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## Emerging Boundary Environmental Challenges and Institutional Issues: Canada and the United States

Circumstances characterizing the two international boundaries of the United States, north and south, have differed in three significant ways: cultural, historical, and geographical. These factors have influenced how transboundary regional issues have been perceived and evaluated. Institutional responses to the environmental challenges of each region have been shaped and limited by these factors and by subsets of these factors inherent in the relationships of each region to their broader national contexts. Prominent among these are factors of demography, or populations, and of social structures.

Regions are variously defined depending upon the criteria selected. For our purposes here, transboundary regions are considered as bioregions—that is, areas of general ecological similarity that frequently coincide with economic similarities, e.g., the maritime areas of New England and Canada, the Great Lakes, the Great Plains, and the Pacific Northwest. Between the United States and Mexico, the Rio Grande Valley and the Sonora Desert are identifiable transboundary regions.

Policy decisions and institutional arrangements for each transboundary region are often affected by national political considerations, extraneous to the regions, and by problems specific to each region. The national governments, parties to agreements pertaining to the environmental problems of each region, are preoccupied with a broad diversity of issues among which regional transboundary affairs are only randomly high on political agendas. Concern for rights of national sovereignty, prerogatives of state and provincial governments, and bureaucratic interests of federal agencies have been limiting factors for transboundary institutions. The International Boundary and Water Commission (IBWC) and the International Joint Commission (IJC) as a matter of practical consideration have been given responsibilities for review and negotiation of transboundary environmental issues, but do not have political or policing (i.e., enforcement) authority. Each boundary region is divided between two federal administrative systems and their subdivisions. No comprehensive

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or political authority presides over the environmental problems of the Great Lakes Basin or the Rio Grande Valley. In less complex times binational oversight of regional problems presented few serious difficulties. But as transboundary transactions have escalated, particularly in the Great Lakes region, nongovernmental environmental organizations are beginning to urge consideration of new forms of coherent, responsive organization and policymaking, which means new forms of governance.

A consequence of these circumstances is that the national governments, having not given attention to the problems of the regions commensurate with their intrinsic environmental importance, tend now to be resistant to moves toward alternative governance. The governments are not prepared to acquiesce in the resolution of regional problems by politically autonomous institutions. Particular policy issues continue to be relegated to those national departments and bureaus that have national responsibility for the types of issues involved. National agencies characteristically have interests both broader and different from transboundary issues *per se*. Thus binational management of regional resources tends to be issue-specific, uncoordinated, and subordinate to an agency's bureaucratic interests. The national agencies, moreover, are invariably jealous of their jurisdictions. And so the question arises, will these disparate and largely ad hoc institutional arrangements be adequate to deal with the challenges of the future? Perhaps not, but the status and structure of more effective alternatives are not clear, nor is the timing of probable change forcing events safely predictable.

## HOW THE REGIONS DIFFER

In comparing the regions and the situations confronting their boundary commissions, three differences have significant bearing upon the suitability of institutional arrangements for environmental policy and management.

The first is the situation of the Great Lakes Basin Ecosystem as the unique and most significant environmental entity on the Canadian-American boundary, and the most demanding responsibility of the International Joint Commission. The Great Lakes have no counterpart in the Mexican-American boundary region. They present problems comparable to those encountered in other international regional bodies of water, notably the Baltic, Black, and Mediterranean seas. The lakes are regional seas—hydrologically, ecologically, and economically interconnected, fractionally managed, and frequently mismanaged.

Although the jurisdiction of the IJC extends along the 5,000-mile length of the Canadian-American international boundary, its role in relation to the lakes is more comprehensive, more particularized, and espe-

cially more complex. It shares responsibility for the lakes with other binational bodies, notably the Great Lakes Fisheries Commission and the Governors and Premiers of the Great Lakes States and Provinces.<sup>1</sup> Of greater significance for institutional responsibilities in the basin are the roles of the administrative agencies of the two federal governments and of the states and provinces. If multi-jurisdictional coordination is necessary to the basinwide ecosystem approach declared by the Great Lakes Water Quality Agreements, the task of obtaining it is truly formidable. Beyond the lakes, issues affecting transboundary waters come and go, but the lakes remain a primary and continuing concern of the International Joint Commission; no other agency has so comprehensive a responsibility for this protection. Yet the responsibility has been treated with caution rather than with foresight, and at times has been politically compromised.

The second difference is cultural, evident in the large and active binational nongovernmental organized environmental citizen concern in the Great Lakes region. Linguistic and cultural differences pose no serious barrier to transboundary cooperation. There is no legacy of mistrust comparable to that between Mexicans and Anglos. The nongovernmental organizations (NGOs), many of which are binational in membership, develop their own agendas and communication networks.<sup>2</sup> They undertake to inform a larger public regarding Great Lakes issues and then cooperatively to lobby their respective governments for reform. They have generally understood the limitations of the IJC, but have hoped through it to send messages to the national authorities which many of their members see as evasive and 'foot-dragging' on Great Lakes issues. But NGO leaders are beginning to question whether politically appointed commissioners are likely to take positions at variance with the governments that appointed them. At the 1991 IJC biennial meeting on the Great Lakes Water Quality Agreement held at Traverse City, Michigan, eleven United States and Canadian NGOs made formal presentations and issued press releases critical of the IJC and the Parties in their failure to implement declared objectives; for example, Great Lakes United put out a pamphlet

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1. M. Donahue, *Institutional Arrangements for Great Lakes Management*, in *Perspectives on Ecosystem Management for the Great Lakes* 115-39 (L. Caldwell ed., 1988).

2. Publications on environmental NCOs and public participation in governmental policy-making are extensive. Among those especially pertinent to the Great Lakes are S. Lerner, *Environmental Constituency-Building; Local Initiatives and Voluntary Stewardship*, 13:3 *Alternatives* 55-60 (Sept.-Oct. 1986); International Joint Comm'n, Great Lakes Science Advisory Bd., *Public Participation and Remedial Action Plans: An Overview of Approaches and Issues Arising from RAP Coordinator's Forums* 33 (1990); *Decisions for the Great Lakes* (A. Misener & G. Daniel eds., 1982); *New Groups Signal Growing Great Lakes Regional Identity*, 2 *Great Lakes Rep.* (Mar.-Apr. 1985) (pages unnumbered); and *Public Involvement: Planning and Implementing Public Involvement Programs* (1988). Of particular importance is J. Manno's *Advocacy and Diplomacy: Non-Governmental Organizations and the Canada-U.S. Great Lakes Water Quality Agreement*, Paper Presented at a Seminar on Int'l NGOs-The Great Lakes and Beyond (Oct. 1991) (forthcoming).

entitled *Broken Agreement: The Failure of the United States and Canada to Implement the Great Lakes Water Quality Agreement*.

The third difference is water "surplus" throughout most of the Canadian-American boundary region, and water scarcity along the Mexican boundary. Indeed water as a resource is a unifying factor in both regions. In the Great Lakes region, opposition to diversion of its waters for agricultural and urbanization in the western and southwestern states inspired the 1985 Charter for the Great Lakes by Governors and Premiers of the Great Lakes States and Provinces. When present trends are projected into the future, it seems highly probable that water as a limiting factor will be a source of political contention. If America's fixation on growth continues and diversion of Great Lakes water is obstructed, the ghost of NAWAPA (North American Water and Power Alliance) may rise reincarnate, assuming that the energy to activate it can be found.<sup>3</sup> This colossal scheme to move vast quantities of water from the Canadian Rockies to water-deficit United States would create a transboundary environmental problem of truly continental proportions. Its political-economic implications would be no less portentous. If entertained seriously in the United States it would possibly be the biggest single challenge yet to the IJC, especially were the project to arouse major opposition in Canada.

## IMMANENT CHALLENGE

Because of the geopolitical circumstances of the Canadian-American borderlands, the institutional challenges of the Great Lakes are distinctive and distinguishable from all other areas. Of the emerging transboundary environmental challenges in North America, those of the Great Lakes are far greater, more complex, and of continuing duration. The focus of this essay will therefore be restricted to the institutional issues of the Great Lakes Basin and will not extend to environmental challenges along the rest of the international boundary. These challenges are important ecologically, economically, and politically, but they do not appear to present institutional problems comparable to those of the Great Lakes Basin, and existing institutional arrangements under the supervision of the IJC seem generally adequate to the need.

Two periodicities confront Great Lakes decisionmakers: short-term and long-term. Short-term crises (e.g., chemical spills) may require one-time-only attention by particular agencies (e.g., Coast Guard and United States Corps of Engineers). Meeting long-term or immanent challenges could require the coordinated effort of a large number of public

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3. NAWAPA: *A Continental Water System—Symposium*, 23 Bull. of the Atomic Scientists 8-27 (Sept. 1967); R. Lewis, *NAWAPA: Water for the Year 2000*, 21 Bull. of the Atomic Scientist: 9-11 (May 1965).

agencies (e.g., elimination of toxic substances, assessing trends affecting water quality, or restoration of damaged ecosystems). Short-term crises, however, if not addressed in a timely and effective manner, may become long-term problems. Invasions by exotic species (e.g., sea lampreys, alewives, and zebra mussels) are cases in point. Short-term crises may occur paradoxically because long-term or continuing challenges have not been anticipated or effectively addressed. For example, oil or chemical spills may occur because the governments have failed to establish adequate preventive controls over potentially hazardous shipping practices.

A "challenge" in this context is a situation or trend having adverse effects or consequences for the quality of life and to which preventive or remedial response is possible. The challenge is to the persons affected, and to those responsible for response, and may include the whole society in the region. A whole society cannot be called to account, so it is necessary to fix accountability more precisely. But the present fractionated jurisdiction enables governments to evade the consequences of institutional irresponsibility.

In some cases challenges may be localized geographically and particularized by issue, by activity, or by people affected. But whatever the incidence of the challenge, the problems encountered in a large and complex region such as the Great Lakes Basin eventually involve public agencies having jurisdiction and responsibility in relation to one or more aspects of the challenge. Few if any of the challenges to the lakes can be met solely by private means, although nongovernmental volunteer efforts may help greatly to overcome difficulties that do not require legal remedies. NCOs have been playing increasingly important roles in identifying emerging challenges, in monitoring the effectiveness of governmental and private responses, in pressuring the sometimes reluctant public agencies to action, and in preserving and protecting natural areas.

As previously noted, the one public agency with broadly inclusive responsibility for the state of the lakes is the International Joint Commission.<sup>4</sup> Established pursuant to the Boundary Waters Treaty of 1909,<sup>5</sup> the functions and political significance of the Commission have grown in response to the challenges of circumstances and events, until today it is possible that popular expectations concerning its role as an agent of public policy may exceed its legal and political mandate. The two federal governments (the "Parties" in official nomenclature) established the IJC as an agent of limited jurisdiction to supervise the observance of obligations assumed under the Boundary Waters Treaty. Three commissioners respectively from Canada and the United States are appointed politically to rep-

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4. R. Spencer et. al., eds. *The International Joint Commission—Seventy Years On*. (1981); J. Carroll, *Environmental Diplomacy: An Examination and Prospective of Canadian-U.S. Transboundary Environmental Relations*, (1983); B. Sadler. *The International Joint Commission: Past and Future*, 4 *Transboundary Resources Rep.*: 1-2 (Winter 1990).

5. 36 Stat. 2448 (1909), reprinted in Caldwell, supra note 1, at 345-54 app. a.

resent their governments, although in practice, the Commission has customarily acted on the merits of the issues before it on a nonpartisan basis.

Of the challenges confronting the Commission, the most complex and comprehensive are those officially recognized and defined by the Water Quality Agreements of 1972, 1978, and Protocol of 1987.<sup>6</sup> Identification and definition of these challenges is provided primarily in the Great Lakes Water Quality Agreement of 1978. But there is a paradox in the terms of this Agreement which, in itself, is a challenge to the policies of the Parties, and a jurisdictional problem for the IJC. The terms of the 1978 Agreement and 1987 Protocol faithfully reflect the "split level" commitment of the Parties toward meeting the challenges of the lakes. Water quality issues fit the traditional IJC adjudicatory functions. A basinwide ecosystem approach to lake management practices and functions is not easily accommodated by the present binational arrangements and is resisted operationally even though endorsed rhetorically by the IJC.

As a general proposition the 1978 Agreement identifies its scope as "the Great Lakes Basin Ecosystem." Article I defines this term to mean "the interacting components of air, land, water and living organisms, including humans, within the drainage basin of the St. Lawrence River at or upstream from the point at which this river becomes the international boundary between Canada and the United States." This holistic delineation of the environmental parameters of policy is both reiterated and implied in the Protocol of 1987. For example, Annex 2 states that "Remedial Action Plans and Lakewide Management Plans shall employ a systematic and comprehensive ecosystem approach to restoring and protecting beneficial uses in Areas of Concern or in open lake waters." This comprehensive approach, moreover, was endorsed in the 1985 Charter for the Great Lakes adopted jointly on 11 February 1985 by the Governors and Premiers of the Great Lakes States and Provinces. Principle I of the Charter "Integrity of the Great Lakes Basin" declared that:

The planning and management of the water resources of the Great Lakes Basin should recognize and be founded upon the integrity of the natural resources and ecosystem of the Great Lakes Basin. The water resources of the Basin transcend political boundaries within the Basin, and should be recognized and treated as a single hydrologic system. In managing the Great Lakes Basin waters, the natural resources and ecosystem of the Basin should be considered as a unified whole.<sup>7</sup>

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6. Int'l Joint Comm'n (1989), Revised Great Lakes Quality Agreement of 1978, amended by Protocol of Nov. 18, 1987, art. I(g), at 5. See also excerpts from 1978 Agreement in Caldwell, *supra* note 1, at 359-61, app. B.

7. *The Great Lakes Charter*, reprinted in Caldwell, *supra* note 1, at app. C.

However in moving from the general ecosystem approach to operational specifics, the 1978 Agreement and 1987 Protocol reveal a common defect of the virtues strongly marked in the technological societies of the twentieth century. The economic and technological strength of Canadian and American societies lies primarily in their ability to apply means to the solution of specific problems, and only very secondarily to do so within the context of comprehensively considered ends. Of course an abundance of cheap, accessible natural resources has been an essential condition for the economic and technological success of the two countries. But historically the prospect of inexhaustible resources and endless frontiers has diverted attention from the long-term consequences of a cornucopian approach to nature's bounty.

People tend to do what they do best and to focus on present problems with relatively little consideration for the long-term implications of their preferred solutions. Priorities tend to respond to the political pressures of the day and to reflect the short-term biases especially characteristic of the present state of democratic politics. In consequence, science and technology are mobilized primarily to identify, measure and evaluate specific hazards to environmental quality. Thus time and resources are allocated to achieve tangible results in measurement of mass balances of contaminants in the lakes, and to ascertain thresholds of significance, in preference to the investigation of ways of eliminating the contaminants at their source. Virtual elimination of toxicants has been a declared top priority of the International Joint Commission and the Parties. But the route toward realizing this priority has been indirect, protracted, and complicated by legal provisions regarding the burden of proof of culpability for contamination.

The tendency to do what we do best, and also to avoid politically inconvenient controversy, pushes the policy process toward the panacea of "the technological fix." The less a plausible policy intrudes upon the interests of individuals and groups, especially their financial interests, the more attractive it is politically. Democratic policymaking tends to favor compromise solutions. In matters of production, consumption, and disposal of residuals, control, selective and graduated, is generally preferred to outright prohibition or to mandatory use of benign alternatives at higher monetary cost. Arguments over how clean is clean, how pure is pure, and what levels of exposure are tolerable characterize debates over control. Issues of acceptable risk arise and reflect popular assessments of hazards that may be disproportionate to the probabilities.<sup>8</sup> Attitudes may be influenced by the extent to which a hazard might be evaded. For exam-

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8. On risk see EPA, *Reducing Risk Setting Priorities and Strategies for Environmental Protection* (Report of the Science Advisory Bd, Relative Risk Reduction Comm.); C. Gillette & J. Krier, *Risk, Courts, and Agencies* 138 U. Penn. L. Rev. 1027 (1990) (heavily documented with many references to analysis of risk).



ple, the contamination of fish in the Great Lakes poses no direct hazard to anyone who does not eat the fish; the risk is voluntary. But atmospheric fall-out, acidic or carcinogenic, cannot be evaded by persons residing in its path; the risk is involuntary.

Public response to immanent challenges is further deflected or diminished by absence of a consensual vision of a preferred future. In contemporary open societies there is an abundance of popular concern over possible futures. That concern, however, tends to resemble the outlook of the Kiplinger Washington Letter *Changing Times*, which forecasts "What's Ahead?" or John Naisbitt's popular *Megatrends*.<sup>9</sup> These and similar publications purport to assist adaptation to an unfolding but partially predictable future. It is difficult and may be impossible for a populous and diversified society to agree on a common future or even to plan toward relatively limited ends for which there are no obvious or generally acceptable means. Among conservative and libertarian elements of the population in Canada and the United States, there is strong aversion to planning at the societal level. The shaping of an environmental future through public planning, from their viewpoint, is a very bad idea, and in any case beyond human rational capability. The "practical" approach to problems of the lakes is issue by issue as they emerge—no grand, basinwide plans that, in any case, are regarded as not practical or feasible.

## INSTITUTIONAL IMPLICATIONS

Future-directed incremental planning is, however, an accepted practice in governmental as well as in private sectors. Reconciliation and coordination of policy and planning is another matter, especially in societies in which competition and contest are widely accepted behaviors. The competitive mind-set tends to view issues fractionally and to focus on contestants, on winners or losers, rather than on probable outcomes and implications of the contest. This linear approach to interactive multiplex relationships is ineffective when applied to large, complex, long-term problems. It is poorly adapted to policymaking on the scale of the Great Lakes basinwide ecosystem.

To regard these observations merely as abstract philosophical speculation would be to miss the point that they characterize the present societal foundation for whatever policies or procedures are adopted to meet the challenges of the future for the Great Lakes, and indeed for all of the transboundary waters and their more inclusive ecosystems. But evidence confirmed independently by numbers of opinion analysts indicates a progressive shift of public opinion in nearly all societies of advanced

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9. J. Naisbitt, *Megatrends: Ten New Directions Transforming Our Lives* (1982); J. Naisbitt with P. Abusdene, *Megatrends 2000: Ten New Directions for the 1990s* (1990).

techno-scientific capability toward more ecologically informed policies and toward a greater weighing for environmental quality in relation to economic interests.<sup>10</sup> This attitudinal shift toward what has been called the New Environmental Paradigm (NEP) has been evident in the growth of membership in environmental organizations in the United States and Canada. It has also been evident in vigorous popular representation at the public meetings of the IJC, notably at its reports to the public on implementation of the Great Lakes Water Quality Agreements held in Toledo, Ohio, November 1987, in Hamilton, Ontario, October 1989, and in Traverse City, Michigan, September 1991.<sup>11</sup> Paradoxically, these representations were followed by increased official emphasis on the role of the states and provinces and the Parties. From one viewpoint this might appear to be a positive response; but from another it could be seen as counteracting regional initiatives by strengthening the hands of national agencies that hitherto had been less than vigorous in leading toward water quality and basin-wide ecosystem objectives.

The fundamental paradox of binational policy for the Canadian-American transboundary environmental issues is that the goals of policy to which the Parties to the Great Lakes Water Quality Agreements have expressly committed themselves are achievable only through a degree of coordinated action that existing institutional arrangements are unlikely to provide. Moreover, as popular impatience for results and acceptance of the need for a more coordinative and comprehensive approach to policy grow, the Parties appear to be moving in a retrograde direction. The 1987 Protocol to the 1978 Water Quality Agreement enhanced the role of the states, the provinces, and the Parties in the implementation of the Agreement. Subsequent decisions by the Parties have continued this trend.<sup>12</sup> If the official role of the IJC has not been significantly diminished by this tendency, neither has it generally been expanded to respond to growing public expectations. If the Parties, for a number of political reasons, are unobtrusively trying to roll back the IJC to its relatively obscure status of fifty years ago, neither the commissioners nor those speaking for the Parties would be likely to admit it.

The internal politics of Great Lakes management have not been apparent to the concerned public; its motivators and prime movers officiate in Ottawa and Washington and do not appear in open meetings to con-

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10. R. Inglehart, *Culture Shift in Advanced Industrial Society* (1990); L. Milbrath, *Environmentalists: Vanguard for a New Society* (1984).

11. Int'l Joint Comm'n, *Fifth Biennial Report on Great Lakes Water Quality* pts. I & II, (1989/1990); and G. Thornburn, *1991 Biennial Meeting Brings Diverse Interests Together Focus on International Joint Commission Activities 1* (Nov.-Dec. 1991).

12. See *infra* note 13. Also provisions of the Clean Air Act amendments of November 15, 1990, Public Law 101-549, Atmospheric Deposition to Great Lakes and Coastal Waters, 104 Stat. 2556, 5374-5376, and amendment to the Federal Water Pollution Control Act of November 16, 1990, Public Law 101-596. Great Lakes Critical Programs Act of 1990, 104 Stat. 3001.

firm, deny, or explain national policies. The preference for partially decentralized implementation through duly constituted conventional units of government has been perceived by some observers as a bias of relatively conservative administrations in Ottawa and Washington against centralized regional governance and institutional innovation. This bias, to the extent that it exists, is congenial to the line agencies, especially in the United States. The United States Army Corps of Engineers, the Environmental Protection Agency, the Coast Guard, the National Oceanic and Atmospheric Administration, the Departments of Agriculture and Interior, and the Department of State would hardly act in character if they welcomed the growth of a coordinative authority for the Great Lakes to which their own planning and decisionmaking might be subordinated.<sup>13</sup>

The sovereignty argument also plays to a not inconsiderable audience in both Canada and the United States. As often happens elsewhere and on other issues, the sovereignty issue, like the "we need more research" syndrome, is often an alibi for inaction. Conservative apprehension might also be aroused by the prospect of substantial increases in mandatory public spending should a determined effort be made to achieve water quality goals at an early date. Liberal critics might resist budget allocations that could conceivably preempt funds otherwise available for favored social programs.

We have today a large body of statutory laws, administrative regulations, programmatic missions and public policies, general and specific, pertaining to the Great Lakes. If this body of legislation has indeed been codified, clarified as to status and intent, and so far as possible reconciled for consistency, its existence remains unaccountably obscure. With this information as a practical matter unavailable, one can do little more than guess at the adequacy of law and administrative structure to safeguard the lakes. Without this information in generally comprehensible form, it would be unreasonably difficult for the public to know what institutional configuration might best protect the integrity and renewability of the lakes.

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13. The United States General Accounting Office has issued several reviews of U.S. implementation of the Water Quality Agreements. For its findings, somewhat mixed, see: Report to the Congress of the United States: A More Comprehensive Approach Is Needed to Clean Up the Great Lakes (CED-63, May 21, 1982); Report to the Secretary of State: International Joint Commission Water Quality Activities Need Greater U.S. Government Support and Involvement (GAO/CED 82-97, June 23, 1982), and Report to the Chairman, Committee on Governmental Affairs, U.S. Senate: Need to Reassess U.S. Participation in the International Joint Commission (GAO/NSIAD-89-164). See also United States Environmental Protection Agency, U.S. Progress in Implementing the Great Lakes Water Quality Agreement: Annual Report to Congress, 1988. Chicago, Illinois: EPA Great Lakes National Program Office; (attention given to interagency coordination).

## INTERAGENCY CONSEQUENCES

One consequence of official ambiguity on transboundary environmental policies has been the tacit devolution of decisionmaking to subnational units of government—notably to the States and Provinces. One factor in this ambiguity is inherent in the Water Quality Agreements themselves, which define their scope to be the Great Lakes Basin ecosystem including “. . . the interacting components of air, land, water and living organisms including man . . . but which in operational detail are concerned almost wholly with water.” Air pollution has long been a point of contention along the international border, and the reluctance of the United States to deal with the acid rain issue led to a number of State-Province agreements in default of timely and effective federal action.<sup>14</sup>

Present institutional arrangements and growing public demands for action on priorities for the Great Lakes could easily accentuate the “turf” rivalries of the federal agencies in Canada and the United States. In Canada the relationship between the federal government in Ottawa and the single large and powerful Province of Ontario could be complicated over decisions concerning who is responsible for what. A formal agreement between the Canadian government and the Province has presumably clarified respective responsibilities. In the United States the situation is less clear. In the United States it would be exceptional if there were no tensions among the federal agencies and the states regarding their roles in the Great Lakes basin.

In Canada the concerns of Ontario (richest and most populous province) in the future of the lakes would appear to be more conducive to addressing the costs and benefits of restoration and protection than is the case in the United States where the eight Great Lakes states have not formed a joint and concerted effort to obtain political and financial concessions from the federal government comparable to the lobby for subsidized water by Congressional representatives from the western states.

Because interagency differences are usually aired behind closed doors, their existence and significance are largely conjectural. If they exist, they may or may not affect implementation of the larger objectives declared by the governments for the Great Lakes. However, if all were threatened by some loss of independent action in fulfilling their missions in the lakes, they might be expected to bring their common cause on behalf of national interests to the White House staff, the Office of Management and Budget, and relevant committees of the Congress. This closing of ranks is unlikely to be a public event and if it in fact occurred it would

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14. See the “indefinite extension of the treaty of 1889.” 59 Stat. 1219, USTS 994, (Article II, Feb. 3, 1944).

more likely be inferred from a pattern of high-level decisionmaking than from any explicit statement of policy.

Even in theory, it is not easy to assess the adequacy of present legal and administrative arrangements for meeting future challenges in the Great Lakes. The assumption of greater responsibility by the Parties, States and Provinces for implementing the Water Quality Agreements and Protocol, however desirable for specific action, is not the course of action most likely to achieve a basinwide ecosystemic approach to Great Lakes problems. In the long run, popular dissatisfaction with the rate of progress toward goal achievement will probably be the crude test of organizational effectiveness. Should present trends toward accentuating the responsibilities of the Parties and subnational jurisdictions continue, this dissatisfaction may well focus on the national governments.

One consequence of a greater role for the Parties in implementing the Agreements is that in each government the departments concerned with foreign affairs would be the lead agencies in interagency decision-making. The substance of the Great Lakes Water Quality Agreements is hardly within their areas of expertise. The American Department of State, for example, is a watchdog for national sovereignty. Its personnel are more often lawyers than scientists. The extent of its concern for Canada may be inferred from the relegating of Canada to a bureau concerned chiefly with European affairs. *Prima facie*, one might infer a cautious legalistic approach to fulfilling the commitments of the Agreements. This might be an unfair prejudgment, but even with the best of intent in Washington, it strains credulity to believe that an interagency effort is likely to produce a coordinated approach to an objective that can be no more than a relatively secondary priority on most agency agendas.

The Parties are, in fact, many different government agencies. The eight states and Ontario are answerable primarily to their own constituencies. So who speaks for the lakes? Hardly the governments. The organized public for Great Lakes policy, although divided by membership, is united in a concern for the whole Great Lakes system. These citizen groups have looked to the IJC as the official agency of the Parties through which they might send messages to the governments. Some people have looked to the IJC for services as ombudsman, to act as mediator between the public and the agencies, but with authority to call the agencies to account on matters of policy and decisionmaking. This expectation has never been realistic. Observers inclined to cynicism see the IJC today as a front for politically conservative governments that have no real commitment to the water quality agreements.

The IJC was established for limited purposes of a quasi-judicial nature. The Parties never intended to confer policy formulating or administrative powers on the IJC. But the Parties as an entity have seldom, if ever, been confronted by a demanding or discontented Great Lakes con-

stituency. Individual agencies such as the Corps of Engineers or the Fish and Wildlife Service have faced the public in open hearings. But occasions for face-to-face meetings with representatives of the Department of State or Ministry of External Affairs have been virtually nonexistent. If the level of public concern for the future of the Great Lakes continues to rise, how will these institutional behaviors accommodate an increasingly active and informed participatory democracy?

The IJC is more open to nongovernmental interposition than is the International Boundary and Water Commission (IBWC) on Mexican–United States transboundary affairs. The functions and personnel of IBWC are largely technical, and in its areas of expertise the IBWC enjoys a substantial degree of autonomy.<sup>15</sup> Mexico–United States transboundary institutions are treated at length in this volume by Alberto Szekely. In the future the omnipresence of the desert might become an integrative concern in this region, especially as more is learned regarding the advantages of its ecological resources.

The geopolitical and functional circumstances of the two commissions differ to a degree that complicates comparison of their status. Both attract predatory tendencies in the administrative agencies of the United States, but each has successfully withstood covert efforts to transfer functions to “line” agencies. The national agencies are likely to be more successful in opposing any significant expansion of commission autonomy than in reducing its present status. But the Canadian and Mexican transboundary situations differ in the presence of a much larger and aggressive NGO constituency for Canadian–American transboundary Affairs, especially in relation to the Great Lakes. Moreover the Water Quality Agreements beyond their technical aspects involve a broader range of policy issues than does the Mexican–United States Water Treaty of 1944.

## CONJECTURAL ALTERNATIVES

This broad mandate of mission and continuing growth of public concern raises doubt and uncertainty over whether the present binational arrangements for attaining the objectives of the Great Lakes Water Quality Agreements are adequate to the task. This is not to say that present arrangements are inadequate or that some other institutional structure, if feasible, would achieve more rapid results. Uncertainty results from the absence of a balance sheet on the state of the lakes, comparing needs, objectives, accomplishments, and efforts under way. Doubt also follows

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15. N. Smith, *Transboundary Relations and Acid Rain: New York's Memorandum of Understanding with Quebec and Ontario*, 5 J. of Borderlands Studies 111–33 (Spring 1990); *Paradiplomacy Between the U.S. States and Canadian Provinces: The Case of Acid Rain Memoranda of Understanding*, 3 J. Borderland Studies 13–38 (Spring 1988).

from a pervasive distrust of government. It reflects the experience of people with official rhetoric that in practice does not always mean what it appears to mean; hence, there appears to be a credibility gap between governmental declarations of public goals and quiet concessions to self-seeking private interests.

Thus far there has been less popular distrust of the International Joint Commission than of the intentions and performance of the Parties. The IJC appears to have given high priority to an assessment of the state of the lakes, but it remains to be seen how this priority will be implemented, and to what effect. An adequate assessment would need to be comprehensive and easily updated. Computer technology could provide a dynamic format; the large and complex task would be the marshaling and reconciling of relevant data from a multiplicity of sources. How this assessment might be organized, staffed, and funded is another uncertainty. Moreover, not everyone concerned would agree that such a comprehensive assessment is needed, and it would require an extraordinary competence in interdisciplinary synthesis, which is precisely the capability in which our reductionist science is least proficient.

What is certain, however, is that the cleansing, rehabilitation, and protection of the lakes remains an unfinished and formidable task. Despite progress, significant contamination of the lakes from both industrial and municipal point sources continues. The nonpoint source problems remain unresolved in practice and would especially require changes in agriculture, which governments are reluctant to contemplate. Local officials are generally uncomfortable in resisting demands from riparian property owners for the "right" to line lakes with tax-yielding marinas, motels, and summer cottages. Citizens of some communities (e.g., Erie, Pennsylvania) have discovered that some local officials were prepared to barter away public access to the lake for jobs and revenues anticipated from private development. These are only a few examples to illustrate the need of a system of governance for the Great Lakes that finds an appropriate balance between basinwide policies and controls and local autonomy and options.

Looking to the future institutional options for governance of the Great Lakes, five alternatives may be identified. None but the fifth are wholly mutually exclusive, and each might be adopted progressively were there sufficient popular persuasion of the need for more comprehensive and coordinative control. In summary they are:

1. No significant change. Present structure is satisfactory.
2. Each Party establishes or strengthens its own coordinative authority.
3. The IJC and its Great Lakes Regional Office are given carefully limited coordinative responsibilities.

4. The IJC is given executive powers with selective assumption of national agency initiatives in policymaking.
5. An autonomous Great Lakes Authority is established by treaty, advised by a representative assembly, and with limited power to raise revenues and to issue and enforce regulations.

Comment on the implications of these issues follows.

**1. No significant change.** The conservatism of the Parties on environmental issues and considerations of sovereignty tend to reinforce a general status quo, with no more than incremental change among agencies reflective of changes in national legislation (e. g., the United States Clean Air Act of 1990). However, if more than a *primus inter pares* relationship among lead agencies appears needed, alternative (2) may be adopted.

**2. National coordinative authority.** If interagency collaboration demonstrably fails to achieve the degree of coordination needed to fulfill national commitments under the Water Quality Agreements, each Party may establish a new supra-departmental coordinative authority. Alternatively this coordinative responsibility might be laid on an existing agency such as the Office of Management and Budget, or the Environmental Protection Agency in the USA, or the Department of Finance, or Environment Canada in Canada. The EPA appears to be approaching the status of coordinator in the USA.

**3. Upgrading the Great Lakes Regional Office.** If consolidation of policy responsibilities by each Party still failed to achieve basinwide coordination, or possibly made binational cooperation more difficult, the Parties might be importuned to confer increased, but specified and limited, coordinative authority on the IJC. To meet this challenge, the IJC might logically enlarge the role of the Great Lakes Regional Office without fundamentally changing its character as a research and investigating arm of the Commission. In fact, the IJC since 1990 has seemed intent on downgrading, if not abolishing, the Great Lakes Regional Office at Windsor, Ontario. It has closed its science library (transferred to the University of Windsor), given up its conference rooms, and demoralized its professional staff. Its rationale of fiscal necessity is specious by the most charitable standards. The Canadian division of IJC under spent its budget at the time of these changes by more than the so-called "savings" gained by the closures. As for use of the research library, the commissioners are neither scientists nor administrators and are hardly competent judges of the uses and usefulness of the library for the work of the Great Lakes Regional Office.

**4. An IJC with executive powers.** An extension of the foregoing alternative would be the transformation of the IJC into an operative regulatory agency. Under this alternative the Commission would become a governing board with an executive office to carry out its policies. The Par-



ties would doubtless retain, in some form, a veto over IJC decisions and would define the area in which the Commission could exercise autonomous decisionmaking. Under this scenario the Great Lakes Regional Office would acquire administrative powers and responsibilities in addition to its present functions of research, analysis, and reporting. Coordination of basinwide monitoring would very likely become a Regional Office function. This alternative could emerge as the culmination of a progressive incremental process of reconciling and consolidating binational planning and decisionmaking for the Great Lakes. It would be the most integrated of the relatively conservative alternatives for managing the protection and restoration of the Great Lakes ecosystems.

**5. A fifth is the least probable.** Yet history records many improbabilities that, in retrospect, appear as logical consequences of developments that, when they occurred, were not perceived as tending sequentially toward basic change. Preconditions for change may be present for a long time before some catalyzing or catastrophic event sets off a radical reconfiguration of political institutions. Thus changes previously regarded as improbable to impossible may rapidly become politically acceptable. The history of our times is filled with such unforeseen eventualities.

This is next to the least probable scenario, as long as IJC commissioners are appointed largely for faithful political partisanship. There have been some able and conscientious commissioners, Canadian and American. But many have had neither knowledge nor experience with Great Lakes issues. The tests of suitability for appointments to the IJC employed by the chief executives of Canada and the United States are reliable indicators of the seriousness of their concern for the lakes. For the United States commissioners in recent years the functions expected of political appointees appear to be to hold commitments in check and to see that nothing occurs that could embarrass the President.

This fifth alternative would restructure the governance of the Great Lakes upon the basis of a new international treaty supplementing, extending, and in effect replacing the Boundary Waters Treaty of 1909 and all subsequent binational agreements. It would constitute a new institutional approach to management for the lakes in which the Parties would merge some of their respective sovereignties in a quasi-autonomous agent which we might call the Great Lakes International Authority. The Authority would be an administrative agent of the Parties with power to coordinate the activities of national and subnational agencies impacting upon the Great Lakes Basin ecosystems. It might be complemented by an assembly representative of the official jurisdictions in the Great Lakes and of the public at large. In this respect it would resemble the Parliament of Europe as an issue-raising, deliberating, proposal-formulating body, supplementing but not replacing national, state, and provincial legislative bodies.

This alternative would be elected as a consequence of a coalescence of public and official opinion that a more integrative and focused institutional arrangement was necessary to attain the goals of the Water Quality Agreements and subsequent objectives. The Authority would neither necessarily nor probably replace the IJC, which could retain its traditional supervisory role over the Great Lakes, and, in any case, would have continuing surveillance over the rest of the Canadian-American boundary waters, a responsibility more likely to increase than to diminish.

Ours is an age of improbability. From our understanding of the origin and structure of the cosmos to the nature of the microorganismic world, assumptions and beliefs have been challenged, some shattered by advances in knowledge. Unforeseen events in politics and economics have occurred on a scale and at a rate that has taxed the ability of nearly all institutions to accommodate them. Although ecological change in the Great Lakes Basin has been going on for more than a century, public awareness of its destructive and impoverishing consequences has been slow to materialize. Now, however, there has been a rapid escalation of organized popular concern. Will the gradual institutional adjustments made by the Parties to meet earlier perceptions of need be sufficient to satisfy an expanding and intensifying public concern?

Under conditions regarded as 'normal,' institutions of law and government are especially resistant to change. Institutional conservatism is 'normally' conducive to social stability; law and government are ligaments that bind diverse communities into coherent and predictable relationships. Political leaders tend, therefore, to be cautious in introducing innovative changes in institutional arrangements. Of course, dramatic events may induce dramatic responses, but political reaction to slow-moving incremental changes is 'normally' incremental and retarded. Circumstances may build toward a fundamental institutional change that awaits a triggering event for its occurrence.

A dramatic disaster may not be as ecologically significant as may massive, invisible, cumulative contamination of the lakes. But dramatic events can catalyze concern in a way that chronic degrading trends will not. The possibility of a catastrophic oil or chemical spill in the lakes or the rupture of a shoreline nuclear reactor has been foreseen by members of the IJC's Science Advisory Board. But even in an age of improbability, it is difficult for governments to take action to forestall possible but improbable events. In official choice among priorities, the less certain is likely to lose in competition with the presently evident. Because presently recognized hazards have been discovered and addressed incrementally, no comprehensive, coherent institutional response has been made to the challenge of environmental degradation. The principle of a basinwide ecosystem approach to management for the lakes has been adopted by the Parties, but practice is still largely issue specific and incremental. Opinion is

divided over whether a more focused and cohesive institutional response is needed and, if so, how to obtain it.

## A SCENARIO

We now look ahead to an as yet unnamed year in the not too distant future when a maritime collision and massive oil-chemical spill occurred below Port Huron in the St. Clair River. The spill occurred near midnight on December 31 and was attributed to a navigational miscalculation possibly induced by an alcohol-related human error. In our New Year's Eve oil spill, a Coast Guard duty officer in the communication response chain suffered an upset stomach that required an unforeseen sojourn in the bathroom. Expecting to be away from his desk for only a few minutes, he took his telephone off the hook, thus breaking communication long enough for the oil spill to gain additional time to move unobstructedly downstream. His sojourn in the bathroom was longer than expected. But even with uninterrupted response, there is slight possibility for more than a token 'cleanup' of an oil spill in open water. When the public realizes this and the spill directly affects a populous area, a vociferous public reaction may be expected. Unaffected communities may join in through apprehension over possibilities. Because of bad weather, the time of night, and preoccupation with New Year's Eve festivities, the spill was not detected until it had moved rapidly downstream through Lake St. Clair into the Detroit River and was approaching Lake Erie. By this time serious damage had been done to water intakes and shoreline installations. By noon on January 1 authorities in Canada and the United States had been alerted, and efforts to contain the spill were being set in motion. The United States Coast Guard had contingency plans for such an event, but the time, place, and circumstances of its occurrence could hardly have been worse. Bad weather with poor visibility, communications failure, and inevitable delays in locating and mobilizing personnel and equipment on a major holiday frustrated efforts to prevent the spill from entering Lake Erie. It was a quintessential exemplification of Murphy's proverbial law that anything that can happen, given time, will happen.

Planning and acting are different forms of behavior and the best laid plans may fail in action if circumstances prove inconsistent with expectations. If the potential for accident is inherent in a techno-social system, later if not sooner, it may be expected to occur, and likely under circumstances not regarded as probable in contingency planning. The human tendency is to attribute the cause of an accident to a specific exceptional event and to fail to perceive the broader circumstances that made the accident a probability.

The possibility of catastrophic oil spills on the Great Lakes had been projected in a report from Carnegie Mellon University and by the Public Review Panel on Tanker Safety and Marine Spills Response Capability for the government of Canada. The Great Lakes Critical Programs Act of 1990 (Public Law No. 101-596, amending the Federal Water Pollution Control Act) had directed the EPA Great Lakes National Programs Office in cooperation with the Coast Guard and consultation with the Great Lakes states to "identify areas within the Great Lakes which are likely to experience numerous or voluminous spills of oil or other hazardous materials, [and] identify weaknesses in Federal and State programs and systems to prevent and respond to such spills."<sup>16</sup> Unfortunately implementation of this admonition required inter-jurisdictional coordination, which invariably takes time. Moreover, the United States Congress does not legislate for Canada. To plan and make operational "systems to prevent and respond to such spills" required placing restrictions on shipping and industrial practices which also required additional legislation (and persuasion) on both sides of the international border. Consequently the United States agencies focused on response while working on prevention. When the spill occurred, the importune circumstances delayed effective response. Good intentions proved poor insurance against untimely disaster.

Public reaction was explosive. Television crews were hampered by the weather, but news media descriptions and comments were widespread. Press coverage aroused apprehension in the cities of the lower lakes, dependent upon lake water for domestic and industrial purposes. For the news media the big question was who to blame. The humans immediately responsible were soon identified, but nearly as soon the systemic nature of the catastrophe became clear. The news media concluded that beyond and indeed including the initial event, all of the agencies charged with protecting the lakes had some share in responsibility for its occurrence. The predictable response of the nongovernmental environmental organizations was "We warned that this might happen; we told you so."

Few people are immune to embarrassment, but public officials, especially elected officials, have an acute aversion to public humiliation. Under the stress of popular excitement and indignation, and pertinacious questioning by the news media, politicians often make commitments that they could not previously have been persuaded to make. The cumulative public frustration with unfulfilled objectives and with the gap between official protestation and performance was triggered into action by a single horrendous event that catalyzed a broad range of concerns into demand for something more effectual than government business as usual. Thus

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16. 104 Stat. 3001 tit. I (5) (Spills of Oils and Hazardous Materials).

members of Parliament and Congress, along with state and provincial legislators, were soon calling for a binational conference on the status and future of the Great Lakes.

Events moved rapidly beyond control of the IJC and the government agencies. The IJC sought center stage by endorsing the idea of a binational conference, which indeed had been proposed some years earlier by United States IJC member Charles Ross. But the IJC and the Parties had lost credibility though their apparent efforts to downgrade if not abolish the Great Lakes Regional Office. They were unprepared to take any constructive initiative beyond endorsing a conference. The administrative agencies in Ottawa and Washington were constrained by indecision and political uncertainty. Their credibility was compromised by a popular perception that their fractional approach to protection of the lakes was part of the problem. And so, in response to a request by the governments, the IJC convened a binational conference of elective and nongovernmental representatives from the Great Lakes–St. Lawrence Basin states and provinces in which agency personnel participated only in resource and advisory capacities. There was general agreement that although information from the agencies was essential to the work of the conference, their participation in conference deliberations would risk conflict of interest.

In our scenario, the International Conference on the Future of the Lakes (ICFL) convened in early summer on Mackinaw Island, sixteen months after the New Year's Eve spill. During the intervening months a preparatory commission had been at work, following a pattern previously set for the environmental conferences of the United Nations (e.g., Stockholm 1972 and Rio de Janeiro 1992). Carefully planned meetings were held in principal cities around the lakes, with local public officials, citizens, and Native American communities, especially in designated Areas of Concern for which Remedial Action Plans had been, or were being, developed. When convened, the Conference had before it three major documents to consider: (1) a new Draft Treaty and Protocol for the Great Lakes, (2) an Action Plan and (3) a Financial Plan.

The Treaty and Protocol constituted, in effect, a constitution for the Great Lakes. The Protocol provided a frame for governance consisting of an elective Assembly for the lakes, meeting once annually to receive and consider reports, hear representatives of the public, review progress, and make recommendations. Its functions were deliberative, not legislative, and in its own sphere it resembled the Parliament of Europe. The Protocol provided an administrative structure to coordinate and direct the Action Plan under the general supervision of a reconstituted IJC, implementing and extending execution of the Remedial Action Plans, and programming new remedial and protective initiatives and research priorities. Finally there was a Financial Plan to provide basic revenues for the Great Lakes International Authority. The Plan authorized the levying of speci-

fied revenues (e.g., on shipping, shoreline development, and effluent discharge) and the issuance of revenue bonds.

There was precedent for a set of principles for custody of the lakes. Charters for the Great Lakes had been adopted by the Governors of the Great Lakes States and Provinces (1984), and proposed by Professor Lester W. Milbrath in 1988 and by the Rawson Academy of Aquatic Science in 1989.<sup>17</sup> Although these documents did not call for the establishment of a new basinwide coordinative agency, mechanisms far more effective in coordination were implicit in their terms. Drawing upon these preceding declarations the Conference incorporated their principles in a definitive document suitable for formal adoption by the two national governments. The new authority did not generally duplicate or preempt the existing operative responsibility of the government agencies, but it provided a central supervisory and coordinative capability hitherto lacking in the Great Lakes Basin.

And so the Great Lakes entered a new phase of governance. The Conference report was adopted by the Parliament of Canada and the Congress of the United States, and the treaty was ratified with surprisingly little opposition. Headquarters for the new Authority were constructed on an island in the Detroit River, midway between the Ontario and Michigan shores, and connected by rapid transit with Detroit and Windsor. Here, in effect, was the capital of a new kind of political regime for the Great Lakes.

The government agencies continued to perform most of their previous functions, but under the coordinative supervision of the Authority monitored by the IJC. Most questions of law and adjudication remained with the judiciaries of the respective countries. In lieu of a court for the Great Lakes, the treaty provided for an Office of Legal Affairs for fact-finding and advisory opinions on points of law and for mediation and arbitration services. This office also performed a function similar to that of the Swedish Ombudsman. Thus conflict resolution was emphasized in prefer-

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17. See D. Minton, *Toward a More Accountable Process*, and G. Francis, *Great Lakes Governance and the Ecosystem Approach: What Next?* in Caldwell, *supra*, note 1. See also L. Milbrath, *A Governance Structure Designed to Learn Would Better Protect the Great Lakes Ecosystem* in Caldwell, *supra* note 1, at 141–67. Milbrath proposes a Great Lakes Futures Review Board, a Great Lakes Court and a Charter declaring principles. He also suggests an voluntary assessment of one-tenth of one percent on the annual budgets of the principal jurisdictions in the region. See also Rawson Academy of Aquatic Science: *Towards an Ecosystem Charter for the Great Lakes—St. Lawrence* (Sept. 1989). Most writers on institutional arrangements for the Great Lakes consider any significant change in international jurisdictional arrangements to be impractical and impolitic. The opinion is widely held that the Boundary Waters Treaty of 1909 is the best agreement that could be obtained. Yet the Water Quality Agreements have clearly enlarged its dimensions, or at least the interpretation of its provisions. Moreover, the Free Trade Agreement was widely viewed as impractical until it became a fact. When the European Economic Community was negotiated, only a visionary could have foreseen the Community of today and the Single European Act. Scenario 5 is projected into a future and does not intimate a development that could be expected tomorrow.

ence to litigation. No new large bureaucracy was created, but some transfers of agency positions and personnel to the new authority did occur.

## IN CONCLUSION

The foregoing scenario is obviously a piece of political science fiction. It may or may not be prophetic. But who can safely predict the future in an age of improbability? Fiction may be an aid to foresight when conventional modes of prediction are not reliable. Intuitive judgments, informed by historical experience and judicious assessment of trends, have sometimes proved to be right. It has been the experience of mankind that great changes often come about unobtrusively, incrementally, and contrary to the conventional wisdom of the day. When a progressive sequence of events suddenly comes to term, it is often the practical minds preoccupied with day-to-day concerns that are most taken by surprise. No one has better described this syndrome of misplaced attention than Alexis de Tocqueville in the opening lines of his history of the French Revolution. He wrote:

Il n'y rien de plus propre a rappeler les philosophes et les hommes d'Etat a la modestie que l'histoire de notre Revolution; car il n'y eut jamais d'evenements plus grands, conduit de plus loin, mieux prepares et moins prevus.

### English Translation

Nothing is better fitted to give a lesson in modesty to philosophers and statesmen than the history of the French Revolution; for never were there events more important, longer in ripening, more fully prepared, or less foreseen.<sup>18</sup>

A revolution in the management of human activities affecting the Great Lakes is less momentous than is a national revolution. Yet old regimes unable to adapt to changing needs and circumstances risk replacement. The authorities in charge are usually the last to see the need for change. Our scenario is consistent with a worldwide tendency to reallocate responsibilities hitherto claimed by national states, to multinational or localized bodies. All-purpose national sovereignties seem unable to respond adequately to many of the challenges of a new post-modern age. Thus new institutions for governance, but less than governments, have

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18. A. de Tocqueville, *The Old Regime and the French Revolution, On the State of Society in France Before the Revolution in 1789; and on the Causes which led to that Event* 26 (J. Murray trans., 1856).

been emerging under the general concept of regime theory. The Great Lakes International Authority exemplifies this tendency, which is to fill the unoccupied area of policy and action where two or more sovereign states meet. The future of the Great Lakes may be determined by the new concept of governance.