

Recent Developments in International Environmental Pollution Control

Frederick J. E. Jordan *

I. Air and Water Pollution in North America

The history of economic and social progress in the United States and Canada is replete with illustrations of our emphasis on exploitation rather than conservation of resources. We have viewed natural resources as things inexhaustible and indestructable — to be used and abused by all generations as limitless gifts of nature. Increasingly we have discovered that every resource has its ultimate limits and have been compelled to set about the arduous tasks of conserving, protecting or restoring, often at enormous costs.

Such is the story of our two vital environmental resources, water and air. In developing our industries and metropolises, our transportation systems and our playgrounds we have relied heavily on the abundance of water and air without questioning their capacities to do our biddings. Recently we have been shocked to discover that in the process of building our material society we have converted many of our fresh waters into open sewers and our fresh air in some areas into palls of death-laden smog. As the Science Council of Canada recently observed.

In these basic respects our ancestors of prehistoric times were better off than we are today; their air was pure, their rivers clean and their habitat luxuriant. What benefit our mechanical advances if nature becomes a slum? What triumph our ingenuity in flying to the moon if our surroundings are dirty? Today everyone realizes this neglect, many demand palliatives, some have a duty to rectify errors. How are we to enjoy the benefits of nature without destroying them in the process?¹

How, indeed, has become the pressing question as governments and industry have come to appreciate that preventive and remedial measures are imperative if the environmental resources are to be preserved and, in many cases, restored to a usable state. The only answers appear to be massive expenditures of public and private funds for research into the problems of pollution, equally massive

* Associate Professor, Faculty of Law, Queen's University.

¹ "A Major Program of Water Resource Research in Canada", *Report No. 3 of The Science Council of Canada*, Ottawa, (September, 1968), p. 3.

amounts for development of techniques and devices to treat and control pollution, rigorous and effective laws and machinery designed to foster and to compel pollution abatement and control and the education of an often apathetic public.

Evidence of the extent and magnitude of water pollution in North America is present on every hand. In the United States the problem has reached crisis proportions in a number of densely populated and heavily industrialized areas. Presidential messages to Congress in recent years chronicle the growing blight. In 1961, President Kennedy observed that "Pollution of our country's rivers and streams has as a result of rapid population and industrial growth and change, reached alarming proportions".² Four years later President Johnson added that "Every major river system is now polluted... In spite of the efforts and many accomplishments of the past, water pollution is spreading."³ This year, the President cited further examples of worsening conditions: fish kills, closed beaches, oil slicks, algae growths and contaminated drinking waters.⁴ These views are buttressed by the evidence compiled in a report of the Senate Subcommittee on Air and Water Pollution in 1966.⁵ An estimate of the raw sewage being dumped into the nation's waterways was given, in 1967, as four billion pounds a year.⁶ The Federal Water Pollution Control Administration set the cost of a clean-up of this situation at between \$26 and \$29 billion.⁷

In Canada, water pollution is also a problem of major proportions in certain areas and, while it is not of the magnitude or extent of the situation in the United States, it could readily become a crisis in the absence of effective action. Almost daily the press reports new cases of water pollution from British Columbia, Ontario, Quebec or New Brunswick and attacks the complacency of governments and the public — a complacency stemming from the belief that our abundance of "aqueous treasures will never run out — or go bad".⁸

² President's Message on Natural Resources to the United States Congress, February 23, 1961.

³ President's Message on Natural Beauty to the United States Congress, February 7th, 1965.

⁴ President's Message on Conservation and Water Management to the United States Congress, March 8, 1968.

⁵ 89th Congress, 2d Session, Senate, *Report to the Committee on Public Works on Steps Toward Clean Water*, January 1966.

⁶ *Newsweek*, August 21, 1967, p. 61, Report of Senate hearings on water pollution.

⁷ *New York Times*, January 25, 1968.

⁸ *Time (Canada)*, August 2, 1968, pp. 9-10.

It is difficult to find any reliable assessment of the extent of the problem generally throughout Canada or of the magnitude of the expenditures which are necessary to effect a program of research, abatement and control. However, the recent study by the Science Secretariat of the Privy Council Office emphasized the growing threat of water pollution to the fisheries, recreation, wildlife and municipal water supplies in the heavily populated regions of the country and underscored the need for accelerated research into the causes of pollution and methods of treatment.⁹ These observations led the Science Council to urge vigorous and substantially increased support for research into the sources and causes of water pollution in Canada. "Little is being done to solve them, but they will remain unanswered for Canadian conditions until tackled in Canada."¹⁰

Concern has also been voiced frequently in the House of Commons with numerous requests to the Government for a statement on the action which it proposes to take.¹¹ The Government has stated its concern¹² and recently characterized water pollution a "matter which must receive increased attention from federal, provincial and municipal governments".¹³ The provinces have also recently recognized that water pollution requires national attention and coordination and have agreed to cooperate in establishing a workable set of national guidelines for pollution control.¹⁴

As for cost, the pulp and paper industry in Canada was advised in the autumn of 1968 that it will have to spend a minimum \$250 million with annual operating expenses of \$40 million to curb effectively the pollution which it is creating.¹⁵ And a United States Federal Pollution Control Administration officer recently estimated that Canada must spend at least \$100 million annually to combat existing water pollution.¹⁶

⁹ "Water Resource Research in Canada", *Special Study No. 5 of the Science Secretariat*, Ottawa, July 1968, p. 4.

¹⁰ "A Major Program of Water Resource Research in Canada", *Report No. 3 of the Science Council of Canada*, Ottawa, September 1968, p. 16.

¹¹ See *House of Commons Debates* (Daily Edition), 1968, vol. 113, pp. 926, 1022-23, 1153, 1213-14, 1477. As recently as December 1968 an attempt was made to establish a Special House Committee to investigate the nature and extent of pollution in Canada. See *ibid.*, pp. 3834-3843.

¹² *House of Commons Debates*, 1967, vol. I, p. 4.

¹³ *House of Commons Debates* (Daily Edition), 1968, vol. 113, p. 8.

¹⁴ *Kingston Whig-Standard*, August 3, 1968 and *Globe and Mail*, August 10, 1968. More recently, it was announced that the Ontario Government will establish a commission to study pollution in the province. See *Globe and Mail*, December 11, 1968.

¹⁵ *Globe and Mail*, September 17, 1968.

¹⁶ *Kingston Whig-Standard*, August 7, 1968.

Only in the last few years has air pollution in the United States been accorded the status of an urgent situation. It required such dramatic events as the air inversion phenomenon over New York City causing death to a number of inhabitants to force the realization that air pollution is an evil consequence of urbanization, industrialization and motorization resulting in

(M)ounting dangers to the public health and welfare, including injury to agricultural crops and livestock, damage to and deterioration of property, and hazards to air and ground transportation.¹⁷

Evidence gathered by a Senate Subcommittee in 1963 indicated that, in addition to an estimated annual damage to agriculture and property of \$11 billion, air pollution was contributing to a large number of human respiratory diseases.¹⁸

In 1966, the Secretary of Health, Education and Welfare produced additional evidence of the health dangers and made a strong case for increased research, concluding that

(T)he problem not only really remains critical, it continues to grow at a faster rate than our efforts to cope with it.¹⁹

Two years later the President characterized air pollution as the most critical problem of conservation facing the American nation and urged Congress to appropriate \$128 million to assist in the struggle for clean air.²⁰

In Canada, again the problem of air pollution is of lesser proportions but again complacency will lead to a situation where contamination of the atmosphere imperils the health in the larger centers. In answer to criticisms of the Government's failure to take positive steps to investigate and control air pollution in Canada, the Minister of National Health and Welfare last year agreed that the problem was becoming critical but insisted that the Government was proceeding to cope with it.²¹

In March of this year further discussion of the problem occurred in the House of Commons. One member introduced evidence to show the cost of air pollution damage in Toronto — \$120 million annually

¹⁷ *Clean Air Act*, P.L. 88-206, 42 U.S.C., s. 1857 *et seq.*

¹⁸ Senate Committee on Public Works, *A Study of Pollution — Air*, 1963, pp. 14, 20-21.

¹⁹ Senate Subcommittee on Air and Water Pollution, *Hearings*, June 1966, pp. 19, 22-53, 56-86.

²⁰ *President's Message on Conservation and Water Management to the United States Congress*, March 8, 1968.

²¹ *House of Commons Debates*, 1967, vol. III, pp. 3430-3436.

— and he urged his Government to move rapidly to remedy the blight in Canada's urban areas.²²

That there is a pollution problem in a number of urban areas in Canada is recognized; the difficulty is that little is being done to assess its extent and consequences so that remedial measures can be ascertained and implemented.²³

Thus far we have been considering the national aspects of environmental pollution problems in Canada and the United States. The international aspects of the problems are equally significant, however, since some of the most serious water and air pollution in the two countries is found along the boundary between them and in consequence poses international as well as local and national issues. Because of the transient nature of water and air, what is domestic pollution at points along the Great Lakes frequently becomes international pollution and thus elevates the problem to the realm of international rights and obligations of states.

Evidence of serious pollution in many areas of the boundary waters from the St. Croix River in the east to the Lake of the Woods in the west is well documented in a number of studies. As early as 1918 the International Joint Commission advised the governments that the entire stretch of boundary waters was being contaminated.²⁴ Since the Second World War, the Commission has, in a series of investigations, reported serious conditions of pollution requiring urgent action in the connecting channels of the Great Lakes,²⁵ the St. Croix River,²⁶ Rainy River²⁷ and Lakes Erie, Ontario and the international section of the St. Lawrence River.²⁸ The situation in Lake Erie as found by the IJC reflects the complexity, magnitude and seriousness of the international water pollution problem. In its interim report of 1965, the Commission reported that the Lake was in a state of eutrophication and the situation was "serious and is deteriorating".²⁹ The second report in 1968 indicates that while some progress has been made on both sides, much research and improvement remains to be done.³⁰ As if to underscore this

²² *House of Commons Debates*, 1967-68, vol. VII, pp. 7189-7192.

²³ See Ross, "Canadian Air Pollution Control Measures", *National Conference on Pollution and Our Environment*, (Montreal, 1966), *Background Paper D 30-3*.

²⁴ IJC, *Report on Pollution of Boundary Waters*, 1918, p. 51.

²⁵ IJC, *Report on Pollution of Boundary Waters*, 1950.

²⁶ IJC, *Report on the St. Croix River Basin*, 1959.

²⁷ IJC, *Report on Pollution of Rainy River and Lake of the Woods*, 1965.

²⁸ IJC, *Interim Reports on Pollution of Lake Erie, Lake Ontario and the International Section of the St. Lawrence River*, December 1965 and August 1968.

²⁹ IJC, *Interim Report*, 1965, p. 2.

³⁰ IJC, *Interim Report*, 1968, p. 2.

view, a recent report by the United States Federal Water Pollution Control Administration confirms that pollution from municipal and industrial sources is killing Lake Erie (it has deteriorated to the extent that it has aged 15,000 years beyond its natural age) and only through major corrective actions taken immediately can the waters be restored to an acceptable state. The minimum immediate cost of remedial action is estimated at \$1.3 billion.³¹ A similar report was issued this year advising that industry and government would have to spend about \$300 million in order to provide satisfactory water quality standards for Lake Ontario and the international section of the St. Lawrence River.³²

Other recent examples of critical boundary waters pollution incidents are the spring flushout of the Buffalo River into the Niagara River,³³ the fish kill this past summer on the Presqu'Isle River between Maine and New Brunswick³⁴ and the recent allegations by Sault Ste. Marie, Michigan that its sister city across the St. Marys River in Ontario was causing transboundary pollution.³⁵

While the extent of transboundary air pollution is not nearly so great as water pollution, it is a serious problem where it does exist. The nature of the hazard in the industrial belt along the Detroit River was reported by the IJC to the governments in 1960. The Commission found air contamination on both sides of the river to be serious, causing health and economic injuries.³⁶ It pointed out that the major sources of such pollution were not the vessels on the river but the land-based industrial, domestic and transportation activities.³⁷ The greater problem has now been recognized by the governments in their recent reference to the Commission.³⁸

The problems of international environmental pollution are not peculiar to North America. Although transboundary air pollution does not appear at this time as a significant issue outside North America, water pollution is a problem of major concern in Europe.

³¹ *Lake Erie Report: A Plan for Water Pollution Control*, U.S. Department of the Interior, Federal Water Pollution Control Administration, August 1968. See esp. pp. 1-9, 12-16, 67-82, 85.

³² *Water Pollution Problems and Improvement Needs: Lake Ontario and St. Lawrence River Basins*, U.S. Department of the Interior and New York State Department of Health, June 1968, pp. 110-112.

³³ *The International Joint Commission in Action*, XX External Affairs 383, at p. 384 (No. 9, September 1968).

³⁴ *Globe and Mail*, July 10, 1968.

³⁵ *Kingston Whig-Standard*, October 26, 1968.

³⁶ IJC, *Report on Pollution of the Atmosphere*, 1960, pp. 3-4.

³⁷ *Ibid.*, p. 7.

³⁸ IJC, *Docket No. 85*, Terms of Reference, September 23, 1966.

This was made abundantly clear at a conference on water pollution problems in Europe convened by the United Nations regional commission in 1961.³⁹ River basins such as the Rhine, Moselle, Saar and Lake Constance have become seriously polluted, necessitating international action to combat the problem.⁴⁰ Indeed, the problems of international environmental pollution have acquired enough significance that Sweden in 1968 proposed that the problems be studied generally by the United Nations.⁴¹

The magnitude and importance of the national and resulting international aspects of environmental contamination are clear enough and some states have recognized the need for action to curtail the consequent social and economic injuries. But what is being done to effect realistic treatment and control of environmental pollution? What laws are being developed to enforce standards of quality considered acceptable in the national and international communities? What machinery is being created to promote and coordinate research, to formulate standards of quality and to police the activities of those responsible for contaminating the environment?

We will consider briefly recent developments generally at the international level and then consider the practice which is evolving between Canada and the United States.

II. International Rules Relating to Pollution Control

Laws relating to the uses of international rivers are rudimentary and, in any modern context of international water resources development, embryonic. Such was evidently the case when Canada and the United States set out to negotiate an agreement for development of the Columbia River with one side contending for application of the so-called *Harmon Doctrine* and the other invoking the doctrine of prior appropriation. Since no general agreement could be reached on the existence of a principle of international law governing the sharing of waters for purposes of a relatively old use such as power development, it is not surprising that little evidence would exist as

³⁹ *Conference on Water Pollution Problems in Europe*, United Nations Economic Commission for Europe, Proceedings, (3 vols.), (Geneva, 1961).

⁴⁰ See Garretson, A.H., et al., eds., *The Law of International Drainage Basins*, (New York, 1967), pp. 105-06; "Control of River Pollution by Industry", *General Report of the International Institute of Administrative Sciences*, (Brussels, 1965), pp. 60-64.

⁴¹ *Canada and the United Nations, 1968*, Department of External Affairs Statements and Speeches, No. 68/15, October 9, 1968. The General Assembly subsequently adopted a resolution convening a conference on the human environment for 1972. See *New York Times*, Dec. 4, 1968.

the basis for a common agreement on the international rules relating to pollution control, a use of much more recent significance in both the domestic and international spheres.

Two major studies which have paralleled each other over the last decade, and which have set forth their conclusions during the last two years, have examined in detail the practice of states in the uses of international rivers and offer significant contributions to the development of international legal rules governing the uses of international rivers generally and the control of water pollution in particular.

Jerome Lipper, writing the conclusions of the International Rivers Research Project of the New York University School of Law, observes that while the law governing utilization of international rivers has really developed only very recently, the weight of evidence

(E)ndorses the limited sovereignty principle which embraces equitable utilization or, as it is sometimes termed, equitable apportionment, with respect to both contiguous and successive international rivers.⁴²

This position was confirmed by the prestigious International Law Association in 1966 after ten years of research and international discussion. In the *Helsinki Rules* adopted by the Association it was asserted as the "key principle of international (water) law" that

(E)ach basin State is entitled, within its territory to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin.⁴³

Flowing from this fundamental principle of equitable utilization, the *Helsinki Rules* assert that on every riparian state in an international drainage basin there is a positive obligation to prevent new or increased water pollution (defined in physical terms)⁴⁴ which would cause substantial injury to a co-riparian state and a qualified obligation to abate existing pollution with similar adverse consequences.⁴⁵ The legal consequences of a failure to meet these international obligations are in the first case a mandatory cessation of the wrongful activity and payment of adequate compensation,⁴⁶ and in the second situation a duty to enter forthwith into negotiations to effect an equitable settlement.⁴⁷

⁴² Garretson, A.H., *et al.*, *The Law of International Drainage Basins*, pp. 62-63.

⁴³ *Helsinki Rules on the Uses of the Waters of International Rivers*. International Law Association, (London, 1967), p. 9 (Article IV).

⁴⁴ *Ibid.*, p. 17 (Article IX).

⁴⁵ *Ibid.*, pp. 19-20.

⁴⁶ One must note the *caveat* which the Committee placed on this principle. See *Helsinki Rules*, p. 25.

⁴⁷ *Helsinki Rules*, p. 24 (Article XI).

As the International Rivers Committee itself observed, of all the principles governing uses of international rivers, the ones relating to control of water pollution posed the greatest difficulty in achieving agreement.⁴⁸ This is reflected in the compromisory nature of some of the language employed in Articles X and XI of the *Helsinki Rules* — particularly in relation to the issue of existing pollution and the remedies pertaining thereto.

While enunciation of the general principle of *sic utere tuo ut alienum non laedas*⁴⁹ as applicable to matters of international water pollution is eminently reasonable and properly supportable on the basis of international jurisprudence and state practice⁵⁰ — after all, is not international pollution a violation by one state of another state's territorial integrity? — it is perhaps more questionable that the legal remedies asserted to exist are either generally recognized in international law as applicable in pollution cases or, more importantly, are the best means of dealing with the problem in many cases.

One might also question the efficacy of drawing a distinction between existing and new pollution since both — if they are of a nature causing substantial damage — are in need of abatement and prevention with equal urgency. Better, perhaps, it is to draw a distinction between pollution in a boundary water basin where more than one state is contributing to the problem and the case of a transboundary stream where the upstream riparian is clearly causing injury downstream in the lower riparian state's territory. Here it is perhaps more realistic to speak of an obligation to negotiate an equitable settlement in the first case and of compensation and injunctive relief in the second case.

Anthony Lester, analyzing the law and practice of international pollution control for the International Rivers Research Project, emphasized at the outset that "the relevant international law (is) not... well-developed".⁵¹ While he believed that international law asserted an obligation on one state to avoid causing serious injury to a co-riparian state in using international waters and a right of the injured state to seek injunctive and compensatory relief in such cases,⁵² Lester observed that one could find little evidence of detailed application of these rules.⁵³

⁴⁸ *Ibid.*, p. 5.

⁴⁹ One must so use his own as not to do injury to another.

⁵⁰ See *Helsinki Rules*, pp. 20-22; Garretson, A.H., *et al.*, *The Law of International Drainage Basins*, pp. 99-100.

⁵¹ Garretson, A.H. *et al.*, *The Law of International Drainage Basins*, p. 94.

⁵² *Ibid.*, p. 102.

⁵³ *Ibid.*, p. 109.

Turning to the matter of progressive development of international law in the area of international water pollution, Lester emphasized the essential importance of recognizing the need, not so much for the development of specific rules stating rights and obligations of states which can be adjudicated to resolution in particular cases, but for the development of procedures whereby an international agency is established to evolve a common plan of action among the co-riparian states for pollution control.⁵⁴ This, more often than not, will be the effective solution for which states will be seeking; not compensation for injuries sustained but a mutual program of pollution control and abatement whereby each state will be informed of the steps which are necessary to eliminate the international wrong. Granted, there will be cases in which one state is clearly and solely responsible for the transboundary water pollution; such was the case with the air pollution in the *Trail Smelter Arbitration*. In such instances it is important to develop as applicable the principles providing for legal remedies such as compensation and injunctive relief as well as the obligation to submit the matter to adjudication. However, in many cases the question will be one of determining the causes of pollution in each state, the degree to which each state is contributing to the pollution, the adverse transboundary effects which the pollution is occasioning and the most effective remedial measures which the states may take to abate and control the pollution.

While it is not easy to identify many international agreements which create a *specific* obligation on one state to prevent or abate water pollution which is causing injury in a second state of a nature which gives rise to enforceable rights,⁵⁵ there are a substantial number of agreements whereunder the parties express an obligation to take unilateral or cooperative measures to limit or control activities which cause international pollution. Such agreements have become increasingly common in recent years particularly in Europe, and in many instances joint machinery is created to facilitate cooperative, investigative, abatement and control measures.⁵⁶

⁵⁴ *Ibid.*, pp. 109-110.

⁵⁵ See, for example, the Agreement between Germany and Denmark for the settlement of questions relating to watercourses on the frontier, (1922), 10 L.N.T.S. 187; U.N. Doc. A/5409, p. 284.

⁵⁶ For illustrations of agreements which provide for one or both of these principles, see U.N. Doc. A/5409, (April 15, 1963), *Legal Problems Relating to the Utilization and Use of International Rivers*, pp. 83, 138, 234, 244, 245, 249, 266, 277, 281, 292, 425, 435, 438, 461, 467. See also, Whiteman, *Digest of International Law*, vol. III, (Washington, 1964), pp. 1043-1045 and Garretson, A.H. et al., *The Law of International Drainage Basins*, pp. 102-106.

It is thus submitted that it is important in the development of international rules governing the uses of international fresh waters to seek out and enunciate principles which place an obligation on states to avoid pollution which causes serious injury in the territory of others and which specify the particular remedies which may be claimed in such circumstances. But it is equally important that we also seek to establish a regime whereby states recognize the obligation to cooperate to mitigate the causes of international water pollution.

Virtually nothing has been developed by way of international rules relating to transboundary air pollution, essentially because apart from North America it has not become a significant international problem. It is interesting to note however that the United Nations will be considering the question along with that of water pollution during the current session.⁵⁷

It is submitted that the law as it is developing in relation to water pollution has equal application to cases of air pollution. In their nature there is little difference between the two types of pollution. Both result from human conduct, both may result in serious health and economic injury and both move freely across boundaries and are difficult to identify in their sources where there is a concentration of population and industry on both sides of an international boundary.

Consequently, a state may not permit air pollution where the result is to cause serious injury in a contiguous state and, where such activity is occurring, there is an obligation to take measures necessary to abate and control the pollution. Similarly, where — as will be the case in many instances — air pollution is generated on both sides of the boundary, the two states are obligated to cooperate in controlling the transboundary effects.

III. Canada and the United States: International Pollution Control

Having outlined in a general way the development of international rules relating to pollution control, it is necessary to consider more specifically what Canada and the United States have been doing to recognize and give effect to the international obligation to abate and control transboundary pollution. While the main concern is with the international aspects of the problems, it is obvious that due to the nature of air and water pollution along the boundary one

⁵⁷ *Canada and the United Nations, 1968*, Department of External Affairs Statements and Speeches, No. 68/15, October 9, 1968.

cannot logically separate the domestic from the international aspects. Similarly, in considering the measures being taken to deal with international pollution, the unilateral domestic action of the various governments in each state is very relevant to determine if the international obligations are being met.

Constitutionally, in both Canada and the United States, jurisdiction over water and air pollution is divided between the local and national levels of government with the major responsibility seemingly resting on the local legislatures.⁵⁸ It is thus necessary to consider first what is being done at the local levels and the relevance of these activities to the international problems.

In the three local jurisdictions considered, the states of New York and Michigan and the province of Ontario, major legislation has been enacted in recent years designed to cope with water pollution matters within the states and province. In New York State in 1961, the Water Resources Commission was created to exercise general supervision over state waters, including their quality.⁵⁹ The year 1965 saw the adoption of a comprehensive Pure Waters Program designed "to maintain reasonable standards of purity of waters of the state consistent with public health and public enjoyment thereof, the propagation and protection of [fish, birds and animals], and the industrial development of the state..."⁶⁰ As amended to 1968, the legislation empowers the Commission to classify all waters within the territorial limits of the state and to specify purity standards to be achieved and maintained for each category. The Department of Health is empowered to enforce these standards through various proceedings including court action, and penalties for non-observance include revocation of the water use permits which all users must obtain. Financial assistance is made available through federal and state grants to enable municipalities to construct facilities designed to achieve the pure waters standards. In addition, tax laws provide incentives for industries

⁵⁸ For a discussion of the United States constitutional position see Edelman, *Federal Air and Water Control: The Application of the Commerce Power*, (1964-65), 33 Geo. Wash. L. Rev. 1067; Birmingham, *The Federal Government and Air and Water Pollution*, (1968), 23 Business Lawyer 467. The Canadian position is dealt with by Laskin, "Jurisdictional Framework for Water Management", *Resources for Tomorrow Conference*, (Montreal, 1961), *Background Papers*, vol. I, pp. 211-225 and Landis, "Legal Control in Canada of Pollution in the Great Lakes Drainage Basin", *Proceedings of the Great Lakes Water Resources Conference*, (Toronto, 1968), pp. 158-200.

⁵⁹ Chapter 490, N.Y. State Laws of 1961.

⁶⁰ New York State, *Public Health Law*, 1954, c. 879, Article 12, s. 1200. This policy statement was carried over from earlier enactments.

which are required by the quality standards to construct waste treatment facilities.⁶¹

Michigan for many years has had a Water Resources Commission "to guard against the pollution of lakes and streams within the State".⁶² With numerous amendments in recent years recognizing the need for increased state action, the legislation vests the Commission with full powers over pollution control of the state's waters including the contiguous Great Lakes. It is empowered to investigate the quality of the waters, to make rules, to issue regulations and to enforce the provisions of the Water Resources Commission Act. It prescribes the necessary pollution control standards for each area and issues enforceable orders for their compliance. The Commission may commence a court action to compel abatement or control of pollution by any offender.

Recent amendments made provision for a State Water Pollution Control Fund to assist municipalities in construction of treatment facilities⁶⁴ and provided tax incentives for industrial concerns constructing similar works.⁶⁵ In 1968, municipalities were required to file long-range pollution control plans⁶⁶ and the electors were asked to approve a state bond issue of \$335 million to build municipal treatment facilities.⁶⁷ Of significance, too, was the enactment of a law providing for control of water pollution by oil spills resulting from drilling operations in the Great Lakes and connecting waters.⁶⁸

In 1956, Ontario established the Ontario Water Resources Commission, giving it comprehensive jurisdiction over water management in the province including problems of pollution.⁶⁹ The legislation prohibits generally any pollution which might impair the quality of water in the province and empowers the Commission to seek an injunction to enjoin such activities.⁷⁰ In addition the Commission is authorized to construct treatment facilities for municipalities,⁷¹ to

⁶¹ New York State, *Public Health Law*, 1954, c. 879 as amended to 1968, Article 12, ss. 1200-1236c. See also, Hennigan, "Pollution of New York State Waters", *Symposium Proceedings on the Fresh Water of New York State: Its Conservation and Use*, (Buffalo, 1966), pp. 42-45.

⁶² Mich. Stat. Ann., s. 3.3 and s. 3.521 *et seq.*

⁶³ Mich. Stat. Ann., s. 3.521 *et seq.*

⁶⁴ *Ibid.*, s. 3.533(51).

⁶⁵ *Ibid.*, s. 7.793(51).

⁶⁶ Mich., *Act No. 75* of the Public Acts of 1968.

⁶⁷ Mich., *Act No. 76* of the Public Acts of 1968.

⁶⁸ Mich., *Act No. 98* of the Public Acts of 1967.

⁶⁹ *Ontario Water Resources Commission Act*, R.S.O. 1960, c. 281, as amended to 1966.

⁷⁰ *Ibid.*, ss. 26 & 27.

⁷¹ *Ibid.*, s. 16.

investigate water pollution and its causes⁷² and to make regulations prescribing standards of water quality, operating standards for sewage works, and rules for discharge of wastes from boats.⁷³

Despite the establishment of these local regulatory agencies which have set about to study the problems of water pollution in their jurisdictions and to establish standards or guidelines for water quality, the problems of water pollution in their contiguous boundary waters have continued to develop. The Federal Water Pollution Control Administration has set out a number of the shortcomings of the authorities in combatting pollution in Lake Erie. The report emphasizes that "the cleanup of Lake Erie is less a problem of engineering than it is a problem of diverse, inadequate, and unwieldily changing governmental policies, funding and management",⁷⁴ and points to the need for long-range pollution control programs, large scale research, enforcement of standards and international cooperation from the province of Ontario.⁷⁵ The recent reports of the IJC indicate that pollution and eutrophication are also continuing to develop in Lake Ontario and the international St. Lawrence River⁷⁶ and that the condition of the Niagara River is still unsatisfactory.⁷⁷

It would appear that in order to cope effectively with the problems of water pollution in the boundary waters it is essential that the national governments take an active role. Such participation is imperative for a number of reasons. The magnitude of the task, both in terms of investigating the causes and nature of the pollution and in terms of the cost of clean-up, necessitates the expenditure of sums of money which are beyond the budgets of the local governments. The fact that the waters involved relate to more than one jurisdiction suggests that coordination of activities in the various jurisdictions is necessary. It also suggests the need for ensuring that there is a degree of uniformity both in the standards of quality

⁷² *Ibid.*, s. 26.

⁷³ *Ibid.*, s. 47. The Government announced on November 7, 1968 that regulations had been issued for discharge of sewage from boats. In 1967 the Commission issued new *Policy Guidelines for Water Quality Control Objectives* but has not yet established the new standards thereunder.

⁷⁴ *Lake Erie Report: A Plan for Water Pollution Control*, U.S. Department of the Interior, Federal Water Pollution Control Administration, August 1968, Foreward.

⁷⁵ *Ibid.*, pp. 12-16.

⁷⁶ IJC, *Second Interim Report on the Pollution of Lake Erie, Lake Ontario and the International Section of the St. Lawrence River*, August 1968, p. 2.

⁷⁷ *The International Joint Commission in Action*, XX External Affairs 383, at p. 386-87 (No. 9, September 1968).

control which are set and in the enforcement of these standards. Finally, although the sources of the pollution may be local in origin, the fact that they are causing pollution of an international nature dictates an active concern on the part of the national governments.

As a result of a series of legislative enactments by Congress in recent years, the United States Government has asserted a very active and comprehensive jurisdiction over water pollution control in interstate and international waters.⁷⁸ Under this legislation the Federal Water Pollution Control Administration has authority to require states to establish water quality standards for interstate, and international streams and lakes, to make available substantial federal funds both for research programs and for state abatement and control programs and to proceed with enforcement actions in cases where there is a failure to comply with quality standards established for interstate and international waters.

This legislation is of significance for it is a recognition by Congress of the need for effective involvement of the federal government in the task of pollution control in the areas where the local governments are unable or unwilling to carry out the full tasks of pollution control either alone or in cooperation with one another. More importantly, the legislation recognizes the international responsibility of the United States to effect measures designed to control pollution with transboundary consequences. This is provided for in the following terms:

Whenever the Secretary (of the Interior), upon receipt of reports, surveys, or studies from any duly constituted international agency, has reason to believe that any pollution [of interstate or navigable waters] which endangers the health or welfare of persons in a foreign country is occurring, and the Secretary of State requests him to abate such pollution, he shall give formal notification thereof [to the appropriate state and interstate pollution control agencies] and promptly call a conference... if he believes that such pollution is occurring in sufficient quantity to warrant such action. The Secretary, through the Secretary of State, shall invite the foreign country which may be adversely affected by the pollution to attend and participate in the conference, and the representative of such country shall, for the purposes of the conference and any further proceedings resulting from such conference, have all the rights of a State water pollution control agency.⁷⁹

This procedural arrangement for control of international water pollution is of course reciprocal in the sense that the foreign nation must provide "essentially the same rights" to the United States with

⁷⁸ *Federal Water Pollution Control Act of 1956*, 33 U.S.C., s. 466 *et seq.*, as amended by P.L. 87-88, (1961), P.L. 89-234, (1965) and P.L. 89-753, (1966).

⁷⁹ 33 U.S.C., s. 466g(d) (2).

respect to the prevention and control of water pollution occurring in that country.⁸⁰

In Canada, there is no comprehensive federal legislation relating to water pollution. Seemingly of the view that Parliament's jurisdiction over water pollution matters is strictly limited, the government has proceeded to assert its jurisdiction in a piecemeal and haphazard fashion. The main areas of control relate to navigation and shipping, fisheries and migratory birds. The *Navigable Waters Protection Act* prohibits the depositing in such waters of materials which would obstruct navigation.⁸¹ The *Canada Shipping Act* authorizes the making of regulations for the protection of Canadian waters from pollution by ships.⁸² While oil pollution regulations were adopted in 1957 and 1960, no sewage and garbage prevention regulations have been promulgated. The *Fisheries Act* has provisions which prohibit the pollution of waters to the detriment of the fish⁸³ and similar provisions are contained in the *Migratory Birds Convention Act* to protect waterfowl.⁸⁴ In addition to these specific provisions prohibiting water pollution in particular circumstances, there are enactments providing for limited assistance to local governments in constructing water conservation works,⁸⁵ sewage treatment facilities and tax incentives to industry to construct pollution control works. A number of federal departments also are actively engaged in research and control programs, including collaboration with the International Joint Commission in its work.⁸⁶

The fact remains, however, despite these activities, that federally there exists no single comprehensive program of pollution control directed to uniformity or coordination of standards or research or to providing for financial assistance to the local governments. Such legislation was proposed, along the lines of the federal enactments in the United States, in the Throne Speech of May 1967⁸⁷ but no action has yet been taken despite a subsequent announcement by

⁸⁰ *Ibid.*

⁸¹ *Navigable Waters Protection Act*, R.S.C. 1952, c. 41.

⁸² *Canada Shipping Act*, R.S.C. 1952, c. 29, as amended by 4-5 Eliz. II, S.C. 1956, vol. II, c. 34, s. 25.

⁸³ *Fisheries Act*, R.S.C. 1952, c. 119.

⁸⁴ *Migratory Birds Convention Act*, R.S.C. 1952, c. 179.

⁸⁵ *Canada Water Conservation Assistance Act*, 1-2 Eliz. II, S.C. 1952-53, c. 21.

⁸⁶ See, "The Participation of the Government of Canada in the Investigation and Abatement of Water Pollution", *National Conference on Pollution and Our Environment*, (Montreal, 1966), *Background Papers*, vol. 2, B5-1. See also, Canadian Tax Foundation, *Local Finance Paper No. 20*, (July, 1968), pp. 5-6.

⁸⁷ *House of Commons Debates*, 1967, vol. I, p. 4.

Energy, Mines and Resources Minister Pepin in 1968 that federal legislation was forthcoming.⁸⁸ The major cause of reluctance on the part of the government to enact legislation appears to be the view that, with the exception of the specific areas mentioned above, jurisdiction over the matter of water pollution rests with the provinces. While it is clear that generally this is the case,⁸⁹ it does not follow that the extraprovincial aspects of the problem are within provincial jurisdiction. Indeed, in relation to the international aspects of the problem, it seems quite clear that Parliament possesses jurisdiction to compel abatement and control, including the establishment and enforcement of standards, the conducting of research and the coordination of agencies seeking to deal with the problem. Canada has recognized the international obligation in relation to transboundary pollution both in law⁹⁰ and in practice⁹¹ but has failed thus far to legislate effective means of carrying out this obligation domestically.

Canada and the United States, as early as 1909, formally recognized their mutual obligation to prevent pollution of boundary and transboundary waters to the injury of health or property on the other side of the boundary.⁹² Although this international prohibition was made a part of the domestic laws of both countries immediately, no specific provisions for administration or enforcement of the obligation were made.

In practice, the International Joint Commission, also created by the *Boundary Waters Treaty*, has been employed as the international agency in water pollution cases. Through references of the problems by the two governments to the IJC under the provisions of Article IX of the Treaty, the Commission has been charged with the task of investigating the transboundary water pollution situations and recommending to the two governments the necessary course of action. Following adoption of the Commission's report by the governments,

⁸⁸ See Canadian Tax Foundation, *Local Finance Paper No. 20*, (July, 1968), pp. 5-6.

⁸⁹ See Laskin, "Jurisdiction Framework for Water Management", *Resources for Tomorrow Conference*, (Montreal, 1961), *Background Papers*, vol. I, pp. 211-225; Landis, "Legal Control in Canada of Pollution in the Great Lakes Drainage Basin", *Proceedings of the Great Lakes Water Resources Conference*, Toronto, 1968, pp. 153-200.

⁹⁰ *The Boundary Waters Treaty Act*, 1-2 Geo. V, S.C. 1911, c. 28.

⁹¹ See the various references which have been made to the IJC on boundary waters pollution matters. The Government of Canada has each time adopted the recommendations reported by the IJC.

⁹² *Treaty Between the United States and Great Britain Relating to Boundary Waters, and Questions Arising Between the United States and Canada*, (1909), U.S.T.S. 548; *Redmond Treaties*, vol. III, (Washington, 1923), 2607-08; S.C. 1911, c. 28, Article IV.

the Commission has been charged with the subsequent task of supervising compliance by water users with the water quality standards which it has recommended. This task, as we shall see later, is extremely difficult since the Commission has no powers of enforcement and no machinery exists at the domestic levels which it may invoke in aid of its task.

In the area of international air pollution control there is no specific treaty provision between Canada and the United States obligating the countries to prevent or control transboundary flows of air contaminants. However, the international tribunal in the *Trail Smelter Arbitration* laid down the fundamental rule, accepted by both states, that

(N)o 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 property or persons therein, when the case is of serious consequences and the injury is established by clear and convincing evidence.⁹³

This obligation has been recognized in practice by the two governments in the two references on problems of boundary air pollution which have been referred to the IJC for investigation and recommendations for remedial measures to be taken by the federal governments.⁹⁴ While one cannot imply from these references any recognition of an obligation to pay compensation for injuries occasioned in the other state, it does seem clear that the two countries recognize the obligation to cooperate in measures designed to ascertain the sources and extent of the boundary pollution and to take measures to abate and control such pollution where injury is occasioned.

Much of what has already been said of water pollution control activities applies equally to the matter of air pollution control. Michigan,⁹⁵ New York State⁹⁶ and Ontario⁹⁷ all have active programs of air pollution abatement and control with a board or commission responsible for establishing standards of quality and for enforcing the standards.⁹⁸ In the United States, Congress has superimposed

⁹³ *The Trail Smelter Arbitration*, (1938-1941), 3 U.N.R.I.A.A. 1906, at p. 1965.

⁹⁴ See, IJC Docket No. 61, *Pollution of the Atmosphere in the Detroit River Area* and Docket No. 85, *Air Pollution Reference*.

⁹⁵ *A Digest of State Air Pollution Laws* (1967 edition), pp. 272-281.

⁹⁶ New York, *Public Health Law*, 1954, c. 879, as amended to 1968, article 12A, s. 1271 *et seq.* See also, *A Digest of State Air Pollution Laws* (1967 edition), pp. 360-363. It is noteworthy that the Pollution Control Board is directed to cooperate with international agencies in abatement programs.

⁹⁷ *Air Pollution Control Act*, 15-16 Eliz. II, S.O. 1967, c. 2.

⁹⁸ For an account of the Ontario air pollution control program see Martin, "Air Pollution Control and Some of its Effects on Industry", *Proceedings of the Ontario Pollution Control Conference*, (Toronto, 1967), p. 79.

on the states programs a comprehensive federal scheme designed to complement and bolster the local activities and to regulate particularly those areas of air pollution with which the states are not effectively coping. Under the federal legislation the Secretary of Health, Education and Welfare is given powers substantially the same as those of the Secretary of the Interior in relation to water pollution, including authority to designate interstate air quality control regions, to establish guidelines for pollution control and to fix standards for air quality if the states fail to do so within a given time. The Secretary is further empowered to commence proceedings against offenders and where he receives a report from an international agency that air pollution originating in the United States is endangering the health or welfare of persons in a foreign state, he must proceed with an enforcement conference to which the foreign country is invited.⁹⁹

In Canada, federal government involvement in air pollution abatement and control has been minimal. Again believing this to be essentially a matter of provincial jurisdiction,¹⁰⁰ Parliament has confined itself to dealing with control of smoke emissions from ships¹⁰¹ and railway operations.¹⁰² In addition, some research is carried out by the Department of National Health and Welfare and the National Research Council and some financial assistance to provincial programs is made.¹⁰³ However, despite the increasing need for research and control,¹⁰⁴ the federal government has given no indication of its intention to provide a national framework for action although it seems clear that Parliament could exercise a much broader jurisdiction than it presently does.

⁹⁹ *Air Quality Act of 1967*, P.L. 90-148. See particularly s. 108 (d) (1) (D). As with international water pollution control, this provision may be invoked only where the foreign state grants the United States similar rights to seek enforcement.

¹⁰⁰ Ross, "Canadian Air Pollution Control Measures", *National Conference on Pollution and Our Environment*, (Montreal, 1966), *Background Papers*, vol. 3, D30-3.

¹⁰¹ *Canada Shipping Act*, as amended, 9-10 Eliz. II, S.C. 1960-61, vol. 1, c. 32, s. 28, and regulations issued in 1964 and 1966.

¹⁰² *Railway Act*, R.S.C. 1952, c. 234; *General Order, No. 838 of the Board of Transport Commissioners*, February 1959.

¹⁰³ See Katz, "Regional Air Pollution Control", *National Conference on Pollution and Our Environment*, (Montreal, 1966), *Background Papers*, vol. 2, B 17-2-2. See also, Canadian Tax Foundation, *Local Finance Paper No. 20* (July, 1968), p. 6.

¹⁰⁴ Anderson, "Effects of Air Contamination on Health", *National Conference on Pollution and Our Environment*, (Montreal, 1966), *Background Papers*, vol. 1, A3-2.

With regard to transboundary air pollution, the International Joint Commission is the only device which exists for coping with the problem and it operates under the same limitations as it does in water pollution cases. It may investigate the problem and recommend remedial measures, but no machinery charged with responsibility for enforcing its recommended standards of air quality exists.

IV. Limits on Institutional Arrangements: Proposals for Change

The foregoing survey of the laws and machinery for dealing with problems of environmental pollution in Canada and the United States indicates a number of weaknesses in their effectiveness - particularly in relation to the control and abatement of transboundary pollution. While the various jurisdictions in dealing with pollution as a domestic matter also naturally are seeking to prevent or control the transboundary effects, this latter aspect is not necessarily the essential focus of the program. Consequently, problems arise in relation to coordination of research activities and investigations, allocation of financial resources, establishment of uniform standards of quality control and means of enforcement, and while the program in a particular jurisdiction may be satisfactory for the needs of that jurisdiction, there is no assurance that the program will be effective in its contribution to the solution of the international problem.

Given the fact that international legal rules concerning transboundary pollution, even if they did exist with a degree of clarity and precision, would not provide in most cases the solution to problems of international pollution, it is imperative to emphasize and develop machinery by which the states proceed to carry out, on a cooperative basis, measures to prevent pollution which causes injury across the frontier.

The joint international agency approach is emphasized by Anthony Lester in his chapter on pollution control¹⁰⁵ and Ely and Wolman devote a chapter to the discussion of international agencies employed to deal with international river basin development and use.¹⁰⁶ Likewise, the International Law Association recognizes the importance of joint agencies in seeking solutions to international river problems.¹⁰⁷

Canada and the United States have, in recent years, employed the International Joint Commission as the joint agency for han-

¹⁰⁵ Garretson, A.H. *et al*, *The Law of International Drainage Basins*, pp. 109-110.

¹⁰⁶ *Ibid.*, c. 4.

¹⁰⁷ *Helsinki Rules*, 1967, pp. 45-50.

ding problems of the transboundary environment. In seven instances since the Second World War, the two governments have referred to the Commission for investigation and report with recommendation for government action cases of water and air pollution along the boundary.¹⁰⁸ In each of these studies where the Commission has reported, it has spelled out a series of "Objectives" for quality control which it recommends for adoption by the governments. It has further requested and been granted authority to exercise a continuing supervision over the particular area with the special tasks of urging offenders to comply with the standards which it has set out and of reporting to the appropriate government authorities further action which they should take to ensure compliance with the standards.¹⁰⁹

In its role as an international pollution control agency, however, the Commission faces a number of limitations which tend to impair its effectiveness. The IJC, by the terms of the *Boundary Waters Treaty*, has no specific jurisdiction over boundary pollution matters and consequently no control over the timing, extent or nature of the investigations which it undertakes. It must await a reference from the two governments, agreement on the terms of which may occasion a lengthy delay in commencing the study. Once it is seized of a reference, the Commission, while it has the ability to draw upon personnel of the governments to conduct its own studies and is authorized to make use of information gathered by other agencies engaged in related studies, has no power to direct or coordinate the research or information-gathering which is being done by domestic agencies at the various levels of government. This may mean not only duplication of activities but also a lack of communication among the various bodies on what is being done or, indeed, on what objectives are being sought, viewing the study from the international level.

Another, and perhaps the most fundamental difficulty, is the lack of power to give effect to the standards and measures of control which are recommended by the Commission following completion

¹⁰⁸ See, IJC, Dockets No. 54 & 55, *Pollution of Boundary Waters: Connecting Channels Reference*, (1946 & 1948), Docket No. 71, *St. Croix River Basin Reference*, (1955), Docket No. 73, *Pollution of Rainy River and Lake of the Woods Reference*, (1959), Docket No. 81, *Red River Pollution Reference*, (1964), Docket No. 83, *Great Lakes Pollution Reference*, (1964), Docket No. 61, *Detroit River Air Pollution Reference*, (1949), Docket No. 85, *Boundary Air Pollution Referenc*, (1966).

¹⁰⁹ For an example of the terms of the Commission's recommendations, see IJC, *Report on Pollution of Boundary Waters*, 1950, pp. 9-10.

of its study and subsequently in the exercise of its surveillance function. This problem may be viewed from two levels. On the international plane, the Commission of course possesses no powers of compulsion either in terms of obliging the federal governments to implement and enforce its recommendations or in terms of imposing its standards on the local governments or individuals who are causing the pollution. At the domestic level, while the two federal governments may "adopt" the recommendations of the Commission setting out the remedial action which the IJC deems necessary to control the international problem, in the absence of legislative enactments to effect these, their implementation and enforcement remain academic. The Commission is thus dependent upon the will of the local governments to adopt and enforce the standards which it has set and, in the absence of this, upon its own ability to persuade the governments and the industries and municipalities of the desirability of complying with the Commission's standards. And, even if one jurisdiction does give effect to the standards, there is no assurance that others, sharing the same water or air region, will do likewise.

What might be done to strengthen the joint machinery which is established to ensure the observance of the international obligations resting on Canada and the United States to prevent injurious transboundary pollution?

To advocate the establishment of a supranational pollution control authority is, as Ely and Wolman point out, essentially utopian.¹¹⁰ The Government of the Netherlands proposed such a body to control pollution on the Rhine River but this was rejected by the co-riparian states and, as Judge Kulz indicated, the pollution control commissions in Europe are designed essentially to conduct studies, gather information and make recommendations to the national governments for administrative and legislative measures to be taken.¹¹¹ It is not likely for a number of reasons that Canada or the United States would be prepared to vest broad powers over international pollution control in an international agency whether it be the IJC or some other body. However, it is possible to suggest several important measures which might be considered which would make the role of the agency more effective in dealing with environmental pollution problems along the boundary.

First, the governments could add a clause to the *Boundary Waters Treaty* affirming with regard to transboundary air pollution the same

¹¹⁰ Garretson A.H. *et al.*, *The Law of International Drainage Basins*, p. 145.

¹¹¹ *Report of the Fiftieth Conference of the International Law Association*, (Brussels, 1962), pp. 417-18.

obligation which is spelled out in relation to water pollution. In relation to both obligations the two governments might undertake to give domestic effect by enacting the necessary legislation.

At the same time the governments could vest the Commission with jurisdiction over all matters of boundary water and air pollution which were having transboundary effects in relation both to initiating the investigation without awaiting a reference and to coordinating the various bodies involved in the study.

The Commission should also be empowered to exercise supervision over the implementation of its recommendations by the users of the resource which has been the subject of the Commission's study and be authorized to report offenders to the federal Attorney-General of the appropriate national government with recommendations for the action to be taken. This power could include in a formal manner the one now informally employed by the Commission of holding international public meetings where the Commission reviews the progress (and lack thereof) being made by the various local agencies, industries and municipalities to achieve the standards of quality for boundary air or water established by the IJC.

The reporting of violations to the federal Attorneys-General to be effective would necessitate the two governments securing legislation which would give statutory effect to the standards for quality control enunciated by the IJC from time to time and enable the Attorney-General to launch proceedings to compel compliance with the standards.

Many of the foregoing proposals would be meaningless if effected in the absence of a substantial program of financial aid to assist the local governments in investigating and remedying the causes of pollution. This has already been implemented in the United States under the federal laws with beneficial results. In Canada, little incentive is presently provided by the federal government to the local control agencies or municipalities. It is essential that the assistance be increased in a manner which will ensure a coordinated attack on pollution problems from the local to the international level. No level of government acting alone can deal with the entire problem of pollution and all levels must appreciate that pollution can no longer be considered as a part of the price of progress.
