

International Joint Commission
Canada and United States



Commission mixte internationale
Canada et États-Unis

IJC Science Advisory Board

Hilton Garden Inn Reagan National Airport (Salon 3&4)

2020 Jefferson Davis Highway, Arlington, VA

April 25, 2018, 1:00–4:00pm

Toll free dial in number: 1-877-413-4781

Conference ID: 9722054

MEETING RECORD

Attendees:

RCC: Deborah Lee (U.S. Co-Chair), Gavin Christie (Canadian Co-Chair), Chris Winslow, Christine Mayer, Ian Campbell, Kathy McKague, Kyle McCue, Michael Twiss, Patricia Chambers, Sandra Eberts, Val Klump, Yingming Zhao, Yves Michaud.

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

IJC Staff: Lizhu Wang, Matthew Child, Glenn Benoy, Victor Serveiss,

1. Welcome and round table introductions

- The Co-Chairs welcomed everyone to the meeting, and participants had a roundtable introduction.
- No comment on the October 25, 2017 SAB meeting record.
- Approved draft agenda as presented.

2. Ongoing RCC and SPC projects

1) *Great Lakes Agriculture and Nutrient Issues* (Ian Campbell):

- The proposed work will conduct an inventory of BMP research and researchers that can be applied to the Great Lakes Basin by conducting searches in Google Scholar and/or Scopus, and canvass agricultural research institutions, government departments, funding agencies, and University Departments in Canada and the United

States. It will determine which BMPs are relevant to the biophysical constraints, agricultural production systems, and the issues of the Great Lakes basin.

- This is a work plan that has not been approved by the Commissioners yet.
- Discussion:
 - It was mentioned that there will be an opportunity of sharing an intern with Ottawa office.
 - It was asked that whether the project will address BMP effectiveness and life time, spatial position relative to land use, and the best BMP for a given practice and location. It was responded that this will be an initial effort of conducting an inventory on research and researchers. Although there will be descriptions of BMPs, it will not be the focus. It will focus on nutrient related BMPs relevant to the Great Lakes basin.

2) ***Fertilizer Application Patterns and Trends, and their Implications for Water Quality in the Western Lake Erie Basin*** (Mike Murray and Dave Allan):

- Final report has been completed and released in February 2018 as an IJC report.
- The report's binational analysis was completed only up to 2006/07.
- Additional data now available and the workgroup has obtained approval for additional funding to support an update analysis for fertilizer application up to 2011/2012.
- A manuscript will also be prepared.
- Discussion:
 - It was asked if the added effort will result in a revised final report. It was clarified that a separate, supplemental report will be produced.

3) ***Great Lakes Nutrient Adaptive Management*** (Debbie Lee and Gavin Christie):

- The project is to develop a process of using modeling approaches to effect ecosystem management through an adaptive management framework. It will answer whether there are gaps in modeling process from watershed to the lake; how models can be used in an adaptive management framework at watershed and lake scales to identify gaps, and how to build that into adaptive management.
- The project contractor has completed an inventory and identified the pros and cons of the models. A workshop was just completed as part of the project. The workshop used an online polling tool, which was proven very effective. The workgroup works closely with Annex 4 nutrient task team in model evaluation.

4) ***Evaluation of Stressor Interactions in the Great Lakes*** (Dave Allan):

- This project will review existing literature that considers stressor interactions, including marine and other literature outside of the Great Lakes. It will summarize state of knowledge and generate an annotated list of key references.

- This work will identify a sub-set of stressors where the impact is important and is potentially influenced by a second stressor, synthesize information to either assess interactions directly or develop models, and test hypotheses that identify pathways to clarify how pairs of stressors may interact.
- This work will include a workshop, and will be completed by spring/summer 2019.
- Discussion:
 - It was mentioned that this work will focus on identification of stressors and some of the stressors may come from the Great Lakes Early Warning System project. Although it focuses on the analysis of interactions, cumulative effect should be considered as part of this. This work also needs to relate to decision making.

5) ***Surface and Ground Water Model Integration*** (Yves Michaud and Sandy Eberts):

- This is a feasibility study for developing a basin-wide model. The project has completed a series of activities, including the development of a white paper and holding a workshop.
- The workshop participants agreed to do a conceptual model, address it as a basin-wide framework, and conduct a pilot study.
- The workshop participants all agreed that we have enough data to start with, and data gaps also need to be filled. The challenges mentioned are climate change and budget. The project may need a 2nd phase, which has been proposed by the workgroup leads.
- Discussion:
 - The SPC is also very interested in this project; it relates to nutrient transport and links with Annexes.
 - A gap exists in that we do not know how nutrient transported basin wide, although some particular areas are known.
 - The groundwater boundary has not been clearly defined. We may have to build a conceptual model first, and then develop a numerical model; groundwater boundary may be bigger than surface watershed.

6) ***HPAB's Fish Consumption*** (Jeff Ridal)

- This project will communicate benefit of fish consumption and will develop a harmonized fish consumption advisory framework for the St. Lawrence River taking considerations of sustainability and indigenous peoples' perspectives.
- It is in the process of moving forward and the proposal is not completed yet.
- It is planned to be carried out by a contract.

7) ***Current Status and Assessment of Great Lakes Connecting Channels*** (Michael Twiss):

- It will conduct a synthesis of current knowledge and assessment of existing initiatives on the Great Lakes connecting channels; assess the current institutional capacity to design and conduct connecting channel surveillance and monitoring programs; and

identify needed infrastructure to facilitate future connecting channel surveillance and monitoring programs.

- The project does not involve a workshop, and will be carried out mainly through reviews and interviews.
- It is not an assessment of channel condition, but assessment of whether agencies have adequate monitoring effort and capability.
- The scope of the work will include all the connecting channels identified by the GLWQA, and also include Chicago Sanitary and Ship Canal and Mackinaw Strait between Lake Michigan and Lake Huron.

8) ***WQB's Animal Feeding Operations*** (Dale Phenicie):

- This project looked at how manure is regulated in different jurisdictions;
- Selected contractor in Ontario with work in progress. The information available for the US side is less well developed.
- There will be a webinar on this; the objective is to compare regulatory approaches in Canada and the US.

9) ***Cooperative Science and Monitoring Initiative*** (Chris Winslow):

- Had a workshop to identify priorities of management and research for Lake Erie in 2017; Is in the process of planning a similar workshop for Lake Michigan, which will held in September in Milwaukee.

10) ***Energy Transport*** (Michael Murray):

- This project addresses potential water quality and ecological impacts to the Great Lakes associated with unrefined liquid hydrocarbons. It also assesses research, monitoring, and other information needs to better understand the hazards of unrefined liquid hydrocarbons in the Great Lakes region.
- Limnotech is the contractor who submitted their report in Jan 2018;

11) ***Declining Offshore Productivity*** (Bob Hecky and Joe DePinto):

- All lakes except Lake Superior have experienced productivity declines.
- This project is to understand the phenomenon of declining offshore productivity in the lakes while they are at the same time experiencing nearshore eutrophication. It evaluates the role of coastal transportation and in-lake cycling.
- The project has selected contractor, performed literature review, updated Great Lakes data analysis, carried out inventory and review ecosystem models, and received technical synthesis report from the contractor.
- Discussion:
 - It was asked that what data exist for indicating whether a tipping point has occurred. It was commented that there are chlorophyll and nutrient data available

from early 1970s and lower food web data since 1998. Prey fish biomass trended downwards with reduced phosphorous since the late-1990s then leveled off; so far there has not been a tipping point per se.

3. SAB's Great Lakes Early Warning System project (detailed review and discussion)

- Workgroup Co-Chairs presented the set of slides.
- This project has a large workgroup of 24 members.
- The project has completed synthesis of current knowledge and approaches of environmental early warning systems and evaluation of their applicability to the Great Lakes; has developed a conceptual framework for a Great Lakes early warning system, and completed subject matter expert surveys and interviews.
- An expert workshop is planned for May to select among six potential frameworks and to expand a list of current and potential Great Lakes stressors and threats.
- Workshop will include representatives from agencies, universities, industry, and NGOs. Still trying to arrange for indigenous people's representation.
- It was commented that working with indigenous people, we have to actually go to their places to build relationships and work with them.

4. International Decade of Great Lakes Research (Val Klump and Michal Twiss):

- This effort is predicated around setting a target date for restoration of the Great Lakes. It is acknowledged this will require a discussion of timelines, and will need to define restoration.
- This work will have a Town Hall meeting during IAGLR with the goal of setting up a long-term research agenda for understanding the function of the system. To do so, we need to have data, processes, and models for looking back and forecasting. We also need to predict what will be going on in the future with uncertainties.
- The scope of the Town Hall is to figure out how much and how it needs to be funded. There have been complaints to NSF that there is not much funds to the Great Lakes system. The Great Lakes has the same amount of coast line as that of east and west marine coasts, but do not get the same funding. CSMI is a good program, but it cannot substitute for fundamental research programs.
- The Town Hall meeting will be from 4:00-5:30 on Wed (June 20) to discuss and identify ideas with panelists. It may produce a commentary for a short publication with input from Canadian Academy of Science, and will ask IJC support to this request of funds;
- It was commented that the GLRI needs to go from Initiative to a program. This effort is to ask for fund separately from GLRI. There are risks and consequences of not conducting basic science. To manage the system well we need to understand it.

5. Review of TAP Workshop

- Had an in depth discussion regarding what SAB's contribution to TAP should be. It was identified that the GLWQA 7.1 k(iii) - an assessment of the extent to which programs and other measures are achieving the General and Specific Objectives of the Agreement, and v) - other advice and recommendations, fit the SAB's responsibilities.
- It was commented that WQB may be responsible more on iii) and SAB may be more on v) and to support on iii);
- The TAP recommendations need to be at high level and policy relevant.
- The TAP needs to be narrowly focused, evidence based, and taken a longer-view and aligned with board projects which support the IJC mission.
- Parties are busy implementing programs, and do not have time to look forward;
- RCC and SPC, each has identified two members to serve on the "Steering Committee". Both RCC and SPC are committed to get involved and contribute to the TAP process.
- It was mentioned that more discussions are needed.

6. SAB session at IAGLR

- There will be a session titled 'The IJC's Science Advisory Board - Review of Current Priorities and Projects' at the 2018 IAGLR on June 22. This session has 11 presentations about SAB history and its current projects. At the end of the session, there will be panel discussion to discuss and identify how SAB can improve its efforts in carrying out its responsibility to achieve the GLWQA objectives.
- It is mentioned that we need to make people aware of the panel discussion. As the incoming IAGLR President, Michael Twiss will make an effort to encourage others to attend.

7. Preparation for Advisory Board Co-Chairs meeting (follows SAB meeting)

- Due to time limitation, this item was skipped.

8. Other business

- No other business was brought forward.

9. Adjourned at 4:00 PM

International Joint Commission
Canada and United States



Commission mixte internationale
Canada et États-Unis

IJC Science Advisory Board

Hilton Garden Inn Reagan National Airport (Salon 3&4)
2020 Jefferson Davis Highway, Arlington, VA
April 25, 2018 – 1:00 – 4:00pm

Toll free dial in number: 1-877-413-4781
Conference ID: 9722054

Draft Agenda

<i>Time</i>	<i>Agenda Item</i>	<i>Lead</i>
1:00-1:10	3. Welcome and Round table introductions Acknowledge October 25, 2017 SAB meeting record (Attachment 1) Approval of draft agenda	SAB Co-Chairs
1:10-1:55	4. Ongoing RCC and SPC projects (Attachment 2) <ul style="list-style-type: none"> Focused discussion on projects identified by SAB members 	Work Group Co-Chairs
1:55-2:25	5. SAB's Great Lakes Early Warning System project – detailed review and discussion	Lucinda & Michael SAB Members
2:25-2:40	COFFEE BREAK	
2:40-3:00	6. International Decade of Great Lakes Research (Attachment 3)	Val Klump
3:00-3:35	7. Review of TAP Workshop <ul style="list-style-type: none"> Debrief – reflection on discussion and outcomes Possible collaborative approach by SAB Possible SAB collaboration with other Boards Project ideas in support of TAP? 	SAB Co-Chairs & Members
3:35-3:50	8. SAB session at IAGLR (Attachment 4) <ul style="list-style-type: none"> Review and discussion, particularly for the facilitated discussion at the end of the SAB Session 	SAB Co-Chairs & Members
3:50-3:55	9. Preparation for Advisory Board Co-Chairs meeting (follows SAB meeting)	SAB Co-Chairs

3:55-4:00	10. Other business	SAB Members
4:00	11. Adjourn	