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# STUDENT COMMENT

## Who'll Stop the Rain: Resolution Mechanisms for U.S.-Canadian Transboundary Pollution Disputes

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GINA L. SWETS\*\*

Since the signing of the Rush-Bagot Agreement of 1817<sup>1</sup> which demilitarized the border between the United States and Canada, relations between the two countries have been characterized by cooperation, conciliation and an awareness of a common heritage. It is this awareness which has historically provided the framework for the successful resolution, through negotiation and compromise, of many of the problems facing the two nations. In light of the great strides Canada and the United States have made by employing a cooperative approach to resolving their differences, it is especially unfortunate that the problems of transboundary air and water pollution threaten to hinder progress toward greater cooperation. Both nations contribute significant amounts of pollutants into the environment of the other. Thus, the problem of transboundary pollution is bilateral in scope. A mutually satisfactory resolution of this problem is essential to the economic and aesthetic welfare of both nations.

The discussion to follow will explore selected mechanisms for the resolution of transboundary environmental disputes between the United States and Canada. The areas to be examined are: 1) limited territorial sovereignty as a basis for liability in transboundary pollution disputes; 2) a remedy to the acid rain dispute under section 115 of the U.S. Clean Air Act;<sup>2</sup> 3) the effectiveness of current mechanisms for resolving disputes

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1. Rush-Bagot Agreement, Apr. 28-29, 1817, United States-Canada, 8 Stat. 231, T.S. No. 110 1/2. While this agreement provided only for disarmament of the Great Lakes, it was the impetus for subsequent disarmament on land. Address by Lawrence S. Eagleburger, Asst. Sec'y for European Affairs, before the Center for Inter-American Relations, in New York City (Oct. 1, 1981), reprinted in BUREAU OF PUB. AFFAIRS, U.S. DEP'T ST., CURRENT POL'Y No. 318 (Oct. 1981).

2. Clean Air Act, § 115, 42 U.S.C. § 7415 (Supp. IV 1980).

over the Poplar River and Garrison Diversion projects;<sup>3</sup> and 4) the draft treaties proposed by a Joint Working Group of the American and Canadian Bar Associations dealing exclusively with the resolution of disputes between the United States and Canada.<sup>4</sup>

The authors conclude that despite the availability of adequate legal mechanisms for resolving disputes, it is unlikely that either the U.S. Government or the Canadian Government will willingly employ any of these legal mechanisms. It is far more likely that the United States and Canada will continue to pursue negotiated settlements of these volatile issues through diplomatic channels.

### I. LIMITED TERRITORIAL SOVEREIGNTY

Before discussing the acid rain and water pollution disputes which are the specific focus of this Comment, it will be helpful to examine the relevant principles of international law which form the basis of liability in these disputes. Fundamental among these principles is the doctrine of limited territorial sovereignty. According to this doctrine, it is the right of every nation, free from outside interference, to make and enforce rules respecting all activity within its territory, but it is also the obligation of every state to respect the rights of its neighbors.<sup>5</sup> As applied in the environmental context, the doctrine provides that, while both Canada and the United States have the right to develop their economies and to utilize their resources as they see fit, each nation also has a duty to consider and to account for the effects of that activity outside its borders.

The first and foremost judicial expression of the principle of limited territorial sovereignty in an environmental context is found in the *Trail Smelter Arbitration*.<sup>6</sup> In that case, air pollution, in the form of sulfur dioxide from a smelter in Trail, British Columbia, was causing injury to American citizens and property in Washington State. In 1928, after private efforts to resolve the dispute failed, the matter was referred to the International Joint Commission (I.J.C. or Commission), for its investigation and report under article IX of the Treaty with Great Britain Relating to Boundary Waters Between the United States and Canada (Boundary Waters Treaty or Treaty).<sup>7</sup> After a three-year study, the I.J.C.

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3. The Poplar River project involves the construction of a power plant in Saskatchewan having adverse environmental impacts in Montana, and the Garrison Diversion Unit is a large and complex irrigation project in North Dakota having adverse effects on water quality in Canada. For further discussion see text *infra* at 75.

4. See ABA-CBA, SETTLEMENT OF INTERNATIONAL DISPUTES BETWEEN CANADA AND THE USA (1979) [hereinafter cited as ABA-CBA SETTLEMENT TREATIES].

5. Bilder, *International Law and National Resources Policies*, 20 NAT. RES.J. 451, 452-53 (1980).

6. *Trail Smelter Arbitration (U.S. v. Can.)*, 3 R. Int'l Arb. Awards 1905 (1941), reprinted in 35 AM. J. INT'L L. 684 (1941).

7. Treaty with Great Britain Relating to Boundary Waters Between the United States and Canada, Jan. 11, 1909, United States-Great Britain, 36 Stat. 2448, T.S. No. 548 [hereinafter cited as Boundary Waters Treaty]. The International Joint Commission (I.J.C.) was

recommended that Canada pay the United States \$350,000 in damages and that pollution control devices be installed at the smelter.<sup>8</sup> In 1935, after the United States complained of continuing damage, the two countries agreed to have Canadian responsibility determined by a special tribunal.<sup>9</sup> In its final report, the tribunal proclaimed that:

[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.<sup>10</sup>

The *Corfu Channel Case*,<sup>11</sup> while it did not involve environmental issues, supports the application of limited territorial sovereignty in an environmental context.<sup>12</sup> The case arose as a result of a minefield explosion which damaged British warships in Albanian territorial waters. The International Court of Justice held that, had the Albanian Government known of the minefield's existence, it would have been obligated to notify and warn the British warships of the danger. The Court's decision was based primarily on the recognition that it is "every State's obligation not to knowingly allow its territory to be used for acts contrary to the rights of other States."<sup>13</sup>

The most recent major judicial declaration of the principle of limited territorial sovereignty is found in the *Lac Lanoux Case*<sup>14</sup> between France and Spain. Spain was unable to assert territorial integrity as a basis for objection to a French decision to divert waters from Lac Lanoux for a hydroelectric project because it could not prove that the project would cause actual damage to Spanish waters. The Court, however, held that principles of international law require a state to take measures to protect its neighbor's riparian interests, and that "account must be taken of all interests . . . which are liable to be affected by the works undertaken, even if they do not correspond to a right."<sup>15</sup>

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established by the Boundary Waters Treaty. For further discussion of the jurisdiction of the I.J.C. under art. IX of the Boundary Waters Treaty, see text *infra* at 70.

8. 3 M. WHITEMAN, *DIGEST OF INTERNATIONAL LAW* 789 (1964).

9. Arbitblit, *The Plight of American Citizens Injured by Transboundary River Pollution*, 8 *ECOLOGICAL L.Q.* 339, 362 (1979). The agreement is embodied in the 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, Apr. 15, 1935, United States-Canada, 49 Stat. 3245, T.S. No. 893.

10. 3 R. Int'l Arb. Awards at 1965.

11. *Corfu Channel Case* (U.K. v. Alb.), 1949 I.C.J. 4 (Judgment of Apr. 9).

12. J. BARROS & D. JOHNSTON, *THE INTERNATIONAL LAW OF POLLUTION* 69 (1974).

13. 1949 I.C.J. at 22.

14. *Lac Lanoux Case* (Fr. v. Spain), 12 R. Int'l Arb. Awards 281 (1957), 24 I.L.R. 101 (1957).

15. 24 I.L.R. at 138.

*A. International Agreements Incorporating Limited Territorial Sovereignty*

Two major international agreements pertaining to environmental issues have incorporated the principle of limited territorial sovereignty. These agreements are the Declaration of the UN Conference on the Human Environment<sup>16</sup> (Declaration) and the Recommendations of the Council for Strengthening International Cooperation on Environmental Protection in Frontier Regions<sup>17</sup> (OECD Guidelines).

The Declaration recognizes that:

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.<sup>18</sup>

In addition, recommendation 103(a) of the Action Plan for the Human Environment also adopted by the UN Conference on the Human Environment (Action Plan) states that "[a]s a general rule, no country should solve or disregard its environmental problems at the expense of other countries."<sup>19</sup> Finally, recommendation 51(b)(i) of the Action Plan, although relating specifically to water resources, encourages states to notify their neighbors, at an early stage, of any proposed activities which may impact adversely on the neighbor's territory.<sup>20</sup> The purpose of the notification requirement is to promote the best possible use of the waters while attempting to minimize pollution in all concerned states.<sup>21</sup>

The OECD Guidelines encourage countries to cooperate in preventing pollution, "paying special attention to the principles of equal right of access and nondiscrimination."<sup>22</sup> The Guidelines also mandate that environmental impact statements required by domestic law must account for the transboundary impacts of the proposed activity and that individuals who may be exposed to transboundary pollution be informed of the fact.<sup>23</sup>

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16. Declaration of the United Nations Conference on the Human Environment, 1 U.N. GAOR (21st plen. mtg.), U.N. Doc. A/CONF.48/14/Rev.1 (1972), reprinted in 11 I.L.M. 1416 (1972) [hereinafter cited as Declaration].

17. Organization for Economic Cooperation and Development Recommendations of the Council for Strengthening International Cooperation on Environmental Protection in Frontier Regions, Sept. 27, 1978, Document C (78) 77 (Final) [hereinafter cited as OECD Guidelines]. Final text can be found in 17 I.L.M. 1530 (1978).

18. Declaration, *supra* note 16, principle 21.

19. Action Plan for the Human Environment of the U.N. Conference on the Human Environment, recommendation 103(a), U.N. GAOR (21st plen. mtg.), U.N. Doc. A/CONF.48/14/Corr.1 (1972), reprinted in 11 I.L.M. 1421, 1462 (1972).

20. *Id.* recommendation 51(b)(i).

21. *Id.* recommendation 51(b)(ii).

22. OECD Guidelines, *supra* note 17, art. II.1.

23. *Id.* arts. II.3, II.2.

## II. ACID RAIN: A STATUTORY REMEDY

Acid rain is "the most important and outstanding difficulty between our two countries."<sup>24</sup> Any changes in the U.S. Clean Air Act that would increase transboundary air pollution affecting Canada would be "bloody close to an act of hostility on a friendly neighbor."<sup>25</sup> The Reagan Administration's proposed changes to the Clean Air Act show "a complete and callous disregard not only for our acid rain problems, but also for the effects these provisions would have on the United States' environment as well."<sup>26</sup> These statements, made by Canada's senior environment officials, reflect the attitude of the Canadian Government toward what it perceives to be a growing lack of resolve on the part of the United States to make the necessary political and economic sacrifices to solve the problem of acid rain.<sup>27</sup>

Since the signing of the Memorandum of Intent on August 5, 1980,<sup>28</sup>

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24. Statement made to visiting American journalists in Toronto, Sept. 15, 1981, by Canadian Environment Minister John Roberts, *reprinted in* [1981] 4 INT'L ENV'T REP. (BNA) 1039 (Oct. 14, 1981).

25. Statement made to visiting U.S. journalists touring Ontario to inspect the areas most sensitive to acid rain by Ontario Environment Minister Keith C. Norton, *reprinted in* [1981] 4 INT'L ENV'T REP. (BNA) 1039 (Oct. 14, 1981).

26. *Id.*

27. Roger Simmons, Parliamentary Secretary to the Minister of the Environment and a member of the House of Commons told a symposium of the Ohio Environment Council September 17, 1981, that Canadians are becoming increasingly impatient with the lack of official action on the problem of acid rain. [1981] 4 INT'L ENV'T REP. (BNA) 1039 (Oct. 14, 1981). The Canadian public similarly expressed its impatience with American inaction when thousands of demonstrators protested on Parliament Hill during President Reagan's visit to Ottawa in March 1981. [1981] 4 INT'L ENV'T REP. (BNA) 921 (July 8, 1981).

28. Memorandum of Intent on Transboundary Air Pollution, August 5, 1980, United States-Canada. T.I.A.S. No. 9856. The history of this Memorandum was recently described by Thomas M.T. Niles:

In the fall of 1978, the Congress adopted a resolution calling upon the President 'to make every effort to negotiate a cooperative agreement with the Government of Canada aimed at preserving [the] mutual airshed to protect and enhance air resources and insure the attainment and maintenance of air quality protective of public health and welfare.' As a result of that resolution informal bilateral discussions with Canada on air pollution were begun in 1978. Also in 1978 [the United States] organized with Canada the bilateral research consultative group. The group, composed of U.S. and Canadian scientists, carried out preliminary surveys of research on transboundary air pollution and . . . long range transport of air pollutants in 1979 and 1980 . . . .

In July [of 1979] the United States and Canada issued a joint statement on transboundary air quality . . . announcing the intention to develop a cooperative agreement on air quality . . . .

[T]he United States and Canada signed a memorandum of intent in August 1980, agreeing on procedures to be followed in preparing for and negotiating on agreement on transboundary air pollution. The memorandum provided for the creation of a U.S.-Canadian coordinating committee and under it five joint work groups composed of U.S. and Canadian representatives from scientific, technical, and legal disciplines. The U.S. membership of about 50 is drawn from eight different Federal agencies. The Canadian membership is

the once high expectations of both countries have been tempered by the reality of negotiating a mutually acceptable political, economic and environmental solution to a problem that is not fully defined. Both countries agree that much remains to be learned about the phenomenon of Long Range Transport of Air-Borne Pollutants. Therein lies the dilemma. Much of the damage caused by acid precipitation occurs in Canada. Accordingly, the Canadian Government urges immediate action to abate sulfur and nitrogen oxide emissions to prevent further damage.<sup>29</sup> The United States, while also concerned with the damage associated with acid rain, is reluctant to commit the vast sums of money required for cleanup until more information is available.<sup>30</sup> To expend millions of dollars pursuing an ineffective solution would not only be a waste of financial resources but also would allow the damage to continue. The need for immediate action must be balanced against the need for sufficient data to insure the most appropriate and cost-effective solution.

#### A. *The Problem of Acid Rain*

Acid precipitation is the product of a four-stage phenomenon known as the Long Range Transport of Air-Borne Pollutants: emission of pollutants; the long-range transport of the pollutants through the atmosphere; the chemical transformation of the pollutants into acids; and the eventual deposition of acidic pollutants into the aquatic and terrestrial ecosystems of the victim areas.

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comparable.

Statement made by Thomas M. T. Niles, Deputy Assistant Secretary for European Affairs, before the Subcomm. on Arms Control, Oceans, International Operations, and Environment of the Senate Foreign Relations Comm. on Feb. 10, 1980; *reprinted in* 82 DEP'T ST. BULL. 50, 51 (April 1982) [hereinafter cited as Niles].

Negotiations on transboundary pollution resumed for the third time on February 24, 1982, in Washington. The Canadian delegation offered a draft text of an agreement based on the Great Lakes Water Quality Agreement Between the United States and Canada to serve as a basis for discussion. The subjects covered in the draft included the state of scientific knowledge and the control actions taken by both nations. The United States continued to press for stricter domestic regulation in Canada and, contrary to the Canadian position that immediate abatement action is needed to lessen the probability of irreparable damage to the environment, the United States took the position that a firm foundation of understanding upon which to determine what measures would be necessary and effective in controlling transboundary air pollution was needed, especially in view of the enormous cost of existing technical approaches to controls. *Id.*

Reports from the various joint working groups will be subject to peer review and analysis before any of the results of their research will be considered in the negotiations. Canadian Environment Minister John Roberts has said Canada is willing to cut SO<sub>2</sub> emissions in the eastern part of Canada by fifty percent provided that the United States takes parallel action. Some U.S. officials have rejected the Canadian challenge as purely a political move to win public sympathy because Roberts knows there is no chance the United States will take up the challenge. Canada maintains that a fifty percent reduction is necessary to meet the objectives of the draft agreement tabled by Canada. [1982] 5 INT'L ENV'T REP. (BNA) 122 (May 12, 1982).

29. See Niles, *id.* at 51.

30. *Id.*

It is beyond the scope of this Comment to present a detailed analysis of the nature of acid precipitation and its resultant effects on the earth's ecosystems. However, before proceeding with a discussion of possible dispute resolution mechanisms, a cursory explanation of the data underlying the dispute will be instructive.

### *Chemistry*

Initially, large quantities of sulfur and nitrogen oxides are emitted into the atmosphere as by-products of industrial activity. Once in the atmosphere, the pollutants are transported great distances by wind currents. During the transport, the oxides combine with water vapor in the air and are deposited on earth in rain or snow as sulfuric and nitric acids (wet deposition).<sup>31</sup> In contrast, dry deposition occurs when the chemicals fall to earth as dry particulate matter and complete the transition to acids by mixing with surface moisture.<sup>32</sup>

The nature of the chemical transformation is not precisely understood but, generally, "[p]recipitation becomes acidic when pollutants, mainly sulfur dioxide and nitrogen oxides, are further oxidized to acid sulfates and nitric acid with a resultant release of hydrogen ions in solution, which causes acidity."<sup>33</sup>

The determination of the acidity of a solution is called a pH measurement. The lower the numerical measure the greater the acid content. Distilled water has a pH of 7 and is considered neutral. The Great Lakes are slightly alkaline with an average pH of 8.0 to 8.5.<sup>34</sup> Even without the added factor of acid precipitation, "clean" rainfall has a pH of 5.6. Although such rain is slightly acidic, it produces no adverse effects even in lakes with limited buffering capacity. The lower pH in "clean" rainfall is due to carbon dioxide reacting with the water vapor in the air to form a mild carbonic acid. However, with the additional amounts of sulfuric and nitric acids present in the precipitation, it is not uncommon for acid rainfall in some areas to have a pH of 4.0, making it forty times more acidic than "clean" rainfall.<sup>35</sup>

Through a process known as "loading," the pH of many lakes, as well as forest and agricultural areas, is gradually being lowered because of increased amounts of sulfuric and nitric acids in the precipitation. The results of increased acidity are not easily observed in the short term. It is only through cumulative, long-term deposition that the effects of acid

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31. ONTARIO MINISTRY OF THE ENVIRONMENT, *THE CASE AGAINST THE RAIN: A REPORT ON ACIDIC PRECIPITATION AND ONTARIO PROGRAMS FOR REMEDIAL ACTION 1* (1980) [hereinafter cited as *CASE AGAINST THE RAIN*.]

32. *Id.*

33. UNITED STATES-CANADA RESEARCH CONSULTATION GROUP, *THE L.R.T.A.P. PROBLEM IN NORTH AMERICA: A PRELIMINARY OVERVIEW 1* (1979) [hereinafter cited as *RESEARCH CONSULTATION GROUP PRELIMINARY REPORT*].

34. *Id.*

35. *Id.*



loading become apparent.<sup>36</sup>

The principal exception to the gradual loading process occurs during spring run-off. Acids present in the accumulated winter snowfall are suddenly released into the streams and lakes when the snow melts in the spring. Large quantities of sulfuric and nitric acids are thus injected into shallow streams, raising their acid level dramatically.<sup>37</sup> This phenomenon of "acid shock" may only last a few weeks, but it can have a devastating effect on wildlife. Even well-buffered lakes can be adversely affected. Smaller species of fish and amphibians are particularly sensitive. Females may be unable to reproduce, and eggs may fail to hatch when their nesting waters are saturated with high levels of acid suddenly released by the spring run-off.<sup>38</sup>

Some areas possess more natural ability to "buffer" or neutralize the gradual infusion of acids than other areas. Areas with alkaline soil or lakebeds containing large deposits of limestone are much better able to cope with acid precipitation. In these areas, as the acids fall to earth, they are neutralized by the naturally alkaline properties of the soil or lakebeds.<sup>39</sup>

Other areas do not possess such natural buffering capacities and are much more sensitive to the influx of additional acids. As acid precipitation continues in these areas, their neutralizing capacity diminishes and the acid level rises. As the natural buffering abilities of these areas is depleted, continued loading causes increased and more rapid acidification. It is generally acknowledged that lakes with a pH of 5.5 or below are in serious danger. At present, some lakes in the Adirondacks and Muskoka-Haliburton regions have a pH of 4.0 to 4.5.<sup>40</sup>

### *Emission Sources*

Approximately two-thirds of acid precipitation results from sulfur dioxide (SO<sub>2</sub>) emissions, and nitrogen oxides (NO<sub>x</sub>) are responsible for the remaining one-third.<sup>41</sup> In Canada the principal sources of SO<sub>2</sub> emissions are nonferrous smelting plants such as the International Nickel Company (INCO) located in Sudbury, Ontario.<sup>42</sup> The INCO smelter is the largest single source of SO<sub>2</sub> in North America and is responsible for twenty percent of Canada's sulfur emissions.<sup>43</sup> INCO possesses the tallest smokestack in the world, giving it the capability of dispersing SO<sub>2</sub> pollutants

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36. *Id.* at 2.

37. *CASE AGAINST THE RAIN*, *supra* note 31, at 18.

38. *Id.*

39. SECOND REPORT OF THE UNITED STATES-CANADA RESEARCH CONSULTATION GROUP ON THE LONG RANGE TRANSPORT OF AIR POLLUTANTS 3 (Nov. 1980) [hereinafter cited as RESEARCH CONSULTATION GROUP SECOND REPORT.].

40. *CASE AGAINST THE RAIN*, *supra* note 31, at 3.

41. RESEARCH CONSULTATION GROUP PRELIMINARY REPORT, *supra* note 33, at 1.

42. *Id.* at 6.

43. *Id.*

over great distances. In 1980, the government of the Province of Ontario announced plans to reduce INCO's SO<sub>2</sub> emissions from 3600 tons per day to 1950 tons per day by 1983.<sup>44</sup> Total Canadian sulfur emissions are approximately one-fifth those of the United States.<sup>45</sup>

In the United States, two-thirds of sulfur emissions come from coal-fired utility plants that burn high sulfur coal.<sup>46</sup> The majority of the offending utility plants are located in the Upper Ohio Valley, including eastern Ohio, northern West Virginia, and eastern Pennsylvania.<sup>47</sup>

Major emissions sources can be located in a general sense. However, the sheer number of individual sources in the United States and Canada is such that it is impractical to attempt to identify each individual source. Instead, many smaller individual sources may be collectively categorized as "area sources."<sup>48</sup> Some large individual facilities such as Sudbury's INCO smelter produce such a volume of pollution that they can be individualized as "point sources" and evaluated individually.<sup>49</sup>

Based on a yearly average, it is estimated that the United States deposits three to four times as much SO<sub>2</sub> into the Canadian environment as is deposited into the U.S. environment by Canadian sources.<sup>50</sup> Sulfur emissions originating in the United States are responsible for approximately fifty percent of sulfuric acid deposition in Ontario and Quebec.<sup>51</sup>

44. CASE AGAINST THE RAIN, *supra* note 31, at 13.

45. RESEARCH CONSULTATION GROUP PRELIMINARY REPORT, *supra* note 33, at 6.

46. *Id.* at 4.

47. *Id.*

48. *Id.*

49. *Id.*

50. *Id.* at 11.

Table 2 Transboundary Flux Estimates  
(Tg S y<sup>-1</sup>, millions of metric tons of S per year)

Method of Estimation	Canada to USA flux	USA to Canada flux
I Statistical trajectory model (ASTRAP) (Shannon, 1979)	0.5	2
II Simple advection and decay model (Galloway and Whelpdale, 1979)	0.7	2

The above models indicate the amount of sulfur moving from the United States into Canada ranges from four to 2.86 times the amount of sulfur moving from north to south. The models used above are judged to be accurate within a factor of two. As atmospheric modeling methods are further refined, confidence in the validity and accuracy in their estimates will increase.

It should further be noted that atmospheric models indicate sulfur deposition; they do not measure the deposition of harmful sulfuric and nitric acids. However, European studies have indicated that "a reasonable similarity exists" between strong sulfate deposition and strong acid deposition when observed over an "annual average period." *Id.*

51. A Stanford Research Institute study found the following:

[T]he total sulfur deposition in Southern Ontario and Southern Quebec calculated to be from sources in the U.S. was 50,000 and 68,000 tons S[ulfur] respectively for January and August 1977. This amount of deposition associ-

The transportation sector accounts for roughly forty percent of NO<sub>x</sub> emissions in the United States. Thirty percent of the emissions come from electric utilities and the remainder comes from other combustion sources.<sup>53</sup> In Canada, the transportation sector accounts for sixty percent of NO<sub>x</sub> emissions, other combustion sources for twenty percent, and electric utilities for ten percent.<sup>54</sup> Due to increased development of electric utilities in the future, it is thought that NO<sub>x</sub> emissions will increase at a greater rate than will SO<sub>2</sub> emissions.<sup>54</sup>

Assuming no further regulation of emission standards, total SO<sub>2</sub> emissions will increase ten to fifteen percent by the year 2000, while NO<sub>x</sub> emissions will increase fifteen to thirty-five percent due to increased industrial use of fossil fuels. By the year 2000, the quantity of SO<sub>2</sub> and NO<sub>x</sub> emissions will both be thirty to thirty-four million metric tons per year.<sup>55</sup>

### *Adversely Affected Areas*

Most of eastern Canada and large areas of the northeastern United States lack sufficient buffering capacity and are extremely sensitive to the injection of additional acids into their ecosystems. The fresh water lakes of Ontario's Muskoka-Haliburton area and the Adirondack region of New York State lie on granite bedrock with little buffering capacity and are especially vulnerable. Both areas have already sustained heavy damage. Rainfall in the protected wilderness area of the Adirondacks has an average pH of 4.1.<sup>56</sup> Approximately fifty percent of 218 lakes studied in 1975 showed significant acidification.<sup>57</sup> Twenty-five percent of the area's lakes had a critical pH of less than 5.0.<sup>58</sup> The fish population in at least 100 lakes above 610 meters in elevation has been totally eliminated due to acidification.<sup>59</sup> A corresponding loss of one million dollars annually in the area's tourism revenues can be attributed to the decline in sport fishing.<sup>60</sup>

The lakes studied in the Muskoka-Haliburton region of Ontario showed a forty to seventy percent loss in buffering capacity over a ten-

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ated with U.S. sources compares with 110,000 and 100,000 tons S[ulfur] deposited within Ontario and Quebec originating with Canada. The total in U.S. regions calculated to be from sources in southern Ontario and southern Quebec was 38,000 and 21,000 tons S[ulfur] for January and August.

*Id.* at 13.

52. UNITED STATES-CANADA MEMORANDUM OF INTENT ON TRANSBOUNDARY AIR POLLUTION: WORK GROUP 1, IMPACT ASSESSMENT INTERIM REPORT 1-3 (Feb. 1981) [hereinafter cited as MOI IMPACT ASSESSMENT INTERIM REPORT, Feb. 1981].

53. *Id.*

54. RESEARCH CONSULTATION GROUP SECOND REPORT, *supra* note 39, at 3.

55. *Id.* at 4.

56. RESEARCH CONSULTATION GROUP PRELIMINARY REPORT, *supra* note 33, at 17.

57. MOI IMPACT ASSESSMENT INTERIM REPORT, Feb. 1981, *supra* note 52, at 3-18.

58. *Id.* at 3-21.

59. RESEARCH CONSULTATION GROUP PRELIMINARY REPORT, *supra* note 33, at 17.

60. *Id.*

year period.<sup>61</sup> As a result, Ontario's fish population has declined substantially. An Ontario Ministry of Environment study in 1978 has documented the extinction of at least one species of brook trout. It is estimated that 2000 to 4000 Ontario lakes are already overly-acidified and that their fish populations have been eliminated.<sup>62</sup> It is possible that 48,000 Ontario lakes could be lost to acidification within twenty years.<sup>63</sup> Quebec, Nova Scotia and Newfoundland have also documented environmental damage due to acid precipitation. There is evidence that increased loading has produced a corresponding decline in Atlantic Salmon spawning in these areas.<sup>64</sup>

Damage to terrestrial ecosystems has not been as well documented. Much of the data has been collected through laboratory testing and more research is needed under field conditions. The adverse soil effects documented in the laboratory include the leaching of basic cations such as magnesium and calcium, damage to the foliage of crops, and decreased productivity of forest and agricultural areas. It is believed that acid precipitation causes comparatively high concentrations of dissolved aluminum and other potentially toxic ions to be leached from the soils and transported to acidified lakes, resulting in the gross disturbance of normal ionic balances, with consequent degradation of fish habitats.<sup>65</sup> This leaching of aluminum from the surrounding soil and subsequent deposition into the acidified lakes "represents an important biogeochemical linkage between terrestrial and aquatic environments exposed to acid precipitation."<sup>66</sup>

In the United States, the areas containing acid sensitive soils are the southeastern United States, the Appalachian Highland Regions, the Adirondack Mountains, New England and the Great Lakes States. In Canada, the most sensitive agricultural areas are in Quebec and, to a lesser degree, Ontario and the Maritime Provinces.

#### B. *United States Clean Air Act Overview*

To better understand the international applications of section 115 of the U.S. Clean Air Act, it is necessary first to discuss briefly the relevant principles and policies of that act in the context of domestic air pollution management. The primary purpose of the Clean Air Act is to promote the public health and welfare by insuring that air quality meets certain standards.<sup>67</sup> These standards are referred to as National Ambient Air Quality Standards (NAAQS) and are established by the Federal Government

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61. *Id.*

62. RESEARCH CONSULTATION GROUP SECOND REPORT, *supra* note 39, at 19.

63. CASE AGAINST THE RAIN, *supra* note 31, at 2.

64. RESEARCH CONSULTATION GROUP PRELIMINARY REPORT, *supra* note 33, at 17.

65. RESEARCH CONSULTATION GROUP SECOND REPORT, *supra* note 39, at 17.

66. *Id.*

67. Clean Air Act § 101(b)(1), 42 U.S.C. § 7401(b)(1).

through the Environmental Protection Agency (EPA).<sup>68</sup>

Two types of standards are employed. Primary standards are designed to protect public health.<sup>69</sup> Secondary standards are for the protection of the public welfare.<sup>70</sup> The air quality standards are set by federal officials, but the responsibility for conforming with the standards rests with the individual states.<sup>71</sup> The precise method of reducing the pollutants is left to the discretion of the states, but to ensure compliance with the federally promulgated standards, each state is required to submit a detailed plan demonstrating where and by how much emissions will be reduced.<sup>72</sup> These plans are known as State Implementation Plans (SIPs), and must be submitted for EPA approval. The individual states must demonstrate to the EPA that their plan will achieve compliance with federal standards by December 13, 1982. If a state cannot meet air quality standards, the EPA and the federal government may intervene and promulgate a SIP for the state.<sup>73</sup>

Through New Source Performance Standards (NSPS),<sup>74</sup> stringent control over emissions from plants constructed after 1970 is possible because new plants may be required to utilize the best available emission reduction systems.<sup>75</sup> Unfortunately, there is much less control over sources built prior to 1970. Controls on the older sources are only required if it can be shown that emission reductions are necessary to achieve the NAAQS. Through the use of extremely tall smokestacks, the pollution can be dumped high enough into the atmosphere to allow the NAAQS to be met locally while the pollution is being transported through the atmosphere to lakes and rivers hundreds of miles away.

It has been estimated that power plants constructed prior to 1970 emit an average of eighty-three pounds of SO<sub>2</sub> for each ton of coal burned. In contrast, the power plants built after 1970 are required to emit

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68. Clean Air Act § 109, 42 U.S.C. § 7409. The U.S. Congress amended the Clean Air Act in 1977. Clean Air Act Amendment of 1977, Pub. L. No. 95-95, 91 Stat. 685 (codified at 42 U.S.C. §§ 4362, 7401-7626 (Supp. IV 1980)). The purpose of the amendments was to achieve certain specified air quality standards in regions where the ambient concentration of pollution exceeds national standards and to prevent deterioration of air quality in regions already cleaner than the ambient standards. 42 U.S.C. §§ 7501-08.

69. Clean Air Act § 109(b)(1), 42 U.S.C. § 7409(b)(1).

70. Clean Air Act § 109(b)(2), 42 U.S.C. § 7409(b)(2).

71. Clean Air Act § 110, 42 U.S.C. § 7410.

72. Clean Air Act § 111, 42 U.S.C. § 7411.

73. *Id.*

74. *Id.* For a discussion of New Source Performance Standards (NSPS), see Lutz, *Managing a Boundless Resource: U.S. Approach to Transboundary Air Quality Control*, 11 ENVTL. L. 321 (1981). The NSPS requirements for certified power plants have particular relevance to the acid rain problem since seventy-five percent of the SO<sub>2</sub> emissions in the eastern United States and Canada come from coal-fired utility power plants. See RESEARCH CONSULTATION GROUP PRELIMINARY REPORT, *supra* note 33, at 4-6.

75. Lutz, *Laws of Environmental Management: A Comparative Study*, 24 AM. J. COMP. L. 447, 518 (1976).

no more than an average of twelve pounds of SO<sub>2</sub> per ton of coal.<sup>76</sup>

Scientists from the EPA estimate that power plants built prior to 1970 still have an average of twenty years useful life remaining.<sup>77</sup> Unfortunately for Canada and upper New York State, these pre-1970 power plants are cheaper to run due to the lack of emission controls, and the utility companies are likely to continue to use older plants to maximize profits.<sup>78</sup> Furthermore, the Reagan Administration's policy of promoting even greater coal usage is expected to encourage the conversion of oil-fired plants to coal usage.<sup>79</sup> The oil-fired plants currently in operation that convert to coal will not be covered under the NSPS.<sup>80</sup> The NSPS will do much to insure that newly constructed power plants will not contribute massive amounts of SO<sub>2</sub> into the atmosphere but will do very little to control pre-1970 sources.

### C. Canadian Clean Air Act Overview

Canadian provinces enjoy a much more autonomous relationship with the Canadian federal government than do their American counterparts. The provinces tend to make minimal use of legal solutions and prefer to emphasize government-industry cooperation in the development of pollution controls.<sup>81</sup>

The federal government promulgates advisory, nonbinding "national ambient air quality objectives"<sup>82</sup> for specific pollutants. Federal objectives become binding only if a province independently enacts legislation and incorporates the federal objectives into the statute.

76. Wetstone, *Air Pollution Control Laws in North America and the Problem of Acid Rain and Snow*, 10 ENV'T L. REP. (ENVTL. L. INST.) 50001, 50007 (1980), citing Costle, *New Source Performance Standards for Coal-Fired Power Plants*, 29 J. AIR POLLUTION CONTROL A. 690 (July 1979).

77. *Id.*

78. In an address to the Air Pollution Control Association in Montreal, Quebec in June 1980, EPA Administrator Douglas M. Costle stated in pertinent part:

We all know that many of our older industrial plants—particularly power plants—are either minimally controlled or not controlled at all. New plants are being built clean. Indeed if we could afford to wait 30 to 40 years, emissions would inevitably drop as old plants are replaced by new. It should be clear to everyone that, environmentally, we cannot afford to wait that long. Today, retirement schedules on older plants are being stretched out, not shortened. In the meantime, the industrial base continues to grow and, with it, the amount of acid deposition.

Reprinted in CASE AGAINST THE RAIN, *supra* note 31, at 9.

79. CASE AGAINST THE RAIN, *supra* note 31, at 11. "The conversion of these older U.S. utilities to coal is anticipated to increase total U.S. SO<sub>2</sub> emissions by 16 per cent." *Id.*; See also [1980] 3 INT'L ENV'T REP. (BNA) 91 (Mar. 12, 1980). (A 10 to 15 percent increase in acid rain is expected due to the conversion to coal.)

80. CASE AGAINST THE RAIN, *supra* note 31, at 11.

81. Wetstone, *supra* note 76, at 50012.

82. Canadian Clean Air Act, Can. Stat., ch. 47 § 4 (1970-71) (as amended Dec. 17, 1980), reprinted in [Reference file] 1 INT'L ENV'T REP. (BNA) § 51, at 1901, 1902 [hereinafter cited as Canadian Clean Air Act].

The Canadian Clean Air Act sets three ranges of air quality objectives: desirable, acceptable and tolerable.<sup>83</sup> The "tolerable" range is the equivalent of the American primary standard and is the level of pollution above which it is believed that human health will be affected. The acceptable range is comparable to the American secondary level and states the levels of pollution above which the public welfare is deemed to be affected. The desirable range is Canada's long-term goal in pollution control.<sup>84</sup>

The federal government sets national emissions guidelines that are applied to new sources only.<sup>85</sup> The provinces set their own policies regarding emissions standards on existing sources. In the event a question should arise as to Canada's compliance with an international pollution agreement, the Canadian Department of the Environment may also set emissions standards.<sup>86</sup>

Under the American system, the power to deal with transboundary pollution issues is relatively centralized in the federal government. Under the Canadian parliamentary system, the possibility of a single national response is precluded by a lack of a single locus of power. A system of dual control is shared by the federal and provincial legislatures with neither entity competent to take conclusive unilateral action.<sup>87</sup> Thus, jurisdiction to deal with acid rain rests concurrently with the federal and provincial governments, and, in order to deal effectively with the problem of acid rain, the federal and provincial governments must coordinate their efforts and enact the appropriate legislation at both levels of government. The Canadian federal government, supported by the provincial governments, has taken the lead in negotiations with the United States. For the present, the federal and provincial governments are unified in their quest for a solution.

#### D. *Canadian Access Through Section 115*

In 1977 the U.S. Clean Air Act was amended to facilitate the regulation of pollution generated within the United States that adversely affects foreign countries.<sup>88</sup> From the Canadian perspective, the most significant language of the act concerns the granting of access to the American legal system to a damaged foreign state. Section 115 of the amended Clean Air Act reads as follows:

Endangerment of public health or welfare in foreign countries

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83. Canadian Clean Air Act, Can. Stat., ch. 47 § 4(1).

84. Wetstone, *supra* note 76, at 50012-13.

85. Canadian Clean Air Act, Can. Stat., ch. 47 § 8.

86. *Id.* § 7(1).

87. The Canadian Legislative Position, a speech by T. Bradbrooke Smith to the Conference on the Transnational Implications of Acid Rain, held Mar. 28, 1981 at the Case Western Reserve University School of Law, Cleveland, Ohio; reprinted in 5 CAN.-U.S. L.J. 67 (1982) [hereinafter cited as Transnational Implications of Acid Rain].

88. Clean Air Act § 115, 42 U.S.C. § 7415.

from pollution emitted in United States

(a) 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 causes or contributes 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.

#### Prevention or elimination of endangerment

(b) The notice of the Administrator shall be deemed to be a finding under section 7410(a)(2)(H)(ii) of this title which requires a plan revision with respect to so much of the applicable implementation plan as is inadequate to prevent or eliminate the endangerment referred to in subsection (a) of this section. Any foreign country so affected by such emission or pollutant or pollutants shall be invited to appear at any public hearing associated with any revision of the appropriate portion of the applicable implementation plan.

#### Reciprocity

(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.

#### Recommendations

(d) Recommendations issued following any abatement conference conducted prior to August 7, 1977, shall remain in effect with respect to any pollutant for which no national ambient air quality standard has been established under section 7409 of this title unless the Administrator, after consultation with all agencies which were party to the conference, rescinds any such recommendations on grounds of obsolescence.<sup>89</sup>

Thus, section 115 allows the EPA to intervene in American administrative hearings on Canada's behalf.

Canada contends that pollutants rich in oxides of sulfur and nitrogen originate in the upper Ohio Valley and find their way into the lakes and rivers of eastern Canada causing considerable and possibly irreparable damage to the ecosystem of that region.<sup>90</sup> Through section 115, if a determination is made by the EPA that pollution in the United States is reasonably anticipated to endanger public health and welfare in Canada and that Canada affords the United States essentially the same rights of access to the Canadian legal system, the EPA could employ the Ohio SIP procedure to abate the source of the pollution.<sup>91</sup> The EPA could also, at

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89. *Id.*

90. RESEARCH CONSULTATION GROUP PRELIMINARY REPORT, *supra* note 33, at 4.

91. Clean Air Act § 115, 42 U.S.C. § 7415.



its discretion, direct that Ohio's implementation plan be revised and that Canada could participate in related hearings.<sup>92</sup>

In 1980, the I.J.C. promulgated a report confirming that the Great Lakes basin, including most of eastern Canada and portions of the north-eastern United States, were sustaining significant damage due to the effects of acid precipitation originating in the United States.<sup>93</sup> Then, on December 17, 1980, the Canadian Clean Air Act was amended to grant the United States, or any foreign country, essentially the same rights of access to Canadian jurisprudence as granted Canada under section 115 of the U.S. Clean Air Act.<sup>94</sup> The Canadian amendment was intended to mir-

92. Clean Air Act § 115(b), 42 U.S.C. § 7415(b).

93. THE 1980 SEVENTH ANNUAL INTERNATIONAL JOINT COMMISSION REPORT ON GREAT LAKES WATER QUALITY 49-54, as cited in DeSaillan, *Acid Rain, Canada and the United States: Enforcing the International Pollution Provision of the Clean Air Act*, 1 B.U. INT'L L.J. 181, nn.261, 263 (1982). A summary of the pertinent findings of the I.J.C. report is reprinted in [1980] 3 INT'L ENV'T REP. (BNA) 543, 544 (Dec. 10, 1980).

94. Canadian Clean Air Act, Can. Stat., ch 47 § 21.121.2. The amendment reads as follows:

21.1(1) Subject to this section, where the Minister has reason to believe that an air contaminant emitted into the ambient air by any source or sources of a particular class or classes 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, then, notwithstanding anything prescribed or otherwise provided pursuant to this Act, whether before or after the coming into force of this section, the Minister shall recommend to the Governor in Council with respect to that source or each of those sources, as the case may be, such specific emission standards in relation to that air contaminant, either alone or in combination with any one or more other air contaminants, as he may consider appropriate for the elimination or significant reduction of that danger.

(2) Where the Minister proposes to make a recommendation under subsection (1)

(a) notice of the proposal and of the source or class or classes of sources referred to in subsection (1) with respect to which he proposes to make the recommendation shall be published in the Canada Gazette and persons in Canada who would be affected by the prescription, if any, of specific emission standards under section 21.2 on the basis of the recommendation shall be afforded a reasonable opportunity to make representations to the Minister in respect of the subject matter of the notice; and

(b) a reasonable opportunity shall, in a manner prescribed by the Governor in Council, be afforded for the making, with respect to the proposal, of representations on the part of the country other than Canada that the Minister, in proposing to make the recommendation, takes into consideration in accordance with subsection (1).

(3) Nothing in subsection (1) authorizes the Minister to make a recommendation thereunder with respect to any source referred to therein, other than a federal work, undertaking or business, situated in a province unless

(a) notice of any representations made pursuant to subsection (2) has been forwarded to the government of the province;

(b) the Minister has endeavoured to determine by consultation with such government whether, in his opinion, the danger that he takes into

ror its American counterpart for the purpose of removing any speculation as to the extent of reciprocity granted the United States. In reference to the Canadian amendment, Douglas Costle, former administrator of the EPA wrote:

In my view the amendments to the Canada Clean Air Act give adequate authority to the government of Canada to provide essentially the same rights to the United States as Section 115 provides to Canada. . . . Both statutes allow the state or province, as appropriate, to take action to remedy air pollution affecting a foreign country. If the state or provincial government fails to develop an adequate remedy, the federal government is authorized to establish emission limitations.<sup>95</sup>

After examining the Canadian amendment in light of the I.J.C.'s findings and recommendations concerning acid rain, Costle concluded that the initiation of the section 115 procedures was warranted.

### III. WATER POLLUTION ISSUES

Although acid rain is one of the greatest sources of contention between Canada and the United States today, transboundary water pollution issues have also caused considerable disagreement between the two nations. This portion of the Comment focuses on two industrial projects which have been the basis of U.S.-Canadian environmental disputes. As with acid rain, limited territorial sovereignty is the principle of interna-

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consideration in accordance with subsection (1) for the purposes of the recommendation can be eliminated, or reduced to an extent he considers adequate, by means of any steps that such government may cause to be taken pursuant to the laws of the province;

(c) where the Minister determines, pursuant to paragraph (b) that the danger can be eliminated or so reduced, he endeavours to procure that elimination or reduction; and

(d) the Minister takes into account, for the purposes of such recommendation, any representations so made.

21.2(1) Subject to subsection (2), the Governor in Council may prescribe as a specific emission standard any such standard recommended by the Minister pursuant to section 21.1 if the Governor in Council is satisfied that the country other than Canada, taken into consideration in accordance with subsection 21.1(1) for the purposes of such recommendation, has made provisions by law for essentially the same kind of benefits in favour of Canada with respect to abatement or control of air pollution as is provided in favour of that country by virtue of this act.

(2) Where paragraph 21.1(3)(c) applies in respect of danger taken into consideration in accordance with subsection 21.1(1) for the purposes of any recommendation thereunder, nothing in subsection (1) authorizes any prescription on the basis of such recommendation unless the Governor in Council is satisfied that a reasonable endeavour on the part of the Minister under that paragraph has been unsuccessful.

95. Press release issued January 16, 1981, by Douglas Costle, Administrator of the EPA prior to leaving office, reprinted in pertinent part in Carson, *The American Legislative Position, The Transnational Implications of Acid Rain*, 5 CAN.-U.S. L.J. 72 (1982).

tional law which is applicable to such disputes. In water pollution disputes, limited territorial sovereignty is applied in the doctrine of equitable utilization. Equitable utilization dictates that each coriparian state has equal and similar rights in the use of shared waters. Witaschek best expresses the doctrine: "The equitable utilization doctrine purports to weigh the benefit to one state in use of water against the injury which might result to another because of such use . . . ."<sup>96</sup>

#### A. *The Helsinki Rules on the Uses Of International Rivers*

The Helsinki Rules on the Uses of International Rivers<sup>97</sup> (Helsinki Rules) incorporate the doctrine of equitable utilization. Article IV of the Helsinki Rules declares: "Each basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial use of the waters of an international drainage basin."<sup>98</sup> Article V lists eleven factors which together determine what constitutes a "reasonable and equitable share" in any given case, and advocates a weighing and balancing of all factors in arriving at a final determination.<sup>99</sup>

96. Witaschek, *International Control of River Water Pollution*, 2 DEN. J. INT'L L. & POL'Y 35, 50 (1972). In apportioning the uses of water the goal is to maximize the benefit and minimize the detriment to each coriparian. *Id.*

97. Rules on the Uses of the Waters of International Rivers, U.N. Doc. A/CN. 4/274, reprinted in INT'L L. ASS'N, REPORT OF THE FIFTY-SECOND CONFERENCE AT HELSINKI 484 (1966) [hereinafter cited as Helsinki Rules].

98. *Id.* art. IV. An international drainage basin is defined as "a geographical area extending over two or more States determined by the watershed limits of the system of waters, including surface and underground waters, flowing into a common terminus." *Id.* art. II.

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(1) What is a reasonable and equitable share within the meaning of Article IV is to be determined in the light of all the relevant factors in each particular case.

(2) Relevant factors which are to be considered include, but are not limited to:

(a) the geography of the basin, including in particular the extent of the drainage area in the territory of each basin State;

(b) the hydrology of the basin, including in particular the contribution of water by each basin State;

(c) the climate affecting the basin;

(d) the past utilization of the waters of the basin, including in particular existing utilization;

(e) the economic and social needs of each basin State;

(f) the population dependent on the waters of the basin in each basin State;

(g) the comparative costs of alternative means of satisfying the economic and social needs of each basin State;

(h) the availability of other resources;

(i) the avoidance of unnecessary waste in the utilization of waters of the basin;

(j) the practicability of compensation to one or more of the cobasin States as a means of adjusting conflicts among uses; and

(k) the degree to which the needs of a basin State may be satisfied, without causing substantial injury to a cobasin State.

Equitable utilization as it applies to transboundary water pollution disputes, is given perfect expression in article X:

[A] State must prevent any new form of water pollution or any increase in the degree of existing water pollution in an international drainage basin which would cause substantial injury in the territory of a co-basin State, and . . . should take all reasonable measures to abate existing water pollution in an international drainage basin to such an extent that no substantial damage is caused in the territory of a co-basin State . . . . The rule applies to water pollution originating . . . within the territory of the State, or . . . outside the territory of the State, if it is caused by the State's conduct.<sup>100</sup>

The comment to article X indicates the article finds its theoretical support in the principles enunciated in the *Trail Smelter*, *Corfu Channel*, and *Lac Lanoux* cases.<sup>101</sup>

#### B. *The Boundary Waters Treaty And The International Joint Commission*

The Boundary Waters Treaty remains the instrument most directly applicable to U.S.-Canadian transboundary water pollution disputes. The Treaty's declared purpose is "to prevent disputes regarding the use of boundary waters . . . and to make provision for the adjustment and settlement of all such questions as may . . . arise."<sup>102</sup> The Treaty makes the equitable utilization doctrine applicable to all water pollution disputes between the United States and Canada: "[t]he 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."<sup>103</sup> In article VIII, the Treaty states that "[t]he . . . Parties shall have, each on its own side of the boundary, equal and similar rights in the use of the

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(3) The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is a reasonable and equitable share, all relevant factors are to be considered together and a conclusion reached on the basis of the whole.

*Id.* art. V.

100. *Id.* art. X.

101. Comment to art. X of the Helsinki Rules, *reprinted in THE LAW OF INTERNATIONAL DRAINAGE BASINS* 793 (A. Garretson, R. Hayton & C. Olmstead eds. 1967) [hereinafter cited as A. Garretson]. The comment to art. X also cites *Soci t  Energie Electrique v. Compagnia Imprese Elettriche Liguri*, 64 Foro It. I 1036 (Corte cass., Italy, 1939) as theoretical support. In that case, the Italian Supreme Court declared:

If this [State], in the exercise of its sovereign rights is in a position to establish any regime that it deems most appropriate over the watercourse, it cannot escape the international duty . . . to avoid that, as a consequence of such a regime, other (coriparian) States are deprived of the possibility of utilizing the watercourse for their own national needs.

*Id.* at 794.

102. Boundary Waters Treaty, *supra* note 7, preamble.

103. *Id.* art. IV.

. . . boundary waters."<sup>104</sup>

The drafters created the I.J.C. to further the purposes of the Treaty and to resolve any transboundary water pollution disputes which might arise between the two countries.<sup>105</sup> The I.J.C., as it operates under the Treaty to manage transboundary water pollution disputes, is considered a model in international cooperation. Not only is the I.J.C. regarded as having greater expertise in pollution matters than any similar international body,<sup>106</sup> but it is also frequently commended for its nonpolitical character which has allowed it to function independently and to remain largely invulnerable to outside political influences.<sup>107</sup> In fact, the I.J.C.'s most significant undertaking, an investigation specifically involving transboundary water pollution, resulted in the Great Lakes Water Quality Agreement of 1972.<sup>108</sup> The agreement is seen by many as the most significant international agreement of its kind to date, as well as the most illustrative example of the successes a cooperative body such as the I.J.C. can achieve in managing transboundary pollution problems.<sup>109</sup>

#### *Referral Procedure Under the Boundary Waters Treaty*

Article IX of the Boundary Waters Treaty provides that either country may submit a water pollution dispute to the I.J.C. for its investigation, study and report.<sup>110</sup> The I.J.C. usually appoints a technical advisory board to investigate the matter.<sup>111</sup> This board reports its findings to the I.J.C., and the Commission makes its conclusions and non-binding recommendations on the basis of the information.<sup>112</sup>

#### *Article X Jurisdiction*

Article X grants the I.J.C. an arbitral function. Under this article, disputes are referred to the I.J.C. with the consent of both parties, and a majority of the Commissioners may render a binding decision.<sup>113</sup> The

104. *Id.* art. VIII.

105. *Id.* art. VII.

106. J. BARROS & D. JOHNSTON, *supra* note 12, at 70-71; L. BLOOMFIELD & G. FITZGERALD, *BOUNDARY WATER PROBLEMS OF CANADA AND THE UNITED STATES* 60-64, 517 (1958).

107. Arbiblit, *supra* note 9, at 350; Bilder, *Controlling Great Lakes Pollution: A Study in United States-Canadian Environmental Cooperation*, 70 MICH. L. REV. 469, 519 (1972); Note, *A Primer on the Boundary Waters Treaty and the International Joint Commission*, 51 N.D.L. Rev. 493, 501 (1974).

108. Agreement on Great Lakes Water Quality, Apr. 15, 1972, United States-Canada, 23 U.S.T. 301, T.I.A.S. No. 7312.

109. J. BARROS & D. JOHNSTON, *supra* note 12, at 71; L. BLOOMFIELD & G. FITZGERALD, *supra* note 106, at 517. The 1972 Agreement was in fact such a success that it served as the basis for the 1978 Agreement on Great Lakes Water Quality, Nov. 22, 1978, United States-Canada, 30 U.S.T. 1383, T.I.A.S. No. 9257. Neither of these agreements is of treaty force. [1981] 4 INT'L ENV'T REP. (BNA) 927 (July 8, 1981).

110. Boundary Waters Treaty, *supra* note 7, art. IX.

111. Bilder, *supra* note 107, at 486-87.

112. *Id.*

113. Boundary Waters Treaty, *supra* note 7, art. X.

I.J.C. has never received a referral under this Article,<sup>114</sup> and the literature is silent as to possible explanations for this fact. The most logical reason is that Canada and the United States are reluctant to entrust a neutral, non-political third party with final decision-making responsibility on such contentious issues.

#### IV. THE POPLAR RIVER DISPUTE

The purpose of the following discussion is two-fold: 1) to demonstrate the ineffectiveness of the mechanisms provided for in the Boundary Waters Treaty to resolve transboundary water pollution disputes and to posit reasons for the ineffectiveness; and 2) to show how, in one situation at least, Canadians and Americans have been able to reach a negotiated resolution of their differences based on compromise and conciliation.

In 1977, Canada and the United States requested the I.J.C. to report on the predicted effects of a coal-fired thermal power plant under construction by the Saskatchewan Power Corporation (SPC) near Coronach, Saskatchewan, about ten miles north of the Montana border.<sup>115</sup> SPC's plans included the construction of an open-pit coal mine to provide coal for power generation, as well as plans to dam the East Poplar River to provide water to operate the plant.<sup>116</sup>

Problems arose when Montana residents discovered that fly ash from the burning of coal would produce high boron levels in the waters of a reservoir created by damming the East Poplar River. This polluted water would in turn flow into the river at the international boundary, polluting agricultural irrigation waters in Montana.<sup>117</sup> Construction continued despite bilateral negotiations on potential pollution and water loss injuries.<sup>118</sup> Upon referral of the matter to the I.J.C., the Commission appointed a technical advisory board of officials from the two federal governments and the governments of Montana and Saskatchewan.<sup>119</sup>

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114. Bilder, *supra* note 107, at 484.

115. [1979] 2 INT'L ENV'T REP. (BNA) 622 (Apr. 11, 1979). The Saskatchewan Power Corporation (SPC) is a Crown Corporation. Telephone interview with Michael Jay, Intergov't Officer with the Saskatchewan Dept. of Intergov't Affairs, Regina, Saskatchewan (Oct. 8, 1981). A Crown Corporation is a "government agency" under Saskatchewan law. An Act respecting the Administration, Planning and Use of the Water Resources of Saskatchewan, SASK. REV. STAT., ch. W-7, § 2(f)(ii) (1978) [hereinafter cited as Water Resources Act].

116. [1979] 2 INT'L ENV'T REP. (BNA) 622 (Apr. 11, 1979).

117. *Id.*

118. Arbitblit, *supra* note 9, at 352. Reduced water flows and the increased demand for water are of particular concern because the East Poplar River, although a river in name, more closely resembles a creek in size. Telephone interview with George Rejhon, Environment Consular, Canadian Embassy, Washington, D.C. (Oct. 7, 1981). Demand for increased water quantities is an especially important factor in light of the fact the SPC has a second unit on line and plans to construct two additional units. Telephone interview with John. E. Carroll, Institute of Natural and Environmental Resources, University of New Hampshire (Oct. 12, 1981).

119. Although the board members were government officials, they conducted their investigation in their individual rather than their representative capacities. Telephone inter-

The I.J.C.'s interim report, submitted in February 1979, recommended withholding approval of the plant until further steps were taken to reduce boron discharges, placing responsibility for this task on the SPC.<sup>120</sup> In its report, the I.J.C. cited "unforeseen delays" as preventing it from meeting the deadline set for submission of its final report.<sup>121</sup> While this delay continued and because the two federal governments perceived a growing need to defuse an issue rapidly becoming highly polarized and emotional, the U.S. Department of State, the Canadian Department of External Affairs and officials from Montana and Saskatchewan undertook to resolve the problem independently of the I.J.C..<sup>122</sup>

In September 1980, this group arrived at a resolution of the Poplar dispute, one which has been deemed "innovative," "successful," "new," and "unique."<sup>123</sup> George Rejhon, Environment Consular at the Canadian Embassy in Washington, D.C., credits the flexibility and "vagueness" of the Boundary Waters Treaty as enabling negotiators, provided they are operating with mutual goodwill, to devise creative and innovative solutions for these types of problems.<sup>124</sup>

The plan adopted in the resolution established a four-member Poplar River Bilateral Monitoring Committee, consisting of public officials with technical expertise from the two federal, the provincial and the state governments.<sup>125</sup> The committee is to insure that data on the quality of water flowing into Montana is exchanged at least quarterly so that unforeseen pollution can be detected early. The committee must also report annually to the federal governments summarizing the committee's main activities, indicating water quality changes and making recommendations on the ad-

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view with Consular Rejhon (Oct. 7, 1981).

120. Note 116 *supra*.

121. [1980] 3 INT'L ENV'T REP. (BNA) 466 (Oct. 10, 1980).

122. Telephone interviews with Consular Rejhon (Oct. 7, 1981) and John E. Carroll (Oct. 12, 1981). Professor Carroll believes the impetus for federal involvement came from the inability of Montana and Saskatchewan to solve the problem between themselves. Originally, the federal governments had not wanted the state and the province involved in negotiations, but Montana insisted on participating. Hence, both were included. Federal government involvement served not only to provide for representation of the two local governments most directly concerned but also to defuse somewhat the political side of the issue.

123. Telephone interview with John E. Carroll (Oct. 12, 1981). Professor Carroll points out that the dispute was "resolved" rather than "solved" indicating perhaps that only a temporary, as opposed to a permanent, settlement has been reached. He also mentions that there are many people in Montana who would not call this arrangement a "solution."

124. Telephone interview (Oct. 7, 1981). Consular Rejhon is of the opinion that the brief, less explicit nature of the Boundary Waters Treaty is characteristic of Canadian law, rather than of American law. But see Note, *A Primer on the Boundary Waters Treaty and the International Joint Commission*, 51 N.D.L. REV. 493, 495 (1974), which provides the historical background of the Treaty. According to this article, the United States had far greater bargaining power at the time of drafting than did Canada. As a result, the treaty terms were more favorable to the United States. From this fact, it might be inferred that the treaty is a more "American" document.

125. Telephone interview with John E. Carroll (Oct. 12, 1981).

equacy of monitoring operations.<sup>126</sup>

The most interesting feature of the plan is its requirement that if the monitoring committee finds, at any time, that the plant is discharging pollutants at a higher level than is permitted under Saskatchewan law, the Canadian Government shall immediately order the SPC to cease and desist plant operation. Both federal governments have agreed to be bound by the committee's findings in this regard, and to use the committee's data as the basis for future decisions regarding plant operation.<sup>127</sup>

A cease and desist order is a far more stringent sanction than those provided under the Saskatchewan Water Resources Management Act (Water Resources Act). Under the Water Resources Act, the maximum penalty levied on a polluting corporation is a civil fine.<sup>128</sup> A fine alone provides little motivation for a polluter, especially a wealthy one, to comply with statutory obligations. It may be far less expensive to pay the fine than it would be to develop and install proper pollution abatement devices. To this extent, the threat of a cease and desist order has much greater likelihood of exacting compliance with provincial law. It also gives the Poplar agreement a much needed enforcement mechanism.

When the I.J.C. finally submitted its water quality report in February 1981, its effect was to rubberstamp the creation of the bilateral committee. The I.J.C. conceded that Poplar River water quality and flows would be adversely affected, though pollution and property damage were not expected to be substantial.<sup>129</sup>

The first unit of the plant began operation in July 1981, over continued American protest.<sup>130</sup> As of mid-June 1982, the first unit was still the

126. Note 121 *supra*.

127. Telephone interview with John E. Carroll (Oct. 12, 1981).

128. The penalty provisions state:

(3) Where an offence is committed by a corporation, the corporation is liable:

(a) for a first offence to a fine of not more than \$1,000 and, in the case of an offence under section 27 . . . to a further fine not exceeding \$250 for each day during which the offence continues; and

(b) for a second or subsequent offence to a fine of not more than \$5,000 and, in the case of an offence under section 27 . . . to a further fine not exceeding \$500 for each day during which the offence continues.

(4) Where default is made in payment of any fine, costs or sum ordered to be paid no imprisonment in default of the payment shall be ordered.

Water Resources Act, ch. W7, §§ 42(3)-(4). Section 27 says that "no person shall discharge, deposit, drain or release any substance capable of changing the quality of water or causing water pollution." *Id.* § 27. A cease and desist order becomes an even more stringent sanction when one considers that the SPC has a monopoly on electrical generation in Saskatchewan. Telephone interview with Michael Jay (Oct. 8, 1981).

129. Telephone interview with John E. Carroll (Oct. 12, 1981); [1981] 4 INT'L ENV'T REP. (BNA) 691 (Mar. 11, 1981). A report by the U.S. EPA contains the same findings. Telephone interview with Michael Jay (Oct. 8, 1981).

130. Federal officials as well as Montana residents were among the most vocal protesters. [1981] 4 INT'L ENV'T REP. (BNA) 1002 (Aug. 12, 1981).



only one in operation. The second unit is scheduled to begin operation sometime in the winter of 1982-1983. The SPC has not yet decided whether to propose to the provincial government that the third and fourth units be constructed.<sup>131</sup> The Bilateral Monitoring Committee has recently submitted its first annual report, in which it concluded that the Poplar pollution situation was "satisfactory."<sup>132</sup> The arrangement appears to be working well and provides hope that similar solutions can be reached in future disputes.

#### A. *Canadian Environmental Law—Impacts on the Poplar Project*

Considering the potential for renewed disagreement over the Poplar project if additional units begin operation, it is useful to assess what consideration the SPC might give to Canadian statutes and how effective these statutes might be in resolving these potential disputes.

The Canada Water Act does not create a duty not to cause trans-boundary water pollution. The act specifically defines "interjurisdictional waters,"<sup>133</sup> but provides that water quality management actions may be taken in those waters only by joint federal and provincial initiative and only when the water quality has become a matter of "urgent national concern."<sup>134</sup> Therefore, it is likely that no action will be taken under this act for alleviating the impact of water pollution in the United States unless and until Canada, on its own initiative or under pressure from the United States, determines that water quality in the area is a matter of "urgent national concern."

Saskatchewan law requires polluters to consider the possible international environmental implications of their activities. This duty only arises, however, when a plan for development and use of river basin resources has been approved. The Minister of the Environment then has discretion or, on occasion, may be ordered by the Lieutenant Governor in Council, to consider the international environmental implications of the plan.<sup>135</sup>

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131. Telephone interview with Wayne Nordquist, Director of Env't'l. Programs, SPC (June 14, 1982).

132. *Id.*

133. Canada Water Act, CAN. REV. STAT., ch. 5, § 2.(1) (Supp. I 1970) (amended by ch. 14 (Supp. II)). "Interjurisdictional waters" are defined as "any waters, whether international, boundary or otherwise, that, whether wholly situated in a province or not, significantly affect the quantity or quality of waters outside such province." Under this definition, the East Poplar River is an interjurisdictional water.

134. *Id.* § 11.(1)&(2). This section provides as follows: "Where, in the case of any interjurisdictional waters, the water quality management of those waters has become a matter of urgent national concern . . . the Governor in Council may, on the recommendation of the Minister [of the Environment], designate such waters as a water quality management area . . . ."

135. The Minister "may and when directed by the Lieutenant Governor in Council shall . . . consider possible . . . international implications of any . . . project." Water Resources Act, § 10(2)(d).

The Water Resources Act also gives the Minister discretion to consult and exchange information with any public, private or governmental agency in Saskatchewan or elsewhere in order to promote coordination between international plans for water resource development and use.<sup>136</sup>

These provisions will contribute little to future attempts to adjust Canadian-U.S. differences regarding the Poplar project. The obligation to consider transboundary effects arises only in certain limited circumstances, and at the discretion of Canadian officials. Neither the provisions of the Boundary Waters Treaty nor of Canadian environmental law have been as effective in controlling transboundary pollution as might have been hoped.

#### V. THE GARRISON DIVERSION UNIT

The successes achieved by Canada and the United States in reaching a mutually agreeable resolution of their differences over the Poplar power plant have, unfortunately, not been repeated in their dispute over the environmental impacts of the Garrison Diversion Unit in North Dakota. The problems posed by Garrison are far more complex and controversial than those presented by Poplar, and it is likely that the very enormity and complexity of the issues has prevented the two countries from reaching a settlement. There are some hopeful signs, however, that an understanding may be reached in the future.

The Garrison Diversion Unit (Garrison or GDU), is a large-scale, extremely complex and highly controversial water diversion project in North Dakota which, if construction continues as planned, will have significant environmental effects not only in North Dakota, but across the border in Manitoba.<sup>137</sup>

Garrison has been characterized as a "cause célèbre" in Canada. Many Canadians see Garrison as a classic example of American insensitivity to Canadian problems in general, and to its environmental concerns specifically.<sup>138</sup>

Garrison, because of its controversial history, is an even more useful vehicle than the Poplar situation for examining the inability of the I.J.C. and of U.S. and Canadian domestic law to manage and to resolve transboundary water pollution disputes. The Garrison experience goes beyond the Poplar experience to demonstrate that, when political interests are deeply enmeshed in environmental disputes, treaty and statutory law will be largely ignored and chances of reaching amicably negotiated settlement become vulnerable to and dependent upon the existence of positive bilateral relations.

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136. *Id.* § 10(3).

137. J. CARROLL & R. LOGAN, *THE GARRISON DIVERSION UNIT* 32-33 (1980); telephone interviews with James Payne, Esq., of Pepin, Dayton, Herman, Graham & Getts, Minneapolis, Minn. (Oct. 20 and Nov. 9, 1981).

138. Telephone interview with John E. Carroll (Oct. 12, 1981).

Garrison was originally authorized in 1944 and the Garrison Dam over the Missouri River in western North Dakota was completed in 1956.<sup>139</sup> Congress reauthorized the project in 1965, along with plans for an irrigation project, the Garrison Diversion Unit.<sup>140</sup> Construction began in 1967.<sup>141</sup>

The Garrison plan calls for the irrigation of 250,000 acres of land in central and eastern North Dakota. Water diverted from the Missouri River crosses the Continental Divide and eventually flows into the Hudson Bay Drainage Basin in Canada. Return flows from irrigation water will empty into the Red and Souris Rivers, both of which flow into Manitoba and both of which also terminate in the Hudson Bay Drainage Basin.<sup>142</sup>

North Dakota's strong commitment to Garrison lies in the belief that it will bring a much needed vitality to a traditionally lethargic economy. North Dakota is a drought-prone state, three-fourths of whose income is generated by agriculture. Its economic growth rate is slow by comparison with that of other states and recreational activities in North Dakota are quite limited. Greater water supplies from Garrison would increase agricultural productivity and revenues and enhance the state's recreational resources. This would in turn promote the state's economic growth, making it a more attractive place to live. Urban communities will benefit from more plentiful and higher quality water supplies, which, it is hoped will attract new business.<sup>143</sup>

For the United States, Garrison's greatest drawbacks are its staggering costs and its tremendous adverse environmental impacts. The Garrison cost estimate, originally calculated at \$250 million,<sup>144</sup> has now reached \$790 million,<sup>145</sup> and critics of the project estimate the final bill may ex-

139. J. CARROLL & R. LOGAN, *supra* note 137, at 25-26. The Garrison Diversion Unit [hereinafter cited as Garrison or GDU] was not implemented in 1944, although the Flood Control Act, Pub. L. No. 78-534, ch. 665, § 9, 58 Stat. 887, 891 (1944) authorized it. Minnesota and South Dakota were the only two states which mounted any substantial opposition to the measure in Congress. J. CARROLL & R. LOGAN, *supra* note 137, at 26.

140. The GDU was authorized by Act of August 5, 1965, Pub. L. No. 89-108, 79 Stat. 433.

141. Note, *An Analysis of the Scope of the Final Environmental Impact Statement on the Garrison Diversion Unit Project: Applying a Totality of Circumstances Test*, 53 N.D.L. Rev. 427, 431 (1977).

142. Goldberg, *The Garrison Diversion Project: New Solutions for Transboundary Pollution Disputes*, 11 MANITOBA L.J. 177, 178 (1981).

143. J. CARROLL & R. LOGAN, *supra* note 137, at 9-12. Between 1930 and 1970, North Dakota's population had dropped from 681,000 to 618,000. *Id.* at 10. This lowered its population rank among the states from thirty-eighth to forty-fifth. U.S. BUREAU OF THE CENSUS, STATISTICAL ABSTRACT OF THE UNITED STATES 143, (1978), *cited in id.* at 10 n.3 An added benefit, according to North Dakota's Dep't of Pub. Health, is that stream flows will be augmented, decreasing the concentration of pollutants during low-flow periods. J. CARROLL & R. LOGAN, *supra* note 137, at 12.

144. J. CARROLL & R. LOGAN, *supra* note 137, at 12.

145. *Id.*

ceed \$1 billion.<sup>146</sup> It is argued that the cost of the project and the amount of energy it will require are not justified when one considers the relatively small number of farmers who will benefit from the project, and the fact that the project will consume as much presently productive agricultural land as it will eventually irrigate.<sup>147</sup>

Although Garrison's environmental impact will primarily be felt in Manitoba, North Dakota will not be impacted lightly. Total dissolved solids in GDU's return flows may exceed North Dakota standards. Garrison may also hurt the state's recreational waterfowl hunting industry by reducing the waterfowl population.<sup>148</sup> Biota transfer into the American portion of the Hudson Bay Drainage area is an additional concern, although it affects Canada far more than it does the United States.<sup>149</sup>

For Canada, Garrison's costs far outweigh any benefits to be gained. Those limited benefits include an increase in the quantity of water entering Canada, which will in turn lower the concentration of pollutants in the Souris River, provide more water for irrigation in southern Manitoba, and increase minimally the hydroelectric generating capacity of certain Manitoba plants.<sup>150</sup>

As for its costs, Garrison will cause increased flooding in the Souris River Valley and substantially impair the quality of most water flowing into Manitoba, necessitating greater water treatment expenditures.<sup>151</sup> However, Garrison's most destructive and controversial effect is the transfer of foreign biota into Canadian waters. Technical devices to prevent some of this transfer are not expected to be sufficiently effective to

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146 The National Taxpayers Union has pointed out that the projected cost of Garrison is now estimated at \$1,018 billion. Luoma, *Water: Grassroots Opposition Stymies Garrison Diversion*, AUDUBON, Mar. 1982, 114, 116-17.

147. For a more detailed discussion of these costs, see J. CARROLL & R. LOGAN, *supra* note 137, at 14-16.

148. Total dissolved solids (TDS) are a major water pollutant. The EPA study said generally, in referring to the GDU, that many environmental effects of constructing and operating the Garrison Diversion Unit will be severe and continuing. Examples of such effects include water quality degradation, flooding potentials, wetland loss through drainage, and loss of critical wildlife habitat. With respect to TDS, the EPA predicted the GDU's return flows might exceed North Dakota's water quality standards "during the period required to reach solid-water equilibrium in the irrigated areas, assuming full utilization of sprinkler irrigation equipment and a high level of irrigation management." Letter from Russell E. Train, Administrator, EPA to Gilbert G. Stamm, Commissioner, Bureau of Reclamation, dated Aug. 16, 1974, and entered at the I.J.C. hearing, Grand Forks, N.D., Nov. 19, 1975, in I.J.C. HEARINGS RECORD (Washington, D.C., 1975), cited in J. CARROLL & R. LOGAN, *supra* note 137, at 16 n.26.

In addition to reducing the waterfowl population, Garrison will also harm certain birds protected under the Convention for the Protection of Migratory Birds, Aug. 16, 1916, United States-Great Britain, 39 Stat. 1702, T.S. No. 628, and the Migratory Bird Treaty Act, 16 U.S.C. § 703 (1974). Other adversely affected wildlife include certain water-dependent terrestrial animals. J. CARROLL & R. LOGAN, *supra* note 137, at 18.

149. J. CARROLL & R. LOGAN, *supra* note 137, at 18.

150. *Id.* at 20.

151. *Id.* at 21-22.

protect Manitoba from potential destruction of its entire commercial fisheries industry. The costs to Manitoba of attempting to alleviate this and other of Garrison's adverse impacts will be quite large and are of course a major item in Garrison's overall cost-benefit ratio.<sup>152</sup>

A. *Garrison and the I.J.C.*

Canada has opposed Garrison continuously since 1969. Formal Canadian complaints were lodged with the U.S. State Department in that year and in 1971 and 1973. In response to the 1973 complaint, officials from Canada and the United States met to discuss Canadian objections and possible solutions. The meeting resulted in an impasse and a note from Canada reminding the United States of its obligations under the Boundary Waters Treaty and requesting a moratorium on further construction until the two countries agreed on measures to protect Canadian rights. Although the United States refused to halt construction, Canada was encouraged by U.S. reassurances that, until its treaty obligations were met, the United States would refrain from further construction which might adversely affect waters flowing into Canada. As a result of this American concession, Canada and the United States entered into a series of bilateral negotiations. After nearly two years of failed attempts to agree on measures to alleviate Canadian pollution injuries, the countries finally referred the matter to the I.J.C. in October 1975.<sup>153</sup>

In August 1976, the two nations issued a joint communiqué in which the United States again vowed to uphold its obligations under the Boundary Waters Treaty. Despite this pledge, Canada sent a Diplomatic Note to the United States in October 1976, again requesting a moratorium and expressing concern that as the United States spent even greater sums of money on Garrison, it was becoming increasingly difficult to halt the momentum in support of the project. The U.S. reply promised not to proceed with Garrison until the I.J.C. submitted its report and reiterated the pledge to uphold its treaty obligations.<sup>154</sup>

In September 1977, the I.J.C. submitted its report. The Commission was most concerned with the impact of biota transfer from the Missouri Basin into the Hudson Bay Drainage Basin. This concern led the I.J.C. to recommend that construction on the parts of the project affecting Canada be halted until the problem was resolved.<sup>155</sup> The Commission further recommended that Canada and the United States negotiate a water quality agreement for the Red and Souris Rivers which would set uniform quality

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152. The commercial fisheries industry in Manitoba could lose as much as \$6 million annually if the sauger, walleye and whitefish populations in Lakes Manitoba and Winnipeg were decreased by fifty percent. Of course, the losses would be much higher were the industry totally destroyed. *Id.* at 23. For a discussion of the total monetary losses Manitoba stands to suffer, see *id.* at 23-24.

153. *Id.* at 29-30.

154. *Id.* at 35-36.

155. *Id.* at 37-39.

standards for the entirety of these rivers even though they crossed an international boundary. Professors Carroll and Logan have labeled this "an innovative attempt to go beyond the 1909 Treaty and set a precedent for the resolution of existing, and the prevention of future, transboundary pollution problems."<sup>156</sup> Such an agreement would have eliminated the need to set new standards every time a similar problem arose.<sup>157</sup> Unfortunately, the negotiations never took place.<sup>158</sup>

The United States was highly critical of the I.J.C. and its report. The Department of State claimed the I.J.C., by declaring such one-sided disapproval of the project, had destroyed whatever bilateral negotiating leverage the United States might have had, and that the Commission had perhaps wrongly expanded its traditional role by issuing such a harsh, condemning report.<sup>159</sup>

The I.J.C.'s recommendations for bilateral negotiations were never acted upon, and the outcome of the dispute has been placed in the hands of the U.S. courts, the U.S. Congress and the diplomats.

#### B. *The National Audobon Society Suit and the Congress*

Garrison is the subject of a six-year old lawsuit in which the National Audubon Society (NAS) has attempted to halt further land acquisition and construction by the U.S. Department of the Interior (DOI), until an Environmental Impact Statement (EIS) which affirmatively accounts for Garrison's impacts on Canadian waters has been approved.<sup>160</sup> In May 1977, the Federal District Court for the District of Columbia handed down a stipulation which prohibited DOI from acquiring more land and proceeding with construction until DOI filed a new EIS and proposed legislation to modify, reauthorize or deauthorize Garrison.<sup>161</sup>

156. J. CARROLL & R. LOGAN, *supra* note 137, at 40.

157. *Id.*

158. Telephone conversation with John E. Carroll (Oct. 12, 1981).

159. J. CARROLL & R. LOGAN, *supra* note 137, at 44-45. North Dakota Governor Arthur A. Link said of the Commission's work: "Rather than recognizing the flexibility of the treaty, the Commission has adopted a position of absolute nondegradation. We must oppose that concept. . . . It may prohibit nearly every proposed water-related development on either side of the international boundary. This would be contrary to the national interest." *Id.* North Dakota Att'y Gen. Allen I. Olson remarked:

The International Joint Commission is a product of the Boundary Waters Treaty of 1909. That Treaty is a product of international law. The I.J.C. must conduct its investigations and make its recommendations within the four corners of the Treaty and international law. When it does not, it fails in its responsibility to the two governments and reduces its credibility. It appears from a first reading of this report that the I.J.C. may not have adhered to this basic principle.

*Id.*

160. *Id.* at 42; telephone interview with James Payne (Oct. 20, 1981).

161. Telephone interview with James Payne (Oct. 20, 1981). The stipulation and order read in part:

The parties to this agreement recognize that the issues raised in the com-

DOI submitted two new plans in 1978 and 1979, both of which were rejected by Canada due to inadequacies in the plans' consideration of I.J.C. recommendations.<sup>162</sup> DOI's final plan was submitted in April 1979, with an admission that this new plan would still threaten Canadian interests.<sup>163</sup> The plan was never submitted to Congress and DOI's original plan, authorized in 1965, is still in effect.<sup>164</sup>

Regardless of the result of the NAS suit, Congress will ultimately decide whether construction proceeds.<sup>165</sup> Although the district court's injunction was in effect through most of 1981, Senate conferees attached language overturning the injunction to an appropriations bill in Nov-

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plaint are difficult and complex, and that their resolution in judicial proceedings is uncertain. A judgment entered in this case at this time may be a less than satisfactory conclusion for the parties, or any of them, due to the range of relief available to the court. In light of the difficulties associated with the litigation noted above and the uncertainties raised by the President's recommendations that the Garrison Diversion Unit be substantially modified, as well as the issues pending to the Boundary Waters Treaty of 1909 between Canada and the United States, the parties deem a stay of this judicial proceeding to be warranted.

Stipulation and Order, *Nat'l Audubon Soc'y v. Cecil D. Andrus*, (D.D.C., Civil No. 76-0943, May 11, 1977), reprinted in J. CARROLL & R. LOGAN, *supra* note 137, at 42. The agreement set January 1, 1978, as the deadline for submission of the new Environmental Impact Statement and proposed legislation. The defendant was also required to submit a fish and wildlife mitigation plan and to include a discussion of compensation for losses resulting from wetland drainage, stream channelization, cultivation of native prairie, creation of hazardous nesting cover, adverse impacts on national wildlife refuges, introduction of rough fish, increased flows, and alteration of water temperatures. *Id.*

162. The Canadian Embassy's response stated that:

[T]he draft plan relates to the review of the proposed project being undertaken by the Administration in compliance with the stipulation entered into and approved by the U.S. Federal District Court in May, 1977, which stayed the suit of the Audubon Society against the Department of the Interior. As such it does not appear specifically to consider the transboundary effects of the project which were detailed by the International Joint Commission. Therefore, as currently drafted, it does not address substantive Canadian concerns.

Letter from the Canadian Embassy, Washington, D.C., to the U.S. Dep't of State, Mar. 31, 1978; reprinted in J. CARROLL & R. LOGAN, *supra* note 137, at 49. In its rejection of the Department of the Interior's (DOI) 1979 proposal, a Canadian official said that "we were truly disappointed to find that this latest plan is no more satisfactory in this regard than either the 250,000 acre plan or the draft 96,300 acre plan proposed a year ago." Statement by the Head of the Canadian Delegation at the Canada-United States Meeting on the Garrison Diversion Unit, Mar. 28, 1979, reprinted in *id.* at 50-51.

163. DOI conceded that interbasin transfer of fish from the Missouri River Basin to the Hudson Bay could result from this project. As for the passage of fish into Lake Winnipeg, "[T]here is presently no screening device that can be guaranteed to be 100 percent effective." Statement by the Head of the Canadian Delegation at the Canada-United States Meeting on the Garrison Diversion Unit (Mar. 28, 1979), cited in J. CARROLL & R. LOGAN, *supra* note 137, at 51 n.14.

164. Telephone interview with James Payne (Oct. 20, 1981). Mr. Payne believes continuing Canadian objections to the plan kept it from even preliminary review in the U.S. Office of Management and Budget.

165. Luoma, *supra* note 146, at 117.

ember 1981. The House of Representatives deleted this language. The result was that money had been appropriated but the injunction preventing construction was still in effect. Then, in January 1982, the court of appeals stayed the injunction. As of mid-June 1982, construction had been allowed to proceed and DOI had promised to consult Canada on plans for those portions of the project adversely affecting Canadian waters. Ad hoc discussions were being held between DOI and officials from the Canadian federal and Manitoba provincial governments, while neither the U.S. House of Representatives nor the Senate had yet acted on DOI's 1982 appropriations request.<sup>166</sup>

If funds are not appropriated, momentum for Garrison may diminish. If money is appropriated and construction continues, then it remains to be seen how effectively DOI and Canadian officials can negotiate an arrangement which will protect Canadian interests. It will be a delicate process, but the Poplar River experience proved it is possible and the foundation may already have been laid by the discussions currently taking place. These discussions are another hopeful sign of increased bilateral cooperation in the future.

## VI. THE AMERICAN-CANADIAN DRAFT TREATY PROPOSALS

At present there is no mechanism for achieving a definitive resolution to environmental disputes between the United States and Canada. To that end, in August 1979, the American and Canadian Bar Associations (ABA and CBA) approved and recommended to the U.S. and Canadian Governments, as a possible basis for negotiation, two draft treaties: a draft treaty on a regime of equal access and remedy in cases of trans-frontier pollution between the United States and Canada; and a draft treaty on third-party settlement of disputes related primarily to the interpretation, application or operation of any treaty in force between Canada and the United States.<sup>167</sup> The following is a discussion, based on the drafters' comments, of the relevant portions of the draft treaties.

### A. *Equal Access and Remedy*

The thrust of this proposal is that persons in both countries should have equal access to judicial and administrative procedures for the prevention of, and compensation for, pollution damage. The treaty proposes not a new legal system but the "adjustment of the two countries' existing municipal legal systems to accomodate equally residents of both in pollution disputes."<sup>168</sup> The Joint Working Group of the ABA and CBA (Work-

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166. Telephone interview with Richard Wegman, Esq., of Wellford, Wegman, Krulwick, Gold and Hoff, Washington, D.C. (June 15, 1982).

167. King & Smith, *Preface to ABA-CBA SETTLEMENT TREATIES*, *supra* note 4, at v.

168. REPORT TO THE EXECUTIVE AND TO THE 1979 ANNUAL MEETING OF THE CANADIAN BAR ASSOCIATION (July 1979); *reprinted in ABA-CBA SETTLEMENT TREATIES*, *supra* note 4, at xxxiii.



ing Group) relied heavily on the 1977 OECD Recommendation of the Council for the Implementation of a Regime of Equal Right of Access and Non-Discrimination in Relation to Transfrontier Pollution.<sup>169</sup>

Article 1 defines the descriptive terms to be used. It is foreseeable that the legislatures of the two countries could use different definitions of operative terms in pollution legislation.<sup>170</sup> This could lead to litigation even before the substance of the dispute is reached. The drafters voiced their concern that the treaty contain an agreed "neutral set of definitions."<sup>171</sup>

The main operative provisions are in article 2. The "country exposed"<sup>172</sup> to the pollution must be granted the same rights of access in the "country of origin"<sup>173</sup> as would the country of origin's own citizens in cases of similar domestic pollution. Were Canada to pursue legal action in the United States, it would have to be offered access to all judicial and administrative proceedings that would be available to American citizens pursuing a similar matter.<sup>174</sup> The equal access guarantee applies to remedies in state and provincial courts as well as in federal courts. Quasi-judicial remedies are also available. In instances where the remedy sought would be prospective in nature, the quasi-judicial remedies would be most effective. The right to prevent possible future injury is equally as significant as the right to pursue an after-the-fact remedy such as damages and abatement.

Under article 3 the right of access extends to private environmental organizations as well as public agencies if counterparts in the other country enjoy a similar opportunity.<sup>175</sup> A significant requirement of notice is placed on the polluting party in article 4 which requires adequate notice be given to the affected parties to allow them an equal opportunity to act and take full advantage of their rights under this treaty.<sup>176</sup> For example,

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169. See OECD Recommendation of the Council for the Implementation of a Regime of Equal Right of Access and Non-Discrimination in Relation to Transfrontier Pollution (442d mtg.); reprinted in ABA-CBA SETTLEMENT TREATIES, *supra* note 4, at 97.

The recommendation was the result of several years study. The OECD decision is in the form of a general recommendation elaborated by ten principles. The principles include an obligation to exchange all information relevant to transfrontier pollution. The OECD also recommended making the remedies in the judicial system of each country available to residents of other countries. ABA-CBA SETTLEMENT TREATIES, *supra* note 4, at 43.

170. Draft Treaty on a Regime of Equal Access and Remedy in Cases of Transfrontier Pollution, art. 1 [hereinafter cited as Draft Treaty on Equal Access], reprinted in ABA-CBA SETTLEMENT TREATIES, *supra* note 4, at xiii. For a complete text of the Draft Treaty on Equal Access, see Appendix A.

171. Draft Treaty on Equal Access, *id.* art. I; Drafters' comment in REPORT AND RECOMMENDATIONS OF THE ABA-CBA JOINT WORKING GROUP, reprinted in ABA-CBA SETTLEMENT TREATIES, *supra* note 4, at 47.

172. Draft Treaty on Equal Access, *supra* note 170, at art. 2.

173. *Id.*

174. *Id.* art. 2(a).

175. *Id.* art. 3.

176. *Id.* art. 4.

if the United States were planning a new dam project or planning to relax emission standards on coal-fired utility plants in Ohio which would adversely affect the Canadian environment, the United States would be required to give notice of the proposed changes in a timely manner to enable the Canadian Government or private Canadian environmental organizations to intervene before the fact.<sup>177</sup>

Residents of the exposed country are granted the same rights as residents of the country of origin.<sup>178</sup> The treaty is not intended to create any rights greater than those belonging to a citizen of the polluting country. The "equal access" treaty is intended to put all persons in both countries on an equal footing in any pollution proceeding in either country.

### B. *Third Party Arbitration*

At present there is no system in place which can assure a definite resolution of intergovernmental disputes. Even between two countries with relations traditionally as cordial as those between the United States and Canada, it is unrealistic to expect all disputes to be conclusively dealt with by negotiation. Relations between the two nations continue to grow in complexity and become even more convoluted and interwoven. Binding third-party arbitration is one way to ensure the manageability of relations.

The arbitration draft treaty discussed below restricts compulsory binding arbitration to disputes about treaty interpretation.<sup>179</sup> The proposed draft treaty is then "an appeal for a mutual commitment to the final authority of law in the government of the two countries' affairs."<sup>180</sup>

Since arbitration is an ad hoc procedure, the parties retain control over the composition and procedure of the panel for each case.<sup>181</sup> The arbitration can be kept self-contained, and unrelated issues cannot be linked to the issue at hand in order to force a resolution of the unrelated issue.

Article 1 limits compulsory arbitration to matters involving the interpretation, application and operation of treaties binding on both countries. In disputes involving both treaty and nontreaty legal disputes, compulsory arbitration will not extend to the non-treaty issues<sup>182</sup> unless the non-treaty issues are essential to the treaty issues in dispute. Treaty interpre-

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177. *Id.*

178. *Id.* art. 5.

179. Draft Treaty on Third Party Settlement of Disputes Relating Primarily to the Interpretation, Application or Operation of any Treaty in Force Between Canada and the United States [hereinafter cited as Treaty on Third-Party Settlement], reprinted in ABA-CBA SETTLEMENT TREATIES, *supra* note 4, at xxi. For the complete text of the Treaty on Third Party Settlement, see Appendix B.

180. REPORT AND RECOMMENDATIONS OF THE ABA-CBA JOINT WORKING GROUP, reprinted in ABA-CBA SETTLEMENT TREATIES, *supra* note 4, at 58.

181. *Id.*

182. *Id.*

tation or application is particularly well suited for international arbitration because, as an ad hoc procedure, "the parties retain control over the composition and procedure of the panel for each case, thus giving it the advantages of flexibility and relative informality."<sup>183</sup>

It is important to note that it is explicitly recognized that negotiation is to be the first step toward arbitration.<sup>184</sup> Arbitration is viewed as the last resort, and, until all other avenues of resolution have been exhausted, the arbitration tribunal will not accept jurisdiction.

Disputes concerning issues other than treaty interpretation may be heard by the arbitration tribunal only through ad hoc agreement of both countries.<sup>185</sup> Article 2 offers some examples of non-treaty issues the arbitral court has optional jurisdiction to hear. "Environment issues" is specifically mentioned.<sup>186</sup> "Ripeness" of an issue becomes relevant when considering the timing of an agreement to arbitrate. Once a dispute is deemed "ripe" for settlement, it is important that arbitration proceed as expeditiously as possible. It is specified in article 2 that an exchange of diplomatic notes is sufficient to start the process in motion.

Under the treaty, disputes are to be resolved by a three-person arbitral tribunal or, if the parties cannot agree on its constitution within 120 days, the matter is to be referred to a special Chamber of the I.C.J.<sup>187</sup> One national of each Party shall serve as a judge in the Chamber. The third judge is to be chosen through ad hoc agreement of the two nations.

The scope of jurisdiction of the arbitral tribunal is to be decided by the tribunal itself.<sup>188</sup> It is likely that disputes between the parties will arise as to the scope of jurisdiction of the tribunal to hear the dispute. To avoid confusion and delay, final settlement of such points must be left to the tribunal itself. Both countries by submitting to binding arbitration implicitly agree to be regulated by the decision of the tribunal.<sup>189</sup>

As the system of arbitration is designed for the sole use of the United States and Canada, there exists a unique opportunity to develop a "North American jurisprudence."<sup>190</sup> The primary legal reference in the arbitration proceedings is to be international law. However, due to the similarities in the legal backgrounds of both countries, emphasis will be placed on the common principles of the two legal systems.<sup>191</sup> Thus, if the United States and Canada share a common interpretation of a rule of interna-

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183. *Id.*

184. Treaty on Third-Party Settlement, *supra* note 179, at art. 1.

185. *Id.* art. 2; drafters' comment in REPORT AND RECOMMENDATIONS OF THE ABA-CBA JOINT WORKING GROUP, reprinted in ABA-CBA SETTLEMENT TREATIES, *supra* note 4, at 69.

186. Treaty on Third-Party Settlement, *supra* note 179, at art. 2.

187. *Id.* art. 3(a)&(b).

188. *Id.* art. 4.

189. *Id.* art. 5.

190. *Id.* art. 8; drafters' comment in REPORT AND RECOMMENDATIONS OF THE ABA-CBA JOINT WORKING GROUP, reprinted in ABA-CBA SETTLEMENT TREATIES, *supra* note 4, at 84.

191. Treaty on Third-Party Settlements, *supra* note 179, at art. 8.

tional law, the tribunal will follow the Canadian-U.S. interpretation regardless of international practice. Conversely, if the two countries' international practices differ, the prime reference will be international law. If neither of the above produces an answer, the internal practices of the two countries will be examined. Article 8 also allows the parties to specify their choice-of-law rules in an ad hoc agreement or to agree that no particular laws will be applied.

In addition to providing that the United States and Canada agree to be bound by the findings of the tribunal, article 9 also provides that in the event a domestic law or piece of legislation was violative of international law, the tribunal is empowered to specify alternative relief such as damages<sup>192</sup> since it may not be possible for Canadian or U.S. representatives to ensure the reversal of a judicial decision or enactment of new legislation to remedy the situation.<sup>193</sup> Paragraph 2 of article 9 allows either party to request a clarification of any tribunal decision.<sup>194</sup> However, the parties are not granted the power to seek a revision of a judgment. It is the reasoning of the drafters that permitting the revision of judgments would cause uncertainty as to the resolution of a dispute and thereby defeat the purpose of the treaty.<sup>195</sup>

The final article allows the parties to request the tribunal to hand down a non-binding advisory opinion. With the availability of advisory opinions, it is expected that both countries will be more likely to make use of arbitration procedures and to submit difficult cases to such procedures.<sup>196</sup> The advisory procedure is available only through an ad hoc tribunal. The Statute of the I.C.J. would not permit the United States and Canada to seek advisory opinions directly from the Court or a Chamber.<sup>197</sup> It is likely, however, that should there be a need for an advisory opinion through a special Chamber of the I.C.J., an appropriate procedure could be improvised through UN channels.<sup>198</sup>

## VII. CONCLUSIONS

Between two countries as politically and economically interrelated as the United States and Canada, it is to be expected that disputes will arise. The majority of these disputes have been handled satisfactorily by the ad hoc process of negotiation.

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192. *Id.* art. 9.

193. *Id.*; drafters' comment in REPORT AND RECOMMENDATIONS OF THE ABA-CBA JOINT WORKING GROUP, reprinted in ABA-CBA SETTLEMENT TREATIES, *supra* note 4, at 87.

194. Treaty on Third-Party Settlements, *supra* note 179, at art. 9.

195. *Id.*; drafters' comment in REPORT AND RECOMMENDATIONS OF THE ABA-CBA JOINT WORKING GROUP, reprinted in ABA-CBA SETTLEMENT TREATIES, *supra* note 4, at 88.

196. *Id.* art. 10; drafters' comment in REPORT AND RECOMMENDATIONS OF THE ABA-CBA JOINT WORKING GROUP, reprinted in ABA-CBA SETTLEMENT TREATIES, *supra* note 4, at 89-90.

197. *Id.*

198. *Id.*

The present acid rain dispute has escalated into a major foreign policy issue for both countries. In any dispute, domestic or international, there are many factors at work simultaneously. No dispute of this magnitude can be considered in a vacuum. Both countries must consider the political, economic, sociological, and environmental implications of any action taken. In the case of acid rain the need for immediate action to prevent further damage must be balanced against the necessity of compiling sufficient data to be sure that the source of the pollution is correctly identified and the most effective curative measures are taken. Aside from the billions of dollars estimated for the cleanup, any time spent pursuing an incorrectly identified source is not only a waste for its own sake but, in addition, allows the pollution to continue while blind alleys are investigated.<sup>199</sup>

Even though the Canadian amendment essentially mirrors section 115, other factors such as the Canadian Government's practice and implementation standards must also be considered before reciprocity in fact is determined to exist. The EPA must determine if Canadian legislation gives sufficient authority to the Government of Canada to provide essentially the same right to the United States. It must also be determined that Canada is exercising and interpreting that authority in a similar manner. Negotiations required by the Memorandum of Intent signed in August 1980 will provide a forum for clarifying the status of the two reciprocity clauses. At present, it is too early to examine Canadian policy as to the federal government's powers granted under sections 21.1(1) and 21.2(1) of the Canadian Clean Air Act.<sup>200</sup>

After a period of intense dissatisfaction and frustration with the progress of negotiations, brought on by an American statement that the fifty percent reduction in sulfur dioxide emissions proposed by Canada was "scientifically premature and too costly for tough economic times,"<sup>201</sup> Canada appears to be much more optimistic. Canada's Mark MacGuigan met with George Schultz, U.S. Secretary of State, and was buoyed by Schultz's positive attitude toward achieving significant progress in the acid rain dispute.<sup>202</sup> Canadian hopes were further strengthened when the U.S. Senate Environment and Public Works Committee almost unanimously approved an amendment to the U.S. Clean Air Act requiring thirty-one states to reduce SO<sub>2</sub> emissions by eight million tons over the next twelve years.<sup>203</sup>

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199. Marvin Moss, director for program integration of the analysis division of the U.S. Department of Energy, was quoted as saying, "[i]t is not clear by any means that if you cut emissions of sulfur dioxide in the eastern part of the United States by 50 percent that you will see a 50 percent reduction in acid rain over the continental U.S." [1982] 5 INT'L ENV'T REP. (BNA) 280 (July 14, 1982).

200. [1981] 4 INT'L ENV'T REP. (BNA) 684 (Mar. 11, 1981).

201. Note 199 *supra*.

202. [1982] 5 INT'L ENV'T REP. (BNA) 312-14 (Aug. 11, 1982).

203. *Id.*

While bilateral water pollution disputes have not received the popular attention that has been given to the acid rain problem, water issues are no less important, nor any easier to resolve. Both the Poplar power plant situation and the dilemma surrounding the Garrison Diversion Unit indicate the extent to which political considerations and the general state of bilateral relations can complicate and confuse efforts to arrive at workable solutions to shared environmental problems. The Poplar power plant "resolution" seems to be effective, while the future of the Garrison Diversion Unit remains uncertain. Current negotiations are a hopeful sign that the dispute may be resolved without resort to further litigation. Experience with both these projects indicates that the chances of reaching negotiated settlements of future environmental disputes will depend in large part on the extent to which diplomats and negotiators can separate the environmental issues from the greater political issues.

It is possible that binding arbitration is not the most appropriate vehicle for resolution of these environmental disputes. Given the realities of international politics, it is possible that a decision wholly on the legal merits would be too one dimensional to provide a realistic and mutually satisfactory resolution. Neither country may be willing to risk a binding third party resolution and instead probably would opt for a course of continued negotiation. It is ironic that the very issues which prompted the development of the ABA-CBA draft treaty proposals may prove to be the same issues that neither party is willing to entrust to them.

## APPENDIX A

### Draft Treaty on a Regime of Equal Access and Remedy in Cases of Transfrontier Pollution Article 1: Definitions

For the purposes of this Treaty:

- (a) "Pollution" means any introduction by man, directly or indirectly, of substance or energy into the environment resulting in deleterious effects of such a nature as to endanger human health, harm living resources or ecosystems, impair amenities or interfere with other legitimate uses of the environment.
- (b) "Domestic pollution" means any intentional or unintentional pollution, the physical origin of which is situated wholly within the area under the jurisdiction of one Party and which has effects within that area only.
- (c) "Transfrontier pollution" means any intentional or unintentional pollution whose physical origin is subject to, and situated wholly or in part within the area under the jurisdiction of one Party and which has effects in the area under the jurisdiction of the other Party.
- (d) "Country of origin" means the Country within which, and subject to the jurisdiction of which, transfrontier pollution originates or could originate in connection with activities carried on or contemplated in that Country.
- (e) "Exposed Country" means the Country affected by transfrontier pollution or exposed to a significant risk of transfrontier pollution.
- (f) "Persons" means any natural or legal person, either private or public.

#### Article 2: Rights of Persons Affected

- (a) The Country of origin shall ensure that any natural or legal person resident in the exposed Country, who has suffered transfrontier pollution damage or is exposed to a risk of transfrontier pollution, shall at least receive equivalent treatment to that afforded in the Country of origin, in cases of domestic pollution or the risk thereof and in comparable circumstances, to persons of equivalent condition or status resident in the Country of origin.
- (b) From a procedural standpoint, this treatment shall include but shall not be limited to the right to take part in, or have resort to, all administrative and judicial procedures existing within the Country of origin, in order to prevent domestic pollution, to have it abated, and/or to obtain compensation for the damage caused.
- (c) In the case of requirements for security of cost, this treatment shall at least be equivalent to that accorded to a nonresident national of the Country of origin.

#### Article 3: Rights of Public and Private Organizations

- (a)(1) Where the domestic law of either Party or a political subdivision thereof permits persons who are resident or incorporated within its own territory, such as environmental defense associations, to commence or to participate in administrative and judicial procedures to safeguard general environmental interests, that Party or subdivision shall grant the same rights for comparable matters to similar persons resident or incorporated in the territory of the other Party, provided that these persons satisfy the conditions laid down for persons resident or incorporated in the Country of origin.
- (2) When some of the conditions concerning matters of form laid down in the Country of origin cannot reasonably be imposed on persons resident or incorporated in the exposed Country, these latter should be entitled to commence proceedings in the Country of origin if they satisfy comparable conditions.
- (b) When the law of a Party or a political subdivision thereof permits a public authority to participate in administrative or judicial procedures in order to safeguard general environmental interests, that Party shall provide competent public authorities of the exposed Country with equivalent access to such procedures.

#### Article 4: Notice to Persons in the Exposed Country

- (a) The Country of origin shall take any appropriate measures to provide persons exposed to a significant risk of transfrontier pollution with notice sufficient in form and content to enable them to exercise in a timely manner the rights referred to in this Treaty. As far as possible, such notice should be at least equivalent to that provided in the Country of origin in cases of comparable domestic pollution. It shall be sent also to any authority designated for this purpose by the exposed Country.
- (b) The exposed Country may designate one or more authorities which will have the duty to receive and the responsibility to disseminate such notice within limits of time compatible with the exercise of existing procedures in the Country of origin.
- (c) Where such an authority has been designated, notification to it shall constitute fulfillment of the obligation of the Country of origin under paragraph (a). Failure of the exposed Country to designate an authority under paragraph (b) in no way affects the obligation of the Country of origin under paragraph (a).

#### Article 5: Limitation of Rights Granted

In no event shall the provisions of this Treaty be construed as granting, per se, any greater rights to persons resident or incorporated in the exposed Country than those enjoyed by persons of equivalent condition or status resident or incorporated in the Country of origin.

## APPENDIX B

### Draft Treaty on a Third-Party Settlement of Disputes

#### Article 1: Compulsory Jurisdiction

In any dispute between the States Parties, any question of interpretation, application or operation of a treaty in force between them, which has not been settled within a reasonable time by direct negotiations or referred by agreement of the Parties to the International Court of Justice or to some other third-party procedure, shall be submitted to third-party settlement at the written request of either Party addressed to the other's cabinet officer in charge of foreign affairs, or by an exchange of notes between the two.

#### Article 2: Optional Jurisdiction

1. Any other dispute between the States Parties relating to a question or principle of international law may be submitted to third-party settlement by special agreement between the Parties. Without limiting the generality of this principle, the Parties regard disputes concerning the following matters as particularly appropriate subjects for such special agreements:

- a. pecuniary claims in respect of losses or damage sustained by one of the Parties or its nationals as a result of acts or omissions of, or attributable to, the other Party;
- b. immunities of States and of their agencies and subdivisions;
- c. privileges and immunities of Heads of States, Foreign Ministers and other high officials;
- d. consular privileges and immunities;
- e. treatment of the other Party's nationals;
- f. environmental issues;
- g. the management of natural resources of common interest; and
- h. transnational application of civil and criminal laws.

2. The special agreements referred to in the previous paragraph shall, for each case or group of cases, become effective through an exchange of diplomatic notes without any legislative action.

#### Article 3: Organization of Third-Party Settlement

Unless the parties otherwise agree in a particular case, third-party settlement pursuant to Article 1 or Article 2 above shall be organized in each case as follows:

(a) Within 60 days either of the receipt by the other Party of the request for third-party settlement or of the date of signature of a special agreement, as the case may be, each of the Parties shall appoint one member of the arbitral tribunal. Within a further period of 60 days the Parties shall, by common agreement, select a third person who shall be the Chairman of the tribunal. If no agreement is reached on the selection of a Chairman within this period, either Party may request the President of the International Court of Justice to make the appointment. If the latter is prevented from acting or is a national of one of the Parties, the nomination shall be made by the Vice-President of the Court. If the latter is prevented from acting or is a national of one of the Parties, the appointment shall be made by the senior judge of the Court who is not a national of either Party. The time limits specified in this paragraph may be extended or shortened by agreement of the Parties.

(b) If, for any reason, a tribunal is not constituted pursuant to the previous paragraph within 120 days of the receipt of the request for arbitration or of the date of signature of the arbitral agreement, either Party may, by written application, submit the dispute to the International Court of Justice, to be decided by a Chamber thereof composed in accordance with the following paragraph. The acceptance by the Parties of the jurisdiction of the Court and its special Chamber is subject to the condition that the Chamber has been established in accordance with that paragraph.



(c) The Parties agree that either of them will be authorized to request, at the time of submitting a dispute to the Court, that the Court form a Chamber for consideration of the case pursuant to Article 26(2) of the Court's Statute and Articles 17 and 18 of its Rules, consisting of three judges, one national of Canada, one of the United States, and one of another State to be agreed upon by the Parties. If, at the time of application, one of the States Parties does not have a national on the Court, it shall, pursuant to Article 31(2) of the Court's Statute, nominate a person to sit as judge. If there is no agreement between the Parties on the third member of the Chamber within 30 days of the submission to the Court of an application pursuant to the previous paragraph, or if a Party with no national on the Court does not nominate a person to sit as judge within such time, that member or those members shall be elected by the Court from among its members. In any such case the Parties may jointly request that any election be made from among judges coming from a particular legal system or tradition.

(d) Vacancies which may occur in an arbitral tribunal composed according to paragraph (a) above shall be filled in such manner as provided for original appointments. Vacancies occurring in the Chamber of the Court established pursuant to paragraphs (b) and (c) above shall be filled in accordance with the Statute and Rules of the Court.

#### Article 4: Competence

1. The arbitral tribunal or the Chamber of the Court constituted in accordance with Article 3 shall have jurisdiction in any question or dispute submitted to it in accordance with the provisions of this Treaty.
2. Any disagreement (a) as to whether such tribunal or Chamber has jurisdiction under this Treaty or any agreement concluded pursuant thereto, or (b) as to the extent of such jurisdiction, shall be settled by the decision of that tribunal or Chamber.

#### Article 5: Provisional Measures

1. An arbitral tribunal which considers prima facie that it has jurisdiction under this Treaty or an agreement concluded pursuant thereto shall have the power to prescribe, by order, any provisional measures which it considers appropriate to preserve the respective rights of the Parties pending final adjudication.
2. Such provisional measures may only be prescribed, modified or revoked upon the request of a Party and after giving both an opportunity to be heard.
3. Each order issued pursuant to this Article shall specify the time during which it is to be in effect, which in no case shall be longer than six months. Either Party may apply to the tribunal for renewal of an order issued pursuant to this Article.
4. Any order prescribing, modifying or revoking provisional measures shall be notified forthwith to Parties who shall promptly comply therewith.

#### Article 6: Location of Proceedings

1. Arbitration proceedings commenced at the request of one Party shall take place in the capital of the other Party, unless the Parties otherwise agree.
2. Arbitration proceedings commenced by agreement of the Parties shall take place at a location determined either (a) by the Parties' agreement, or (b) in default thereof by the tribunal itself.
3. Where a dispute is submitted to a Chamber of the Court pursuant to paragraphs (b) and (c) of Article 3, the Parties may request that the Chamber sit at the capital of one of the Parties.
4. The tribunal hearing a case may hold proceedings at locations other than its principal seat as and when the circumstances of the case make it desirable.

#### Article 7: Conduct of Proceedings

1. An arbitral tribunal constituted in accordance with paragraph (a) of Article 3 shall function in accordance with the Rules or Procedure annexed to this Treaty, unless the Parties otherwise agree.
2. At the request of a Party, the tribunal may call upon an agency, subdivision or national of

either Party to appear to give evidence or testimony, provided that the tribunal may not hear or receive evidence or testimony pursuant to this paragraph without the consent of the party whose agency, subdivision or national is being called.

3. A Chamber of the Court formed pursuant to paragraphs (b) and (c) of Article 3 shall function in accordance with the applicable provisions of the Statute and Rules of the Court unless the Parties should, by common agreement, request otherwise.

#### Article 8: Applicable Law

1. In deciding any question or dispute submitted to it pursuant to this Treaty, a tribunal or Chamber shall apply the principles and rules of international law, especially as reflected in the treaties and practice of Canada and of the United States, as well as the two countries, particularly those manifesting their common legal traditions.

2. If a case requires the application of the principles of substantive law in force in either of the two countries, but in the opinion of the tribunal there exists such a divergence between the relevant principles in force in Canada and in the United States that it is not possible to make a final decision on that basis, the tribunal shall apply such other common legal principles referred to in paragraph 1 as it considers appropriate, having regard to the desire of the Parties to reach a solution just to all interests concerned.

3. The Parties may agree on particular principles or rules to be applied by the tribunal.

#### Article 9: Finality, Binding Force and Interpretation of Decisions

1. Subject to Article 10, the decision of a tribunal or Chamber rendered pursuant to this Treaty is final and binding, and shall be complied with by both Parties. If the constitutional law of a Party does not permit or only partly permits a Party's compliance with the tribunal's decision, or if the necessary legislation has not been enacted, the Parties agree that the judgment of the tribunal shall specify pecuniary or other equitable satisfaction for the injured party.

2. In the event of disagreement as to the meaning or scope of the decision, the tribunal or Chamber which rendered it shall construe it upon the request of either Party.

3. The tribunal may, either *proprio motu* or on the request of one or both of the Parties, correct any manifest technical or clerical error in its judgment.

#### Article 10: Advisory Opinions

In any particular case, the Parties may agree that, instead of a binding judgment, an arbitral tribunal constituted in accordance with paragraph (a) of Article 3 should render an advisory opinion.

