

Sharing Knowledge and Practices to Inspire Action Climate Change Workshop

International Joint Commission

October 22, 2024 – Summary

Ottawa, Ontario





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Context

Introduction and Objective

The stated objective of the meeting was:

For IJC board members, board associates, and researchers to share their climate change activities and exchange ideas with the goal of:

- *Enhancing knowledge sharing, promoting best practices and inspiring actions that improve the board's ability to manage their responsibilities in the context of climate change including the use of the Climate Change Guidance Framework (CCGF) and the Climate Hub.*
- *Identifying opportunities and mechanisms for the Commission to further assist boards' efforts to adapt to and avoid climate change impacts.*

Participants

The meeting included approximately 70 participants (in-person and virtual) including researchers, board members and commission staff. A list of attendees is included in Appendix 1.

Purpose of This Report

Following opening remarks by the Commission's Canadian and US Co-Chairs, the meeting included an opening presentation to provide context, panel discussion, and a facilitated discussion among all participants in a small group (table) and plenary format (Agenda included in Appendix 2). This report summarizes key discussion points as recorded by the facilitator during the session. The report is intended as a record of the meeting to be used by the IJC and workshop participants in continuing to work collaboratively to address climate change challenges.

Setting the Stage

Commission Co-Chairs Pierre Baril and Gerald Acker opened the meeting by welcoming participants. They noted that climate change is impacting Commission work and IJC Boards in significant ways including through severe weather events and hydrological impacts on waterways; the Commission is working in a number of ways to address these challenges. The climate change challenge is urgent and there is a need for the IJC and its Boards to be



Figure 1: Commissioners Pierre Baril (left) and Gerald Acker (right) provide opening remarks

proactive. The ability to collaborate across Boards and the Commission, which was a central focus of the day's conversation, will be key to successfully navigating the climate change challenge.

Context for Climate Change and the IJC

Presenters:

- **Glenn Benoy**, Director, Sciences and Engineering Canadian Section
- **Mark Colosimo**, Director, Sciences and Engineering US Section
- **Matthew Child**, Physical Scientist, Great Lakes Regional Office
- **Adam Greeley**, Science Advisor, US Section
- **Catherine Lee-Johnston**, Environmental Advisor, Canadian Section

The Power Point presentation that was used to frame this presentation is available in Appendix 2. Key messages included:

- Governments first tasked the IJC in April 1997 to propose strategies meeting the environmental challenges. Climate change was one of their concerns among others.
- Climate change touches us all – solutions will come through the sharing of knowledge and the identification of actionable steps.
- Using an ecosystem approach, collaboration across Boards, the Commission and partner organizations, agencies, Indigenous Peoples, and adaptive management will all be necessary means of addressing climate change.
- The Climate Change Guidance Framework (CCGF) was developed to help IJC Boards assess their vulnerabilities and identify adaptation measures to address impacts from climate change.
- Adaptive Management Committees are able to provide science, research and monitoring support to Boards.
- Climate change work is also taking place as part of the Commission's responsibilities under the Great Lakes Water Quality Agreement.



Figure 2: IJC Science and Engineering Directors Mark Colosimo (left) and Glenn Benoy (right) present to participants

- There is an opportunity and need to share best practices as well as science and water quality data across the transboundary – through study boards, watershed boards, control boards, advisory boards. There are several relevant studies/projects underway.
- The IJC has also established collaborative structures to focus on climate change.

Best practices and Sharing Knowledge

The Panel

- **Bruce Davison** Head, Boundary Waters Engineering Unit, North & West National Hydrological Service, Environment and Climate Change Canada; (International Souris River Board, Co-Chair)
- **Sarah Dunn** Public Affairs Specialist United States Geological Survey (USGS) - Washington Water Science Center; (International Osoyoos Lake Board of Control, International Columbia River Board of Control; Secretary)
- **Chanel Mueller** Climate Change Expert & Hydraulic Engineer U.S. Army Corps of Engineers
- **Teika Newton** International Watershed Coordinator Lake of the Woods Water Sustainability Foundation
- **Martin Suchy** Water Resources Scientist National Hydrological Services, Environment and Climate Change Canada; (International Osoyoos Lake Board of Control, International Kootenay Lake Board of Control, International Columbia River Board of Control; Secretary)
- **Joel Trubilowicz** Hydrologist National Hydrological Service, Environment and Climate Change Canada (International Kootenay Lake Board of Control; Co-Chair)

Panel Discussion – Key Messages

In a moderated panel discussion, panelists shared activities they or their boards have undertaken, best practices and ideas for addressing climate change challenges. The following key messages emerged:

- Key substantive climate change impacts to the work of boards include warming average temperatures, changing flow regimes, changes in frequency and severity of droughts (including criteria and thresholds), wildfires, changes in frequency and duration of ice jams, more extreme weather events generally, water quality impacts (e.g. increased presence of toxic algae, seasonal forecasting challenges).

- The panel also noted that there are pockets of “resistance” to the idea of climate change; certain groups who do not believe climate change is caused by human impacts, but rather what we are experiencing are natural *weather* variations.
- Climate change related activities that are underway include modeling (modifying existing models and developing new ones); US federal agencies are doing research and assembling data – collecting better information; US Army Corps of Engineers are focused on mitigating impacts; new pilot studies; the formation of new partnerships including with Indigenous partners.
- The panel shared key lessons learned including the need to manage expectations with interests; climate change denial is real – need to manage and communicate appropriately (e.g. characterizing a system that is resilient to varied conditions can be more effective than referring directly to climate change impacts); transboundary repository of information needs to be shared and discussed/understood by people living in the basins; need to develop the right lines of inquiry to frame research; the IJC also has an important role to play in bringing together the right scientists and practitioners.
- Specific opportunities to connect and collaborate were also identified including through the ECCC led National Adaptation Strategy (NAS), the US Hydrology focused Integrated Terrestrial and Hydrological Model Working Group, US based Federal Working Groups, and several Canadian Federal/Provincial/Indigenous tables focused on various watershed specific issues.



Figure 3: Facilitator Warren Wilson leads the discussion with panelists

Group Discussion – Key Messages

Following the panel discussion, participants engaged in a similar discussion (small group followed by plenary) focused on successes in managing climate change, challenges and opportunities to enhance collaboration (specific questions included in the workshop agenda in Appendix 2). The following emerged.

Successes in Managing Climate Change

- **Increased Awareness** - Boards are starting to think about climate change more regularly. It is now mentioned more frequently in meetings and public communications, when it used to be rare.
- **Adaptive Management** - Several boards have established adaptive management committees to conduct science, research and monitoring on an ongoing basis, and review and provide recommendations (when needed) for revisions to Board responsibilities (including Orders of Approval) on a periodic basis. The Great Lakes-St. Lawrence River Adaptive Management (GLAM) Committee is an example that has assessed climate change scenarios to evaluate potential changes to regulation plans and has published peer-review papers on climate impacts.
- **Collaboration** - Boards are leveraging partnerships, building relationships within basins, and connecting with organizations interested in addressing climate change impacts. There is a solid ecosystem between the boards.
- **Climate Modeling** - Boards are continuing to use and adapt climate modeling work and leveraging local expertise. Some are working collaboratively on climate model downscaling techniques; IJC resources can assist in this work.



Figure 4: Workshop participants seated in their discussion groups

Issues in Managing Climate Change

- **Data and Modeling Issues** - Challenges include lack of data (especially for lake evaporation), truncation of hydrologic extreme event predictions, lack of modeling at appropriate scales, and difficulties with binational data sharing and harmonization.
- **Capacity and Resources** - Boards face limitations in time, resources, capacity, and funding. There is also a lack of climate change expertise on many boards.
- **Communication and Perception** - Communicating climate challenges effectively is difficult. Climate denial impacts policy and leaders in some areas. Translating climate data into actionable information is challenging.

- **Jurisdictional Complexities** - Cross-border management and interjurisdictional responsibilities create challenges. Different jurisdictions may have varying approaches and priorities regarding climate change.

Opportunities for Collaboration

Participants discussed opportunities to work together differently and leverage existing frameworks:

- **Climate Hub** - Strong support for creating a climate hub to share information, tools, and best practices across boards. Could also form a "climate hub committee" with representation from each board
- **Dedicated Climate Group** - Recommendation to establish a climate group to support board efforts in recommending climate scenarios and models
- **Sharing Information** - Desire for a centralized portal or clearinghouse for data, models, and GIS files
- **Getting Together** - Proposal for regular webinars or meetings to share work and lessons learned across boards
- **Leveraging Partnerships** - Interest in leveraging partnerships with agencies and academia for climate modeling and research
- **Indigenous Engagement** - Emphasis on improving Indigenous engagement and braiding traditional knowledge and western science; really changing the patriarchal approach that has traditionally been used to work with Indigenous Peoples.

Insights on Previous Climate Change Action Items

At the October 2023 IJC climate change related workshop session, participants identified several potential actions to advance climate change related priorities (full report - [25th Anniversary of the International Watersheds Initiative International Joint Commission](#)). In this discussion, participants reflected on the 2023 discussion and provided additional insights and ideas.

- Paleoclimate reconstruction datasets can be useful.
- Sharing of policy documents, best practices, and evaluation frameworks is important.
- Information management and communications need improvement.
- Better coordination on resilience is needed.
- The IJC should define its focus areas for climate change.

- Harmonization of downscaling models is key to provide consistent data across the transboundary.
- Explore existing and potential external funding for climate related work.
- Artificial Intelligence is an important tool to leverage for research and data analysis.

The Path Forward

Future Workshop Topics

Participants suggested topics they would like to learn more about in potential future workshops:

- Scoping of existing resources and understanding what might work best before implementation.
- Supporting data gaps (e.g., downscaling efforts)
- Cross-border information sharing
- Implementing climate action with existing data and studies in preparation for crises
- Data practices and storage
- Updates on current climate science
- Partnerships and cross-collaborations



Figure 5: Panelists provide their input

Potential Next Steps to Support Climate Change Collaboration

In a final roundtable discussion, participants discussed specific actions that could be taken to enhance collaboration around climate change.

- **Enhance Indigenous Collaboration** - Enhance engagement with Indigenous Communities to incorporate and ensure their involvement in the initiatives taken by the IJC.
- **Establish Climate Hub** - Create a centralized platform for sharing climate data, models, and best practices across all IJC boards and committees.
- **Form a Climate Committee** - Establish a cross-board climate change committee with representatives from each board to coordinate efforts and share knowledge.

- **Enhance Data Sharing** - Improve binational data harmonization and sharing processes to support climate modeling and decision-making.
- **Regular Knowledge Exchange** - Implement quarterly webinars or workshops for boards to share climate-related work, challenges, and lessons learned.

Conclusion

The workshop highlighted the urgency of addressing climate change impacts on transboundary water management. Participants emphasized the need for increased collaboration, data sharing, and adaptive management approaches. Key potential next steps that were suggested included establishing a climate hub, improving cross-board communication, and enhancing partnerships with various interests, including Indigenous communities. While challenges remain, particularly in data harmonization and resource capacity, the IJC and its boards are committed to proactively addressing climate change to ensure effective management of shared water resources. The IWI Team is working on its next work planning exercise for 2025-2030 and will consider the feedback received in this workshop for that exercise and priority setting.

Appendix 1 – List of Participants

| Name | Organization |
|-------------------------------|---|
| IN PERSON | |
| Megan Garner | Environment and Climate Change Canada / International Lake of the Woods Control Board / International Rainy-Lake of the Woods Watershed Board |
| Marci Riel | Manitoba Métis Federation, International Souris River Board |
| Timothy Winans | International Joint Commission |
| David Hutchinson | Environment and Climate Change Canada / International Osoyoos Lake Board of Control |
| Armaghan Abed-Elmdoust | United States Army Corps of Engineers - Buffalo District |
| John-Kilpatrick | United States Geological Survey / St. Mary-Milk Rivers Accredited Officer / St. Mary-Milk Rivers Study Board |
| Daniel Ferreira | Environment and Climate Change Canada / International St. Croix River Watershed Board / Great Lakes-St. Lawrence River Adaptive Management Committee |
| Lauren Schifferle | United States Army Corps of Engineers – Buffalo District / International Lake Ontario-St. Lawrence River Board / International Niagara River Board / Great Lakes-St. Lawrence River Adaptive Management Committee |
| Brianna Vaagen | Environment and Climate Change Canada / International Souris River Board |
| Patricia "Trece" Bye | University of Michigan |
| Jo Werba | International Joint Commission |
| Frank Seglenieks | Environment and Climate Change Canada / International Lake Ontario-St. Lawrence River Board / Great Lakes-St. Lawrence River Adaptive Management Committee |
| Teika Newton | Lake of the Woods Water Sustainability Foundation / International Rainy-Lake of the Woods Watershed Board |
| Alexandra Lavictoire | Environment and Climate Change Canada - National Hydrological Service / Adaptive Management Committee / International Rainy-Lake of the Woods Watershed Board |
| Joan Frain | International Lake Ontario-St. Lawrence River Board |
| Sarah Dunn | United States Geological Survey / International Osoyoos Lake Board of Control / International Columbia River Board of Control |
| Avni Solanki | International Joint Commission |
| Chanel Mueller | United States Army Corps of Engineers – St. Paul District |
| Wendy Leger | Environment and Climate Change Canada / Great Lakes-St. Lawrence River Adaptive Management Committee |

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|-----------------------------|--|
| Eric Swenson | United States Army Corps of Engineers - St. Paul District / International Red River Watershed Board / International Souris River Board / International Lake of the Woods Control Board / International Rainy-Lake of the Woods Watershed Board |
| Annie Provencher | Manitoba Métis Federation |
| Rachel Bell | International Joint Commission |
| Nicole O'Brien | Environment and Climate Change Canada / International St. Croix River Watershed Board |
| Joel Trubilowicz | Environment and Climate Change Canada / International Kootenay Lake Board of Control / International Columbia River Board of Control |
| Rob Caldwell | International Joint Commission |
| Todd Sellers | Lake of the Woods Water Sustainability Foundation / International Rainy-Lake of the Woods Watershed Board |
| Anna Gossard | University of Michigan |
| Patrick Cherneski | Environment and Climate Change Canada - Canada Water Agency / International Red River Watershed Board |
| Pierre Baril | International Joint Commission |
| Abby Moore | International Rainy-Lake of the Woods Watershed Board / United States Army Corps of Engineers - St. Paul District |
| Sue Lowry | St. Mary-Milk Rivers Study Board |
| April Walker | Red River Valley Alliance / International Red River Watershed Board |
| Mike Shantz | Environment and Climate Change Canada / Great Lakes-St. Lawrence River Adaptive Management Committee |
| Lyne Sabourin | International Joint Commission |
| Collin Smith | International Red River Watershed Board / United States Army Corps of Engineers - St. Paul District |
| Bruce Davison | Environment and Climate Change Canada / International Souris River Board |
| Martin Suchy | Environment and Climate Change Canada / International Osoyoos Lake Board of Control / International Kootenay Lake Board of Control/ International Columbia River Board of Control |
| Sue Chiblow | International Joint Commission |
| Diana Moczula | International Joint Commission |
| Vianey Rueda | University of Michigan |
| Rebecca Seal-Soileau | United States Army Corps of Engineers - St. Paul District |
| Sonja Michelsen | United States Army Corps of Engineers - Seattle District |
| Jake Mohrmann | Montana Department of Natural Resources and Conservation |
| Richard Aisaican | International Souris River Board - Indigenous Advisory Committee |
| Laurie Tollefson | International St. Mary and Milk Rivers Study Board |

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|-------------------------------|---|
| Mike Hirst | International Rainy-Lake of the Woods Watershed Board / Lake of the Woods Soil and Water Conservation District |
| John Allis | International Joint Commission |
| Patricia Clavet | Ministère de l'Environnement et de la Lutte contre les changements climatiques / International Lake Ontario-St. Lawrence River Board / Great Lakes-St. Lawrence River Adaptive Management Committee |
| Julie Lafleur | Ministère de l'Environnement et de la Lutte contre les changements climatiques |
| Susan Daniel | International Joint Commission |
| Karen Cederwall | Kenora Métis Council / International Rainy-Lake of the Woods Watershed Board |
| Erika Klyszejko | International Joint Commission |
| Celine Desjardins | International Joint Commission |
| Catherine Lee-Johnston | International Joint Commission |
| Adam Greeley | International Joint Commission |
| Mark Colosimo | International Joint Commission |
| Warren Wilson | Facilitator |
| Chrissy Chiasson | International Joint Commission |
| Glenn Benoy | International Joint Commission |
| VIRTUAL | |
| Kevin Bunch | International Joint Commission |
| Christopher Wilkie | International Joint Commission |
| Biljana Music | Ouranos |
| Christian Moreau | International Joint Commission |
| Katryna Slimmon | Environment and Climate Change Canada |
| Casey Brown | University of Massachusetts |
| Dave Dempsey | Writer |
| Christine San Antonio | United States Army Corps of Engineers – New England District / International St. Croix River Watershed Board |
| Jason Williams | International Joint Commission |

Appendix 2 – Workshop Agenda

Objective: For board members and associates, and researchers to share their climate change activities and exchange ideas with the goal of:

- Furthering knowledge sharing to improve boards abilities to manage their responsibilities under climate change including through use of the climate change guidance framework and the proposed climate hub.
- Identifying opportunities and mechanisms for the Commission to further assist the boards to enhance knowledge sharing and for boards to continue to learn from one another.

Date: Tuesday October 22, 2024

Time: 1:30-4:30pm

Venue: Delta Hotel Ottawa City Centre (Pinnacle Room)

101 Lyon Street North
Ottawa, ON
K1R 5T9

Approach

- This will be an interactive hybrid session, aiming to maximize discussion and exchange between the participants.
- A framing presentation and moderated panel will set the stage for small group (table) followed by plenary discussion in the room and on-line.
- Participants will be seated in half-rounds, with a seating plan, so that a reasonable cross-section of participants are sitting at each table.
- Online, small group discussions will be facilitated by IJC staff.

Workshop agenda

| Time | Topic | Lead |
|-----------|--|---|
| 1:30-1:40 | Opening remarks <ul style="list-style-type: none">• Welcome and purpose | Commissioners |
| 1:40–1:45 | Overview of agenda and approach | Facilitator |
| 1:45-2:00 | IJC and climate change <ul style="list-style-type: none">• Presentation on the IJCs role in climate change including the role of the CCGF and broad status of boards CCGF work | Mark Colosimo/Glenn Benoy/Matthew Child |

| | | |
|-----------|--|---|
| | <ul style="list-style-type: none"> • Q&A | |
| 2:00-2:45 | <p>Moderated Panel</p> <ul style="list-style-type: none"> • How is climate change impacting your work overall? • Can you share a key climate change related activity, or initiative and any partners you worked with? • What lessons have you learned through your climate change activities? • How can we work better together (regions, boards, commission) to achieve climate change goals? • Are there external organizations/resources that could help inform how the IJC's boards adapt to climate change? | Researchers, Boards, Basins represented |
| 2:45-3:00 | Break | |
| 3:00-4:15 | <p>Discussion – Table followed by Plenary</p> <ul style="list-style-type: none"> • What is going well today, in terms of how we are managing climate change ambitions? What successes have you had with your board? • What are the major challenges? • Are there opportunities to work together differently, perhaps inform the creation of the climate hub, or leverage the climate change guidance framework to a greater degree? How? • Provide any new insights you may have on the brainstorming from the workshop last October (workshop report here: 25th Anniversary of the International Watersheds Initiative International Joint Commission (ijc.org)) regarding the climate change suggested action items • What do you want to learn more about at potential future workshops? | Facilitator |
| 4:15-4:25 | Summary and next steps | Mark/Glenn |
| 4:25-4:30 | Closing | Commissioners |

Appendix 3 – Presentation



Climate Change Workshop: Sharing Knowledge and Practices to Inspire Action

October 22, 2024

Glenn Benoy, Matthew Child,
Mark Colosimo, Adam Greeley,
Catherine Lee-Johnston



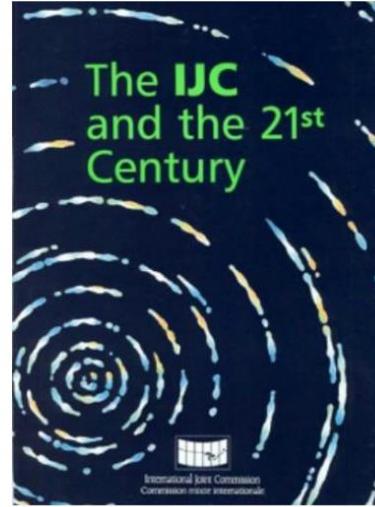
Today's Workshop Details

- **Agenda**
 - Commissioners opening remarks
 - IJC and Climate Change
 - Moderated panel: board members and climate experts
 - Breakout discussion
 - Next steps and closing
- **Facilitator: Warren Wilson**



Climate Change and the IJC

- The IJC and the 21st Century is a forward looking document; assessing the challenges facing the IJC in the new century
- Two key issues the IJC is acting on:
 - ❖ Applying the watershed approach to shared water management
 - ❖ Adapting to the impacts of climate change
- Commission and others partner and adjacent organizations addressing climate change
 - ❖ GLWQA and IWI
 - ❖ Great Lakes Commission, ECCC, USACE, etc.



2024-11-14

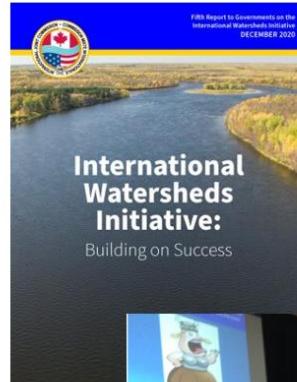
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International Watershed Initiative (IWI)

The IWI helps provide a binational approach to solving transboundary issues through:

- Engaging local communities and local and Indigenous board participation
- An integrated ecosystem approach:
 - ❖ Water quantity (levels/flows/ apportionment)
 - ❖ Water quality (Nutrient enrichment, pollutants)
 - ❖ Aquatic ecosystem health (Aquatic invasive species, climate change impacts)
- Supporting board projects to deliver on their mandate
 - ❖ **Assessing and adapting to climate change impacts on board responsibilities**





Climate Change Guidance Framework (CCGF)

- **Climate Change Guidance Framework**

- Recommended planning guidance method
- Shared information pool
- Assistance in establishing adaptive management
- Initiated in 2018 to help boards assess vulnerabilities to their responsibilities to climate change, and identify adaptation strategies for the future
- All boards have completed an initial assessment, and many more are working through the full CCGF assessment
- Commission priority for all boards to complete a full, robust CCGF assessment as impacts from climate change become more frequent and more severe



Adaptive Management Committees (AMCs)

- Control and watershed boards with Orders of Approval
- Adaptive management framework to deal with uncertainty and non-stationarity as a function of climate change
- Adaptive Management Committees (AMCs) that do the science, research and monitoring on an ongoing basis to review and revise Orders of Approval on a periodic basis
- Great Lakes-St. Lawrence River Adaptive Management (GLAM), Souris AMC, Rainy-Lake of the Woods AMC, others in the future



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6



IJC Advisory Boards & their Climate-related Projects

Great Lakes Water Quality Board

- Climate Change Adaptation for Community Resilience Across the Great Lakes Region

Great Lakes Science Advisory Board

- Great Lakes Science Plan
- Great Lakes Winter Science
- Framework Toward Bridging Traditional Ecological Knowledge and Western Science

Health Professionals Advisory Board

- Great Lakes Human Health Indicators and Climate Change

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Climate-related Partnerships

- IJC, Great Lakes Fishery Commission & Great Lakes Commission Memorandum of Understanding
- Support to regional partners e.g., Advisor to Great Lakes Commission Standing Committee on Climate Resilience
- Support for Great Lakes Water Quality Agreement implementation – Observer to Annex 9 (Climate Change Impacts)

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8



Today's Goal

Board members and associates, and researchers to share their climate change activities and exchange ideas with the goal of:

- Specific actions and outcomes that facilitate collaboration and improve knowledge sharing to support IJC Boards to adapt to climate change impacts.

Concepts heard from October 2023 Workshop:

- Climate Hub
- Climate Steering Committee

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