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The Management of Canada-U.S. Boundary Waters: Retrospect and Prospect

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INTRODUCTION

As natural unities, rivers, lakes, and aquifers require an integrated approach to their use and development. This typically calls for the design of complex strategies, characterized by multiple ends and means, and their application to major drainage basins.[1] Water management issues, often difficult to resolve politically, become magnified where jurisdictional divisions are involved. International watercourses are the most notable example, because sovereign nations are involved. Whether cooperation or conflict prevails depends upon numerous factors, including hydrological configuration, the temper of the relationship and stage of development of the riparian nations, and their attitudes towards the environment and international conventions governing resource management.

On a global scale, Canada-U.S. resource and environmental relationships tend to represent a best case example.[2] A number of the bilateral instruments for problem solving developed by the two countries serve as role models for other states which share boundary waters. The International Joint Commission (IJC), in particular, is a well-known vehicle for dealing with riparian issues, as well as related matters of mutual concern. None of this, of course, is to suggest that the course of environmental diplomacy always runs smoothly along the "undefended border," or that Canada-U.S. water issues yield easily to joint resolution. The articles in this symposium, backed by a more substantial literature,[3] clearly indicate otherwise.

Evaluations of this experience have resulted in various recommendations for improvements and alternatives to the conventional policies and institutions governing Canadian-U.S. water relations. In the following discussion, the key forces bearing upon this area of bilateral cooperation are identified and certain proposals for reform are interpreted in the context of changing circumstances and evolving concepts. This analysis, it must

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1. *See generally* G. WHITE, STRATEGIES OF AMERICAN WATER MANAGEMENT (1979).

2. Le Marquand & Scott, *Canada's International Environmental Relations*, in RESOURCES AND THE ENVIRONMENT 78 (O. Dwivedi ed. 1980).

3. A reasonably comprehensive citation of relevant work can be found in J. CARROLL, ENVIRONMENTAL DIPLOMACY (1983).

be added, is undertaken from a Canadian perspective and so likely embodies somewhat different concerns and assumptions than those prevalent on the other side of the border.

PROBLEMS IN PERSPECTIVE

International river basins set special kinds of water management problems. A brief recapitulation of their basic features is given first in this section. This provides the background for more specific consideration of the trends and issues that enjoin and exercise Canada and the United States. Elements of both continuity and change can be detected in this pattern of interrelations; it contains much of general interest for the student of international rivers as well as for those more specifically concerned with bilateral environmental affairs.

Boundary waters are subject to the usual problems that are encountered in the management of a common property resource.[4] The use and development of rivers and lakes is characterized by interdependencies which differ in their symmetry of effect. As a result, there is an unequal distribution of benefits and costs accruing from demands that alter the quantity and quality of the resource, whether by small-scale withdrawal and consumptive activities, major hydro projects, or the discharge of wastes. The impacts on other uses include externalities which are often intangible, pervasive, and difficult to offset or compensate.

Where these effects spill over jurisdictional boundaries, they lead to political conflict and a joint or unilateral search for its settlement. It tends to be particularly difficult to secure the basis for international cooperation on shared waters. There are over 200 trans-border rivers and much effort has been expended to date on trying to reach formal and informal agreements regarding their apportionment and control. The results, however, have generally not equalled the time or resources expended, and a considerable residue of political conflict remains in many parts of the world. Even where international compacts exist, they are often ill adapted to the new challenge of environmental management.[5]

A Taxonomy of Problems

The basis for cooperation on boundary waters is influenced by the kind of management questions which are at issue. A brief classification of problems relevant to Canada-U.S. relations is given below:[6]

4. Sadler, *North to the Arctic and East to the Bay: Policy and Institutional Perspectives on Western River Management*, in WATER POLICY FOR WESTERN CANADA: THE ISSUES OF THE EIGHTIES 7 (B. Sadler ed. 1983).

5. INTERNATIONAL UNION FOR THE CONSERVATION OF NATURE, WORLD CONSERVATION STRATEGY § 19 (1980).

6. The taxonomy is based on D. LeMarquand, *Politics of International River Basin Cooperation and Management*, 16 NAT. RES. J. 885-88 (1986).

a) *Upstream-downstream conflicts* are traditionally difficult to resolve because the spillovers are largely one way. A typical example is the dispute, recently referred to the IJC, over the potential impacts of a proposed coal mining development, located adjacent to tributory headwaters of the North Fork of the Flathead River in British Columbia, on the ecological and aesthetic values of the main stem of the river in Montana which has protected status under the U.S. Wild and Scenic Rivers Act.[7] In such cases, there may be little economic advantage for the upstream riparian to negotiate a settlement although additional considerations, discussed in the next section, may come into play and mitigate against a hardline stance.

b) *Common pool resources*, by contrast, are characterized by incentives for countries to cooperate because their unrestricted use leads to diminishing returns or increasing costs for both, or all, riparians. Thus the deterioration of water quality in the Great Lakes is a source of a mutual concern to both Canada and the United States. Pollution occurs from innumerable sources and can only be reversed or halted through joint clean up operations or coordinated programs for controlling waste and toxic discharges.

c) *Integrated river basin developments* represent an interim type of issue. While such schemes can provide benefits to both countries, they are often complex, expensive, and require lengthy negotiations to reach a successful agreement. Particular difficulties tend to be encountered in working out an equitable distribution of benefits and costs. This question perhaps more than any other stalled the conclusion of the Columbia River Treaty,[8] which remains such an important benchmark in boundary waters management.

The Geopolitics of Water in North America

The Canada-U.S. border bisects the North American continent from east to west between the 42nd and 49th parallels, and truncates the far north largely along the line of the 141st meridian. It divides several major river basins and the Great Lakes system and crosses or coincides with almost three hundred watercourses. A range of hydrological regimes and configurations is traversed by the 5,000 mile boundary. The imposition of political divisions on this natural order governs the riparian relationship between the two countries, setting the stage for conflict or cooperation.[9]

Figure 1 illustrates the geopolitical linearities of Canada-U.S. water relations. The two countries share ten moderate-sized or major river basins (defined here as $+50{,}000$ km^2). For most of these systems, the upstream

7. 16 U.S.C. 1274, § 3(a)13 (1982).

8. Canadian Dept. of External Affairs, The Columbia River Treaty, Protocol, and Related Documents 17, 100 (1964).

9. LeMarquand, *supra* note 6, at 884.

downstream relationship is reversed within or across enough drainage areas so that overall reciprocal as well as unidirectional elements can be discerned. A complicating factor, however, is the concentration of Canadian settlement and development activity adjacent to the U.S. border. The population and economy of the United States, by contrast, are both more widely distributed and the center of gravity is moving from the northern states to the southern sunbelt. Along the northern frontier, there are also a significant number of national parks, wild rivers, and other kinds of protected reserves which are particularly sensitive to the downstream impacts of air and water pollution.

In the far North, a similar relationship is pending. British Columbia and Yukon Territory occupy the headwaters of all of the international rivers flowing through Alaska. Until now there has been a lack of water

Figure 1

resource development in this area. Sooner or later, this is likely to change, adding new and potentially more intractable issues to the bilateral agenda of water issues.

The Past Record of Canada-U.S. Water Relations

There is a long tradition of Canadian-U.S. relations on boundary waters which reaches back to the last years of the nineteenth century.[10] It thus predates, by approximately seventy-five years, the emergence of most other bilateral resource and environmental issues. During this time, the nature and scope of the water problems of concern to both countries has been transformed as a result of technological development and changing socio-economic values. Other elements, notably the institutions established for dealing with boundary waters and related resource matters, tend to evolve more slowly. This lag between problem and adjustment lies at the heart of current concerns regarding bilateral environmental affairs. It may be useful, accordingly, to place these matters in historical context.

A brief chronology of the evolving course of Canada-U.S. boundary waters management is set out below. For present purposes, three main phases may be recognized:

Localized Problems and International Arrangements (1900-1945)

By the turn of the century, a number of relatively small and localized problems of apportionment of international rivers and lakes had built up. These concerned flood control, power and irrigation projects, and navigation improvements. *Ad hoc* diplomatic responses involving London and Washington proved cumbersome and prompted the signing of the Boundary Waters Treaty[11] in 1909 and, subsequently, the establishment of the International Joint Commission in 1911[12] to administer its provisions. For much of the remainder of this period, the IJC dealt intermittently with a number of problems associated with single purpose water works.

Large Scale Water Development and Joint Cooperation (1945-1965)

After World War II, the scale, complexity, and pace of water projects increased markedly. Multi-purpose river basin development involving international waters required an entirely new level of bilateral cooperation.

10. L. BLOOMFIELD & G. FITZGERALD, BOUNDARY WATERS PROBLEMS OF CANADA AND THE UNITED STATES (1958).

11. Boundary Waters Treaty, Jan. 11, 1909, United States-United Kingdom, 36 Stat. 2448, 2451, T.S. No. 548.

12. The IJC was established pursuant to Arts. VII and VIII of the Boundary Waters Treaty, *id.*

The St. Lawrence Seaway and Power Development Project[13] and the conclusion of the Columbia River Treaty[14] represent the concrete and constitutional benchmarks of the era. In some ways, however, these important achievements were overshadowed by proposals that never happened: namely the schemes for massive interbasin diversions and transfers of Canadian waters south to solve growing problems of supply and quality in the United States.[15]

Water Quality and the Search for Integrated Approaches to Environmental Management (1965-present)

The promotion of the above schemes, together with growing concern about environmental pollution, marked a major turning point in Canada-U.S. water relations. A strong reaction against NAWAPA[16] and similar continental water export projects coincided with the evident deterioration of the quality of the lower Great Lakes. This provided the impetus for the start of a major and ongoing scientific investigation of water quality conducted under the auspices of the IJC, followed by a search for a more integrated approach to the basin ecosystem encompassing the interrelationship of water, air, and land use issues. Milestones on this evolving path include the Great Lakes Water Quality Agreement[17] and the various reports and accords on the collaborative directions and instruments necessary to resolve complex environmental problems.

The Nature and Scope of Contemporary Issues

The overriding question in boundary waters management is becoming the sufficiency of the policy frameworks and institutional arrangements

13. The St. Lawrence Seaway Agreement, June 30, 1952 and August 17, 1954, United States-Canada, 5 U.S.T. 1784, T.I.A.S. No. 3053; supplemented by an Agreement Regarding the Establishment of Saint Lawrence River Joint Board of Engineers, Nov. 12, 1953, 5 U.S.T. 2638, T.I.A.S. No. 3116.

14. Canadian Dep't. External Affairs, *supra* note 8.

15. *E.g.*, the McGregor Diversion (B.C. Hydro, 1978); Prairie Rivers Improvement Management & Evaluation (PRIME), shelved when a new government was elected in 1971; and North American Water and Power Alliance (NAWAPA) (Ralph M. Parsons Company, Consulting Engineers, 1967). For a full description of NAWAPA, see Sewell, *Inter-Basin Water Diversions: Canadian Experiences and Perspectives* in LARGE SCALE WATER TRANSFERS 7, 18-21 (G.N. Golubev & A.K. Biswas ed. 1985).

16. *Supra* note 15. NAWAPA was a scheme to divert water from rivers in Alaska and British Columbia to the west, southwest, and midwest United States, and to the Prairie Provinces of Canada.

17. Great Lakes Water Quality Agreement, April 15, 1972, United States-Canada, 23 U.S.T. 301, 24 U.S.T. 2268, T.I.A.S. No. 7312, 7747; and Great Lakes Water Quality Agreement, Nov. 22, 1978, United States-Canada, 30 U.S.T. 1384, T.I.A.S. 9257. Art. VIII of the 1978 Agreement established the Great Lakes Water Quality Board, the Great Lakes Science Advisory Board, and the Great Lakes Regional Office.

for coordinated planning and implementation of joint agreements.[18] It is partly a matter of developing an "anticipatory capability," a proactive approach to emerging problems based upon research and monitoring and empowered by intergovernmental and public consultations. More critical and controversial, however, are the kind of binational objectives and strategies needed to guide the management of boundary waters and the legal and administrative machinery for international cooperation. A persistent theme in critical analyses of these matters concerns the role and effectiveness of the IJC.

Not unexpectedly, the problems of the Great Lakes loom large in such analyses.[19] They are undeniably complex and controversial, ranging from conventional matters, such as control of lake levels, shoreline erosion, navigation impediments, and hydro-electric power apportionment, to more pervasive issues of habitat reduction and waste and toxic pollution from multiple sources and substances. All of these have impacts on fish and other biotic resources, implications for human health, and represent constraints on allocation for recreation and conservation uses. Superimposed on water management questions *per se* are interdependencies with air quality problems, notably through the medium of acid rain, and land use issues, including urban and industrial development. The point emphasized here is that critical analysis and prescriptions for reform of collaborative trans-border instruments for the Great Lakes should bear in mind the magnitude of this task and its domestic ramifications.

The Canada-U.S. diplomatic agenda of affairs environmental also contains several variants of the upstream-downstream conflict.[20] Some of these are assuming prominence, notably the Sage Creek coal mining proposal adjacent to the British Columbia-Montana boundary.[21] Other recent disputes have been settled by negotiation, e.g., the Skagit River-Ross Dam matter,[22] or seem to have become less contentious for domestic reasons of political economy, e.g., the Garrison Diversion scheme.[23] It is important to remember, however, that issues may be recycled back onto the political agenda as conditions and values change. A classic example is the reconsideration now being given to the Columbia River Treaty on both sides of the border. This element of flux in boundary

18. Le Marquand & Scott, *supra* note 2; CARROLL, *supra* note 3.

19. DECISION FOR THE GREAT LAKES (D. Minener & G. Daniel eds. 1982).

20. For an incisive analysis of contemporary conflict, see Caldwell, *Garrison Diversion: Constraints on Conflict Resolution*, 24 NAT. RES. J. 839-63 (1984).

21. 1946 IJC Docket No. 53R.

22. Kim & Marts, *The Skagit-High Ross Controversy: Negotiation and Settlement*, in this volume.

23. *See generally* Caldwell, *supra* note 20.

waters affairs emphasizes the importance of the processes of management and the effectiveness of institutional arrangements for resolving disputes.

THE STRUCTURE AND STYLE OF ENVIRONMENTAL DIPLOMACY ACROSS THE 49TH PARADOX

There is a wealth of insights and lessons regarding the performance of bilateral instruments for boundary waters management which are presently or potentially available to the two countries. The IJC is a major reference point for such an accounting. In this section, the intent is to set the IJC and other bilateral water institutions within the broader process of environmental diplomacy of which they are an integral and important part. Such an analysis properly begins with a brief synopsis of the climate of Canada-U.S. relationships, and the basic forces and imperatives which influence the joint management of water and other resources across what Richard Gwyn has called the 49th paradox.[24]

The Climate of U.S.-Canada Relations

As a play of word, the 49th paradox encapsulates the state of relationships between the two countries which occupy the bulk of the North American continent. It alludes both to the social and economic similarities which characterize Canada and the United States and the political and cultural imperatives which work to maintain separate destinies. Beyond these generalities, the term also implies much about Canadian perceptions of the relationship and their internal ambiguities and equivocations which stem from the fusion of independent tendencies and obligate dependencies. The nuances of the relationship from either side are captured in the general and scholarly literature on Canada-U.S. affairs[25] and all that need be repeated here are the key points.

First, it should be said that the general climate of Canada-U.S. relationships is one of generosity and goodwill, especially when considered on a global scale. This climate is reasonably stable but subject to cooling and warming trends depending on the play of events and often the personalities of those who occupy high office. At present, the good intentions of the incumbent leaders, manifested in the extravagance and bonhomie of the "Shamrock Summit"[26] between President Reagan and Prime Minister Mulroney, stands in sharp contrast to the tone of relations established under the Trudeau administration. Official imprimateurs, however, do not do justice and indeed may mask the multiple ties and everyday contacts that bind the two societies together across a relatively open border.

Within this context, secondly, certain difficulties in Canada-U.S. re-

24. R. GWYN, THE 49TH PARADOX (1985).
25. *See, e.g.*, K. CURTIS & J. CARROLL, CANADIAN-AMERICAN RELATIONS (1982).
26. March 17, 1985, Quebec, Canada.

lations are created by their evident disparities in population size and political and economic power. While Canada is preoccupied with the United States, American interest in the problems of its neighbor often tends to be secondary to other pressing international concerns. This difference in attention and awareness lies at the heart of many transboundary water and environmental disputes.

Governing Forces and Imperatives

However friendly the governments, bilateral discussions on water and environmental problems are conducted on the basis of national interests.[27] Canada and the United States will either seek to avert the damage or obtain compensation for the harmful actions of the other country/or try to maintain maximum flexibility to utilize or develop the shared resource. As Carroll[28] and Le Marquand[29] observe in this volume, the perception and pursuit of the national interest in environmental diplomacy *per se* should not be viewed negatively. It may take the form, for example, of enlightened self-interest based upon full recognition of the management interdependencies which characterize boundary waters and other common property resources.

In general terms, Canada and the United States can be said to have a shared perception of boundary water problems, although this does not always extend to solutions for them. This consensual view is especially evident at the technical level, where it is moulded by the existence of joint institutions, bilateral machinery, and informal non-governmental contacts. Both countries also have basically similar systems of environmental legislation and technologies for pollution control. Canada and the United States, of course, also differ in their perception of interests, notably with regard to the assimilative criteria for waste discharge into the Great Lakes.

At first glance, the two countries also have very different abilities to press their interests in terms of the power and resources at their command. The promotion of national interests on such matters, however, is seldom unfettered by domestic and international checks and balances. And this holds true even for a superpower traditionally averse to accepting limitations on its sovereignty. The constraints and incentives which shape the willingness of countries to cooperate on water and environmental problems include:[30]

27. *See, e.g.*, L. CALDWELL, U.S. INTERESTS AND THE GLOBAL ENVIRONMENT: CONSIDERATIONS FOR UNITED STATES POLICY (1985).

28. Carroll, *Water Resources Management as an Issue in Environmental Diplomacy*, in this volume.

29. LeMarquand, *Preconditions to Cooperation in Canada-United States Boundary Waters*, in this volume.

30. D. LEMARQUAND, INTERNATIONAL RIVERS: THE POLITICS OF COOPERATION (1976).

a) the image a nation wishes to project;
b) the attitudes held toward international law; and
c) the perceptions of precedent, linkage, and reciprocity associated with alternative courses of action.

So-called bilateral issues are, in reality, multijurisdictional questions in the context of Canada-U.S. relations. Environmental and resource questions invariably involve states and provinces, various regional and municipal governments, and an array of other public and private interest groups with some stake in the outcome of negotiations. All of which leads to a more fluid and complex process of interest definition and influence peddling than may be conventionally considered to be part of the currency of international diplomacy.[31]

The Mechanisms of Exchange

The structure and style of environmental diplomacy between Canada and the United States is multi-faceted. Most of the responsibility for maintaining stable boundary water and resource relations rests within the traditional confines of the national governments and is discharged through normal procedures of diplomacy. Because of the closeness of the two countries, the Ottawa-Washington diplomatic axis is supplemented by a complex web of cooperative activities. This includes both the formal machinery for dispute settlement and an extra-diplomatic network, both of which are of some interest to students of the field.

A brief disaggregation of the main sinews of environmental diplomacy is given below.[32]

a) *Normal Diplomatic Channels* between the two governments for confering on issues of boundary water management are well established and reasonably straightforward. Bilateral relations are usually handled through the foreign affairs bureaucracy at various political and professional levels. Ottawa-Washington consular exchanges involve considerable liaison with environment and other agencies with water and related responsibilities. This is supplemented by direct contacts among technically concerned personnel to exchange information and clarify issues. Outside the presentation of formal positions and views on boundary waters issues, which is relatively infrequent, such exchanges tend to be informal, personal, and ongoing.

b) *The Formal Machinery for Dispute Settlement* is based upon the agreements and arrangements established by Canada and the United States.

31. L. CALDWELL, INTERNATIONAL ENVIRONMENTAL POLICY: EMERGENCE AND DIMENSIONS (1984).

32. This classification was developed for organizing comparative discussion at the seminar on Environmental Diplomacy, Ennis, Ireland, Nov. 21-27, 1985. The author is indebted to Albert Utton and John Carroll for stimulus and clarification respectively.

There are eight major treaties and a multitude of less formal accords and memoranda of understanding on boundary waters matters. Noted already as being of particular importance are the Boundary Waters Treaty of 1909 and the Great Lakes Water Quality Agreements of 1972 and 1978, which respectively established the basic principles that guide the use and management of international river basins and set out standards and remedies to improve water quality in the Great Lakes system. The IJC is the major special purpose institution established to deal with these and other transfrontier questions. It performs two basic functions:

1) the Commission operates as a quasi-judicial body for approving and supervising projects and works that alter water levels at the border; and

2) the Commission conducts investigations and reports on any matter referred by the two countries, including issues which lie outside the domain of water. Under the Boundary Waters Treaty, the IJC also has a mandate to arbitrate disputes between Canada and the United States, though this clause has never been invoked.

c) *Provincial-State Accords* are the result of what Ivo Duchacek has called "subnational microdiplomacy."[33] Regional consultation and cooperation of non-central governments on water and resource matters appears to have grown considerably in recent years. Such relations are an inevitable product of two neighboring federal systems where significant responsibilities for the implementation of water policies and environmental quality standards rest with provincial and state governments. They are the result, first, of specific irritants or mutual concerns; e.g., the contentious Garrison Diversion has involved exchanges between the Manitoba and North Dakota governments lasting over a decade. More general and wide ranging discussions between non-central authorities also take place; particularly notable was the recent signing by eight states and two provinces of the accord opposing diversion of Great Lakes waters outside of the basin.[34]

d) *Interest Group Linkages* involve what may be termed para-environmental diplomacy.[35] Non-governmental organizations are considered by some commentators to be playing a progressively greater role as catalysts in the process of bilateral cooperation and dispute settlement. The form and character of this unofficial network, by its very nature, is not easy to describe. It is most evident when groups and individuals based in Canada and the United States unite in common cause to promote or

33. Duchacek, *Commentary*, 2 BORDERLINES 1, 5 (1985).

34. The Great Lakes Charter (Feb. 11, 1985). Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, Wisconsin, Ontario, and Quebec, signatories.

35. Also a term used by Duchacek, *supra* note 33. A comprehensive analysis is contained in CALDWELL, *supra* note 31.

oppose certain courses of action with respect to international rivers. Such a coalition was forged in response to the High Ross Dam on the Skagit River. There is also evidence that a broader based constituency of environmental interests which transcends traditional national loyalties is being built in North America. This trend has potentially significant implications for the official structure and style of environmental diplomacy.

The Record of the IJC

The IJC has operated for seventy-five years as the permanent body responsible for Canada-U.S. boundary waters management.[36] For much of this period, the Commission was known best for its approval and regulatory function. During the past twenty years, its investigatory role has become progressively more important, largely in response to environmental problems. No other bilateral mechanism has such a broad, independent or evolving mandate.[37]

By most accounts, too, the IJC has a reasonably solid record of accomplishment. The Commission has discharged its responsibilities better than might be realistically expected of an international body confronted by problems which are typically complex and controversial. It seems remarkable, for example, that the six member Commission, three appointments from each country, has seldom divided along national lines during the course of its work. This pattern is symptomatic of the impartiality of the IJC in pursuing the common interest. Allied to this is a well deserved reputation for objectivity, for basing decisions and recommendations on sound scientific and technical data.[38] When combined, these characteristics of impartiality and objectivity illustrate why the work of the IJC is authoritative and acceptable to both governments in a way that strictly national agencies could not hope to achieve. The Commission, moreover, has been able to undertake its supervisory and investigatory roles with a relatively small standing bureaucracy[39] through the judicious deployment of task forces staffed largely by employees of the federal, provincial, and state governments involved in the questions under con-

36. THE INTERNATIONAL JOINT COMMISSION SEVENTY YEARS ON (R. Spencer, J. Kirton & K. Nossal eds. 1981).

37. Jordan, *The International Joint Commission and Canada-United States Boundary Relations*, in CANADIAN PERSPECTIVES ON INTERNATIONAL LAW AND ORGANIZATION 525 (R. MacDonald et al eds. 1974).

38. Scientific uncertainty remains a major constraint on resolving complex problems, such as pollution of the Great Lakes. The study of this problem by the IJC is analyzed in the context of the political process of negotiating management agreements in Munton, *Great Lakes Water Quality: A Study in Environmental Politics and Diplomacy*, in RESOURCES AND ENVIRONMENT, *supra* note 2, at 153-78.

39. Thompson, *Preventing Disputes Along the International Boundary*, in INSTITUTIONAL ARRANGEMENTS FOR WATER MANAGEMENT IN THE MACKENZIE RIVER BASIN 98-99 (B. Sadler ed. 1983).

sideration. Of equal importance, and less commonly realized, are the initiatives undertaken by the IJC in the use of hearings, workshops, and other consultative devices for involving the various publics affected by or interested in the issues at stake.[40]

On balance, the most striking characteristic of the IJC is its capability to adapt to emerging issues and take on added responsibilities. This is especially evident with respect to the unfolding problems of water use and quality in the Great Lakes. As hinted earlier, these are part of a broader range of resource allocation and impact issues that have long-term implications for the integrity of the entire ecosystem. By definition, they demand an integrated, regional approach to environmental management.[41] As Dworsky's[42] contribution to this volume indicates, the IJC has both recognized this necessity and begun to spell out the policy, institutional, and scientific requirement for such a strategy. In many respects the recent framework drafted for the long-range bilateral management of the Great Lakes Basin appears to be in advance of conventional practice within the two countries.[43]

The fundamental issue thus becomes whether either country is undertaking sound water and environmental management. It is a moot point whether the IJC can act as a catalyst for domestic improvements in Canadian and U.S. practice. For obvious reasons, international agencies usually tend to represent the lowest common denominator rather than the highest common factor of the state of the art of resource management. And although the IJC is not a run of the mill model, this point must be carefully borne in mind when criticisms of the institution and prescriptions for its reform are made.

Similar considerations apply to the role of the IJC in dealing with upstream-downstream or unidirectional disputes. Le Marquand and Scott argue that these are now being treated like "common pool" issues, i.e., more as problems to cooperatively manage than as disputes to settle.[44] The main function of the IJC is to establish the facts, and to fill in the details of agreements implicitly reached. Such a role categorization, though

40. Sinclair, *The Public Hearing as a Participatory Device: An Evaluation of the IJC Experience*, in PUBLIC PARTICIPATION IN PLANNING 105-22 (W. Sewell & J. Coppock eds. 1977); Bonner, *The International Joint Commission and Public Participation*, in 2 INVOLVEMENT AND ENVIRONMENT 330-39 (B. Sadler ed. 1979); and Grima, *The Utilization of Public Input in Water Quality Management: A Case Study and Discussion*, in WATER PROBLEMS AND POLICIES 171-84 (W. Sewell & M. Barker eds. 1982).

41. Cornford, O'Riordan & Sadler, *Planning, Assessment, and Implementation: A Strategy for Integration*, in ENVIRONMENTAL PROTECTION AND RESOURCE DEVELOPMENT: CONVERGENCE FOR TODAY 47-75 (B. Sadler ed. 1985).

42. Dworsky, *The Great Lakes 1955-1985*, in this volume.

43. Sadler, *supra* note 4; H. FOSTER & W. SEWELL, WATER: THE EMERGING CRISIS IN CANADA (1981).

44. Le Marquand & Scott, *supra* note 2, at 100.

substantially correct, does not do full justice to the potential of the IJC as a mechanism for conflict resolution. The study by Kirn and Marts[45] in this volume, for example, underlines the initiatives which were taken by the IJC to help settle the Skagit River-High Ross Dam issue. In the Garrison Diversion Project, the involvement of the Commission was the critical event in bringing the controversy to a point of tentative agreement. The reason why the matter eluded conclusive settlement, according to Caldwell's anaysis,[46] was the relatively late stage at which it was referred to the IJC. Had the project been reviewed earlier, a long and costly international wrangle might have been avoided, though this also presupposes agreed criteria for project evaluation.

The main burden of criticism placed on the IJC is not directed at the institution at all but at the way it is used or, more accurately, not used by the two governments. It is a case of too little too late. As a number of commentators have noted, transboundary water and environmental problems are referred to the IJC only where the national interests of Canada and the United States basically coincide. Otherwise, the question is consigned to diplomatic channels where it can easily become stalled. The result is a fairly widespread perception, expressed most recently in Canada by the Commission of Inquiry on Federal Water Policy,[47] that the full potential of the IJC has not been realized.

FUTURE DIRECTIONS

Much less of a consensus exists on what can or even should be done to correct the above deficiencies. Acid rain is often cited as the contemporary litmus test of the reluctance of the two governments to refer difficult and contentious problems to the IJC. It is open to question, however, whether the IJC can be productively involved in this issue at the present stage. The controversy over acid rain may be seen as a reflection of a larger failure in Canadian-American environmental relations, that of an *ad hoc* approach to bilateral problem solving. Regional transboundary issues are now beginning to overshadow site and project specific issues and demand new or strengthened institutional arrangements.

The answer, according to some commentators, lies in a greater formalization of environmental diplomacy based upon shared principles and guiding rules.[48] It is within this context that the future role of the IJC

45. Kirn & Marts, *supra* note 22.

46. Caldwell, *supra* note 20.

47. P. Pearse, F. Bertrand & J. MacLaren, Currents of Change 79-80. (Final Report, Inquiry on Federal Water Policy) (1985).

48. Carroll & Mack, *On Living Together in North America: Canada, The United States and International Environmental Relations*, 12 DENVER J. INT'L L. & POL'Y. 35-50 (1982-83).

and other existing or potential bilateral instruments for water and resource management may be best examined. Under the existing system, for example, the IJC and the Boundary Waters Treaty and supplementary agreements under which it operates stand as important and particular exceptions to the general *ad hoc* approach. These institutional arrangements represent the critical nucleus from which more formal procedures and mechanisms for environmental diplomacy can be designed and implemented. Such a change has both normative and empirical aspects; namely the specification of what seems desirable and what is likely.

Rewriting the Rules of the Game

The purpose here is to delineate an approach to reform, one leading towards the cooperative management of boundary waters and the environmental commons. A policy and institutional framework for this purpose can be best developed through a linked series of specific changes which form part of a longer-term strategy for replacing the present regime of *ad hoc* negotiations and accommodations with an overall system for conflict settlement. The proposed approach goes beyond the margins of the *status quo* within which the international diplomats and political realists habitually operate. On the other hand, for example, it does not necessarily extend to the establishment of an arbitral tribunal with binding authority to enforce decisions on any environmental issue brought before it, as proposed by Carroll and Mack.[49] What is envisaged instead is a more flexible form of "umbrella" understanding in which broad principles and obligations are stated in general terms, existing agreements and instruments are incorporated and related, and room is left for their elaboration and the adoption of new institutional arrangements including specific and binding rules if necessary and once consensus is forged.[50] Such an understanding, to have more than symbolic value, although this is also important in its own right, must include a commitment to action on key issues.

A basic premise of the approach is that the design of institutions should build upon existing arrangements to the extent dictated by problem characteristics. For the present generation of water related issues, protocols to the existing Boundary Waters Treaty could provide a sufficient basis for their resolution. It is evident that the existing rules and procedures require modification and extension to deal effectively and unambiguously with problems of water quality and pollution damage. No serious reform

49. *Id.*

50. An elaboration of this model can be found in P. Birnie, The Role of Law in Solving Certain Environmental Problems (paper presented at seminar on Environmental Diplomacy, Ennis, Ireland, Nov. 21-27, 1985).

will be possible until both countries can agree on common environmental standards. While Canada and the United States endorse different approaches, there has been steady progress in the general area as exemplified by the Great Lakes Water Quality Agreements. The release of recent reports on the condition of the system should serve as a spur to further action.

The quasi-judicial and investigatory roles of the IJC also need to be extended and consolidated in order to smooth the path towards a more expeditious process of settling boundary waters disputes. A case can be made, first, for empowering the Commission with greater authority to enforce the provisions of the Boundary Waters Treaty and supplementary agreements through its approval and supervisory responsibilities. This should occur as an integral part of the negotiation of protocols to the Treaty. Of great importance, second, is the need to strengthen the fact-finding function of the IJC, perhaps in conjunction with formalizing its advisory role.

A particular requirement is to find levers that allow the IJC to gain a timely entry into emerging conflicts. Caldwell, in his review of the Garrison Diversion controversy, has stressed the potential value of pre-audits of major water schemes undertaken prior to project authorization.[51] Such a preliminary scientific assessment, conducted openly, would be generally consistent with the scoping provisions of the U.S. National Environmental Policy Act and with procedures established for independent panel review under the federal Environmental Assessment and Review Process in Canada. It could be jointly formulated and applied under the auspices of the IJC for the early clarification of the issues and identification of the potential consequences of proposed courses of action.

This type of mechanism could help lay the groundwork for a more orderly and positive approach to bilateral problem solving.[52] It implies, *inter alia*, further developing the capability of the IJC in the area of assessment and monitoring of transboundary environmental impacts. A more radical and imaginative step might involve a review of the options for multi-party dispute settlement, as a complement or as an adjunct to the formalization of scientific investigations by the IJC. Such an innovation would be in line with the established tradition of public consultation by the IJC and capitalize on existing trends towards environmental mediation, negotiation, and consensus-seeking prevalent in the United States and, to a lesser degree, in Canada.[53] It still remains unclear whether this

51. Caldwell, *supra* note 20, at 858.

52. The linkage of this mechanism to other reforms in EPA presently under active consideration in Canada is outlined in Sadler, *Impact Assessment in Transition: A Framework for Redeployment* in INTEGRATED APPROACHES TO RESOURCE MANAGEMENT Ch. 10 (R. Lang & A. Armour eds. 1986).

53. G. BINGHAM, RESOLVING ENVIRONMENTAL DISPUTES: A DECADE OF EXPERIENCE (1985); Sadler, *Environmental Conflict Resolution in Canada*, 18 RESOLVE (1986).

experience can be transposed to the bilateral level, though there are precedents in granting non-government environmental organizations observer status in international negotiations.

Also debatable is the adaptability of conventional institutions to deal with the next generation of Canadian-U.S. environmental problems. These are characterized by complex and dispersed linkages of water, air, and territorial impacts in which cause and effect are difficult to disentangle. It follows that a second generation of scientific, policy, and institutional response may be required. Recommended options for a bilateral approach to acid rain, for example, range from reference to the IJC as presently constituted to the establishment of an Air Quality Commission[54] or an independent mediator.[55] What seems widely agreed is that the issue has reached crisis proportions, may seriously damage Canada-U.S. relations, and requires urgent remedial action.

The long-term restructuring of Canada-U.S. water relations can take a number of forms. While the specifics are beyond the compass of this article, it may be helpful to outline a couple of general principles which seem worthy of consideration. First, there seems value in encouraging the plurality of mechanisms which are associated with the bilateral conduct of environmental diplomacy. No single institution, however strengthened, likely can deal effectively with the interconnected range of issues which are emerging within this area. The practice of para-diplomacy, involving non-government organizations, shows particular promise as a catalyst to official action. So, secondly, the greater formalization of agreements and institutions could be usefully complemented by more informal arrangements which allow a greater operational role for interest groups, and indeed non-central governments.

Scenarios of Change

The constraints on the kinds of changes recommended above are well known. They have to do with bureaucratic and political resistance to the implied erosion in the responsibilities, objectives, and mandates of existing agencies. As noted previously, the degree to which change is encouraged or resisted also depends upon the political climate of bilateral relations and American and Canadian perceptions of how their national interests converge or diverge.

With these points in mind, three scenarios of change in boundary waters management are outlined below:

a) *incremental cooperativism*, essentially a continuation of present trends with due allowance for temporary hiccups;

54. J. CARROLL, ACID RAIN: AN ISSUE IN CANADIAN-AMERICAN RELATIONS, ch. 7 (1982).

55. Barnes, *The Pacific Way: A Proposal for International Environmental Conciliation*, 5 ENVTL. IMPACT ASSESSMENT REV. 111-16 (1985).

b) *retrenched nationalism*, occurring as a result of Canadianization tendencies of the liberal left or isolationist tendencies of the Republican right in the United States; or

c) *building continentalism*, through the successful conclusion and implementation of a Free Trade Pact between the two nations.

Only the latter scenario might lead to a major shift in the trajectory of Canada-U.S. water and environmental relations. The emergence of continentalism and its application to natural resources is not as impossible as it once seemed. By all accounts, water is to be included on the agenda of bilateral negotiations on free trade which are now pending. Further, there is even speculation in the Canadian news media that major river diversion schemes, such as the Grand Canal,[56] may be entertained. However, water export to the United States, except via small scale, tanker shipments, remains a highly charged subject in Canada.[57]

The rivers and lakes of Canada occupy a unique niche in the relationship of society and environment. "Lifeblood of the nation," Hugh MacLennan called them.[58] So they are, and in a symbolic as well as an economic sense. Water is more than just a valuable natural resource; it is a major artery in Canadian's image of the landscape and sense of national identity. And in the final analysis, this deeprooted perception may represent a fundamental anchor to scenarios of change in boundary waters management.

56. Kierans, *The Grand Recycling and Northern Development (GRAND) Canal*, in PROCEEDINGS: ONTARIO WATER RESOURCES CONFERENCE 24 (1984).

57. Most of the intervenors at the public hearings held by the Inquiry on Federal Water Policy were vigorously opposed to the idea. The commissioners, in their report, advocate a cautious approach to water export policy. They recommend the Canadian government make a political determination on whether such proposals will be entertained and under what conditions. Pearse, Bertrand & MacLaren, *supra* note 29, at 130-32.

58. H. MACLENNAN, RIVERS OF CANADA (1974).