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Resolving Water-Use Conflicts: Insights from the Prairie Experience for the Mackenzie River Basin

A cooperative approach led the prairie provinces to a basic, even modest, agreement on water sharing that works. Could the same approach work for the Mackenzie River Basin?

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THE STUDY IN BRIEF

The southern regions of Alberta, Manitoba and Saskatchewan suffer from periodic drought more than any other part of Canada. They depend heavily on rivers that rise in the Rocky Mountains and traverse all three provinces to their outlet on Hudson Bay.

In 1969, after a prolonged period of disagreement between Alberta and Saskatchewan over conflicting priorities for the use of prairie rivers, the two provinces joined with the governments of Manitoba and Canada to enter into an arrangement known as the Apportionment Agreement. The Agreement was based on the broad principle that each upstream province would allow one-half of the natural flow of the rivers to pass to its downstream neighbours.

But much has changed since 1969: A warming climate, a growing population and an expanding economy, particularly in Alberta, has focused increased attention on the water resources of the prairies and demands an examination of how the Agreement works today. This *Commentary* examines the history, terms and application of the Apportionment Agreement and its extension into the areas of groundwater and water pollution. It also investigates whether the agreement has features that could ease protracted negotiations over the more complex Mackenzie River Basin to the north.

Federal, provincial and territorial authorities first focused their attention on the need for a similar arrangement for the northward flowing rivers of the Mackenzie River Basin in 1981. The governments of Canada, Alberta, Saskatchewan and British Columbia, as well as the Yukon and Northwest Territories, are now attempting to negotiate an agreement for the management of the entire aquatic eco-system of the Mackenzie Basin. Apart from the creation of a Master Agreement on structure and process in 1997, there has been little progress on major issues. The experience of the Apportionment Agreement for the southern prairies suggests that more progress might be achieved if governments sought agreement first on the basics of minimum flow regimes and water quality objectives. This could allow the parties to develop a sense of trust that would enable them to approach the many elements of a more comprehensive agreement with a greater prospect of success.

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Water shortages have been a feature of the southern regions of the prairie provinces since the beginning of the European agricultural settlement.

The depth of the Rocky Mountain snowpack and the amount of spring and summer precipitation cause variations in the flow of the major rivers of the Saskatchewan-Nelson Basin, which flow through Alberta, Saskatchewan and Manitoba. The Basin suffers from recurring droughts that can be extreme, as during the dustbowl years of the 1930s. In the past 30 years, increasing population growth and economic activity in southern Alberta have drawn attention to a growing scarcity of water in the region. Within the last decade, Alberta has severely curtailed the issue of new licences for allocations of water in the Bow, Oldman and South Saskatchewan River Basins¹ and has begun to address the need to meet a rising demand for water.

In many parts of the world, pressures of this type have been a source of rivalry and political conflict over the use of inter-jurisdictional rivers.

Fortunately, in 1969, before serious competition for water resources had arisen, the governments of Canada, Alberta, Saskatchewan and Manitoba entered into the Master Agreement on Apportionment with the objective of sharing the waters of rivers and streams that flow from Alberta into Saskatchewan and from Saskatchewan into Manitoba. In broad terms, Alberta and Saskatchewan agreed to allow one-half of the natural flow of water that would ordinarily cross the provincial boundary to flow into the territory of their downstream neighbour.

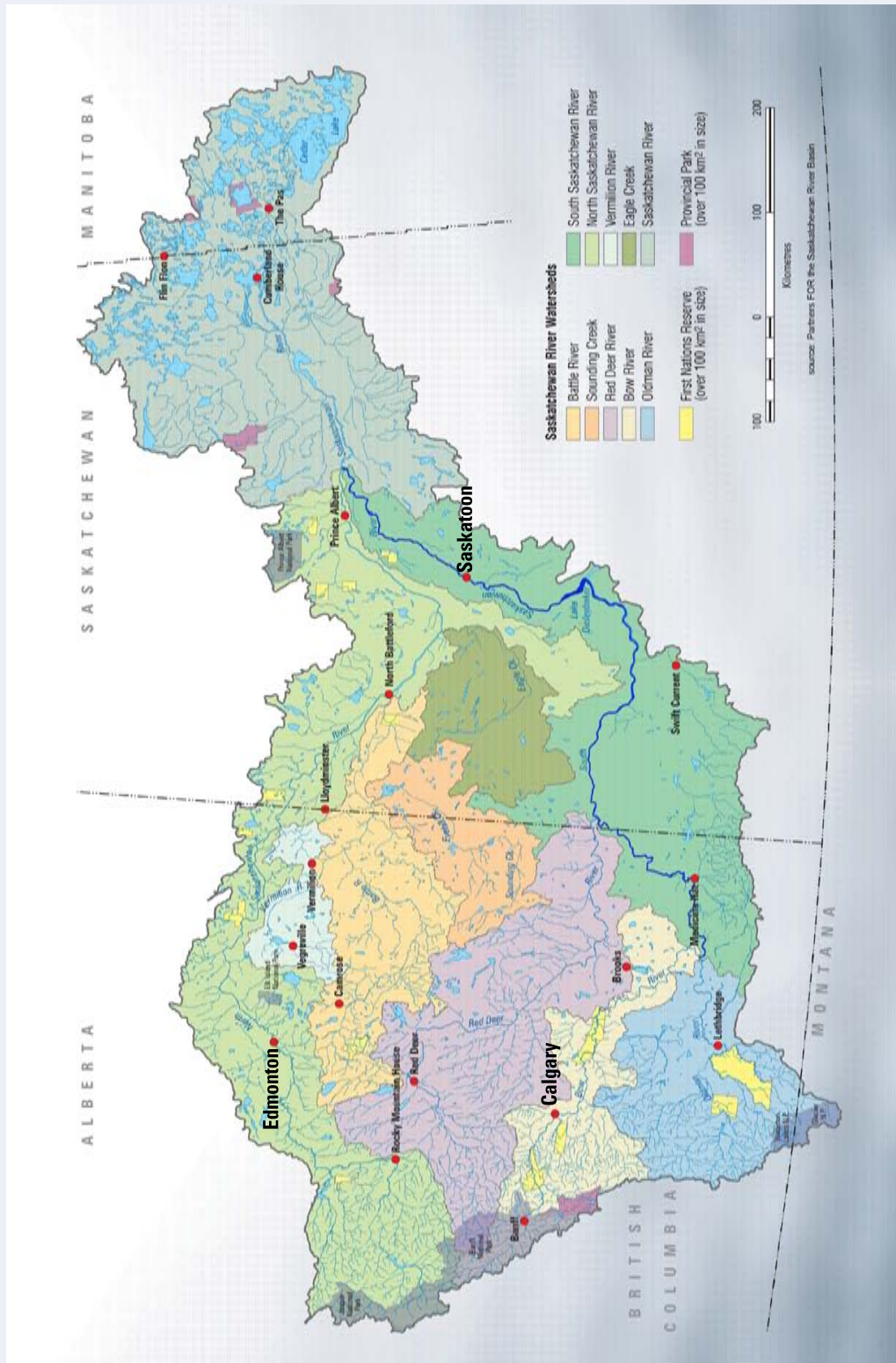
Box: Born in the Rockies

The Rocky Mountains provide the source of two of Canada's major river systems. The rivers of the Saskatchewan-Nelson River Basin flow eastward across Alberta, through Saskatchewan and on to Manitoba (Figure 1). They flow into Lake Winnipeg and from there through the Nelson River into Hudson Bay. To the north, the rivers of Mackenzie River Basin flow through British Columbia, Alberta, Saskatchewan, Yukon and the North West Territories before discharging into the Arctic Ocean (Figure 2). From the viewpoint of water use, the two basins have enjoyed very different histories and pose different challenges. Water scarcity has been a perennial concern in the Saskatchewan-Nelson River Basin, while water quality has become an important issue in the Mackenzie Basin.

The author acknowledges the invaluable and enthusiastic research assistance of Kimberly Precht, holder of a Roger S. Smith Research Award at the University of Alberta.

- 1 Under the *Bow, Oldman and South Saskatchewan River Basin Water Allocation Order*, Alta Reg 171/2007, ss. 4, 6 and 8, with minor exceptions, new licences can be issued only in respect of First Nations lands or projects, for a water conservation objective, for storage that both benefits the environment and improves the availability of water to holders of existing rights and in respect of applications that were complete before the effective date of the Regulation.

Figure 1: Saskatchewan River Basin*



*The Nelson River flows eastward from Lake Winnipeg to Hudson Bay.
Source: Partners for the Saskatchewan River Basin.

Figure 2: Mackenzie River Basin



Source: Mackenzie River Basin Board.

By comparison, the Mackenzie River Basin to the north poses a more complex challenge, fraught with existing and potential tensions over water use. Until recent decades, the Mackenzie River system, which extends through three provinces and two territories, was free of water conflicts. The first major example of the inter-jurisdictional impact of water developments in the system occurred with the completion of the WAC Bennett Dam on the Peace River in British Columbia in 1968. The initial

operations at the Bennett Dam caused drastic effects to the ecology of the Peace-Athabasca Delta,² which is situated in Northeast Alberta and recognized as a Wetland of International Importance under the Ramsar Convention.³ Although the problems in the Delta were mitigated to some extent by the construction of a weir, concern has recurred as a result of a proposal by BC Hydro to construct a new dam, known as the Site C Clean Energy Project, on the Peace River.

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- 2 Dirschl(1971) and Timoney et al. (1997). The long-term impact of the dam on the drying of the Delta seems to be viewed as uncertain.
- 3 *Convention on Wetlands of International Importance especially as Waterfowl Habitat*, concluded at Ramsar, Iran, on 2 February 1971, 996 UNTS 245, Can TS 1981 No 9 (entered into force 21 December 1976, accession by Canada 15 May 1981) [Ramsar Convention].

In recent years, industrial activities associated with the development of the oil sands in Alberta have created concerns over the quality and quantity of water in the Athabasca River. The increasing intensity of water use emphasizes the need for an agreement dealing with the transboundary waters of the Basin before disputes arise. In 1981, the governments of Canada, British Columbia, Alberta and Saskatchewan recognized the need for such an agreement at an early date.

This *Commentary* will discuss how three prairie provinces and Ottawa managed to conclude the Apportionment Agreement. It will examine the key provisions that apportion the flow of one of Western Canada's major river systems and examine how they have operated for more than 40 years. It will also show how the Agreement has evolved to include other issues, such as water quality and groundwater.

In light of the long delay in reaching an agreement on the Mackenzie River Basin, the *Commentary* will investigate whether the Apportionment Agreement has features that might facilitate the protracted negotiations over the more complex Mackenzie River Basin. In particular, it will identify two factors that contributed to the success of the Apportionment Agreement and emphasize the importance of reaching such an agreement before increasingly intensive water development makes the problem of sharing water resources more difficult to solve. Finally, it will demonstrate that by implementing an agreement dealing only with the pressing issue of shared surface flows, governments were able to develop a sense of mutual confidence that allowed them to extend the agreement into other areas.

INTERNATIONAL EXPERIENCE AND THE APPORTIONMENT AGREEMENT

Whenever water crosses a political boundary, the potential arises for a dispute between the upstream and downstream jurisdictions, over their respective entitlements to water. The Apportionment Agreement did not arise out of the blue. The problems it addresses are often encountered in international law and in other federal states, and the approach taken in the Agreement was influenced particularly by the experience of the American West.

Between Neighbours: Inter-jurisdictional Waters

The United States has seen considerable litigation between neighbouring states over their relative rights to shared watercourses. The litigation gave rise to a principle known as equitable apportionment in the United States, as a result of the recognition that its function is essentially to share the flow of water in rivers that flow from one state to another. In the memorable words of Justice Oliver Wendell Holmes, the object of resolving interstate disputes over water use is to "secure an equitable apportionment without quibbling over formulas" (McCaffrey 2007, 250).⁴ In practice, equitable apportionment is more a statement of an ideal than a practical principle that can be applied to resolve individual disputes. In turn, the principle of equitable apportionment was adopted in international law, where it is known as equitable utilization, in order to resolve water disputes between neighbouring states.

Although the principle of equitable apportionment has been elaborated in detail as a means of allocating quantities of water between

4 Justice Holmes spoke these words in *New Jersey v New York*, 283 US 336, at 342-3 (1931).

neighbouring jurisdictions, it has also been used in international law to address issues of pollution, notably in the United Nations Convention on the Law of Non-Navigational Uses of International Watercourses.⁵ Even when it is applied only to water quantity issues, there remains an inevitable degree of uncertainty about how tribunals might apply the principle to the merits of an individual dispute. This creates an incentive for states to avoid the vagaries of litigation by resolving water sharing issues by agreement.

The best-known example of an apportionment agreement in the United States is the Colorado River Compact. The original Compact came into effect in 1929. It arose out of a concern on the part of the states located in the Upper Basin that the rapid development of Los Angeles and the growth of irrigated agriculture in southern California would leave insufficient water available for their long-term growth (Getches 1985, 415). The broad objective of the Compact was to divide the waters of the Colorado River system on an equal basis between the states of the Upper and Lower Basins, based on the assumption that the average annual flow of the system was at least 16 million acre-feet (a standard unit of volume measurement in water use).⁶ The Compact was intended to provide each Basin with an average flow of 7.5 million acre-feet per year (Getches 1985, 417).⁷

The lessons that were learned from the Colorado River Compact and the underlying principle of equitable apportionment influenced both the approach and the content of the Apportionment Agreement.

A Cooperative Prairie Approach: The History of the Agreement

In contrast to the Colorado River Compact, which was created in order to avoid a potentially intense interstate struggle, the implementation of the principle of equitable apportionment through the Apportionment Agreement on the Canadian prairies grew out of a largely cooperative approach to interprovincial rivers that emerged from a long period of federal management and influence over water issues.

In 1894, the government of Canada established control over prairie water resources when it passed the *North-west Irrigation Act*. The Act declared that the Crown owned all the water located in the vast area of the Northwest Territories that stretched from the Rocky Mountains to the Lake of the Woods and allowed the government to grant licences, in order to provide water users with secure rights to divert and consume water.⁸ In the event that there was insufficient water to meet licensed entitlements at a particular time, the principle of prior allocation gave licensees priority of supply

5 UN Doc. A/RES/51/869, 21 May, 1997.

6 Common estimates of annual household water use are roughly 1 acre-foot per year in North America. One acre-foot represents the amount of water that covers an acre of land to the depth of one foot.

7 The 1929 Compact dealt only with gross allocations to each Basin. In 1949, the Upper Colorado River Basin Compact provided individual states with a proportionate share of the total amount of water allocated to the Upper Basin. The states of the Lower Basin were unable to agree upon a similar apportionment of the water allocated to that Basin. Ultimately, the United States Supreme Court found that the *Boulder Canyon Act*, which provided financing for the Hoover Dam, had effectively apportioned water between the Lower Basin states (*Arizona v California*, 373 US 546; 376 US 340 (1963)). The Upper Basin states received the following shares: Colorado, 51.75 percent; Utah, 23 percent; Wyoming, 14 percent; New Mexico, 11.25 percent; Arizona, 50,000 acre-feet. The statutory allocation to the Lower Basin states is: Arizona, 2.8 million acre-feet, California 4.4 million acre-feet, Nevada 300,000 acre-feet of the first 7.5 million acre-feet. Deliveries in excess of such amounts are apportioned 46 percent of Arizona, 50 percent to California and 4 percent to Nevada. See Getches 1985, 418.

8 *North-west Irrigation Act*, SC 1894 (57-58 Vict), c 30, ss 4, 8, as amended by SC 1985 (58-59 Vict), c 33, s 2.

during water shortages, according to the seniority of their licence, through a process that has recently become known in some quarters as first-in-time, first-in-right, or FITFR.⁹ When the federal government created the provinces of Alberta and Saskatchewan in 1905 and extended the boundaries of Manitoba in 1912, it retained full control of all natural resources, including water, in the three provinces.

The federal government continued to manage prairie water resources until 1930, when the Natural Resources Transfer Agreement passed ownership and control of all natural resources to the provinces. Each province re-enacted the federal *Irrigation Act* as a provincial statute with only minor changes and Alberta and Saskatchewan agreed to maintain the federal licensing procedures and priority system that had operated before 1930 (Barton 1984, 44). Although the provinces had yearned for the right to control their own resources, and thus to shape their own destinies, they found the task of water management burdensome in an era of severely constrained financial resources (Stutt 1995, 66, 73-75). The financial pressures felt by the provinces were exacerbated by the Great Depression and accompanying years of drought.

Four years after leaving the area of water management to the provinces, the federal government quickly re-assumed a major presence in the water resources of the prairies through the creation of the Prairie Farms Rehabilitation Administration (PFRA) in 1935. The PFRA

promoted many small-scale irrigation and water conservation projects in order to alleviate drought conditions. The continuing federal presence after 1935 ensured that the provinces could not discuss the future of water management without recognizing that through PFRA the federal government had maintained a substantial interest in prairie waters.

As noted by Rod Stutt (1995),¹⁰ immediately following the war, it became apparent that prairie watercourses were beginning to approach the point of full allocation. However, governments were contemplating some politically important water projects that would have been impossible to achieve if new water allocations were not available. The idea began to percolate that a regional agency might avert this danger if it had the power to make new water allocations on the criterion of the “best use” of water (Stutt 1995, 77). The provinces were conscious that in order to protect their hard-earned rights as owners of water resources, they could not permit the federal PFRA to act as the contemplated agency, but the extent of recent PFRA investments in water and the existence of potential federal legislative powers over water required them to take federal interests into account.

Allocating Water between the Provinces on the “Best Use” Principle

Following some years of discussions, the Prairie Provinces Water Board (PPWB) was created in

9 The emergence of the acronym FITFR is unfortunate because it fails to respect an essential difference between the Canadian law of prior allocation and the American system of prior appropriation. Prior appropriation is a true application of FITFR, because the person who first put water to use obtained a water right and priority through the mere fact of using water for a beneficial purpose, without any requirement of government intervention. In Canada, it was illegal to put water to use, except for the domestic purposes of a riparian owner, unless the government had first granted a licence. The licence was the only way to obtain a valid allocation of water, to quantify the amount of water to which a licensee was entitled and to establish priority in times of shortage. FITFR neglects the reality that in Canada a right to water could never be obtained by first putting water to use and that only government could grant the right, following the evaluation of an application and a decision on whether, and how much, water should be granted to a licensee.

10 This account of the development of water management in the post-war years owes a great deal to the doctoral thesis of Rod Stutt (1995).

1948 by agreement between the governments of Canada and the three provinces. The Board consisted of representatives of each government and had the power to collate and analyze data on prairie waters. Importantly, it was allowed to identify the best use for water allocations, and was given the power “to recommend the best use to be made of interprovincial waters in relation to associated resources in Manitoba, Saskatchewan and Alberta and to recommend the allocation of water as between each such province” (PPWB Agreement (1948), quoted in Barton 1984, 45). This was commonly known as the “best use” principle. The agreement preserved provincial autonomy over water resources through the requirement that any such recommendation would have no legal effect until ratified by a Cabinet Order in each province.¹¹

The subsequent history of the PPWB provides a perfect example of the difficulty of applying the superficially attractive principle of allocating water to its best use in order to reach practical decisions. For some years before 1948, Saskatchewan had championed the South Saskatchewan River Project (SSRP) in order to secure a share of national post-war reconstruction funds and to create the capacity for irrigation and the generation of hydroelectric power in the province. The SSRP was controversial. It could potentially use all the water in the South Saskatchewan River, and it was not endorsed by either the Royal Commission on the South Saskatchewan River Project (1952) or by any other impartial study (Stutt 1995, 106).

The SSRP cast a large shadow over the Prairie Provinces Water Board from its inception. In 1948, the Board had approved Alberta’s request for an increased allocation of more than 2.2 million acre-feet for the expansion of irrigation projects. With

an eye on the SSRP, Saskatchewan refused to ratify this recommendation and expressed the view that any further allocation of water would jeopardize the province’s interests. In 1949, Saskatchewan revealed the nature of its interest by seeking an allocation of 5.5 million acre-feet for the SSRP, which was then more of an embryonic idea than a project. The competing provincial requests created a stalemate in the Board and the application of the best use principle threatened to place it in the difficult position of favouring one province’s request at the expense of the other (PPWB 1965, 5).

In 1951, Saskatchewan withdrew its objection to Alberta’s request for an increased allocation for irrigation. In the words of a Saskatchewan advisor, the province did not want to be seen as responsible for “blowing up”¹² the PPWB and felt that continuing regional discord threatened the possibility of federal funding for the SSRP. In 1953, the PPWB and the four governments approved Saskatchewan’s request for an allocation of 960,000 acre-feet, less than 20 percent of its 1949 request, for a revised SSRP that then contemplated only an irrigation project, without provision for hydroelectric facilities (Stutt 1995, 130-133).

Ensuring Provincial Shares of Water through Flow Protection

The debate over the SSRP ended abruptly in 1957 with the election of the Diefenbaker government and the subsequent construction of the Gardiner Dam south of Saskatoon beginning in 1959. However, the PPWB’s inability to apply the best use principle to choose between an allocation of water to the SSRP or to Alberta irrigation projects led to the emergence of a new approach to the

11 Technically the ratification must be carried out by Order in Council, an order made by the Lieutenant-Governor of the province on the recommendation of the Cabinets.

12 This was how T.K. Shoyama phrased his province’s position in correspondence to Saskatchewan Minister of Agriculture, I.C. Nollet, in 1951 (Stutt 1995, 130).

management of prairie waters. Instead of asking the PPWB to decide upon the allocation of water on a project-by-project basis, it was proposed to guarantee to each province a share of the total flow of interprovincial rivers. A subcommittee of the Board considered the implications of this idea over a two-year period, during which time it gathered further input from a meeting with the Upper Colorado River Commission. The American experience supported the idea of apportioning rivers according to a fixed percentage of their flow rather than by allocating fixed quantities of water to each province. Ultimately, the subcommittee recommended replacing the attempt to make individual allocations on the best use principle with an equitable apportionment of water between the provinces. The provinces would then be free to allocate their respective shares of interprovincial waters as they saw fit (PPWB 1965, 10-12).

Following the report of the subcommittee, it became clear that Alberta was not opposed to the idea of apportionment, as long as its existing licences to a total 2.1 million acre-feet of water within the province were protected. Saskatchewan was concerned that in dry years, Alberta's use of its full entitlement would leave too little water for Saskatchewan. In the case of wet years, Saskatchewan foresaw another problem – Alberta's proposal that it should first be entitled to its allocation of 2.1 million acre-feet and that the remaining flow would then be shared with Saskatchewan would allow Alberta to maintain a permanent 2.1 million acre-feet advantage in its share of the rivers (Stutt 1995, 165-166). These issues were settled by 1966 in ways that can be clearly seen in the text of the 1969 Agreement, as the following section will show.

Over the next two years, three remaining fundamental principles were resolved. It was clarified that the agreement would extend to all the eastward flowing rivers, rather than just the Saskatchewan River, as Alberta had originally contemplated. However, as will be explained below, Alberta succeeded in establishing that in the case of the Red Deer and South Saskatchewan Rivers it could pass more water from one stream in order to make up a shortfall in the other.¹³ Alberta ultimately decided to forego its desire to include a termination clause in the Agreement, and by May 1969, the text of the Agreement had been finalized.

Motivations to Reach an Agreement

It is always difficult to reach agreement over the sharing of interjurisdictional rivers and it is thus important to investigate why the Apportionment Agreement came about. Alberta as the upstream jurisdiction had great practical power over the Saskatchewan River system and could have solidified its claims by putting water to productive use before its downstream neighbours.¹⁴ What led Alberta to enter into the Apportionment Agreement in 1969?

Part of the explanation undoubtedly lies in the long tradition of control over prairie waters by the federal government and its continued presence in management through the Prairie Farm Rehabilitation Administration. These factors, combined with economic pressures, meant that the provinces were slow to fully assert their newly granted control over water resources. In 1937, Alberta and Saskatchewan had even discussed the possibility of creating a board to regulate and control the use of interprovincial boundary waters

13 See text below.

14 Although the doctrine of equitable utilization in international law and equitable apportionment in American law does not give any automatic preference to existing uses, in the negotiation of interjurisdictional agreements, it is extremely difficult to persuade one jurisdiction to give up existing uses in order to allow another jurisdiction to use its fair share of the river. See the account of negotiations over the River Nile (McCaffery 2007, 264-268).

and both provinces had enacted legislation that would have enabled this possibility.¹⁵ Nothing ever came of these discussions, but the idea persisted that the regulation of interprovincial waters lay beyond the competence of a single province.

When the three prairie provinces discussed the need for a study of the Saskatchewan-Nelson Basin in 1946, for example, a federal official issued a heavy-handed warning that they were intruding on federal jurisdiction and should desist (Stutt 1995, 78). It is quite clear that one factor behind the creation of the Apportionment Agreement was the need to “remove for all time the threat of federal takeover” of interprovincial waters (161). Federal influence over prairie waters receded after the conclusion of the Apportionment Agreement, making it difficult to imagine today that the provinces would harbour a similar concern over the potential exercise of overriding federal power. Indeed, in the current negotiations over the Mackenzie River, the parties have agreed that the federal government will become involved only if the agreement involves the federal government in taking some action, or specifically relates to federal jurisdiction, or if a province or territory requests input from the federal government.¹⁶

The provinces were also conscious that the Colorado River Compact had dealt with a more deep-seated water conflict in the United States. Indeed in 1961, when it appeared that the Diefenbaker government might push through a water allocation for the SSRP that could have threatened Alberta’s irrigation interests, the Alberta representative to the PPWB circulated a copy of the Compact and commented that it “might form a basis for a division of the Saskatchewan River water” (Stutt 1995, 141). In 1969, Alberta

must also have been aware that if it had chosen to pursue its interests by aggressively appropriating interprovincial waters, in the event of litigation the courts would have almost certainly applied some version of the equitable apportionment principle.

At that time, equitable apportionment was already established in both international and American law and it is difficult to imagine the courts applying at the domestic level a test that was less stringent than the international standard. Indeed, only seven years later, a majority of judges in the Supreme Court of Canada strongly suggested, in a pollution case, that interprovincial rivers might lie within the *exclusive* jurisdiction of the federal government. Both the tradition of cooperative management and the threat of federal control suggest that the provinces were wise to resolve their differences by agreement.

THE TERMS OF THE AGREEMENT

The original Master Agreement on Apportionment was entered into on October 30, 1969 by the governments of Canada, Alberta, Saskatchewan and Manitoba. The Master Agreement has two main functions: it establishes the essential legal elements of the arrangements between the four governments and provides some of the vital administrative mechanics through a reconstituted Prairie Provinces Water Board. The Master Agreement itself does not create any specific provisions for water apportionment, but it provides a structure for three substantive agreements set out in Schedules to the Master Agreement that deal respectively with water sharing between Alberta and Saskatchewan, Saskatchewan and Manitoba and the redesigned Prairie Provinces Water Board.

15 Alberta: *Water Resources Act*, SA 1931, c 71, s 64; Saskatchewan: *An Act to amend the Water Rights Act*, 1931, SA 1937, c 13, s 1. See also Stutt 1995, 76.

16 MRBB, Mackenzie River Basin Board, Bilateral Water Management Agreements, Guidance Document, 7.

Three amendments to the Master Agreement were added in 1984, 1992 and 1999. The 1984 and 1999 amendments were minor and technical in nature, but in 1992 a new Schedule was added to the Agreement that expanded the scope of transboundary water management. The 1992 amendments established water-quality objectives for interprovincial waters and made limited provision for the consideration of groundwater matters that have interprovincial implications. Below, this account will deal in turn with the present state of the Agreement relating to surface water, water quality and groundwater.

Who Gets What: The Flow Requirements for Surface Water

The Master Agreement contains a clear statement of the broad obligations assumed by the upstream provinces. The general purpose of the water sharing provisions allows Alberta “to make a net depletion of one half the natural flow of water arising in or flowing through” Alberta and requires the province “to permit the remaining one half of the natural flow of each such watercourse to flow into” Saskatchewan. Saskatchewan assumes a corresponding obligation “to make a net depletion of one half of the natural flow of water arising in, and one half of the water flowing into” Saskatchewan and to permit “the remaining one half of the flow of each watercourse to flow into” Manitoba.¹⁷

The two provincial agreements contained in Schedules A and B give some specific content

to the broad obligations described in the Master Agreement. They show that the principle of equitable apportionment provides the foundation for the agreements and recite the provinces’ view that the application of the principle allows the upstream province to make a net depletion of one-half of the natural flow of water occurring within its boundaries. The provincial agreements then require each upstream province to permit a quantity of water equal to half the natural flow of each watercourse to flow to its downstream neighbour.¹⁸

The agreements do not mean that one-half of the natural flow of each watercourse will flow to the downstream neighbour at all times during the year. They place two restrictions on the obligations of the upstream province.

First, the upstream province is entitled to adjust the actual flow in each watercourse from time to time. There is an interesting difference in this respect in the wording of the two provincial agreements. Alberta is permitted to adjust the actual flow on an equitable basis during each calendar year. In contrast, the agreement between Saskatchewan and Manitoba states that the actual flow shall be adjusted “by mutual agreement on an equitable basis”¹⁹ and makes no reference to the calendar year. Thus, in the first instance, Alberta is the sole judge of what constitutes an equitable basis, whereas Saskatchewan and Manitoba must agree on the equitable basis of any adjustment in flow by Saskatchewan. In the absence of a requirement of mutual agreement, Alberta could argue that a decision to allow more water to flow downstream

17 Master Agreement on Apportionment, Preamble, paragraphs 4 and 5.

18 A watercourse is defined widely and includes all natural channels, together with their tributaries, that from time to time carry water across the provincial boundary (Master Agreement on Apportionment, Schedule A and Schedule B, Preambles, Paragraph 3; Text, Paragraph 3; Paragraph 1(b)). There is a small exception to the general principle in Paragraph 1(a) of Schedule A of the Master Agreement, which excludes from the calculation of “natural flow” in Alberta water that is taken by Montana from the St Mary’s River under the provisions of the 1909 Boundary Waters Treaty. The St Mary’s, Waterton and Belly Rivers, flow from Montana into Alberta. They provide the only international contribution to the waters of the Saskatchewan-Nelson Basin.

19 Master Agreement on Apportionment, Schedule A, Paragraph 3, Schedule B, Paragraph 3.

during the spring run-off could permit it to reduce the natural flow of water below 50 percent during the summer months, as long as Saskatchewan received half of the natural flow of the river over the course of the year.

Secondly, the upstream province is not restricted from removing any quantity of water from any given watercourse, provided that it diverts water of comparable quality from its 50 percent entitlement from other streams or rivers into that watercourse in order to meet its commitments. This qualification has two consequences. It means that the upstream province cannot make up for a diminished flow in one watercourse by an increased flow in a different watercourse. In addition, it allows Alberta to store some water from its 50 percent annual entitlement in one year and to use some of the stored water to prevent a shortfall in a subsequent year.

The agreement between Alberta and Saskatchewan contains two further provisions, one of which is explicit and the other implicit, that enable Alberta to make more intensive use of the heavily allocated South Saskatchewan River.

The agreement between Alberta and Saskatchewan expressly entitles Alberta to remove a minimum of 2.1 million acre feet of water per year from the South Saskatchewan River, even if the quantity of water removed exceeds the net depletion allowance of 50 percent to which Alberta would otherwise be entitled. The only restriction on Alberta's expanded right is that the province may not allow the instream flow of the South Saskatchewan River at the provincial boundary to drop below 1,500 cubic feet per second (cfs).²⁰ In addition, Alberta is required to ensure that its use of the river "shall be made equitably during each year, depending on the actual flow of water in the said watercourse and the requirements of each Province, from time to time." This paragraph also appears to allow Alberta

to make an initial assessment of whether it has chosen to make equitable use of the river over a particular year.

Alberta's ability to use the South Saskatchewan River is also enhanced implicitly through the definition of the point at which the agreement measures the province's obligation to pass one-half of the natural flow of the river downstream. The general provisions of the agreement determine the natural flow of rivers at a point close to the provincial boundary, but a special rule applies to the South Saskatchewan and Red Deer Rivers. Alberta is given the option (which it chose to exercise) to determine the natural flow of these rivers at a point below their confluence. The junction of the two rivers occurs in Saskatchewan, 16 km east of the provincial border. As a result, for the purposes of determining flow obligations, the Red Deer and Saskatchewan are treated as one river. In marked distinction to the normal principle of the agreement, Alberta can thus use more than 50 percent of the South Saskatchewan River and make up the difference from the Red Deer River while satisfying the terms of its obligations.

History explains the special treatment of the South Saskatchewan River. Even at the time the Apportionment Agreement was negotiated, its two main tributaries, the Bow River and the Oldman River systems, were intensively developed. During the period when the federal government owned and managed prairie water resources, it licensed major allocations of water in the South Saskatchewan River Basin for irrigation, hydro-electrical power and municipal use. This trend continued when water was transferred to provincial jurisdiction in 1930 and by 1969 much of the Basin's water was either fully allocated or approaching full allocation. Most of these licences still exist and are specifically protected by Alberta's *Water Act*. One of Alberta's

20 The metric equivalent of 2.1 million acre-feet is approximately 2,590 million cubic metres. 1500 cfs amounts to slightly less than 42.5 cubic metres per second. A flow of this magnitude would fill about 1,468 Olympic-size swimming pools in one day.

major interests in negotiating the agreement was to ensure that it could take sufficient water to fulfill the licensed allocations in the basin, while maintaining a minimum transboundary flow of 1,500 cfs.

A second special provision affects Battle, Middle and Lodge Creeks, which originate in the Cypress Hills region of south-eastern Alberta. The agreement requires Alberta to permit a quantity of water equal to 75 percent of the natural flow of these watercourses to pass the interprovincial boundary. This provision illustrates how this part of the agreement also has international implications. The three creeks are tributaries of the Milk River and part of the Missouri River Basin, most of which is located in the United States. Alberta's increased flow obligation enables Canada to meet its commitments under the Boundary Waters Treaty of 1909 to allow 50 percent of the flow of the Milk River to pass into Montana.²¹

The agreement between Saskatchewan and Manitoba does not contain any exceptions to the general requirement for Saskatchewan to allow 50 percent of the natural flow of watercourses to pass the provincial boundary.

Water Quality

The 1969 Apportionment Agreement dealt with the sharing of the flow of interprovincial watercourses and contained only a passing reference to water quality.²² In practice, questions of water quality can always arise in agreements over the sharing of quantities of water. It is of little use to pass water on to a neighbour if it is unfit for its intended use. The Water Quality Agreement of 1992, which

now constitutes Schedule E to the Apportionment Agreement, takes some steps to address this issue.

The Water Quality Agreement sets water quality objectives for a total of 11 specified river reaches. Five of the reaches involve rivers that flow from Alberta to Saskatchewan and the others involve rivers that flow from Saskatchewan to Manitoba. The water quality objectives can trigger action to remedy a failure to meet the objectives and to take precautionary steps to avoid future failures. The agreement states that if, as a result of human activities, the concentration of a chemical, physical or biological variable in a river reach fails to meet the agreed objective, the responsible province must take reasonable and practical measures to bring the quality of water within the acceptable limits. A more forward-looking provision deals with the situation where a variable is within the acceptable limit. It requires action if trend analysis or an assessment of the impact of a proposed development indicates that water quality has been or may be significantly altered within the acceptable limit. In this event, the parties are required to agree on reasonable and practical measures to be taken by responsible province to endeavour to maintain the water quality in the relevant river reach.

The Water Quality Agreement thus has limited force. The province in which the variable arises is never required to bring it within the limits of the stated water quality objective, but must only take "reasonable and practical measures" to do so. It will not be in breach of the agreement if those measures fail to return the quality of water to the stipulated standards. The PPWB describes the water quality objectives as "descriptions of water quality conditions that are known to protect human and

21 See Alberta Environment on the Apportionment Agreements governing Battle, Middle, and Lodge Creek, online at http://www3.gov.ab.ca/env/water/gwsw/quantity/waterinalberta/apportionment/tb_transboundary/tb7_battle_middle_lodge.html (accessed September 25, 2011).

22 Paragraph 3 of the two provincial agreements requires a province which diverts more than 50 percent of the natural flow from a given watercourse to replace the diverted water with water of a comparable quality.

ecological health, and are acceptable to upstream and downstream provinces.” The chosen objectives are generally uniform in the 11 river reaches, although there are variations.²³ The variations are explained by the process by which the PPWB developed the water quality objectives.²⁴

Groundwater

In 1969, it was not common for inter-jurisdictional water agreements to take groundwater into account and groundwater was not mentioned in the original text of the Apportionment Agreement. Amendments in 1992 brought groundwater explicitly within the purview of the Agreement. The amendments record that the parties “mutually agree to consider groundwater matters that have implications affecting transboundary surface and groundwater, to refer such matters to the Board, and to consider recommendations of the Board thereon” (Amending Agreement 1992). This change is modest in nature, but important in that it encourages the parties at least to consider transboundary groundwater issues.

AN EVALUATION

A Closer Look: Obligations Under the Apportionment Agreement

In order to evaluate the Master Apportionment Agreement and the agreements added later in

Schedules, it is initially important to identify the nature of the obligations assumed by the governments which signed them. This is a difficult task and can be assisted by a process of elimination. Although the agreements were influenced by the Colorado River Compact, their legal status is fundamentally different. The Colorado River Compact was authorized under the Compact Clause of the US Constitution and approved by Congress.²⁵ It is more analogous to a treaty than a mere agreement between two governments and, in the manner of all interstate compacts, once approved it becomes almost impossible to change.

Nor are the prairie apportionment agreements like the Murray-Darling Basin Agreement and Basin Plan in Australia, which was also signed by federal and state governments. The Australian agreement is embedded in the *Commonwealth Water Act of Australia* (Briese et al. 2009) and there is no doubt about its legal enforceability. In contrast, the apportionment agreements do not have any legislated status, because they are not incorporated into any federal or provincial statute.

The text of the agreements provides some initial assistance in identifying their nature. The Master Agreement records that each of the four governments was authorized to enter the agreement by Order in Council and that the government parties agreed that the two interprovincial agreements “will continue in force and effect until cancelled by an agreement in writing among the four parties” and may only “be altered by an

23 For example, the objective for dissolved iron is 1.0 mg/L in the designated reaches of the Beaver River and South Saskatchewan River, but 0.3 mg/L in the other nine reaches. The objective for dissolved manganese is 0.2 mg/L in the same reach of the Beaver River, but is set as 0.5 mg/L in all the other river reaches.

24 The PPWB had developed generalized water quality objectives in 1973, but the objectives adopted in 1992 were specific to individual river reaches. The 1992 objectives were designed to be compatible with provincial water quality objectives, or based on specific basin objectives where they were available. Where provincial objectives were not available, the Surface Water Quality Guidelines developed by the Canadian Council of Ministers of Environment (CCME) were used. The process involved provinces identifying sensitive water uses they wished to protect on inter-provincial streams. The objective for each constituent was based on the most sensitive use of the river system and the most restrictive of the provincial objectives (PPWB 1991, 11-12).

25 US Const art I, § 10, cl 3.

agreement in writing among the four parties.”²⁶ All three agreements require the parties to refer any disputes for determination to the Federal Court of Canada.

These elements suggest that the agreements are types of contract that each government was authorized to enter and that contain provisions relating to the alteration and termination of the contract together with a dispute resolution procedure. A straightforward contractual analysis of the agreements leads to the conclusion that if one province were unilaterally to alter or cancel the apportionment agreements, the resulting dispute could be heard by the Federal Court. However, this conclusion is complicated because of the intergovernmental nature of the agreements. The doctrine of parliamentary sovereignty suggests that the governments, having submitted to the jurisdiction of the Federal Court by legislation, could at any time revoke its authority to decide issues arising from the agreements. The provinces might also choose to eliminate their own liability for any breach of the agreements with impunity (Percy 1983, 116-117). Although the Federal Court can make a determination of the rights and liabilities of the parties under the agreements, it cannot necessarily provide an adequate remedy, particularly if one of the parties has dissolved an agreement (Saunders 1988, 57). The apportionment agreements thus bear the external appearance of binding contracts, but their continuation depends more on political goodwill than the possibility of legal sanctions.

Putting the Agreement into Practice

Alberta Practice

The view that the apportionment agreements are of limited legal effect is reflected in provincial implementation strategies. Alberta and Saskatchewan both assume significant obligations under the agreements, but neither the agreements nor their obligations are mentioned in provincial statutes. For example, in 1991 Alberta began to restrict the issue of water licences in the entire South Saskatchewan River Basin. In a regulation, it reserved all unallocated water in the Basin, capped the amount of water that would be available for irrigation and subjected new licences to the possible imposition of conditions which would limit the licensed diversion of water in order to maintain minimum instream flows.²⁷ Despite the fact Alberta's obligation to maintain a minimum flow of 1,500 cfs in the South Saskatchewan River at the provincial boundary was a key element in setting the level of minimum flow, the regulation makes no reference to the agreement as a factor in establishing flow requirements in licences.

The provinces have chosen to implement their obligations by administrative, not legislative, methods. Because the adoption of new administrative policies is not always announced publicly, it is difficult to discern when these methods were introduced. For example, at some point in the decade following the execution of the Apportionment Agreement, Alberta began to issue water licences that permitted the withdrawal of water only if the remaining residual flow in the

26 Master Agreement on Apportionment, Preamble and Paragraphs 4 and 5.

27 *South Saskatchewan Basin Water Allocation Regulation*, Alta Reg 307/91, s 7, as amended by Alta Reg 318/2003 and replaced by the *Bow, Oldman and South Saskatchewan River Basin Water Allocation Order*, Alta Reg 171/2007.

river exceeded a stipulated amount. In the south-eastern region of the province, it is common to find terms in licences that reflect Alberta's minimum obligation under the Agreement by prohibiting the licensee's right to divert water unless there is a minimum residual flow of 1500 cfs in the South Saskatchewan River at Medicine Hat.²⁸

The insertion of conditions into recent licences provides no assurance that Alberta will meet its minimum flow obligations at the Saskatchewan border, because this technique cannot affect the rights that were granted under earlier licences. Indeed, the *Alberta Water Act* does not allow the province to compel the holders of licences issued before 1999 to restrict their diversions in order to maintain minimum instream flow levels unless their licences contain a specific term that permits such a restriction. In practice, such terms were extremely rare before the 1970s. The Act states that the terms of existing licences prevail over the provisions of the Act, thus preventing a Director from issuing a water management order to restrict diversions that may cause a significant adverse effect on the aquatic environment.²⁹

The absence of a legal power to compel senior licensees to conduct their operations so as to enable Alberta to meet its apportionment obligations has not so far impaired the effectiveness of the agreement. On average, Alberta has passed approximately 75 percent of the annual natural discharge of the rivers subject to the Agreement to Saskatchewan. In 2001, the driest year on record,

the amount of water passed to Saskatchewan was recorded at 54 percent,³⁰ although the province was required to release water from upstream storage to maintain the required rate of flow for a few days (Alberta Environment 2009, 6). However, it is now recognized that the total allocation of water within Alberta has reached the point where in dry years it can exceed the province's share of the flow under the Apportionment Agreement (4). It may be necessary for Alberta to address this possibility in legislation at a future date.

In recent years, policy and planning documents have explicitly reflected the fact that Alberta takes its obligations under the Apportionment Agreement very seriously. Although the *Water Act* does not mention the province's obligations, Alberta's major Water Policy commits the province to administer and operate the water management system to meet transboundary agreements (Water for Life 2008, 7). The Agreement is now incorporated by reference into some aspects of decision making under the *Water Act* through the Approved Water Management Plan for the South Saskatchewan River Basin. The plan is designed to guide the exercise of discretionary decision making under the Act by requiring, in particular, a Director to take the plan into consideration in making any decision to issue a water licence or to approve the transfer of an allocation held under an existing licence (ss 51(4), 82(5)).

The plan also requires the province to develop an operations plan – the Apportionment

28 E.g., Alberta Water Licence No. 19779, issued in 1993. Further upstream, on the Bow River, licences frequently contain a minimum flow requirement of 1400 cfs (e.g., Alberta Water Licence No. 19647, issued in 1991) which in practical terms can assist Alberta to meet its obligations at the Saskatchewan border.

29 *Water Act*, SA 2000, c W-3, ss 18(2)(b), 97(1)(i).

30 See Figure 10, which shows Alberta's apportionment performance between 1970 and 2010, in the *Alberta Report (Interim) on South Saskatchewan River Basin Water-sharing with Saskatchewan in 2010 under the Master Agreement on Apportionment*, available online at <http://ssrb.environment.alberta.ca/pubs/AB-Report-on-SSRB-Water-sharing-with-Sask-in-2010.pdf>.

Operations Plan – to identify criteria for decisions on how Alberta will meet its full obligations to Saskatchewan (SSRB Plan 2006, 10).³¹

The Apportionment Operations Plan expresses the philosophy that the Apportionment Agreement will be treated as if it held a priority from 1969. This idea is also reflected in the Water Shortage Plan for the South Saskatchewan River Basin, which suggests that Alberta Environment wishes to treat all licences issued after the date of the Apportionment Agreement as subordinate to the obligations of the agreement. However, that suggestion flatly contradicts the provisions of the *Water Act*, which reaffirms the century-old principle that licensees are entitled to divert the water allocated under their licences, unless the water is required by a senior licensee (s 30). The Act does not grant any status or priority to the Apportionment Agreement and does not permit the province to require the holders of a licence issued before 1999 to reduce or cease their diversions, unless the licence contains an express term to the contrary. However, both plans show that Alberta holds a strong commitment to meeting its obligations under the Apportionment Agreement, even if it lacks the legislative basis to require licensees to ensure that the obligations are fulfilled.

Saskatchewan Practice

In contrast to the position in Alberta, the Apportionment Agreement is rarely mentioned in Saskatchewan government documents dealing with water management. This is probably explained by the fact that Saskatchewan has not experienced

intensive water developments that could threaten the province's ability to meet its obligations to Manitoba. The annual reports of the Saskatchewan Watershed Authority do little more than emphasize that Saskatchewan has met its obligations under the Agreement and will continue to do so (2010/2011 Report, 18-19).

Modesty of Scope and Goals

Water Quantity Requirements

In 1987, the Federal Water Policy endorsed the principle of integrated watershed management as a cornerstone of federal water management generally and specifically “in interjurisdictional waters subject to federal-provincial-territorial agreements.” The integrated approach “takes into account all water uses and water related activities” and requires “the integration of water management plans and objectives with those of other natural resource interests—fisheries, forestry, wildlife, mining, hydropower and agriculture—to reflect the unity of natural processes and the interdependence of uses and users” (Canada 1987, 10). Another commentator has noted that water resource managers have long advocated an integrated approach to river basin planning, both within national jurisdictions and throughout international drainage basins, and that this has led to the advocacy of an ecosystem approach to river basins (Bankes 1996).

The achievements of the Apportionment Agreement are very modest when judged against the criterion of integrated watershed management.

31 Under the Apportionment Operations Plan, the province states that it will manage all the sub-basins of the South Saskatchewan River Basin to meet the requirements of the Apportionment Agreement and that this may require the holders of recent low priority licences to reduce or stop their diversions from time to time (Operations Plan 2009, 2, 10). In addition, as required by the SSRB Plan, Alberta has also prepared a Water Shortage Plan for the Basin. It states clearly that all water shortage management decisions must ensure that Alberta will meet its obligations under the Apportionment Agreement (AENV Water Shortage Procedures for the South Saskatchewan River Basin 2009, 4).

The Agreement does little more than share interprovincial rivers on a 50-50 basis and set water quality objectives for key reaches of rivers near provincial boundaries. It represents a very basic approach to inter-jurisdictional water management. However, in following the advice of the Upper Colorado River Commission to share river flows by a percentage figure rather than by specifying fixed quantities of water, it has a distinct advantage over the Colorado River Compact.³² This provides much greater flexibility in managing the similarly variable flows of prairie rivers.

The limited scope of the Agreement is hardly surprising in light of its origins. The formula for sharing water between the provinces seems almost arbitrary in nature. In 1967, the four governments had commissioned a study on Water Supply for the basin, which might have provided a rational basis for apportioning water between the provinces, but it did not report until 1972. Apparently the parties discussed a variety of divisions of the natural flow during negotiations, ranging from 70-30 percent through 30-70 percent. The ultimate decision to adopt a 50 percent division was an outcome of negotiation rather than technical analysis (Barton 1984, 48), yet it has important implications.

The sharing formula almost certainly fails to maximize the economic benefit to water. It is distinctly possible that there could be greater economic benefits from an apportionment which allowed one province to use more than 50 percent of the naturally occurring flow. Interestingly, Alberta raised this objection when the PPWB first considered the possibility of recommending an allocation of water to the South Saskatchewan River Project during the 1950s. Alberta argued,

with considerable justification, that the same quantity of water could be used in Alberta “to irrigate the same number of acres, of better farm land, at significantly less cost” (Stutt 1995, 105). The final formula reflects a preference to equalize regional opportunity rather than to maximize economic benefits. From time to time, irrigation interests in Alberta have objected to allowing 50 percent of the natural flow to pass to Saskatchewan, where it may be put to uses that are less productive than those that can be carried on in Alberta. However, the adoption of this figure undoubtedly helped to slow down the environmental degradation of rivers in Alberta and a recent change in environmental policy has blunted demands to use more water in Alberta.

The Alberta government has established a general water conservation objective of 45 percent of the natural rate of instream flow in the heavily allocated Bow, Oldman and South Saskatchewan River sub-basins. Although this figure is not met in many portions of those basins, the government seeks to achieve the water conservation objective by exercising the permitted 10 percent holdback of allocated water on transfers of existing licensed allocations, purchase of existing allocations, licence cancellations and voluntary actions. A commitment to a minimum flow level of 45 percent would leave virtually no extra water available for other uses in those regions. When combined with the restriction on issuing new licences in these basins, it effectively eliminates the possibility of any further allocations that might endanger the requirement to pass 50 percent of the natural flow at the Saskatchewan border.

32 The Compact allocated 7.5 million acre feet of water to both the Upper Basin states and the Lower Basin States based on the assumption that the annual average flow of the Basin was 16 million acre-feet. However, the average annual flow of the river is approximately 13.5 million acre-feet and actual annual flows have been as low as 4.4 million acre-feet. The Compact requires the Upper Basin states to guarantee substantial minimum deliveries of water to the Lower Basin in all years, often leaving less water for the Upper Basin than originally contemplated (Getches 1985, 419).

Water Quality Objectives

The water quality objectives under the Apportionment Agreement are more modest than the minimum flow requirements, because they represent targets rather than actual commitments to maintain a certain quality of water at the specified sites. The annual reports of the PPWB from 2006 to 2010 provide only a crude and unhelpful measure of the extent to which the provinces are meeting their objectives. The reports show that adherence to the water quality objectives is consistently in a range between 94 and 95 percent and that there has been little variability in the adherence rate since 2003 (PPWB Annual Report 2009, 11). However, in 2006, for example, although the overall adherence rate was 94 percent, no sites exhibited a rate of 100 percent and two sites achieved less than 90 percent compliance (PPWB Annual Report 2006/2007, 14).³³ These percentages are derived from testing for each pollutant in each designated river reach a number of times per year.³⁴ There is no indication of whether a failure to achieve a particular objective was significant or minor.

The annual reports rarely provide explanations of how and why the objectives were not achieved, although a PPWB publication in 1996 sought to explain why there were frequent problems meeting certain water quality objectives in the Red Deer River at the boundary between Alberta and Saskatchewan (PPWB 1996). A more recent report of the Watershed Alliance for the Battle River, which flows from Alberta into Saskatchewan, indicates another watercourse with persistent water quality problems. Although it is not concerned

with PPWB monitoring, it shows, for example, that Canadian Water Quality Guidelines for phosphorus were exceeded 50 percent of the time at all 11 reporting stations on the river and 100 percent of the time at seven stations (Battle River Watershed Alliance 2011).

Despite these limitations, the PPWB's annual reports are useful in providing a form of scorecard that allows governments to examine their performance in achieving water quality standards for the listed contaminants. The scorecard would be far more valuable if the public version contained details of each failure to achieve an objective rather than the opaque statement of an arbitrary compliance percentage.

It is also evident that the Board has continued to perform further work on the review of water quality objectives that the Committee on Water Quality (COWQ) initiated in 2006, with an emphasis on the objectives for nutrients. The COWQ is presently focused on revising and developing objectives for nutrients, analysing trends and completing a review of existing water quality objectives in other jurisdictions (PPWB Annual Report 2009-2010, 12).

Groundwater

The inclusion of groundwater in the agreement in 1992 was certainly a step in the right direction. However, the 1992 amendment does little more than require governments to take groundwater into consideration. It is notable that since 1992, the international law of groundwater has shown signs of developing beyond this modest starting

33 The Qu'Appelle and Carrot Rivers have adherence rates that are chronically lower than the other PPWB river reaches, as indicated in the PPWB Annual Reports for 2008 and 2009. The reports are available on the PPWB website: <http://www.ppwb.ca/>.

34 For example, if there are 10 water quality objectives for a particular reach and testing is conducted 12 times in a year and the compliance rate is reported at 90 percent, it merely shows that on 12 occasions water quality failed to meet an objective. The compliance rate does not indicate whether there was a failure to meet one objective 12 times or whether there was a failure to meet every objective on one or more occasions.

point. In 2008, the International Law Commission completed a project to develop draft articles on transboundary aquifers. They include, for example, the application of the principle of equitable and reasonable utilization to shared groundwater resources and an obligation not to cause significant harm and to take all appropriate measures to prevent harm to aquifers (ILC 2008, Art.4, Art. 6). Although there is not yet great pressure on cross-border aquifers in the prairie provinces, it would be advisable for governments to take further measures to protect groundwater before those pressures arise and to focus on particular areas in which groundwater use is likely to become intensive.

CONCLUSION: INSIGHTS FROM THE PRAIRIE EXPERIENCE FOR THE MACKENZIE RIVER BASIN

The Apportionment Agreement represents a typical first-generation water agreement between neighbouring jurisdictions. It is similar to interstate compacts negotiated in the United States during the first half of the 20th century, which tended to be “uni-dimensional and limited in scope” and aimed at specific problems. In contrast, modern agreements are considered most effective “when management of the shared resource is comprehensive and multi-dimensional” (Draper 2002, iv).

The Apportionment Agreement cannot be described as an example of comprehensive watershed management. However, the Agreement and the PPWB are generally regarded as successes and this may be attributed in part to the restricted scope of both the agreement and the mandate of the Board. Although it has been argued that the PPWB might encounter difficulties if it is required to face more intractable management problems (Saunders 1988, 54), its limited structure has had significant benefits. The PPWB has met the

technical challenge of determining the natural flow of the rivers upon which the obligation of equal sharing depends. It has also extended its activities into more difficult areas, such as water quality and groundwater management. More importantly, it is clear that the Board has created an atmosphere of confidence between the water managers of the three provinces. There is little danger today that interprovincial cooperation might be ambushed by the emergence of previously unannounced initiatives, as it was in the 1940s by Alberta’s request for increased irrigation allocations and Saskatchewan’s initial presentation of the SSRP. While in the early years, allowing Alberta to use more water than stipulated in the Agreement would have achieved greater economic benefits, in the past decade Alberta’s policy documents have shown a greater deference to the Agreement than ever before. It is now almost certain that any major development that could threaten the management of interprovincial rivers would first be discussed and analysed in the regular meetings of the PPWB.

The Mackenzie River Basin in 2011 poses more complex problems than those that were covered by the Apportionment Agreement. The Basin involves more governments, and problems of water quality as well as water quantity. There is also a shared recognition that each government must engage Aboriginal organizations in the development of bilateral agreements.

Progress toward an agreement has been slow. The need for an intergovernmental body for the Mackenzie Basin was first identified in 1972. In 1981, the Basin Study Agreement, in which the governments of Canada, British Columbia, Alberta and Saskatchewan participated, called for each jurisdiction at an early date “to conclude an agreement through which transboundary water management issues such as minimum flows, flow regulation and water quality can be addressed.”³⁵

35 See the History of Intergovernmental Cooperation on the Mackenzie River Basin Board website: <http://mrbb.nobletdesign.com/information/81/index.html> (accessed 1 November 2011).

By 1997, the parties to the Basin Study Agreement had expanded to include the Northwest Territories and Yukon and the six governments succeeded in concluding the broad principles of a Master Agreement. The structure of the Master Agreement resembles the Apportionment Agreement, in that it contemplates future individual agreements over the waters that cross the boundaries of the five participating provinces and territories. One such agreement has so far been made, between the Northwest Territories and Yukon, but it deals with the tractable issues that arise with the largely undeveloped rivers that flow between the two jurisdictions.

The Master Agreement is based on four guiding principles: equitable utilization; prior consultation; sustainable development; and the maintenance of ecological integrity.³⁶ The guiding principles are far more ambitious than those enshrined in the Apportionment Agreement and they reflect the modern approach to integrated management of river basins. They envisage a comprehensive agreement for the cooperative management of the entire aquatic ecosystem of a basin that exceeds 1.8 million km² in area.

The objectives of the Mackenzie River Basin Board are praiseworthy and reflect the principles of integrated watershed management, but the scale of their ambition has meant that the progress of substantive negotiation has been glacial. Meanwhile, the issues that must be addressed have become more complex. In the 30 years that have elapsed since governments identified a need for an early agreement, the important Peace-Athabasca River system has changed from a relatively pristine state to an example of intensive development. That development is likely to become more intensive

with each passing year and to further complicate the negotiation of an agreement.

The success of the Apportionment Agreement has led some commentators to consider whether it might provide a model for the management of the Mackenzie River Basin, despite the acknowledged differences between the two regions (Barton 1984, 61-65).³⁷ While the experience of the Apportionment Agreement cannot be fully applied to the issues that face the Mackenzie Basin in a different era, it does suggest some strategies that might make it easier to achieve initial bilateral agreements.

The co-operative approach to water management on the prairies suggests that an alternative approach might seek to negotiate an agreement that is initially less ambitious and deals with the issues of minimum flow, flow regulation and water quality that were identified as priorities in 1981. It may be easier to preserve the goals of sustainable water management and the maintenance of ecological integrity by taking small steps that will make it easier to reach the ultimate goal.

In some ways it might be easier to establish desirable levels of instream flows and a regime of flow regulation today than it was in 1969. The decision to apportion the flow of prairie rivers equally was an arbitrary result of the negotiating process. In modern times, instream flows are established by reference to standards that are based on the ecological needs of the river. Many flow regimes now vary on a seasonal basis, which can allow parties to achieve their objectives during periods when the rivers are in flood in exchange for accepting restrictions during times of low flow. The minimum flow levels are also likely to be affected by releases from upstream storage in some years in

36 See Part C of the Basin Transboundary Waters Master Agreement, which came into effect in 1997 and can be accessed online: <http://mrbb.nobletdesign.com/information/31/index.html> (accessed 1 November 2011).

37 Others caution that some of the success of the Apportionment Agreement has arisen from its restricted scope and that the prairie experience might not be readily transferable to the Mackenzie Basin (Saunders 1988, 54).

order to meet identified objectives, such as allowing periodic flooding to meet the environmental needs of a downstream area. This suggestion does not underestimate the difficulty of setting minimum flow levels, especially where there are differing economic values from use, but it recognizes that the initial task is simplified if it is not required to include the overall ecological integrity of a large area of the Mackenzie River Basin.

A similar approach can be taken to water quality. The experience of the PPWB shows that initial baselines for water quality objectives can be quickly established by taking into account the requirements of other jurisdictions and bodies such as the Canadian Council of Ministers of Environment, with provision for regular review at required intervals. While far from perfect, this approach is surely preferable to allowing development to occur through approvals for individual projects without any concentrated focus on the quality of water that should be achieved at a provincial or territorial boundary.

The task of reaching an agreement on the basics of the apportionment of water quantity and quality for Mackenzie Basin is challenging enough, but it has recently become increasingly complex. The 1997 Master Agreement excluded groundwater resources, except where the parties

to a bilateral agreement expressly agreed to their inclusion. The Mackenzie River Basin Board's Guidance Document for the negotiation of bilateral agreements now embodies the parties' decision that agreements should specifically consider groundwater quantity and quality. While acknowledging that interjurisdictional water agreements should address groundwater, these suggestions are probably excessive in a region where the occurrence of transboundary groundwater problems must be extremely rare. Initially, it would surely be more practical to include groundwater within the ambit of an agreement, but to reserve any form of detailed assessment to those rare cases in which groundwater problems are likely to occur in the foreseeable future.

If agreement can be reached on the essential building blocks of a bilateral agreement, there is then some prospect of building on one of the genuine successes of the Apportionment Agreement. The prairie experience suggests that once representatives of the participating governments begin to work together on administering an existing agreement, they are likely to develop a sense of mutual confidence that may enable them to build towards a more comprehensive agreement in the future.

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