

CAN BASIN MANAGEMENT BE SUCCESSFULLY IGNORED: THE CASE OF THE US-CANADA TRANSBOUNDARY WATER

by

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Abstract

Experience shows that many initiatives to establish basin-wide management fail. This study examines whether a spatial alternative that includes only parts of the basin can work. The case study drawn on is the 1909 Boundary Treaty and International Joint Commission regulating the water shared by the U.S. and Canada. In this case a deadlock in negotiations at the basin scale, led to the adoption of a boundary regime. This option allows reciprocal benefits from cooperation. Despite its limited spatial scale the regime functioned effectively most of the time. This can be attributed to the size of the Great Lakes, the American internal regime and the reference mechanism. When the mutual consent required for a reference to be issued was lacking, the friendly relations, the flexibility in treaty interpretation and the two-way upstream/downstream relations along the entire boundary line enabled to prevent a unilateral water diversion of non-boundary water.

Key words: transboundary water, basin-wide; International Joint Commission

Introduction

It is often suggested that the management of water resources should be set at a basin-wide scale. This scale allows issues of land, water and human development to be integrated, thereby internalizing all externalities, regardless of political boundaries (Wescoat, 1984; Newson, 1992; Kirby and White, 1994). This recommendation is not limited interstate basins.

In the case of transboundary water it is suggested that basin-wide treaties and consequently transboundary institutions should be established (Kliot et al , 2001; Lundqvist et al, 1985; Gleick, 1993)

However, it was already observed that basin-wide initiatives often fail, at both the planning/negotiation and management stages (Fischhendler and Feitelson, 2003; Waterbury, 1997). This failure has been attributed to the disregard of the physical social and political heterogeneity of the basin and region in the attempts to craft comprehensive solutions to multi-player games (Natural Resources Committee, 1935; Waterbury, 1997;U.S.; Daniels and Bassett, 2002). Ignoring the broad context may result in basin initiatives that infringe on state/local entities' sovereignty (Goldfarb, 1994; Keiter, 1994; Adler, 1995; Lee and Dinar, 1996), in time-consuming planning (Pope, 1981; Mitchell, 1983; O'Riordan, 1981), and in a spatial discrepancy between the benefits and costs of cooperation (Fischhendler and Feitelson, 2003; Dufournaud and Harrington, 1990; Schroeder-Wildberg, 2002). Consequently, it seems that actual transboundary water institutions often pertain to scales which better address broader economic and political circumstances (Fischhendler and Feitelson, 2003).

In light of the failure of many basin-wide institutions, it was suggested that if we continue to await the advent of basin-wide accords, based on some notion of optimality, the wait will indeed be long and perhaps fruitless (Waterbury, 1997). Therefore, the need for more flexible and openly negotiate spaces has recently been stressed (Stevens, 1997; Zimmerer, 1994; Zimmerer, 2000; Molden and Douglas, 2002). One possible generic space of negotiation/management that differs from the basin-wide scale is a wider supra-basin space, whereby several basins are negotiated and managed concurrently. This option, that allows for broader issues to be linked, as indeed been explored in the US-Mexico case (Fischhendler and Feitelson, 2003). From a management perspective this spatial option does not necessarily contravene the basin management approach, as the whole basin can still be included within the (wider) regime jurisdiction. This paper suggests that another option is to reduce the scale of negotiations/management to include only some of the basin areas. This option excludes

troublesome areas from the regime jurisdiction, thereby, reducing the number of players involved in the decision-making process and the asymmetries of costs and benefits. This may, in turn, reduce the transaction and political costs of a basin-wide agreement. This option necessarily contravenes the basin-wide paradigm as it disregards the hydrological unity of drainage basins. This study asks whether a narrowly defined space can indeed be successful, from both a political and managerial perspective.

The study focuses on the establishment of the U.S. and Canada water regime, first formalized almost a century ago when the 1909 Boundary Treaty and International Joint Commission (IJC) were created. This regime – still functioning – is often cited as a model of success for other riparians seeking to regulate their international water (Legault, 2000; Holsti and Levy, 1974; Cohen, 1976). However, although the 1909 Treaty and the IJC performance were intensively studied (e.g., Carroll, 1988; Bloomfield and Fitzgerald, 1958; Dreisziger, 1974) the role and function of the IJC as a boundary commission (as opposed to a basin commission) has not been examined.

The paper begins by describing the conditions that brought the formation of a boundary regime to regulate the U.S.-Canada shared water. Then, it examines how the adverse managerial implications of this regime were mitigated as the hydrological unity of drainage basins were disregarded. This is by focusing on how the Chicago Diversion that was excluded from the regime jurisdiction was regulated. It concludes by discussing the conditions under which ignoring the basin management can be successful.

Formation of a boundary regime

Conflicting spatial preferences

Like many other borders, the U.S.-Canada boundary was drawn without much reference to environmental systems (LeMarquand and Scott, 1980). In fact, about 150 lakes and rivers are transcended by this boundary (Fig.1) (Cohen, 1977). Already at the end of the 19th century a discrepancy between political and hydrological boundaries resulted in potential externalities when Canada announced plans to divert the Niagara's water, which the U.S. had been using for hydroelectricity production. In response, the U.S. State Department called for regulating the transboundary water of the Great Lakes (Dreisziger, 1974, p. 36-37). Subsequently, the

U.S. initiated the formation of an International Commission for the Great Lakes in 1902 (Dreisziger, 1974, p. 41).

While the U.S. concerns focused on the area adjacent to the border, Canada became alarmed when the Sanitary District of the city of Chicago diverted water from Lake Michigan, exclusively a U.S. lake remote from the boundary line (Dreisziger, 1974, p. 55). The aim of this diversion was to dilute the city's sewage and reverse its flow from Lake Michigan to the Mississippi River (Naujoks, 1946). Since the district did not believe that there were any restrictions on the maximum quantities which could be diverted – but was well aware of the growing needs of the city – it built the Chicago Channel with a capacity of 10,000-cubic feet per second (c.f.s.). By 1900 the canal was pumping 5,000 c.f.s. of the lake's water (Cain, 1969). Canada interpreted this as a threat to the water level of Lake Michigan, Lake Huron and the other lakes and waterways further down the system (Canadian House of Commons Debates, 1905, p. 40 – thereafter Commons Debates). Other concerns Canada had at the time were the proposed diversion of the Rainy River watershed by the Minnesota Canal, and the obstruction of the St. John River in the state of Maine, which interfered with the floating of logs further down river on the Canadian side (Dreisziger, 1974, p. 59).

All this motivated Canada to join the U.S. initiative to establish an international regime. Since Canada was concerned over issues beyond the boundary line, it sought a commission whose jurisdiction would extend over all of the basins crossing the boundary line, including the tributaries of the Great Lakes. This would have allowed the commission to restrict the Chicago diversion and settle controversies on the other international basins. In contrast, the U.S. wanted a commission that is limited in scope and jurisdiction, which would regulate only the Great Lakes dissected by the boundary line. This, the Americans believed, would ensure the commission's jurisdiction over the future regulation of the Niagara Falls and Lake Erie without limiting the Chicago diversion. These conflicting needs delayed the cooperation by three years. Finally, in 1904, the temporary International Water Commission (IWC) was established. However, it was vested only with investigative power, and no consensus was reached regarding its scope and jurisdiction (Commons Debates, 1909, p. 6585-6586).

Deadlock in negotiation at a basin scale

To ease the drought in the mid-south of the U.S. in 1907 Minnesota proposed that the Great Lakes water would be diverted southward through the Chicago diversion to the Mississippi

basin. This initiative was stopped by the protests of Canada and the IWC, combined with internal opposition of the U.S. states bordering the Great Lakes that were concerned by the effect of the diversion on the Great Lakes levels (Commons Debates, 1910, p. 907; Congressional Record, 1907).

The perceived risk to water levels in the Great Lakes further encouraged Canada to establish a permanent authority with jurisdiction over non-boundary water issues that would serve as judicial tribunal to settle differences along the entire boundary line (Carroll, 1988, p. 40-41). Canada also hoped that equal representation in such a supra-national authority would help offset its power disparity with the U.S. (Gibbons, 1953; Commons Debates, 1909, p. 6639) and give the Canadian federal government control over provincially owned resources, such as non-boundary rivers and lakes (Cohen, 1976).

However, Canadian opposition did not deter the Chicago Sanitary District, which had no other readily available option, from planning to divert more Great Lakes water for sanitation purposes of the Calumet region by constructing the Calumet-Sag Canal (Cain, 1978). Therefore, the Sanitary District became concerned by the IWC's decision to investigate the Chicago diversion. The IWC issued a report that recommended limiting the diversion to no more than 10,000 c.f.s. (Cain, 1969, p. 390; Cain, 1978, p. 93) and suggested that both governments establish principles to govern all water adjustment to the international boundary, including secondary tributaries (Third Report of the Canadian Section, 1907, p. 141,151). In response, the state of Illinois objected to any future basin-wide agreement that would impinge on its sovereignty and restrict future diversions, a restriction that would benefit Canada at the expense of Chicago (Congressional Record, 1907). Consequently, its representatives proposed excluding Lake Michigan from any future treaty (Cain, 1969, p. 390). This was supported by the Mississippi basin states, which realized that an international basin-wide regime would block the option of diverting the Great Lakes' water to the Mississippi River to ease the frequent droughts along the Mississippi basin.

Since water in the U.S. is a state issue, the U.S. federal government was also troubled by such an initiative. It was afraid this proposed supra-national regime would infringe over its states' sovereignty by advancing linkages and tradeoffs across the transboundary basins. This could result in sacrificing the interests of some states in one part of the U.S. (water users along the Mississippi and the Sanitation Districts in Illinois) in order to secure the benefits of other

states in another part of the country – the Great Lakes states (Memorandum of the State Department, 1958, p. 23-24).

The hegemony of the different states over their water resources was already established in practice by the Harmon Doctrine. This doctrine was created in 1906 by the U.S. while negotiating a water agreement with Mexico along the upper Rio Grande. It argues for the absolute jurisdiction of the nation over its water resources within its own territory even through a diversion injured co-basin states (Bourne, 1974; Commons Debates, 1910, p. 870). This implies that the U.S. states and Canadian provinces are entitled to do as they please with the waters within their own territory (Commons Debates, 1910, p. 906; McDougall, 1971). Consequently, the U.S., influenced by this doctrine while negotiating a water agreement with Canada, insisted that each party reserve for itself exclusive jurisdiction over the use and diversions of all waters on its own side of the line (McDougall, 1971).

Yet, the U.S. could not dismiss the Canadian demand for a treaty pertaining to a wider jurisdiction since there were several issues at stake in which Canada was in an advantageous position. One was the controversy over the St. Mary and Milk Rivers. The U.S. planned to divert St Mary water through Canada to the Milk River in order to irrigate the lower valley of southeastern Montana, but it needed Canada's consent; otherwise Canada could use these waters itself (Dreisziger, 1974, p. 169-183). The U.S. was also concerned by the growing number of companies on the Canadian side that were given concessions to withdraw unlimited quantities of water from the Niagara River (Committee of Foreign Relations, 1906). As a result, talks, over a permanent treaty and commission, began in 1906. Soon after, a treaty was drafted based on basin-wide international control of multiply basins, aimed at settling the U.S.-Canada water controversy (Dreisziger, 1974, p. 149). But the U.S. Secretary of State Eliot Root rejected this treaty on the basis that the powerful coalition established between Illinois and the Mississippi states may block future negotiations with Canada, if the U.S. would accede to the Canadian demand for a wide-scale agreement (Memorandum of the State Department, 1958, p. 58-59). This is in contrast to a possible treaty on boundary water, where both countries would benefit from cooperation (Memorandum of the State Department, 1958, p. 16-17). This resulted in a second draft, in which all matters that lay wholly within the jurisdiction of one or the other of the governments were left out (Dreisziger, 1974, p. 151, 157).

Boundary regime as a spatial compromise

Canada was aware that the Harmon Doctrine gave the U.S. an advantage where it was an upper riparian (Commons Debates, 1910 p. 870), and also provided a legal basis for not internalizing the Chicago diversion in any future agreement. Yet, it seems that the failure of the first draft made it clear to Canada that a basin-wide management was not likely to be accepted by the U.S.. Canada also realized that the Harmon Doctrine gave it an advantage along many parts of the boundary, as in some basins Canada is the upper riparian while in others the U.S. is the upper riparian (Commons Debates, 1910 p. 914) – Fig.1. This allows Canada to counter any unilateral action of the U.S. with a similar action elsewhere, where it is the upper riparian. Moreover, the Canadians realized that limiting the treaty's jurisdiction to boundary water would allow them to advance this agreement without the need to consult the provinces, as the treaty would not affect the provinces' right to divert tributary water (Commons Debates, 1910, p. 878, 883). This allayed the concern that the provinces would oppose the treaty, claiming that it impinges on their sovereignty (Gibbons, undated).

After three years of negotiations Canada was willing, in 1909, to accept a boundary treaty and commission that is limited spatially to the boundary. It did, however, set several conditions to mitigate the implications of this spatial restrictions. One was to include a litigation mechanism so that the injured party in cases of crossboundary externalities had the same rights and legal remedies as if such injury took place in the country where the externality emanates (Commons Debates, 1910, p. 871). This provision would enable Canadian citizens to file lawsuits against U.S. citizens in U.S. courts of law. It also demanded the exclusion of the Milk and St. Mary Rivers from this uniform limited sovereignty principle by setting different principles for water allocation in these two rivers. In addition, Canada demanded the inclusion of an arbitration provision and a reference mechanism. This mechanism, by joint consent, refers to matters affecting the common frontier where differences arise, and provides a mean to study any water question (whether tributary, transboundary or boundary) related (Cohen, 1958).

Yet, the risk stemming from the Chicago diversion was left open since the treaty pertained only to boundary water and deliberately excluded any reference to this specific diversion (Memorandum of the State Department, 1958, p. 41). Furthermore, the U.S. succeeded to exclude the Chicago diversion from the mechanism of litigation to recover damages, by restricting it to cases that already existed (Memorandum of the State Department, 1958, p. 48).

In conclusion, by attempting to advance a basin-wide regime over the Great Lakes, Canada ignored the implications of including many players with conflicting spatial preferences (especially Illinois that was supported by the Mississippi basin states). This resulted in a deadlock in negotiations. The impasse was resolved only when both sides were willing to compromise (Commons Debates, 1910, p. 910) and settle for a spatially limited agreement that excludes troublesome areas (Memorandum of the State Department, 1958, p. 59). This reduced the number of players involved and offset the asymmetries of costs and benefits between players in the Great Lakes. Canada was aware that it had to adjust the proposed regime's jurisdiction from basin-wide to the boundary, if a treaty was to be signed (Bourne, 1974). The U.S. accepted the enlargement of the scope of treaty to the entire U.S./Canada frontier, the injury provision and the reference mechanism. However, this mechanism was conditioned on mutual consent and its recommendations were not legally binding. Consequently, in 1909 the Boundary Treaty was signed and the International Joint Commission (IJC) were established with jurisdiction primarily over boundary¹ issues. This boundary regime is a combination of supra- and sub-basin management. The supra-basin management is manifested in the concurrent negotiations of all transboundary basins and in the establishment of one agreement and one institution to manage them. The sub-basin management is manifested in the confinement of the jurisdiction of the treaty and the IJC to boundary (rather than basin) water, implying that the different states/provinces are allowed to divert tributary water even if it adversely affects the shared water.

The Hydrological Challenge: The Case of the Chicago Diversion

By restricted the joint management to the border area the states/provinces were excluded from the new international federal regime. As a result, the transaction costs and political costs of a wider in scale agreement were reduced. However, this spatial restriction also provided each side with the right to take unilateral action with regard to non-boundary water, thereby disregarding the hydrological unity of drainage basins. Consequently, soon after the treaty was signed there was a need to address the risk of hydrological externalities. This section focuses on the case of the Chicago Diversion in order to examine how these potential implications were addressed.

Despite the Secretary of War's restriction of the Chicago diversion in 1901 to 4,167 c.f.s. of water, the Chicago Sanitation District was already building the Cal-Sag Channel, aiming to divert more water at the time the 1909 treaty was negotiated (Diversion memorandum, 1912). In 1907 and 1913 the district applied to the Secretary of War to increase the diversion to 10,000 c.f.s. In both cases the proposed increase was denied on the grounds that it would significantly lower the level of the Great Lakes system, which would jeopardize U.S. relations with Canada, decrease electricity production along the Niagara Falls and interfere with the navigational capacity of the Great Lakes (Naujoks, 1946; Tarlock, 1994, p. 108). It was made clear, however, that this diversion was in any case beyond the jurisdiction of the 1909 treaty and the IJC as boundary treaty and commission (Stimson, 1913).

Although the U.S. Federal Government had not authorized a diversion of more than 4,167 c.f.s., at least 8,000 c.f.s. were diverted by 1912 (Diversion memorandum, 1912). This increase led the Canadian federal government to protest, especially due to its adverse implications on power production and navigation and their fear that the diversion would be formalized through Congressional legislation (Geddes, 1921; Howard, 1924). This fear was well founded as Illinois, supported by the Mississippi states, intended to propose in 1924 a congressional act to allow it to withdraw 10,000 c.f.s. (Boston Transcript, 1924). Despite Canada's ongoing protest, in the early 1920s the diversion indeed increased to almost 10,000 c.f.s. (Fulton, 1994; Geddes, 1922).

The diversion was regulated in 1925 as a result of injunction bills filed by the U.S. Great Lakes bordering states to the Supreme Court. The Supreme Court fixed the diversion at 4,167 c.f.s., but also affirmed the power of the Secretary of War to increase the diversion (Tarlock, 1994, p. 109). Indeed, a few months later the secretary, due to the risk of an outbreak of sewage-related diseases, and despite the Canadian protest (e.g., Howard, 1925), allowed the district to increase the diversion to 8500 c.f.s. for four years (Naujoks, 1946). Canada and the Province of Ontario responded by sending additional letters of protest over the unilateral action, arguing that the diversion conflicts with the need for joint consent, given the friendly relations and the confidence that has been build between the two countries (e.g., Howard, 1926; Beaudry, 1927).

This situation, of some players opposing an increase in the Chicago Diversion while others support it has established two coalitions. One is the Great Lakes coalition comprised of the

Canadian federal government and the provinces/states bordering the Great Lakes (except of Illinois) that opposed an increase of the Chicago Diversion. The other is the U.S. states along the Mississippi (except Minnesota and Wisconsin that supported the Great Lakes coalition since they are riparians on both basins) supporting an increase of the Chicago Diversion. (Fig.2.)

Following another injunction filed by the U.S. Great Lakes coalition against the district, and the state of Illinois in 1927 a special master was appointed by the court, who stressed that Canada had no legal grounds for protest since it had accepted the boundary regime set by the 1909 treaty (Commons Debates, 1928, p. 544). He further argued it was an internal issue for Congress to decide whether the diversion should be maintained or even increased to improve navigation on the Mississippi (Report of the Special Master Charles Hughes, 1928). This led some Canadians to suggest that the 1909 treaty should be terminated (Commons Debates, 1928, p. 552). Although the court did not formally consider Canadian rights it did issue, in 1930, a decree that reduced the diversion to 6500 c.f.s. immediately, to 5000 c.f.s. by 1935, and to 1500 c.f.s. in 1938, in addition to domestic pumping (Tarlock, 1994, p. 112).

Canada's failure to adjust the international regime to govern the Chicago diversion and the concern of the Great Lakes states (excluding Illinois) over an increased diversion (at times of droughts along the Mississippi) motivated both to seek other mechanisms to internalize the externalities generated by the diversion (Hearings, p. 298, 305, 587). In the early 1930s, while Canada and the U.S. were negotiating the St. Lawrence Treaty, these partners, together with the U.S. State Department, insisted that the new treaty should legally restrict the Chicago diversion and should also forbid any diversion of water from the entire Great Lakes basin, except by the authorization of the IJC (Simsarian, 1938). This, in practice, enlarged the Great Lakes coalition to include also the U.S. federal government, that was worried that unilateral diversion of Great lakes water may reflect on U.S.- Canada relation as a whole. Indeed, the draft treaty presented for ratification to the U.S. Senate did include such a provision (McDermott, 1934). However, on March 10, 1934 the treaty failed to pass as the Mississippi coalition, joined by neighboring states, such as Texas and Kansas, voted against it (Hickerson, 1934). As a result, the new version of the treaty (from 1938) did not include a basin-wide joint authority that could regulate Lake Michigan and prevent tributary diversions (Simsarian, 1938).

In the late 50s, the state of Illinois had plans to increase the Chicago diversion through congressional legislation. In this case Chicago cited the 1909 treaty as a legal basis for unilateral diversion (Bourne, 1974). At the same time Canada as an upper riparian planned to dam the Columbia River and to divert water from the transboundary Kootenay and Columbia Rivers into the Fraser River, a wholly Canadian stream, in order to regulate the Columbia's seasonal fluctuation and to produce hydroelectricity (Bourne, 1959). Canada, and particularly the Province of British Columbia, disregarded the dependence of the northwestern U.S. on this water (Swainson, 1979) and argued its right to divert this non-boundary water under the 1909 Treaty (Bourne, 1959; Commons Debates, 1957, p. 441). As a response to these concurrent controversies, the IJC initiated a joint investigation, although both cases were not boundary issues. In order to explore the risk of the Chicago diversion, the IJC used a reference that already existed to investigate Lake Ontario levels (Subcommittee of Committee of Public Works, 1954) and a general reference issued a decade earlier to probe the controversy on the Columbia (External Affairs, 1957, p. 247, 272). Finally, since the 1909 treaty and the IJC set uniform rules for the whole boundary line, a unilateral diversion on the Columbia River was presumed to reflect on the diversion of the Great Lakes water and vice versa. Consequently, both sides refrained from unilateral diversions (Diversion of Water from Lake Michigan at Chicago Report, 1959; House Report, 1959; Piper, 1967, p. 100-101) and all bills² between 1954-61 to increase the Chicago diversion failed to pass or were vetoed by President Eisenhower (Potter, 1958; House Report, 1959; Piper, 1967, p. 100-101; Wagner and O'Neil, undated).

Soon after, as a result of the severe drought between 1961-64, the Great Lakes levels dropped to an unprecedented low (Changnon and Harper; 1994; Cohen, 1988). This resulted in losses of 19-26% to hydroelectric utilities' production on the Niagara and St. Lawrence Rivers, a reduction of cargo loads, and in crops (Cohen, 1988). Consequently, the U.S. and Canadian governments agreed to issue a reference and to establish boards to investigate further regulation of the Great Lakes basin (Carroll, 1988, p. 124-125). The board recommended a set of measures, including the need to investigate consumptive use and water diversions in the entire basin (IJC, 1976). As a result, in 1977 a reference was issued that for the first time, in practice, expanded the IJC's scope and geographical jurisdiction to investigate these matters at the scale of the entire basin, including the Chicago diversion (IJC 1981; IJC 1985). In response to this reference the IJC initiated a basin wide investigation stressing the need to broadly interpret the 1909 Treaty (IJC, 1985). Since then, as a consequence of the growing

awareness of the risks of climate change, several additional references have been issued to allow the IJC to continue its basin-wide investigation, such as the investigations into the protection of the waters of the Great Lakes (2000a). Furthermore, pressure of the U.S. states bordering the Great Lakes (arguing that Chicago used the legal loophole of the 1930 decree which did not regulate domestic uses to increase diversion) and the 1961-4 drought led to additional Supreme Court decree. This new decree, issued in 1967, set the diversion at 3200 c.f.s., including domestic pumpage (Fulton, 1994, p. 76). However, the court also permitted the state of Illinois to apply for increased diversion for domestic use (U.S. Supreme Court, 1967).

During the drought of 1987-88 (resulting again in low flows on the Mississippi River) Illinois and the Mississippi riparians appealed once again for increasing the Chicago diversion. Yet, strong domestic opposition on behalf of the Great Lakes states, coupled with Canadian opposition through the IJC and the estimation that such a diversion would have only minor impact on the flow of the Mississippi River, succeeded in blocking this proposal (Canadian Year Book, 1989).

In short, the reference mechanisms often allowed the IJC to investigate issues beyond its formal jurisdiction, instead of formally expanding the international regime's jurisdiction by new treaties (as the 1932 treaty tried – and failed to pass). However, it seems that references were issued only when there were drastic events, such as the regional drought of 1961-1964 or by using already-existing references issued for other cases. In these cases it was the friendly relations between Canada and the U.S., the strong Canadian protest, the internal American regime and the uniform rules for the whole boundary line that succeeded to regulate the diversion. However, the risk for an increase in diversion of the Great Lakes' water, together with narrow definition of the IJC's jurisdiction triggered the establishment of new forms of regulation, discussed below.

The emerge of a new regime

As a result of the weak federal and international authority over non-boundary water several private initiatives (receiving provincial support) to divert Canadian water to the U.S. were advanced. Among them were the 1944 North America Water and Power Alliance, the Central North American Project, the 1966 Kuiper Diversion Scheme, the 1968 Western States Water Augmentation Concept (Scott, 1985), and the 1987 suggestion of the governor of Wisconsin

to divert the Great Lakes water to the U.S. (Changnon, 1987). These proposals and the 1961-64 regional droughts clarified to both sides the difficulties of maintaining the integrity of the resource on the basis of the IJC limited jurisdiction. Thus, both sides promoted new strategies to protect the Great Lakes water.

At the federal level, Canada initiated a review process of its water policy and recommended that legislative mechanisms to regulate these transfers and mitigate the risk of water export be sought (Commons Debates, 1993, p. 19998). This resulted in the 1987 federal water policy that prohibits large-scale exports of water from Canada through diversion from lakes and rivers (Commons Debates, 1993, p. 20009). This policy was finally formalized by Bill C-15 to amend the International Boundary Water Treaty Act, which conditions any boundary water diversion (except for domestic use) outside the basin on federal approval issued by a permit system, rather than by international approval granted by the IJC. This amendment is intended to better enforce federal control on local initiatives to divert the Great Lakes water, initiatives that often ignore the IJC authority over boundary water on the pretence that they do not affect the boundary water. Furthermore, the permit system also allows the federal government to initiate its own investigation over boundary water, replacing the reference mechanisms which required American consent (Fawcett, 2002). This amendment was also restricted to boundary water to avoid infringement of the provinces' authority (Fawcett, 2002), thereby leaving all non-boundary water (about 85 percent of Canada's water) susceptible to export, as the provinces remain free to divert or export their tributary water (Commons Debates, 2000, p. 9328). This federal reform was accompanied by a series of provincial reforms in which most provinces developed similar policies or legislation to protect water resources from commercialization (Commons Debates, 1999, 11611). However, the economic incentive to sell water to the U.S. recently resulted in Ontario and Newfoundland attempting to provide permits for private companies to divert Great Lakes water to the U.S. (Commons Debates, 1999, p. 11614; Council of the Great Lakes Governors, 2002).

The U.S. also promoted a reform at the federal level. In 1986 Congress passed the Water Resources Development Act. This act prohibits any diversion of Great Lakes water without the consent of all eight governors (Article, b(3), Water Resource Development Act, 1986), thereby transferring the power from Congress to the governors of the Great Lakes states (Hill, 1989). This has strengthened the Great Lakes Compact and the Great Lakes Commission, which was set up as an advisory body to protect the basin ecosystem. As

Ontario and Quebec joined the Commission the Great Lakes Commission turned into a binational agency (Declaration of Partnership, 1999). Yet, this body functions only as an advisory body with no substantive authority (Hill, 1989).

At the international level, the weakness of both federal governments and the IJC to control diversions has led to many proposals to formally amend IJC jurisdiction to accommodate water diversions in the whole basin, even by renegotiating the existing boundary treaty (Morgan, 1966; Sugarman, 1986; Allee, 1993; Greenpeace, 1989; Caldwell, 1993; IJC, 1985). However, it has become clear that such an action requires that the different states and provinces relinquish power to federal and international bodies (Morgan, 1966). So far they have not shown any readiness to do so (Hill, 1989; Common Debates, 2000,p 9348-9351). As a result suggestions to update the 1909 Treaty and IJC jurisdiction to a basin-wide control were rejected (Sugarman, 1986; LeMarquand, 1993). Instead, the 1909 Treaty was supplemented with other international mechanisms, mostly at the state/province level in order to expand the great Lakes regime jurisdiction. Some of these are summarized in Table 1.

Discussion and Conclusion

Keohane (1995) suggests that when the number of actors involved increases the problems of cooperation multiply. Given the multiplicity of players, many with conflicting preferences, it not surprising that in the existing decentralized systems; the option of Canada's initiative to establish basin-wide regime for the Great Lakes resulted in an early impasse in negotiations. Consequently, a spatial compromise was adopted. In essence only what was managerially crucial (the boundary water) was included without infringing on the existing states'/provinces' hegemony over tributary water resources. The willingness to adopt the spatial compromise was facilitated by Canada's willingness to relinquish basin-wide control over the Great Lakes in return for expanding the regime's jurisdiction to stretch along the entire boundary and for a reference and injury mechanisms. This compromise established a boundary regime that reduced the asymmetries of costs and benefits and the number of players in a basin-wide agreement for the Great Lakes.

Despite its limited spatial scale and the jurisdiction that runs contrary to the logic of basin management, the regime that was established between the U.S. and Canada functioned effectively most of the time. This can perhaps be explained by the size of the Great Lakes and thereby low flow/storage ratio, which allows for a long response time to major changes in the

water supply (Fulton, 1994; Eryuzlu, 2002). Still, the potential impacts of the Chicago Diversion, in times of regional droughts, were sufficient to affect the integrity of the Great Lakes. The reference mechanism was found to be an efficient tool to enable the IJC to initiate an investigation beyond its formal jurisdiction without compromising provincial/state sovereignty over water resources. Its success in circumventing the political cost of a formal adjustment is attributed to the temporary and advisory status of the reference and its narrowly defined scope.

When the mutual consent required for a reference to be issued was lacking, the Canadian protest and domestic alliances with American parties (Great Lakes states) led to the establishment of the Great Lake coalition. This coalition highlighted the implications of unilateral diversion on the amity between both sides, on the confidence building already established between both sides and on the economic effect of lowering the Great Lakes water. The implications for the U.S. unilaterally diverting the Chicago Diversion were further emphasized by the two-way upstream/downstream relations along the entire boundary line especially given Canada being the upstream riparian on the Columbia River. Indeed, in most cases the U.S. federal government, and especially the State Department stressed these factors, though often informally, so as not to be criticized for allowing Canada to have a say in U.S. internal affairs. Yet, this involvement did, indeed, raise the question of the legitimacy of Canadian involvement in U.S. internal policy in some circles (Wagner and O'Neil, undated). As a result of these considerations unilateral diversions of non-boundary water including the Chicago Diversion were largely restricted and a more flexible case-by-case approach was used (McDougall, 1971).

The notion that current conditions will not support a better treaty today, and the IJC's belief that limiting the commission to what is environmentally essential – i.e., boundary issues – was what enabled it to circumvent political pitfalls, encouraged the IJC to maintain its formal jurisdiction (Mackenzie, 2002; Vechsler, 2002). The successes of this regime also guided the IJC in 1972 when the U.S. and Canada negotiated the Great Lakes Water Quality Agreement. This regime excluded control over domestic tributaries and rejected the adoption of effluent standards since Canada wished to retain water as a domestic issue (Carroll, 1988, p. 136). Even the 1978 agreement (updating that of 1972), which took a more holistic approach, put the focus of pollution prevention on those areas adjacent to the boundary water (Carroll, 1988, p. 137).

Yet, the growing awareness of the importance of addressing the integrity of the Great Lakes, led to the adoption of new measures to supplement the boundary regime. This is the case of the Council of the Great Lakes Governors and its Charter advancing a basin-wide adjustment, the process of strengthening the domestic regime in both countries, adopting the Water Quality Agreement and its ecosystem approach and the latest IJC river basin boards. The success of these measures to widen the IJC's jurisdiction as a boundary regime can be perhaps explained by their voluntarily nature and the involvement of the provinces/states in the regime.

In conclusion, in the U.S./Canada case it seems that basin management was indeed successfully ignored. A regime that is limited to the boundary water was successful in promoting cooperation for almost a century of rapid change and in addressing, to some degree, environmental concerns. In contrast, a basin-wide approach led to a deadlock in negotiations, as it necessitated a consensus between multiple stakeholders in a decentralized water system. This highlights the need to reconsider the uncritical support of the basin-wide approach and to explore other spatial management alternatives. Such alternatives may reduce the transaction and political cost and hence enable an agreement that would not be reached if the basin-wide principle is adhered to. In some cases an agreement that pertains only to the boundary water may prove to be appropriate even though it ignores that hydrological integrity of the basin. This is the case when a boundary regime reduces the number of players, offset the asymmetries of costs and benefits and simplifies the coordination challenge. Yet, it is vital that it will be applied only in cases there is a high level of confidence between the parties, the resource can tolerate some degree of upstream diversions, there are two-way upstream/downstream relations within the area included in the agreement and some mechanisms that allow to address concerns beyond the management space have been incorporated in the agreement. In the US-Canada case these include a reference mechanism, injury provisions, flexibility in treaty interpretation and the possibility of supplementing the existing regime with "soft" laws and agreements.

Notes

¹ Boundary water are defined as “the waters from main shore of the lakes and rivers and connecting waterways, or the portion thereof, along which the international boundary between the United States and the Dominion of Canada passes, including all bays, arms, and inlets thereof, but not including tributary waters which in their natural channels would flow into such lakes, rivers and waterways” (1909 Treaty, Article, IV).

² This includes H.R.6100; H.R. 3210; H.R 3300; H.R.2; H.R.1; S.1123; S. 1172 (all to authorize the state of Illinois to increase the Chicago diversion).

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Mechanism	Aim	Year initiated	Participants	Initiators
The Great Lakes Water Quality Agreement, its 1978 amendment and 1986 protocol	Adopting an ecosystem approach	1972	Federal governments IJC	Great Lakes States, provinces, Federal governments
The Council of the Great Lakes Governors, the Great Lakes Charter and annex	Adopting basin-wide management	1985	Great Lakes states, provinces	States, provinces
Transboundary watershed boards	- Joint basin-wide management - Integrate quality and quantity issues	1997	IJC, States, provinces and local players	IJC
Binational Executive Committee	- Implement the Great Lakes Water Quality Agreement - Direct communication channels between Federal governments	1995	Federal governments, Ontario and Great Lakes States	Federal governments

Table .1. Recent mechanisms to protect the Great Lakes water

Sources: based upon information provided by: Pete, 2002; Great Lakes Governors Task Force, 1985; Johnson, 2002; Council of the Great Lakes Governors, 2002; Kangas, 2002; Cowgill, 2002

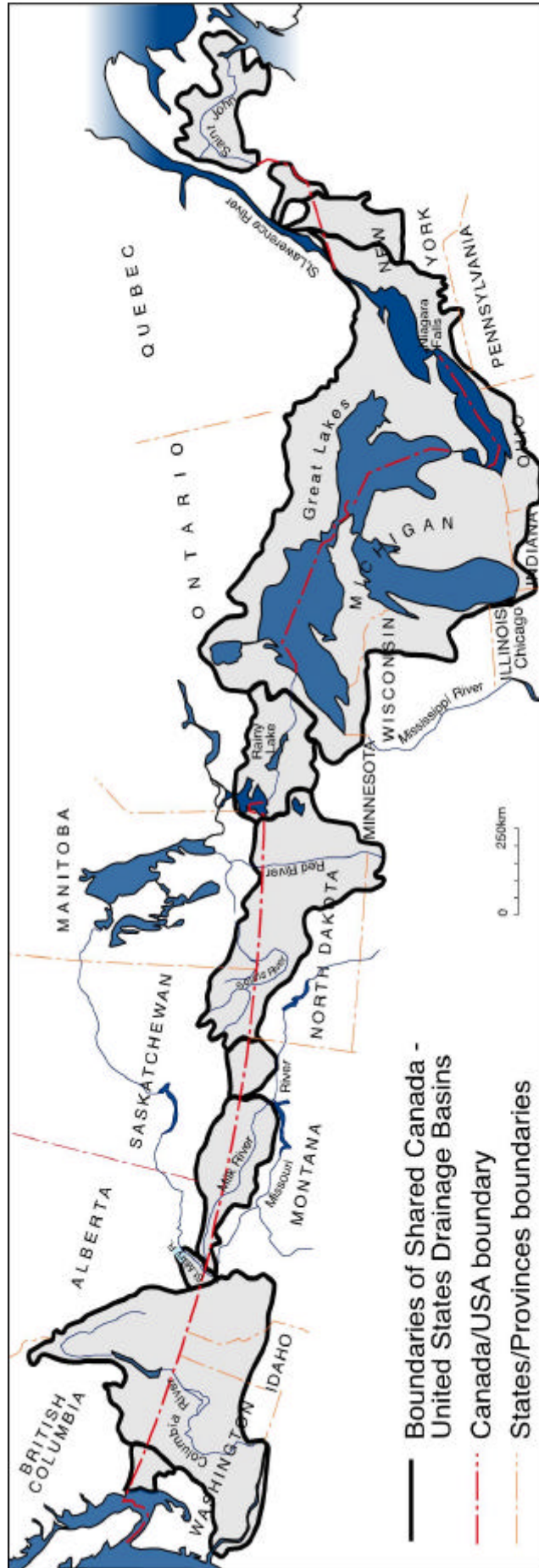


Figure 1: Transboundary Basins along the US/Canada Border

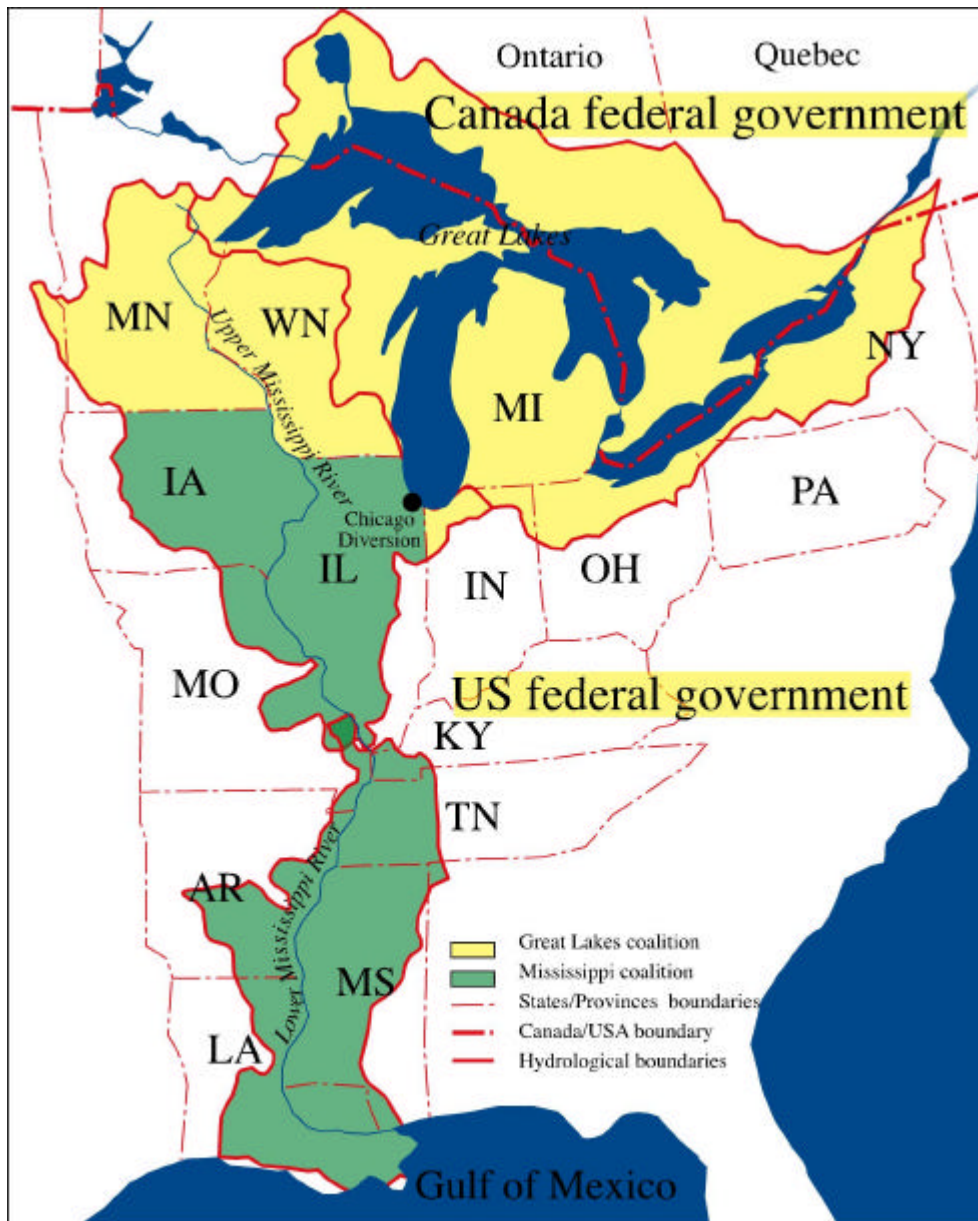


Figure 2: Distribution of Support and Opposition to Internalize the Chicago Diversion in the Late 1920s