

Great Words Needed for the Great Lakes: Reasons to Rewrite the Boundary Waters Treaty of 1909

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Bright above him shone the heavens,
Level spread the lake before him;
From its bosom leaped the sturgeon,
Sparkling, flashing in the sunshine;
On its margin the great forest
Stood reflected in the water,
Every tree-top had its shadow,
Motionless beneath the water.

-Hiawatha upon the shore of Lake Superior,
Song of Hiawatha, Henry Wadsworth Longfellow

INTRODUCTION

The Great Lakes have long provided people with food and water and beauty and wonder. In return, many authors have praised the Lakes with great words of admiration. Indeed, this Note is about writing great words for the Lakes, but unfortunately not in admiration. This Note concerns writing out of necessity for the Lakes.

This Note proposes to rewrite the Boundary Waters Treaty of 1909 (“BWT” or “Treaty”).¹ Written by the governments of the United States and Canada, this Treaty created the International Joint Commission (“IJC”) to settle disputes concerning the boundary waters between the two countries. The BWT has worked fairly well over the years, but there are new problems and challenges that would be best addressed by providing the Lakes a new document with new language.

For practicality, this Note focuses primarily upon the Great Lakes (as opposed to all of the boundary waters), upon the United States’ perspective, and upon environmental issues. Part I of this paper provides the pertinent history surrounding the creation of the BWT and briefly summarizes the Treaty itself. Part II surveys what the IJC has accomplished and how its powers have changed over time, particularly due to the influence of the Great Lakes Water Quality Agreements. Part III considers the current pollution problem. Part IV analyzes some of the common criticisms the government and

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1. Boundary Waters Treaty, Jan. 11, 1909, U.S.-Gr. Brit., 36 Stat. 2448 [hereinafter BWT].

the academic world have for the IJC, and considers some of their proposed solutions. Part V contains conclusions and recommendations. In sum, this Note proposes a revision of the Treaty, shifting its focus from that of a tool of the governments to a promise to the people. This Note also proposes the establishment of a "science judgment board" to help untangle the scientific disputes that hinder policy making and integration in the Great Lakes basin.

1. HISTORY OF THE BOUNDARY WATERS TREATY OF 1909 AND THE INTERNATIONAL JOINT COMMISSION

To understand why the Boundary Waters Treaty of 1909 should be rewritten, it is helpful to understand why it was written in the first place. Therefore, this Part first examines early treaties involving the United States that set the stage for the BWT, second, it examines science, industry, and pollution at the turn of the century; and third, it reviews direct precursors to the BWT and analyzes the actual drafting of the BWT. After this historical survey is finished, this Part summarizes the Treaty's provisions.

A. Navigation, Diversion, and Irrigation Treaties

"The waters of this as well as the other great Lakes are clear and wholesome, and of sufficient depth for the navigation of large ships," wrote the explorer and popular author Jonathan Carver in 1766.² Like many early explorers in the Great Lakes region, Carver emphasized the navigability of the Great Lakes in the same stroke of the pen with which he admired the wild beauty of the region. For example, the author generally added an imaginary "vessel of fifty tons" for which there was assuredly "sufficient depth and breadth" to any description of the natural scenery composing a pleasant cove or harbor.³ The Great Lakes, then, were recognized and "advertised" early on for their navigational possibilities. Because the Lakes were boundary waters, however, these possibilities were also political problems from the beginning.

Since ancient times, navigation has presented boundary waters problems throughout the world. Indeed, it is the oldest boundary waters problem between the United States and Canada.⁴ Navigation treaties between the United States and Canada (represented by Great Britain) have existed since the birth of the United States. The Definitive Treaty of Peace, created shortly after the American Revolution, set territorial boundaries upon the waters between the two countries.⁵ The two countries stressed the importance of navigation by including as part of the peace plan navigation rights upon the

2. JONATHAN CARVER, ESQ., *TRAVELS THROUGH THE INTERIOR PARTS OF NORTH AMERICA, IN THE YEARS 1766, 1767, AND 1768* 29 (3d ed. 1956).

3. *Id.* at 26-27.

4. N.F. Dreisziger, *Dreams and Disappointments, in THE INTERNATIONAL JOINT COMMISSION SEVENTY YEARS ON 9* (Robert Spencer et al. eds., 1981).

5. Treaty of Paris, Sept. 3, 1783, 8 Stat. 80, 81.

Mississippi River for Great Britain, under the mistaken belief that the Mississippi had its origins across the Canadian border.⁶ As time progressed, navigation rights continued to create problems between the two nations.⁷ In response, they drafted a succession of treaties establishing freedoms, such as a total right to pass over the boundary and navigate all boundary waters of either country,⁸ and restrictions, such as the number of vessels with eighteen-pound cannons allowed to navigate the Great Lakes.⁹

Navigation of boundary waters during the nineteenth century was important to Canada and the United States for three reasons. First, navigation across the boundary waters stimulated profitable trade between the countries;¹⁰ second, navigation through the boundary waters provided efficient transportation for trade within each country; and third, the St. Lawrence River (part of which lies completely in Canada) furnished at least some access to the Atlantic Ocean and the East Coast.¹¹ It is not surprising, then, that the two countries continually traded navigation rights. The Treaty of 1854¹² between the United States and Canada is illustrative: "It is further agreed that the British subjects have the right freely to navigate Lake Michigan so long as the privilege of navigating the River St. Lawrence, secured to American citizens shall continue."¹³ This treaty lasted twelve years and then terminated due to differences arising out of the American Civil War.¹⁴ A treaty to settle these differences between the two nations was signed in Washington, D.C., on May 8, 1871. This treaty again bartered for navigation rights in the boundary waters region. Once more, the Americans were allowed use of the St. Lawrence River and some adjoining canals, while the Canadians secured the right to use many state canals which were connected to the boundary waters.¹⁵

6. *Id.* at 82-83 (defining the boundary line between U.S. and Canada as following the center of the Mississippi River for some distance); see L.M. BLOOMFIELD & GERALD F. FITZGERALD, *BOUNDARY WATERS PROBLEMS OF CANADA AND THE UNITED STATES* 2 (1958).

7. Dreisziger, *supra* note 4.

8. BLOOMFIELD & FITZGERALD, *supra* note 6, at 3 (discussing the Jay Treaty of 1794).

9. *Id.* at 4 (discussing the Rush-Bagot Agreement of 1817, Apr. 29, 1817, U.S.-Gr. Brit., 8 Stat. 231).

10. At this time, a movement to annex Canada to the United States received strong support from the Canadians who desired the economic benefits of trading freely with U.S. citizens. The movement was defeated in part by a treaty in 1854 which provided for broad navigation rights, as discussed *infra* note 12 and accompanying text. 1 RICHARD N. CURRENT ET AL., *AMERICAN HISTORY* 381-82 (1987).

11. Ocean-going vessels could not make the trip until the 1950's when, under the St. Lawrence Seaway Agreement of 1954, Aug. 17, 1954, 5 UST 1788; 234 UNTS 199, the river was dredged and made into a canal. People were able to navigate the St. Lawrence in smaller vessels before the 1950's however. Gerald Graham, *International Rivers and Lakes: The Canadian-American Regime*, in *THE LEGAL REGIME OF INTERNATIONAL RIVERS AND LAKES* 14 (Ralph Zacklin & Lucius Caflisch eds., 1981). The importance of the Great Lakes as a trade center during the mid-19th century increased substantially with the new construction of canals and railroads which led to easier accessibility and population growth in the area. 1 CURRENT ET AL., *supra* note 10, at 250, 307.

12. 1 Malloy 671.

13. BLOOMFIELD & FITZGERALD, *supra* note 6, at 5-6.

14. *Id.* at 6. See generally 1 CURRENT ET AL., *supra* note 10, at 419-20.

15. BLOOMFIELD & FITZGERALD, *supra* note 6, at 6-7 (discussing the Treaty of Washington).

Another type of boundary waters issue then surfaced in the Southwest between the United States and Mexico. A water diversion controversy, which concerned irrigation around the Rio Grande, spurred the creation of the International Boundary Commission in the Convention of 1889.¹⁶ Again, as with navigation, the United States moved to secure its interests. When the Mexicans complained that the irrigation practices of the United States had so depleted the Rio Grande as to cause hardship to many Mexicans, the United States countered that it had no duty to limit American citizens' use of the Rio Grande's water even though it created hardship downstream in Mexican territory. The United States' reply was based upon the views of United States Attorney General Harmon and thus became known as the Harmon Doctrine.¹⁷

These early treaties between the United States and Canada (and Mexico) demonstrate three facets of boundary waters relations around the turn of the century. First, the countries recognized the boundary waters as an important resource; second, boundary waters issues arose because the countries wanted to use that resource to their advantage; and third, major conflicts that ensued generally involved navigation and irrigation. These facets illustrate the boundary waters relationship existing between the countries when the BWT was written in 1909. The next section of this Note discusses the probable role pollution played in the drafting of the BWT.

B. Pollution in the Great Lakes at the Turn of the Century

On March 3, 1909, the Senate advised ratification of the Boundary Waters Treaty.¹⁸ That same day the Senate passed a bill that awarded Orville and Wilbur Wright gold medals in recognition of their triumphant advances in human flight.¹⁹ The Wright brothers' first flight serves as a reminder that science and industry, as they are known today, were still in their early years when the BWT was written. Industry at the turn of the century was a young yet growing force that was responsible for a remarkable expansion in America's economy.²⁰ Social Darwinism drove America's industries. Having begun with Herbert Spencer in the 1870's, the philosophy of "the weak fail, the strong endure"²¹ continued to receive strong support through the turn of the century. The infamous Supreme Court case of 1905, *Lochner v. New York*,²² showed that Social Darwinism strongly influenced even legal

16. Convention Respecting Boundary, Mar. 1, 1889, U.S.-Mex., 26 Stat. 1512. In 1896, Canada proposed the creation of a similar commission to settle problems between the U.S. and Canada, but the U.S. declined the invitation.

17. BLOOMFIELD & FITZGERALD, *supra* note 6, at 8.

18. BWT, *supra* note 1, 36 Stat. at 2448.

19. ORVILLE AND WILBUR WRIGHT, H.R. DOC. NO. 2042, 60th Cong., 2d Sess. (1909). The Wright brothers' first flight at Kitty Hawk, North Carolina was in 1903. 2 CURRENT ET AL., *supra* note 10, at 499.

20. 2 CURRENT ET AL., *supra* note 10, at 497.

21. *Id.* at 506.

22. *Lochner v. New York*, 198 U.S. 45 (1905) (holding unconstitutional a New York statute which limited the number of hours bakers could work to no more than 60 hours a week and 10 hours a day).

thought.²³ In *Lochner*, the Court refused to allow the State of New York to limit the hours bakers could work per week. New York had acted to protect the health of the workers. Inspired by ideas of "the liberty of the individual," the Supreme Court reasoned that the working class could and should "assert their rights and care for themselves without the protecting arm of the State."²⁴ Consequently, this philosophy encouraged competitive and highly charged industries with little governmental regulation. The "*Lochner* Era" lasted almost thirty years.²⁵

Yet in spite of its vigor, industry was in many ways still in its infancy. For example, the age of mass production did not begin until 1914 when Henry Ford installed moving assembly lines in his factories.²⁶ In many ways, industrial pollution was also in its infancy. Industrial pollution tended to be physical or organic, unlike the chemical pollution that exists today. In addition, most people did not yet realize the adverse effects of industrial pollution. This was due in part to a lack of understanding of the serious health effects pollution can have upon humans,²⁷ in part to nature's ability to absorb and disperse pollution,²⁸ and in part to a general apathy concerning all types of pollution.²⁹

For the most part, control over water pollution at this time belonged to the several states. The only federal law was the Rivers and Harbors Act of 1899, which made it illegal to "throw, discharge, or deposit any refuse matter . . . into any navigable water of the United States."³⁰ State statutes ranged

23. Justice Holmes complained in his dissent in *Lochner* that "[t]he Fourteenth Amendment does not enact Mr. Herbert Spencer's Social Statics" in reaction to the majority's reliance on the social philosophy in the opinion. *Id.* at 75.

24. *Lochner*, 198 U.S. at 53. Note that while the Court was unwilling to protect the bakers (who were all adult men), the Court was willing to protect women because they could not be expected to care for themselves. *Muller v. Oregon*, 208 U.S. 412, 421-22 (1908). Therefore, *Lochner* should not be viewed as a universal condemnation of health-related or protective regulation by the Court.

25. GEOFFREY R. STONE ET AL., CONSTITUTIONAL LAW 739 (1986). During the *Lochner* Era, the Court invalidated over 200 economic regulations.

26. 2 CURRENT ET AL., *supra* note 10, at 500.

27. The Federal Government did not begin to research and educate the public about any human diseases until 1902 when the U.S. established the National Institute of Health. Milton I. Roemer, *Government's Role in American Medicine—A Brief Historical Survey*, in LEGACIES IN LAW AND MEDICINE 183, 190 (Chester R. Burns ed., 1977). An interesting example of the lack of knowledge about the health risks of pollution is found in the Department of the Interior's 1906 study on stream pollution by acid-iron wastes. The problem was how to dispose of "waste pickle," an acidic solution into which iron was immersed to remove impurities. One solution noted by the report was to bottle and sell the waste pickle as tonics for human consumption, though this solution did not meet with great success. HERMAN STABLER, STREAM POLLUTION BY ACID-IRON WASTES, H.R. DOC. NO. 71, 59th Cong., 2d Sess. 5 (1906).

28. See EARLE BERNARD PHELPS, THE POLLUTION OF STREAMS BY SULPHITE PULP WASTE, H.R. DOC. NO. 1297, 60th Cong., 2d Sess. 6 (1909) (finding that discharges of sulphite pulp waste were successfully diluted by the waters of Lake Champlain to the point where the pollution was insignificant); see also notes 34-37 and accompanying text for an analogous discussion of the power of nature to dilute sewage waste.

29. See ALLAN J. MCLAUGHLIN, SEWAGE POLLUTION OF INTERSTATE AND INTERNATIONAL WATERS, H.R. DOC. NO. 739, 62d Cong., 2d Sess. 14 (1912) (discussing the "dangerous apathy" among Americans concerning the spread of typhoid fever caused by polluted water supplies).

30. Rivers and Harbors Act of 1899, ch. 425, 30 Stat. 1121, 1152 (1899). Note that "navigable waters" were limited to waters in which ships in commerce could safely navigate. The term did not take

from those that simply made it illegal to poison wells to those that attempted to prevent all pollution of waters.³¹ The Great Lakes states' statutes varied across this range. For example, Minnesota had one of the toughest water pollution laws in the country while Michigan's laws were among the least stringent.³² The states defined pollution as almost purely organic, including such things as logs, debris, dead animals, and sewage.³³

The greatest pollution problem facing the Great Lakes at the time the BWT was written was not industrial but municipal. Sewage contamination of drinking water supplies resulted in the alarming spread of typhoid fever. By 1912 the United States suffered from 250,000 cases of typhoid fever per year that resulted in a total of 25,000 deaths. Estimates of economic loss—lost earnings and medical expenditures—reached \$100 million annually.³⁴ The cause of the problem was the common practice of taking water directly from the Great Lakes and, without filtration or treatment, pumping it directly into homes for consumption.³⁵

The United States did not label the sewage problem in the Great Lakes and the resulting typhoid epidemic as an international problem, and therefore the epidemic probably did not play a significant role in the drafting of the BWT. The typhoid issue was one of local "zones," in that a city's *own* sewage would pollute its *own* water supply.³⁶ In many cases the zone was small enough that the solution was simply a matter of moving the intake pipe either farther out into the lake or farther up the shore.³⁷ When the zone was too large for such simple measures, water filtration and treatment was necessary.³⁸ There was some evidence that pollution from American cities could have adverse effects upon others,³⁹ but there was seldom any talk of Canadian cities affecting American water supplies. Indeed, the United States' focus upon interstate and international typhoid consequences revolved around trains and steamboats. *Pollution* was not travelling across international borders; the problem was that *people* were travelling across the borders and returning infected.⁴⁰ In any case, most agreed that the Lakes were not a

on its modern and expansive meaning to include even wetlands adjacent to navigable waters until 1985. *See United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 123 (1985).

31. EDWIN B. GOODELL, A REVIEW OF THE LAWS FORBIDDING POLLUTION OF INLAND WATERS IN THE UNITED STATES, H.R. DOC. NO. 233, 59th Cong., 1st Sess. 32 (1905).

32. *Id.* at 36, 81.

33. *Id.* at 33, 37, 81.

34. H.R. DOC. NO. 739, *supra* note 29, at 18.

35. *Id.* at 13. One observer stated that he could follow the sewage discharge of Chicago (which was often dumped all at once in large quantities) as it travelled the currents of Lake Michigan towards his local pumping station and then shortly thereafter, to his home where the water would become "foul smelling." MARSHALL O. LEIGHTON, POLLUTION OF ILLINOIS AND MISSISSIPPI RIVERS BY CHICAGO SEWAGE, H.R. DOC. NO. 788, 59th Cong., 2d Sess. 157 (1907).

36. *See* H.R. DOC. NO. 739, *supra* note 29, at 42, 45, 85; *see also* Dreisziger, *supra* note 4, at 9.

37. H.R. DOC. NO. 739, *supra* note 29, at 45.

38. *Id.* at 85.

39. *See* H.R. DOC. NO. 788, *supra* note 35, at 112 (discussing a prevailing opinion among medical practitioners in Buffalo that the city would have to start treating its water because of pollution put into the water at Cleveland).

40. H.R. DOC. NO. 739, *supra* note 29, at 38.

basin-wide pollution problem and that they still oxidized and purified themselves effectively without the aid of man.⁴¹ Consequently, pollution was not yet a recognized international problem in the Great Lakes.⁴²

C. Direct Precursors to the 1909 Treaty

Although pollution was not yet recognized as an international issue at the time the BWT was drafted, pollution did have an indirect effect on the Great Lakes that could have had serious international consequences. Chicago's "drainage canal" was a plan to divert huge amounts of Lake Michigan water and then flush Chicago's sewage through a canal with that water. The sewage would then flow to the Des Plaines River and down through the Mississippi watershed.⁴³ As far as the Great Lakes were concerned, the problem was not pollution (that was the Mississippi's problem), but navigation, because the diversion could have resulted in a water level decrease of 7.45 inches.⁴⁴

In addition to the indirect effects of pollution, irrigation and hydroelectric power generation also received substantial attention from the United States and Canada. The irrigation problem had been developing in the West as the two countries disagreed over the use of water in the St. Mary's and Milk rivers which flowed in Montana and Alberta.⁴⁵ It was the diversion of water for the generation of electricity, however, that prompted the two countries into action. The Army Corps of Engineers investigated an American plan to divert water from the St. Mary's River at Sault Ste. Marie. Their report recommended that in order to protect navigation, an international commission should be set up to oversee such projects. The Army Corps' early involvement foreshadowed the important role that technical and scientific personnel continue to play in the regulation of the Lakes.⁴⁶ Finally, when hydroelectric power threatened the natural splendor of the Niagara Falls and the important navigation downstream from the Falls, public pressure became strong enough to force Congress to act.⁴⁷

Consequently, the United States enacted another Rivers and Harbors Act, in 1902. This Act requested that the President invite Canada to join in the formation of an international commission to be composed of three Americans and three Canadians. The Commission would investigate the "conditions and

41. Even the small and shallow Lake Erie had a "very great" ability to render sewage harmless. ALLAN J. McLAUGHLIN, *SEWAGE POLLUTION OF INTERSTATE AND INTERNATIONAL WATERS*, H.R. DOC. NO. 1501, 61st Cong., 3d Sess. 28 (1911).

42. While most sources suggest that the Great Lakes were not popularly recognized as an international pollution problem, there is some indication that there was speculation within the governments that such a problem did, in fact, exist. Such speculation is evidenced by the brief mention of pollution in the Boundary Waters Treaty, *see infra* part I.D., and also by an early task given to the International Joint Commission that concerned pollution in the Lakes. *See infra* text accompanying note 58.

43. H.R. DOC. NO. 788, *supra* note 35, at 6-8.

44. Dreisziger, *supra* note 4, at 10.

45. BLOOMFIELD & FITZGERALD, *supra* note 6, at 10; Dreisziger, *supra* note 4, at 10.

46. Dreisziger, *supra* note 4, at 11.

47. *Id.* at 12.

uses" of the boundary waters.⁴⁸ Subsequently, in 1905, the two nations formed the purely investigative International Waterways Commission. In its first major report, the Commission examined electrical production on the St. Mary's River and reached the conclusion that an agreement was needed to divide and govern the surplus boundary waters. The new Commission then discussed the Chicago Canal and Niagara River issues soon after. It was clear, however, that the two nations needed a treaty that would create some written guidelines governing the boundary waters.

The actual drafting of the BWT was a long and hard fought process, the discussion of which is beyond the scope of this Note. A few particularly large obstacles to the negotiations, however, are worth mentioning. First, Canada wanted fixed principles, whereas the United States shied away from forfeiting its sovereignty to international law. Second, Canada desired broader and stronger powers for the Commission, but again the United States wanted to retain control of its own destiny. Third, Canada sought to include in the treaty all waters that flowed over the boundary, but the United States insisted on only those waters that actually straddled the boundary. Finally, Canada wanted tough diversion restrictions, and the United States wanted to protect its right to divert water.⁴⁹ In essence, the economically and politically weaker Canada was on the initiative, seeking protection from its "giant neighbor which cannot avoid being overwhelming no matter how good its intentions."⁵⁰ The Boundary Waters Treaty was signed in Washington D.C., on January 11, 1909.

D The Boundary Waters Treaty of 1909 and the International Joint Commission

The purpose of the Treaty as stated in the Preamble is:

To prevent disputes regarding the use of boundary waters and to settle all questions which are now pending between the United States and the Dominion of Canada involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other, along their common frontier, and to make provision for the adjustment and settlement of all such questions as may hereafter arise.⁵¹

Following the Preamble, the Treaty defines the boundary waters in accordance with the United States' idea that only waters straddling the border are included; rivers flowing across the border are specifically excluded. This was a successful attempt by the United States to limit the scope of the Treaty. Article I secures the right of navigation upon the boundary waters for the two countries. In a possible concession to Canada, Lake Michigan is included as part of the navigable waters, while the Canadian portion of the St. Lawrence

48. Rivers and Harbors Act of 1902, ch. 1079, 32 Stat. 331, 373.

49. BLOOMFIELD & FITZGERALD, *supra* note 6, at 10, 13.

50. John W. Holmes, *Introduction: The IJC and Canada-United States Relations, in THE INTERNATIONAL JOINT COMMISSION SEVENTY YEARS ON*, *supra* note 4, at 6.

51. BWT, *supra* note 1, 36 Stat. at 2448.

is not—a deviation from earlier treaties.⁵² The nations then secure the right to exact tolls and fees on ships but only if such tolls and fees are not exacted in a discriminatory manner.⁵³

Article II embodies the Harmon Doctrine⁵⁴ and was regarded as a huge concession to the United States.⁵⁵ The clause insures absolute sovereignty of the upstream state when it uses or diverts water that flows into the boundary waters or across the boundary (as compared to the boundary waters themselves). Because the United States is the upstream state in all but a few places along the border, the clause is more advantageous to the United States than it is to Canada.⁵⁶ Article II reserves the right, however, for either of the countries to object to a diversion of waters if it would affect navigation. This was possibly the only positive feature of Article II for the Canadians since, at a minimum, it assured the Canadians the right to protest the Chicago Canal and other diversions of Lake Michigan water. The clause then provides a compensation right for the injured, limited to whatever legal remedies are available in the country where the water was diverted.⁵⁷

Article III states that no new diversions or uses that will “materially affect the level or flow of the boundary waters” can be conducted unless the International Joint Commission grants permission. Article III does not apply to the “ordinary use of such waters for domestic and sanitary purposes.”⁵⁸

Article IV is similar to Article III in that it again requires permission from the International Joint Commission. Dams and other constructions, if they would raise the level of the water on the other side, now require IJC consent. Article IV also contains the only direct reference to pollution in the entire treaty: “It is further agreed that the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other.”⁵⁹ The term “pollution,” however, is not defined anywhere in the BWT.

Articles V and VI deal directly with the Niagara, St. Mary’s, and Milk Rivers’ diversions. Articles V and VI are succinct in that they set exact amounts of water that may be diverted by both sides and provide for IJC surveillance of the amounts that are diverted.⁶⁰

The International Joint Commission is formally created in Article VII. The Commission is composed of three Americans, appointed by the President, and three Canadians, appointed by the British Sovereign on the recommendation of the Governor of the Dominion of Canada.⁶¹ The guidelines do not

52. See *supra* note 13 and accompanying text.

53. *E.g.*, BWT, *supra* note 1, 36 Stat. at 2449.

54. See *supra* notes 16-17 and accompanying text.

55. BLOOMFIELD & FITZGERALD, *supra* note 6, at 13.

56. Graham, *supra* note 11, at 3.

57. BWT, *supra* note 1, 36 Stat. at 2449.

58. *Id.* at 2449-50.

59. *Id.* at 2450.

60. *Id.* at 2450-51.

61. *Id.* at 2451.

establish any type of required experience, legal or otherwise, for the commissioners.

While Articles III and IV comprise the administrative responsibilities of the IJC, Article VIII lays down the administrative guidelines that the IJC is to follow. First, the countries are to have equal and similar rights regarding the waters. Second, an order of precedence is laid out governing uses: uses for "domestic and sanitary purposes" are first, navigation uses are second, and irrigation and power uses come last. Finally, Article VIII states that the Commission need only have a simple majority to make a decision and, in case of a tie along national lines, each side is to send separate reports to their own governments, who will then deal with the problem.⁶²

Article IX provides that either country can submit "any other questions or matters of difference" to the IJC for examination and report. These submissions are called "references" and are investigative in nature. The IJC can make conclusions and recommendations, but the reports have no binding power. Again, if the IJC is divided, separate reports are sent to the two countries.⁶³

The IJC's strongest power stems from Article X of the Treaty. If the two countries *both* give their consent,⁶⁴ issues can be handed to the IJC for binding arbitral determination. This time, if a tie results, reports are sent to the two governments and then an umpire is chosen.⁶⁵ The umpire has the power to render a final decision. Interestingly, the Treaty does not specify which system of law decides a legal right at issue.⁶⁶

Of importance in the last Articles are the Commission's powers. Article XII grants the Commissioner the power to administer oaths to witnesses, take evidence on oath, provide to all parties the opportunity to be heard, and adopt any other rules of procedure that are in accordance with "justice and equity."⁶⁷

II. WHAT THE IJC HAS DONE AND WHAT HAS BEEN DONE TO IT

The BWT gave the IJC a wide variety of powers: arbitral, administrative, and investigative. Notably, the ability to initiate and enforce activities was not among the IJC's powers. How these powers (or lack of powers) have been applied by the IJC to pollution problems is the first subject of this Part. This Part also examines the Great Lakes Water Quality Agreements, which were

62. *Id.* at 2452.

63. *Id.*

64. In the United States, it is the Senate's consent (2/3 vote) that is needed. U.S. CONST. art. II, § 2, cl. 2.

65. The umpire is chosen in accordance with the Hague Convention of 1907, Oct. 18, 1907, 36 Stat. 2199.

66. Note that for Article II conflicts, the countries established that the law of the defendant country would control. *See* BWT, *supra* note 1, 36 Stat. 2448, and text accompanying note 49. Not expressly stating a choice of law leads to perplexing problems between the two countries even today. PAUL R. MULDOON, CROSS-BORDER LITIGATION 60-62 (1986). Here, the exclusion calls into question just how seriously one or both of the countries took Article II.

67. BWT, *supra* note 1, 36 Stat. at 2453-54.

an attempt to broaden the powers of the IJC in the Great Lakes. Finally, this Part evaluates the performance of the IJC.

A. The IJC and Pollution

The first pollution "reference" that the two governments gave the IJC concerned, not surprisingly, sewage disposal into the Great Lakes and the resulting typhoid epidemic.⁶⁸ The two governments submitted the reference in 1912, and the IJC finished its comprehensive report in 1918. The Commission concluded that while river mouths and shorelines on the Great Lakes were sometimes seriously polluted, the waters farther from shore were pure. Pollution in the Detroit and Niagara Rivers was so serious, however, that the IJC proposed that it be given jurisdiction to "take proper steps to prevent dangerous pollution crossing the boundary line rather than to wait until it is manifest that such pollution has actually physically crossed."⁶⁹ This proposal would have given the IJC power to investigate any alleged violations of Article IV and make conclusive findings of fact. The United States did not want the IJC's findings to be conclusive, however, and the proposal was shelved in 1929.⁷⁰

In the following years, the IJC's involvement with pollution was infrequent. The IJC dealt mainly with lake level issues and power generation issues until the United States gave it a reference, in 1928, that concerned transboundary air pollution.⁷¹ The problem was a smelter located at Trail, British Columbia, whose emissions were damaging crops and other property in Washington.⁷² The IJC concluded in its report that \$350,000 worth of damage had been done in Washington. This award was paid but the pollution continued. The two governments then created a special tribunal to settle the matter. The *Trail Smelter* arbitration became the foundation for today's transboundary pollution law.⁷³ The arbitrators held that, under international law, no country has the right to use its territory in such a way as to cause serious damage by fumes in neighboring states.⁷⁴

68. BLOOMFIELD & FITZGERALD, *supra* note 6, at 76; WILLIAM H. SMITH, INTERNATIONAL JOINT COMMISSION DOCKET NO. IV., POLLUTION OF BOUNDARY WATERS, *reprinted in* PAPERS RELATING TO THE WORK OF THE INTERNATIONAL JOINT COMMISSION 101, 118-21 (1929).

69. Richard B. Bilder, *Controlling Great Lakes Pollution: A Study in United States-Canadian Environmental Cooperation*, 70 MICH. L. REV. 469, 490 (1972) (quoting a letter accompanying the Draft Convention of Oct. 6, 1920).

70. *Id.* at 490-91.

71. The IJC's jurisdiction for air pollution matters comes from the preamble of the BWT, "to settle all questions along their common frontier," and from Article IX references, "any other questions along the common frontier." BWT, *supra* note 1, 36 Stat. at 2448.

72. Alfred P. Rubin, *Pollution by Analogy: The Trail Smelter Arbitration*, 50 OR. L. REV. 259, 260 (1971).

73. *Id.* at 259-60; see also Nisuke Ando, *The Law of Pollution Prevention in International Rivers and Lakes*, in THE LEGAL REGIME OF INTERNATIONAL RIVERS AND LAKES, *supra* note 11, at 333-35.

74. Ando, *supra* note 73, at 335 (quoting the *Trail Smelter* case); Convention of Ottawa Arb., Apr. 16, 1938, 3 R.I.A.A. 1905, 1965-66.

After World War II, American industry and population surged and generated more pollution. Two important trends emerged concerning the IJC. First, the United States and Canada increasingly sought the IJC's help on pollution matters—both water pollution and transboundary air pollution.⁷⁵ Second, the IJC's duties shifted from the approval of applications under Article VIII to the investigation of references under Article IX.⁷⁶ The second trend springs in part from the first, in that pollution problems inevitably concern scientific questions and therefore necessitate the investigative references. As a result, the IJC became progressively more scientifically oriented. Article VIII applications decreased because developers and industry realized that many of the opportunities that the Great Lakes had once offered were finite and had already been taken advantage of. Added to this was the migration of industry in America to the south and the west. Therefore, in a broad sense, the Lakes were shifting from being a natural resource ready for exploitation to being a resource that perhaps had passed its prime and was now ready for cleanup.

The governments manifested their concern about the worsening pollution in a few specific references. The first, in 1946, concerned Lake St. Clair, the St. Clair River, the Detroit River, and the St. Mary's River (the *Connecting Waters Reference*). The IJC's report was significant because of its technical breadth, demonstrating the IJC's increasing reliance upon scientific data to back its proposals, as well as its innovative suggestions. The IJC's suggestions were innovative in that they set technical water quality standards, a practice which the Commission and the two governments have since followed.⁷⁷ Another trend-setting innovation was the creation of surveillance committees to report indefinitely on a particular body of water.⁷⁸

Another significant reference came in 1964. The *Lower Great Lakes Pollution Reference* concerned pollution in Lakes Erie and Ontario as well as in the St. Lawrence River. The study was a massive scientific and administrative feat. The IJC created two scientific boards to conduct research that would turn out to be the most comprehensive scientific water pollution research ever performed. The IJC coordinated input from the two investigative committees, the two national governments, several state governments, and the Province of Ontario into a final report that was issued in 1971. This comprehensive report concluded that the Lower Lakes were seriously polluted throughout and that there was no longer any doubt that pollution from each side was crossing the

75. Bilder, *supra* note 69, at 492.

76. From 1909 until 1944 the IJC handled 38 applications and only 11 references. From 1944 to 1979, the IJC handled 20 applications and 35 references. Also, the references after the War dealt with more important issues while the applications were of lesser importance. Dreisziger, *supra* note 4, at 29.

77. The United States codified water quality standards in the Federal Water Pollution Control Act § 303, 33 U.S.C. § 1313 (1988). Also, the two countries set water quality criteria in the Great Lakes Water Quality Agreement of 1972, Apr. 15, 1972, U.S.-Can., 23 U.S.T. 301 [hereinafter 1972 GLWQA], and in the Great Lakes Water Quality Agreement of 1978, Nov. 22, 1978, U.S.-Can., 30 U.S.T. 1383 [hereinafter 1978 GLWQA].

78. The commissions set up under this reference surveyed the rivers until the Great Lakes Water Quality Agreement was signed in 1972. William R. Willoughby, *Expectations and Experiences, 1909-1979*, in, THE INTERNATIONAL JOINT COMMISSION SEVENTY YEARS ON, *supra* note 4, at 29.

boundary to the detriment of the other.⁷⁹ Recommendations included emergency measures to be taken and, more importantly, an expansion of the IJC's powers so that the Lower Lakes could be saved.⁸⁰

B. The Great Lakes Water Quality Agreements

The IJC's findings and recommendations, coupled with growing public anxiety over the state of the Lakes, helped bring the United States and Canada together in talks that would eventually produce the Great Lakes Water Quality Agreement of 1972 ("1972 GLWQA").⁸¹ The 1972 GLWQA was superseded by the Great Lakes Water Quality Agreement of 1978 ("1978 GLWQA"),⁸² which greatly expanded the earlier agreement. Furthermore, while the 1972 GLWQA emphasized the control of phosphorous, the 1978 GLWQA focused more on the control of toxic chemicals because many new toxins were discovered in the Lakes in the intermittent years.⁸³

The purpose of the 1978 GLWQA is stated in Article I: "[T]o restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes Basin Ecosystem."⁸⁴ The two governments then state as general objectives that the waters should be *free* of various harmful substances including debris, heat, and toxins that could be unsightly or unhealthy or that could interfere with beneficial uses.⁸⁵ Article IV sets out how the specific objectives (contained in Annex 1 of the 1978 GLWQA) are to be met. The specific objectives are detailed in that they set concentration ceilings for many different pollutants.⁸⁶

Article VII sets forth the IJC's "responsibilities," which are, in actuality, one ongoing reference under Article IX of the BWT. The IJC is to collate and analyze any data the two governments submit to it, as well as collect and analyze any information that concerns the general and specific objectives. The IJC can also tender advice and provide assistance concerning the objectives or coordination of joint activities or matters "related to research in the Great Lakes Basin Ecosystem."⁸⁷ The Commission is required to write a report biennially on its progress towards these objectives.⁸⁸ The IJC gains some independence in that it is given the power to submit special reports to the

79. Bilder, *supra* note 69, at 495-96, 499-500.

80. *Id.* at 500-01.

81. 1972 GLWQA, *supra* note 77, 23 U.S.T. 301; Bilder, *supra* note 69, at 501-02.

82. 1978 GLWQA, *supra* note 77, 30 U.S.T. 1383.

83. See George Francis, *Binational Cooperation for Great Lakes Water Quality: A Framework for the Groundwater Connection*, 65 CHI-KENT L. REV. 359, 365-66 (1989).

84. 1978 GLWQA, *supra* note 77, art. II, 30 U.S.T. at 1387.

85. *Id.* art. III, 30 U.S.T. at 1387.

86. *Id.* art. IV, 30 U.S.T. at 1388. For example, one of the first pollutants listed in Annex 1 is DDT, which is not to reach levels higher than .003 micrograms-per-liter of water or 1.0 micrograms-per-gram of fish. *Id.* annex 1, 30 U.S.T. at 1415.

87. *Id.* art. VII, 30 U.S.T. at 1393.

88. After the report is received by the parties, Article X requires them to consult with one another to discuss the report and any modifications or alterations to be made to the agreement. *Id.* arts. VII, IX, 30 U.S.T. at 1394-96.

governments or to the public from time to time and may also publish any reports. Further, the IJC can independently verify any data submitted to it by the parties.⁸⁹ Lastly, two boards are created to assist the IJC—the Great Lakes Water Quality Board and the Great Lakes Science Advisory Board.⁹⁰ The Water Quality Board contains representatives from the two federal governments as well as from state and provincial governments. Various environmental and government agencies contribute most of the members to the Science Advisory Board, which provides scientific advice to the IJC.

The 1978 GLWQA was amended in 1987 by protocol.⁹¹ The amendment adopted an IJC concept named Remedial Action Plans (“RAP’s”), which are local programs implemented by the IJC to deal with “Areas of Concern,” namely toxic hotspots that require immediate attention. The RAP’s are evaluated by the IJC based on several criteria, including consistency with the 1978 GLWQA, sufficiency in restoring beneficial uses,⁹² and reasonableness of the Plan’s schedule.⁹³ RAP’s adopt the ecosystem approach by requiring that all sources of environmental impacts, including all point source and non-point source air, water, and ground water pollution, be considered.⁹⁴ The 1987 Protocol also broadened the IJC’s powers in some significant respects. For instance, the IJC received the added responsibility of monitoring the two governments’ progress toward reducing airborne as well as groundwater sources of toxic pollutants.⁹⁵

Other government activity related to the 1978 GLWQA followed soon after the 1987 Protocol. In 1989, the EPA initiated a study called the Great Lakes Initiative (“Initiative”).⁹⁶ The purpose of the Initiative is to bring uniformity to the various Great Lakes basin states’ water quality standards as well as to revise the Specific Objectives found in the 1978 GLWQA.⁹⁷ Further, Congress passed the Great Lakes Critical Programs Act (“CPA”)⁹⁸ in 1990 which amended § 118 of the Clean Water Act. The Critical Programs Act identifies key components of the 1978 GLWQA, imposes statutory deadlines

89. *Id.* art. VII, 30 U.S.T. at 1394. Before this, the IJC could only check data for error if asked to do so by one of the governments. BWT, *supra* note 1, art. IX, 36 Stat. at 2452.

90. 1978 GLWQA, *supra* note 77, art. VIII, 30 U.S.T. at 1394-95.

91. Protocol Amending the 1978 GLWQA, Nov. 18, 1987, T.I.A.S. No. 11551 [hereinafter 1987 Protocol].

92. Beneficial uses include swimming, fishing, drinking water, and the ability to sustain wildlife. *Legal Pollution of the Great Lakes: Hearing Before the Subcomm. on Oversight of Government Management of the Senate Comm. on Governmental Affairs*, 102d Cong., 1st Sess. 112 (1991) [hereinafter *Pollution Hearing*] (testimony of Paul D. Zugger, Mich. Dep’t of Nat. Resources).

93. John Hartig, *Protocol Established for Review of Remedial Action Plans for Areas of Concern*, FOCUS ON INT’L JOINT COMMISSION ACTIVITIES 7, Mar./Apr. 1987.

94. *Pollution Hearing*, *supra* note 92, at 112.

95. 1987 Protocol, *supra* note 91, art. XIX, T.I.A.S. No. 11551 at 19-21.

96. The result of the Initiative is the proposed Water Quality Guidance for the Great Lakes System, 58 Fed. Reg. 20,802, 20,823 (1993) (to be codified at 40 C.F.R. §§ 122-123, 131-132) [hereinafter PWQG] (proposed Apr. 16, 1993).

97. *Id.* at 20,820.

98. Great Lakes Critical Programs Act of 1990, Pub. L. No. 101-596, 104 Stat. 3000 (codified as amended at 33 U.S.C. § 1268 (Supp. III 1991)).

for the fulfillment of those components, and increases federal resources for the programs in the Great Lakes.⁹⁹

C. The IJC's Performance

Over the years, the IJC has been quite independent in its work. For example, the Commission is not bound to American or Canadian statutes; it simply takes them into consideration.¹⁰⁰ Also, the Commission has remained free from political pressures and has worked in the spirit of cooperation—the commissioners seldom divide along political lines and their reports, until recently, have never been ignored or intentionally disobeyed.¹⁰¹ Several factors have played a role in the IJC's success so far. No doubt an amiable relationship exists between the two countries and is fostered by the countries' cultural and political similarities. Also, the fact that the BWT is bilateral as opposed to multilateral has expedited matters because problems tend to be easier to settle when only two points of view are involved.¹⁰² Yet as Professor Bilder pointed out in 1972, the IJC's commendable record was probably due in part to the fact that "the Commission has been relatively obscure . . . Its functions have been largely limited to scientific and technical investigations . . . It has in general had little occasion or tendency to ruffle important feathers."¹⁰³ A Canadian reporter echoed this sentiment in 1990 when he wrote: "Anyone who can name all the members of the joint commission is either an employee, a relative or a groupie. Their obscurity is significant; it reflects their power."¹⁰⁴

Nevertheless, the IJC has served impartially and has been quite successful. The obscurity of the IJC is not its fault; it has simply had little chance to wield real power. The strongest power the IJC has is its arbitral power, embodied in Article X of the BWT. Under Article X, the IJC can make binding decisions. Unfortunately, however, only the two governments *together* can invoke Article X, and they never have.¹⁰⁵ Indeed, the IJC cannot, in reality, start or enforce anything of substance. Consequently, it is a commission for the governments; it is a tool of the governments. The IJC serves only to answer those questions that one or both governments want answered.¹⁰⁶

99. Note that while § 118 imposed the deadline of June 30, 1991, for the adoption of the Great Lakes Water Quality Guidances under the GLWQA, the EPA did not publish its proposed guidances until April 16, 1993. See PWQG, *supra* note 96.

100. Willoughby, *supra* note 78, in THE INTERNATIONAL JOINT COMMISSION SEVENTY YEARS ON, *supra* note 4, at 31.

101. See *id.* Out of approximately one hundred applications and references handled by the IJC before 1978, the Commission failed to reach a decision or divided along national lines only four times. *Id.* at 39. Professor Bilder also recognizes the IJC's "tradition of independence and impartiality." Bilder, *supra* note 69, at 519.

102. Graham, *supra* note 11, at 19.

103. Bilder, *supra* note 69, at 520.

104. David Israelson, *Dying Lakes Tangled in Red Tape*, TORONTO STAR, Oct. 17, 1990, at A23.

105. Graham, *supra* note 11, at 11.

106. See Bilder, *supra* note 69, at 515-17. Many questions that one country wants answered may still remain unanswered. Country A may not ask a question that it knows Country B does not want answered

This, of course, leaves all of the questions that neither country wants answered, unanswered, potentially to the detriment of the people living around the Lakes.

Nonetheless, the governments seem to like this arrangement. When they adopted the GLWQA's of 1972 and 1978, the parties had the opportunity to give the IJC more power, yet they elected not to do so. Perhaps this arrangement is best, for it seems that much of the IJC's power comes from its lack of power. Because most of the IJC's powers are limited, the countries, for the most part, do not hesitate to call upon the Commission's expertise. This can be compared to the fact that while a bengal tiger could best guard our homes from intruders, most of us instead choose a basset hound.

III. TODAY

This Part looks at today's pollution situation in the Great Lakes region and around the world. First, this Part examines the the pollution problems facing the complex governmental bureaucracy in the Great Lakes. Next, this Part looks at modern trends in environmental law, and lastly, this Part surveys the international environmental perspective.

A. The Great Lakes' Complex Hodgepodge

One is tempted to use the word "chaos" to describe the pollution situation around the Great Lakes today. Perhaps the most obvious source of chaos is the sheer size of the Lakes. Herman Melville wrote: "Those grand fresh-water seas of ours—Erie, and Ontario, and Huron, and Superior, and Michigan—possess an ocean-like expansiveness."¹⁰⁷ Indeed, the Lakes are colossal; holding eighteen percent of the world's surface fresh water—65 trillion gallons¹⁰⁸—between 9,674 miles of coastline.¹⁰⁹

Another source of chaos is the immense number and variety of pollutants found in the Great Lakes basin. In comparison to only twenty-three years ago, it is now known that there are "thousands, not tens, of potential pollutants."¹¹⁰ The U.S. Fish and Wildlife Service found that one lake trout taken from the Great Lakes can contain over 400 unnatural chemicals.¹¹¹ Fish consumption advisories are now common in all of the Great Lake states.¹¹²

because it may fear a retaliatory question by Country B that Country A does not want raised. *Id.* at 517.

107. HERMAN MELVILLE, *MOBY DICK* 280 (Bantam Books ed., 1986) (1851).

108. Therefore, there are over 12,000 gallons of water in the Great Lakes for each of the 5.4 billion people on earth. *See* U.S. BUREAU OF THE CENSUS, U.S. DEP'T OF COMMERCE, *STATISTICAL ABSTRACT OF THE U.S.* 820, tbl. 1358 (112th ed. 1992) [hereinafter *STATISTICAL ABSTRACT*] (using 1991 figures).

109. 1989 COUNCIL ON ENVTL. QUALITY ANN. REP. 325.

110. Frances H. Irwin, *An Integrated Framework for Preventing Pollution and Protecting the Environment*, 22 ENVTL. L. 1, 9 (1992).

111. *Great Lakes Water Quality Issues: Hearing Before the Subcomm. on Water Resources of the House Comm. on Public Works and Transportation*, 101st Cong., 2d Sess. 200 (1990) [hereinafter *Water Resources Hearing*] (statement of Mr. James C. Gritman, U.S. Fish and Wildlife Service).

112. *See id.* at 201.

As well, new scientific studies indicate that wildlife is exhibiting the effects of the toxic nature of the water. For instance, bald eagles have low reproduction rates around the Great Lakes, and other fish-eating birds have high rates of deformities in their young.¹¹³ Some preliminary studies also show that humans, as part of the food chain, are experiencing health side effects.¹¹⁴ Each potential pollutant offers many unanswered questions that only add to the confusion, such as where did the pollution come from, how long will it last, and is it dangerous to animal or human health. It is difficult for Canada and the United States to take strong measures against the pollution when these questions remain unanswered.

The question "where did the pollution come from?" is especially difficult to answer today. When the governments discovered that many of the pollutants in the Lakes came from the air¹¹⁵ and groundwater, they realized that controlling pollution would be more difficult than once was expected. Adding to the difficulty is the surprising number of oil and chemical spills that were discovered recently to have occurred in the Lakes—more than 5,000 in the 1980's.¹¹⁶

The toxic nature of today's pollution also contributes to the confusion. Some toxins do not appear in water analysis at all because they settle at the bottom of the Lakes where they are hard to measure, yet they can still be pulled into the food chain by bottom-feeding organisms.¹¹⁷ Furthermore, minute levels of PCB's can collect in fish over long periods of time, creating health problems even before the PCB's are detectable in the water.¹¹⁸ This problem, called "bioaccumulation," is especially prevalent in the Great Lakes. The Lakes' long and diverse food chain and long water-retention time combine to promote bioaccumulation rates that are greater than those found in smaller fresh waters.¹¹⁹ In addition, toxins can react with other substances in unpredictable ways to form new substances, frustrating the already difficult scientific task of documenting the pollutants found in the Lakes.¹²⁰ Lastly, causal connections between pollutants and adverse health effects create virtually insurmountable legal and scientific problems. Toxic effects on

113. *Id.*

114. *Id.* at 4 (testimony of Gordon K. Durnil of the IJC stating that "consumption of certain Great Lakes fish posed a threat to women of childbearing age who pass these toxic substances on to their offspring"). For a comprehensive discussion of the toxins and related health effects in the Great Lakes, see *Tainted Water, Tainted Fish? Stewardship of the Great Lakes: Hearing Before the Senate Comm. on Governmental Affairs*, 102d Cong., 2d Sess. (1992).

115. PCB's are an example of a pollutant that reaches the Great Lakes mainly through the air. Irwin, *supra* note 110.

116. *Great Lakes Spills Exceed 5,000*, CHI. TRIB., Apr. 20, 1990, § 1, at 19. Eighty percent of the spills were land-based spills and the remaining 20% were from vessels. Spills in tributaries to the Great Lakes were part of the final figure; about 1800 spills occurred directly within the Lakes. *Id.*

117. See U.S. EPA, FIVE YEAR PROGRAM STRATEGY FOR THE GREAT LAKES NATIONAL PROGRAM OFFICE 26 (1988).

118. Irwin, *supra* note 110, at 9.

119. U.S. EPA, *supra* note 117, at 124.

120. Bilder, *supra* note 69, at 515-16.

humans often remain latent for decades, at which time it is nearly impossible to link any particular source to that effect.¹²¹

The confusion created by the chaotic nature of today's pollution is only compounded by the chaotic nature of the bureaucracy set up to deal with it. Involved in Great Lakes pollution are the two countries, eight state governments, one provincial government, and numerous local governments and municipalities. Each of these governments has its own laws and regulations. The United States has, besides the Environmental Protection Agency, several agencies concerned with monitoring Great Lakes pollution, such as the Department of the Interior, the Council on Environmental Quality,¹²² and the Defense Department (the Army Corps of Engineers). Furthermore, these agencies are often subdivided into different groups. Canada, too, adds a similar number of agencies to the fray.¹²³ There also exist several international commissions, most notably the IJC, the Great Lakes Fishery Commission,¹²⁴ and the Great Lakes Study Group.¹²⁵ Throw in a Great Lakes Governors Board and hundreds of private environmental organizations, and the result is a "complex hodgepodge"¹²⁶ to say the least. This hodgepodge manifests itself in widely varying water quality regulations throughout the Lakes. For example, a paper pulp mill located in Wisconsin can legally discharge one thousand times more dioxin than it could if it were located in Michigan.¹²⁷

The limitations of science make it exceedingly hard to bring this complex hodgepodge together. Generally, both sides in a conflict can produce scientific data to support their conclusions. As Mark Van Putten states, the problem is not that there is too little research being done, but that "the arguments about how much science is enough and if it's good science and bad science can go on forever."¹²⁸ Past IJC Co-Chairperson Gordon K. Durnil was similarly struck by "the abundance of evidence that could exist without anyone coming to a conclusion."¹²⁹ The differences in science manifest themselves in four different ways in the Great Lakes basin. First, disagreements in science lead to the adoption of varying water criteria. For instance, one government's data

121. See *In Re "Agent Orange" Prod. Liab. Litig.*, 611 F. Supp. 1223 (E.D.N.Y. 1985).

122. Established as part of the National Environmental Policy Act ("NEPA") of 1969, 83 Stat. 852 (codified as amended at 42 U.S.C. § 4321 (1988)), the Council conducts investigations to analyze federal performance and trends in the environment, and it advises the President on many environmental issues. Bilder, *supra* note 69, at 532 & n.220.

123. Bilder, *supra* note 69, at 535.

124. The Great Lakes Fishery Commission was established in 1955 by the Convention on Great Lakes Fisheries, June 6-Oct. 6, 1955, U.S.-Can., art. II, para. 1, 6 U.S.T. 2836, 2838.

125. The Great Lakes Study Group is an informal organization composed of agencies from both the U.S. and Canada who do research in the Great Lakes basin. Bilder, *supra* note 69, at 535.

126. *Id.* at 478; see also Barry G. Rabe & Janet B. Zimmerman, *Cross-Media Environmental Integration in the Great Lakes Basin*, 22 ENVTL. L. 253, 258 (1991).

127. *Water Resources Hearing*, *supra* note 111, at 183.

128. *Water Pollution Prevention and Control Act of 1991: Hearings on S. 1081 Before the Subcomm. on Environmental Protection of the Senate Comm. on Environmental and Public Works*, 102d Cong., 1st Sess. 447 (1991) [hereinafter *Environmental Protection Hearings*]. Mark Van Putten is the current director of the Great Lakes Natural Resource Center.

129. David Moberg, *Sunset for Chlorine*, E MAG., Aug. 1993, at 26, 30.

may suggest that the permissible level for benzene should be set at 560 parts-per-billion while another government's data will suggest a limitation of 118 parts-per-billion.¹³⁰ Second, discord in science leads to the adoption of different methods of calculation. For example, the paper pulp mill located in Wisconsin can discharge one thousand times more dioxin than it could in Michigan, not because of varying standards, but because dilution is factored into the equation differently in the two states.¹³¹ Third, differences in science mean that different modes of detection are used around the Lakes. Most entities along the Lakes, for instance, detect PCB's by testing the water or bottom sediment, yet the Great Lakes Water Quality Initiative argues that testing local fish tissue is the better method.¹³² Fourth, scientific differences lead to stagnation in the policy-making arena. Often, scientific differences do not get settled because it is difficult to prove, beyond a doubt, that one party is correct and the other party is incorrect. Consequently, as long as that uncertainty exists, there is an excuse not to adopt the other party's science as one's own.

B. Modern Trends

One strong trend in environmental law is the rise of a holistic view of the environment known as the ecosystem approach. This approach recognizes the interrelatedness of the environment and focuses on two aspects. First, that the environment cannot be broken down into parts (for example, timber management cannot be separated from water management because each affects the other). Second, in the same way that the environment cannot be broken into parts, pollution also cannot be divided (for example, water pollution must be managed in conjunction with air pollution, again, because each affects the other).

There are many good reasons for the integrated approach. Scientists recognize that if governments only control one type of pollution, the pollution is often just transferred to other media.¹³³ Perhaps the best known example of this phenomenon is trash incineration. If a government only regulates solid waste landfills, municipalities may choose to meet the solid waste requirements by incinerating much of the waste. The problem, then, is that the pollution, instead of being controlled, has only changed form from solid waste to smoke emissions and toxic sludge. Another problem recognized by the

130. These levels are the actual "chronic aquatic criteria" in force today in Ohio and Michigan respectively. GREAT LAKES NATURAL RESOURCE CENTER, NATIONAL WILDLIFE FEDERATION, THE GREAT LAKES WATER QUALITY INITIATIVE: ESTIMATED REDUCTIONS IN POINT SOURCE LOADINGS OF GREAT LAKES TOXIC POLLUTION 16 (1992) [hereinafter NWF REPORT] (copy on file with the *Indiana Law Journal*).

131. *Water Resources Hearing*, *supra* note 111, at 183.

132. See NWF REPORT, *supra* note 130, at 13. The Great Lakes Water Quality Initiative is a joint program between the U.S. EPA and several state and national agencies and governments. The aim of the initiative is to bring some conformity to Great Lakes water quality standards. NWF REPORT, *supra* note 130.

133. Irwin, *supra* note 110, at 12-14.

integrated approach is that those who identify the sources of pollution must consider all media in their analysis. This is necessary because of the complex ways that different pollutants interact with one another in different environments.¹³⁴ The United States and Canada have pledged themselves to the integrated approach—calling for “lake ecosystem objectives” and “ecosystem health indicators” in the 1987 Protocol.¹³⁵

The idea of pollution *prevention* (as opposed to control) has gained popularity recently, mainly because scientists have realized that control measures often just shift pollution across different media instead of reducing it.¹³⁶ Prevention focuses on stopping pollution before it occurs.¹³⁷ One benefit of prevention is that it is often cheaper to deal with pollution before it comes “out of the pipe” than to deal with it once it has mixed with the environment.¹³⁸ Indeed, the IJC has declared that Lake Superior should be made a zero-discharge zone for certain persistent toxins, demonstrating that the Commission is ready to give preventive measures a serious try.¹³⁹

C. The International Situation

While the pollution problem has worsened, the relationship between the two countries is as cooperative as ever, and certainly more cooperative than it was in 1909. The recent Canada-United States Free Trade Agreement (“Trade Agreement”)¹⁴⁰ demonstrates that the two countries are willing to remove many barriers. Accordingly, the Trade Agreement contains provisions for dispute resolution that are binding on a broad range of issues. Under the Agreement, disputes are referred to the Canada-U.S. Trade Commission. If the Commission is unable to settle a particular difference, then the problem is handed to an arbitral panel for resolution.¹⁴¹ Even more interesting, the Agreement creates an international panel to review final domestic agency orders concerning anti-dumping and countervailing duty cases. The North American Free Trade Agreement (“NAFTA”)¹⁴² is likely to go even further with its dispute-settlement mechanisms.¹⁴³ Also, the United States and

134. *Id.* at 14-15.

135. See Francis, *supra* note 83, at 362.

136. REGION FIVE, U.S. EPA, POLLUTION PREVENTION: MEETING THE ENVIRONMENTAL CHALLENGES OF THE 1990s, at 1 (1991); Rabe & Zimmerman, *supra* note 126, at 268.

137. See Francis, *supra* note 83, at 372.

138. *Environmental Protection Hearings*, *supra* note 128, at 49 (testimony of William K. Reilly, Administrator of the EPA).

139. *Water Resources Hearing*, *supra* note 111, at 128 (testimony of Gordon K. Durnil, U.S. Chairman of the IJC).

140. Free Trade Agreement, Jan. 2, 1988, U.S.-Can., 27 I.L.M. 281.

141. *Id.* at 383-86; see also Edith B. Weiss, *New Directions for the Great Lakes Water Quality Agreement: A Commentary*, 65 CHI.-KENT L. REV. 375, 383 (1989).

142. North American Free Trade Agreement, Dec. 17, 1992, 32 I.L.M. 289 and 32 I.L.M. 605 [hereinafter NAFTA]. NAFTA has been signed by representatives of the three contracting parties, but has not yet been ratified by their respective legislative bodies.

143. The Preamble to NAFTA states that one objective is to “[build] on [the countries’] respective rights and obligations under [existing] bilateral instruments of cooperation.” *Id.* at 297. NAFTA also uses an international panel system to decide issues concerning anti-dumping and countervailing duty

Canada were both recently parties to the 1987 Montreal Protocol,¹⁴⁴ and an Air Quality Agreement in 1991,¹⁴⁵ again indicating their cooperative spirit and the potential for settlement of problems existing between the countries.

Yet, while a cooperative spirit exists, there may be a disparity between the two countries when the respective governments set priorities for their nations. While twenty-five percent of all Canadians live within the Great Lakes basin,¹⁴⁶ the Great Lakes remain just another pollution problem for the U.S. Government to deal with. The disparity between the countries should not be overstated, however, because the Great Lakes are of increasing importance to the Great Lakes states as core industries move out and tourism and recreation industries take on added importance. As well, while the percentage of people in the United States that live around the Great Lakes is not as great as that of Canada, it is still a large number of people, totalling almost 30 million.¹⁴⁷ In addition, the Great Lakes states remain important economic and political powers in the United States.

Another recent development is the recognition that pollution is an international problem. There are more than one thousand treaties dealing with environmental concerns in the world today, and most of them were signed within the last twenty years.¹⁴⁸ The United Nations Conference on Environment and Development in Rio de Janeiro ("Rio Conference") during June, 1992, reflected the growing desire for international cooperation in environmental affairs.¹⁴⁹ The political backlash that President Bush encountered following the United States' lackadaisical political showing at the Rio Conference reflects the strong public support for international political measures against pollution.¹⁵⁰

In addition to the growing awareness of the role international politics must play in the environmental field, customary international law concerning

issues. *Id.* at 683-85, 687. In addition, the Preamble states that the parties resolve to "[strengthen] the development and enforcement of environmental laws and regulations," so we may expect the parties to use dispute mechanisms, outlined in chapter 20 of NAFTA, for environmental problems as well. *Id.* at 693.

144. Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, 26 I.L.M. 1550 [hereinafter 1987 Montreal Protocol], amended by Adjustment and Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer, June 29, 1990, 30 I.L.M. 537. The Protocol was established to curtail the use of CFC's which deplete the earth's ozone layer, potentially leading to significant worldwide environmental consequences. The Protocol had over 50 signatories, and contains a provision for the amicable resolution of disputes. See Jeff Trask, Note, *Montreal Protocol Noncompliance Procedure: The Best Approach to Resolving International Environmental Disputes?*, 80 GEO. L.J. 1973, 1973-79 (1992).

145. Air Quality Agreement, Mar. 13, 1991, U.S.-Can., 30 I.L.M. 676.

146. See SYSTEM OF NATIONAL ACCOUNTS, STATISTICS CAN., HUMAN ACTIVITY AND THE ENVIRONMENT 18-19 (1991).

147. STATISTICAL ABSTRACT, *supra* note 108, at tbl. 32.

148. Mary E. O'Connell, *Enforcing the New International Law of the Environment*, 35 JAHRBUCH FÜR INTERNATIONALES RECHT 293, 295-96 (1992).

149. The IJC participated in the Rio Conference. For a publication of the speech given by IJC Chairman Durnil at a session of the Conference, see *IJC Participates at Rio Summit*, FOCUS ON INT'L JOINT COMMISSION ACTIVITIES 9 July/Aug. 1992.

150. See Michael Wines, *Bush Leaves Rio with Shots at Critics*, U.S. and Foreign, N.Y. TIMES, June 14, 1992, § 1, at 10.

pollution has also developed and become more established recently. When the BWT was first written, the Harmon doctrine, which placed little restriction, if any, upon a country's use of its own natural resources, was in place.¹⁵¹ Generally, if any tougher standards were agreed upon by countries, they were based on mutual respect and friendly relations, not on law. The law slowly developed, however, beginning most notably with the *Trail Smelter* arbitration,¹⁵² and then more recently with the Stockholm Declaration of 1972. Principle 21 of the Declaration requires states to have "the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction."¹⁵³ The standard generally applied to this duty is that of "due diligence,"¹⁵⁴ and damage is usually required before liability can attach.¹⁵⁵ There is a growing movement within international law, however, to create a duty for nations to take precautions to prevent environmental harm before it happens.¹⁵⁶

IV ANALYSIS OF COMPLAINTS ABOUT, AND PROPOSALS FOR, THE IJC

There have been many criticisms made about the IJC. While almost everyone agrees that the IJC deserves respect for what it has accomplished, there is substantial regret that it has not accomplished more.¹⁵⁷ One of the most common criticisms, often made by the IJC itself, is that it has no power of initiation.¹⁵⁸ Another common criticism is that the IJC has no enforcement mechanism to force the countries into action; even today the Commission plays mainly an advisory role. Because the IJC exists solely at the discretion of the governments, there is also concern that the decisions it does make are watered down so that the governments only have to hear what they want to hear.¹⁵⁹

Probably the greatest danger to the IJC's effectiveness around the Great Lakes, and one that has arisen only lately, is the existence of evidence that the Commission is being ignored. A report by the United States General Accounting Office ("GAO") in 1982 found that of the sixteen reports on Great Lakes water quality that the IJC submitted to the United States Government, the Government had only replied to three.¹⁶⁰ More recently, the GAO again

151. See *supra* notes 16-17 and accompanying text.

152. See *supra* notes 71-74 and accompanying text.

153. M.N. SHAW, *INTERNATIONAL LAW* 534 (2d ed. 1991).

154. *Id.* at 536.

155. *Id.* at 543.

156. O'Connell, *supra* note 148.

157. See John E. Carroll, *Patterns Old and New, in THE INTERNATIONAL JOINT COMMISSION SEVENTY YEARS ON*, *supra* note 4, at 43.

158. Willoughby, *supra* note 78, at 35.

159. See Carroll, *supra* note 157, at 48.

160. U.S. GENERAL ACCOUNTING OFFICE, *REPORT TO THE SECRETARY OF STATE: INTERNATIONAL JOINT COMMISSION WATER QUALITY ACTIVITIES NEED GREATER U.S. GOVERNMENT SUPPORT AND INVOLVEMENT* 7 (1982). Note that the GLWQA does not require formal reply by the governments but

found in 1989 that the U.S. Government was not responding consistently to the IJC.¹⁶¹ The State Department has since promised to reply to IJC proposals,¹⁶² but the fact that the IJC could be kept in the dark for so long is disturbing. And, more importantly, the GAO found that the U.S. Government has not implemented "about one of every three major recommendations" issued by the IJC under the GLWQA.¹⁶³ Lack of government support also has several serious side effects because it means that there is little accountability between the two governments since their views often remain hidden, little incentive for federal and state agencies to follow or contribute to IJC recommendations, and little chance that the IJC can make sound policy decisions.¹⁶⁴ The lack of government support certainly adds to the slow pace of progress under the GLWQA.¹⁶⁵

The academic world, as well as various government agencies, has suggested many possible solutions to the problems that hinder the IJC. Professor Weiss believes that, at a minimum, procedures should be incorporated into the GLWQA, giving the IJC the power to mediate between the two countries with the goal of amicable resolution. The IJC has performed mediation functions before, outside the Great Lakes region, with positive results.¹⁶⁶ Professor Weiss also proposes a "Commission of Inquiry"¹⁶⁷ This Commission would provide a dispute-resolution mechanism stronger than mediation. The Commission would be an independent body composed of various experts that would conduct impartial inquiries, issue reports of its findings, and make recommendations.¹⁶⁸ In fact, a commission of inquiry was recently adopted by the United States in the Convention for the Prohibition on Military or Any Other Hostile Use of Environmental Modification Techniques of 1980.¹⁶⁹ The problem with these proposals, however, is that the governments can still ignore them if they so desire. A negotiation power would be ineffective unless the IJC was able to bring the two nations to the negotiation table in the first place. And, investigations by a board of inquiry would be fruitless if a government could choose to rely on its own investigations instead of the board's whenever the two conflict.

The most comprehensive proposals to date are those for a "supranational" board to govern the Great Lakes. Supranational proposals stem from the feeling that government is too fractionalized and therefore too slow to act

in many of the above cases, the IJC specifically requested a reply. *Id.*

161. *Oversight of U.S. Progress Under the Great Lakes Water Quality Agreement: Hearing Before the Subcomm. on Oversight of Government Management of the Senate Comm. on Governmental Affairs*, 101st Cong., 2d Sess. 117 (1990) [hereinafter *Oversight Hearing*] (report submitted into testimony by the GAO).

162. *Id.* at 5.

163. *Id.* at 113.

164. U.S. GENERAL ACCOUNTING OFFICE, *supra* note 160, at 7-8.

165. *See Pollution Hearing, supra* note 92, at 1 (opening statement of Sen. Levin).

166. Weiss, *supra* note 141, at 380. The IJC successfully mediated a dispute between Seattle and British Columbia concerning a proposed dam on the Upper Skagit River. *Id.*

167. *Id.* at 381.

168. *Id.*

169. *Id.*

regarding the Great Lakes. A supranational board would be the one and only manager and overseer of the entire Great Lakes basin and would have at its disposal many traditional governmental powers. For instance, the board would exercise direct power by setting standards, regulating activity, and enforcing those standards and regulations on its *own authority*, irrespective of any government action.¹⁷⁰ The board would require an extensive staff and extensive funding, perhaps bolstered by "special taxes or effluent charges on polluting enterprises."¹⁷¹ The supranational board stems in part from the European Community,¹⁷² where a supranational European Commission exists that can make legally binding decisions that are automatically incorporated into the domestic legal systems.¹⁷³ The problem with this proposal is that it goes too far. Making the IJC a supranational board would certainly fill the Commission's power void, but in light of the two governments' unwillingness to relinquish any sovereignty in the Great Lakes Water Quality Agreements, the proposal is simply too far-reaching, and it has no realistic chance of being implemented.

Slightly more down to earth is a proposal that allows the IJC to initiate investigations but leaves enforcement up to the Attorney General (after being tipped off by the Commission).¹⁷⁴ Another proposal that would use the court systems was offered by the IJC in 1918 and was resurrected in recent years. Not only would the Commission have the power to initiate investigations under this proposal, but IJC findings of fact would be given conclusive status in trial proceedings.¹⁷⁵ As such, the courts would serve as the ultimate enforcement mechanism, not governmental agencies. Critics of this proposal argue that utilizing the courts to this extent is not practicable; the court system is too busy to add to its dockets the high number of complex conflicts concerning the Great Lakes. Furthermore, taking enforcement out of agency hands is again too potent a proposal to be implemented by the governments.

There are a host of other proposals for change—many are simply procedural. They include more and different personnel,¹⁷⁶ greater continuity of leadership,¹⁷⁷ full-time commissioners¹⁷⁸ (commissioners today are only part-time), broader jurisdiction and narrower jurisdiction,¹⁷⁹ more funding, separate and direct funding, equal funding by the nations,¹⁸⁰ more

170. Don Munton, *Paradoxes and Prospects*, in THE INTERNATIONAL JOINT COMMISSION SEVENTY YEARS ON, *supra* note 4, at 61, 64-67.

171. *Id.* at 66.

172. *Id.* at 67.

173. SHAW, *supra* note 153, at 766.

174. Munton, *supra* note 170, at 68.

175. *Id.* at 69; *see supra* notes 63-66 and accompanying text.

176. The U.S. Accounting Office suggests that a broader base of people is needed on the Great Lakes Advisory Board. U.S. GENERAL ACCOUNTING OFFICE, *supra* note 160, at 15.

177. *Id.* at 10.

178. *See* Carroll, *supra* note 157, at 54.

179. *See id.* at 56 (arguing for less attention upon Great Lakes issues and expansion into air pollution issues).

180. *Id.* at 54. The IJC's funding is currently a line item in the State Department's budget and Carroll suggests that direct funding would encourage independence. According to Carroll, the Canadians have

politicalization and less politicalization,¹⁸¹ and more expansion into groundwater¹⁸² and air pollution concerns.¹⁸³

This Note has given a sketch of the long and full history of the Great Lakes and the Boundary Waters Treaty of 1909, with an emphasis on pollution matters. While certainly not complete, the previous history is enough material upon which to develop some recommendations for change. As Margaret Fuller wrote in *Summer on the Lakes, in 1843*, "The weather grew gradually clearer, but not bright; yet we could see the shore and appreciate the extent of these noble waters."¹⁸⁴

V RECOMMENDATIONS

Two changes are necessary to make the Boundary Waters Treaty of 1909 effective. The first is to rewrite the Treaty in a way that fundamentally changes its nature as a tool of the governments to being an "environmental pledge" to the people. This first proposal gives no new specific power to the IJC, but for the reasons set out below, will substantially increase the IJC's influence. The second proposal is to establish a "science judgment board" to settle scientific discrepancies and encourage scientific research throughout the basin.

Benjamin Franklin, mocking the English for their ignorance about the United States, once wrote a London newspaper, saying: "The grand leap of the whale up the Fall of Niagara is esteemed, by all those who have seen it, as one of the finest spectacles in nature."¹⁸⁵ The following proposals are in the spirit of Franklin's quote, in that they urge the development of more and better knowledge and encourage more involvement from both the people and the government in the creation and use of that knowledge.

A. Rewrite the BWT into a Treaty for the People and Not for the Governments

The language of the BWT must be changed because as it now stands, the Treaty has no legitimacy of its own when it is applied to Great Lakes pollution. The present Treaty makes clear that the Treaty itself and the IJC exist solely for the pleasure of the two governments and not for the people. This is not surprising; treaty law traditionally has been the law between states and not between peoples. Furthermore, this Treaty was written during the *Lochner* era,¹⁸⁶ a time when the government was particularly adverse to

a history of funding their half of the IJC more fully than the U.S., which Carroll would like to see equalized. *Id.*

181. *See id.* at 51.

182. *See generally* Francis, *supra* note 83, at 359-72.

183. *See* Carroll, *supra* note 157, at 56.

184. MARGARET FULLER, *SUMMER ON THE LAKES, IN 1843* 12 (Univ. of Ill. Press 1991 ed.).

185. JOHN BARTLETT, *FAMILIAR QUOTATIONS* 348 (15th ed. 1980).

186. *See supra* notes 21-25 and accompanying text.

recognizing and protecting human rights. Yet, because the Treaty focuses on the governments, the power behind the Treaty, and therefore the power behind the IJC, stems completely from the governments. After all, it was from the governments' authority and for the governments' benefit that the BWT and the IJC were created.

If, however, the language of the Treaty invoked the rights of the people, it would gain strength and legitimacy. The Treaty, then, should recognize the people's right to a clean, safe, and aesthetically pleasing environment and then *promise* that the governments will do all that is possible in the people's name to secure that right. This type of promise is an "environmental pledge" to the people. Language of this kind is called "soft law"—law for which there exists no *direct* enforcement power or binding power behind its language. Although parties cannot be bound to the treaty if they do not consent, at least the rights of the people of those countries that do consent will be invoked in writing for all to see. Such a writing will serve as a reminder that the governments are of and for the people, thus giving *indirect* power to the language, stemming from the moral and political accountability of those making the promise and those charged with upholding it. In this sense, the new treaty will be similar to a constitution because, like a constitution, it will involve human rights and will receive its authority from the very people it is created to protect.¹⁸⁷ Providing this type of legitimacy to the BWT means that the IJC will be working to uphold a solemn treaty and not working simply in response to the governments.

Because the new treaty will be for the people, and because it will be the IJC's duty to oversee the implementation of the treaty, the IJC's focus will shift from being an instrument of the governments to being a representative of the people. The new treaty, then, will make clear that the Commission is working in the people's interest and that the IJC will involve the people in Great Lakes pollution matters through education,¹⁸⁸ public reports, and the "science judgment board" proposed below. The IJC will have a strong incentive to educate citizens surrounding the Lakes because the more people that know about the promises in the treaty, the more political accountability there will be, and, consequently, the more power and influence the IJC will have.

187. An example of an influential international agreement that indirectly involves the people by promising to secure their rights is the Convention for the Protection of Human Rights and Fundamental Freedoms. The Convention starts with the promise that "[t]he High Contracting Parties shall secure to everyone within their jurisdiction the rights and freedoms defined in section 1 of this Convention." Examples of rights included are "life" and "security of person." Here, the governments have made a well-defined public promise to which the people can hold the governments politically responsible. The Convention was ratified on November 4, 1950. It is reprinted in *EUROPEAN CONVENTION ON HUMAN RIGHTS: COLLECTED TEXT* 4-5, 21 (1987).

188. Indeed, the IJC has already recommended that public education programs should be implemented, to "incorporate the Great Lakes ecosystem as a priority topic in existing school curricula throughout the basin and beyond, to ensure that our children understand the importance of a healthy Great Lakes ecosystem." *Oversight Hearing*, *supra* note 161, at 63.

Another reason to involve the people in the language and spirit of an environmental treaty is because environmental law seems more closely tied to basic human rights than most subjects traditionally covered by treaties. There is little reason to invoke the involvement of the people with grand language in a complicated securities exchange treaty. Yet, environmental treaties have unique purposes that make them especially fitting to be bound together with the power of the people. For instance, the environment is tied to the physical health and safety of the citizens, a concern that is very close to the lives of all people and is easily understood by everyone. Furthermore, in this country, people have recognized a feeling of psychological well-being that comes from living in a healthy and natural environment. As the great American transcendentalist Emerson wrote in *Nature*: "Nature says,—[man] is my creature, and [despite] all his impertinent griefs, he shall be glad with me."¹⁸⁹

A third, more practical reason for basing environmental treaties on the power of the people is the fact that some of the best work in the environmental field is already performed by private citizen groups which are strong resources that want to be more involved. For instance, the National Wildlife Federation, a large private environmental group, emphasized in a report to the Congressional Subcommittee on Water Resources that the various environmental groups "are frustrated at the lack of accountability for implementing the GLWQA. We believe that the Federal, State and Provincial Governments, plus the IJC, all share the responsibility for ensuring that the promises made to the people of the U.S. and Canada are honored."¹⁹⁰

In addition, private parties could play a useful role by policing the environment and pointing out polluters to the government; though they need some sort of procedure to do this.¹⁹¹ Many domestic statutes already involve the people and recognize citizens' rights to a safe environment. The National Environmental Policy Act ("NEPA"), for example, states "it is the continuing responsibility of the Federal Government to assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings."¹⁹² The Endangered Species Act provides citizens with the right to sue under the statute in order to force compliance.¹⁹³

The Treaty must be rewritten not only because the people are missing from its language, but also because the environment is conspicuously absent as well. The legitimacy of the BWT as an environmental treaty is further defeated by the fact that, as discussed in Part I, the Treaty was never intended to be an environmental treaty, but rather a navigation and irrigation treaty. An instrument has less legitimacy of its own when it is not being used for the purpose for which it was written. The actual text of the BWT, too, focuses completely upon navigation and irrigation. The one line tucked away at the

189. RALPH W. EMERSON, *NATURE* 11-12 (Jaroslav Pelikan ed. 1989).

190. *Water Resources Hearing*, *supra* note 111, at 185.

191. See my proposal for a Great Lakes Science Judgment Board *infra* note 197 and following text.

192. The National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331 (1988).

193. The Endangered Species Act, 16 U.S.C. §§ 1531, 1540(g) (1988).

end of Article IV that ambiguously mentions pollution is hardly an indication to the people that the governments are serious about the environment.¹⁹⁴ While lawyers have developed the skill of making relatively ambiguous and obscure clauses immensely important (e.g., the Commerce Clause),¹⁹⁵ lay people tend to ignore such clauses. Furthermore, the old age of the BWT cuts against its legitimacy as an environmental agreement. While many documents, especially those that deal with static and everlasting principles such as liberty, become more legitimate as they weather the trials of time, documents about fast changing and quickly growing concerns do not. Therefore, just as a document concerning health care written at the turn of the century would not gain legitimacy today because of its old age, so too is the case with environmental agreements.

The rights of the people must be bound into a bilateral treaty. The "environmental pledge" to the people cannot be made separately in each country's own environmental statutes. By involving the people as a whole in a bilateral treaty, the spirit of cooperation between the nations is strengthened. In the 1909 Treaty, according to the philosophy of the day, the United States tried to secure its *own* best interests.¹⁹⁶ When the United States signs the new treaty, it will be making a pledge not only to its own citizens, but to Canadian citizens as well. A promise of this sort, to all people around the Great Lakes, is the perfect foundation for cooperation between the two nations.

This spirit of cooperation will better serve the goal of pollution prevention than does existing dispute resolution mechanisms. Prevention is a positive action that seeks to stop problems before they occur. Dispute resolution mechanisms are negative actions that seek to solve problems after they arise. Stimulating action to avoid a problem before it occurs, then, is not well served by dispute mechanisms, but is served by cooperation. Therefore, fostering a spirit of cooperation will greatly enhance the countries' ability to take preventive measures. This result will bring the countries in line with new customary international law rules that require nations to take preventive measures before damage results.

The indirect environmental pledge method of providing the IJC with more power is a good alternative. Much of the IJC's power in the past came from its lack of power. Because the governments retained control over the IJC, the IJC remained popular with the governments. In light of the GLWQA's, where the governments declined to shift any of their power to the IJC, it is unlikely that the two nations would give the IJC many new specific powers in a new treaty. That is why the indirect environmental pledge method of giving the IJC more power is practicable. The method does not give the IJC any new *specific* powers, but instead strengthens the IJC's influence so that the powers

194. "It is further agreed that the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other." BWT, *supra* note 1, art. IV, 36 Stat. at 2450.

195. U.S. CONST. art. I, § 8, cl. 3.

196. See *supra* notes 10-17 and 52-57 and accompanying text.

the IJC already has, like making recommendations and conducting investigations, are taken more seriously and are therefore more effective. This is not to say that the governments would not agree to giving the IJC *any* new specific powers. The free trade agreements, as well as the long and respected existence of the IJC, suggest that another step can now be taken. The next proposal creates a specific power that, for the reasons stated below, the governments would likely consent to.

B. Create a Great Lakes "Science Judgment Board" to Settle Disputes Concerning Science and the Great Lakes

The new treaty should create a special independent "Science Judgment Board" to handle conflicts of science. The creation of science courts is not a new idea; they first arose in the early 1970's.¹⁹⁷ The basic idea of a science court is to separate scientific issues from policy issues so that the best scientific answer is reached, without the interference of policy considerations. Policy can then be made based on the science. For the new treaty, however, the term "science judgment board" is preferable to "science court" because the term "court" carries incorrect connotations of a legal court, whereas the Great Lakes "Science Judgment Board" would be more akin to an administrative tribunal.

1. Attributes of the Science Judgment Board

The Science Advisory Board is presently the primary scientific body affecting the Great Lakes. This group, composed mainly of state, provincial, and federal agency scientists, is guilty of coloring science with policy because of its close affiliations with the government. The Science Judgment Board, on the other hand, will be independent. It, like the IJC, will have six members: two scientists and one lawyer or judge from each country. In this way, scientific know-how will be blended with necessary legal skills such as impartiality, the ability to weigh evidence, and the ability to reach final decisions.¹⁹⁸ To help ensure its ability to separate science questions from corresponding policy questions, the judges on the Science Judgment Board, unlike the Science Advisory Board, will not have any affiliation with government agencies affecting the Great Lakes.

Besides achieving political impartiality in science issues, a Science Judgment Board has some additional attributes that lend themselves well to the Great Lakes situation. The Science Judgment Board will combine the legal method with the scientific method. This is helpful because it removes the legal requirement of a burden of proof. Science questions can be so hard to prove in accordance with legal standards that the person who is stuck with the

197. See generally James A. Martin, *The Proposed "Science Court"*, 75 MICH. L. REV. 1058 (1977) (discussing the desirability of establishing a science court).

198. Cf. *id.* at 1064-65.

burden often loses. The Science Judgment Board will remove the burden, even if a compromise must be settled upon to do so. The Board will do this by looking at each argument equally without requiring that any burdens be carried by either party. In many cases, one scientific argument will be clearly superior to the other, and it will be adopted outright. Yet, if neither argument proves its superiority over the other, the Board will not always declare one a loser and adopt the other, as a court of law would, but might combine both arguments to reach a final decision. Furthermore, a Science Judgment Board adds the legal concept of finality to decisions. By contrast, the scientific method never reaches the finality stage, since everything is subject to disapproval, and often withholds judgment until enough facts are available.¹⁹⁹

2. Benefits of the Science Judgment Board

The Science Judgment Board could bring substantial benefits to the Great Lakes. First, much of the fractionalization that occurs in the Great Lakes due to differences in scientific methods and conclusions could be resolved, thereby bolstering the integrated approach.²⁰⁰ Second, a better and more comprehensive base of scientific materials should result, an achievement that will aid the governments in their policy decisions. Also, many scientific uncertainties could be given some sort of finality so that policy makers would be forced to deal with them. As Carl Sagan writes, “[i]f we are faced with an ominous prediction involving powerful forces that may not be readily influenced, we have a natural tendency to reject or ignore the prophecy.”²⁰¹ People then put off dealing with the problem, continues Sagan, by continually asking for “much better evidence before we can take it seriously.”²⁰² The Science Judgment Board would add finality to these unresolved issues.

Possibly the most troubling issue in the Great Lakes today is the effect that pollution in the Lakes has on human health. There exists some evidence of adverse health effects, but there is no solid proof. It is evident, however, that the IJC and various people in government would welcome some sort of final decision on this matter so that appropriate policy could be created. Until the problem is rectified, the IJC can only use arguments like the one Chairman Durnil made before the Senate Subcommittee on Water Resources: “We tend to talk in terms of webs and food chains [and] [h]umans are a part of that

There are limited studies [t]he presumption has to be that humans are affected. We cannot afford to make any other presumption.”²⁰³ Thus, considering the complexity of pollution problems and the number of

199. *See id.* at 1059-63.

200. The integrated approach is discussed *supra* notes 133-35 and accompanying text.

201. Carl Sagan, *Croesus and Cassandra: Policy Response to Global Change*, in ENVIRONMENT IN PERIL, 202, 205-06 (Anthony B. Wolbarst ed., 1991).

202. *Id.* at 206.

203. *Water Resources Hearing*, *supra* note 111, at 7.

uncertainties in the Great Lakes, the Science Judgment Board could help get policy moving again.

Many of the problems affecting the Great Lakes are due to domestic differences. The Science Judgment Board could help here as well. The Board, for example, could be used within the United States as a special master²⁰⁴ by domestic courts to help settle scientific problems that arise in domestic litigation regarding the Lakes. In this way, the Science Judgment Board's findings, while not legally binding in Canada, could be legally binding in certain instances within the United States.

The Science Judgment Board will serve the interests not only of the people surrounding the Great Lakes, but also those of anyone charged with the management of any freshwater system. As noted earlier, the vast size, complexity, and long water retention time of the Lakes presents special environmental problems. But as the Great Lakes National Program Office of the EPA states: "they also make the Lakes an 'early warning system' for environmental pollution problems."²⁰⁵ Therefore, by providing better and faster answers to scientific problems in the Great Lakes, the Science Judgment Board will also generate invaluable information that can be applied anywhere in the United States or the world.

Another important benefit that the Science Judgment Board would bring to the Great Lakes is the sense of fairness and justice that a court, with all of its procedures and deliberations, gives to any final verdict. Many scientific determinations presently made by the government seem quite arbitrary to ordinary civilians. This is due to the lack of set procedures for making such determinations, the view that such determinations are colored by political considerations, and the lack of conclusivity of those determinations.²⁰⁶ When the civilian happens to be legally liable for the clean-up of a polluted site, such arbitrariness can turn into a feeling of downright injustice. But if the Science Judgment Board policed such determinations, the sense of arbitrariness and injustice could be greatly reduced because the Science Judgment Board would gradually lend to important scientific findings the feeling of surety and conclusivity that legal courts give to determinations in criminal cases.

3. Practical Considerations

It is especially important that the Science Judgment Board be an international tribunal and therefore be included in the Treaty and not in a domestic act. The pollution problem in the Great Lakes is international in character; there is no doubt that pollution from one country crosses the border to the detriment

204. FED. R. CIV. P. 53.

205. U.S. EPA *supra* note 117, at 24.

206. By "lack of conclusivity," I am restating that scientists do not generally make final decisions. See *supra* note 199 and accompanying text. This, in turn, means that the EPA, for example, must explain that its decisions are based upon data that are "suggestive" or "highly suggestive" of such decisions. They cannot, then, state anything with surety that is convincing to the average civilian.

of the other. Because each country is responsible for roughly one-half of the Great Lakes, the most damaging conflict occurs when Canada has one standard and the United States has another. For example, it is of little importance to settle a difference between New York and Ohio in favor of Ohio if Canada has the same standard as New York but is not a party to the settlement. Furthermore, a private party has less incentive to sue a polluter in his own country if he cannot sue similar polluters in the other country, for what good is it to stop one polluter at home if you can not stop one hundred polluters across the border. Note, too, that a party may be hesitant to sue a domestic polluter without the right to go after similar polluters across the border, because the private party may feel that he is just hurting local industry, possibly to the advantage of foreign industry, with no significant reduction in pollution.

An important question to decide is what kind of actions should come before the Science Judgment Board. The first type of action that should come before the Board occurs when one party claims it is meeting a standard and another party disagrees. For instance, an industrial complex may have data indicating that it is discharging phosphorus materials at legal levels while a citizen's group or a government agency may have data to the contrary. Also falling into this category are those situations where one party uses one mode of detection while another party may have found a better mode of detection.²⁰⁷ Similarly in this category are the situations where two or more parties use different methods of calculation in determining if a standard has been met. These situations arise, for example, when two states define mixing zones²⁰⁸ differently.

The second type of action that would come before the Board occurs when one entity adopts a standard based on a certain scientific conclusion while another entity adopts another standard based on a different conclusion. An example would be where state A determines that mercury is not dangerous to aquatic life until it reaches .2 milligrams-per-liter, while state B determines that nothing over .05 milligrams-per-liter is safe. The states will likely adopt different standards based on the disparate scientific conclusions. Accordingly, Michigan could challenge Ohio's weaker benzene standards before the Board.²⁰⁹

The third type of action that could come before the Science Judgment Board are those involving issues where proponents exist on both sides of an issue, but no definite conclusions have been adopted by either side. One present example of this is the human health issue in the Great Lakes.

207. Therefore, the situation where the Great Lakes Initiative championed fish tissue testing for PCB's as opposed to water testing could come before the Board. *See supra* note 115 and accompanying text.

208. Mixing zones are areas in a body of water around a point source of pollution that do not have to meet water quality standards. The mixing zone is allowed in order to provide time for the pollutants to become diluted in the water.

209. *See supra* note 130 and accompanying text.

Issues will be brought before the Board in one of several ways. First, private citizens and, more importantly, private citizen groups, should be able to bring an action. This way, private citizen groups will be able to challenge existing scientific conclusions that they believe are incorrect or outdated. This will encourage private research, as well as "appeal to the great inventiveness in our country,"²¹⁰ which will enhance knowledge and lessen the research burden on government agencies. The heightened effectiveness of private research will, in turn, encourage more people to contribute funding to private organizations. Second, all government entities will be able to initiate an action because, under this proposal, they are still the main enforcement mechanism around the Lakes. They should, then, have the benefits of the Science Judgment Board. Third, industrial entities should be able to bring an action. This way environmentally conscious companies can police industry by making sure their competitors are not using false scientific data to their advantage.

The Board's decisions should be final as far as policy makers are concerned, and the new treaty should state something to this effect. An incentive to treat the decision as binding could be provided by publishing the Board's opinions and making them available to the public. Also, choosing highly qualified and esteemed judges to sit on the Board will enhance the influence of their decisions. Finality should be qualified, however, so as not to stifle further research.²¹¹ The IJC should have the power to reopen an issue when it believes that there are further developments that warrant such action. The Great Lakes Science Advisory Board will aid the IJC in the interpretation of the Science Judgment Board's findings and in the application of those findings to policy questions.

The IJC will play a very active role in the management of the Board. First, the Commission will choose the judges who sit on the Science Judgment Board. The Commission is already familiar with many of the scientific questions in the Lakes, and is therefore well qualified to choose people who have the necessary skills to be effective board members. Also, letting the IJC select the judges, as opposed to allowing the governments to do so, helps remove the Board from political influence. Second, the Commission should manage the basin by actively searching for scientific conflicts and then encouraging settlement—using the Science Judgment Board if necessary. Because it is plausible that the IJC may find a conflict in which no one is willing or able to properly stand up for one side, the IJC should itself possess the ability to be a party before the Board. This power is important because otherwise there may be times when party A, who has a tougher standard based on limited scientific evidence, would rather just adopt party B's lesser standard to settle the conflict than go through the trouble of appearing before the Science Judgment Board. Also, this will allow individuals, who generally

210. Ralph Nader, *The Management of Environmental Violence*, in ENVIRONMENT IN PERIL, *supra* note 201, at 1, 10. Nader argues that by allowing citizens to become actively involved in pollution research and development, industry will be less able to claim that it lacks the technology to reduce pollution. *Id.*

211. See Martin, *supra* note 197, at 1084-85.

will not have the ability to conduct significant scientific research, to bring scientific issues to the IJC's attention. The IJC can then continue the process. Most importantly, all actions will first go through the IJC for a determination of whether an issue will go to the Board at all. This procedure will serve a couple of worthwhile functions. It will provide the IJC with some broad managerial powers over the basin because it will be able to settle the most crucial issues first. Also, the IJC will be able to better manage the basin by having the authority to keep actions that it believes would be counterproductive from the Board.²¹² Lastly, the IJC will be able to ensure that the Science Judgment Board runs efficiently by monitoring its workload and screening out frivolous actions.

The concept of a Science Judgment Board is both practicable and feasible. For the following reasons, the Science Judgment Board is a logical next step and one to which the governments will not likely object. The IJC has a long history of using strong and innovative science to help its work gain support from the governments. For instance, in 1946 the IJC was responsible for the formulation of scientifically based water quality standards,²¹³ part of the foundation for state and federal water pollution control today. And in 1964, as part of the *Lower Great Lakes Pollution Reference*, they conducted the most comprehensive scientific study ever completed on water pollution.²¹⁴ The governments have also been very receptive to leaving scientific issues to the IJC in recent years. The increase in the number of investigations (references) that the governments entrust to the IJC is indicative of this receptiveness. Furthermore, the establishment of the Science Advisory Board under the GLWQA demonstrates that the governments are willing to bolster the IJC's science capabilities. Note, too, that one of the few new powers bestowed upon the IJC in the GLWQA is the power to independently verify data, evincing the governments' willingness to let the IJC have control over technical matters. Domestic statutes also provide reason to believe that good science is important to the governments. Several federal statutes require that environmental decisions be based on the best available science.²¹⁵ Accordingly, the threat of being brought before the Science Judgment Board would encourage all Great Lakes entities to have good scientific support for their actions. Lastly, the Canada-United States Free Trade Agreement, as well as NAFTA, has provisions that allow for review by an international panel of state and federal anti-dumping and countervailing duty statutes and orders show that the governments are not adverse to having limited issues surveyed and decided by international tribunals.

212. For instance, the last thing the already overloaded EPA needs is to be preparing constantly for Science Court, yet because of the amount of research it does, it could be the target of many potential actions.

213. See *supra* note 77 and accompanying text.

214. See *supra* note 69 and text accompanying note 79.

215. For example, the Federal Water Pollution Control Act requires that water quality criteria be based upon the "latest scientific knowledge." 33 U.S.C. § 1314(a)(1) (1988).

CONCLUSION

The Great Lakes are a valuable resource to the United States and Canada alike but are threatened by both complex pollution problems and complex bureaucratic solutions. The Boundary Waters Treaty was never written to be a pollution treaty. In and of itself, it is quite an impressive document as an enforcement mechanism with respect to navigation or water diversion matters. Yet, the Treaty loses legitimacy when it comes to pollution. By rewriting the Treaty to intimately include the people of the two countries and their right to a safe environment, we add strength to the Treaty and therefore strength to the Commission. By rewriting the Treaty to include the Science Judgment Board, we help bring together some of the fragmentation that hinders the integrated approach, we give the IJC a creative managerial power, and we provide the governments with something they have really wanted all along—better science. And, by rewriting the Treaty we move closer to the day when we can stop writing out of necessity for the Lakes and start writing in admiration again.

From the brow of Hiawatha
Gone was every trace of sorrow,
As the Fog from off the Water,
As the mist from off the meadow.
With a smile of joy and triumph,
With a look of exultation,
As of one who in a vision
Sees what is to be, but is not,
Stood and waited Hiawatha.

-Hiawatha before his departure upon Lake Superior,
Song of Hiawatha, Henry Wadsworth Longfellow