

THE INTERNATIONAL JOINT COMMISSION'S ROLE IN THE UNITED STATES-CANADA TRANSBOUNDARY AIR POLLUTION CONTROL REGIME: A CENTURY OF EXPERIENCE TO GUIDE THE FUTURE

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Abstract

The International Joint Commission (IJC), a bilateral institution established to manage the shared water resources of the United States and Canada, is celebrating its centennial. Despite its original mandate, the IJC also earned a prominent role in the governance of transboundary air pollution between the two nations. This article reviews the evolution of that particular function, evaluating the IJC's role in the international transboundary air pollution regime with an eye to the challenges apparent at the dawn of its second century. The birth of the IJC and its original mandate under the 1909 Boundary Waters Treaty are introduced first. Next, every reference made to the IJC directly confronting air pollution is presented and analyzed. A pattern of increasing responsibility is traced from Trail Smelter through the series of three Detroit-St. Clair River Region references, then beyond the Great Lakes Water Quality Agreements to the 1991 U.S.-Canada Air Quality Agreement. After evaluating those experiences, four proposals are distilled that would help to restore the IJC to the forefront of the U.S.-Canada transboundary air pollution control regime. Namely, the "precautionary principle" of international environmental law should be directly applied when drafting future references for submission to the IJC; the evidentiary value of IJC reports should be recognized in

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domestic courts on both sides of the border (especially in the context of the transboundary litigation provisions recorded in section 115 of the U.S. Clean Air Act and section 21.1 of the Canadian Clean Air Act); the Boundary Waters Treaty should be revised to transform IJC arbitration into an attractive alternative to litigation; and the IJC should be granted all of its familiar roles vis-à-vis the upcoming transboundary air pollution cap and trade program.

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INTRODUCTION

Few institutions have had a greater impact on the development of modern transboundary law than the International Joint Commission (IJC). Founded in 1909 as a humble forum for the settlement of water disputes between Canada and the United States, the IJC quickly ascended to the forefront of international environmental law. Although the vast majority of disputes referred to the IJC still concern water rights, the IJC also earned a prominent role in the transboundary air pollution control regime. Now, on its centennial anniversary, the time has come for a complete study of this particular function. It is that history—the successes and failures of the IJC in dealing with transboundary air pollution—which will be reviewed within this article and evaluated with an eye to the challenges apparent at the dawn of the IJC's second century.

After this brief introduction, the second section of this article will discuss the birth of the IJC and its original mandate under its enabling document, the 1909 Boundary Waters Treaty. The third section will discuss all the references made to the IJC directly confronting air pollution during its first century of operation and the IJC's evolving role vis-à-vis those challenges.¹ The IJC was called upon, just several years after its establishment, to directly settle the archetype transboundary air pollution dispute. In doing so, the IJC and its successor tribunal canonized lasting precedents in the field of international environmental law. The "polluter pays" and "extraterritorial responsibility" doctrines elaborated in the *Trail Smelter* cases have been incorporated into the rich chain of environmental literature developed under the auspices of the United Nations. After *Trail Smelter*, a series of three Detroit-St. Clair River region air quality references proved the IJC's effectiveness in solving transboundary air pollution disputes. Each reference granted progressively more power to the IJC by increasing its scope of inquiry and conduct, as the governments responded to weaknesses within the IJC's mandate. In addition, three bilateral agreements expanded the IJC's responsibilities during those years. The Great Lakes Water Quality Agreement of 1972 opened IJC proceedings to the public eye and transformed the IJC into a custodian of public discourse. Its 1978 successor explicitly acknowledged the linkage between air and water pollution, citing the interconnected role of both within a broader and more realistic definition of "ecosystem." Lastly, the 1991 U.S.-Canada Air Quality Agreement (AQA) reaffirmed the governments' faith in the IJC by once again calling upon it to handle mass publication of recommendations, manage public reaction to the findings, and entrust it with a prominent role in dispute resolution. In the performance of all of these tasks, the IJC has been lauded for its independence and professionalism.

The final section will suggest in greater detail four modest proposals to reward the IJC for a century of outstanding service and restore it to the forefront of the U.S.-Canada transboundary air pollution control regime. In order to equip the IJC with the tools it will need to make a difference in its second century, the errors of its first century must be corrected. First, the "precautionary principle" of international environmental law should be

1. This analysis was facilitated when the IJC published its complete set of reports online in recognition of this auspicious anniversary. See Int'l Joint Comm'n, *Boundary Waters Treaty, A Century of Cooperation Protecting Our Shared Waters*, <http://bwt.ijc.org> (last visited Oct. 25, 2009). The first IJC report was published in 1914. The IJC appropriately launched its new web portal in conjunction with World Water Day (Mar. 22, 2009), because the IJC's primary purview is over shared water resources.

directly applied when drafting future references for submission to the IJC. Second, the evidentiary value of IJC reports should be recognized in domestic courts on both sides of the border, especially in the context of the transboundary air pollution litigation provisions recorded in section 115 of the U.S. Clean Air Act and section 21.1 of the Canadian Clean Air Act. Third, a slight tweaking as part of a modernization of the Boundary Waters Treaty could easily transform the IJC's Article X arbitration option into an attractive alternative to litigation. Finally, the IJC should be granted all of its familiar roles vis-à-vis the upcoming transboundary air pollution cap-and-trade system proposed as part of the 2003 AQA Border Air Quality Strategy. Indeed, the IJC may even be utilized again as a manager of public discourse in the expected transboundary carbon cap-and-trade system currently being discussed between the governments. This is not a radical proposal; it would not be the first time that the IJC has been granted new subject matter beyond the original wording of the 1909 Boundary Waters Treaty.

I. THE BOUNDARY WATERS TREATY AND THE BIRTH OF THE IJC

The birth and development of U.S.-Canada transboundary air pollution policy is intimately rooted in the history of their bilateral water pollution regime. Decades before they ever considered the direct effects of transboundary air pollution, the governments had established formal methods for managing their shared water resources. After all, four of the Great Lakes and hundreds of smaller waterways form a large part of the 5,525-mile (8,891 kilometer) boundary.² The International Waterways Commission (IWC) was created in 1903 to address the issues of conflicting usage rights between the two nations,³ but soon thereafter the IWC advocated the formation of a more permanent body. Within a few years, such a body was created with the ratification of the 1909 Boundary Waters Treaty (BWT).⁴ Though primarily concerned with regulating navigation

2. Int'l Boundary Comm'n, <http://www.internationalboundarycommission.org> (last visited Oct. 25, 2009).

3. See Jennifer Woodward, *International Pollution Control: The United States and Canada - The International Joint Commission*, 9 N.Y.L. SCH. J. INT'L & COMP. L. 325, 326 (1988) (citing INT'L JOINT COMM'N, SIXTH ANNUAL REPORT ON WATER QUALITY 10 (1978)).

4. Noah D. Hall, *The Evolving Role of Citizens in United States-Canadian International Environmental Law Compliance*, 24 PACE ENVTL. L. REV. 131, 138 (2007).

and water use along the border,⁵ the BWT addresses transboundary pollution in the second paragraph of Article IV.⁶

The BWT's most important contribution is the establishment of the IJC, a bilateral panel to which the nations can submit transboundary pollution claims for study or resolution.⁷ The United States and Canada each appoint three Commissioners who meet at least semiannually,⁸ and who are presided over by a chairman from the country in which the present meeting is held.⁹ Article VIII of the BWT assigns jurisdiction over the "use or obstruction or diversion of the waters" to the IJC,¹⁰ while Articles IX and X grant broad authority to investigate any other questions or matters referred to it by either nation.¹¹ Article IX responses are non-binding and do not possess the color of law.¹² Furthermore, the IJC can only make recommendations on matters of fact and circumstance that have been

5. Treaty Between the United States and Great Britain Relating to Boundary Waters Between the United States and Canada, U.S.-U.K., Preliminary Article, Jan. 11, 1909, 36 Stat. 2448 [hereinafter Boundary Waters Treaty] ("For the purposes of this treaty, boundary waters are defined as the waters from main shore to main shore of the lakes and rivers and connecting waterways, or the portions thereof, along which the international boundary between the United States and the Dominion of Canada passes, including all bays, arms, and inlets thereof, but not including tributary waters which in their natural channels would flow into such lakes, rivers, and waterways, or waters flowing from such lakes, rivers, and waterways, or the waters of rivers flowing across the boundary.").

6. "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." *Id.* at art. IV.

7. *Id.* at art. VII.

8. *Id.*

9. Jeffrey L. Roelofs, *United States-Canada Air Quality Agreement: A Framework for Addressing Transboundary Air Pollution Problems*, 26 CORNELL INT'L L.J. 421 (1993) (citing Timothy M. Gulden, *Transfrontier Pollution and the International Joint Commission: A Superior Means of Dispute Resolution*, 17 SW. U.L. REV. 43, 58 (1987)).

10. Boundary Waters Treaty, *supra* note 5, art. VIII.

11. Article X states in part:

[A]ny other questions or matters of difference arising between them involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other, along the common frontier between the United States and the Dominion of Canada, shall be referred from time to time to the International Joint Commission for examination and report, whenever either [party] shall request that such questions or matters of difference be so referred." *Id.* at art. IX. Article X states in part: "Any questions or matters of difference arising between the High Contracting Parties involving the rights, obligations, or interests of the United States or of the Dominion of Canada either in relation to each other or to their respective inhabitants, may be referred for decision to the International Joint Commission by the consent of the two Parties"

Id. at art. X.

12. *Id.* at art. IX. IJC recommendations made pursuant to Article IX are not binding on either party.

explicitly referred.¹³ While Article IX requires a reference from only one country,¹⁴ this has always been done bilaterally as a matter of custom.¹⁵ Matters may be submitted to binding arbitration under Article X only if both countries formally grant jurisdiction to the tribunal,¹⁶ but this procedure has never been utilized before.¹⁷

Nevertheless, the IJC has admirably performed such a useful function that it remains sufficiently funded, supported, and operable over one century after its original creation.¹⁸ It has been commended for its objective leadership on environmental issues many times,¹⁹ as numerous references have been made to the IJC for non-binding investigative reports and studies pursuant to article IX.²⁰ The procedure itself has resulted in many positive outcomes, as Professor Noah D. Hall states:

[The] bilateral approach has strengthened the credibility of IJC reports and recommendations and ensured sufficient funding for its efforts. These non-binding reports and studies, along with the objective recommendations that are often requested, have proven valuable in diplomatically resolving numerous international environmental disputes and crafting new policies in both countries to prevent environmental harms from occurring. As such, the IJC enjoys a well-deserved reputation for objective work, supported by the best science available and free from political biases, and serves as an important source of information for both the public and decision-makers in the United States and Canada.²¹

13. "Such reports of the Commission shall not be regarded as decisions of the questions or matters so submitted either on the facts or the law, and shall in no way have the character of an arbitral award." *Id.*

14. *Id.*

15. Noah D. Hall, *Toward a New Horizontal Federalism: Interstate Water Management in the Great Lakes Region*, 77 U. COLO. L. REV. 405, 418 (2006) [hereinafter Hall 2006].

16. To submit a matter to binding IJC arbitration, the advice and consent of the United States Senate must be acquired, making such submissions unlikely. Boundary Waters Treaty, *supra* note 5, art. X. The consent of the U.S. Senate requires a two-thirds majority vote. U.S. CONST. art II, § 2, cl. 2. For an article IX review, consent of the United States Senate is not required. Boundary Waters Treaty, *supra* note 5, art. IX.

17. Hall 2006, *supra* note 15.

18. See Int'l Joint Comm'n, http://www.ijc.org/en/home/main_accueil.htm (last visited Oct. 25, 2009) (demonstrating the IJC's continuous existence).

19. Barry Sadler, *The Management of Canada-U.S. Boundary Waters: Retrospect and Prospect*, 26 NAT. RESOURCES J. 359, 370-72 (1986).

20. Hall 2006, *supra* note 15, at 418 n.71.

21. Hall, *supra* note 4, at 140-41.

Of the numerous references made to the IJC over its first century, five dealt directly with transboundary air pollution. In addition, the 1978 Great Lakes Water Quality Agreement made reference to the IJC insofar as air pollution serves as a precursor to water ecosystem contamination. The next section will explore the venerable history of the IJC's role in the U.S.-Canada transboundary air pollution regime.

II. THE IJC AND TRANSBOUNDARY AIR POLLUTION ISSUES

The IJC has been called upon five times in its history to directly manage or resolve transboundary air pollution issues between the United States and Canada. In fact, the governments called upon the IJC to resolve an air pollution complaint against a smelter located at Trail, British Columbia shortly after the IJC was created. In so doing, the original *Trail Smelter* case became the most famous dispute the IJC has ever had to resolve.²²

A. Docket 25R (1928): Trail Smelter

The zinc and lead smelter at Trail, British Columbia, Canada was the largest in the entire British Empire. It operated along the Columbia River, only seven miles (eleven kilometers) north of the Washington State boundary.²³ After two 409-foot high smokestacks were installed in 1925 and 1927,²⁴ spewing sulfur dioxide pollution over a wider area,²⁵ farmers located in the United States sought redress.

Existing legal remedies were inadequate. Canada only allowed suits for injury to land in the jurisdiction where the land was located, so the U.S. farmers would have been unable to sustain a nuisance suit in British Columbia.²⁶ Even if a Washington court had accepted jurisdiction, its judgment would have been impossible to enforce against a Canadian

22. Libin Zhang, *Pakootas v. Teck Cominco Metals, Ltd.*, 31 HARV. ENVTL. L. REV. 545, 554 (2007).

23. *Trail Smelter Case (United States v. Canada)* 3 R.I.A.A. 1905 (*Trail Smelter Arb. Trib.* 1941).

24. *Id.* at 1917.

25. *Id.*

26. Hall, *supra* note 4, at 142 ("British Columbia courts would decline to assert jurisdiction in any action to recover for the property damage in Washington because of the rule announced by the House of Lords in *British South Africa Co. v. Companhia de Mocambique*, [1893] A.C. 602. That case held that suits for damage to foreign lands are local actions and must be brought in the state where the land is located.") (quoting EDITH BROWN WEISS ET AL., *INTERNATIONAL ENVIRONMENTAL LAW AND POLICY* 246 (1998)).

company without significant physical assets within its jurisdiction.²⁷ Frustrated, the Washington farmers convinced the State Department to take up their cause with the Canadian government.²⁸ In December 1927, the U.S. government formally asserted that the smelter's increased and elevated sulfur dioxide emissions were flowing south and damaging the trees of the Columbia River valley—a resource critical to the local logging, farming, and cattle grazing industries.²⁹

In 1928 the two sides agreed to refer the case to the IJC for an appraisal of the facts, liabilities, and damages under Article IX of the BWT. In 1931, the IJC asserted that the Canadians owed the United States \$350,000 for economic damages caused to the Washington farmers and recommended that pollution control measures be undertaken.³⁰ This holding established the "polluter pays" principle for resolving transboundary environmental disputes, but it failed to provide ongoing relief to the citizens of Washington. Thus, the State Department reopened the issue with the Canadian government in 1933. Unfortunately, for the sake of directly analyzing the Article X procedure, that reference was not made to the IJC itself. Instead, the original IJC ruling and subsequent diplomatic negotiations led the two nations to convene a new, three-member arbitration tribunal for settlement of claims for damages.³¹ Nonetheless, this decision is worth examining because it was born under the original IJC decision, refers to the earlier IJC findings as precedent, and may very well indicate the composition of an Article X reference to the IJC. The new tribunal was composed of an American, a Canadian, and an independent chairman (in this case, a Belgian national).³² The Tribunal was charged with determining what indemnity should be paid for damages caused by the Trail smelter after January 1, 1932; whether the Canadian "[s]melter should be required to refrain from causing damage in the State of Washington in the future";

27. Washington State had no long-arm statute that would have permitted a Washington court to assert jurisdiction over the Canadian smelter. EDITH BROWN WEISS ET AL., *INTERNATIONAL ENVIRONMENTAL LAW AND POLICY* 246 (1998).

28. With no domestic litigation options, the United States intervened on behalf of the Washington State landowners under the legal construct of espousal, in which the nation state takes on an international claim on behalf of its private citizens. *RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS LAW OF THE UNITED STATES* § 902 cmt. i (1987).

29. *Trail Smelter Case (United States v. Canada)* 3 R.I.A.A. 1905, 1944 (*Trail Smelter Arb. Trib.* 1941).

30. *Id.* at 1918–19.

31. *Convention Between the United States of America and the Dominion of Canada Relative to the Establishment of a Tribunal to Decide Questions of Indemnity and Future Regime Arising from the Operation of Smelter at Trail, British Columbia, U.S.-Can.*, Apr. 15, 1935, 49 Stat. 3245.

32. *Trail Smelter Case (United States v. Canada)* 3 R.I.A.A. 1905, 1911 (*Trail Smelter Arb. Trib.* 1941).

and “what measures or regime, if any, should be adopted or maintained by the Trail Smelter.”³³

In doing so, the Tribunal was directed to “apply the law and practice followed in dealing with cognate questions in the United States of America as well as international law and practice, and . . . give consideration to the desire of the high contracting parties to reach a solution just to all parties concerned.”³⁴ Legally speaking, the Tribunal first concluded that there was no need to choose between the law of the United States or international law to decide the case, “as the law followed in the United States in dealing with the quasi-sovereign rights of the States of the Union, in the matter of air pollution, whilst more definite, is in conformity with the general rules of international law.”³⁵ The Tribunal next quoted an eminent contemporary legal authority who wrote that “[a] State owes at all times a duty to protect other States against injurious acts by individuals from within its jurisdiction.”³⁶ To support that supposition, the Tribunal cited an early case from the Federal Court of Switzerland used to abate a transboundary hazard, in that case projectiles emanating from a shooting range. The court stated that “[t]his right (sovereignty) excludes . . . not only the usurpation and exercise of sovereign rights (of another State) . . . but also an actual encroachment which might prejudice the natural use of territory and free movement of its inhabitants.”³⁷ Finally, the Tribunal canvassed United States Supreme Court decisions regarding interstate pollution, including cases both between two states and between state and local governments or private parties.³⁸ One of these cases held that “[i]t is a fair and reasonable demand on the part of a sovereign that the air over its territory should not be polluted on a great scale by sulphurous acid gas . . . or threatened by the act of persons beyond its control”³⁹ The Tribunal synthesized these various precedents and distilled the following fundamental principle for transboundary pollution disputes:

33. *Id.* at 1908.

34. *Id.*

35. *Id.* at 1963.

36. *Id.* (quoting CLYDE EAGLETON, *THE RESPONSIBILITY OF STATES IN INTERNATIONAL LAW* 80 (1928)).

37. *Id.*

38. *Id.* at 1964–66. The listed cases are *Missouri v. Illinois*, 200 U.S. 496, 521 (1906); *Georgia v. Tenn. Copper Co.*, 206 U.S. 230 (1907); and *New York v. New Jersey*, 256 U.S. 296, 309 (1921).

It should be noted that two of the U.S. Supreme Court cases cited by the Tribunal were originally thrown out for lack of conclusive or acceptable proof of damages claimed. Thus the IJC, followed by the Trail Tribunal, painstakingly conducted meticulous information gathering on the geography, ecology, and topography of the affected regions as well as clear and convincing statistical evidence before reaching conclusions.

39. *Georgia v. Tenn. Copper Co.*, 206 U.S. at 238.

[U]nder the principles of international law, as well as of the law of the United States, no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.⁴⁰

Ultimately, the Tribunal's 1941 decision (*Trail Smelter II*) awarded another US\$78,000 to the United States and, more importantly, prescribed a set of ongoing operational guidelines with which the smelter was required to comply.⁴¹ To prevent further damage to the State of Washington, the Tribunal mandated specific maximum pollution limits,⁴² as well as that the Trail smelter install equipment to gauge the local wind speed, wind direction, atmospheric pressure, barometric pressure, and sulfur dioxide concentrations.⁴³ Copies of these reports were supplied to both governments on a monthly basis to ensure that the Trail smelter's toxic emissions remained within prescribed limits.⁴⁴ If the smelter could not comply, further compensation would be awarded to the United States.⁴⁵ Both sides agreed to the terms of this arrangement, causing the environment to improve and the political controversy to subside.

Today, the entire *Trail Smelter* process is widely hailed for its result. It was the first international ruling on transboundary air pollution and thus will forever remain an important textbook case on environmental law. However, the *Trail Smelter* procedure has not proven useful as a recurring method for resolving international environmental disputes.⁴⁶ Nonetheless,

40. *Trail Smelter Case (United States v. Canada)* 3 R.I.A.A. 1905, 1965 (*Trail Smelter Arb. Trib.* 1941).

41. *Id.*

42. *Id.* at 1933, 1980.

43. *Id.* at 1974–75.

44. *Id.* at 1975.

45. *Id.* at 1980.

46. Indeed, it has not been used again. Perhaps the closest example came in 1965 with the creation of the Lake Ontario Claims Tribunal to hear claims arising from the Gut Dam on the St. Lawrence River. It was also a three-person arbitral tribunal charged with assessing damages for transboundary harm, but the claims it reviewed arose from an action of the Canadian government, not private actors. See *Canada-United States Settlement of Gut Dam Claims*, Report to the Agent of the United States Before the Lake Ontario Claims Tribunal (Sept. 27, 1968), 8 I.L.M. 118.

Professor Knox finds the procedure deficient in three primary areas: use of a non-binding forum, lack of standing for the aggrieved private parties themselves, and recourse to domestic laws instead of an international legal standard. John H. Knox, *The Flawed Trail Smelter Procedure: The Wrong Tribunal, the Wrong Parties, and the Wrong Law*, in *TRANSBOUNDARY HARM IN INTERNATIONAL LAW* 66–67 (Rebecca M. Bratspies & Russell A. Miller eds., 2006). While acknowledging that a procedure will not be certain to succeed merely because it uses opposite techniques, Knox concludes

the major “polluter pays” and “extraterritorial responsibility” precedents have been enshrined in numerous international declarations in recent decades, most significantly in the United Nations Stockholm Declaration of 1972 and its progeny.⁴⁷

B. The Three Detroit-St. Clair River Region References

The IJC was called upon to address another specific air pollution problem before the end of the 1940s, but that reference would prove to be a more challenging and elusive task. Responding to public concern, the Canadian government began complaining that substantial quantities of sulfur dioxide and smoke from industrial Detroit, Michigan were drifting across the border and damaging Canadian territory as early as 1934. Canada specifically alleged that the concentrations of pollutants exceeded the maximum found near the operation of the now famous Trail smelter to support its claim.⁴⁸ The governments officially referred the problem to the IJC for investigation and report in January, 1949. This began a series of three references, each of which granted increasing authority to the IJC to monitor and report on regional air pollution. The first reference came in 1949 and would be followed in 1966 and 1975.

that “they are more likely to meet the minimum criteria for success: a willingness of governments to create them and of private parties to use them.” *Id.* at 75.

47. U.N. Env't Programme [UNEP], *Declaration of the United Nations Conference on the Human Environment* (June 16, 1972), available at <http://www.unep.org/Documents/Multilingual/Default.asp?DocumentID=97&ArticleID=1503>. Like *Trail Smelter* before it, the Stockholm Declaration acknowledges the right of independent states to use their resources as they choose, but qualifies that right by restricting sovereigns' resource exploitation to those usages that have a negligible impact on the rights of other states. Principles 21 and 22 elaborate a state's external responsibility to protect the environment:

Principle 21: States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and 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.

Id. This principle has since been reaffirmed in numerous other charters and declarations, most notably in Principle 2 of the Rio Declaration on Environment and Development, U.N. Doc A/Conf.151/26 (1992), 31 I.L.M. 874, 876 (1992) [hereinafter *Rio Declaration*], and RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS LAW OF THE UNITED STATES § 601 (1987).

48. See Int'l Joint Comm'n, *Termination of the Commission Activities on Vessel Smoke Surveillance in the Detroit River Area Under the 1949 Air Pollution Reference*, at 1 (1967), http://bwt.ijc.org/docket_table/attachments/Docket%2061/Docket%2061%20Air%20Pollution%20Final%20Report%201967.pdf (discussing the air pollution problem in the cities of Detroit and Windsor) [hereinafter 1966 Report].

1. Docket 61R (1949): The Detroit River Vessel Reference

The 1949 reference charged the IJC with determining whether the air in the vicinity of Detroit was being polluted by “smoke, soot, fly ash or other impurities” in quantities detrimental to the public health, safety, or general welfare of citizens or property on either side of the border.⁴⁹ However, the IJC was constrained to limit their proposed remedial measures to mitigate smoke emissions from ships plying the Detroit River.⁵⁰ An interim IJC report released in 1952 plainly stated that this narrow reference diverted attention from the more serious sources of the air pollution problem by concentrating only on ships.⁵¹ Nonetheless, the IJC performed its narrow duty and published its report under the reference in 1960 (1960 Report). The panel recommended several remedial measures to the governments, including: the adoption of objectives for smoke emission from vessels plying the Detroit River;⁵² the deletion of preferential regulations for hand-fired vessels;⁵³ the development of administrative and legal procedures for dealing with non-compliance;⁵⁴ and continuing IJC surveillance of vessel air pollution emissions on the Detroit River.⁵⁵

The governments acted upon the findings and by 1966 the IJC concluded that the objectives of the 1949 reference had been met. It published a report praising both governments for their efforts.⁵⁶ The United States was lauded for its passage of the 1963 Clean Air Act, which affirmed a responsibility for air pollution that rested primarily with state and local governments.⁵⁷ Accordingly, the State of Michigan was recognized for its consideration of state-wide regulation, while Wayne County and the City of Detroit were praised for passing stringent air pollution regulations.⁵⁸ The IJC noted that suits were being initiated against violating polluters with increasing frequency in American courts.⁵⁹ Canada, meanwhile, passed

49. “The Commission was asked specifically to recommend preventive or remedial measures with regard to the emission of smoke by vessels plying the Detroit River.” *Id.*

50. *Id.*

51. Interim Report of October 22, 1952, as quoted in Int'l Joint Comm'n, *Transboundary Air Pollution Detroit and St. Clair River Areas Report*, at 2 (1972) [hereinafter 1972 Report].

52. 1966 Report, *supra* note 48. These were set annually and made gradually more stringent by the IJC between 1952 and 1957. 1972 Report, *supra* note 51.

53. Such vessels, although comprising only ten percent of the ship traffic on the water, were accountable for two-thirds of the smoke. 1966 Report, *supra* note 48, at 3.

54. *Id.* at 1.

55. These would take place until appropriate machinery could be set up to establish the control of such pollution “on a satisfactory working basis.” *Id.*

56. *Id.* at 6.

57. *Id.* at 4.

58. *Id.*

59. *Id.*

federal legislation in 1964 regulating smoke from ships within one mile of Canadian land.⁶⁰ As a result of this and the termination of hand-fired vessel regulatory exceptions, the IJC's Technical Advisory Board on Air Pollution reported that in 1950, when systematic observations of vessel smoke began, less than ten percent of the vessel passages were considered acceptable, whereas that number improved to about seventy percent by 1966.⁶¹ The governments concurred in the IJC's conclusions and terminated its surveillance of vessel smoke emissions.⁶²

In addition, to reiterate its point that the 1949 reference was inadequate, the IJC stated conclusively in its 1960 Report that the major factors responsible for regional air pollution were the relatively high levels of fuel consumption, dust fall, airborne particulates, and sulfur dioxide from inland industrial installations. The findings indicated that solid fuel consumption by vessels was only 1.5% of the total fuel burned in the region.⁶³ In doing so, the IJC may have technically pushed the limits of its Article IX authority to report only "upon the facts and circumstances of the particular questions and matters referred."⁶⁴ Although no immediate action was taken, the governments ultimately concurred in the IJC's assessment. They submitted an amended reference in 1966.

2. Docket 85R (1966): The Second Detroit-St. Clair River Region Reference

The second reference on air pollution in the Detroit-St. Clair River region was submitted as Docket 85 in 1966.⁶⁵ Heeding the IJC's recommendation of an expanded mandate and recognizing the region's rapidly deteriorating air quality, the governments instructed the IJC to determine:

- 1) Is the air over and in the vicinity of Port Huron-Sarnia and Detroit-Windsor being polluted on either side of the International Boundary by quantities of air contaminants

60. *Id.*

61. *Id.* at 2.

62. *Id.* at 5.

63. Int'l Joint Comm'n Report of June 27, 1960, as quoted in 1972 Report, *supra* note 51, at 2.

64. Boundary Waters Treaty, *supra* note 5, art. IX ("The International Joint Commission is authorized in each case so referred to examine into and report upon the facts and circumstances of the particular questions and matters referred, together with such conclusions and recommendations as may be appropriate, subject, however, to any restrictions or exceptions which may be imposed with respect thereto by the terms of the reference.").

65. Int'l Joint Comm'n, Docket 85R: Port Huron-Sarnia/Detroit Windsor, <http://bwt.ijc.org/index.php?page=dockets&hl=eng&pageNum=5> (last visited Oct. 25, 2009).

that are detrimental to the public health, safety, or general welfare of citizens or property on either side of the International Boundary?

2) What sources are contributing to this pollution and to what extent?

3) What preventative or remedial measures would be most practicable from economic, sanitary, and other points of view?

4) What is the probably total cost of implementing the measures?⁶⁶

In accordance with usual procedure in such investigations, the IJC established the International St. Clair-Detroit River Areas Air Pollution Control Board in 1966, staffed by environmental officials from both nations. These officials established a number of committees composed of industry representatives, academics, and bureaucrats from a variety of fields.⁶⁷ The Board began its investigation and submitted semiannual reports while the IJC began holding public hearings in June 1967.⁶⁸ The Board's reports and public testimony were incorporated in the IJC's final report in 1972.⁶⁹

The 1972 final report provided a detailed study responding to the questions posed. It presented scientific confirmation of the existence of an air pollution crisis in response to Question 1,⁷⁰ and then quantified the extent of the problem in response to Question 2.⁷¹ To that end, the IJC identified and analyzed the concentration and effects of particulate matter,

66. 1972 Report, *supra* note 51, at 3.

67. *Id.* at 6.

68. *Id.* at 4.

69. *See id.* at 11-16 (detailing the public hearings process).

70. *Id.* at 55.

71. *Id.* at 55-56 ("With regard to the Detroit River area the Commission finds that of the 258,200 tons of particulates emitted in 1967, 231,500 tons originated in the United States and 26,700 tons in Canada; and of the 550,700 tons of sulfur oxides emitted in 1967, 516,600 tons originated in the United States and 34,100 tons in Canada. The principal sources are the steam-electric power plants and metallurgical industries in Wayne County, Michigan. With regard to the St. Clair River area the Commission finds that of the 50,800 tons of particulates emitted in 1967, 26,600 originated in Canada and 24,200 originated in the United States; and of the 372,600 tons of sulfur oxides emitted in 1967, 272,900 tons originated in the United States and 99,600 tons originated in Canada. The principal sources are the steam-electric power plants in Michigan and the oil refineries and chemical industries near Sarnia. The principal offensive odors originated at a chemical plant and petroleum refineries near Sarnia.").

sulfur dioxide, and odor-causing volatile substances across the region,⁷² and it detailed the scientific studies conducted on both sides of the border.⁷³ The IJC surveyed and listed the air quality standards currently in effect in both nations in response to Question 3.⁷⁴ Based on these standards, the IJC recommended general and specific air quality objectives to be adopted by the federal, state, and provincial governments.⁷⁵ Finally, in response to Question 4, the IJC estimated that the total economic impact of these standards was \$150 million.⁷⁶

In addition, the IJC made several miscellaneous recommendations. It insisted that the preventive and remedial measures be implemented at the earliest practicable date.⁷⁷ The governments were encouraged to establish a permanent network of air quality monitoring stations,⁷⁸ develop consistent standards on both sides of the border,⁷⁹ cooperate and coordinate at all levels of government,⁸⁰ and ascertain with more certainty the detrimental effects of airborne contaminants.⁸¹ Once again, the IJC specifically requested more authority to continue addressing the regional air quality crisis. The IJC sought the tools it would need to properly coordinate ongoing surveillance of regional air quality, rapidly exchange information between the governments, and monitor the implementation of preventive and remedial measures.⁸² Once again, the governments acquiesced to the request.

3. Docket 99R (1975): The Third Detroit-St. Clair River Region Reference

The third reference was made for the IJC to examine and report the state of air quality on an ongoing basis in the Detroit-Windsor and Port Huron-Sarnia areas in 1975.⁸³ Specific emphasis was to be placed on ambient air quality trends and the emissions of three particular nuisances:

72. *See id.* at 17–19 (analyzing the harmful effects of particulate matter, sulfur dioxide, and odors).

73. *See id.* at 24–46 (describing the effects of air pollution in the Detroit River and St. Clair River areas).

74. *Id.* at 21–23.

75. *Id.* at 60–61.

76. *Id.* at 57.

77. *Id.*

78. *Id.*

79. *Id.*

80. *Id.* at 58.

81. *Id.*

82. *Id.* at 57–58.

83. Int'l Joint Comm'n, *Final Report Pursuant to the July 8, 1975 Reference on the State of Air Quality in the Detroit-Windsor and Port Huron-Sarnia Areas*, at 1 (Jan. 19, 1984), available at <http://www.ijc.org/php/publications/pdf/ID566.pdf>.

sulfur dioxide, suspended particulates, and odors.⁸⁴ The IJC reported annually on regional trends and the achievement of the specific objectives vis-à-vis these three concerns between 1975 and 1983.

The IJC concluded in 1984 that the domestic regulatory programs and control strategies adopted, combined with the closing of many factories due to economic conditions and the installation of upgraded pollution control systems, resulted in significant improvements in emission levels.⁸⁵ These improvements were sustained for several years and, not anticipating this trend to reverse, the IJC submitted that its mission was complete under the 1975 reference.⁸⁶ However, the IJC noted that more attention was needed on a much wider range of pollutants, particularly toxic and hazardous substances.⁸⁷ In essence, the IJC once again challenged the governments to present an expanded reference addressing more pollutants. And, once again, it would not take long for the governments to respond positively.

The impetus came in 1988, when the City of Detroit erected a municipal solid waste and energy recovery facility, one of the largest incinerators of its type in the world.⁸⁸ Local residents, environmental groups, and government agencies expressed concerns about the health effects of such a facility. The governments officially requested that the IJC recommence work under the 1975 reference on the state of air quality in the Detroit-Windsor and Port Huron-Sarnia areas.⁸⁹ The IJC was specifically directed to investigate "the actual and potential hazards posed to human health and the environment from airborne emissions"⁹⁰

To initiate studies under the Reference, the Commission appointed an advisory board of federal, state, provincial and academic experts. The board completed a preliminary screening of available information on a list of 125 chemicals known to be present in the ambient air of the region, and reported its conclusions and recommendations to the Commission in December 11, 1990.⁹¹

84. *Id.* at 2.

85. *Id.*

86. *Id.* at 3-4.

87. *Id.* at 4.

88. Int'l Joint Comm'n, *Air Quality in the Detroit-Windsor/Port Huron-Sarnia Region Report*, at 1 (Feb. 1992), available at <http://www.ijc.org/php/publications/pdf/ID563.pdf>.

89. *Id.* at 19-22.

90. *Id.* at vii.

91. *Id.*

The chemicals on the list were those found in Title III of the United States Clean Air Act.⁹²

In its final report, published in February 1991, the IJC made nineteen recommendations to the governments for improving regional air quality.⁹³ After publication, the IJC held two open meetings to gauge public reaction, as required by the 1972 Great Lakes Water Quality Agreement.

As the discussion above demonstrates, the Detroit-Windsor references showcase the effectiveness of the IJC vis-à-vis air pollution. The IJC met every challenge with scientific professionalism and significantly helped to bring about improvements in air pollution density, monitoring procedures, and public awareness throughout the process. The IJC was only hampered by the governments' initial conservative references. The governments should learn from this experience to be more vigilant and progressive in tackling new pollution threats in the future by granting the IJC broader mandates.

C. The Great Lakes Water Quality Agreements of 1972 and 1978

Even as the three Detroit-St. Clair River references were underway, the governments issued a new joint reference to the IJC to investigate pollution in Lake Erie, Lake Ontario, and the international section of the St. Lawrence River.⁹⁴ The reference was submitted in 1964 as a response to a surging wave of citizen activism. In 1971, the IJC finally issued a report that recommended new water quality control programs and identified the need for a new agreement to coordinate higher levels of cooperative action.⁹⁵ After two years of negotiation, the Great Lakes Water Quality Agreement (GLWQA) was signed in 1972.⁹⁶

The 1972 GLWQA “reaffirms the rights and obligation[s] of Canada and the United States under the BWT and has become a major focus of Commission activity.”⁹⁷ It set forth general and specific water quality objectives,⁹⁸ mainly focusing on waterborne phosphorous pollution.⁹⁹ In so

92. *Id.* at 3.

93. *Id.* at viii–ix.

94. Int'l Joint Comm'n, *Pollution of Lake Erie, Lake Ontario and the International Section of the St. Lawrence River*, at 95–97 (1971), available at <http://www.ijc.org/php/publications/pdf/ID364.pdf>.

95. *Id.* at 89–92.

96. Great Lakes Water Quality Agreement, U.S.-Can., Apr. 15, 1972, 23.1 U.S.T. 301 [hereinafter GLWQA72].

97. Great Lakes Water Quality Agreement, U.S.-Can., Nov. 22, 1978, 30 U.S.T. 1383 [hereinafter GLWQA78].

98. GLWQA72, *supra* note 96, at 304–05.

99. *Id.* at 324.

doing, the GLWQA made the IJC responsible for collecting, analyzing, and disseminating water quality data, monitoring water quality programs, and providing advice and recommendations to the governments for attaining their objectives.¹⁰⁰ However, the GLWQA was short lived. In 1978, the two governments updated and replaced the 1972 Agreement.¹⁰¹ The new GLWQA shifted the focus from phosphorus to a broader range of toxic and hazardous polluting substances, impressively charging that “[t]he discharge of toxic substances in toxic amounts be prohibited and the discharge of any or all persistent toxic substances be virtually eliminated.”¹⁰² This statement is the first direct application of the “precautionary principle” of international environmental law to the U.S.-Canada transboundary regime, a fact that will be discussed later in greater detail. The new GLWQA also included timelines for the development of municipal and industrial pollution abatement and control programs.¹⁰³

Most important to this phase of our analysis, the 1978 GLWQA incorporated a reference for the IJC to consider impacts of air pollution on the Great Lakes ecosystem to the extent that air pollutants are precursors to water problems.¹⁰⁴ This represents a more complete and holistic view through the use of the term “ecosystem,” defined as the interacting components of air, land, water, and living organisms.¹⁰⁵ Thus, the entire ecosystem was incorporated into the GLWQA’s goal “to restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes Basin Ecosystem.”¹⁰⁶

Furthermore, the GLWQA delegated new responsibilities to the IJC, especially with regard to the role of citizen participation in future IJC undertakings. The GLWQA opened the IJC to the public with the directive: “[T]he Commission may exercise all of the powers conferred upon it by the Boundary Waters Treaty and by any legislation passed pursuant thereto including the power to conduct public hearings and to compel the testimony of witnesses and the production of documents.”¹⁰⁷ This is regarded by some as its most significant structural contribution to the transboundary environmental regime:¹⁰⁸

100. It also provided for the establishment of two boards to advise the IJC: the Great Lakes Water Quality Board and the Great Lakes Science Advisory Board. *Id.* at 309–10.

101. GLWQA78, *supra* note 97.

102. *Id.* at 1387.

103. *Id.* at 1421.

104. *Id.* at 1391–93.

105. *Id.* at 1385.

106. *Id.* at 1387.

107. *Id.* at 1394.

108. *E.g.*, Hall, *supra* note 4, at 149–50.

With increased public participation comes increased accountability on the part of both federal governments to comply with their joint responsibilities under the GLWQA. Equally important, the GLWQA has helped create an informed and engaged citizenry on both sides of the border, which has led to the increased role for citizen enforcement.¹⁰⁹

Other commentators also laud this addition, noting that none of the previous environmental agreements and treaties between the United States and Canada required public participation in reviewing and assessing compliance.¹¹⁰ Indeed, that duty would soon be reinforced and expanded.

D. Docket 112R (1991): The U.S.-Canada Air Quality Agreement

The 1991 U.S.-Canada Air Quality Agreement (AQA),¹¹¹ a bilateral executive agreement, covers all forms of transboundary air pollution between the two countries.¹¹² It was the result of a decade of diplomatic commitments, negotiations, and compromises that began with the 1980 Memorandum of Intent and ended with the 1990 U.S. Clean Air Act Amendments.¹¹³ The AQA established a framework for addressing shared

109. Since 1972 the citizen-participation provisions have become ingrained, and the IJC affirmed its commitment to the public in its Ninth Biennial Report:

The public's right and ability to participate in governmental processes and environmental decisions that affect it must be sustained and nurtured.

....

The Commission urges governments to continue to effectively communicate information that the public needs and has come to expect, and to provide opportunities to be held publicly accountable for their work under the Agreement.

Int'l Joint Comm'n, *Ninth Biennial Report on Great Lakes Water Quality: Achieving the Future—How to Do It: Perspective and Orientation* (1998), available at <http://www.ijc.org/php/publications/html/9br/achievec.html>.

110. See, e.g., Roelofs, *supra* note 9, at 448–49 (declaring the mandatory consultation requirement a significant improvement).

111. Agreement on Air Quality, U.S.-Can., Mar. 13, 1991, 30 I.L.M. 676 [hereinafter AQA].

112. *Id.* at 679.

113. “[A]n International Joint Commission study [revealed] that a high proportion of pollutants entering the Great Lakes came from atmospheric pollutants.” Roelofs, *supra* note 9, at 439. The report triggered public concern and, in turn, the establishment of the Bilateral Research Consultation Group on Long-Range Transport of Air Pollutants. Canada and the United States issued a 1979 Joint Statement on Transboundary Air Quality in which both countries committed to reduce certain types of transboundary air pollution. Joint Statement on Transboundary Air Quality by the Government of Canada and the Government of the United States of America, July 26, 1979, reprinted in *Environmental and Health Affairs, 1979 DIGEST OF UNITED STATES PRACTICE IN INTERNATIONAL LAW* § 1, at 1612–13. This led to the 1980 Memorandum of Intent between the Governments of the United States and Canada Concerning

transboundary air pollution and set out clear and firm objectives for emissions reductions. In doing so, the IJC is called upon to assist the governments in the implementation of the AQA.

The AQA begins with both countries reaffirming the principle of state extraterritorial responsibility established in *Trail Smelter* and adopted internationally in the Stockholm Declaration, stating the countries' "[d]esir[e] that emissions of air pollutants from sources within their countries not result in significant transboundary air pollution""¹¹⁴ The countries reaffirmed their commitment to Principle 21 of the Stockholm Declaration, as well as:

[T]heir tradition of environmental cooperation as reflected in the Boundary Waters Treaty of 1909, the Trail Smelter Arbitration of 1941, the Great Lakes Water Quality Agreement of 1978, as amended, the Memorandum of Intent Concerning Transboundary Air Pollution of 1980, [and] the ECE Convention on Long-Range Transboundary Air Pollution of 1979.¹¹⁵

While the overall objectives listed in a common preamble are the same, the AQA provides that the parties are responsible for establishing their own objectives for reducing or limiting air pollutants.¹¹⁶ The two nations take different specific steps because their contributions to transboundary air pollution are asymmetrical. The United States selected standards identical to those achievable under Title IV of the 1990 Clean Air Act Amendments, making their passage the necessary prerequisite.¹¹⁷ Beyond that, Annex 1 of the AQA contains specific objectives for each country for sulphur dioxide and nitrogen oxide emissions limitations.¹¹⁸ These commitments are more

Transboundary Air Pollution, Aug. 5, 1980, 32 U.S.T. 2521. The 1980 Memorandum evidenced a commitment to develop a comprehensive bilateral agreement to combat transboundary air pollution, which ultimately became the 1991 U.S.-Canada Air Quality Agreement.

114. AQA, *supra* note 111, at 678.

115. *Id.*

116. *Id.* at 680.

117. *Id.* at 685-86.

118. *Id.* at 685-89. In regard to sulfur dioxide (SO₂), the United States resolved to make a reduction of 10 million tons below 1980 emissions levels by 2000, and a permanent cap of 8.95 million tons per year for electric utilities by 2010. *Id.* at 685-86. Canada pledged to reduce SO₂ emissions in the seven easternmost provinces to 2.3 million tons by 1994 and a similar annual cap in effect until 1999. *Id.* at 686. It pledged a permanent national emissions cap of 3.2 million tons per year by 2000. *Id.* In regard to nitrous oxides (NO_x), the emissions reductions plans are a lot more complicated because stationary sources (power plants) and mobile sources (cars and trucks) are regulated separately.

stringent than any required by any other agreement to which the governments are parties.¹¹⁹ And, “by including target emission standards and deadlines for achieving the stated levels in Annex 1, the parties created a binding obligation.”¹²⁰

Because the Canadians and Americans had successfully used the IJC to resolve boundary issues in the past, expanding the IJC's role in transboundary air pollution disputes was welcomed. Building on the increased role that citizens played in the IJC's work on the GLWQA, the AQA mandates a role for citizens in the IJC's duties. The IJC is required “to invite comments, including through public hearings as appropriate, on each progress report prepared by the Air Quality Committee pursuant to Article VIII”¹²¹ The IJC must then submit to the two countries “a synthesis of the views” of the public and publish this synthesis after submission to the two governments.¹²² To aid in this task, the AQA creates a new Air Quality Committee (AQC), composed of an equal number of members representing each government, to review progress towards implementation of the AQA's terms and provide public notice of achievements.¹²³ The Deputy Assistant Secretary for Environmental Policy heads the U.S. delegation and serves as co-chair of the AQC with the Assistant Deputy Minister of Environment Canada.¹²⁴ The AQC is responsible for reviewing implementation and submitting progress reports to the parties and the IJC biannually,¹²⁵ and the IJC publishes these reports openly.¹²⁶

Furthermore, the AQA imposes mandatory consultation requirements regarding the contents of these reports. These consultations must take place “as soon as practicable, but in any event not later than thirty days from the date of receipt of the request for consultations, unless otherwise agreed by the Parties.”¹²⁷ Consultation is also required concerning proposals or changes in laws, regulations, or policies that “would be likely to affect

Id. at 686–88. In essence, the U.S. pledged a total annual emissions reduction of 2 million tons from 1980 levels by 2000, while Canada pledged a cap of 870,000 tons by 2000. *Id.*

119. Roelofs, *supra* note 9, at 445.

120. Mark L. Glode & Beverly Nelson Glode, *Transboundary Pollution: Acid Rain and United States-Canadian Relations*, 20 B.C. ENVTL. AFF. L. REV. 1, 32 (1993).

121. AQA, *supra* note 111, at 682.

122. *Id.*

123. *Id.* at 682.

124. U.S. State Dep't, U.S.-Canada Air Quality Agreement, *available at* <http://www.state.gov/g/oes/env/83011.htm> (last visited Dec. 16, 2009).

125. AQA, *supra* note 111, at 682.

126. *Id.*

127. *Id.* at 683.

significantly transboundary air pollution."¹²⁸ In addition, negotiations to resolve disputes arising over the "interpretation or the implementation" of the AQA must take place within ninety days.¹²⁹ If the parties fail to resolve any of these disputes by consultation and negotiation, they must consider submitting the dispute to the IJC or to "another agreed form of dispute resolution."¹³⁰ One commentator believes that this is an invitation to utilize the type of tribunal used in the *Trail Smelter II* case.¹³¹ The AQA also provides that the parties may refer to the IJC any other matters "as may be appropriate for the effective implementation of this Agreement"¹³² in accordance with the applicable provisions of the 1909 BWT.¹³³ Thus, the AQA not only regulates behavior but also provides consultation and enforcement mechanisms through the IJC. As such, the AQA assures that citizens, interest groups, and each government, including each government's lower federal tiers, can exert pressure on the other party to effectuate the objectives of the AQA.¹³⁴

In many ways the AQA is a vast improvement over past attempts to address transboundary air pollution problems. As a practical matter, it has been eminently successful in achieving its stated goals.¹³⁵ As those goals are achieved, the framework possesses the adaptability necessary to set higher standards as science dictates.¹³⁶ Theoretically speaking, the AQA

128. *Id.* at 680. A weakness of these provisions is a lingering ambiguity as to what constitutes "significant transboundary air pollution." *Id.* This leaves each nation with broad discretion in making the determination as to whether a particular action should be subject to the assessment, notification, and mitigation requirements. *Id.*

129. *Id.* at 683–84.

130. *Id.* at 684. See also Roelofs, *supra* note 9, at 450 n.254 (citing the *Trail Smelter* arbitration procedure).

131. Roelofs "assume[s] that this referral provision is a reflection of the type of action taken in the *Trail Smelter* Cases." Roelofs, *supra* note 9, at 446 n.235.

132. AQA, *supra* note 111, at 682. Similar provisions can be found in the Boundary Waters Treaty, *supra* note 5, at 2452, and the GLWQA78, *supra* note 97, at 1394.

133. AQA, *supra* note 111, at 683–84.

134. Roelofs, *supra* note 9, at 449.

135. Emissions of both NO_x and SO₂ have been drastically reduced. Env'tl. Prot. Agency, Cap and Trade: Acid Rain Program Results, available at <http://www.epa.gov/airmarkets/cap-trade/docs/ctresults.pdf> [hereinafter Acid Rain Program Results]. In the United States, NO_x emissions from power plants in 2002 were 33 percent below 1990 levels, and SO₂ levels were 40 percent below what they were in 1990. *Id.* Canada has similarly reduced NO_x and SO₂ emissions. U.S. State Dep't, U.S.-Canada Air Quality Agreement, *supra* note 125. An additional Annex to the Agreement addressed Scientific Cooperation, and in 1997 the Parties signed a "Commitment to Develop a Joint Plan of Action for Addressing Transboundary Air Pollution" to address the shared problems of ground-level ozone and particulate matter. *Id.*

136. The AQA requires that the two countries review the terms of the document every five years in order to make adjustments dictated by time and new information. AQA, *supra* note 111, at 683; Glode, *supra* note 120. Indeed, the subsequent years saw a quick rate of progress and additional Annexes. Acid Rain Program Results, *supra* note 135. The United States and Canada signed an Ozone

strengthens the international environmental law principle of state extraterritorial responsibility and establishes an effective bilateral framework for addressing the problems of transboundary air pollution. The assessment and notification provisions, in concert with mandatory consultation requirements, provide each government with some means to influence pollution-related activities in the other country. The AQA uses the IJC to serve as a mediator and exposes the entire review process to public scrutiny. In doing so, it has added another effective check and balance to the framework in which present and future transboundary air pollution problems occurring between the United States and Canada will be resolved. As a result, the IJC has been charged with a new and important role in resolving U.S.-Canada transboundary air pollution problems.

III. THE IJC'S SECOND CENTURY

If the IJC's second century of transboundary air pollution management is to be as prolific as its first, the governments must recognize both the successes and shortcomings of the present IJC model as well as the gravity of transboundary pollution problems that are yet to be properly addressed. Thus far, the IJC has proven to be indispensable in the pursuit of a healthy transboundary environmental balance. Today, the model should be equipped with the tools necessary to confront the challenges that lie ahead.

Several shortcomings have been identified by commentators and critics upon review of IJC operations. Some lament that the IJC decisions adopted under Article IX are non-binding and do not possess the color of law.¹³⁷ Others point out that the IJC members are political appointees. Despite pledging to perform their duties in an impartial manner, it is unlikely that the IJC would ever take a hard-line position and risk angering either country given its dependence on the services of national officials.¹³⁸ We believe that the IJC's limitation to make recommendations only on matters explicitly referred to it severely retarded environmental progress during the era of the three Detroit-St. Clair River Region references.

For the IJC to maintain the role it has earned, four main suggestions should be heeded. First and foremost, the governments must be vigilant and forward-thinking in drafting references to the IJC. In the future, the

Annex to the AQA in December 2000 to reduce emissions of the precursors to ground-level ozone. Currently, the two countries are considering an additional annex to control particulate matter. *Id.*

137. Glode, *supra* note 120, at 33.

138. *Id.* at 34.

precautionary principle of international environmental law should be directly applied when drafting references for submission. Second, the IJC's lack of binding decision-making power has sometimes led to lax application of its suggestions. IJC reports should have recognized evidentiary value in suits brought under section 115 of the U.S. Clean Air Act and section 21.1 of its Canadian counterpart. Third, a simple tweaking of Article X of the BWT would make in-house arbitration a more attractive dispute resolution procedure compared to transboundary litigation. Finally, the IJC should be granted all of its familiar roles vis-à-vis the upcoming transboundary air pollution cap-and-trade system suggested by the 2003 AQA Border Air Quality Strategy. Indeed, the IJC could be utilized in the expected transboundary carbon cap-and-trade system currently being discussed by the governments. The latter is not a radical proposal; it would not be the first time that the IJC has been granted new subject matter beyond the original wording of the 1909 BWT.

A. The Governments Should Incorporate the Precautionary Principle in Drafting Future IJC References

As the history of the three Detroit-St. Clair River references and the two Great Lakes Water Quality Agreements proves, the governments should be more imaginative and progressive when submitting references to the IJC in order to conserve resources and avoid having to resubmit them later. As stated, the 1949 reference charged the IJC with determining whether the air in the vicinity of Detroit-Windsor was being polluted but limited the IJC inquiry to smoke emissions from ships plying the Detroit River.¹³⁹ Seventeen years later, a broader mandate finally came. It would be another nine years before the IJC's request to conduct ongoing monitoring of air pollution was granted. All in all, it took twenty-six years for the IJC to accumulate the authority it needed to sufficiently police the air quality of the Detroit-Windsor corridor—over two and a half decades where progress could have been made more quickly.

During those years and beyond, environmental and public health activists struggled to find ways to protect health and the environment when facing scientific uncertainty about cause and effect. Luckily, international environmental law norms already provide guidance that, if followed, would help prevent the sometimes irreparable damage caused by lengthy delays. Indeed, along with the “polluter pays” and “extraterritorial responsibility” principles of international environmental law established in *Trail Smelter*

139. 1966 Report, *supra* note 48.

and incorporated into the various United Nations conventions on the environment,¹⁴⁰ there is also an established “precautionary principle.” This principle, which has since become a critical part of environmental agreements throughout the world, offers the public and decision-makers a forceful, common-sense approach to environmental and public health problems.

The precautionary principle was born in the Germanic legal tradition¹⁴¹ and spread throughout Europe in the early 1970s to provide environmental risk managers with a tool for decision-making on environmental threats.¹⁴² It was codified as Principle 15 of the 1992 Rio Declaration on the Environment and Development: “In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”¹⁴³

This was the first codification of the precautionary principle on a global scale. Since then it has been incorporated into numerous conventions, statutes, and court decisions around the world,¹⁴⁴ causing many scholars to argue that it may have already achieved the status of customary

140. The “polluter pays” principle is codified in the Rio Declaration at Principle 16; “extraterritorial responsibility” is codified in Principle 2. Rio Declaration, *supra* note 47, at 876–79.

141. The precautionary principle is rooted in the German principle of *Vorsorge*, meaning precaution or foresight. Charmian Barton, *The Status of the Precautionary Principle in Australia: Its Emergence in Legislation and As a Common Law Doctrine*, 22 HARV. ENVTL. L. REV. 509, 514 (1998) (citing Sonja Boehmer-Christiansen, *The Precautionary Principle in Germany: Enabling Government*, in INTERPRETING THE PRECAUTIONARY PRINCIPLE 38 (Tim O’Riordan & James Cameron eds., 1994)).

142. Thomas Lundmark, *Systemizing Environmental Law on a German Model*, 7 DICK. J. ENVTL. L. & POL’Y 1, 11 (1998); DAVID FREESTONE & ELLEN HEY, THE PRECAUTIONARY PRINCIPLE AND INTERNATIONAL LAW, at 4 (1996).

143. See Rio Declaration, *supra* note 47, at 879.

144. The Principle was integrated into numerous international conventions and agreements, including the Bergen declaration on sustainable development (Bergen Ministerial Declaration on Sustainable Development in the ECE Region, 6, Aug. 1990, in 1 Y.B. INT’L ENVTL. L. 429, 431 (1990)), the Maastricht Treaty on the European Union (The Treaty on the European Union, 7, Feb. 1992, 35 O.J. (C 191) 29, available at http://eur-lex.europa.eu/en/treaties/dat/11992M/tif/JOC_1992_191__1_EN_0001.pdf), the Barcelona Convention (Convention for the Protection of the Mediterranean Sea Against Pollution, 1976, available at http://195.97.36.231/databases/webdocs/BCP/BC76_eng.pdf), and the Global Climate Change Convention (United Nations Framework Convention on Climate Change, 1776 U.N.T.S. 107, 170, available at <http://unfccc.int/resource/docs/convkp/conveng.pdf> [hereinafter UNFCCC]). Furthermore, the European Union expressly adopted the Principle in its February 2000 “Communication from the Commission on the Precautionary Principle.” *Communication from the Commission on the Precautionary Principle*, at 3, COM (2000) 1 final (Feb. 2, 2000), available at http://ec.europa.eu/dgs/health_consumer/library/pub/pub07_en.pdf.

international law.¹⁴⁵ That longstanding academic debate must remain outside of the scope of this paper. The authors highlight the obvious, however, in noting that years of human exposure to toxic industrial pollutants would have been avoided if such a common-sense approach had been applied earlier in the Great Lakes Region.

The United States's relationship with the principle is convoluted. The United States should be honor-bound to apply the precautionary principle because it signed and ratified the Rio Declaration¹⁴⁶ as well as the United Nations Framework Convention on Climate Change.¹⁴⁷ Despite these acceptances of the principle, however, minimal effort has been made to implement it. It is not expressly acknowledged in the laws of the United States, though much national environmental legislation possesses a precautionary nature.¹⁴⁸ Furthermore, some American courts have demonstrated hostility towards its application or recognizing its status as customary law.¹⁴⁹ Canadian legislators and courts have each been more

145. To prove the status of customary international law, it must be demonstrated that a) it was the practice of all or nearly all states, and b) that these states applied it because they believed they were legally bound to do so. PHILIPPE SANDS, *PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW* VOL. 1 143–45 (Vaughan Lowe & Dominic McGoldrick eds., 1995). This sense of legal obligation, or *opinio juris*, arises when states no longer feel free to deviate from the practice of customs and habits. BARRY E. CARTER ET AL., *INTERNATIONAL LAW* 122 (4th ed. 1991).

146. JOEL TICKNER ET AL., *THE PRECAUTIONARY PRINCIPLE IN ACTION: A HANDBOOK 2* (Science and Environmental Health Network ed., 1999).

147. UNFCCC, *supra* note 144. Article 3 of the United Nations Framework Convention on Climate Change also contains a precautionary principle. This treaty was also a product of the 1992 Rio Conference. The treaty aims to stabilize greenhouse gas concentrations but contains no binding provisions; the principal update which added mandatory steps was the Kyoto Protocol.

148. Kannan cites provisions of the National Environmental Policy Act, Clean Water Act, Occupational Safety and Health Act (OSHA), and Pollution Prevention Act of 1990 as examples. See Philip M. Kannan, *The Precautionary Principle, More Than a Cameo Appearance in United States Environmental Law?*, 31 WM. & MARY ENVTL. L. & POL'Y REV. 409, 430–31 (2007). A more recent example is Article 3 of the United Nations Framework Convention on Climate Change. UNFCCC, *supra* note 144.

149. To recognize its standing as customary law would be to suggest that the United States must officially abide by it. The U.S. Supreme Court stated in *The Paquete Habana*, 175 U.S. 677, 700 (1900), that customary international law may become part of domestic law:

International law is part of our law, and must be ascertained and administered by the courts of justice of appropriate jurisdiction, as often as question of right depending upon it are duly presented for their determination. For this purpose, where there is no treaty, and no controlling executive or legislative act or judicial decision, resort must be had to the customs and usages of civilized nations.

Thus, when confronted with the principle in *Beanal v. Freeport-McMoran, Inc.*, 197 F.3d 161, 167 (5th Cir. 1999), the United States Fifth Circuit Court of Appeals held that the principle could not achieve customary international law status because of its ambiguous nature. The court explained:

[The plaintiff] fail[ed] to show that [the precautionary principles stated in the Rio Declaration and other treaties] enjoy universal acceptance in the international community. The sources of international law cited by [the plaintiff] and the amici

sympathetic to the explicit recognition of the principle than their American counterparts,¹⁵⁰ writing it into the very fabric of the Canadian Environmental Protection Act.¹⁵¹ Thus, acceptance of the principle is far more advanced in Canada than it is in the United States.

Nevertheless, the precautionary principle was applied between the governments with the signing of the GLWQA in 1978. That understanding established the goal of eliminating virtually all discharges of toxins into the Great Lakes. Under the GLWQA, the IJC was designated to conduct research and issue statements on the quality of the lakes and threats to that quality. In its Sixth Biennial Report on Great Lakes Water Quality, the IJC noted that attempts to control the release of toxic substances into the Great Lakes Basin had failed miserably and stated: “[A]ll persistent toxic substances are dangerous to the environment, deleterious to the human condition, and can no longer be tolerated in the ecosystem, whether or not unassailable scientific proof of acute or chronic damage is universally accepted.”¹⁵²

Since then, conditions have generally improved. History evinces that the precautionary principle has had a positive effect when applied along the U.S.-Canada border. It should be automatically considered and given the fullest possible legal effect when drafting future references to the IJC in order to save valuable time and protect human health. An explicit way to reflect the adoption of the principle would be to codify it into new laws, regulations, or a binding treaty, opportunities which the upcoming

merely refer to a general sense of environmental responsibility and state abstract rights and liberties devoid of articulable or discernable standards and regulations to identify practices that constitute international environmental abuses or torts.

In so concluding, the Fifth Circuit rejected arguments that the precautionary principle is *opinio juris*: followed by most states out of a sense of legal obligation.

150. The principle has been codified into even more Canadian legislation, including the Oceans Act, 1996 S.C., ch. 31, pmbl ¶ 6 (Can.), available at <http://laws.justice.gc.ca/PDF/Statute/O/O-2.4.pdf>, and the Endangered Species Act, 1998 S.N.S., ch. 11, §§ 2(1)(h), 11(1) (Can.), available at http://www.gov.ns.ca/legislature/legc/bills/57th_1st/3rd_read/b065.htm. See also Kathryn Chapman, 114957 *Canada Ltée (Spray-Tech, Société d'arrosage) v. Hudson (ville): Application of the Precautionary Principle in Domestic Law*, 15 CAN. J. ADMIN. L. & PRAC. 123, 124 (2001) (“[T]he Supreme Court of Canada may have taken a step towards affirming this principle in Canadian jurisprudence as an element of customary international law . . .”).

151. Environmental Protection Act, 1999 S.C., ch. 33, § 2(1)(a) (Can.), available at <http://www.laws.justice.gc.ca/PDF/Statute/C/C-15.31.pdf>.

152. Int'l Joint Comm'n, Sixth Biennial Report Under the Great Lakes Water Quality Agreement of 1978 to the Governments of the United States and Canada, available at <http://www.ijc.org/php/publications/html/6bre.html> (last visited Oct. 24, 2009).

adoption of new transboundary cap-and-trade mechanisms will soon yield.

B. The Governments Should Recognize the Evidentiary Value of IJC Decisions in Domestic Courts and Make IJC-Sponsored Arbitration a More Attractive Alternative to Litigation

The IJC lacks binding mechanisms and independent enforcement power by design. The failure of governments to bring claims of environmental harm against one another is most often attributed to the fear of reciprocal claims.¹⁵³ The IJC is trusted as a safe harbor in which to diplomatically resolve transboundary disputes precisely because it lacks binding power. The most telling example of this is the fact that the Article X binding arbitration procedure has never been utilized.¹⁵⁴ However, after a century of excellent work, IJC reports should be officially recognized as valid evidence in suits brought under section 15 of the U.S. Clean Air Act and section 21.1 of the Canadian Clean Air Act. In addition, the Article X procedure should be tweaked to make binding IJC arbitration a streamlined and more attractive alternative to litigation. These steps should be taken now that both administrations appear to be more amenable to liberal environmental policies.

1. The Governments Should Recognize the Evidentiary Value of IJC Decisions in Their Domestic Courts

Section 115 of the 1977 U.S. Clean Air Act Amendment provides that if the EPA Administrator receives notice from an international agency that pollution originating from the United States endangered the public welfare of a foreign country, the Administrator must require the offending state(s) to submit a revised action plan (a State Implementation Plan, or SIP) addressing the problem.¹⁵⁵ In order to trigger this section, the injured

153. Knox, *supra* note 46, at 71, 73.

154. Hall 2006, *supra* note 15.

155. Clean Air Act, 42 U.S.C. § 7415(a) (2006) (“Whenever the Administrator, upon receipt of reports, surveys or studies from any duly constituted international agency has reason to believe that any air pollutant or pollutants emitted in the United States cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare in a foreign country or whenever the Secretary of State requests him to do so with respect to such pollution which the Secretary of State alleges is of such a nature, the Administrator shall give formal notification thereof to the Governor of the State in which such emissions originate.”).

foreign state must have provided the United States with reciprocal rights.¹⁵⁶ Within a few years of this codification, a section 115 suit was filed in the United States District Court for the District of Columbia to compel EPA Administrator Lee M. Thomas to order the offending states to revise their SIPs.¹⁵⁷ The district court in *New York v. Thomas* had to decide first whether the litigants satisfied the requirements of section 115 and, if so, what actions the EPA Administrator must take.¹⁵⁸ Thus, the court examined section 115 and elaborated upon three prongs contained within: harm, reciprocity,¹⁵⁹ and duty.¹⁶⁰

To satisfy the evidence-of-harm requirement of section 115(a), the district court interpreted the text of the statute to hold that the Administrator only need have “reason to believe that any air pollutant or pollutants emitted in the United States cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare in a foreign country.”¹⁶¹ To meet this evidentiary standard, the plaintiffs submitted a speech by former EPA Administrator Douglas M. Costle in which he publicly announced that “acid deposition is endangering public welfare in the United States and Canada . . . sources contribute to the problem not only in the country where they are located but also in the neighboring country,”¹⁶² and that “section 115 authority could appropriately be used to

156. 42 U.S.C. § 7415(c) (“This section shall apply only to a foreign country which the Administrator determines has given the United States essentially the same rights with respect to the prevention or control of air pollution occurring in that country as is given that country by this section.”).

157. *New York v. Thomas*, 613 F. Supp. 1472, 1476 (D.D.C. 1985), *rev'd*, 802 F.2d 1443 (D.C. Cir. 1986).

158. *Id.* at 1481–82.

159. *Id.* at 1481–83. The court found that section 21.1 of the Canadian Clean Air Act contained similar provisions to section 115 of the United States Clean Air Act that satisfied the reciprocity requirement of section 115(c). *Id.* at 1483–84.

Under section 21.1(1), if the Environmental Minister determines that “an air contaminant emitted . . . in Canada creates or contributes to the creation of air pollution that may reasonably be expected to constitute a significant danger to the health, safety or welfare of persons in any other country,” he shall “recommend to the cabinet . . . such specific emission standards . . . as he may consider appropriate for the elimination or significant reduction of that danger.” An Act to Amend the Clean Air Act, 1980 C. Gaz., ch. 45 s. 3. Except with regard to federal sources, the Minister must first give the province an opportunity to remedy the situation. *Id.* If the province fails to do so, and the complaining country provides reciprocal rights, Environment Canada is then authorized to prescribe specific emission standards. *Id.*

160. *New York v. Thomas*, 613 F. Supp. at 1486. The Clean Air Act clearly directs the EPA Administrator to commence the process of requiring offending states to revise their respective SIPs. 42 U.S.C. § 7415(b). Consequently, the court ordered the EPA Administrator to provide such notice to the state governors responsible for the conditions encompassed by the Costle determinations. *New York v. Thomas*, 613 F. Supp. at 1486.

161. § 7415(a).

162. Letter from Douglas Costle, Administrator of the E.P.A., to Edmund Muskie, Secretary of State (Jan. 13, 1981), *reprinted in* *New York v. Thomas*, 613 F. Supp. at 1488. See Letter from Douglas

develop solutions.” Costle claimed that he based his findings on a report issued by the IJC,¹⁶³ and the court accepted this submission of evidence by the plaintiffs.

On appeal, the United States Court of Appeals for the District of Columbia reversed the district court's decision in *Thomas*.¹⁶⁴ The decision, written by Judge Antonin Scalia (now a United States Supreme Court Justice), dismissed the case as involving “an unusual statute executed in an unexpected manner.”¹⁶⁵ The appeals court concluded that Costle’s findings could not serve as the basis for the judicial relief sought by the plaintiffs because they were not made in accordance with the notice and public comment requirements of the Administrative Procedure Act.¹⁶⁶ Thus, the appellate court found it unnecessary to address the other merits of the case, and the Canadian government did not intervene.¹⁶⁷ While Costle’s speech alone may not be sufficient evidence, the IJC report he claimed to base his speech on should have been recognized if it were submitted.

IJC reports possess a long and respected history. While their evidentiary value is not, unfortunately, the only judicial hurdle to a section 115 suit at the present time,¹⁶⁸ a sympathetic majority may now exist in the high offices of American federal government to reclaim section 115 for the

Costle, Administrator of the E.P.A., to George Mitchell, United States Senate (Jan. 13, 1981), *reprinted in* *New York v. Thomas*, 613 F. Supp. at 1488 (“Section 115 authority could appropriately be used to develop solutions.”).

163. *New York v. Thomas*, 613 F. Supp. at 1476.

164. *Thomas v. New York*, 802 F.2d 1443, 1448 (D.C. Cir. 1986).

165. *Id.* at 1446.

166. *Id.* at 1446–48; Administrative Procedure Act, 5 U.S.C. § 553 (2006).

167.

Notwithstanding the question of sovereignty, Canada's intervention in the American legal system could possibly ignite similar action by the United States under the reciprocity provisions of the Canadian Clean Air Act. More important, by accepting the jurisdiction of the United States court system in the *Thomas* case, Canada would waive any immunity afforded by the act of state and sovereign immunity doctrines against counterclaims for damages caused in the United States by Canadian pollutants. These two possibilities are sufficient to make application of municipal law a less than desirable dispute resolution mechanism for addressing transboundary air pollution.”

Glode, *supra* note 120, at 24.

168. In *Her Majesty the Queen in Right of Ontario v. U.S. EPA*, 912 F.2d 1525, 1535 (D.C. Cir. 1990), the D.C. Circuit Court of Appeals again rejected a Canadian attempt to utilize section 115. The Province of Ontario accused the EPA of acting arbitrarily by denying its request, and that of the state of New York, and sought to require the EPA to make endangerment and reciprocity findings under section 115. *Id.* at 1530. The court concluded that unless the EPA was prepared to identify specific sources in specific states as contributors to air pollution endangering public health or welfare in Canada, and to call for additional controls on those sources, there would be no point in issuing the endangerment and reciprocity findings. *Id.* at 1534–35.

future. As of now, it has never been conclusively established whether section 115 of the Clean Air Act can serve as a means of resolving transboundary air pollution issues. One way to resolve this uncertainty would be to afford evidentiary weight to IJC findings. In turn, individual IJC reports would begin to have legal value. Stronger and well-reasoned IJC decisions may become binding in concert with judicial proceedings, but only when all other standing requirements are met. Thus, a clarification of section 115 by reevaluating the legal value of IJC decisions would create a powerful new partnership for transboundary environmental protection.

2. The Governments Should Tweak the Boundary Waters Treaty to Make IJC-Sponsored Arbitration a More Attractive Alternative to Litigation

Transboundary litigation, under any circumstances, is a messy proposition. Arbitration is preferable for reasons of speed, cost, control, privacy, and technical specialization. While the BWT contains provisions for IJC-sponsored arbitration, the *Trail Smelter* cases revealed the existence of two simple procedural errors with the Article X mechanism. A new and independent tribunal was established for two reasons. First, the consent of neither the U.S. Senate nor the Canadian Parliament was necessary to legitimize the proceeding. Second, as IJC delegates are officials appointed by their home government, it is unlikely that they would vote against their sponsor nation. Thus, this and every Article X referral would probably result in a split decision. A simple solution could fix these apparent problems: the text of Article X of the BWT should be amended in two places.

First, the last clause of the first paragraph should be amended to reflect modern geopolitical realities, both globally and domestically. That clause reads:

Any questions or matters of difference arising between the High Contracting Parties involving the rights, obligations, or interests of the United States or of the Dominion of Canada either in relation to each other or to their respective inhabitants, may be referred for decision to the International Joint Commission by the consent of the two Parties, *it being understood that on the part of the United States any such action will be by and with the advice and consent of the Senate, and on the part of His Majesty's*

*Government with the consent of the Governor General in Council.*¹⁶⁹

As environmental issues have become so divisive as to result in deadlock in the chambers of both governments, the BWT should be amended to permit the executives and their ministerial agents—the U.S. Secretary of State and the Canadian Minister of Foreign Affairs—to make executive referrals to the IJC under Article X. This is precisely what happened in *Trail Smelter*, when the President of the United States and the King of Great Britain concluded a separate convention to enable such a proceeding.¹⁷⁰ If this step were to be taken, the advantages would include the benefit of a clear procedure, the saving of political and diplomatic resources, and even a possibility for the development of IJC precedent. Furthermore, the number of cases submitted to the IJC would likely remain low, as the executives alone would have to bear the political risk of referral. If a major case were referred to the IJC in an unpopular or negligent manner, the executives would still be accountable to the political will of their peoples as evinced through the constitutional distribution of checks and balances. Conversely, the checks on the IJC are, and would remain, the prospects of a lack of referrals, reduced funding, re-staffing, and/or even disbandment if trust in that institution were to be abused.

Second, the probability of ineffective conferencing is high at present because the IJC panel is composed of an even number of bureaucrats appointed from each nation. The *Trail Smelter* tribunal remedied the possibility of endless indecision by allowing one participant from each country and an independent chairman from a neutral, third-party state (in that case, a Belgian national).¹⁷¹ The text of Article X does anticipate a course of action in the event of paralysis, but that procedure requires a new submission to a sole arbitrator.¹⁷² This option may be undesirable because

169. Boundary Waters Treaty, *supra* note 5, art. X (emphasis added).

170. Convention Relative to the Establishment of a Tribunal to Decide Questions of Indemnity and Future Regime Arising from the Operation of Smelter at Trail, British Columbia, U.S.-Can., Apr. 15, 1935, 49 Stat. 3245.

171. *Trail Smelter Case* (United States v. Canada) 3 R.I.A.A. 1905, 1911 (Trail Smelter Arb. Trib. 1941).

172.

If the said Commission is equally divided . . . it shall be the duty of the Commissioners to make a joint report to both Governments, or separate reports to their respective Governments, showing the different conclusions arrived at with regard to the matters or questions referred, which questions or matters shall thereupon be referred for decision by the High Contracting Parties to an umpire chosen in accordance with the procedure prescribed in the fourth, fifth and sixth paragraphs of Article XLV of the Hague Convention for the pacific settlement of international disputes

of the inherent uncertainty of the result and the feeling that the governments have lost control of the process. The governments should replace this provision with a streamlined process: any dispute sent to the IJC under Article X should be submitted immediately to an adjudicatory panel. That panel, like the one established in 1935, should contain an even number of delegates from both sides (at the least one and at the most three), as well as a neutral arbitrator from a third-party state to serve as chairman. That would reduce the two-tier process to one single step and assure the governments that they will not be in danger of losing control of the process to an outsider.

For the aforementioned reasons, Article X, as written, is impractical. Indeed, it has never been used in the 100 years of IJC operations. The governments should learn from the *Trail Smelter* experience and take this historic opportunity to rewrite Article X of the BWT in order to make IJC-sponsored arbitration an attractive alternative to litigation.

*C. The Governments Should Assign the IJC a Prominent Role in Future
Transboundary Cap and Trade Regimes*

Inspired in part by the positive impact of the concentrated attention on regional air quality around the Great Lakes, Canada and the United States announced three major air quality pilot projects under the AQA's *Border Air Quality Strategy* in 2003.¹⁷³ Two of the three programs contribute to achieve the AQA's objectives by focusing extra attention, planning, monitoring, reporting, and enforcement resources on particularly problematic spots along the US-Canadian border.¹⁷⁴ The third major initiative is a joint study exploring the feasibility of transboundary emissions trading for NO_x (nitrogen oxides) and SO₂ (sulfur dioxide).¹⁷⁵ In addition, there are high hopes for implementation of a transboundary cap-and-trade regime for carbon emissions by 2012.

Boundary Waters Treaty, *supra* note 5, art. X.

173. Canada-U.S. Border Air Quality Strategy Projects, <http://www.epa.gov/airmarkt/progsregs/usca/pilotproject.html> (last visited Aug. 29, 2009).

174. GEORGIA BASIN-PUGET SOUND INTERNATIONAL AIRSHED STRATEGY, June 2005, http://www.epa.gov/r10earth/psgb/media/pdf/international_airshed_strategy.pdf; GREAT LAKES BASIN AIRSHED MANAGEMENT FRAMEWORK PILOT PROJECT, June 2003, <http://www.epa.gov/airmarkt/progsregs/usca/docs/glb.pdf>.

175. U.S. EPA, UNITED STATES-CANADA EMISSIONS CAP AND TRADING FEASIBILITY STUDY, BORDER AIR QUALITY STRATEGY (2005), <http://www.epa.gov/airmarkets/progsregs/usca/docs/feasstudy.pdf> [hereinafter FEASIBILITY STUDY].

The impetus for the transboundary air pollution cap-and-trade feasibility study was the success of present cap-and-trade systems utilized in the United States.¹⁷⁶ Those programs are administered solely by the U.S. EPA, which is responsible in all aspects for gathering reports, ensuring compliance, pursuing penalties, and managing public concern. The focus of the new transboundary study has been electricity generators that burn fossil fuels, and many significant obstacles to implementation have been identified.¹⁷⁷ For example, the national legal frameworks were assessed for gaps that would need to be addressed, and both countries were confronted with a need to implement regulatory changes to ensure that the allowances issued by the other country would be equivalent for harmonized recognition, trading, and enforcement purposes.¹⁷⁸ None of these challenges are insurmountable. While primary compliance and enforcement duties should remain the purview of the national-level regulators, IJC recommendations and public diplomacy skills would doubtlessly prove as beneficial to this regime as they have to other transboundary issues in the past.

Additionally, Canadian Prime Minister Stephen Harper indicated willingness to join the United States in forming a transboundary carbon emission cap-and-trade program days after President Obama's election victory.¹⁷⁹ Canadian climate-change policy has already been advanced at the provincial level. British Columbia imposed a carbon tax on fossil fuels in summer 2008, around the same time that Ontario and Quebec agreed to establish a bilateral cap-and-trade system. All together, four provinces are committed to a cap-and-trade system with seven U.S. states under the Western Climate Initiative (WCI), and this union may serve as a precursor to national or bilateral plans.¹⁸⁰ The WCI is due to start in 2012, the

176. The two existing U.S. cap-and-trade programs are the Acid Rain Program and the NO_x Budget Program, both under Title IV of the 1990 Clean Air Act Amendments, 42 U.S.C. § 7651 (2006). The Acid Rain Program limits the amount of SO₂ that can be emitted from U.S. coal-burning electric power plants. In 2010 the national cap will be reset to 8.95 million tons—about 1/2 the 1980 amount. Since its implementation in 1995, the U.S. Acid Rain Program sources have reduced SO₂ emissions by 49 percent from 1980 levels and 43 percent from 1990 levels. U.S. EPA, ACID RAIN AND RELATED PROGRAMS: 2007 PROGRESS REPORT 6 (2007), available at <http://www.epa.gov/airmarkt/progress/docs/2007ARPRReport.pdf>.

177. FEASIBILITY STUDY, *supra* note 175, at ix.

178. *Id.* at ix–x.

179. CBC News, Canada to Push Climate Agreement with Obama Government, Nov. 5, 2008, <http://www.cbc.ca/canada/story/2008/11/05/canada-us-environment.html?ref=rss> (last visited April 7, 2009).

180. History of Western Climate Initiative, <http://www.westernclimateinitiative.org/wci-partners> (last visited Dec. 16, 2009).

expected launch date for a U.S. federal system, leading some to think the WCI will simply be subsumed into the latter.¹⁸¹

The IJC can surely make positive contributions to either regime as it has so many times in the past. This humble review of the first 100 years, with its special emphasis on positive contributions to transboundary air pollution regulation, proves that the IJC has a continuing and indispensable role to play in future developments. First, there is no reason to deny the IJC its usual responsibilities of ongoing monitoring, research, publication, and dialog. While the IJC has not had a role in the purely domestic U.S. cap-and-trade programs, its ability to harmonize information and resources for a transboundary audience should be incorporated into the international regime. Second, the IJC consultation and dispute resolution procedures should once again be incorporated into the new regime to provide a forum for diffusing any situations which may arise, as they were under the AQA. Third, assigning these roles to the IJC would ensure a high level of quality and professionalism while bringing the resources and experience of the IJC staffers to bear on a related issue. This, as well as the wealth of experience the IJC has had in making recommendations, would assist the EPA and Ministry of Environment greatly in administering programs. More imaginatively, once the realm of cap-and-trade has been entered into, the IJC may be utilized to help manage the public's concern over carbon emissions and global warming. This is not a radical suggestion, as it obviously would not be the first time that the IJC has been assigned an area of authority not originally delegated under the BWT. Indeed, scientific advances inform us that global warming must logically be included in any new evaluation of the evolving definition of "ecosystem" promulgated under the 1978 GLWQA, especially if the precautionary principle is brought to bear. As such, the governments must include carbon reduction strategies within their comprehensive ecosystem plans. The people of both nations would benefit if the IJC should find itself with these new areas of vigilance under its umbrella.

CONCLUSION

Professor Wolf stated upon the IJC's centennial celebration, "I can attest that the models and approaches that the IJC has pioneered and

181. See Comments of the Western Power Trading Forum to the Western Climate Initiative on the Development of a Regional Cap and Trade Program 3, <http://www.westernclimateinitiative.org/ewebeditpro/items/O104F14495.pdf> (last visited April 7, 2009).

implemented over the years have contributed not only to 100 years of peaceful and productive management of U.S.-Canadian shared water resources, but have informed collaborations in often tense basins around the world.¹⁸² The same can emphatically be said for the IJC's contributions to transboundary air quality management.

Decades of involvement in air pollution matters placed the IJC at the forefront of global transboundary air pollution. Within years of the IJC's establishment in the 1909 BWT it was called upon to directly settle a case of first impression concerning transboundary air pollution. In doing so, it canonized important and lasting precedents to the field of international environmental law. Its record since then has been no less impressive or important. The three Detroit-St. Clair River references prove the IJC's effectiveness and passion for solving transboundary air pollution disputes while demonstrating that another important environmental law norm—the precautionary principle—must be applied to all IJC submissions. The GLWQA of 1972 transformed the IJC into a manager of public record, and its 1978 successor explicitly acknowledged the linkage between air and water pollution, citing the interconnectivity of different elements within an ecosystem. In addition, the 1991 U.S.-Canada Air Quality Agreement reaffirmed the governments' faith in the IJC by once again assigning it prominent public diplomacy and dispute resolution functions.

On its 100th anniversary the time is right for an evaluation and retooling. If the IJC's second century is as prolific as its first, the governments must equip the IJC with the authority it will need to continue to make a positive difference. First and foremost, the governments must be more vigilant and forward-thinking in drafting new IJC referrals. To enable this, the international environmental law precautionary principle should be directly applied when composing future references for submission. Second, the evidentiary value of IJC reports should be recognized in domestic courts on both sides of the border, especially in the context of section 115 of the U.S. Clean Air Act and section 21.1 of the Canadian Clean Air Act. A slight tweaking as part of a modernization of the BWT could also easily transform the IJC's Article X arbitration option into an attractive alternative to litigation. Lastly, the IJC should be granted all of its familiar roles vis-à-vis the upcoming transboundary air pollution cap-and-trade system reviewed under the 2003 AQA Border Air Quality Strategy. Indeed, the IJC could even be utilized in the expected transboundary carbon cap-and-trade system currently being discussed by the U.S. and Canadian governments. The IJC

182. Press Release, Int'l Joint Comm'n, New Website Launched on World Water Day to Mark Centennial of Boundary Waters Treaty and Post 100 Years of IJC Reports Online for the First Time (Mar. 20, 2009), http://www.ijc.org/rel/news/2009/090319_e.htm.

has already proven its adaptability and utility to new subject matter beyond the original grant of the 1909 BWT. We now celebrate that venerable history and hope that these humble suggestions may help to empower the IJC to continue its role as guardian of the U.S.-Canada transboundary environment for the foreseeable future.

