

Science Management Board
Meeting Report: April 17, 2009
Ottawa, Ontario

1. Opening Remarks

The eighth meeting of the Science Management Board (SMB) was called to order by Serge Labonté, facilitator for the meeting. Following a tour de table, Wendy Watson-Wright reviewed the meeting agenda, introducing the agenda items and offering a brief overview of each. The Board approved the agenda.

Approval of Minutes from November 28, 2008

There were two requests for clarification and one proposed amendment (to add context to the Laroque reference).

Action items identified in the November minutes were reviewed. It was noted that that:

- the Five Year Research Plan has been completed;
- a monitoring grid had been started and is being incorporated with the fresh water monitoring plan; and
- a risk framework on scientific advice has been developed.

The minutes were then approved by the Board.

2. SMB Retrospective and Forward Agenda

Wendy Watson-Wright presented the SMB Retrospective and Forward Agenda.

Discussion

- In a wide-ranging discussion that touched upon specific issues such as the Northern Agenda and freshwater, as well as the manner in which Science works with its client sectors, the Board acknowledged that a great deal of progress had been made since the inception of the Science Management Board. They also felt that, at the same time, there had been slight changes in DFO culture with respect to fisheries management issues (such as total allowable catch, biomass etc.).
- The importance of integration was emphasized repeatedly, not only within the Science Sector but across all of the work of the department. SMB believes that integrated management needs to become the modus operandi for DFO.
- They noted that strong examples of effective integration are emerging from COEs and LOMAs, and that international pressure in some areas provides DFO with an opportunity to demonstrate its competence in areas such as ecosystem management.

- The Board further noted that the department has impressive expertise when it comes to the Arctic but its resources and activities are spread out. The challenge of coordinating these was noted, as was the fact that the establishment of COEs and work done through IPY were helping to address the issue. Nevertheless, it was felt that additional effort may be needed to move the Science agenda forward, particularly with respect to the North.
- The Board commented that Arctic and freshwater needs were seen as important in all DFO Sectors, but these have not yet become part of the departmental psyche.

Direction

- FAM and other Sectors need to work with Science to change the “nature of the debate” (i.e., to look at the big picture and shift the focus away from an emphasis on numbers).
- New scientific products need to be based more on thresholds, indicators and cumulative impacts.
- Consideration should be given on how to engage staff at all levels (within Science as well as within client sectors) in discussions that keep the Research Agenda current, and to assess progress. It was noted that the 5-year Research Agenda would need to be revisited and renewed in the near future.
- DFO Science needs to work more closely with industry in order to know what they are doing and how they are doing it. It is necessary to eliminate as much as possible any surprise factors and to remain proactive in terms of environmental assessments, standards, and regulations. This is especially critical in relation to energy exploration in the North (oil/gas, gas hydrates, etc.).
- DFO Science should avail itself of opportunities to ensure other federal departments are aware of DFO’s approach, role, and responsibilities with respect to the Arctic.
- All Sectors should consider emerging fisheries, marine mammals and freshwater in all planning and decision making.

3. International Science Strategy (ISS)

Wendy Watson-Wright presented an overview of the International Science Strategy.

Discussion

- SMB members discussed the ISS in the context of its role in facilitating coordination, collaboration and consultation not only within the Department (e.g., between Sectors), but also with respect to DFO’s relationships with other government departments. The Board noted that the process of developing an ISS has already

improved communications. For example, Sectors are now more inclined to exchange information and communicate with each other in advance of implicating one another with respect to international and bilateral agreements.

- The ISS' potential role in shaping DFO's policies, programs and actions as they relate to international affairs was also explored by the SMB. The ISS could identify and inform the nature of the international activities the Department chooses to pursue. For example, Canada's relationship with Norway was raised in relation to oil and gas exploration and petroleum research. Norway is very heavily involved in the latter and has offered to collaborate with Canada in this regard.

Decision

- The SMB approved the ISS.

Follow up Action

- The SMB directed the development of an ISS *action plan* that includes:
 - clear criteria / conditions / reasons for DFO Science's involvement in international fora, issues, agreements etc.;
 - an articulation of how DFO Science international activities contribute to departmental strategic objectives;
 - integrated performance measures; and
 - an assessment of the extent and nature of its impact on DFO resources.

4. Review of the Proposed 2009-2010 Science Advisory meeting schedule

Ghislain Chouinard explained the nature of the requests for peer scientific advice made by client groups, their contribution to DFO's planning process, and the decision making process currently in place. In addition, he presented the proposed peer review schedule.

Discussion

- SMB members were pleased to learn of the methodology and rigour used by the Canadian Science Advisory Secretariat, and remarked that the process used by CSAS inspires confidence. Additionally, Board members noted that the information and data collected in response to requests for peer scientific advice is critical to the business planning process.
- SMB members discussed whether CSAS could make the requests for peer scientific advice earlier in the year. It was mentioned that the European Union has asked ICES and PICES to provide their science data sooner, and both organisations have taken steps to do so. However, in light of the nature of the science data collected by CSAS, and given that it is based on biological processes (e.g., life and spawning

cycles), it must follow its natural course and some data cannot be hastened. Providing data earlier in the year may come at a cost in the sense that some information may be lost in the rush to gather information.

- In discussing the five year planning cycle and Department's adaptability and nimbleness, it was determined that it is neither feasible nor advisable for DFO Science to divert or reroute resources from one project to another "mid-stream".
- During the discussion on the peer review process it was noted that its timing is important to Species at Risk, and has implications for the posting of critical habit information. For example, Oceans, Habitat and Species at Risk (OHSAR) Sector was required to postpone its posting of critical habitat information because of incomplete data. In delaying its posting, OHSAR has exceeded the legal timeframe permitted by the *Species at Risk Act*, and consequently is now dealing with this matter in court.

Direction

- The issue of co-management in the context of DFO and Aboriginal arrangements was raised, and it was noted that these arrangements should receive more consideration. DFO performs science on behalf of Aboriginal organisations and receives resources for its efforts. It was noted, however, that the resources are not always sufficient, and that lack of adequate resources places additional pressure on the Science Sector.
- DFO must make a greater effort to integrate issues. Our current approach tends to be regional rather than national (e.g., we treat issues in isolation, as if they belong only to the West or East coast, or to the Arctic). There is benefit to solving problems and addressing challenges as interdependent and connected. DFO should adopt a national, rather than silo approach in planning and prioritizing.
- CSAS needs to be aware of the *Species at Risk Act* and when possible insist that responses to its requests for peer scientific advice accommodate the legal time frames outlined by the *Species at Risk Act*.
- In the context of OHSAR, DFO needs to increase and improve its capacity vis à vis freshwater.

5. National Centre on Arctic Aquatic Research Excellence (NCAARE)

Bob Fudge, presented an overview of the mandate and scope of the COE, as well as the work it does and the challenges it encounters.

Discussion

- The Board discussed the tendency for industry to conduct its own environmental assessments, and set its own standards. Board members agreed that if DFO doesn't involve itself, it won't know what those standards are, or be in a position to exercise its regulatory responsibilities.
- Meeting participants noted that research presented by industry will have applications and implications for DFO, and that we will have to assess their work from a regulatory perspective. It was agreed that we can only conduct these assessments if we have the appropriate science data. In light of the challenges industry-led environmental assessments and industry-developed environmental standards would place on DFO, Board members noted that the need for greater engagement of industry and a more direct and involved approach.
- DFO's engagement strategy vis à vis the private sector and industry should be applied consistently and on a national level. This method is currently employed on the East Coast where it has become indispensable. For example, industry now comes to the Centre for Offshore Oil, and Gas, and Energy Research (COOGER) in advance to determine DFO concerns are before embarking on any research.
- In the context of seismic testing in the Beaufort Sea and the marine mammals living in the area, SMB members discussed the Department's level of satisfaction with the methods being used by industry and whether they are appropriate. It was suggested that DFO Science work with Exxon in conducting seismic testing and be present in the process or on Exxon vessels. If DFO sets the protocols, and advises them on the best approach (without doing their work for them), we would be more confident in trusting their data, results and/or analysis.
- SMB members discussed whether there is an alternative to the Nahidik in terms of collecting the necessary data and information in the North. This issue was raised in relation to an integrated management plan for the Beaufort Sea, and the amount of science yet to be performed in this area. Board members concluded that while there is no obvious replacement for the Nahidik, an alternative might be to utilize much smaller vessels to do some of this research.
- In this vein, and in an effort to offset the costs of doing research in the North, NCAARE has come up with an innovative plan. It has designed small vessel oceanographic equipment that can do the same job as the machinery designed for larger vessels. The scaled down version is transportable and looks for vessels of opportunity in the North. It was noted that northern communities would be involved in monitoring.
- DFO's work with Environment Canada (EC) with respect to weather forecasting was cited as an example of effective collaboration in response to questions regarding the

level of cooperation/collaboration between DFO and other science based departments.

- As an example of federal/territorial or intergovernmental collaboration, SMB discussed the proposed Canadian Arctic Research Institute (CARI) and the 50 foot research vessel “Nunavut”. The Government of Nunavut wants to work with DFO on both of these projects. On the international front, with respect to ocean observation in the Arctic/Antarctic, DFO’s relationship with Korea (recent *Letter of Agreement*) and the Newfoundland and Labrador region’s work with the Intergovernmental Oceanographic Commission were cited.

Direction

- DFO Science should position itself to better monitor the type of projects that private industry is involved in, to ensure that it is aware of the private sector’s motivations and activities (e.g., DFO should make efforts to engage the private sector at the “ground level”). By taking a more forward-looking and self-starting approach, the Department will be better positioned to understand the interests of Korea, Japan, China in building icebreakers or exploring Northern waters.
- DFO Science’s engagement strategy vis-à-vis the private sector and industry should be applied consistently and on a national level.
- DFO needs to go beyond sharing information and move towards actually guiding private industry in its actions. Our efforts should be oriented at influencing what sort of information is sought and what should be collected.
- When possible and appropriate, DFO should partner with industry as it is able to move with greater speed than government.

Follow up Action

- DFO Science should closely examine the possibilities stemming from the MOU with the British Antarctic Survey (sharing of data and information on logistics) with a view to the potential benefits to DFO.
- A more thorough discussion on the relationship between the Department and industry during a future SMB was requested.

6. Management of Scientific Data

Bob Keeley, presented an overview of the type of scientific data DFO manages, why data management is critical to the Department’s strategic planning process and the uses of this data.

Discussion

- SMB members remarked that DFO Science is recognised as a leader in data management and other sectors or government departments can learn much from the Science's system. In light of the anticipated demographic shift and upcoming retirements in the workplace, and the related issues of public service renewal and retention, DFO's data management techniques will position it well vis-à-vis knowledge transfer and succession planning.
- Notwithstanding the above, Board members expressed concern about the Department's data management capacity. Meeting participants took note of the relatively few people in Science who manage data and that, generally, those who do are not dedicated resources, as they generally have other responsibilities and are multi-tasking. The value of a group tasked solely/specifically with data management was emphasized. Additionally, SMB remarked that there is a lack of consistency in terms of technique from sector to sector and region to region.
- Meeting participants stated that the level of confidence vis à vis data collected by Science personnel is high. The consensus was that it is very likely that data collected by DFO will end up in accessible archives. It is less clear, when speaking of our colleagues and partners in other government departments, as to whether other data, such as the oceanographic data collected by EC, is as likely to be accessible. It was noted that although the ocean data being processed in real time is relatively small compared to atmospheric information, it is increasingly significant. Science is working with EC to remedy the silo approach to information and to integrate our monitoring data.
- The discussion on the nature and importance of DFO's partnerships with other Departments also focused on areas where relationships were working well. For example, EC has supercomputing resources that it uses for numerical weather forecasting; DFO Science is developing the ocean computer models that will be coupled with the existing atmospheric models. DFO Science already has cooperative arrangements in place with EC through the Centre for Ocean Model Development for Applications (COMDA) and The Canadian Operational Network of Coupled Environmental Prediction Systems (CONCEPTS) projects.
- DFO works with approximately 60 people in data centres around the world and has been involved in advancing the development of standards. We operate the global archive of surface drifters; this includes oceanographic data and meteorological data. We share and compare challenges with respect to data management and are working towards the Oceans data portal - a link between oceanographic and meteorological data, connecting data centres around the world.
- It was noted that DFO's European counterparts have invested a lot of time and money to standardize and define terminology.

- SMB members raised the potential of a multi-species approach to *SARA* in the context of watersheds and the type of information that should be collected to better bridge with Environment Canada on this front. As a first step in addressing this challenge, DFO Science has started to develop a pilot program around information management focused mostly on taxonomic issues and North American species. Science is sharing information with other departments and will have a database and a point of contact.

Direction

- DFO Science should continue to develop its capacity to assemble, process, archive and disseminate real time ocean data.
- DFO Science should continue to promote collaboration and coordination with other departments and partners in other countries, with respect to sharing information and best practices, joint approaches to data collection, warehousing, the use of resources and the formalization of standards. The Federal Biodiversity Information Project was mentioned as a potentially good project from a collaborative data management perspective.
- DFO Science should consider an integrated data management perspective in the context of species at risk.
- The freshwater watershed program needs to be strengthened. It was felt that working with Environment Canada may facilitate this as it collects real-time information on fresh water. Given that connecting with EC would require the development of web services, DFO Science should work more closely with them on this and on the development systems to enable and facilitate the capture, processing and storage of real time information/data.
- DFO Science, in conjunction with other Science Based Departments and Agencies, should create a process and program of training, mentoring and coaching to ensure that knowledge transfer and to facilitate succession planning in the area of data management.
- Meeting participants further stressed the importance of the establishing a special unit tasked with historical data rescue.

Follow up Action

- DFO Science should continue to develop and implement a formalized national data management system to replace the sometimes regional and piece meal approach that is currently in place with respect to data collection and storage.

7. Science Managers Workshop meeting in Montréal

Wendy Watson-Wright presented a summary and Jacqueline Gonçalves presented highlights of the Montréal meeting.

Discussion

- The Board agreed that there is an opportunity for sectors to work together in re-evaluating and reassessing some of the processes DFO has in place. Given the number of similar challenges and issues have arisen across sectors, throughout DFO, a joint approach is both warranted and efficient.
- The Department as a whole must question its modus operandi to ensure that its methods and approaches are evergreen, relevant and forward looking. As we move forward, sectors need to communicate, cooperate and coordinate in examining the procedures incorporated into day-to-day practices to determine whether they are still the best way to fulfil our objectives. If a structure that is in place is no longer feasible or purposeful, the Sectors should come together and devise/design something new.

Follow up Action

- It was proposed that staff from FAM and OHSAR join, or in some way contribute to, Science Sector meetings.
- SMB encouraged joint Science- FAM and Science-OHSAR management meetings.

8. Forward Agenda

SMB members suggested the following Items be considered for future meetings:

- Arctic science – coordination
- Ecosystems monitoring
- Fresh water science capacity and prioritization
- The requirements for new scientific advice and new products such as thresholds and indicators, coordination and integration.
- Biodiversity Convention Renewal (2010)
- Relationship between DFO Science and industry