observation Core also includes support for Network Support Services, including the "assembly and support of access to observational data sets, both environmental and socio-economic."

Based on this situation, the facilitation and support role of MEOPAR's Observation Core, and informal discussions which took place at the "Ocean Innovation 2013: Ocean Smart" conference in Rimouski (October 20-23, 2013), MEOPAR organized an initial data management workshop to coordinate the following tasks:

- Assess and report on current data management activities and capacity with respect to ocean-related environmental data across Canada
- Compare the situation in Canada with situations and developments in Europe and the USA, including comparison of lessons-learned and attempted solutions
- Identify and report on needs and opportunities for Canadian ocean data management
- Initiate a working group, draft ideas, and initial invitation list for a MEOPAR "Expert Forum" on Ocean Data Management."

Agenda

Day 1	
8:30-9:00	*Breakfast served in the foyer*
9:00-9:10	Introduction to Workshop & MEOPAR
9:10-10:30 Each presentation should be 15-20 minutes max.	Session 1: Current Activities - National SmartBay/SmartATLANTIC Ocean Tracking Network (OTN) Remote Sensing Data St. Lawrence Global Observatory (SLGO) OceanViewer (MEOPAR)
10:30-10:50	*Coffee break in foyer*
10:50-12:00 Each presentation should be 15-20 minutes max.	Session 2: Current Activities - National Fisheries and Oceans Canada (DFO) Environment Canada (EC) ArcticNet Polar Data Catalog
12:00-13:00	*Lunch served*
13:00-14:30 Each presentation should be 15-20 minutes max.	Session 3: Current Activities – National & International Ocean Networks Canada (ONC) COOPEUS Copernicus Marine Service Integrated Ocean Observing System (IOOS)
14:30-14:50	*Coffee break in foyer*
14:50-16:45	Session 4: Round Table on needs and opportunities for ocean data management in Canada
16:45-17:00	Fill out Questionnaire
Day 2	
8:30-9:00	*Breakfast served in foyer*
9:00-10:30	Session 5: MEOPAR's Expert Forum
10:30-10:50	*Coffee break in foyer*
10:50-12:00	Joint Session with Glider Workshop
12:00-13:00	*Lunch served*
13:00-14:30	Writing Session
14:30-15:00	*Coffee break in foyer*
15:00-16:00	Writing team reports and discussion of next steps
16:00-16:30	Summary (possibly joint with Glider Workshop)

Participants List

Participant	Organization	E-Mail
Douglas Wallace	MEOPAR	Douglas.wallace@meopar.ca
Alison Maunder	MEOPAR	Alison.maunder@meopar.ca
Catherine Vardy	MEOPAR	Catherine.vardy@meopar.ca
Lenore Bajona	OTN	Lenore.bajona@dal.ca
Emmanuel Devred	TAKUVIK	Emmanuel.devred@takuvik.ulaval.ca
Eric Rehm	TAKUVIK	Eric.rehm@takuvik.ulaval.ca
Benoît Pirenne	ONC	bpirenne@uvic.ca
Derrick Snowden	IOOS	Derrick.snowden@noaa.gov
Julie Friddell	Polar Data Catalogue	Julie.friddell@uwaterloo.ca
Diego Ibarra	OceanViewer	dibarra@dal.ca
Oscar Schofield	Rutgers Uni., COOL	Oscar@marine.rutgers.edu
Claude Tremblay	SLGO/OGSL	tremblayc@ogsl.ca
Keven Ratté	SLGO/OGSL	rattek@ogsl.ca
Mélanie Fournier	Dalhousie Uni.	Melf1982@yahoo.fr
Hilario Calderon	Dalhousie Uni.	Hilario.calderon@dal.ca
David Moorman	CFI	David.moorman@innovation.ca
Chrisoph Waldmann	COOPEUS	waldmann@marum.de
Andrew Sherin	ACZISC	a.sherin@dal.ca
Martin Fortier	ArcticNet	Martin.fortier@arcticnet.ulaval.ca
Mathieu Ouellet	DFO	Mathieu.ouellet@dfo-mpo.gc.ca
Henry Kucera	Swiftsure Consulting	Henry.kucera@swiftspace.com
Randy Gillespie	MUN, Marine Institute	Randy.gillespie@mi.mun.ca

List of Presentations

*All presentations available to download by clicking the following link: http://meopar.ca/?p=2018

Title	Presenter	Organization
MEOPAR Overview	Doug Wallace	MEOPAR
SmartBay: Technology solutions for integrated management	Randy Gillespie	Memorial University
Ocean Tracking Network Data Management	Lenore Bajona	Ocean Tracking Network
Remote Sensing for MEOPAR: Data Management	Emmanuel Devred	TAKUVIK
SLGO's Role Regarding Data Management	Claude Tremblay	SLGO
Ocean Viewer.org: Benefits of a one-stop-shop portal for real-time ocean conditions and forecasts in Atlantic Canada	Diego Ibarra	MEOPAR
CCGS Amundsen Marine Data Collection through ArcticNet and other partner programs	Martin Fortier	ArcticNet

The Polar Data Catalogue: Sharing and Archiving Canada's Polar Data	Julie Friddell	Polar Data Catalogue
U.S. Integrated Ocean Observing System	Derrick Snowden	IOOS
COOPEUS & Copernicus	Christoph Waldmann	COOPEUS
COINAtlantic	Andrew Sherin	ACZISC Secretariat
Ocean Data Management at Fisheries and Oceans Canada: Overview	Mathieu Ouellet	DFO
Digital Infrastructure Oceans 2.0	Benoît Pirenne	ONC
Some Thoughts: Once more around the Buoys or…Into the Future?	Henry Kucera	Swiftsure Consulting

Guiding questions and responses

Participants were asked to contemplate the following questions during the course of the workshop. On the second day, a roundtable discussion was initiated and participants discussed their responses to each of the questions. Below each question are the responses and discussions heard.

What did you learn that you didn't already know about data management in Canada?

- The breadth of oceanographic data collection efforts in Canada
- What role DFO plays in oceanographic data collection
- Seems as if our ability to gather data and make observations are outstripping our ability to form hypotheses and test them. The whole point of collecting data is to do something with it and we need to make sure that Canada's efforts are focusing on the end uses. Canada seems to be insight challenged not necessary data challenged.
- Need to keep in mind that heterogeneity in data collection efforts and types is important especially in regional circumstances.
- There seems to be a proliferation of portals in Canada and we need a coordinating body to link them.
- Need to push past data collection and managing meta-data to distributing and access for end-users.
- The amount of regional nodes serving up world-class data assets to their constituents.
- The ocean community needs to look to successes in the terrestrial community to avoid inventing, rediscovery and redundancies.
- Data management standards are still not widely understood or implemented in data collection.

What major issues or obstacles do you see for coordinated data management in Canada?

- The ocean observation community in Canada is not well defined or understood.

- Hard to identify end-users and even harder to share data once the end-users are identified.
- Hard to keep meta-data up to date and useful to remain relevant.
- Funding often comes in the form of infrastructure which is the gift that keeps on taking if you don't have proper human resources behind it.
- Need a coordinated national strategy with defined vision to help raise awareness for the useful of ocean meta-data in order to secure funding.
- Data management requires large amount of both fiscal and technical expertise that is not easy to find.
- Oceanographic data sets are not always archived and therefore not readily accessible to be mined for useful information.
- Confusion surrounding the idea that data management is not research.
- Science assets and personnel are being spent on building infrastructure that may already be open source or commercial.

What are the major opportunities we can leverage in Canada?

- World Class Tanker Safety Expert Panel will provide many opportunities for collaboration.
- Current efforts are very well connected both locally and internationally.
- Opportunities for synergies as there are many Canadian organizations focusing on different aspects of the data management value chain. For example, federal departments can offer long-term data stewardship for some data types while universities can offer long-term storage.
- Lots of world-class systems in place, just a matter of coordinating and sharing lessons learned.
- Potential to leverage the Federal Geospatial Platform to help with coordinating.
- MEOPAR seems to be a potential champion of the efforts with sustainable funding.

Additional thoughts and comments?

- Effective data stewardship is not pure science and needs to useful applications to prove its worth.

A Canadian Ocean Data Management Community of Practice

During the workshop, a number of participants discussed the need to initiate a formal oceanographic data management community of practice for Canada. The community of practice would help coordinate oceanographic data collection and management. From the discussion, a vision, objective, impacts/outcomes and deliverables were identified.

Vision Statement

Make Canada's ocean data & information universally accessible and useful in order to turn data into knowledge.

Objectives:

- Provide a forum for exchange of knowledge, expertise and best practices for the management of ocean data
- Find the infrastructure that is require to achieve the vision
- Define and identify the human resources that are needed to achieve our vision
- Identify applicable standards and encourage their use
- Identify and locate data resources in Canada and make information available domestically.
- Identify international ocean data resources that could be of use to Canada
- Create inventory of best practices and strategies for data management
- Demonstrate the value and utility of using ocean data
- Coordinate Canadian input in international efforts to develop knowledge-based management
- Impacts/Outcomes:
- Ocean data is ubiquitously accessible and useable for all Canadians
- Ocean data and information organizations are working together to deliver a national infrastructure for ocean data
- Radically improved exchange of information, knowledge and best practices with respect to ocean data management across the country
- Provide Canada with best advice on planning and efficient use of major data management infrastructure
- Much better use of current ocean data by all sectors of society; academic, researchers, government agencies and the private sector
- Better promotion and awareness of the ocean data resources that exist in Canada and identification of gaps needing to be addressed in the coming years.

Deliverables:

- Defined community of practice with organizational structure in place
- Built catalogue of ocean data in Canada based on CWS standards
- International resources identified and made accessible by Canadian data managers
- A repository of code
- An established definition of ocean data management
- Provide a window into Canadian data management practices for international stakeholders.

Action Items & Next Steps

Expert Forum on Ocean Data Management towards a national strategy.