GREAT LAKES POLLUTION: A FRAMEWORK FOR ACTION

*F. J. E. Jordan**

"Water, water everywhere
And not a drop to drink."
—Samuel Taylor Coleridge,
The Rime of the Ancient Mariner (1798)

I. INTRODUCTION

In December, 1970 the International Joint Commission submitted to the governments of Canada and the United States a comprehensive report on the state of water quality in the Lower Great Lakes drainage basin. [1] This major report [2] marks a significant milestone in the efforts of the International Joint Commission (I.J.C.) to foster conservation and rational utilization of the shared water resources of Canada and the United States, for in it the Commission challenges the governments to new heights of active cooperation in international water pollution abatement and control and proposes for itself an increasingly active and responsible role in securing cooperation among governments to clean up the sorry mess in the Great Lakes system.

There has been, in recent years, increasing public concern over the condition of the waters in the Great Lakes basin, this vital heartland of Canada and the United States with its burgeoning population and industry, and the report of the I.J.C. makes it abundantly clear that this concern is well founded, at least in the lower reaches of the basin. The waters in question "are being seriously polluted on both sides of the boundary" and the "polluted waters are lakewide in extent," a consequence mainly of wastes discharged into the waters by municipalities and industries located in the basin. [3]

Before proceeding to a detailed consideration of the several conclusions and recommendations set out in the Commission's 1970 report, it is desirable to place the activities of the I.J.C. in the field of water quality control in a suitable perspective. This requires a view of the Commission's general role in international water resources management and an outline of the joint agency's earlier endeavors in relation to water pollution control.

---

*B.Comm., 1962; LL.B., 1963, University of British Columbia; LL.M., 1964, University of Michigan. Professor of Law, Queen's University.

[1] For the purpose of this paper, the author adopts the terminology employed by the International Joint Commission (I.J.C.) in its report. Thus, Lower Great Lakes drainage basin refers to Lake Erie, Lake Ontario, the international section of the St. Lawrence River and their connecting channels.

[2] I.J.C., REPORT ON POLLUTION OF LAKE ERIE, LAKE ONTARIO AND INTERNATIONAL SECTION OF THE ST. LAWRENCE RIVER (1970). The report was released to the public by the governments of Canada and the United States on January 14, 1971.

[3] *Id.* at 136-37.

II. The International Joint Commission and Water Resources Management

As successor to the short-lived International Waterways Commission, [4] the International Joint Commission was formally created under the Boundary Waters Treaty [5] of 1909 principally to ensure the equitable sharing of boundary waters between Canada and the United States. Specifically, the I.J.C. was vested with jurisdiction over uses of boundary waters on one side of the international boundary which would affect "the natural level or flow . . . on the other side of the line" and over works on trans-boundary waters (those flowing across the boundary) in the downstream country which would raise the water level in the upstream state. [6] In either of these situations, a prospective user must obtain the approval of the Commission before proceeding with the project. In addition to this absolute jurisdiction, the I.J.C. was given a contingent jurisdiction to investigate and to report on such "other questions or matters of difference arising between [the two countries or their inhabitants] along the common frontier" where the Government of Canada or the United States decided to refer an issue to the Commission. [7]

Under these several provisions of the Boundary Waters Treaty, the I.J.C. has, since its inception in 1912, dealt with a variety of international water resources problems, ranging from relatively simple, single-use applications such as the request by a Minnesota resident in 1936 to make repairs to his private dam on the Rainy River [8] to highly complex, multiple-use proposals initiated by the two national governments relating to development of the Columbia River [9] and the St. Lawrence Seaway. [10] In handling these cases, particularly those referred to the Commission by the two national governments, the I.J.C. has developed sophisticated techniques for carrying out the investigation on which its recommendations are made. The Commission usually creates specialized joint boards composed of engineers, scientists, economists, etc., as the case may require, to gather extensive information and evaluate it for the Commission. In addition, the Commissioners conduct numerous public hearings to obtain a wide spectrum of official and private views on the proposals for water resources development under consideration. Where the I.J.C. concludes that a particular course of development is advisable it recommends accordingly and establishes another technical joint body to ensure that the development is carried out in accordance with the terms of approval.

In a number of cases where the I.J.C. has been asked by the two national governments to investigate and to report on the possibilities for

[4] Canada and the United States established the International Waterways Commission in 1903 as an *ad hoc* joint body to investigate and report on a number of boundary water problems which had arisen between the two countries.

[5] Treaty Between the United States and Great Britain Relating to Boundary Waters, and Questions Arising Between the United States and Canada, Jan. 11, 1909, [1909] 2 U.S.T. 548, Can. Stat. 1911 c. 28.

[6] *Id.* arts. III & IV.

[7] *Id.* art. IX.

[8] I.J.C. Files, Docket No. 36.

[9] *Id.* Docket No. 51.

[10] *Id.* Docket Nos. 17 & 68.

utilization of waters of a particular international basin, the terms of reference have been very comprehensive, encompassing virtually all possible uses to which a body of water may be put. In the Columbia River reference, for example, the Commission was directed to consider domestic water supply and sanitation, navigation, efficient development of water power, control of floods, needs of irrigation, reclamation of wet lands, conservation of fish and wildlife, and other beneficial public purposes. [11] Similarly, in the more recent Pembina River basin reference, the governments directed the I.J.C. to consider domestic water supply and sanitation, control of floods, irrigation and any other beneficial uses. [12] It is evident from these illustrations that the Commission has been actively involved in the planning of comprehensive water resources development and management including, in a number of cases, the problem of water quality control. However, it has not been in this broad context that the I.J.C. has performed most of its tasks relating to water pollution; rather it has been on the basis of several specific references concerning water quality problems in boundary and transboundary waters that the Commission has acted. And, perhaps not surprisingly, it has been this task which has preoccupied the I.J.C. in recent years.

III. The International Joint Commission and Water Quality Control

Water quality was not a matter of primary concern when the Canadian and American negotiators met in 1907 to draft what became the Boundary Waters Treaty. However, they did believe that some provision should be made for this potential problem and, in the first draft of the agreement, a clause forbidding water pollution having transboundary consequences was inserted. [13] The joint agency to be established to administer the treaty was vested with "such police powers" as might be necessary to ensure respect for this rule. [14]

To this proposal the United States Secretary of State objected. [15] The most he would accept was an anti-pollution clause covering boundary and transboundary waters over which the joint agency would have no jurisdiction. [16] Thus, the only reference to water quality in the treaty is found in Article IV: "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."

Even to this provision the United States Senate objected when the treaty came before that body for consideration. It was viewed as a clear attempt to create a police power at the federal and international levels over water

[11] *Id.* Docket No. 51. International Columbia River Engineering Board, Report on the Water Resources of the Columbia River Basin 1 (1959).

[12] I.J.C. Files, Docket No. 76. I.J.C., Report on the Cooperative Development of the Pembina River Basin 54 (1967).

[13] Sir George C. Gibbons Papers, Vol. 14, Fol. 3, (Public Archives of Canada).

[14] *Id.*

[15] *Id.* Sir Wilfrid Laurier Papers, 1908, Vol. 755, No. 216108-216112.

[16] Chandler P. Anderson Papers, box 65, 197-203 (Manuscript Division, Library of Congress).

pollution. [17] Canada would not, however, agree to dropping the clause and mollified the Senators by suggesting that the rule would be enforced only in "more serious cases." [18]

Despite the apparent low priority given to water pollution problems in the Treaty of 1909, one of the first cases referred to the I.J.C. by the national governments for investigation and report under Article IX of the treaty was the condition of boundary waters both in the Great Lakes basin and elsewhere along the international boundary. The governments wanted to know the extent, causes and localities of boundary waters pollution which caused injury to public health and the means by which to prevent such pollution "to insure the adequate protection and development of all interests involved on both sides of the boundary and to fulfill the obligation undertaken in Article IV . . . ." [19]

The two governments subsequently sought to limit the investigation by the Commission to the transboundary consequences of the water pollution, [20] but the I.J.C. protested any such limitation.

> If, during the investigation, one thing impressed itself more than another upon the attention of the commission, it was the view that while pollution which has a transboundary effect must in consequence of the obligation resting on both countries under the treaty be distinguished from pollution which has not such an effect, the distinction is, from a practical standpoint, highly technical and artificial. [21]

Under this reference in 1912, the I.J.C. investigated boundary water conditions from the Rainy River in northwestern Ontario to the St. John River in New Brunswick, employing the services of several scientists and relying heavily on cooperation from the public health services in both countries. In 1918, after six years of study, the Commission reported that, with the exception of the Great Lakes themselves beyond their shores:

> The entire stretch of boundary waters, including Rainy River, St. Mary's River, St. Clair River, Detroit River, Niagara River, St. Lawrence River from Lake Ontario to Cornwall and the St. John River . . . is polluted to an extent which renders the water in its unpurified state unfit for drinking . . . and . . . in direct contravention of the treaty. [22]

In the Great Lakes connecting channels of the Detroit and Niagara Rivers the pollution along the shores was "very intense" and imperilled "the health and welfare of the citizens of both countries." [23]

Pointing out that it was both feasible and practicable to remedy the existing situation and to prevent future pollution, the I.J.C. recommended to the governments that it be given "ample jurisdiction to regulate and pro-

---

[17] *Id.* box 69, letter from Senator K. Nelson to Senator S. M. Cullom, January 29, 1909.

[18] *Supra* note 13, Vol. 8, Letterbook No. 1, 507.

[19] I.J.C., FINAL REPORT ON THE POLLUTION OF BOUNDARY WATERS 5 (1918).

[20] *Id.* at 6.

[21] *Id.* at 48.

[22] *Id.* at 51.

[23] *Id.*

hibit" pollution of boundary and transboundary waters [24] by authorizing the Commission "to make regulations, rules, directions and orders as in its judgment may be deemed necessary...." [25] To do otherwise was to have constant conflict among national, state, provincial and municipal authorities. [26]

Government response was favorable and the I.J.C. was requested to draft specific proposals for effecting the Commission's recommendation. [27] In 1920, the I.J.C. submitted to the national governments a draft treaty which would empower the Commission on its own initiative to investigate and determine sources of pollution and would oblige the governments to enact legislation whereby enforcement measures could be taken. There was no suggestion in the draft that the Commission itself would engage in enforcement measures; rather this responsibility would lie with the governments. [28]

Despite the initial interest shown by the governments, the proposed convention was never adopted and the Commission was not involved with boundary water pollution problems again until the period following the Second World War.

In 1946 and 1948 the I.J.C. was again requested by Canada and the United States to take up the problem of boundary water quality, this time specifically in relation to the waters of the connecting channels of the Great Lakes, including the St. Mary's River, the St. Clair River, Lake St. Clair, the Detroit River and the Niagara River. The Commission was directed to determine if pollution of a transboundary character existed in these waters and, if so, to recommend appropriate remedial measures. [29]

To carry out the necessary studies, the Commission established two Boards of Technical Advisers, composed of senior scientific personnel seconded from the public services of Canada, the United States, Ontario, Michigan and New York State. The I.J.C. later remarked on the value of this procedure whereby the governments concerned were actively involved in the investigation and the Commission obtained advice from experts most closely associated with the pollution problems. [30] In addition to the work of the technical boards, the Commission itself held a series of public meetings in border cities along the waterway to obtain information and views on the pollution problem and the possible means to cope with it. [31]

Reporting its findings to the governments in 1950, the I.J.C. advised that in all the waters under investigation, there was evidence of progressive degradation of a transboundary nature with sources on both sides of the boundary. [32] The major causes of the pollution were inadequately treated

[24] *Id.* at 52.
[25] *Id.* at 50.
[26] *Id.*
[27] I.J.C. File No. 4-5-1:1.
[28] *Id.*, Draft Convention, October 6, 1920.
[29] I.J.C., REPORT ON THE POLLUTION OF BOUNDARY WATERS 1-2 (1950).
[30] *Id.* at 4.
[31] *Id.*
[32] *Id.* at 8.

domestic sewage which created a bacteriological content in the waters three to four times greater than that reported in the 1912 study and industrial wastes which were of little significance in the earlier study. [33]

The recommendations for remedial action by the governments were essentially two. The Commission urged that the national governments adopt, as minimum criteria for maintaining the boundary waters in a condition complying with the treaty obligation, the "Objectives for Boundary Waters Quality Control" established by the Commission. [34] These objectives were a series of scientific standards for measuring the quality of receiving waters and which, if observed, would ensure that the waters were suitable for all the normal uses to which they were put. [35]

To ensure that the recommended objectives were secured, the I.J.C. proposed that it be authorized by the national governments "to establish and maintain continuing supervision over boundary waters pollution" through control boards which the Commission would establish. [36] In carrying out its supervision the Commission would "notify those responsible for any pollution found objectionable . . ." and if no remedial action were taken, the I.J.C. would then "make recommendations to the appropriate authority having jurisdiction as to the further action deemed advisable." [37]

The recommendations of the I.J.C. in 1950 were premised on several assumptions by the Commission. First, the Commission believed that the national governments would, in adopting the objectives for water quality control, take measures necessary to ensure that the standards were made effective. Second, the Commission believed that if it maintained a continuing surveillance over the boundary waters, its constant presence and the threat of adverse reports by it to the "appropriate authorities" would secure reasonable compliance by municipalities and industries with the standards set. Third, the Commission expected that with the pressure exerted by the national governments in adopting the objectives, the state and provincial governments would establish appropriate quality standards and enforce these standards where persuasion failed.

Thus, when the national governments in 1951 adopted the recommendations of the I.J.C. and authorized it to establish international boards to carry out surveillance functions, the Commission promptly set up two Advisory Boards, one to supervise compliance in the St. Mary's, St. Clair and Detroit Rivers and one to deal with problems in the Niagara River. The Boards were composed of state, provincial and federal public service personnel and were directed to ascertain what measures the municipalities and industries were taking to comply with the objectives established by the Commission.

Progress toward achieving the I.J.C. water quality objectives was very slow, particularly in the years immediately after the adoption of the I.J.C. report. The national governments, while approving the objectives prescribed

[33] *Id.* at 5.
[34] *Id.* at 9.
[35] *Id.* at 6-7.
[36] *Id.* at 9-10.
[37] *Id.* at 10.

by the Commission, did little or nothing to make them effective at the legislative level. The state and provincial governments took some halting steps, but were reluctant to spell out any specific standards or to finance the machinery necessary to ensure effective enforcement. Given this lack of government impetus, it is not surprising that neither industry nor the municipalities took any steps to spend the funds necessary to control their effluent discharges into the connecting channels of the Lower Great Lakes. [38]

It was not until over a decade later that meaningful laws began to emanate from the various legislative bodies, and even then the I.J.C. was unable to report that it was fully satisfied with the progress. Reporting to the Commission in 1967 on the current state of progress in the Niagara River, the International Advisory Board observed that "[a]lthough there has been considerable waste reduction progress since 1951 . . . there remain some areas in the river in which the water quality fails to meet the objectives occasionally or all of the time." [39] The Board identified coliform organisms, phenols, oil and discoloration agents as the chief sources of continuing pollution. [40]

The next year the International Advisory Board for the Lake Superior-Lake Huron-Lake Erie connecting channels reported on conditions in those areas. While general improvement was found throughout, I.J.C. objectives were exceeded in the lower twenty miles of the Detroit River, in parts of the St. Clair River and on the Canadian shores of the St. Mary's River. [41] These findings were buttressed by the findings of the United States Federal Water Pollution Control Administration in its reports of 1968 on conditions in Lake Erie and Lake Ontario. [42] And, in 1970 the I.J.C. itself reported:

> Progress in achieving the Objectives for the Connecting Channels in so far as individual communities and industries are concerned has been fairly good .... However, the Commission's Water Quality Objectives are not being met currently in all reaches of the Connecting Channels because the responsible authorities and industries have not provided sufficient treatment facilities to keep pace with the population growth and with industrial expansion. [43]

While the International Joint Commission was carrying out its surveillance functions over the waters of the connecting channels of the Great Lakes and, at the same time investigating transboundary water pollution problems

---

[38] See *id.* at 9, where the Commission estimated the costs in 1950 of municipal treatment facilities at 100,000,000 dollars and of industrial treatment facilities at 26,000,000 dollars.

[39] I.J.C. ADVISORY BOARD, SUMMARY REPORT ON POLLUTION OF THE NIAGARA RIVER 1 (1967).

[40] *Id.*

[41] I.J.C. ADVISORY BOARD, SUMMARY REPORT ON POLLUTION OF THE ST. MARY'S RIVER, ST. CLAIR RIVER AND DETROIT RIVER 1-3 (1968).

[42] U.S. DEPT. OF INTERIOR, FEDERAL WATER POLLUTION CONTROL ADMINISTRATION, LAKE ERIE REPORT: A PLAN FOR WATER POLLUTION CONTROL 39-40 (1968); LAKE ONTARIO AND ST. LAWRENCE RIVER BASINS: WATER POLLUTION PROBLEMS AND IMPROVEMENT NEEDS 20-24 (1968).

[43] I.J.C., REPORT ON POLLUTION OF LAKE ERIE, LAKE ONTARIO AND THE INTERNATIONAL SECTION OF THE ST. LAWRENCE RIVER 4 (1970).

in the Rainy River and Red River basins under separate references from the governments, a further investigation of pollution in the Great Lakes basin was referred to it. In October 1964, the national governments asked the Commission to consider the state of water quality in that part of the system directly affected by the waters of the connecting channels: Lake Erie, Lake Ontario and the international section of the St. Lawrence River.

In this reference to the I.J.C. under Article IX of the Boundary Waters Treaty, the two governments observed that they were informed that these waters were "being polluted by sewage and industrial waste" and, mindful of the international obligation under Article IV of the treaty, requested the Commission to determine if the waters of the two lakes and upper river were "being polluted on either side of the boundary to an extent which is causing or is likely to cause injury to health or property on the other side of the boundary . . . ." [44] Notably, in addition to inviting the Commission to recommend appropriate remedial measures if the answer was affirmative, the governments also invited the I.J.C. to advise them if and when it was desirable to extend the reference to include other boundary waters of the Great Lakes basin. [45]

Because of its present knowledge of the existing conditions in the connecting channels of the Lower Great Lakes, the Commission realized that advising the governments on this question was a matter of some urgency. At the same time, it was evident that the magnitude and complexity of the problems involved meant that the full studies by the two joint technical boards of conditions in the basin would take several years to complete. Thus the Commission decided to issue a series of interim reports to the governments as the technical investigations progressed, identifying the most urgent problems and suggesting immediate remedial steps. [46]

Between 1965 and 1970, the I.J.C. submitted three interim reports dealing with several matters of urgency. In December 1965, the governments were warned that preliminary studies revealed the waters of Lake Erie to be in an advanced state of eutrophication and those of Lake Ontario to be approaching a similar state. [47] The main cause of this deterioration appeared to be nutrients, particularly the phosphorus discharged in municipal and industrial wastes. [48] Assuming some transboundary effects, the Commission urged the governments to move speedily to ensure "sufficient purification of all municipal and industrial wastes before discharge into these waters and their tributaries to achieve the maximum possible removal of phosphates." [49]

The second interim report in 1968 was an evaluation of the progress which had been made since 1965 by the governments in combatting pollution in the Lower Great Lakes basin and an outline of the many problems which

---

[44] *Id.* at 161.

[45] *Id.* at 162.

[46] *Id.* at 10.

[47] I.J.C., INTERIM REPORT ON THE POLLUTION OF LAKE ERIE, LAKE ONTARIO AND THE INTERNATIONAL SECTION OF THE ST. LAWRENCE RIVER 3 (1965).

[48] *Id.* at 7.

[49] *Id.* at 15.

remained to be solved. The Commission observed that "a great deal still remains to be done" in both countries. [50]

In 1969, the Commission received comprehensive reports from its Water Pollution Boards on the water quality conditions in the Lower Great Lakes basin [51] and, later that year and in early 1970, held a series of public hearings in communities along the Lakes. [52] As a result of these studies and inquiries, the I.J.C. in a third interim report in April 1970 drew the attention of the governments to three urgent matters: potential oil pollution, phosphorus build-up and watercraft pollution in the Great Lakes. [53]

The first matter arose from a specific request by the national governments in 1969 for the I.J.C. to investigate and report on, as a matter of urgency, the potential danger of oil spills from oil and gas drilling activities in Lake Erie. [54] The Commission concluded that there existed a serious risk of accidental spills and urged the governments to develop adequate contingency plans and meantime to prohibit oil production and further drilling in parts of Lake Erie. [55]

On the other two problems, the governments were urged to implement an immediate "integrated programme of phosphorus control" which would include a ban on phosphates in laundry detergents by the end of 1972 [56] and to adopt "at the earliest possible date compatible regulations for the control of water pollution from all classes of commercial vessels and pleasure craft . . . ." [57]

In December 1970 the I.J.C. transmitted to the two governments its full report on the state of water pollution in the Lower Great Lakes basin. This report reinforced the conclusions and recommendations of the interim reports, identified additional pollution problems and proceeded to outline in detail the Commission's proposals for a comprehensive regime of water quality control for the Great Lakes basin.

From the major studies of the joint technical boards carried out in collaboration with the federal, state and provincial water agencies, the I.J.C. identified a number of agents which appear to be contributors to the pollution problems in the basin. In addition to the phosphorus already noted,

---

[50] I.J.C., SECOND INTERIM REPORT ON THE POLLUTION OF LAKE ERIE, LAKE ONTARIO AND THE INTERNATIONAL SECTION OF THE ST. LAWRENCE RIVER 3 (1968).

[51] INTERNATIONAL LAKE ERIE WATER POLLUTION BD. & INTERNATIONAL LAKE ONTARIO—ST. LAWRENCE RIVER WATER POLLUTION BD., REPORT TO THE INTERNATIONAL JOINT COMMISSION ON THE POLLUTION OF LAKE ERIE, LAKE ONTARIO AND THE INTERNATIONAL SECTION OF THE ST. LAWRENCE RIVER (1969).

[52] I.J.C., REPORT ON POLLUTION OF LAKE ERIE, LAKE ONTARIO AND THE INTERNATIONAL SECTION OF THE ST. LAWRENCE RIVER 13 (1970).

[53] I.J.C., THIRD INTERIM REPORT ON POLLUTION OF LAKE ERIE, LAKE ONTARIO AND THE INTERNATIONAL SECTION OF THE ST. LAWRENCE RIVER: SPECIAL REPORT ON POTENTIAL OIL POLLUTION, EUTROPHICATION AND POLLUTION FROM WATERCRAFT 2 (1970).

[54] *Id.* at 35-36.

[55] *Id.* at 28-29.

[56] *Id.* at 30-31.

[57] *Id.* at 31.

nitrogen, bacteria, viruses, accumulating solids, organic contaminants, oil, radioactive substances and toxic materials such as mercury are included in the list. [58] The chief sources of the pollutants on both sides of the boundary are municipalities, industries, watercraft and dredging activities. [59] And the major consequences of the pollution are eutrophication of the lakes, deoxygenation of the waters, algal growths, bacterial and organic contamination, water turbidity and discoloration, harming most legitimate uses of the waters of the Great Lakes. [60] The Commission was also satisfied that the widespread incidence of pollution in the basin is transboundary in nature and of a degree on each side to constitute a hazard to health and property on the other side of the boundary. [61]

At the jurisdictional level, the I.J.C. concluded that the main problem is the diffusion of authority to take corrective action in the basin. With two levels of government and seven jurisdictions bordering on the waters, not surprisingly, "the policies and goals and the vigour with which they are pursued in the several jurisdictions are not uniform; and there is considerable variation in the actual laws, their administration and enforcement." [62]

Having reached the conclusions that the water quality of the Lower Great Lakes is in a critical state and bound to deteriorate further unless prompt corrective action is taken in a coordinated fashion, the I.J.C. set out its proposals for remedial and preventive action. These recommendations, couched in the strongest terms ever employed by the Commission, may for convenience be considered in two categories: those indicating the general and specific goals to achieve and maintain an acceptable quality of water in the basin and those suggesting how administratively and politically, the goals may be realized.

IV. A Framework for Action

Of cardinal importance, in the view of the I.J.C., is the need for the governments to accept as "the minimal basis for the establishment of [quality] standards for these waters" the Water Quality Objectives described by the Commission in the report. [63] The five general objectives describe the quality of the receiving waters in the basin as being maintained in a condition "at all places and at all times" free from any foreign substances which would impair directly or indirectly the value of the waters for any legitimate use including the most restrictive. [64] The nine specific objectives seek the "desirable levels of water quality considered necessary at this time to achieve the General Objectives" by defining scientific parameters for measuring the maximum permissible levels of foreign substances in the receiving water. [65]

---

[58] I.J.C., Report on Pollution of Lake Erie, Lake Ontario and the International Section of the St. Lawrence River 34-51 (1970).

[59] For elaboration, see *id.* at 72-79.

[60] For elaboration, see *id.* at 84-107.

[61] *Id.* at 62-71.

[62] *Id.* at 108.

[63] *Id.* at 149.

[64] *Id.* at 116-17.

[65] *Id.* at 117-20.

In relation to all these objectives, the I.J.C. made two important observations. To be successful, the objectives must be applied to *all* parts of the Lower Great Lakes basin, including the connecting channels of the Lakes [66] and, for the time being, to Lakes Huron and Superior as well. [67] Second, the nine specific objectives listed are not exhaustive and additional parameters will be defined as they are deemed necessary. [68]

The I.J.C. next enumerated the specific actions which must be taken if the objectives for water quality are to be secured. These include programs to eliminate phosphorus from detergents and other sources, to control the discharge of all organic and toxic contaminants, to construct fully adequate municipal and industrial waste treatment facilities, to control the disposal of solid wastes and dredged materials, to develop contingency plans to cope with spills of oil and other hazardous materials, to research methods of cleaning up oil spills, to control oil and gas exploration and exploitation in Lake Erie, to regulate closely the shipping of hazardous materials, to prevent effluent discharges from watercraft, to regulate the location and operation of thermal power plants and to promote and support further research into water quality problems in the Great Lakes. [69]

The I.J.C., having set out this large bill of particulars, next addressed itself to the questions of implementation and enforcement of the remedial measures. Averting again to the jurisdictional problem, the Commission recognized that there were no facile answers. However, it observed that while historically water pollution matters seemed to rest constitutionally with the state and provincial governments, there was recent evidence of a substantial federal presence in both countries, particularly in relation to pollution problems involving international navigable waters such as the Lower Great Lakes. [70] In the opinion of the Commission, it follows that "[i]n order to achieve effective pollution control and acceptable water quality in these boundary waters, the policies and laws of the several jurisdictions concerned must have a common goal and the programmes to achieve that goal need to be coordinated with the programmes of the other jurisdictions involved in the lakes." [71]

To this end, the Commission directed a series of recommendations to the various governments for particular actions by them to secure the remedial measures. The two national governments were first urged to adopt the Water Quality Objectives established by the I.J.C. [72] With a view to making the objectives effective, Canada and the United States were advised to enter into agreements on "programmes and measures . . . and the schedules for their implementation," [73] on an "integrated programme of phosphorus control" [74]

[66] *Id.* at 114.
[67] *Id.* at 155.
[68] *Id.* at 120.
[69] *Id.* at 150-55.
[70] *Id.* at 108-09.
[71] *Id.* at 111.
[72] *Id.* at 149.
[73] *Id.* at 149-50.
[74] *Id.* at 150.

and on international contingency plans to deal with accidental spills of hazardous materials. [75] The federal governments were further urged to adopt common measures designed to ensure safe navigation of ships carrying hazardous materials [76] and to extend the 1964 reference to the I.J.C. on water quality in the Lower Great Lakes to include the remaining boundary waters of the system including their tributary waters. [77]

The state and provincial governments were requested to recognize the Water Quality Objectives as the "minimal basis for the establishment of standards" for the waters [78] and to ensure the construction "as a matter of urgency" of the necessary waste treatment facilities. [79]

To both levels of government the Commission urged the development of "compatible and coordinated programmes" for control of organic and toxic contaminants, [80] for disposal of solid wastes, [81] for applied research on oil spill clean-up [82] and for control of waste discharges from watercraft [83] and requested full support for the Commission's water surveillance activities. [84]

Finally the Commission dealt with its own role in protecting the water quality of the Great Lakes. Generally, it recommended that the governments of Canada and the United States confer on the I.J.C. "authority, responsibility and means for coordination, surveillance, monitoring, implementation, reporting, making recommendations to governments . . . and such other duties related to preservation and improvement of the quality of the boundary waters of the Great Lakes—St. Lawrence System as may be agreed by the said Governments . . . ." [85]

Specifically, the I.J.C. requested that it be charged with responsibility for the supervision of water quality programs in the Great Lakes basin including those dealing with accidental spills, pollution from watercraft and the handling of hazardous materials. [86] Its tasks would be several. The Commission would "review and make recommendations concerning legislation in each country relating to pollution of the Great Lakes System with a view, amongst other things, to harmonize and strengthen such legislation." [87] It would report frequently to the national governments on recommendations regarding objectives, standards, programs, research, regulations, legislation,

---

[75] *Id.* at 152-53.

[76] *Id.* at 154.

[77] *Id.* at 155.

[78] *Id.* at 149.

[79] *Id.* at 151. The Commission estimated the capital costs for the construction of municipal and industrial waste treatment facilities at one and a half billion dollars, with 200,000,000 dollars of this attributable to Canada. See *id.* at 124.

[80] *Id.* at 151.

[81] *Id.* at 152.

[82] *Id.* at 153.

[83] *Id.* at 154.

[84] *Id.* at 155.

[85] *Id.* at 156.

[86] *Id.* at 133.

[87] *Id.*

agreements and enforcement as might be appropriate. [88] And it would also make recommendations to state and provincial governments for action in specific cases. [89]

To carry out these extensive functions, the I.J.C. believed that it would require, in addition to the general authority which the governments would grant, a strengthening of its subpoena power, clarification of its authority to publish its findings without reference to the governments and an increase in its professional staff. [90]

The recommendations of the I.J.C. in its 1970 report are wide-ranging and demanding and it remains to consider how the various governments may respond to these proposals for an effective water quality control regime in the Great Lakes basin. The recommendations contemplate the two federal governments concluding an international agreement (or agreements) on a water quality regime for the Lower Great Lakes which would make effective the water quality objectives. Such an agreement would presumably adopt as its basis the objectives proposed by the I.J.C. in its report and would commit the governments to a definite course of action to ensure the realization of this goal. [91] This would be a considerable step beyond the general prohibition of transboundary water pollution found in Article IV of the Boundary Waters Treaty since it would probably spell out with some particularity the levels of water quality to be maintained in the basin.

Both national governments already have legislation enacted which would facilitate the implementation of any such international obligations undertaken. In the United States, Congress has authorized the Environmental Protection Agency, in the absence of acceptable water quality standards set by the states, to promulgate federal standards for navigable and interstate waters. [92] In addition, there are specific federal powers relating to oil spills [93] and other hazardous substances in navigable waters. [94]

In Canada, the recently enacted Water Act [95] empowers the federal government, in relation to interjurisdictional waters where pollution is of urgent concern [96] to make regulations including quality standards for such waters designated as a water quality management area. [97] The act also asserts federal control over the production of nutrients including phosphorus. [98] Under amendments to be made soon to the Canada Shipping Act,

[88] *Id.*

[89] *Id.* at 133-34.

[90] *Id.* at 135.

[91] See discussion which follows on the proposed contents of an international agreement.

[92] Water Pollution Control Act, 33 U.S.C.A. § 1160(2) (1970). § 1165 specifically authorizes federal involvement in pollution control programs for the Great Lakes.

[93] *Id.* § 1161.

[94] *Id.* § 1162.

[95] Canada Water Act, Can. Stat. 1969-70 c. 52.

[96] *Id.* § 11. While there may be some debate over the meaning of the term "urgent national concern," if water quality problems in the Great Lakes do not fall within the category after the evidence led by the I.J.C., it will be difficult to describe a body of water in Canada that does.

[97] *Id.* § 16(2)(*c*).

[98] *Id.* §§ 17-22.

the Minister of Transport and the Federal Cabinet are given broad powers to regulate ships carrying hazardous substances in Canadian waters. [99]

The existing federal legislation in both countries also contemplates the active involvement of the state and provincial governments in achieving water quality standards, an involvement anticipated and urged by the I.J.C. Indeed, the federal legislation is initially premised on action and cooperation by the state and provincial governments, unilateral action being taken by the federal governments only as a last resort.

The United States law declares "the primary responsibilities and rights of the States in preventing and controlling water pollution" [100] and sets out the procedure for facilitating their active participation in cooperation with each other and with the federal government. [101] Only when a state fails to establish and enforce satisfactory standards is federal action permitted. [102] Similarly, the Canada Water Act is couched in terms of federal-provincial cooperation with both levels of government establishing the water quality agency and agreeing on the water quality standards to be adopted. [103] Again, unilateral federal initiative will occur only where cooperation of the province cannot be secured. [104]

State and provincial laws also give their respective governments broad powers to adopt water quality standards which will apply to the portion of the Lower Great Lakes within each jurisdiction, and to ensure achievement of these standards. A recent New York state enactment, the Environmental Conservation Law [105] empowers a Commissioner of Environmental Conservation, in conjunction with the State Environmental Board to establish quality standards for all waters in the state. [106] Water quality standards for all waters in Michigan are regulated under the Water Resources Commission Act [107] which makes specific reference to the Great Lakes. [108] In Ohio, the Water Pollution Control Board [109] has a similar jurisdiction while in Pennsylvania the Department of Environmental Resources is empowered to establish standards for controlling water pollution under the Clear Streams Act. [110] In Ontario, the Water Resources Commission, with the approval of the Cabinet, is empowered to make regulations prescribing standards for sewage and industrial wastes discharge and for receiving waters. [111] In addition

[99] Bill C-2, An Act to amend the Canada Shipping Act (Third Reading, March 1, 1971).

[100] Water Pollution Control Act, 33 U.S.C.A. § 1151 (1970).

[101] *Id.* § 1154.

[102] *Id.* § 1160.

[103] Canada Water Act, Can. Stat. 1969-70 c. 52, §§ 9, 13.

[104] *Id.* § 11.

[105] N.Y. Consol. Laws c. 43-B (1970).

[106] *Id.* § 15.

[107] MICH. STATS. ANN. § 3.521 (1970).

[108] *Id.* § 3.525.

[109] OHIO REV. CODE ANN. Tit. 61, § 6111.03 (1953). The powers of this Board appear to have been transferred to the newly created Ohio Water Development Authority in March 1968. See C.C.H. *Clean Air and Water News*, 1968 State Law Supp. 17.

[110] PA. STATS. ANN. Tit. 35, § 691.1 (1964), *as amended* Pub. L. No. 222 (1970).

[111] Ontario Water Resources Commission Act, ONT. REV. STAT. c. 281 § 47(*g*) (1960).

both Ontario and Michigan are attempting to control discharges from watercraft, the former under the Water Resources Commission, [112] and the latter under the Watercraft Pollution Act of 1970, in force since January 1, 1971. [113] From the foregoing summary of federal, state and provincial laws, it is evident that substantial legislative authority already exists to give effect to many of the I.J.C.'s recommendations relating to the adoption of water quality standards. There is no assurance, however, that the necessary programs to implement the standards will be forthcoming in a uniform, concerted fashion without some active urging and coordination by an international agency endowed with powers of supervision and overview. The I.J.C.'s view is that there must be an agency to oversee the activities of all jurisdictions involved to ensure a high level of coordination and cooperation among the various programs and to monitor compliance by all parties with "agreements between Canada and the United States regarding water quality objectives and standards and the programmes to achieve them." [114]

Can the I.J.C. properly perform such a role? The Commission believes that it can, primarily on the basis of the techniques and expertise which it has acquired over the years carrying out many of these functions in relation to the connecting channel waters of the Great Lakes. [115] As noted earlier, the Commission already does perform a surveillance function, not only in relation to the connecting channels of the Great Lakes, but also in respect of the St. Croix River basin, the Red River basin and the Rainy River and Lake of the Woods. Under all of these earlier references, the I.J.C. has been granted the authority by the national governments "to establish and maintain continuing supervision over the waters [in question] in relation to pollution through a board to be appointed by the Commission." [116] The Commission notifies those responsible for pollution offending the water quality objectives and recommends to the authorities appropriate action to remedy the situation. [117]

To an extent, this approach has been useful but is subject to several limitations in practice. First, the terms of reference as to the Commission's scope of authority and responsibility are vague. Second, the national governments have granted the authority informally by letter without attempting to define the Commission's status or powers. Third, the I.J.C. has had no direct relations (in a legal sense, at least) with the main actors in pollution control, the state and provincial governments. Fourth, and perhaps most significantly, the federal governments until recently had no comprehensive legislation through which to ensure that the initial and subsequent recommendations of the I.J.C. could be effected in relation to a particular body of international waters. Finally, no concerted effort has been undertaken to ensure coordination of the various state and provincial and federal programs.

[112] *Id.* § 47 (ha), *as amended* Ont. Stat. 1966 c. 108, § 11(2).

[113] MICH. STATS. ANN. § 3.533(201) (1970).

[114] I.J.C., REPORT ON POLLUTION OF LAKE ERIE, LAKE ONTARIO AND THE INTERNATIONAL SECTION OF THE ST. LAWRENCE RIVER (1970) 130-31.

[115] *Id.* at 132-33.

[116] I.J.C., REPORT ON THE POLLUTION OF RAINY RIVER AND LAKE OF THE WOODS 19 (1965).

[117] *Id.*

Many of these difficulties can be met if the governments are willing to endow the Commission with more precise powers and the capacity to enable it to become an active catalyst in pollution control planning rather than a passive observer of government inaction.

The provincial and state governments concerned have expressed a willingness to allow the Commission to engage in a more active role in controlling pollution on the Great Lakes. At an intergovernmental conference on the Great Lakes environment convened in Toronto in September, 1970, the Ontario government observed that common action by all Great Lakes jurisdictions is essential on matters of water quality standards, phosphorus levels, oil spills and monitoring and surveillance of programs. [118] Ontario proposed that the governments adopt arrangements whereby there would be exchanges of information and coordination of programs to achieve common objectives. [119] Ontario's Minister of Energy and Resources Management reportedly went so far as to propose the creation of "a new international agency with powers to enforce mutually agreed standards of pollution abatement." [120] This proposal was apparently rejected by the Ontario government and the eight basin state governors present, Governor Whitcomb of Indiana summing up the reason for the opposition: "[t]he creation of an international agency with enforcing powers is almost impossible without running afoul of the sovereignty of states and provinces involved." [121]

The conference did, however, reach agreement on a substantially expanded role for the I.J.C., acting as a clearing-house for rapid exchange of information on environmental programs, acting as a forum to review pollution control standards and to achieve their uniformity, recommending and promoting uniform enforcement of standards by the different jurisdictions, carrying out surveillance and publishing reports of results indicating the effectiveness of each government's program and encouraging each government to establish and maintain a single agency responsible for cooperating with other governments on all aspects of environmental quality programs. [122] If this communiqué is an accurate reflection of the position espoused by the state and provincial authorities, it comes very close to the role which the Commission describes for itself in the report.

More recently, on June 10, 1971, ministers and representatives of the two federal governments and the Great Lakes basin provinces and states met in Washington to consider the recommendations of the I.J.C. set out in

---

[118] Ontario, Background Papers for the Great Lakes Environmental Conference 3 (Sept. 1970).

[119] *Id.* at 43-5. For a summary of Ontario's proposals see *A bold and imaginative plan to combat pollution in the Great Lakes*, Globe and Mail (Toronto), Aug. 22, 1970, at 8, col. 1.

[120] The report of the conference proceedings is taken from *Strengthening of Role for I.J.C. Agreed as Aid in Pollution Fight* Globe and Mail (Toronto), Sept. 11, 1970, at 1-2.

[121] *Id.*

[122] *Id.*

its 1970 report. These officials reached agreement on implementation of most of the Commission's recommendations. [123]

First, it was agreed that the Canadian and United States governments should conclude a formal international agreement on water quality control in the Great Lakes basin. The agreement would "establish Common Water Quality Objectives based upon the recommendations of the International Joint Commission for the boundary waters of the Great Lakes System and would commit the Governments to the development of compatible water quality standards and to the implementation of programs and other measures designed to attain these objectives." [124] In particular the agreement would include binding commitments for both countries to construct treatment facilities, to reduce phosphorus discharges, to eliminate mercury and other toxic wastes, to control pollution from thermal, radioactive and pesticide sources and to prevent discharges from vessels on the lakes. [125]

Secondly, the parties agreed to have the I.J.C. carry out a study of land-based pollution sources in the Great Lakes basin, to have the Commission coordinate water quality research in the basin and to have the agency study pollution problems in Lakes Huron and Superior. [126]

Finally, the parties agreed that the federal governments

> should assign additional responsibility and authority to the International Joint Commission to assist the Governments in their efforts to restore and protect Great Lakes water quality. The Commission would be given a greater role in surveillance of water quality in the Great Lakes, including spot checks of water quality in the boundary waters, monitoring of the effectiveness of governmental programs to achieve the common water quality objectives, making recommendations for legislation and programs, and coordinating activities to achieve improved water quality in the Great Lakes. [127]

To carry out these responsibilities, the parties agreed that the I.J.C. should establish the necessary technical joint boards to be constituted in consultation with the governments, [128] that the I.J.C. be provided with "additional staff and other resources in order to enable it to carry out its expanded functions" [129] and that "the establishment of an office in the Great Lakes area for the performance of the new functions of the International Joint Commission should be considered." [130]

If these proposals concerning the expanded role of the I.J.C. are implemented by the federal governments, there is no doubt that the Commission can become a more effective international agency for achievement of water

---

[123] See Communiqué on Canada-United States Ministerial Meeting on Great Lakes Pollution, Washington, D.C., June 10, 1971.

[124] *Id.* at 2.

[125] *Id.*

[126] *Id.* at 3-4.

[127] *Id.* at 3.

[128] *Id.*

[129] *Id.*

[130] *Id.*

quality control in the Great Lakes basin. However, there are several further measures which should be considered by the governments if the Commission is to provide an "independent overview" of the pollution control programs in the basin. [131]

First, while the I.J.C. has built up considerable expertise in carrying out monitoring and surveillance it is seriously understaffed, relying almost entirely on government staff for its technical personnel. While there is no question that the government personnel have performed the work for the Commission in an admirable manner in the past, it does seem that if the I.J.C. is to assume that role of objective critic of government policies, legislation and administration in the field of water quality control, its evaluative work should be performed by persons other than those in the employ of the governments. Thus, the Commission should be authorized to retain the services of personnel from both countries to carry out the technical functions of monitoring and surveillance.

Secondly, the Commission as now constituted with three commissioners appointed by each of the two national governments is unrepresentative of the state and provincial points of view. Yet, many of the water pollution matters with which the Commission deals are of direct concern to the state and provincial governments and, if the Commission's recommendations are to be carried out by these governments, it is desirable that they have a greater involvement at the decision-making level. Beyond this, the Commission itself would probably benefit from having as a part of its membership, some commissioners who are closely associated with water quality problems of the Great Lakes. In order to facilitate this increased representation for purposes of establishing an international office for Great Lakes pollution control, the size of the I.J.C. might be increased from six to eight, with one additional United States member being appointed from a body such as the Great Lakes Basin Commission [132] and one new member for the Canadian side appointed either from the water quality management agency for the Great Lakes which may be created by Ontario and Canada under the Canada Water Act [133] or from the Ontario Water Resources Commission. [134]

Finally, as a means to make effective the recommendations which the I.J.C. may present flowing from its review and evaluation functions, the Commission should be authorized to hold public hearings at which government agencies are required to answer questions put by the Commission concerning their programs for water quality control. The Commission should also be authorized to make public directly the results of its investigations,

---

[131] *Id.* at 4.

[132] The Great Lakes Basin Commission is an agency created by the President in 1967 under the Federal Water Resources Planning Act, Pub. L. No. 89-80, 79 Stat. 244 (1965) with representatives from the eight basin states and the federal government. The Commission deals with all environmental problems of the Great Lakes. See Ontario, Background Papers for The Great Lakes Environmental Conference 37-39 (Sept. 1970).

[133] Can. Stat. 1969-70 c. 52, §§ 4, 5, 9, 11.

[134] The agency of the government of Ontario concerned with water quality matters in the Great Lakes.

critical though these may be of certain programs. And the Commission should be enabled, by federal legislation in both countries, to appear before the enforcement agencies of Canada and the United States, to point out specific cases of non-compliance with the water quality objectives which have been adopted by international agreement. The embryo of this idea is already encompassed in the United States Water Pollution Control Act, [135] but its provisions anticipate an appearance by the foreign state (Canada) rather than the I.J.C. Better it would be if the Commission itself were to appear and request that measures be taken by the control agency to remedy the situation.

The proposals for action made by the I.J.C. may place a considerable restraint on the freedom of the various governments to determine unilaterally their policies relating to water quality management in the Great Lakes basin. However, the evidence marshalled by the I.J.C. makes it abundantly clear that the time has passed when we can afford to go our separate ways without risking the destruction of a vital international resource.

[135] 33 U.S.C.A. § 1160(*d*)(2) (1970).