
ATLAS Science-Policy meeting

Library and Archives Canada, Ottawa

10.30-15.00, 11 May 2018

MEETING SUMMARY REPORT

Background

The second science-policy meeting for the ATLAS project took place in Ottawa on Friday 11 May 2018. The aim of this meeting, and similar events that will take place during the course of the project, is to link research and policy, establish an on-going dialogue with stakeholders and potential users of ATLAS results, and to provide policymakers and stakeholders with timely and relevant scientific knowledge in support of policy developments. Invitees to these meetings comprise senior policymakers, stakeholders from industry and NGOs, representatives of international organisations, and leading scientists. The objective is to ensure that ATLAS results are brought promptly to the attention of policy makers and other stakeholders in a forum where they can be discussed with all interested parties, and to keep ATLAS partners up to date with the latest policy issues and questions.

Hosted by Department of Fisheries and Oceans Canada (DFO), this meeting mainly served to bring the project to the attention of the Canadian government stakeholders and to gather their feedback on where ATLAS results will be of benefit to their work in the future development of management of ecosystems in the Atlantic.

Meeting report

Meeting participants were welcomed by Dr Louise Laverdure, Director General of Ecosystem Science at DFO. In her opening remarks, Dr Laverdure acknowledged this meeting as an important opportunity for science knowledge dialogue between EU and Canada in support of ocean policy development, and stressed that Canada takes its commitment to the Galway Statement - *'to increase our knowledge of the Atlantic Ocean and the bordering Arctic region, by aligning our ocean research and observation efforts'* - very seriously. Dr Laverdure highlighted the recent investments by the Canadian government in strengthening their scientific workforce, reflected on Canada's work to date on describing 236 ecologically and biologically significant areas (EBSAs) in their national waters, and considered how these efforts aided Canada's progress towards achieving the 2020 Aichi Targets set by the UN Convention on Biological Diversity (CBD). However, she acknowledged that there remained much work to be done to embed conservation strategies into a marine spatial plan for Canadian waters that can protect marine ecosystems whilst balancing Blue Growth objectives and supporting societal needs. Dr Laverdure concluded with the statement that oceans will play a prominent role in Canada's G7 Presidency during 2018, including hosting a meeting of G7 Ministers in autumn 2018 on the theme of *"Working together on climate change, oceans and clean energy"*. [The full text of Dr Laverdure's opening statement is provided in Annex 1].

The meeting was then opened by the Chair, Professor David Johnson, who explained the context of the ATLAS Science-Policy meetings. He invited the meeting participants to introduce themselves and give an insight into their personal interest in the Atlantic.

The meeting commenced with a series of presentations by project participants and collaborators, each focusing on a specific aspect of the ATLAS work.

Professor Murray Roberts, ATLAS Coordinator, provided an overview of the project and its high-level objectives, particularly placing it in the context of the economic crisis and the importance of the Atlantic and its resources for Blue Growth. He also highlighted the connections between the Atlantic and other sea basins, and the potential impacts that global-scale issues such as climate change and ocean acidification could have on Atlantic ecosystems, particularly if the Atlantic Meridional Overturning Circulation (AMOC) is affected. ATLAS links closely to social and policy dimensions, and results will be analysed in terms of their application to maritime spatial planning (MSP). To date, the project has led or participated in 19 offshore research expeditions, with 15 more planned for this year and next. These cruises are investigating 12 case studies in the Atlantic, each with a focus on deep-sea ecosystems and how these might be impacted by changes in the AMOC. Prof. Roberts concluded with an overview of the peer-reviewed publications produced from the project to date and a look to the future in the context of the Belem Statement, which will extend pan-Atlantic collaborative ecosystem research to the South Atlantic.

Dr Lea-Anne Henry (University of Edinburgh) provided an overview of the 12 ATLAS case studies, highlighting how science results emerging from these focused studies can be used to strengthen existing area-based management measures, provide the basis for proposals for new EBSA descriptions, and provide data and expert opinion to inform marine spatial planning. Specific case studies presented in more detail included emerging results from the Gulf of Cadiz case study that demonstrate how new data could provide the basis for a new EBSA description, and new data from the Faroe-Shetland Channel that could be used to strengthen marine spatial planning for the MPA. New information from this latter area demonstrates the environmental factors governing the distribution and diversity of sponge ground beds. A key piece of work has been in disentangling the impacts of industry (fishing and oil/gas) from natural environmental factors on deep-sea sponge ground ecosystem structure. Water mass structure (particularly temperature, silicate and salinity) strongly affects the distribution and diversity of the sponge beds, while large-scale gradients in these environmental factors affect sponge ecosystem structure but so do fishing activities, with oil and gas impacts being more localised.

A more detailed look at how ATLAS results can be applied to marine spatial planning was presented by Prof. David Johnson (on behalf of Dr Anthony Grehan, National University of Ireland Galway). Blue Growth scenario testing in the context of ecosystem-based management (noting SDG 14 and the IOC/DG-MARE Joint Roadmap of 2017) will utilise the EU FP7 Project MESMA (Monitoring and Evaluation of Spatially Managed Areas) methodology. Spatially-managed area plans will be developed for each ATLAS case study area. To that end, each case study has defined the extent of its area, catalogued existing sectoral activities, mapped the spatial management institution landscape and described (any) existing management plans. In addition, each case study has identified potential future blue growth opportunities that must be accommodated. Examples of case study goals and operational objectives were presented.

Comments following these introductory presentations touched on: how to quantify natural capital as a resource to be managed in the ocean sector; how socio-economic goals and strategies can be balanced with conservation interests via the application of marine spatial planning; the EU's approach to ocean management via the Marine Strategy Framework Directive (environmental objectives), the EU Marine Spatial Planning Directive (spatial management strategy), and the Blue Growth agenda (socio-economic and societal aspects).

Prof. Johnson then invited meeting participants to identify and discuss specific areas where ATLAS can deliver benefits. The following aspects were noted:

- ATLAS is well designed to deliver some of the knowledge needed to answer some policy and management questions, but is also designed to ask better policy and management questions.
- ATLAS brings together EU and American expertise to Canadian waters. After a long period of releasing human resources, Canada no longer has the expertise to tackle some of the big questions. Some of the missing knowledge can be gained via partnering through programmes such as ATLAS, which provides a great opportunity for joint research.
- It was noted that longevity of research programmes is always an issue. What will be the legacy from this project? The Galway Framework may be able to help with that. Prof. Roberts noted that the EC is in the process of assessing proposals for new ecosystem-based research that will extend into the South Atlantic.
- Any outcomes that are relevant to better understanding the impacts of industry activity on ocean ecosystems is useful. The MSP work under ATLAS will be very useful as Canada develops its own plan. The ATLAS puzzle graphic is a reminder to think big and not become too blinkered on any one piece of the puzzle, and to be sure that the different pieces continue to fit together.
- Management of resources in the ocean is hugely complicated. Even with the new Canadian investment in ocean science, it is still a huge challenge to advance knowledge on what's happening in the oceans. The problems are huge and can only be solved via international collaboration through projects such as ATLAS.

Following this discussion, Dr Ellen Kenchington (DFO) presented results from the recent ATLAS assessment of the implications of climate change for Vulnerable Marine Ecosystems (VMEs) and ecologically or biologically significant areas (EBSAs) in the North Atlantic¹

In response to international treaties and agreements 47 areas have been identified in the high seas of the North Atlantic as EBSAs, VMEs and MPAs (collectively referred to as area-based management tools, ABMTs). Most of these areas protect species living on the seafloor, such as corals and sponges, living kilometers below the surface. The ATLAS study asked whether climate change would have an effect on these areas and, if so, over what time frames? Deep-sea species, including sponges and corals, have evolved in extremely stable environmental conditions and are ill-equipped to deal with fast-changing environments. The potential impacts of climate change were reviewed over the next 20- 50 years following a pressure-state-response framework applied to each of the 47 areas identified as EBSAs, VMEs or MPAs. The state of any one ABMT can be affected by a number of pressures: both endogenic (caused by on-site human activities) and exogenic (caused by external drivers, such as CC); such pressures can push the state of an ABMT out of balance, into a new, deteriorated state. The study aimed to identify potential management responses on adaptation of ABMTs in ABNJ to the effects of climate change, recognising that only the endogenic pressures are amenable to management. Certain ecological traits contribute to increase the resilience of systems to pressures, allowing them to absorb disturbance without fundamentally changing and those were considered in evaluating the responses. The study concluded that, with the exception of the hydrothermal vent EBSA on the Mid-Atlantic Ridge, all of the conservation targets in all of the current MPAs, EBSAs and areas closed to fishing to protect VMEs may be impacted by changes in at least one of the five climate change oceanographic variables before 2050, and may already be undergoing such effects.

Comments arising from Dr Kenchington's presentation highlighted the lack of interaction between biological population experts and habitat experts to determine how species distribution (e.g., fish) will change with climate

¹ Johnson, D.J., Ferreira, M-A. & Kenchington, E. (2018) Climate change is likely to severely limit the effectiveness of ABMTs in the North Atlantic. *Marine Policy* 87: 111-122

change. Integration between population studies and biodiversity management is currently very limited, and both communities are currently coming up with different strategies that are not necessarily compatible.

Prof. David Johnson provided an overview of the policy interactions that ATLAS has undertaken to date. He explained that ATLAS is able to instigate information exchange, to promote dialogue in some cases, and exceptionally to have direct input to policy-making and the development of regulatory instruments. This is taking place at global, regional and national scales. For example, ATLAS has convened side events and opportunities for discussion at UN meetings such as the BBNJ Prep Com series leading to UN Resolution 72/249 and for CBD discussions on EBSAs and coldwater corals. A presentation at the 4th meeting of the Collective Arrangement between OSPAR and NEAFC was an opportunity to provide information to both this regional forum and to the national delegations and advisory bodies present. Policy briefs will be generated as ATLAS science results become more concrete.

Comments following this presentation noted the important lessons learned from IPCC's feed into the Paris Agreement that could be valuable for communicating ATLAS results. These include: 1) acknowledge that its impossible to discuss options without making some choices appear to have better outcomes than others. Visions of better outcomes will vary from person to person so ATLAS should be very neutral about presenting consequences; 2) assess where the dialogue can be changed from negatives to opportunities; 3) ensure rigour in detection and attribution of change: we need to make sure that when ATLAS points the finger, we have real certainty in our evidence.

The final presentations of the afternoon focused on trans-Atlantic collaborative frameworks and initiatives. Presented by Terry Schaefer (NOAA) and Karen Davison (DFO), this encompassed the principles and work plan of the Galway Statement and Atlantic Ocean Research Alliance (AORA). A series of formal tri-lateral working groups have been established to advance scientific planning in the areas of aquaculture, ocean literacy, Atlantic seabed mapping, ecosystem approach to ocean health and stressors, and the Atlantic Seafloor Partnership for Integrated Research and Exploration (ASPIRE). A brief overview was given of the objectives of each of these working groups, as well as a summary of relevant cross-Atlantic research programmes out in place by the EU and North American agencies in support of the Galway Statement. The presentation concluded with a reflection on the Belem Statement and the move towards basin-wide cooperation in Atlantic science that will build strong partnerships with collaborators in countries bordering the South Atlantic.

Prof. Johnson wrapped up the meeting by thanking DFO colleagues for their support and inviting some final comments from the meeting participants on areas of collaboration and future actions arising from the meeting presentations and discussions. Issues raised included:

- The urgent need for more information on the impacts of industry/commercial activities in the marine environment, to support a more robust definition of "allowable activities" inside protected areas.
- The outcomes of the ATLAS MSP exercise are of great interest, especially how these can be translated into the Canadian context.
- How the views and values of community groups and local knowledge can be taken into account in marine spatial planning and reconciliation activities (though it was acknowledged that ATLAS is primarily focused on deep-sea areas so interaction with coastal communities is very limited).
- There is a need to start thinking proactively about "knowledge systems" - the Davis Strait could provide a good opportunity to explore this, through direct engagement between DFO and the Inuit government.
- It was acknowledged by DFO colleagues that there was a need for them to be more connected to the international networks. Many of the new scientists hired at DFO are seeking opportunities to connect with the wider ocean science/government community. Networking and integration is important for young policy people too, not just scientists. It's important that the two communities continue to be

integrated. It was suggested that a graduate school course could pair scientists with policy people to demonstrate how scientific research can be communicated so that it is relevant for policy. It is important for scientists to understand policy gaps and needs, not just for policymakers to understand the outcomes of research.

- Some of the visual materials produced by ATLAS would be very useful for the forthcoming Canadian Status of the Oceans report.
- There is a desire for the Galway Statement working groups co-chairs to engage more directly with research projects, perhaps through convening a 'project showcase' session at the Galway Statement meetings.
- The UN Decade of Ocean Science is important to the Galway community and will be a priority area for AORA efforts in the coming years.

Prof. Johnson closed the meeting with thanks to DFO for providing the meeting venue and for their positive and enthusiastic engagement with ATLAS. He advised that a report of the meeting would be made available in due course.



Science-Policy Meeting participants in front of the Library & Archives Canada building, Ottawa.

Annex I: Opening remarks by Louise Laverdure, Acting Director General for Ecosystem Science, Department of Fisheries and Oceans Canada

Bonjour à tous. C'est un grand plaisir de vous voir tous ici à Ottawa. Good morning. It is a great pleasure to welcome you all to Ottawa for the second ATLAS Science-Policy meeting.

Before I get started I would like to take a moment to acknowledge and thank David and Vikki at ATLAS for their efforts in organizing this meeting. This meeting is an important opportunity for dialogue between Canada and ATLAS related to scientific knowledge and research in support of policy development.

As you know, in May 2013, Canada, the United States and the European Commission signed the Galway Statement on Atlantic Ocean Cooperation. Under the Galway Statement, Canada committed to work with the European Union and United States 'to increase our knowledge of the Atlantic Ocean and the bordering Arctic region, by aligning our ocean research and observation efforts.' We take this commitment seriously.

Over the past 2 years, members of the ATLAS consortium have been working to increase knowledge of the deep-sea habitats in the North Atlantic Ocean. As part of this effort, our Canadian scientists have been involved in the development of ocean and basin scale modeling of coral and fish species to provide trans-Atlantic data sets, which can be used for conservation decisions and marine spatial planning.

I am happy to see that Ellen Kenchington, one of our research scientists engaged in ATLAS (as well as a lead for an ATLAS case study on Davis Strait), is here today. I'm sure she will talk more about their work on connectivity pathways using high-resolution particle tracking models as well as the collection of information on currents, food supply and settlement of sponges in the Davis Strait area.

This is an exciting time for ocean science in Canada. The Government has made significant reinvestments in oceans science. At Fisheries and Oceans Canada, 135 new scientists were recruited. And between 2016 and 2021, the Government of Canada will make more than \$1.6 billion in new investments to support more science and new partnerships in the area of oceans protection.

My remarks this morning will focus on what Canada has accomplished and what we are continuing to do to advance marine conservation and knowledge of deep-sea Ecologically and Biologically Significant Areas, or EBSAs.

In Canada, we are continuing our work to identify EBSAs. The identification of these significant areas is one of a suite of ecological tools that can be used to advance the implementation of an ecosystem approach to management of Canada's oceans.

To date, we have identified and described 236 EBSAs within all of our marine bioregions. We recognize the importance of refining and re-evaluating EBSAs over time, when something relevant is known to have changed and when new information become available.

We will continue this work with our domestic and international partners. And we will work to ensure that EBSAs are being taken into account in fisheries management and oceans management decisionmaking. Work being done internationally, such as research through ATLAS, and domestically on EBSAs is more important than ever given the focus on marine conservation in international policy dialogue.

As a signatory to the United Nations Convention on Biological Diversity, Canada is committed to protecting and conserving at least 10% of our marine and coastal territories by 2020. To further demonstrate Canada's

commitment to protecting marine biodiversity Prime Minister Trudeau established an interim marine target of 5% to be reached by the end of 2017. I am pleased to report that we exceeded that interim target with a total of 7.75% of our oceans protected by the end of 2017.

As we move toward 2020 and beyond, we will advance our work on MPA networks to realize the benefits of enhanced biodiversity and productivity and to connect our conserved areas, including effective “other measures.” We are adhering to international best practices and principles – replication, connectivity, representativity – as we develop these networks.

I should also mention that while numerical targets can be helpful to focus effort, we must not lose sight of the need to ensure conserved areas are managed effectively. We are committed to the effective protection of marine biodiversity through the use of evidence-based decision-making to develop effective policies and regulations.

Integral to the success of Canada’s efforts both in achieving 10 percent by 2020 and potentially moving on from there, is our ability to ensure that conservation objectives are being met. Fisheries and Oceans Canada has always had strong monitoring, compliance and enforcement regimes for fisheries as well as oceans management. We are now taking steps to strengthen the management and monitoring systems that are in place for each MPA and for our oceans more broadly, including deepwater ecosystems.

Looking to the future, Canada acknowledges that MPAs and MPA networks should be embedded within broader marine spatial planning, or MSP, and ecosystem-based management regimes to support the sustainable use of our oceans. Where marine resource industries provide significant economic benefits, MSP provides a framework that allows for consideration of these benefits along with social, cultural and marine conservation objectives.

On January 1st, 2018, Canada assumed the G7 Presidency, and in June, we will be welcoming leaders to Charlevoix, Quebec for the annual G7 Summit. Later in the fall, we will host a meeting of G7 Ministers with the theme, “Working together on climate change, oceans and clean energy.” I am very excited about the prominent role that oceans will play in our G7 presidency and equally excited about what we can accomplish together towards protecting our oceans through the ATLAS program.

As you may know the 4th World Conference on Marine Biodiversity will be commencing May 13th in Montreal, Quebec. ATLAS has planned a 1-day symposium on May 12th to discuss North Atlantic Vulnerable Marine Ecosystems (VMEs), EBSAs and MPAs in a changing ocean. Our Fisheries and Oceans scientists and policy makers are looking forward to sharing their experiences, learning from others, making new connections, and discussing the role of science and policy in protecting these sensitive deep-water ecosystems.

I don’t want to take up any more of your time as you have a lot of interesting presentations and discussion topics to cover today. Unfortunately, I am not able to stay with you the entire day, however, I am confident that the discussions here will provide a wide range of views from different sectors of the Department. I hope you all enjoy a pleasant day discussing these important issues. Je vais donc conclure en vous souhaitant une bonne réunion. Thank you. Merci beaucoup.

Annex II: List of registered meeting participants

Johnson, David	Seascope Consultants / ATLAS
Gunn, Vikki	Seascope Consultants / ATLAS
Roberts, Murray	U. Edinburgh / ATLAS
Henry, Lea-Anne	U. Edinburgh / ATLAS
Kenchington,	Ellen DFO
Schaefer, Terry	NOAA
Rice, Jake	IPBES / IUCN FEG
Louise Laverdure	DFO
Stephen Virc	DFO
Nadia Bouffard	DFO
Liisa Peramaki	DFO
Renée Sauvé	DFO
Lisa Setterington	DFO
Caroline Longtin	DFO
Elizabeth Edmondson	DFO
Brett Gilchrist	DFO
Marina Petrovic	DFO
Candace Newman	Natural Resources Canada
Jason Boire	Parks Canada
Martine Landry	ECCC
Susanna Fuller	Oceans North
Sarah Saunders	WWF
Robin Anderson	DFO
Karen Davison	DFO