



IJC Science Advisory Board

Alt Hotel, Room Indigo
185 Slater Street, Ottawa, Ontario K1P 0C8

October 25, 2018, 8:30am – 12:00pm

Meeting Summary

Attendance:

RCC: Gavin Christie (Canadian Co-Chair), Chris Winslow, Ian Campbell, Kyle McCune, Michael Twiss, Patricia Chambers, Rebecca Rooney, Sandra Eberts, Val Klump (by phone), Yingming Zhao, Yves Michaud

SPC: Carol Miller (U.S. Co-Chair), Jeff Ridal (Canadian Co-Chair), Andrea Kirkwood, Bob Hecky, Christina Semeniuk, Dale Phenicie (by phone), Dave Allan, John Livernois, Lucinda Johnson, Mike Murray, Henry Lickers, Clare Robinson

IJC staff: Matthew Child, Lizhu Wang, Dave Burden, Glenn Benoy, Jennifer Boehme, Sally Cole-Misch, Victor Serveiss, Ryan Graydon

Meeting Notes:

1. Welcome and Round table introductions

- The Co-Chairs welcomed everyone to the meeting, and participants had a roundtable introduction.
- No comments on the April 25, 2018 SAB meeting record.
- Draft agenda was approved as presented.
- The Co-chairs provided a debrief on the RCC and SPC board appearances.
 - Both committees' presentations were well received. The Commissioners highly value the work done by SAB.
 - Commissioners approved the RCC's report titled Great Lakes Surface and Groundwater Model Integration Review.
 - Commissioners approved the SPC's report titled Potential Ecological Impacts of Crude Oil Transport in the Great Lakes Basin.

2. Report on completed project reports

- SPC Energy Transport report
 - Commissioners approved the project report, which is primarily a science synthesis of the potential impacts of crude oil on Great Lakes water quality and ecological processes.
 - The report does not provide a risk assessment, but is focused on the hazard posed by crude oil.

- Information is presented on transport modes, volumes, and crude oil characteristics.
- Analysis found that information availability was greater for some taxa than others. The report addresses toxicity and mechanisms, vulnerable areas, spill response.
- The report includes twelve recommendations that touch on a range of issues e.g., data availability, toxicology, modeling, etc.
- RCC Surface and Ground Water Model integration report (SW-GW model)
 - Report is approved.
 - Consultant did a good job; it is a feasibility of modeling study.
 - Identified type of model needed; considered atmosphere, geosphere, and hydrosphere.
 - Recognition that a conceptual model is needed, important and feasible;
 - Stakeholder input is required to advance development of a conceptual model. There was general agreement that the SAB should move forward with this project.
 - The following discussion points were raised:
 - The conceptual model will not be capable of assessing chemical transport. A numerical model is needed for that. A Great Lakes basin groundwater model will be best applied to address basin-wide questions as opposed to smaller scale processes – there are many existing models that are capable of addressing these small scale questions.
 - Minnesota is pretty advanced, but does not have the necessary groundwater data to contribute to a Great Lakes basin groundwater model. The Phase 2 project will identify data gaps like this.

3. Input on new priorities (**Attachment 2**)

- RCC/SPC – Great Lakes Science Plan
 - The work plan proposes to develop a decadal-scale research plan to develop research capacity in the Great Lakes.
 - Research initiative is overdue; working only on low hanging fruit will not work.
 - IAGLR survey showed strong support for proceeding with developing the plan.
 - Draft work plan identifies needed activities, including characterizing existing agency science programs and a series of workshops to develop key research questions and science needs, assess science infrastructure capacities, and develop budget and timeline, etc.
 - The work plan will likely extend to 2020.
 - GLRO Director is highly supportive to a science plan. It has the potential to be very helpful to the agencies/governments.
 - Although the SAB could also pursue foundation funding for the work plan, it may be more expeditious and appropriate to complete the work using only IJC funds. There is limited foundation funding on the Canadian side, although opportunities are greater on U.S. side. The Tri-Council in Canada is looking for really strong research questions, if the proposal is pitched as monitoring it is unlikely to be successful.
 - It is vital that the agencies/Parties are centrally involved. Need to also engage IJC advisory boards and Commissioners.

- Need to consider the dual role of universities in conducting research, and training the next generation of scientists.
 - Need to ensure accountability is addressed in the Science Plan.
 - The IJC's Great Lakes poll could be used to assess people's willingness to pay.
 - **There was general agreement that a work group should be formed to advance the work plan, and the following individuals self-identified:**
 - **Yves Michaud, Chis Winslow, Lucida Johnson, Patricia Chambers, Val Klump, Michael Twiss, Bob Hecky.**
 - **Additional work group members are welcome.**
- **RCC/SPC - Operationalizing early warning system**
 - The final contractor report for the Great Lakes Early Warning System (GLEWS) is expected soon. The main focus of that report is the governance/organizational aspect of GLEWS, with some assessment of stressors and threats. Phase 1 did not delve into analytical approaches.
 - Phase 2 will focus on the analytical component. It proposes to use a risk approach to identify and prioritize stressor and threats. The link to indicators was made, as was the link to recent SAB projects and the stressors/threats the public highlighted during the TAP 2017 consultations.
 - The distinction between GLEWS and early detection systems (e.g., for drinking water intakes in the Huron-Erie corridor) was made.
 - The importance of considering the Indigenous experience was highlighted. For example, how does traditional ecological knowledge get incorporated?
 - The importance of getting youth interested in the natural sciences was discussed. Collaborative approaches to youth engagement should be considered.
 - **There was general agreement the SAB should proceed with fully developing the GLEWS Phase 2 work plan with Lucinda and Michael as co-chairs.**
- **SPC - Economic Valuation of Ecosystem Services**
 - The work plan was described by the work group co-chair, it will use established economic valuation methods to assess people's willingness to pay for high quality ecosystem services.
 - A decision on whether to focus on Areas of Concern or western Lake Erie basin HABs has not been made.
 - Other potentially related work was highlighted by SAB members:
 - The University of Waterloo (Roy Brouwer) completed a discrete choice study on *Phragmites*.
 - John Hartig's recent AOC assessments, which are posted to the IAGRL website.
 - Sea Grant has to report market and non-market value of their programs (Elizabeth Rory is the lead).
 - **The work group is being co-chaired by John Livernois and Christina Semeniuk. Dave Allan, Henry Lickers and Ian Campbell volunteered to join the work group.**

- RCC - Development of Great Lakes basin-wide hydrological conceptual model (follow-on SW-GW model)
 - The project will build off the recent RCC project, to develop a basinwide framework and conceptual model.
 - A manuscript will be produced to reach a wider audience, so that the conceptual plan will be used for numeric modeling.
 - Climate impacts will also be considered.
- SPC – Urbanization and climate change
 - The draft work plan describes the ways urbanization affects water quality, and the implications of a changing climate for water quality and quantity in urban areas.
 - Through discussion it was clarified that the project would include a literature synthesis, and may benefit from scenario analyses.
 - There was general agreement that the project needs to be scoped to clarify whether the focus will be on water quality or quantity (or both), and whether socio-economic drivers (e.g., demographics) will be addressed, among other considerations.
 - **Andrea Kirkwood and John Livernois are the work group co-chairs. Carol Miller, Clare Robinson and Mike Murray volunteered to join. Other members are welcome.**

4. Input to Triennial Assessment of Progress (TAP) Study Board report

- Discussion of selected priority topics identified during TAP Study Board workshop
 - The October 24 workshop confirmed that the Study Board report will include an assessment of two priority topics – nutrients and climate change.
 - The Study Board report will provide crucial source material for the TAP report.
 - For the nutrients priority topics, need to make best use of the diversity of recent advisory board projects (SAB has been particularly active in this area) to develop a narrative that knits together our project outputs.
 - The SPC draft work plan on nutrients (one of six considered by the SPC in summery/early fall, 2018) includes a focus on SAB nutrients projects, emphasizes their utility for informing the Parties’ domestic action plans, and includes an expert workshop. This model should be considered for the Study Board project.
 - In response to a question, it was clarified that funding for contractor assistance is likely, and staff support will also be in place for development of the priority topic reports. Need to consider how to best use the board’s expertise.
 - Should also consider how the information is presented. The example of the nutrient story map for the Mississippi River was highlighted (accessible at <https://geoplatform.maps.arcgis.com/apps/Cascade/index.html?appid=3b88aa4466dc4cb5844ba9ffd394e709>).
 - Reporting approach should consider that the main audience for the TAP report is the Parties, although many secondary audiences exist. Legislators frequently ask for effective ways to communicate issues to their constituents.
 - For climate change, there was general agreement the Study Board report should focus on adaptation.

- There is a lot of climate change-related information available. Examples include a major study on current and potential impacts on the Great Lakes (expected soon from the Environmental Law and Policy Center), and the Ontario Centre for Climate Impacts and Adaptation Resources.
- The role of adaptive management also needs to be considered, including Annex 4 activities.
- There was a general discussion on the need for an IJC Indigenous Advisory Group. Existing Indigenous representatives on IJC's advisory boards could form the core of the group, who could develop a work plan to address several related priorities (e.g., Indigenous protocols and awareness training, history of Indigenous representation at IJC, incorporation of TEK and the experiences of elders, etc.).
- **Henry Lickers provided some suggestions on an IJC Indigenous Working Group (attached)**

5. Highlights of on-going projects

- SPC – Stressor interactions – getting underway.
- SPC – Fertilizer application – peer review of draft contractor supplemental report received.
- SPC – Declining offshore lake productivity – contractor report received.
- RCC – Connecting channels – getting underway.
- RCC – Great Lakes nutrient adaptive management - contractor report received, in the process of developing RCC report.
- IJC SPARROW report for Great Lakes is under review and will be available soon. There will be an online mapper. The data will be hosted by USGS and Natural Resources Canada.

6. Other business

- Potential SAB input to the Parties' draft Priorities for Science and Action (expected mid-2019).
 - SAB members agreed that the board should develop advice on the Parties draft Priorities for Science (2019-2022). More to follow once the draft priorities have been released for review and comment.
- Other items raised by Members.
 - Commissioners seem pleased about how productive the SAB has been.

7. Adjournment

- There being no other business, the meeting adjourned at 4:40pm.

IJC Indigenous Working Group (provided by Henry Lickers)

Small group of indigenous scientists to assist the IJC and its organization with the task of involving indigenous peoples in Great Lakes work.

Composition:

- *US & Canada 6 people - Tribal Governments, First Nations, Métis,*
- *Could be selected from IJC family*
- *Leads to be selected out of this group*
- *Gender balance is important.*

Work Effort:

Design a work plan to:

1. *Design the committee structure needed to present Indigenous Prospective.*
2. *Introduction to Indigenous Protocols & Cultural Awareness Training*
3. *Compile Indigenous Research Data base in the GL e.g. Walpole, Sarnia & Akwesasne*
4. *Identification of Communities, Individuals & Organizations.*
5. *History of Indigenous people in the IJC and its Boards.*
6. *New Approaches & Innovations on TK.*

Face to Face – location to be announced but on an indigenous community.

Context:

- *1909 Boundary Waters Treaty*
- *Boundary Waters Agreement*
- *1970 – EPA & EC*
- *1975 - Akwesasne*
- *1975 – Walpole Island*
- *1985 - Sarnia*
- *1980 – St. Lawrence River Levels Committee*
- *Precautionary Principle*
- *Zero Discharge*
- *Supreme Court Cases Canada*
- *RAP's*
- *1990's Oka*
- *Presidential Executive Orders*
- *GLWQA - 2000 inclusion "Tribal Governments, First Nations, Métis,"*
- *LAMP's*