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ECOSYSTEM GOVERNANCE:

Some Lessons from the Great Lakes Regime

*A Paper Prepared for the
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in the Twentyfirst Century*

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by

*Marcia Valiante
University of Windsor
Faculty of Law
401 Sunset Avenue
Windsor, Ontario
N9B 3P4*

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and

*Paul Muldoon
Canadian Environmental Law Association
517 College Street, Suite 401
Toronto, Ontario
M6G 4A2*

DRAFT

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I. INTRODUCTION

The Great Lakes basin is a significant international ecosystem. Shared between Canada and the United States, it contains over 20% of the earth's fresh water and is home to some 30 million people and intense industrial and agricultural development.¹ Because of a relatively long history of governance and a relatively modest degree of international conflict, the Great Lakes basin is often cited as an example of effective international governance.

This paper will explore some of the aspects of the system of Great Lakes governance that may point to why this system has been, in the opinion of many commentators, effective in lessening conflict and improving environmental quality. This of course is a debateable point, that is difficult to prove or disprove. Through a study now underway, the issue of whether, and the extent to which, the governance system has been effective in the sense that it has changed behaviour and resulted in a higher level of protection for the ecosystem will be considered in depth.² At this point, it is fair to say that a broad consensus exists that the Great Lakes governance system has been effective (though there is little consensus on whether it is adequately responding to the ecological threats now challenging the Great Lakes basin). This assumption has been adopted for the purposes of the discussion in this paper.

This paper will describe the structure of the Great Lakes governance system, both formal and informal, focusing on a few fundamental aspects that are key to its functioning, rather than addressing the details. While Great Lakes governance in its broadest sense would include discussions about fisheries, shipping and water levels, the discussion here is limited to issues of

environmental protection in a narrow sense. Following this discussion, the paper will comment on the extent to which these aspects could be relevant to other international environmental systems.

The basic argument of this paper is that the Great Lakes governance system has been effective because of the combination of the following factors: a strong binational commitment to common goals; goals that include both general principles capable of evolving over time and specific objectives; implementation that respects each nation's particular legal/regulatory system; independent binational oversight; and the existence of a dedicated and active non-governmental community, particularly strong scientific and environmental sectors.

II. THE GREAT LAKES BASIN ECOSYSTEM: LEGAL AND INSTITUTIONAL FRAMEWORK

The entire Great Lakes governance system is a complex and fairly well integrated network of legal agreements, institutions and organizations dating back to the last century. The legal foundation of the present environmental protection regime are the Boundary Waters Treaty of 1909 and the Great Lakes Water Quality Agreements of 1972 and 1978, as amended by a Protocol in 1987.

II.1 The Boundary Waters Treaty

The Boundary Waters Treaty was concluded between the United States and Britain (for Canada) in 1909.³ It built upon a number of earlier efforts to regulate rights of navigation and use of

shared waters and recognized that conflict over such waters was inevitable and sought to regularize the methods for dealing with problems along the common border.

The Treaty sets out a number of principles, such as free navigation,⁴ jurisdiction over use on each side of the border and equal rights for injury caused by such use.⁵ Most importantly, the Treaty established the International Joint Commission as the primary organization to carry out the purposes of the Treaty. The Commission is made up of an equal number of members from each country, six in total.

Generally speaking, the IJC was established to provide means of settling questions between the two countries involving rights, interests or obligations along the common frontier. The Commission was given four functions to realize this purpose:

First, the IJC is vested with quasi-judicial powers requiring it to decide all cases involving the use, obstruction or diversion of boundary waters or waters flowing across the boundary where the result would be to alter the flow or raise the level of such waters. The Treaty sets out guiding principles and an "order of precedence" of uses for the IJC to apply in deciding on these applications.⁶

Second, the IJC is given a "reference" function. When asked by the two governments, the IJC has jurisdiction to examine and report on any "questions or matters of difference arising between them involving the rights, obligations or interests of either in relation to the other or to the

inhabitants of the other, along the common frontier..."⁷ Following an investigation, the Commission submits a joint report to both governments offering their conclusions and recommendations for action.

Third, the Treaty gives the IJC the powers of a tribunal to decide any "questions or matters of difference" between the parties.⁸ A decision made under this power would be binding on the two governments. Referring an issue to the IJC under this provision requires the advice and consent of the U.S. Senate and, perhaps for this reason, it has never been used.

Fourth, the Commission is given a number of administrative functions with respect to the measurement and apportionment of two transboundary rivers, the St. Mary's and the Milk Rivers.⁹

The nature of the Commission's work thus falls primarily into the first two functions. But, whereas approximately three-quarters of its cases before the Second World War were applications under the quasi-judicial power, since then the workload has gradually become dominated by work under the reference power.¹⁰

Since its founding, the IJC has dealt with numerous Great Lakes issues, including references on Great Lakes water and air quality.¹¹ The most important for the establishment of a Great Lakes regime was the 1964 reference on water quality in Lakes Erie and Ontario, which led directly to the negotiation of the first Great Lakes Water Quality Agreement in 1972.

By that time, the IJC had a well-established method of operation and was well-respected on both sides of the border. The essence of the IJC approach was to bring together technical experts in equal numbers from each country (usually government agency personnel) to investigate the details of the issues and make recommendations about options for action. These conclusions and recommendations would then be adopted (or modified) by the Commission in making recommendations to the two governments. The Commission itself reached its final views by consensus and rarely divided along national lines.¹² Thus, it operated as a truly "binational" organization.

II.2 The Great Lakes Water Quality Agreements¹³

The first Agreement, in 1972, largely addressed the issue of eutrophication and was limited in scope to Lakes Erie and Ontario.¹⁴ For present purposes, its most important role was organizational: it placed the binational IJC in a central position with respect to research, data and oversight of Agreement implementation. New binational organizations were created to assist the Commission in carrying out its new functions: the Great Lakes Water Quality Board, the Science Advisory Board and a regional office, which was established in Windsor, Ontario.

The current regime is built upon this foundation, with the 1978 Agreement as the central substantive directive. This Agreement sets out agreed principles, policies and objectives that will guide the two governments in their actions to clean up the Great Lakes.

Specifically, under the 1978 Agreement, the governments committed themselves to an "ecosystem

approach", that is, to an approach that views the entire Great Lakes basin as an integrated ecosystem, requiring efforts not just on water quality, but on sediments, air pollution and land-based activities. The goal of the parties is "to restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes Basin Ecosystem."¹⁵ To achieve this purpose, a number of "policies" are to be followed, including, that the "discharge of toxic substances in toxic amounts be prohibited" and that "the discharge of any or all persistent toxic substances be virtually eliminated."¹⁶ The Agreement then enunciates a number of general objectives and specific water quality objectives and in a series of Annexes details actions for a number of programs.

The role of the IJC under the 1978 Agreement was to "assist in [its] implementation."¹⁷ To accomplish this, the Commission was given responsibility for "collation, analysis and dissemination of data and information" on water quality, the general and specific objectives and the effectiveness of programs and measures adopted. It has the power to independently verify any data or information given to it by the parties. In addition, the IJC was empowered to give advice and recommendations to the parties on all matters relating to Great Lakes water quality, including objectives, legislation, standards, programs and other measures, on all matters covered by the Annexes and on research needs. As well, the Commission was given the role of providing "assistance in the coordination of the joint activities" under the Agreement. Finally, the IJC was required by the Agreement to review and report biennially on progress toward achieving the goals of the Agreement. The 1987 Protocol amending the 1978 Agreement effected a number of changes to the regime. First, it made the regime more comprehensive by adding a number of

areas in which programs were to be initiated by the parties, including contaminated groundwater, sediments and airborne toxic substances.¹⁸ Second, it adopted new, common means for addressing more localized issues: the Remedial Action Plan process and the Lakewide Management Plan process.¹⁹ Third, the Protocol initiated an emphasis away from "binationalism" to "bilateralism." Although there would still be binational activities under the regime, the Protocol required the Parties to meet jointly to undertake a number of tasks.²⁰ Flowing from this requisite, a bilateral structure was initiated, called the Binational Executive Committee (and a number of advisory structures within the Commission dismantled). This Committee has sponsored two activities to date: a State of the Lakes Ecosystem Conference (SOLEC) and the development of a draft binational toxics strategy.²¹ At this stage, it is simply too early to determine the effectiveness of the bilateral emphasis. The positive side is that the bilateral activities may make the Parties more accountable for their activities since they report directly to the IJC. On the other hand, there is the view that the emphasis on bilateralism is a retreat from the traditional binational processes of the IJC, and that the benefits gained from such processes may be lost.

III. THE GREAT LAKES REGIME: ATTRIBUTES OF GOVERNANCE

The Great Lakes Agreement provides a rich history in the evolution of a transboundary governance regime. The legal framework and organizational structure, as described above, as well as the operation of the regime, have changed dramatically over the last 25 years, responding not only to environmental needs but also to social needs and the demands of a growing

environmental movement. As stated in the Introduction, the paper accepted the prevailing view that this regime has been effective in securing action and progress in cleaning up the Great Lakes.

What are the defining characteristics that have made this regime effective? We have identified the following as essential to the success of this regime: binationalism in several crucial aspects (goal setting, data gathering and analysis, review of progress and information dissemination); national responsibility for implementation and enforcement; progressive and flexible substantive principles (ecosystem approach; virtual elimination of persistent toxics); and a process that has opened to broad participation and the development of a strong Great Lakes community. These characteristics, in combination, have led to a balance of power within the political context of Canada and the United States that has allowed progress to be made. Whether this balance can be maintained given changes now underway and whether changes may be necessary to meet existing and future challenges are important questions that will be considered in the larger study.

III.1 Binationalism

One of the key attributes of the Great Lakes regime is the fact that there has been, traditionally, a strong degree of binationalism in several crucial regime activities. "Binationalism", as this paper uses it, means common actions of the parties, where national positions, interests or representations are not apparent, or at least not dominant. Obviously, this is not a pure notion, but in reality runs along a spectrum from "bilateral" actions (those taken individually by national governments with respect to common concerns) to "supranational" actions (those undertaken by an authority outside national governments).

The Great Lakes regime has evolved considerably in this context. Binationalism is found in the provisions of the Agreements in terms of common goals, in the structure and operation of the International Joint Commission and in the structure and operation of the informal non-governmental networks we call the Great Lakes community.

The Great Lakes Water Quality Agreements provide the common goals of the governments of Canada and the United States with respect to environmental quality in this ecosystem. Some of these goals are fairly general, but others are specific, including water quality objectives, targets for loadings reductions, program elements and timetables for reporting. The goals reflect a blending of concerns and priorities of both parties.

The IJC is the focal point for binational activities under the Agreement system. The Commission itself and its special Great Lakes bodies, including the Water Quality Board, the Science Advisory Board and the Council of Great Lakes Research Managers, are composed of equal numbers of members from each country. Historically, these bodies have prided themselves on the fact that their members sit, not as representatives of their agency's position, but as participants in a joint body, advancing a common agenda. There is ample testimony that the result of this approach in the Water Quality Board was the development of an "esprit de corps" among government officials, often allowing them to advance positions reflecting their expertise rather than their agency allegiance.²² Over the more than 20-year history of the Agreements, there developed a strong core of agency expertise with affiliations and allegiances to the Great Lakes that was taken back to their home agencies. This approach likely influenced national agendas and allowed

agencies to pursue a Great Lakes program that might differ from other national programs.

The operations of the IJC-family of organizations also reflects a binational approach. The work of the Water Quality Board, for example, was as a fact-finder to the Commission in its investigations. The Board's mandate was to fulfil the technical, scientific and other informational needs of the IJC and to do so in a way that, even if the ultimate recommended action was open to debate, the factual basis upon which it was based would be not only defensible, but accepted by all participants.²³

Another crucial binational operation is that of IJC review of progress in meeting the goals of the Agreement. Because of its continuing reference authority and its responsibility to monitor and report on the effectiveness of national implementation measures in its required biennial report, the IJC has come to play a powerful role in ensuring the transparency and accountability of the regime. The IJC has no power to enforce the Agreement or implement programs or order any actions. However, its power to collect, verify, analyze and disseminate information on all aspects of the ecosystem and government actions has provided a sound, independent information base that leaves governments exposed and empowers the environmental sector to press for greater efforts. This has been a crucial component of progress in Great Lakes governance. Unfortunately, there are signs that this approach to fact-gathering and review may be shifting away from a truly binational one to a bilateral one. Further study is required to assess the impact of these changes.

III.2 National Implementation

While the Great Lakes regime is characterized by strong elements of binationalism on many governance components, implementation of the goals, policies and objectives is left up to each national government.²⁴ This provision allowed each government to carry out the commonly agreed goals in accordance with existing national structures. Canada and the United States, surprisingly to many people, have quite different constitutional, legal and regulatory cultures. Respecting this difference was important to each country and allowed for minimal change in agency structure.

III.3 Substantive Principles

The Great Lakes regime is intended to operate in accordance with a number of fundamental principles. Perhaps the best known has come to be called the "ecosystem approach". This approach is not specifically laid out in the GLWQA but is necessarily implied by the definition of the boundaries of the regime as the "Great Lakes Basin Ecosystem."²⁵ By this definition, the scope of the regime expanded from the waters of the Great Lakes to the entire drainage basin, over twice the size of the Lakes themselves, and all interconnecting biophysical and social components therein. By expanding the scope of the regime, the whole range of human activities on land, from agriculture to urban development, and affecting the air and groundwater were expressly included. It not only imports a multi-media perspective, requiring consideration of the interactions of water, air and land, but also embraces issues of human health, economy and ecology.

Perhaps the most important effect of adopting an ecosystem approach to Great Lakes governance was to define a new zone or boundary for governance. The Great Lakes Basin as an identifiable region took on great significance for governments and the non-governmental sector alike. Widespread recognition that the elements of the region were so interconnected coincided with greater awareness of the links between environmental and economic well-being and catalyzed enormous interest and momentum for the Basin as a whole.²⁶ Recognition of the Great Lakes as an ecosystem was an important foundational concept behind the development of numerous new organizations, non-governmental and governmental, coordinated and innovative scientific investigation and, for lack of a better term, an ecosystem ethic that began to pervade the legal and political culture of the regime and its participants.

The importance of the ecosystem principle should not be overstated. It has not turned the Basin into a new state, where political boundaries no longer matter. However, it has provided the framework whereby the ecologically-defined region was recognized as having common environmental, economic, political and social concerns and strengths. In effect, the ecosystem concept, its meaning expanded through the persistent efforts of scientists and environmental organizations, has become the prism through which present and future actions are evaluated.

Recognizing the Great Lakes Basin as an ecosystem has also led, at least in part, to a recognition that more specific laws and programs may be justified for the region. For example, in the United States, the "Great Lakes Water Quality Initiative" was an attempt to fashion common guidance for Great Lakes state governments in the setting of water quality objectives.²⁷ The Initiative was

adopted under the federal Clean Water Act, carving out special rules for a regional block of states.

Another important principle of the Great Lakes regime is that of "zero discharge". In Annex 12 to the 1978 GLWQA, the parties agreed that the goal of "virtual elimination of persistent toxic substances" was to be accomplished through control on inputs to the system following a "philosophy" of zero discharge. This concept derives from U.S. domestic legislation but its meaning for the binational context was vague. In coming to terms with the significant toxics problem in the Great Lakes, participants have had to come to terms with the meaning of the concept of zero discharge and the limitations of the existing regulatory approach. Led by the work of environmental groups, the development of a strategy for virtual elimination has become a major issue on the binational agenda.²⁸ In addition, the concept of zero discharge has become a focal point for NGO efforts to organize and motivate Great Lakes citizens to participate in and influence the direction of the regime, as well as a benchmark for measuring progress under the GLWQA.

III.4 Informal Governance Structures: A Great Lakes Community

In the Great Lakes Basin, reference to formal governance structures reveals only part of the story of governance. It is also necessary to discuss the development and role of the non-governmental sector in ensuring the vitality and relevance of the formal regime. It is the argument of this paper (and of the larger study from which the research is derived) that the two have developed a synergy that has made a significant contribution to the regime's success/effectiveness in

improving Great Lakes water quality: that is, a strong and diverse non-governmental community developed as a result of the formal structures, and that the formal structures have been energized and legitimized because of the continuing active involvement of that community.

This part will describe, in general terms, the participants in the Great Lakes community, the development and role of this community's constituencies in governance, and finally, the impact of this community on Great Lakes governance.

At present, the Great Lakes are a focus of interest and action for a diverse range of associations, organizations and individuals, which together constitute a "Great Lakes community". Some constituents are focused on local or regional issues; others on basin-wide issues. Some participate occasionally; others on a full-time basis. A number of the more important sectors of the community will be considered. In practice, governmental agencies at all levels are part of this community, but will not be considered here.

One of the oldest sectors of the Great Lakes community is the scientific sector. Since the 1950s and 1960s, U.S. and Canadian scientists with an interest in the Great Lakes have worked together to advance knowledge about the basin and its ecological decline.²⁹ Through a series of annual conferences, commencing in the early 1960s, scientists have shared and publicized their research. In 1968, the International Association for Great Lakes Research (IAGLR) was formed to coordinate this conference and assist scientific investigations. The work of both academic and government scientists formed the basis for government action in establishing and refining the

Great Lakes Water Quality Agreement. Since the Agreement was established in 1972, scientists from both countries have had a strong presence within formal Agreement structures and a high level of influence in the direction of the regime, as will be discussed below.

Environmental and citizens organizations are another important sector of the Great Lakes community.³⁰ There are hundreds of such organizations with at least some interest in the Great Lakes. Most of these are small groups, locally-based and with few resources. More than 200 of these groups have come together with other interests into a binational coalition known as Great Lakes United, or GLU. GLU, formed in 1983, has become an active and influential participant in Great Lakes governance, to the extent of being allowed to participate in the negotiations for the 1987 Protocol amending the Agreement. As part of an influential coalition, smaller environmental and citizens organizations have gained a broader perspective, basin-wide contacts and the ability to participate in many Agreement processes.

The environmental sector of the community is also characterized by the presence of the large, long-established national environmental organizations such as the Sierra Club and the National Wildlife Federation in the U.S. and Pollution Probe and the Canadian Environmental Law Association in Canada. These organizations work on many issues in many regions but have included Great Lakes issues as a focus of their work, most since the mid-1980s. There are also strong regional organizations such as the Lake Michigan Federation and Société pour le vaincre de pollution and recreational users associations, such as Michigan United Conservation Council and the Federation of Anglers and Hunters, which play an important role, both on their own and

in working through GLU.

Another sector participating in Great Lakes governance is industry. Until 1990, commercial and industrial interests participated only occasionally in binational processes as individual firms or industry associations trying to influence the direction of the regime.³¹ Industry on both sides of the border did not take an active role in policy development and generally concerned themselves with national regulatory initiatives.³² In 1990, industries with a stake in Great Lakes issues joined together in a binational coalition known as the Council of Great Lakes Industries. Since then, the CGLI has taken an active role in trying to influence the direction of policy at the binational level.

Other active sectors of importance include: organized labour; Aboriginal communities; municipal politicians educators.³³ Through Remedial Action Plans, members of the general public also participate.

At the time of the signing of the first Great Lakes Water Quality Agreement in 1972, there was little organized non-governmental participation. Public outcry over the state of the environment, particularly Lake Erie, had been instrumental in getting the two national governments to act, first in referring the issues to the International Joint Commission and second in negotiating the Agreement. This participation was ad hoc and, aside from the scientific sector, not well organized.³⁴

With the creation of the Agreement institutions, however, the level of organization and nature of participation changed. The Agreement gave new powers to the IJC to establish a regional office and two boards, the Water Quality Board and the Research (now, Science) Advisory Board, and left it to the Commission to determine the types of public information programs it would establish. Prior to this, the IJC had operated under quite formal rules of procedure, keeping a low profile with the public and only opening their work to scrutiny at structured public hearings. Early in the operations of the regional office, the Commission and its advisors became convinced of the need to change to a more open process. Several initiatives were undertaken to make the IJC's actions under the Agreement more visible (information officer, release of reports, newsletter, open meetings) and to open up those actions to greater public participation.³⁵

One of the most significant experiments in expanded participation undertaken by the IJC was that for the Reference Group addressing pollution from land-use activities (PLUARG).³⁶ The members of the reference group itself were all from government agencies, but a series of 17 multistakeholder consultation panels were convened around the basin, public hearings were held, and fact sheets, issue papers and reports were widely distributed. The intention was to get broad public input into the reference group's draft report and to generate knowledge and support for the Agreement and the IJC. Although the PLUARG recommendations were never formally adopted by the Parties, this experiment had a lasting influence on the direction of governance regarding water quality and created a pool of individuals from many sectors with expanded knowledge and enthusiasm.

Since that time, the IJC has increasingly opened its processes to broad participation and expanded the information it supplies.³⁷ Relying on the principles in the Agreement as a guide, the NGOs have used data and information provided by the IJC and others to publicize the parties' lack of progress in achieving Agreement goals and to lobby for greater efforts at implementation.

These binational processes have provided a forum for different community sectors to push the direction of the regime and have helped legitimize their participation. As a result, these non-governmental participants have become very influential with the IJC and the Parties. In addition to participating in existing IJC processes, environmental organizations in particular have been active in initiating a range of programs, for example to monitor and publicize progress under the Agreement, to organize support for the principles of the Agreement and to develop the principles in the Agreement into workable policies.³⁸

The scientific community had an operational network prior to the establishment of the Agreement in 1972, but that network was greatly strengthened and expanded with the Agreement. The working boards of the IJC and the regional office relied on and promoted strong links with Great Lakes scientists. Membership on the boards was primarily agency policy makers, with some scientists, but advancement of the regime also depended on continuing research. In 1985, an independent review of the Agreement by the U.S. National Research Council and the Royal Society of Canada strongly influenced the Parties in preparing for the formal review which led to the adoption of the 1987 Protocol.

The particular community that has developed around Great Lakes environmental quality issues in the wake of the Agreement has had a significant impact on the success of the governance regime. This impact is evident on a number of fronts, including development of the factual basis for the establishment and growth of the regime from 1970 to the present, building public and governmental support for the goals of the Agreement, working to operationalize the goals of the Agreement and pressuring the Parties to implement the Agreement through lobbying and monitoring and publicizing the Parties' actions in implementing the terms of the Agreement.

IV. RELEVANCE BEYOND THE GREAT LAKES

The Great Lakes experience in managing the environmental degradation of a shared ecosystem is clearly linked to its particular political and social context. However, there are a number of characteristics that have made it an effective system that could have relevance in other contexts.

In terms of the formal relationship of the national governments within the system, an important characteristic is the equality of the parties, that is, each country has equal representation in all binational institutions. Dating from the creation of the IJC, this equality has been of greatest importance to Canada, which is much smaller in terms of population and economy and has never held much political influence with any U.S. government. Through formal Agreement processes, Canada commands the attention of U.S. officials on a regular basis, magnifying its influence beyond what it would otherwise have. The equality of the relationship at this level has had a positive effect on the continued commitment of both governments to cleaning up the Great Lakes.

Another important characteristic of the formal structure of Great Lakes governance is the use of an independent binational organization, the IJC, for crucial elements of the system. In particular, the IJC's roles in the gathering, evaluation and verification of data, the review of and reporting on national programs to implement the Agreement, the control of information to the public, and the provision of an open forum for debate and resolution of conflicts have had an enormous influence on the direction and effectiveness of the system. This particular organization had the advantage of a long history, a small staff and a mode of operating that allowed it to start off with a high level of respect and little sense of threat to existing agencies.

The third important characteristic is the development of a large binational community focused on the Great Lakes. It was not planned for in the formal structure but developed outside of it, in part spontaneously and in part in response to the concerted efforts of the IJC, foundations, existing groups and individuals. This community has been a necessary element in making the system effective, through building political support for the principles of the Agreement and its institutions, through well-prepared and well-organized participation in binational forums and self-initiated ones to influence the issues on the binational agenda and the direction of policies and through lobbying efforts at the national level to influence policies and actions leading to implementation. The binational scientific community played a leading role in the development of a consensus on the scientific basis for action, which convinced the governments of the need for cooperative action and which formed the basis for the principles of the regime.

Lastly, the adoption of expansive principles, and not just specific numerical objectives, as goals

of the regime was essential in allowing the system to respond to the increasing complexity of the challenges facing the ecosystem. These goals provided impetus for more integrated research and allowed the system to begin to shift focus as priorities changed. They also provided a framework for building public support and for measuring the success of implementing actions.

It is the combination of these characteristics, not any one of them alone, that has allowed this system to function and make progress. The complex, reinforcing relationships among all of them have given this regime its particular strength and vitality. The simple fact is that the regime is a dynamic one that keeps evolving. It is its flexibility and willingness to adopt that has continued to keep students of the regime so interested in its operation. Only hindsight will enable one to determine the benefits of such a regime in terms of the protection of the Great Lakes ecosystem.

ENDNOTES

1. Theodora Colborn, et al., *Great Lakes: Great Legacy?* (Washington, D.C.: conservation Foundation and Institute for Research on Public Policy, 1990), p.1.
2. In 1994, under the auspices of the Institute for International Governance at Dartmouth College, a study was commenced to examine the effectiveness of the Great Lakes Water Quality Agreement. A working draft of the study is planned to be completed by the end of 1995.
3. *Treaty Between the United States and Great Britain Relating to Boundary Waters and Questions Arising Between the United States and Canada*, signed at Washington, January 11, 1909.
4. *Ibid.*, Article I.
5. *Ibid.*, Article II.
6. *Ibid.*, Articles III, IV and VIII.
7. *Ibid.*, Article IX.
8. *Ibid.*, Article X.
9. *Ibid.*, Article IV.
10. This change in workload is due largely to the fact that, by the early 1960s, after the development of the St. Lawrence Seaway and the Columbia River Basin, all major transboundary and boundary waters had been developed.
11. There have been references in 1912, 1946, 1948, 1964 and 1975 on air and water pollution in the Basin in addition to two references mandated by the 1972 Great Lakes Water Quality Agreement: Pollution of the Upper Great Lakes and Pollution of the Great Lakes from Land Use Activities.
12. J.E. Carroll, *Environmental Diplomacy: An Examination and a Prospective of Canadian-U.S. Transboundary Environmental Relations* (Ann Arbor: Univ. of Michigan press, 1983), pp.49-50.
13. *Agreement Between the United States of America and Canada on Great Lakes Water Quality*, signed at Ottawa, April 15, 1972, superseded by *Agreement Between Canada and the United States of America on Great Lakes Water Quality*, signed at Ottawa, November 15, 1978, as amended by *Protocol*, signed November 18, 1987. Referred to hereafter as "GLWQA".
14. 1972 GLWQA, Article VII.
15. 1978 GLWQA, Article II.
16. *Ibid.*
17. *Ibid.*, Article VII. Article VII sets out the "Powers, Responsibilities and Functions of the International Joint Commission" described below.

18. 1987 Protocol, Annexes 16, 14 and 15, respectively.
19. 1987 Protocol, Annex 2.
20. For example, Article X now requires the Parties to meet twice a year, along with State and Provincial governments, to coordinate their work plans and to evaluate progress made. Prior to this, evaluation of progress was done exclusively through the IJC.
21. For example, see: Environment Canada and the U.S. Environmental Protection Agency, *State of the Great Lakes*, July, 1995; and *Canada-United States Strategy for the Virtual Elimination of Persistent Toxic Substances in the Great Lakes Basin*, Draft for Consultation, August 1995.
22. Carroll, *Environmental Diplomacy*, *supra* note 12, p.61.
23. An example of this kind of technical work would include: Great Lakes Water Quality Board, *1989 Report on Great Lakes Water Quality Report to the International Joint Commission*, Presented at Hamilton, Ontario, 1989.
24. 1978 GLWQA, Article VI.
25. The Great Lakes Basin Ecosystem is defined as "the interacting components of air, land, water and living organisms, including humans, within the drainage basin of the St. Lawrence River..." 1978 GLWQA, (as amended), Article I(g). There is a growing volume of literature on this topic. See: R.L. Thomas et al., "The Ecosystems Approach: A Strategy for the Management of Renewable Resources in the Great Lakes Basin" in L.K. Caldwell (ed.), *Perspectives on Ecosystem Management for the Great Lakes* (Albany: State University of New York Press, 1988), pp.31-58.
26. Jack Manno, "Advocacy and Diplomacy in the Great Lakes: A Case History of Non-Governmental Participation in Negotiating the Great Lakes Water Quality Agreement," (1993), 1 Buffalo Environ. L.J. 1, p.31.
27. The Great Lakes Initiative is discussed in relation to the GLWQA in the Great Lakes Science Advisory Board, *Report to the International Joint Commission*, 1993.
28. See, for example, the work of the Virtual Elimination Task Force of the IJC: *A Strategy for Virtual Elimination of Persistent Toxic Substances*, Vols. 1 and 2 (Windsor, Ont.: IJC, 1993). For commentary on this goal, see: National Wildlife Federation and the Canadian Institute for Environmental Law and Policy, *Prescription for Healthy Great Lakes* (Washington, 1991) and P. Muldoon and M. Valiante, *Toxic Water Pollution in Canada: Regulatory Principles for Reduction and Elimination* (Calgary: Canadian Institute of Resources Law, 1989).
29. See discussion in National Research Council of the United States and The Royal Society of Canada, *The Great Lakes Water Quality Agreement: An Evolving Instrument of Ecosystem Management* (Washington, D.C.: National Academy Press, 1985), pp.113-114.
30. See Manno, "Advocacy and Diplomacy", *supra* note 26; and Mimi Larsen Becker, "The International Joint Commission and Public Participation: Past Experiences, Present Challenges, Future Tasks," (1993), 33 Nat. Resources J. 235.

31. Industry became most actively involved when activities at the binational level threatened their interests directly. For example, the detergent industry associations in Canada and the U.S. vigorously participated in the public hearings and debates on the Reports that led to the negotiation of the 1972 GLWQA.
32. See, David R. Allardice, Richard H. Mattoon and William A. Testa, "Industry Approaches to Environmental Policy in the Great Lakes Region," (1994), 25 U. Toledo L. Rev. 357.
33. Organized labour and Aboriginal communities are becoming increasingly visible and important participants. They participate in their own right and some also do through membership in Great Lakes United. Municipal politicians meet annually on matters of common interest through a coalition known as the Great Lakes Mayors' Association. Educators participate on the IJC's Educators Advisory Council and through a series of summer institutes around the Basin.
34. See, Margaret Sinclair, *The International Joint Commission and Its Involvement with the Public* (Windsor, Ont.: IJC, 1974); and Phil Weiler, *Fresh Water Seas: Saving the Great Lakes* (Toronto: Between the Lines, 1990), c.6.
35. Sinclair *supra* note 34; Becker, *supra* note 30, p.244; and Carol Y. Swinehart, "A Review of Public Participation in the Great Lakes Water Quality Agreement," in American Water Resources Association, *The Great Lakes: Living with North America's Inland Waters*, Symposium Proceedings (Bethesda, Md.: AWRA, 1988), pp.137-147.
36. *Ibid.* Also see, A.P. Grima and R.J. Mason, "Applies and Oranges: Toward a Critique of Public Participation in Great Lakes Decisions," (1983), 8 Can. Water Resources J. 22-50.
37. For example, the reference on Great Lakes Water Levels has a diverse study group that includes representatives of environmental, recreational user and ratepayers groups. (See Becker, *supra* note 30) Since 1989, IJC Biennial Meetings have included thousands of Basin citizens, and IJC Boards and Task Forces now include membership from the broader Great Lakes community.
38. For example, leading up to the 1985 review of the 1978 GLWQA, Great Lakes United convened a series of public hearings around the Basin and prepared a report on progress under the Agreement that was influential in getting GLU status in the negotiations (see Manno, *supra* note 26). In addition, the NGO community has organized regional networks of citizens and local groups, including the Lake Erie Alliance. The larger environmental groups have been very influential in pushing the principles of the Agreement into programs such as the Great Lakes Initiative in the U.S., the Canada-Ontario Agreement and the Municipal-Industrial Strategy for Abatement in Ontario.