

## **Great Lakes Executive Committee Meeting Summary**

December 1-2, 2021

### **OPENING REMARKS**

Great Lakes Executive Committee (GLEC) Co-Chairs, Michael Goffin (Environment and Climate Change Canada, ECCC) and Chris Korleski (U.S. Environmental Protection Agency, EPA), welcomed everyone to the December 2021 GLEC meeting and made note of the Participants Briefing Book, which included the draft June 2021 GLEC meeting summary for GLEC review, the meeting agenda, and Annex Information Notes.

A list of meeting attendees can be found in Appendix A.

### **2022 GREAT LAKES PUBLIC FORUM / 50TH ANNIVERSARY OF THE GLWQA**

GLEC Secretariat, Carla Torchia (ECCC) and James Schardt (EPA) discussed updates in planning for the 2022 Great Lakes Public Forum and the 50th anniversary celebrations of the signing of the 1972 Canada-United States Great Lakes Water Quality Agreement (GLWQA), the 2022 Progress Report of the Parties, and the 2023-2025 Binational Priorities for Science and Action.

### **AREAS OF CONCERN**

Areas of Concern (AOC) Canadian Annex Co-Lead, Kate Taillon (ECCC), provided an update on Canadian AOC activities and an overview of recent habitat work in Detroit River; followed by Marc Tuchman (EPA), who provided an update on U.S. AOC activities and introduced the session's guest speaker, Robert Burns (Friends of the Detroit River / Detroit River Riverkeeper).

Robert Burns then discussed habitat restoration efforts on the U.S. side of the Detroit River AOC. He spoke to two of the 16 habitat restoration projects in the AOC, including the Stony Island project (completed) and the Sugar Island project (underway). Robert highlighted successes of these projects due to availability of the U.S. Great Lakes Restoration Initiative funding, partnerships, undertaking outreach and getting local buy-in, and implementing adaptive management practices.

### **LAKEWIDE MANAGEMENT SESSION**

Lakewide Management U.S. Annex Co-Lead, James Schardt (EPA), provided an update on the June 2021 GLEC meeting action item examining the proposal to sunset the original Lakewide Management Annex Subcommittee now that the Lake Partnerships have been established for all Great Lakes. There was interest raised by Annex Subcommittee members for exploring additional roles for the Subcommittee, especially on multi-lake issues. James noted that there was an initial Subcommittee discussion of potential activities that could be pursued and that the Annex Co-Leads will continue the discussion to further understand what the specific deliverables would be for the key activities raised by Subcommittee members.

Sean Backus (ECCC), the Canadian Annex Co-Lead, then introduced Janette Anderson (ECCC) who spoke to the Canadian assessment of Great Lakes nearshore waters. Janette explained the approach for the project (classifying the nearshore into unique regional units, assessing cumulative stress in each regional unit, and identifying areas of high ecological value), as well as some of the findings, how they can be used, and the future availability of all of the data.

## **CHEMICALS OF MUTUAL CONCERN SESSION**

Chemicals of Mutual Concern Annex Co-Leads, Jennifer Vincent (ECCC) and Ted Smith (EPA), provided an overview of annex activities over the past several months, including finalizing of the Great Lakes Binational Strategy for Short-Chain Chlorinated Paraffins Risk Management; finalizing of the Canadian Great Lakes Strategy for PFOS, PFOA, and LC-PFCAs Risk Management; releasing the U.S. National PFAS Roadmap; and U.S. and Canadian PFAS monitoring efforts, as well as PFAS assessment and reduction projects and efforts. Future efforts were also discussed, including anticipating completing initial screenings of two of four chemical nominated for consideration as Chemicals of Mutual Concern (CMCs), which include sulphate, lead, PAHs, and radionuclides; as well as, continuing to implement management actions in the CMC binational strategies, conduct monitoring and surveillance to track trends of CMCs, and coordinating research, monitoring and surveillance activities to identify potential CMCs.

Ted also commented on the June 2021 GLEC action item to examine a path forward on PFAS Chemicals of Mutual Concern strategy with respect to a domestic or binational approach. He noted that they will need to consider the recently released U.S. National PFAS Roadmap with respect to a path forward on the action item.

## **NUTRIENTS SESSION**

Before turning to Nutrients Annex Co-Leads, Jennifer Vincent (ECCC) and Santina Wortman (EPA), Michael Goffin discussed the June 2021 GLEC action item for the GLEC Co-Chairs ensuring appropriate integration of nutrient and productivity issues in the Great Lakes. Michael noted that initial conversations agreed that a meeting will be convened between senior managers of the Great Lakes Fishery Commission, responsible for the Lake Ontario fishery, and EPA and ECCC co-chairs responsible for the Lake Ontario Lakewide Action and Management Plan (LAMP) and the GLWQA Nutrient Annex. He noted that productivity is being considered in current nutrient targets and will also be considered for future nutrient target setting. Michael also noted that, starting with Lake Ontario, an assessment of what activities are addressing the issue will be undertaken, priority gaps identified, and a path forward to address the problem will be proposed.

Jennifer and Santina then provided Nutrients Annex updates and next steps. It was noted that initial modeling findings indicate that cladophora response to nutrients is complicated by other factors and not well predicted by phosphorus concentrations in the eastern basin of Lake Erie. The development of a binational Adaptive Management framework, to examine whether phosphorus reduction targets are sufficient to achieve Lake Ecosystem Objectives (LEOs), was also discussed. Finally, next steps were highlighted, such as new recommendations on Hypoxia, HABs monitoring, eastern basin cladophora and Lake Ontario nutrient targets; and annual update on Lake Erie nutrient reduction efforts.

Joy Mulinex (Ohio / Lake Erie Commission) then spoke to H2Ohio, a statewide strategy for clean and safe

water in Ohio. The five key actions of H2Ohio include, agricultural best management practices; wetland restoration for nutrient reduction to the water; support home sewage treatment system remediation; supporting cleaner drinking and waste water infrastructure (e.g., replacement of lead service lines); and funding water monitoring to support better and more informed decisions. Joy focused her presentation of the nutrient reduction efforts and relevance to the Nutrient Annex work, including highlighting information from the work supported (e.g., 1 million acres in voluntary nutrient management applications; 72 wetland projects supported and benefits; estimated load reduction for the Maumee River Watershed in Ohio 2021; the expansion of counties under the Western Lake Erie Basin Program).

## **AQUATIC INVASIVE SPECIES SESSION**

Aquatic Invasive Species Co-Leads, Gavin Christie (Fisheries and Oceans Canada, DFO) and Aaron Woldt (United States Fish and Wildlife Service) referenced the annex information note provided in the participant's meeting binder briefly noting priorities for Asian/Invasive carp and other invasive species, and the science to support this work; work on the federal mutual aid agreement for early detection and rapid response; and actively developing content to report on the annex over the past three years for the 2022 Progress Report of the Parties. Gavin then introduced the guest speaker, Jeff Zuercher (U.S. Army Corps of Engineers).

Jeff Zuercher provide an update about the Brandon Road barrier development on the Chicago Area Waterway System and prevent the spread of aquatic nuisance species. He discussed the federal risk management plan, which includes a layered system of structural controls (acoustic fish deterrent, bubble curtain, engineered channel, electric barrier, and flushing lock) and non-structural measures (monitoring and response zone; monitoring, management and control zone, which includes the electrical dispersal barrier; and the population reduction zone, where monitoring and harvesting).

## **HABITAT AND SPECIES SESSION**

Habitat and Species Canadian Annex Co-Lead, Sean Backus (ECCC), introduced Greg Mayne (ECCC) who spoke to working being done in Canada on assessing and enhancing the resilience of Great Lakes coastal wetlands. The study identified vulnerabilities and projected climate change impacts, developed strategies for enhancing resilience, and improved awareness and consensus on options for action. Field data collection, modeling and assessment was conducted for 20 different sites. Greg then discussed the findings from the study, including lake levels, wetland response and sensitivity, potential impact and adaptive capacity, as well as strategies to enhance resilience.

## **GROUNDWATER SESSION**

Groundwater Annex Co-Leads, Mohamed Mohamed (ECCC) and Howard Reeves (U.S. Geological Survey, USGS), provided an update on the development of the 2022 groundwater science report, which identifies gaps and emerging issues not highlighted in the 2016 report and highlights progress towards identified research needs. Mohamed and Howard discussed some of the work in the development of the chapters of the 2022 report, including assessment of the geographic distribution of known and potential sources of groundwater contaminants and challenges given the groundwater monitoring is not tailored specifically for this particular purpose; advancement of regional and local scale understanding of

groundwater; advancement of research on role of groundwater in Great Lakes aquatic habitats; understanding the effects of urban development on groundwater; emerging issues (e.g., PFAS/PFOA, phytoestrogens and neonicotinoids); and major needs and gaps (e.g., monitoring, improved modelling of groundwater transport).

## **CLIMATE CHANGE IMPACTS SESSION**

Climate Change Impacts Co-Leads, Shaffina Kassam (ECCC) and Jennifer Day (United States National Oceanic and Atmospheric Administration) provided an update of annex activities over the past six months, including the finalizing 2020 Annual Climate Trends Summary, as well as the June 2021 and September 2021 Quarterly Trends Reports; engaging with other annexes to coordinate future projects and address climate change knowledge gaps; hosting climate change webinar series with on for example climate change modeling, tools, case studies; producing the 2021 climate modeling workshop report; producing a 50 year climate change retrospectives and 50 year prospective examining water levels, water temperatures, precipitation and extreme precipitation, ice cover; completing a data visualization project to help communicate climate projection information.

## **SCIENCE SESSION**

Canadian Science Annex Co-Lead, Ram Yerubandi (ECCC), on behalf of himself and U.S. Science Annex Co-Lead, Elizabeth Hinchey Malloy (EPA), provided a quick overview of annex activities, including an update on Cooperative Science and Monitoring Initiative (CSMI) (e.g., CSMI projects conducted in 2021, planning for 2022 CSMI projects, and drafting of CSMI Synthesis Reports); and an update on Traditional Ecological Knowledge (TEK) activities (e.g., the website <https://greatlakestek.umn.edu/> highlighting TEK references and the GLWQA TEK speaker series recordings, identifying opportunities to increase use of TEK in GLWQA Annex activities, and Canadian supported Great Lakes restoration and protection projects utilizing TEK).

State of the Great Lakes (SOGL) leads, Nancy Stadler-Salt (ECCC) and Elizabeth Hinchey Malloy (EPA), then presented an overview of the draft SOGL assessments for 2022 and highlighted the key messages. They also identified process changes and improvements for the 2022 reporting cycle, and highlighted the next steps leading to the release and presentation of SOGL 2022 at the 2022 Great Lakes Public Forum.

## **NEWS AND COMMENTS FROM GLEC MEMBERS**

Michael Goffin (ECCC) provided an update on the creation of the Canada Water Agency and the expectation of the agency to have responsibility for federal engagement in freshwater, which may include our activities on the Great Lakes (these decisions and announcements would be made in the future).

Thomas Hoggarth, on behalf of Michelle Langan (Fisheries and Oceans Canada, DFO), provided updates including the new DFO Minister and implementation efforts related to the GLWQA annexes, including conducting baseline habitat surveys for the Great Lakes and use these to produce state of the habitat

reports; undertaking aquatic invasive species field work (no grass carp captured this year in Canadian waters); and conducting a risk assessment on the modeling and sampling efforts to inform and manage strategies in early surveillance and response programs.

Melissa Fabian Mendoza (Canadian Nuclear Safety Commission, CNSC) introduced herself as the new GLEC member representing the Canadian Nuclear Safety Commission, as well as other new CNSC members. Melissa noted that the CNSC regulatory oversight reports for 2020 are to be presented this month to the Commission, which includes information on licensees' safety performance. She also discussed the Nuclear Waste Management Organization's (NWMO) Adaptive Phased Management initiative, which is a process being followed to identify and inform a willing community to host a deep geological repository for Canada's used high-level nuclear fuel waste. The process is currently at the site selection phase with two potential sites being considered (Ignace and South Bruce), with NWMO's indicating their intent to apply for a CNSC license and submit a project description to the Impact Assessment Agency of Canada in 2024.

Jill Greenberg (Michigan Department of Environment, Great Lakes, and Energy, EAGLE) provided an update on the Revere Copper aggregate collapse into boat slip on the Detroit River. Jill indicated that the Revere placed absorbent blooms and turbidity curtains, and water monitoring was put into place at various locations. The results of the monitoring are expected to be provided to EAGLE, EPA and U.S. Coast Guard this week. Jill also noted that the City of Detroit issued a cease and desist order to Revere for improper storage of aggregate.

Javier Laureano (EPA Region 2) provided an EPA Region 2 update on Lake Ontario activities, including: Javier also provided an update on beneficial use impairments (BUI) at the Rochester Embayment Area of Concern (AOC) (one BUI removed since the June 2021 GLEC; one BUI expect to be removed in next six months; and two additional BUIs expected to be removed in 2022); the Buffalo River AOC (1 BUI expected to be removed in next six months; and one additional BUIs expected to be removed in 2022); and continued progress at the Niagara River AOC and in St. Lawrence River AOC at Massena/Akwesasne. Javier also discussed EPA Region 2 efforts with respect to the Nutrients Objectives and Targets Task Team, as well as the Lake Ontario Partnership's engagement in the CSML priority setting for 2023.

Joy Mulinex (Ohio Lake Erie Commission) thanked federal, state and other partners involved in the delisting of the Ashtabula AOC and described the benefits and successes of this delisting, including 500,000 cubic yards of sediment and 14,000 pounds of PCBs that were removed and the return of recreational users to the river. Joy also spoke to nutrient management work being done in relation to Ohio's H2Ohio initiative, including: a new wetlands sampling protocol and monitoring of H2Ohio's wetlands to better understanding the movement of phosphorus through different wetlands; a watershed study examining which agricultural best management practices in Ohio are most effective at dealing with nutrient reductions; and funding of harmful algal bloom research initiative.

Carl Platz (U.S. Army Corps of Engineers, USACE) provided several updates on USACE projects and initiatives related to several GLWQA annexes and related work, including:

- Supporting working being undertaken for the ten Areas of Concern (AOC) noted in Great Lakes Restoration Initiative Action Plan III, including dredging and capping projects in the St. Louis River AOC; construction of three habitat restoration projects in Clinton River AOC; completing a contaminated dredging project at Lake George East in the Grand Calumet River AOC; awarding new contracts to help complete management actions and remove BUI's; and planning and

technical support, along with significant strategic navigation dredging, which helped accelerate actions and help delist the Ashtabula River AOC in 2021.

- Undertaking research evaluating the toxicity and bioaccumulation potential of PFAS in aquatic ecosystems in support of the Chemicals of Mutual Concern Annex.
- Completing a demonstration project in the Maumee River watershed in 2021 to maximize the phosphorus reduction benefits of a “key optimal wetland”, which includes features that will permanently keep phosphorus on land. The research and monitoring phase is now underway and the interagency team will investigate phosphorus reduction under a variety of scenarios and answer questions related to legacy phosphorus and storage capacity thresholds.
- Working closely with the States of Illinois and Michigan to gather data, conduct modeling, and initiate multiple design activities for the Brandon Road Project in support of efforts under the Aquatic Invasive Species Annex. USACE will also soon be commencing initial efforts to evaluate the feasibility of implementing a barrier to impede upstream movement of Grass carp in the Sandusky River in collaboration with the Invasive Carp Regional Coordinating Committee.
- Initiating the Great Lakes Coastal Resiliency Study, following federal funds to be received in fiscal year 2022 and the execution of a cost sharing agreement. USACE is currently coordinating the scope, schedule and budget with the coastal program managers from all eight Great Lakes states which are serving as non-federal sponsors for the study and collectively contributing the 25% cost share requirement.

Jon Altenberg (Great Lakes Saint Lawrence Cities Initiative) noted the Cities Initiative’s advocacy and focus on water equity and water infrastructure funding. He also spoke to the Cities Initiative program helping cities strengthen coastal resilience, including the first ever regional survey that documented needs of coastal cities on a binational level throughout the Great Lakes, and work with cities within five states (and expanding that into Canada) to help them deal with these coastal resilience issues. Jon lastly noted plans and efforts for the Cities Initiative moving forward, such as exploring how to leverage blue economy, revitalizing waterfront areas; supporting sustained restoration progress in the U.S. and Canada; the creation of the new Canadian Water Agency; and equipping and enhancing cities’ technical and policy support.

## **COMMENTS FROM COMMISSION REPRESENTATIVES**

Jane Corwin (International Joint Commission, IJC) provided several updates from the IJC, including a joint webinar hosted by the Great Lakes Water Levels Board to provide the public with updates on lake levels and regulation strategies; the anticipated release of the phase one report on the expedited review of the Lake Ontario St. Lawrence River Plan 2014 in early 2022 and planning and initial activities for phase two of the review; and a series of community engagement opportunities to be hosted in early 2022 to communicate the phase one report findings and recommendations to the public.

Erika Jensen (Great Lakes Commission, GLC) provided updates related to three GLC resolutions adopted at its 2021 annual meeting. The first resolution focused on a number of actions with respect to mercury contamination and the GLC’s desire to continue the conversations under the Chemicals of Mutual Concern Annex on how to advance these actions and reduce the damaging impacts of mercury on human health and fish and wildlife populations in the Great Lakes. The second resolution discussed was nutrient harmful algal blooms, where Erika noted continuing work with the Nutrients Annex to track progress on the U.S. and Canada’s commitment to reducing phosphorus and nutrient driven algal blooms in Lake Erie through the GLC’s Blue Accounting Erie Stat initiative; and the GLC’s commitment to

sharing progress made by the states, provinces and the federal governments towards these commitments for Lake Erie, as well as being ready to expand this work to other nutrient related targets that may be developed in the future. The third resolution Erika discussed focused around climate resiliency.

Jim McCain (Great Lakes Fishery Commission, GLFC) first discussed efforts to keep Grass carp from becoming established within the Great Lakes, including Grass carp research and control (to date 640 Grass carp have been captured and removed from Lake Erie); a field feasibility study for the seasonal barrier in the Sandusky River to block Grass carp from reaching spawning locations within the river; a proposal with Ohio DNR and Lake Erie Committee to fund a barrier through the Army Corps of Engineers Great Lakes Fishery Ecosystem and Restoration Program; and continued work with state, provincial, tribal and federal agencies through the Joint Strategic Plan for Management of the Great Lakes to combat the threat of Grass carp within the basin. Jim then discussed the GLFC's sea lamprey control efforts, including noting the GLFC's release of the 2021 estimate of sea lamprey population numbers across the Great Lakes basin (for Lake Superior and Lake Huron sea lamprey numbers are above the targets; and for Lake Erie, Ontario and Michigan, sea lamprey numbers are meeting the targets at this time). Jim also noted that COVID related restrictions in 2021 are likely to have a negative impact on sea lamprey control, but it will take until 2022 for these impacts to be reflected in the population numbers, as well as reduced the sampling ability and therefore estimates of the sea lamprey population numbers may be less accurate. Jim lastly touched on work to take into consideration declining offshore productivity.

## **COMMENTS FROM OBSERVERS**

Nancy Goucher (University of Waterloo) noted the importance of the work being done by university water researchers who are enhancing the understanding of the threats, as well as identifying new innovative solutions to dealing with water issues. She noted that there are more opportunities to leverage this university-based research to support efforts under the GLWQA.

## **MEETING WRAP UP AND ACTION ITEMS**

GLEC Co-Chairs wrapped up the meeting and a summary of action items were provided by the GLEC Secretariat:

1. GLEC members to review and provide input on draft June 2021 GLEC Meeting Summary by December 17, 2021.
2. GLEC Secretariat to share draft Progress Report of the Parties for GLEC review and input. Input is due by February 1, 2022.
3. GLEC Secretariat to issue call to Annex Co-Leads to begin drafting the 2023-2025 Binational Priorities for Science and Action. The draft Priorities to be presented at the June 2022 GLEC
4. GLEC Secretariat to issue a call for speakers for 2022 Great Lakes Public Forum early in 2022.

5. Lakewide Management Annex Co-Leads to continue discussion of possible roles for a future Annex 2 Subcommittee and report out at the June 2022 GLEC.
6. A meeting between senior managers of the Great Lakes Fishery Commission, responsible for the Lake Ontario fishery, and the U.S. Environmental Protection Agency, and Environment Climate Change Canada leads, responsible for the Lake Ontario LAMP and the GLWQA Nutrient Annex, to discuss the offshore productivity issue; and report back at the June 2022 GLEC.
7. Nutrients Annex Co-Leads to consider offshore productivity as they consider Lake Ontario nutrient concentrations and development of phosphorus targets.
8. Nutrients Annex Co-Leads to report on assessment of science for Lake Erie Eastern Basin targets at the June 2022 GLEC.
9. GLEC to consider and provide comment on the draft SOGL 2022 Assessments presented during the December 2021 GLEC meeting by December 31, 2021.
10. GLEC Secretariat to make available the links shared via the December 2021 GLEC meeting chat.



## GLEC MEETING PARTICIPANTS DECEMBER 1-2, 2021

1. Jon Altenberg, Great Lakes Saint Lawrence Cities Initiative
2. Janette Anderson, Environment and Climate Change Canada
3. Hannah Arbuckle, Great Lakes Indian Fish and Wildlife Commission
4. Antonette Arvai, International Joint Commission
5. Kendra Axness, Department of Natural Resources, Wisconsin
6. Sean Backus, Environment and Climate Change Canada
7. Edlynzia Barnes, U.S. EPA
8. Rajesh Bejankiwar, International Joint Commission
9. Pierre Béland, International Joint Commission
10. Sandy Bihn, Lake Erie Waterkeeper
11. Jennifer Boehme, International Joint Commission
12. Ryan Bowie, Chiefs of Ontario
13. Tanya Brothen
14. Eric Brown, Erie County Planning Department
15. Tim Bruno, Pennsylvania Department of Environmental Protection
16. David Burden, International Joint Commission
17. Robert Burns
18. Mark Burrows, International Joint Commission
19. Shampa Chakraborty, Environment and Climate Change Canada
20. Jake Chalmers, Métis Nation of Ontario
21. Matthew Child, International Joint Commission
22. Gavin Christie, Fisheries and Oceans Canada
23. Steve Clement, Environment and Climate Change Canada
24. James Clift, Michigan Department of Environment, Great Lakes, and Energy
25. David Copplestone, Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry
26. Jane Corwin, International Joint Commission
27. Jennifer Day, National Oceanic and Atmospheric Administration
28. Fe de Leon, Canadian Environmental Law Association
29. Melissa De Young, Pollution Probe
30. Frances Delaney, Environment and Climate Change Canada
31. Donalea Dinsmore, Wisconsin Department of Natural Resources
32. Matthew Doss, Great Lakes St. Lawrence Cities Initiative
33. Jason Dubois, Health Canada
34. John Dungavell, Ontario Northern Development, Mines, Natural Resources and Forestry
35. Elizabeth Everhardus, Ontario Ministry of the Environment, Conservation and Parks
36. Melissa Fabian Mendoza, Canadian Nuclear Safety Commission
37. Amber Falkner
38. Pamela Finlayson, Environment and Climate Change Canada
39. Nancy Finley
40. Bonnie Fox, Conservation Ontario
41. Abraham Francis, Mohawk Council of Akwesasne
42. Steve Galarneau, Department of Natural Resources, Wisconsin
43. Lynn Garrity

44. Cristina Giannetas, Ontario Ministry of the Environment, Conservation and Parks
45. Raj Gill, Canadian Freshwater Alliance
46. Michael Goffin, Environment and Climate Change Canada
47. Nancy Goucher, University of Waterloo
48. Jill Greenberg, Michigan Department of Environment, Great Lakes, and Energy
49. Laura Gynane, Ontario Northern Development, Mines, Natural Resources and Forestry
50. Frank Hardy, Biinjitiwaabik Zaaging Anishinaabek
51. Gail Hesse, National Wildlife Federation
52. Elizabeth Hinchey, U.S. EPA
53. John Higham, Transport Canada
54. Savanna Higgins, Cole Munro Foods
55. Richard Hobrla, Michigan Department of Environment, Great Lakes, and Energy
56. Thomas Hoggarth, Fisheries and Oceans Canada
57. Jon Hortness, U.S. Geological Survey
58. Michael Isham, Great Lakes Indian Fish and Wildlife Commission
59. Courtney Jackson, Aamjiwnaang First Nation
60. John Jackson, Toxics Free Great Lakes Binational Network
61. Erika Jensen, Great Lakes Commission
62. Jessica Jock, Saint Regis Mohawk Tribe
63. Donald Jodrey
64. Zachary Jorgenson
65. Norman Joseph, Aamjiwnaang First Nation
66. Carolyn Junemann, Maritime Administration
67. Jennifer Kanine, Pokagon Band of Potawatomi Indians
68. Tyler Kaspar, 1854 Treaty Authority
69. Shaffina Kassam, Environment and Climate Change Canada
70. Tiffani Kavalec, Ohio EPA
71. Carol Kim, Environment and Climate Change Canada
72. Rupert Kindersley, Georgian Bay Association
73. Susan Klapel
74. Roger Knight, Great Lakes Fishery Commission
75. Chris Korleski, U.S. EPA
76. Gail Krantzberg, McMaster University
77. Joe Krieger, National Oceanic and Atmospheric Administration
78. Ash Kumar, Environment and Climate Change Canada
79. Alesia Kurlek, Environment and Climate Change Canada
80. Pamela Lamba, Ontario Ministry of the Environment, Conservation and Parks
81. Bob Lambe, Great Lakes Fishery Commission
82. Michelle Langan, Fisheries and Oceans Canada
83. Javier Laureano, U.S. EPA
84. James Lehnen, New York State Department of Environmental Conservation
85. Louis Lavoie, Parks Canada
86. Henry Lickers, International Joint Commission
87. Jessica Lienhardt, Consulate General of Canada in Detroit
88. Anastasia Lintner, Canadian Environmental Law Association
89. Martin Lowenfish, Natural Resources Conservation Service
90. Stephen Marklevitz, Ontario Northern Development, Mines, Natural Resources and Forestry
91. John Marsden

92. Catherine Masson, Trent University
93. Greg Mayne, Environment and Climate Change Canada
94. Andrew McCammon, The Ontario Headwaters Institute
95. Spencer McCormack
96. Daryl McGoldrick, Environment and Climate Change Canada
97. James (Jim) McKane, Great Lakes Fishery Commission
98. Jennifer McKay, Environment and Climate Change Canada
99. Chris McLaughlin
100. Sonny Meyers, 1854 Treaty Authority
101. Felicia Minotti, Global Affairs Canada
102. Tricia Mitchell, Fisheries and Oceans Canada
103. Caroline Moellering, Little Traverse Bay Bands of Odawa Indians
104. Mohamed Mohamed, Environment and Climate Change Canada
105. Joy Mulinex, Ohio Lake Erie Commission
106. Phillipe Murphy-Rhéaume, Great Lakes and St. Lawrence Cities Initiative
107. Todd Nettesheim, U.S. EPA
108. Lori Nordstrom, U.S. Fish and Wildlife Service
109. Linda Nguyen, Red Cliff Band of Lake Superior Chippewa
110. Carolyn O'Neill, Ontario Ministry of the Environment, Conservation and Parks
111. Jacob Orlandi, Environment and Climate Change Canada
112. Matt Otto, Natural Resources Conservation Service, Wisconsin
113. Paul Parete, Environment and Climate Change Canada
114. Scott Parker, Parks Canada
115. Matthew Pawlowski
116. Heather Pearson, Ontario Ministry of the Environment, Conservation and Parks
117. Harold Peterson
118. Robert Phillips, International Joint Commission
119. Carl Platz, U.S. Army Corps of Engineer
120. Rajendra Poudel
121. Sarah Quinlan Cutler, Parks Canada
122. Solina Quinton, Environment and Climate Change Canada
123. Howard Reeves, U.S. Geological Survey
124. Jenn Richards, Ontario Ministry of Agriculture, Food and Rural Affairs
125. Violeta Richardson, Environment and Climate Change Canada
126. Stephanie Rowley, Environment and Climate Change Canada
127. Emily Santoro, Ontario Ministry of the Environment, Conservation and Parks
128. James Schardt, U.S. EPA
129. Lisa Sealock, Environment and Climate Change Canada
130. Shannon Seko, Transport Canada
131. Althea Serro, Environment and Climate Change Canada
132. Victor Serveiss, International Joint Commission
133. Jocelyn Sherwood, Environment and Climate Change Canada
134. Jenna Shields, Health Canada
135. Lora Shrake
136. Robert Sisson, International Joint Commission
137. Edwin (Ted) Smith, EPA
138. Nancy Stadler-Salt, Environment and Climate Change Canada
139. David Sweetnam, Georgian Bay Forever

140. Kate Taillon, Environment and Climate Change Canada
141. Lorne Thomas, U.S. Coast Guard
142. Carla Torchia, Environment and Climate Change Canada
143. Marc Tuchman, U.S. EPA
144. Dave Ullrich
145. Jennifer Vanator, Great Lakes Indian Fish and Wildlife Commission
146. Sara Varty, Environment and Climate Change Canada
147. Jennifer Vincent, Environment and Climate Change Canada
148. Allison Voglesong Zejnati, International Joint Commission
149. Lizhu Wang, International Joint Commission
150. Mike Weimer, U.S. Fish and Wildlife Service
151. Rod Whitlow, Six Nations
152. Christopher Wilkie, International Joint Commission
153. John Wilson, International Joint Commission
154. Aaron Woldt, U.S. Fish and Wildlife Service
155. Charles Wooley, U.S. Fish and Wildlife Service
156. Santina Wortman, U.S. EPA
157. Ram Yerubandi, Environment and Climate Change Canada
158. Lance Yohe, International Joint Commission
159. Don Zelazny, New York State Department of Environmental Conservation
160. Jeff Zuercher, U.S. Army Corps of Engineers