

Commentary

Renegotiation of the 1987 Great Lakes Water Quality Agreement: From Confusion to Promise

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Abstract: For nearly four decades, the Great Lakes regime has invoked the Great Lakes Water Quality Agreement as the mechanism for binational cooperation on programs and policies. Many advances in water quality have led to unquestionable improvements in ecosystem quality, habitat and biodiversity, and water infrastructure. Still, Great Lakes scientists have issued compelling evidence that the ecological health of the basin ecosystem is at significant risk. In 2012, the Agreement will be revised for the first time in 25 years. The degree of engagement in a future Agreement, including scope, issues of significant importance, governance and collaboration will hinge on a thorough analytical process, so far seemingly absent, coupled with real consultation, so far marginally evident. Renegotiating the Agreement to generate a revitalized and sustainable future mandates that science inform contemporary public policy, and that inclusive discourse and public engagement be integral through the process. Many of these steps are still absent, and the analysis presented here strongly suggests that the constituents of the Great Lakes regime voice their views critically, emphatically, and often. If the negotiators listen, we can collectively make the Lakes Great.

Keywords: shared water; sustainable management approaches; public engagement; Great Lakes; ecosystem approach

1. Introduction

Seen from space, the Great Lakes appear as sparkling jewels strung across the center of North America. The Great Lakes ecosystem is one of the great natural wonders of the world. Nearly one-fifth

of the planet's surface fresh water is stored in and flows through the lakes. One of every three Canadians and one of every 10 United States residents takes her or his drinking water from the Great Lakes [1].

As Manno and Krantzberg (2008) explain:

“The Great Lakes Water Quality Agreement was negotiated pursuant to the 1909 Boundary Waters Treaty between the United States and British Canada that had created the International Joint Commission (IJC) to help resolve problems including pollution that was causing injury to health or property crossing the binational border. The IJC and the institutions added to it...were based on the principle of bi-nationalism (two countries collaborating on achieving a set of shared goals) rather than bi-lateralism (two countries negotiating with each other in an attempt to balance interests and protect each others' rights).”

Prime Minister Pierre Trudeau and President Richard Nixon signed the Great Lakes Water Quality Agreement (GLWQA) in 1972. This Agreement expresses the commitment of Canada and the United States to restore and maintain the chemical, physical and biological integrity of the waters of the Great Lakes Basin Ecosystem [2]. The GLWQA has had substantial influence on the cleanup and restoration of the region. The progress made since 1972 is evidenced by scientific documentation early in the 21st century (for the first time since 1916), of the presence of spawning lake whitefish and eggs in the Detroit River, the resurgence of cormorant populations, the rediscovery of sturgeon populations, and the return of nesting and fledging bald eagles [3].

For nearly four decades the Great Lakes community has invoked the GLWQA as the mechanism for binational cooperation on programs and policies to enhance and protect the integrity of the Great Lakes. Many advances in water quality have led to unquestionable improvements in ecosystem quality, habitat and biodiversity, and water infrastructure. As reported at the 2009 State of the Lakes Ecosystem Conference “Releases of targeted bioaccumulative toxic chemicals have declined significantly from their peak period in past decades and, for the most part, no longer limit the reproduction of fish, birds and mammals. Concentrations of contaminants in the open waters are low, and many contaminants are further declining” [4].

Further, Hall (2009) [5] describes how Canada and the United States have led the way in incorporating citizen participation into transboundary environmental protection and governance. “Since the 1970s, the second generation (after the Boundary Waters Treaty) of environmental agreements between the United States and Canada demonstrate a dramatic growth in the role of citizens in achieving compliance with international environmental law.” The GLWQA relies “heavily on citizens to ensure compliance and implicitly recognize that the two federal governments may have more in common with each other than with citizens and other stakeholders on both sides of the border when it comes to environmental protection and harm.”

While acknowledging progress towards meeting the purpose of the GLWQA, Great Lakes scientists have issued compelling evidence that the ecological health of the basin ecosystem is at significant risk and could be approaching a tipping point. According to Bail *et al.* (2005) [6] “There is widespread agreement that the Great Lakes presently are exhibiting symptoms of extreme stress from a combination of sources that include toxic contaminants, invasive species, nutrient loading, shoreline

and upland land use changes, and hydrologic modifications...Factors such as the size of the lakes, the time delay between the introduction of stress and subsequent impacts, the temporary recovery of some portions of the ecosystem, and failure to understand the ecosystem-level disruptions caused by the combination of multiple stresses have led to the false assumption that the Great Lakes ecosystem is healthy and resilient.”

2. Consensus Emerging from the Review of the GLWQA

The contrasting elements of success and peril, and the contemporary threats to ecological integrity not included in the GLWQA raise the importance of reviewing the Agreement with an eye to revisions. Imbedded within the Agreements is the provision for such a review. Article X of the GLWQA directs the Parties to conduct a comprehensive review of the operation and effectiveness of this Agreement following every third biennial report of the (International Joint) Commission (IJC). The IJC’s 12th Biennial Report, released in 2004, triggered this review which commenced May 2006 and concluded in October 2007 [3]. The Review was conducted by organizing self-selected interested stakeholders into a set of binationally co-chaired Review Working Groups (RWGs). The results of that review are documented by the Agreement Review Committee (ARC). The ARC states:

“Conducted under the guiding principles of openness, transparency and inclusiveness, the Review Report, prepared by the Agreement Review Committee (ARC), draws on the work of the Reviewers... The key outcome of the public review was that, while there have been many successes; the GLWQA is outdated and unable to address current threats to Great Lakes water quality. The reviewers found that...Contemporary approaches to water resource regeneration such as watershed planning and implementation would strengthen the ability to achieving the purpose of the Agreement. Further the Agreement was absent language association with climate change, aquatic invasive species and urbanization. Attention was directed, as well to reforming governance in a manner that would enable active engagement of the large cross section of society that is currently and could in the future be more actively engaged in the implementation of the Agreement. More meaningful public and partner participation in the development and implementation of a renewed Agreement was recommended.” [7]

Previously, Krantzberg (2007) [8] documented that the “Great Lakes community has witnessed and some have engaged in a year of teleconference discussions based on opinion by, as the Binational Executive Committee (BEC) states, experts and non-experts alike. That no resources were made available by the Parties to conduct in person, researched and vetted discourse is disturbing. There has been no analysis of what in the Agreement works, what does not work, and why. There has been no systematic collection of empirical evidence upon which to base any specific and defensible findings.” Nevertheless, there was enough of a consensus that the Agreement needs to be modernized to push the parties forward to that end.

There are, despite the difficult and flawed review period, highly useable observations and recommendations included in the reports of the working groups. At the time of writing this manuscript,

it is unclear whether the Negotiators are deliberately mining these working group reports for context regarding a new or revised Agreement.

On Watershed Planning and Land Use, among conclusions the working group drew are [9]:

“The Agreement should establish a broad institutional watershed planning framework with goals, objectives, implementation targets, and mechanisms to coordinate land use decision makers at all levels of government. One framework objective should be establishing watershed management plans that are developed and implemented with local partners, include all the tributaries across the Great Lakes Basin, are clearly linked to larger lake-wide targets, and are contributing to the goals set out in LaMPs and RAPs; The Agreement should clarify that its scope covers the effects of land use on the water quality of the Lakes’ near-shore, coastal, and shoreline areas, and their tributaries.”

On Biodiversity Threats and Responses, among conclusions the working group drew are [9]:

The Agreement should explicitly address the need for the protection, conservation, and recovery of aquatic and related terrestrial biodiversity as a factor in maintaining or improving water quality;

The Agreement should explicitly note biodiversity as key measure and driver of ecosystem processes related to maintenance of water quality.

On Climate Change, among conclusions the working group drew are [9]:

Additional authority to address climate change should be articulated in the Agreement’s introductory language;

A new annex should be created for the Agreement to support climate change-related monitoring and research OR Annex 17, “Research and Development,” and Annex 11, “Surveillance and Monitoring”, should include specific authorities for joint climate change-related monitoring and research.

Outside of the working groups input, and concurrent with the review and renegotiation process, the IJC proposed a new approach to manage water levels and flows in Lake Ontario and the St. Lawrence River that would introduce an adaptive management strategy to improve the capability to adapt to future changes.

Regarding Invasive Species, reviewers concluded that a new annex to the Agreement should be created to address invasive species by establishing clear goals and accountability mechanisms.

The Agreement should take into account the goals, milestones, and specific recommendations included in the Great Lakes Regional Collaboration Strategy and its Aquatic Invasive Species appendix.

Many other topic areas can be found in the Agreement Review Committee’s reports available at binational.net [4]. It is not clear that these findings were inspected and considered as a collective direction that could inform the renegotiation process, as revealed by the nature of the consultations held in webinars as described below.

3. Renegotiation Begins in 2010

In response to the strong consensus that the GLWQA is out of date, the Canadian Minister of Foreign and U.S. Secretary of State announced on 13 June 2009 that the two countries would begin negotiations to amend the Agreement [10].

It would take until January 2010 when U.S. EPA's Great Lakes National Program Office (GLNPO) and Environment Canada announced they would host a "binational webinar for Great Lakes partners, stakeholders and the public. The purpose WAS to inform all of the process for negotiations between the governments of the United States and Canada to amend the Great Lakes Water Quality Agreement. The webinar will provide opportunity for questions and answers and hopefully will be archived." [11] The webinar was not archived. Nor were there any answers. Says Heckl (2010) [12] "ENGOs were frustrated with these government webcasts because the governments provided little information on the calls, the webcasts were fraught with technical problems, and because they did not allow for a much needed dialogue between the governments and the public. The governments referred to the webcasts as 'listening sessions'."

Negotiations to amend the Agreement were formally initiated on 27 January 2010, when senior officials from Environment Canada, Foreign Affairs and International Trade Canada, the U.S. Department of State and the U.S. Environmental Protection Agency concluded the first formal negotiating session for amending the GLWQA. A summary of what was entitled the First Plenary Meeting was provided online. It read:

"At this first negotiating session, Canada and the U.S. reached agreement regarding the binational structure and process for negotiations. Both countries have agreed to a tentative timeline that targets December 2010 for completion of the process, while recognizing that timelines may need to be adjusted as negotiations proceed. The first issue to be addressed in negotiations will be governance. Governance discussions will focus on the purpose and scope of the Agreement, vision and principles, the management framework and provisions for future reviews and amendments to the Agreement. The Governments of Canada and the United States are committed to engaging the public at key stages of the negotiating process. At this stage, the public was invited to comment on governance issues...A second negotiating session is scheduled for April 2010, at which time progress on governance issues will be reviewed and the focus of negotiations will shift to specific environmental issues." [13]

In Canada, a Stakeholder Advisory Panel was assembled, but no such consultative body was assembled in the United States. On 8 April 2010, senior officials from Environment Canada, Foreign Affairs and International Trade Canada, the U.S. Department of State and the U.S. Environmental Protection Agency met for the second formal negotiating session for amending the GLWQA. A summary of that meeting was posted online and read:

"Since the formal launch of negotiations on 27 January 2010, a significant amount of work has been undertaken. During this time, governance discussions focused on the Agreement's purpose, scope, vision, principles, and management framework. Provisions for future reviews and amendments to the Agreement were also discussed...Canada and the United

States are committed to continued public engagement and have planned additional domestic and binational mechanisms to further engage the public and Great Lakes stakeholders at key stages in the negotiating process. These mechanisms will include a series of binational public webinars that will begin in May. During this webinar series, written comments will be solicited over a six week period. Towards the end of the negotiating process, Canada and the United States also intend to host one public forum in each country.”

The author will return to this commitment to public webinars below.

The statement concludes, “A third negotiating session is expected to take place in summer 2010, at which time progress on all of the issues will be reviewed and the focus of negotiations will shift to the synthesis stage. This will ensure that the interrelation between governance and specific issues is reflected in the Agreement. Focus will also shift to drafting amended text for the Agreement.”

The Governments of Canada and the United States hosted a series of binational public Webinars purportedly “on substantive issues” during the week of June 2010, and in addition to soliciting input during these Webinars, written comments were invited until July 2010.

The summer negotiation did not take place, and by the end of the 2010 calendar year, it became clear the negotiations would extend into 2011. The delay of the summer session to January 2011 was eventually optimistic. That meeting was further delayed and the meeting was rescheduled for the spring of 2011, representing an unexplained delay in completing the negotiations of at least nine months.

4. The Webinars: Scarce on Substance

The webinars to consult with regional members of the Great Lakes community entailed a number of considerations for which the Parties were seeking feedback. In most instances, the considerations were surprisingly vague and seemingly naïve.

The first topic shared was that of Governance, which the Parties defined as Agreement Scope [14]. This is an extract from the webinar slide in which the Parties solicited input on governance:

“Scope:

- Currently, focused on addressing transboundary impairments.
- Fuller consideration of chemical, physical, and biological integrity?
- Extend to address land-water connections at near shore?
- GLWQA Management Forums:
 - Currently, federal, provincial and state agencies responsible for implementing programs relevant to achieving goals.
 - Expand membership?
 - Expanded membership role in priority setting and accountability?
 - Coordination with other environmental management forums?” [15]

Bearing in mind the findings of the review published by the Agreement Review Committee [9], it was surprising that the negotiators would ask for input on considering physical and biological attributes in addition to the chemical focus that characterizes the current Agreement. This is because

the working groups during the Agreement Review were instructed to discuss, for example, biodiversity, invasive species, habitat and climate change.

Questioning the participants on whether or not to extend the purview of the GLWQA to the near shore suggests that there was negotiation required for the Parties to arrive at a consensus. Yet both the Review Working Groups and the IJC recommendations firmly emphasize this point, stating that one objective of the new Agreement should be to establish watershed management plans that include all the tributaries across the Great Lakes Basin, Reviewers called for the Agreement to clarify that its scope covers the effects of land use on the water quality of the Lakes' near-shore, coastal, and shoreline areas, and their tributaries.

Regarding other orders of government and the public, the reviewers stated:

“The Agreement should recognize the critical role and essential participation of other orders of government, including Tribes and First Nations, states and province and local governments and authorities. These entities should be included in the revision and implementation of the Agreement. The Agreement should recognize the critical role and essential participation of the public in the successful implementation of the Agreement by the Parties and other orders of government. The public should be consulted in any revision of the Agreement.” [7]

The IJC working group on the Near shore Framework concluded that “A comprehensive and ecosystematic scientific assessment of condition of the near shore waters and habitats of the Great Lakes is required. This should be developed within an adaptive-management strategy...” [16].

Hence raising the question surrounding expanded membership in Agreement implementation is peculiar, as precisely that was articulated by hundreds of persons engaged in the review. It's also a fundamental prerequisite for actions to regenerate the health of the near shore environment. Webinar participants were asked to comment on what they had already considered extensively in the 2006/7 review, at the IJC's Biennial meeting in 2009, and in other forums such as the Great Lakes St. Lawrence Cities Initiative, who issued Resolution 4—2009M on the Great Lakes Water Quality Agreement stating that “any final agreement recognize the critical role that local governments play in the protection and restoration of the resource.” [17]. The request for public input on matters that had already been deliberated at length engendered frustration since those seeking input at this juncture were asking questions that they thought had long been answered.

The rehashing of matters resolved left the impression that those putting forward the questions were engaged in questionable consultation methods for matters where overall government and stakeholder consensus already existed. Approaches to public engagement leading to collaborative cooperation would dictate this type of consultation requires substantial modification.

5. Toxic Chemicals

The webinar regarding toxic chemicals included the topic of “Establishing Objectives:” which the Parties describe as currently out-of-date and difficult to update, and go on to ask whether they should:

- Establish substance specific objectives independently?
- Establish Great Lakes wide substance specific objectives?

- Establish Great Lakes ecosystem objectives? [18]

In the review of Article IV and Annex I of the Agreement, working group members reported that the inclusion of Specific Objectives many of which contain numeric values for toxic chemicals, along with Lake Ecosystem Objectives, seems out-of-place and an underdeveloped concept as it currently stands. The reviewers asked the Parties to consider transferring the concepts of Lake Ecosystem Objectives, into an Annex, separate from chemical objectives.

The notion of a substance by substance approach to indicator development has long been regarded as entirely incomplete without an ecosystem-based objective that is integrative of multiple stressors. For example, Niemi *et al.* (2004) [19] remark that coastal resources have traditionally been monitored on a stressor-by-stressor basis. To fully measure the complexities of coastal systems, they contend, there is a need for a new set of ecologic indicators that span the realm of biological organization and are broadly applicable across geographic regions while integrating stressor types.

The literature on ecosystem objectives points to their importance in triggering management actions. A key challenge identified by Gislason *et al.* (2000) [20] is to define “measurable indicators and cost-effective monitoring programmes that relate to ecosystem objectives, as well as the reference points...There is a need to consider impacts on both the structure (biodiversity) and the function (habitat productivity)” of ecosystems. As Niemi *et al.* (2007) [21] point out, “Environmental indicators are benchmarks for the current conditions of the Great Lakes coastal region and provide measurable endpoints to assess the success of future management, conservation, protection, and restoration of this important resource.”

Implementation of the ecosystem approach, introduced into the GLWQA in 1978, necessitates, as pointed out by MacDonald *et al.* (2009) [22] the “development of ecosystem goals, objectives, and indicators, to guide decisions on the management of aquatic resources. Ecosystem objectives are specific narratives that depict the nature and breadth of the ecosystem goals (to restore and maintain ecosystem integrity, for example). “A set of ecosystem indicators (including specific metrics and targets)” continue MacDonald *et al.* (2009) [22] is necessary to evaluate programs and measures towards achieving the ecosystem goals and objectives.

6. Nutrients

The webinar regarding nutrients asked participants for their input on the following:

Establishing Targets:

- Single phosphorous target for Great Lakes?
- Separate phosphorous targets for each Great Lake?
- Phosphorous targets specific to each Great Lake, as well as areas within each lake?
- Include socio-economic factors in establishing targets? [23]

There is no scientific basis to contemplate as one option that a future GLWQA might set a single phosphorous target for the entire Great Lakes or even a single one for each Great Lakes. Coupled with the vague language on whether a P target is a loading limit, open water concentration, or otherwise, this consultation was particularly empty of substance. It is illogical to consider such an option, given

that the nature for each of the Lakes varies from oligotrophic as in Lakes Superior, Huron and Michigan to oligomesotrophic and mesotrophic for different zones in Lakes Erie and Ontario.

7. Aquatic Invasive Species

The webinar regarding Aquatic Invasive Species asked participants for their input on the following:

Scope:

- Address all aquatic invasive species, only those known to impact water quality, or only those known to impact biological integrity?
- Consider aquatic invasive species threatening to enter the Great Lakes through canals, rivers, and waterways?

Management Framework:

- Binational forum to identify priorities; domestic mechanisms for action?
- Binationally identify priorities and strategies in an Action Plan; domestic mechanisms for action?
- New binational programs and activities to supplement domestic mechanisms for action?

Karr (1991) [24] has advanced the point that water needs to be of sufficient quality and quantity as it is critical to all life. By way of illustration, Karr uses the “Water Pollution Control Act of 1972 (PL 92-500) and its charge to “restore and maintain biotic integrity” to “illustrate that law’s biological underpinning.” It is clear that invasive species threaten water quality as well as the biotic integrity of the Great Lakes.

Additionally, citing from the United States Environmental Protection Agency’s “Assessing Biological Integrity of Surface Waters” [25]

“The EPA is now focusing on developing biological criteria in addition to chemical criteria to help track progress in maintaining and restoring the health of our waters. In most cases, the most direct and effective way to assess the ‘health’ or biological condition of waterbodies is to: (1) directly measure the condition of their biological communities, and (2) support those data when necessary by measuring the physical and chemical condition of waterbodies and their watersheds.” Biotic threats associated with invasive species are not only those of competition with and disruption of native populations, but also on water quality as evidenced by contaminant pathways being modified, for example, by zebra mussels.

Water quality is central to biological integrity, by way of these illustrations. The inability and probably, undesirability to separate water quality from biological integrity not only invalidates the question of scope put forward by the negotiators of the GLWQA in the consultative process, but calls into question the thought process for putting such an option forward.

8. Climate Change

The webinar regarding Climate Change asked participants for their input on the following Climate Change Models:

- Develop or enhance models to predict changes in regional climate?
- Develop or enhance models to predict the impacts of regional climate change on chemical, physical, and biological processes in the Great Lakes?
- Enhance monitoring to validate model predictions?
- Enabling other levels of Government and NGOs:
- Communicate model outputs and provide other assistance to help address climate change impacts?
- Opportunities to help guide modeling efforts?

Determining how the climate system will respond to increasing atmospheric concentrations of greenhouse gases requires the development of future climate change scenarios. These scenarios are best described as plausible, coherent, internally consistent descriptions of a possible future state of the world, and are used to assess potential impacts and adaptation responses and acknowledge this uncertainty [26]. The literature already contains a number of scientific techniques to develop these future climate scenarios. These include spatial and temporal analogues, application of systematic changes to observed climate data with guidance from Global Climate Models (GCMs), statistical downscaling techniques applied to coarser resolution GCM output and dynamical downscaling methodologies including Regional Climate Models (RCMs) [27].

Higher resolution Regional Climate Models (RCMs) can improve simulations on local climate and forcing features and processes, but AMEC (2006) [27] point out that computational demands are greater with their use and their output may not always be available for use in the climate impact assessment. Therefore, enhanced modeling efforts under the auspices of the GLWQA are a welcomed direction put forward during the renegotiation of the Agreement. The substantive matter of committing to the development and implementation of adaptation strategies would have been an important inclusion and was missing in the documentation associated with the webinar consultations.

9. Habitat and Species

The webinar regarding Habitat and Species asked participants for their input on the following:

Scope:

- Rely on jurisdictions around the Great Lakes as opposed to addressing this issue through the Agreement?
- Commit to maintain and restore habitats, species and ecosystem services supporting the chemical, physical, biological integrity of the waters of the Great Lakes?

Monitoring and Reporting:

- To include all species, habitats and ecosystem services which contribute to, or are key indicators of water quality?

- To include only those species, habitats and ecosystem services that are relevant to address lake-specific impairments”

The 2006/7 review of the Agreement included a working group on Biodiversity Threats and Responses. The working group called for the Agreement to explicitly address the need for the protection, conservation, and recovery of aquatic and related terrestrial biodiversity as a factor in maintaining or improving water quality and explicitly note biodiversity as key measure and driver of ecosystem processes related to maintenance of water quality [9]. From the first pair of considerations regarding scope, it is apparent the findings of the working group are not being accepted as a consensus from the region. Why this is the case is unknown. Further the monitoring and reporting options seem not to make sense. Key indicators of water quality would be relevant to lake-specific impairments, and indicators that were limited to current lake-specific impairments would not have the flexibility to respond to future threats to water quality and ecosystem health.

Overall, the consideration of including species and habitats in a revised agreement is a welcome advance. The matters presented for discussion, however, provided little in the way of substance.

10. Next Steps

The Parties indicated at the conclusion of the webinars that “Possible elements and approaches under consideration will be presented for feedback. Advice received on different approaches will inform subsequent negotiations... Two in-person meetings planned ARE PLANNED for Fall 2010 (one each in U.S. and Canada) to present likely amendments to Agreement.” These did not take place.

In November 2010, the IJC was informed that the Parties have nothing to report since their last meeting with Commissioners at the October Semi-Annual Meeting and that the next negotiating plenary scheduled for the week of January 24, 2011 was further delayed until September 2011.

In response to the nature of the consultation to date, thirty-six citizens’ groups submitted a joint set of comments on the Canadian and U.S. Federal Governments as they renegotiated the Great Lakes Water Quality Agreement. In their document of July 9 2010 the collaboration states:

“To improve the rest of the consultation process, we urge you to carry out each of the following:

Provide detailed draft language of the proposed new Agreement to the public for their comment and ensure that the consultation stage after the release of draft language is long enough to allow people to conduct full assessments and provide detailed comments back to the governments.

Conduct dialogue sessions—not just listening sessions—so we can have a thorough discussion with the negotiators of issues and options under consideration.

Set up an expert table that includes both government and non-government people for each issue area to develop the draft Agreement language.

Hold more than just the two public meetings that have been promised for late September and provide adequate advance notice of these meetings, including making materials available, so people can reserve the dates and adequately prepare for the meetings.”

11. Some Promising Potential

At the request of a coalition of several dozen environmental nongovernmental organizations, seven conference calls were held in September 2011 to discuss governance, toxic substances, nutrients, climate change, habitat and species protection, aquatic invasive species, and the coordination of science and research in the Great Lakes region. Heckl (2010) [12] recounts that “On each call, the government issue-leads gave a brief overview of their thinking on solutions to their respective issues and then the ENGOs briefly summarized their main recommendations on how the issue should be addressed in a new GLWQA. This was then followed by a productive back-and-forth discussion on each of the issues between the ENGOs and the governments. It resulted in a true dialogue and mutual exploration for the first time during the renegotiation process... This more reciprocal, substantive tone of these calls was in stark contrast to the previous webinars held in January and June. It more closely approached the type of engagement that all parties say they think is essential for a successful new Agreement.”

Citizen engagement has been central in the Great Lakes regime, and relying exclusively on national governments for compliance ignores the potentially powerful role that citizens can and do play in environmental law and policy [28]. In fact, the role of citizens with proven credentials to be engaged in the renegotiation process was clearly recognized at the time of the last revisions to the Agreement. In 1987, John Jackson, then vice-president of Great Lakes United received an invitation from Joe Clark, then Canada’s Secretary of State for External Affairs to be an observer on the renegotiation of the 1978 GLWQA [29]. The parties did not repeat such engagement during the 2011 renegotiation period notwithstanding numerous requests both on the webinars and at the Canadian Stakeholder Advisory Panel (Krantzberg, per. obs.).

Effective sustainable management of a transboundary watershed system requires coordinated actions among governments. Chen (2008) [30] states that this inter-state approach is important yet inadequate. “Policies and management plans developed by formal inter-state processes eventually rely on the implementation at local sites; hence community-based actions are critical to the effectiveness of policies.” Chen advocates integrating community-based actions in watershed management, which will be complicated if citizen engagement and contributions to the renegotiation of the Agreement are superficial and limited. While a consensus and willingness to cooperate among the Parties to the Agreement is central to management of the Great Lakes watersheds, implementation of programs and plans must take place at the local level by enabling community engagement. Chen (2008) [30] contends that it is impractical and inefficient for all interventions to be made centrally to protect ecosystem integrity.

12. Requisites for Change

Public participation can improve the quality, legitimacy, and capacity of environmental policy. The opportunity to accomplish these during the renegotiation had mixed endpoints. Following from Dietz and Stern (2008) [31], quality refers to decisions that:

- identify the values, interests, and concerns of those with an interest in the process or decision;

- identify the range of actions that might be taken;
- identify and systematically consider the effects that might follow and uncertainties about them; use the best available knowledge and methods relevant to the above tasks

To a large extent, those interested in the process attempted to provide input to the negotiators, though the range of actions that could be taken and a systematic analysis of those actions appeared superficial and in some cases lacking.

When executed effectively, public participation can improve the quality and legitimacy of a decision. Better results for both environmental and social outcomes can be achieved, and the building of trust among all stakeholders is clearly beneficial. A number of recent and significant voices agree that governance reform in the Great Lakes is critical to future ecosystemic recovery and well-being in the Basin and that any renegotiation of a GLWQA should produce substantive changes in the governance structure in the Basin (e.g., Krantzberg and Manno 2010 [32], Jackson and Kraft Sloan 2008 [33]), and such changes can be affected through a better structured public engagement process that fosters collaborative relationships. Wondolleck and Yaffee (2000) [34] provide extensive analysis of the nature of such relationships, and conclude it is the pooling of appreciation and/or tangible resource that enable stakeholders to solve problems that none can solve individually, and where no public or private sector partner commands action. This resonates as a model for Great Lakes collaborative management, where ownership is shared among parties with different levels of interest and capacity, and therefore, where collaboration and cooperation is essential. The governance of the Great Lakes region could emulate these characteristics by meaningful public engagement in the new Agreement.

Botts and Muldoon (2005) [35] called for “significant and rapid changes, the Great Lakes Agreement” or it will be “at the brink of irrelevancy.” Further, they contend that “the Great Lakes themselves ARE subject to an onslaught of existing and new threats without a binational regime in place to deal with them”, consistent with the findings of Krantzberg and Manno (2010) [32].

Although there is still a need for governance at the ecosystem scale, many policy makers recognize that some threats, such as persistent organic pollutants are a global problem that requires a global response. The appropriate scale for the hands-on work of restoring the Great Lakes ecosystem, however, is at the local level where thousands of ‘Friends of’ organizations, local conservancies, beach stewards, and so on, represent a substantial and knowledgeable constituency actively engaged in clean-up and maintenance [1]

Several analyses undertaken by scholars, activists, and the IJC have recommended changes in the Great Lakes governance system ([9,35,36]). Although they differ in a number of details, they converge on a number of features that would help build a governance framework around a set of clear responsibilities with means for concerned citizens to hold governments accountable. These include:

- Regular reporting on progress in achieving the objectives of the Agreement with indicators directly related to specific commitments;
- Independent third-party review of science to evaluate progress in meeting the purpose of the Agreement;

- Direct reporting by the IJC to Congress and Parliament, in addition to the current practices of reporting the U.S. State Department and the Canadian Departments of Foreign Affairs and International Trade;
- Methods for sub-national governments to share responsibility for the implementation of the Agreement.

More than two decades ago, Weiss (1989) [37] contended that despite the lofty goals of the GLWQA, its implementation has been undermined by its sub-treaty status, as it was never subject to approval in the United States Senate, along with the absence of enforcement provisions. However, Markell (2005) [38] points out that while the GLWQA lacks legally enforceable domestic status, it has given citizens an increased role in shaping policy to address transboundary pollution in the Great Lakes (also Hall 2007) [28]. A renegotiated GLWQA could increase the opportunity for public participation in decision-making, compensating to some extent, for the GLWQA's current failure to contain specific enforcement provisions. It is unlikely that a new agreement would be given treaty status, hence, as noted by Hall (2007) [28], increased public participation would help to insure increased accountability on the part of both federal governments to comply with their joint responsibilities under the GLWQA. The current GLWQA has helped create an informed and engaged citizenry on both sides of the border, which could result in an increased role for citizen enforcement.

Public involvement in international watercourse management is important since it entails:

- improved quality of decisions
- improved credibility and public support
- facilitated decision-making processes
- improved implementation and monitoring [39].

Public involvement in a future Agreement, including scope, issues of significant importance, governance and collaboration will hinge on a thorough analytical process, so that the quality of decisions, support for the process and for implementation stand a better likelihood of success. Real consultation was only marginally evident in the renegotiation process. Previously, Krantzberg (2009) [40] outlined steps that scholars have revealed lead to successful interjurisdictional negotiations, stating: “[A] prescription for renegotiating the Agreement to generate a revitalized and sustainable future mandates that science inform contemporary public policy, third Party Mediation presses for and coordinates a deliberate negotiation, and inclusive discourse and public engagement be integral through the process.” Many of these steps are still absent, and the analysis presented here strongly suggests that the constituents of the Great Lakes regime voice their views critically, emphatically, and often. If the negotiators listen, we can collectively make the Lakes Great.

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Conflict of Interest

The author declares no conflict of interest.

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