

THE FIRST CENTURY OF THE INTERNATIONAL JOINT COMMISSION

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The International Joint Commission: Continually Evolving Approaches to Conflict Resolution

Ralph Pentland and Ted R. Yuzyk

Although there are a number of disturbing signs that the past may not necessarily be prologue, historically, conflict and co-operation have always coexisted relatively successfully in the Canada-US water relationship. This reality prompted both nations to agree to the Boundary Waters Treaty (BWT) over a century ago, in 1909. The treaty has proven to be remarkably visionary in its scope. It provides for joint studies, and it establishes joint requirements for the approval of certain uses, obstructions, and diversions of waters that affect levels or flows in the other country. And despite the fact that it predated most modern environmental awareness, it contains a provision against any pollution that would result in “injury of health and property” on the other side of the boundary.

A key to the BWT’s success was the establishment of the International Joint Commission (IJC). The commissioners, three from each country, are obliged to pursue the common interest of the two nations rather than a narrowly national perspective on boundary and transboundary issues. According to the BWT, the IJC has two primary functions: to approve remedial or protective works, dams, or other obstructions in boundary waters and set terms and conditions for the operation of those projects;

and to investigate and make recommendations on questions or disputes referred to it by either or both governments.¹

In the introduction to this volume, the editors argue, quite correctly, that the BWT and IJC have not become widely accepted models for international water management outside North America. That is because the Canada-US situation is unique in at least two important respects. First, it is both hydrologically and politically relevant that Canada and the United States are both upstream and downstream states. Almost half of their shared waterways flow from the United States to Canada, and just over half flow from Canada to the United States.² Second, Canada and the United States share very common histories, cultures, and values across the border in specific regions. Clearly, the BWT-IJC model could not be directly transferred to, for example, the ten highly diverse nations that share the Nile River basin.

As both observers and participants in the work of the IJC over several decades, the authors of this chapter would suggest that the success of the commission relates both to the attributes directly embedded in the treaty, but also to a number of other attributes that have evolved over the past century plus, and which are continuing to evolve. In the following sub-sections we will explore ten such attributes to demonstrate that continual evolution by way of specific examples. For several of the attributes, we will refer the reader to more historical detail included in other chapters of this book. Even though the BWT and IJC models, per se, may not be directly transferrable to other continents, we would argue that many of the attributes described below would be helpful to others. Our ten specific attributes are:

1. Effective binational dispute resolution;
2. Facilitation of projects of mutual interest;
3. Consensus approach, but an ability to disagree where necessary;
4. Capacity to evolve and undertake preventative actions before an issue escalates;

5. Focus and persistence on holding governments accountable;
6. Continual learning leading to improved binational policies and practices;
7. A healthy mix of longevity and institutional flexibility;
8. Inclusive approach with the public and Indigenous Peoples;
9. Advancement of environmental performance through science; and
10. Standardization and improved data utility in boundary and transboundary basins.

While the IJC has had a long and distinguished record of achievement, there is no guarantee that it will be able to continue meeting all future challenges successfully. In the third section of this chapter, we will speculate briefly on a few of those probable challenges, and explore what additional attributes and approaches may have to be advanced to deal effectively with them.

Key Attributes and Examples

1. Effective binational dispute resolution

The first and perhaps most important attribute of the BWT and the IJC is *effective binational dispute resolution*. Our example is the early-twentieth-century St. Mary–Milk River dispute. (The history of this issue is discussed in more detail in chapter 4 by Timothy Heinmiller.) At the level of principle, allocation of the waters of the St. Mary–Milk basin was established within the BWT itself. But conflicts regarding the details of the allocation have been dealt with by the commission on several occasions.

The first Order of Approval regarding the actual allocation of water between the parties was developed by the IJC in 1921. A subsequent dispute in the early 1930s resulted in a re-examination of the order in the early 1930s. In 2003, the Montana governor again asked the commission

to re-evaluate the order as well as the administrative procedures by which it is implemented. The commission did not reopen the order, but did appoint a task force to examine administrative matters.

There are a number of other ongoing issues that are keeping the IJC engaged. For example, there are certain infrastructure constraints impacting both countries that impede the effective utilization of their respective entitlements. A particular concern is the fact that storage, diversion, and conveyance facilities in Montana are in need of rehabilitation. Also, as climate change progresses, the commission is continually examining the impact of diminishing glaciers and snowpack in the upper watersheds on the seasonal pattern of run-off.³

2. Facilitation of projects of mutual national interest

Another important attribute of the IJC has been its *ability to facilitate projects of mutual advantage*. Our example is the IJC contribution to the development of the Columbia River Treaty (addressed in more detail in chapter 8 by Richard Moy and Jon O’Riordan). In 1944, the governments of Canada and the United States asked the IJC to study and report on the potential of the Columbia River system with respect to domestic water supply, navigation, hydro-power, flood control, irrigation, reclamation of wetlands, and conservation of fish and wildlife.⁴

In 1954, the International Columbia River Engineering Board reported to the IJC. Later that year, the commission made its recommendations to the two countries, outlining principles for calculating and distributing benefits that would result from the co-operative use of storages in Canada for the primary purposes of power generation and flood control in both countries. Formal bilateral negotiations began early in 1960, and by early 1961 Prime Minister Diefenbaker and President Eisenhower signed the Columbia River Treaty. In mid-1963, Canada and British Columbia signed a federal-provincial agreement regarding implementation, and in September of 1964, Prime Minister Pearson and President Johnson formally ratified the current treaty.

The CRT has a clause that it be opened for review after fifty years. Governments and operating entities are currently considering options for renegotiating the CRT. It is unclear at this time how any renegotiation of

the treaty may turn out. But there are certain views already coalescing in the academic community. For example, in late April 2017, a group of twenty-four scientists and representatives of First Nations and tribes from Canada and the United States gathered at the University of California in Berkeley and made a number of interesting recommendations regarding the renegotiation, with an emphasis on science.⁵ One of those recommendations suggested appointment of a binational science panel, which “could be modelled on the successful procedures developed by the International Joint Commission,” to support both sovereign nations in treaty renegotiations.

3. Consensus approach, but ability to disagree where required

Consensus is the norm. But on a few rare occasions, the two sections of the IJC have been *unable to reach a consensus* on recommendations to forward to governments. One such example was the 1948 reference regarding existing and further uses, apportionment, conservation, control, and utilization of the waters of the Waterton and Belly Rivers, which flow from Montana into Alberta.⁶

The international issue arose when interests in Alberta proposed the construction of additional irrigation works that would permit use of the entire flow of the rivers. Canada did so based on the assumption, which turned out to be correct, that Montana was using no basin waters at the time, and had no practical prospects for using any into the foreseeable future. The United States requested the reference in an attempt to keep all future options open.

During the reference, the United States studied possibilities for diverting water via a tunnel from the two rivers for use in another basin. That so-called All-American Tunnel and Canal, which would have had to pass through a mountain, was ultimately deemed by US engineers to be infeasible. The United States then put forth a proposal that Canada should allow the United States to take its share from the Canadian portion of the nearby St. Mary River, with the cost of transportation to be borne by Canada.

Argumentation on both sides was highly legalistic. Counsel for Canada argued that article ii of the treaty was not applicable “when nature prevented actual diversion, and nothing in the treaty could give rise



FIGURE 17.1. Diversion system for St. Mary–Milk Rivers (International Joint Commission Photo Library).

to a claim such as that of the United States whereby the latter wanted Canada to surrender to it water in substitution for the other water which the United States could not use in the first place.” Counsel for Alberta concurred, but also noted that the terms of reference suggested that any project recommended should be “practical in the public interest,” and that in his opinion that meant not only “feasible” but “consistent with prudence and economy.” Counsel for the United States argued that the Canadian position was against the spirit of the treaty and therefore “selfish.” Counsel further argued that the all-American tunnel was feasible, and that it was not Canada’s concern whether or not it was economically sound. In his view, if Canada was to use all of the water, that would represent “appropriation,” not “apportionment.”

The two sections of the commission were unable to reach a consensus, and reported separately to their respective governments in accordance with article ix of the BWT. Following appropriate consultations between the two countries, work continued on the diversion and irrigation project in Alberta. Periodically, Alberta continues to report to the IJC on operations of the resulting system.

The system in Alberta now diverts and interconnects water from the Waterton, Belly, and St. Mary Rivers (see Figure 17.1). It is the source of supply for downstream users along those rivers and for over 200,000 hectares of irrigation in the Magrath, Raymond, St. Mary River, and Taber Irrigation Districts. It is also the main supply for the 10,000 hectare Blood Tribe Irrigation Project, and supplies supplementary water for the United Irrigation District from the Waterton Reservoir.⁷

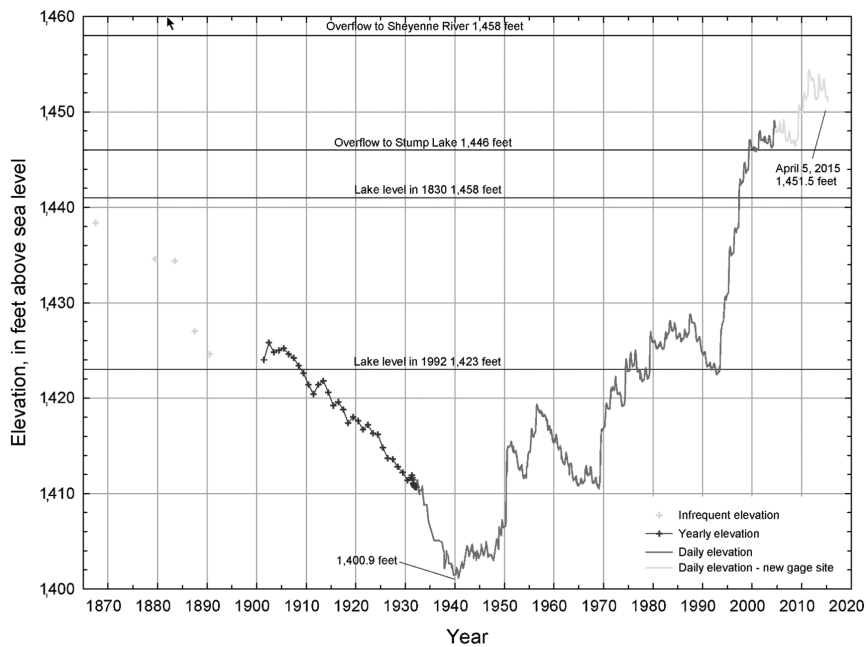
4. Capacity to evolve and undertake actions before an issue escalates

In 1997, the IJC recommended to the governments that a *watershed approach would help to better address current and emerging environmental issues* in a more holistic manner.⁸ The governments responded favourably to this recommendation and an ongoing reference was provided to the commission in 1998 to develop and apply the concept that has become known as the International Watersheds Initiative (IWI). The commission under this reference has regularly reported back to governments on the progress that has been achieved through the IWI.⁹

The premise of the IWI is that local people, with focused scientific and financial assistance from IJC boards, are often best suited to resolve transboundary water issues before they escalate further into contentious binational issues. The success of the IWI is based on the application of seven principles that have become increasingly incorporated into IJC affairs over time:

1. An integrated ecosystem approach to transboundary water issues;
2. Binational collaboration;
3. Involvement of local expertise;
4. Public engagement;
5. Balanced and inclusive IJC board representation;
6. Open and respectful dialogue; and
7. An adaptive management approach.

FIGURE 17.2. Devils Lake annual peak water levels (International Joint Commission, 2015).



Central to this approach is the evolution of existing IJC boards to watershed boards with a broader and more inclusive mandate to achieve the above principles. To date, there are two officially designated watershed boards: the International St. Croix River Watershed Board (2007) and the International Rainy–Lake of the Woods Watershed Board (2013). A number of other IJC boards are in the process of achieving this status. The governments are generally supportive of this paradigm shift in board governance, but there are many factors that need to be considered and a dialogue needs to take place prior to making such a designation. Since 2010, there has been significant sustained funding from the two governments to support numerous IWI projects addressing transboundary issues before they escalate. Through the IWI, the commission has further increased its ability to deliver on its mandate to prevent and resolve transboundary environmental issues.

An example of how the IWI is averting a potential binational conflict relates to Devils Lake, North Dakota (discussed in chapter 7 by Norman Brandson and Allen Olson). Water levels in this closed lake system, within the Red River basin, have been rising over the last seventy-five years to the point where it is threatening to overflow and drain into the Sheyenne River, a tributary of the Red River (see Figure 17.2). In response to this, North Dakota proceeded with construction of an outlet to control the outflow. Canada was concerned that this would result in the introduction of new fish parasites and pathogens that could affect recreational fishing in the Red River system and commercial fishing in Lake Winnipeg.¹⁰

With IWI funding, a team of binational aquatic scientists were engaged to undertake a comprehensive, multi-year field survey of fish parasites and pathogens throughout the Red River basin. Their work concluded that the fish parasites and pathogens found in Devils Lake are ubiquitous, though much of North America's river basins and numerous vectors of entry to the basin were possible beyond the outflows from Devils Lake. Through this sound and accepted science this issue was able to be resolved.

5. Focus and persistence on holding governments accountable

Another attribute that we would like to briefly touch on is the treaty and commission's *ability to hold governments—federal, state, and provincial—accountable over long periods of time*. The specific example we would like to offer is Great Lakes–St. Lawrence diversions and consumptive use (also covered in chapter 9 by Murray Clamen and Daniel Macfarlane). Over half a century ago, public concern was already growing about a perceived trend toward lowering of Great Lakes levels and outflows, with potentially serious consequences for both economic interests and ecological integrity. These fears related to a number of factors, including increasing consumptive uses, embryonic climate change concerns, and dredging in connecting channels. But most critical from the public's perspective were proposals for both small-scale and massive southward diversions from the Great Lakes basin. Figure 17.3 shows the state of existing water diversions in the Great Lakes basin

The IJC initially became involved through a reference from the two federal governments, which was carried out between the mid-1970s and

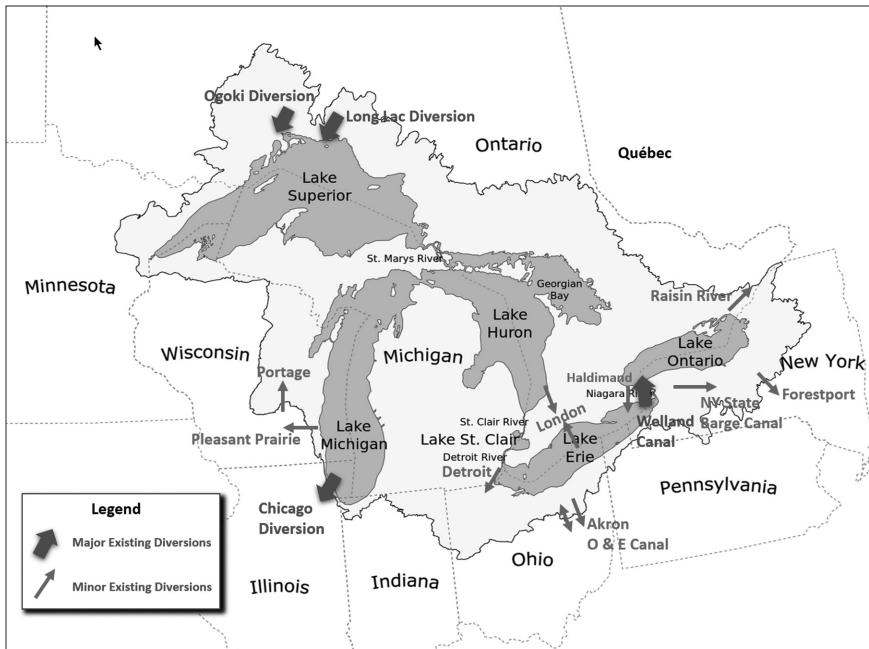


FIGURE 17.3. Existing diversions in the Great Lakes basin (Pentland and Mayer, 2015).

mid-1980s. In January of 1985, the commission released its first major report on the topic. That report called for improved information on consumptive use, and a process of notice and consultation before any new or changed diversions could be approved. The eight Great Lakes states and two Canadian provinces were closely involved in the reference, and even as the study was winding down, they had already negotiated the Great Lakes Charter, which they signed on 11 February 1985.

The federal governments and the IJC were brought back into the picture through another high-priority reference to the IJC in 1999. The IJC released its findings and recommendations in February of 2000.¹¹ By December of 2005, the Great Lakes governors and premiers signed the Great Lakes–St. Lawrence River Basin Sustainable Water Resources Agreement. Following ratification by the eight state legislatures and the US Congress, a parallel compact was signed into law by the US president in 2008.

In accepting the IJC's 2000 report, the two federal governments asked the commission to provide progress reports after three years and at ten-year intervals thereafter. The most recent progress report, released in 2015, was for the most part a good-news story.¹² No new inter- or intra-basin water transfer, which would have significant negative impacts on the ecological integrity of the Great Lakes, had been approved. The growth in consumptive use had been at least temporarily arrested, and international arrangements were largely in place to continue those positive trends. This continued reporting by the IJC on the progress being made by governments can be viewed as a good approach for holding governments accountable.

6. Continual learning leading to improved binational policies and practices

Prior to the early 2000s, the approach to addressing environmental issues was to undertake a large, costly study to evaluate a particular environmental concern or to conduct a periodic Review of Orders for a specific transboundary water regulating structure (i.e., dam). Considerable time and resources were expended on that particular effort, but once it was completed little or no resources were dedicated to effectively and efficiently implementing many of the recommendations. In many cases the recommendations were based on limited or disparate data, or on assumptions of how the environment might be impacted or the impacts of climate change that warranted a need for ongoing scientific evaluation.

The concept of an adaptive management approach to environmental issues was taking root in the water management field around this time and there was a proliferation of literature on this topic. Adaptive management is considered to be a planning process that provides a structured, iterative approach for improving actions through long-term monitoring, modeling, and assessment (see Figure 17.4). It is *built on continuous learning that leads to improved policies and practices over time*.

The need to implement an adaptive management approach in regulating water levels in the Great Lakes–St. Lawrence River system was a key recommendation of a major binational study.¹³ The IJC embraced this recommendation and established a task force after the study to provide more details on its implementation, organizational framework, and the

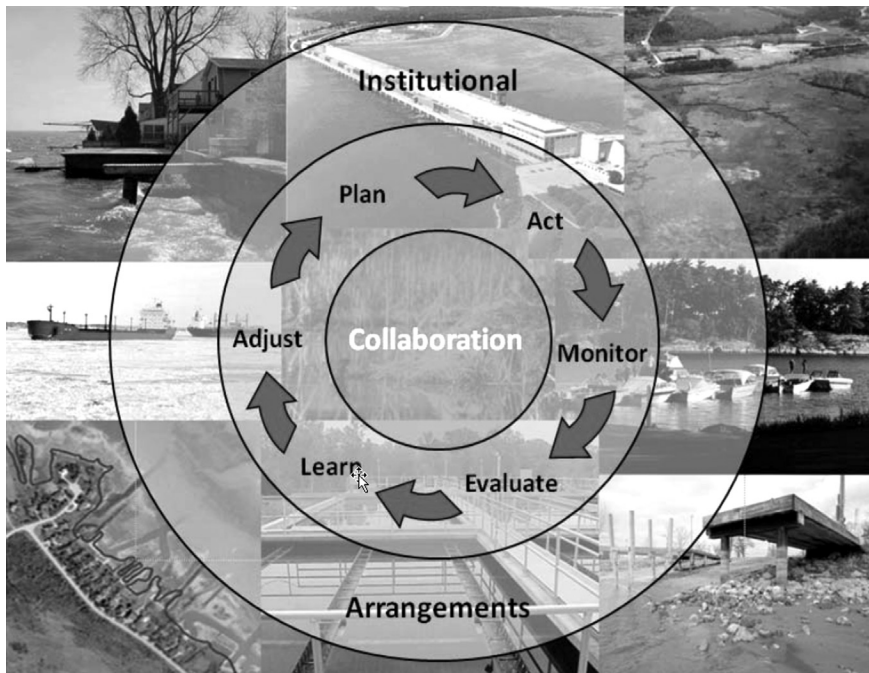


FIGURE 17.4. Adaptive management conceptual framework (International Upper Great Lakes Study Board, 2012).

resources that would be required. The task force’s report was completed in 2013 and the commission provided its recommendations to governments in 2014.¹⁴ This, in turn, resulted in the establishment of a Great Lakes–St. Lawrence River Adaptive Management Committee, which reports on an annual basis to the commission on their work plans.¹⁵ Implementation of an adaptive management approach in the context of water-level regulation is now well established in the Great Lakes–St. Lawrence River system, and it is being pursued by IJC boards in other transboundary basins.

7. A healthy mix of longevity and institutional flexibility

The IJC has continuing jurisdiction over its Orders of Approval, and this is a mainstay of its mandate. Some orders date back a long way, such as the Lake Superior Order of Approval that goes back to 1914. As they are

revised they are referred to as a Supplementary Order of Approval. There is an ongoing need to undertake a Review of Orders that have evolved over time that reflects the *longevity and institutional flexibility* of the work that the commission conducts.

Many orders are open-ended in terms of needing to be reviewed and go for long periods before a review is triggered, while others, like the Osoyoos Lake Order of Approval, has a clause that it be reviewed at a minimum of every twenty-five years.

There has been a conscious effort by the IJC and governments to review many of the long-standing orders to address evolving needs. The commission has adopted an ecosystem approach over the last twenty years that has resulted in factoring water use for the environment into any new regulation plans. The BWT has an order of precedence for water usage:

1. Sanitary/domestic,
2. Navigation, and
3. Power generation/irrigation.

To accommodate such considerations as the environment, the commission applies the principle that “no interest shall be unduly impacted” by the regulation plan. Other interests, such as riparians’ (i.e., cottagers), have also been able to be accommodated under this principle.

In the last couple of decades we have seen regulation plans and subsequent orders being modified that reflect this new thrust, such as: Lake Osoyoos (2013), Lake Superior (2014), and Lake Ontario–St. Lawrence River (2016). A Review of Orders is currently underway for regulatory structures in the Souris and Rainy River basins.

8. Inclusive approach with the public and Indigenous Peoples

One of the key principles on which the commission operates is inclusiveness. It has been focusing on expanding its board membership over time to *include the public and Indigenous Peoples*, and to better engage all interests in its activities.

The past couple of decades have seen a marked change in the composition of the membership of many of the IJC boards. Previously, most

of the boards were comprised solely of jurisdictional representatives from the various government agencies. This changed when the IJC presented a more inclusive vision of board governance in its landmark report to governments in 1997.¹⁶ The governments responded favourably to the idea but wanted to see it undertaken in a thoughtful manner and in consultation with the key federal, state, and provincial jurisdictions that had long-standing membership on these IJC boards. They were particularly responsive to involving Indigenous Peoples and encouraged the IJC to reach out and engage them.

With the establishment of watershed boards (see section 4 on capacity to evolve) we are seeing this more inclusive approach being applied. We also are seeing an increase in the number of board members and numerous supporting committees or groups that help to address this broader mandate.

The International Rainy-Lake of the Woods Watershed Board that was established in 2013 provides a good example of this new governance model. The board when formed was comprised of 20 members: 11 federal, state, and provincial members; 3 from the American tribes, First Nations, and Métis; and 6 from the general public. It has since expanded to 24 members. In the interest of inclusivity, there are now 3 supporting committees or groups that report to the board: the International Water Levels Committee, the Community Advisory Group, and the Industry Advisory Group. A recent report to the IJC calls for further expansion with an Engineering and Scientific Support Committee and an International Adaptive Management Committee.¹⁷ This is definitely a more complex organizational structure, but it does promote inclusiveness and reflects the broader focus on addressing transboundary water issues.

It is important to note that increased public, and to varying degrees Indigenous, participation is now commonplace on most of the IJC boards.

9. Advancement of environmental performance through science

The IJC relies upon shared information, establishing agreed-upon facts, and applying sound science in making its recommendations to governments. It is through this *credible and science-based approach* that the commission has been able to make progress on addressing challenging

binational environmental issues and ensure the effective management of transboundary waters.

Numerous examples are available that elucidate this attribute, but we will focus on just one to make our point. The one that we have selected relates to restoring alewife, a small river herring that is important to the freshwater food chain and the transfer of marine-derived nutrients, to fishery management in the St. Croix River basin, and to the Passamaquoddy people in the region. This native fish's migration route and habitat were severely impacted when the State of Maine blocked their passage at the Woodland dam.

Recreational fishers believed that an increase in the alewife population in Spednic Lake, upstream of the Woodland dam, in the 1980s was the cause of the significant decrease in the smallmouth bass population in the lake. Through intensive lobbying the State of Maine introduced a bill to close off the fishways at the dam in 1995. Over the following years the commission worked with all the interests in the basin to develop a consensus on reopening the fishways and allowing the alewives access back to the upper parts of the basin. Central to building this case was the production of a number of scientific reports that made it clear that there were others factors that had resulted in the decline of the smallmouth bass population and that alewives were basically a scapegoat, or in this case a "red herring." The sound scientific finding and continued dialogue with all the interests made the difference in resolving this contentious environmental issue.

On 10 April 2013, the Maine Legislature passed, by an overwhelming majority, a bill to grant alewife unconstrained passage at Woodland and Grand Falls dam in the St. Croix River watershed. Ten days later, on April 22, the law came into effect.¹⁸ Annual counts of alewife at a counting station near the mouth of the river have been slowly increasing, but numbers are a far cry from where they were in the 1980s. Nonetheless, it is a step in the right direction.

10. Standardization and improving data utility in transboundary basins

Undertaking water-related scientific work in transboundary basins has its challenges. Water data are collected using different methodologies and to

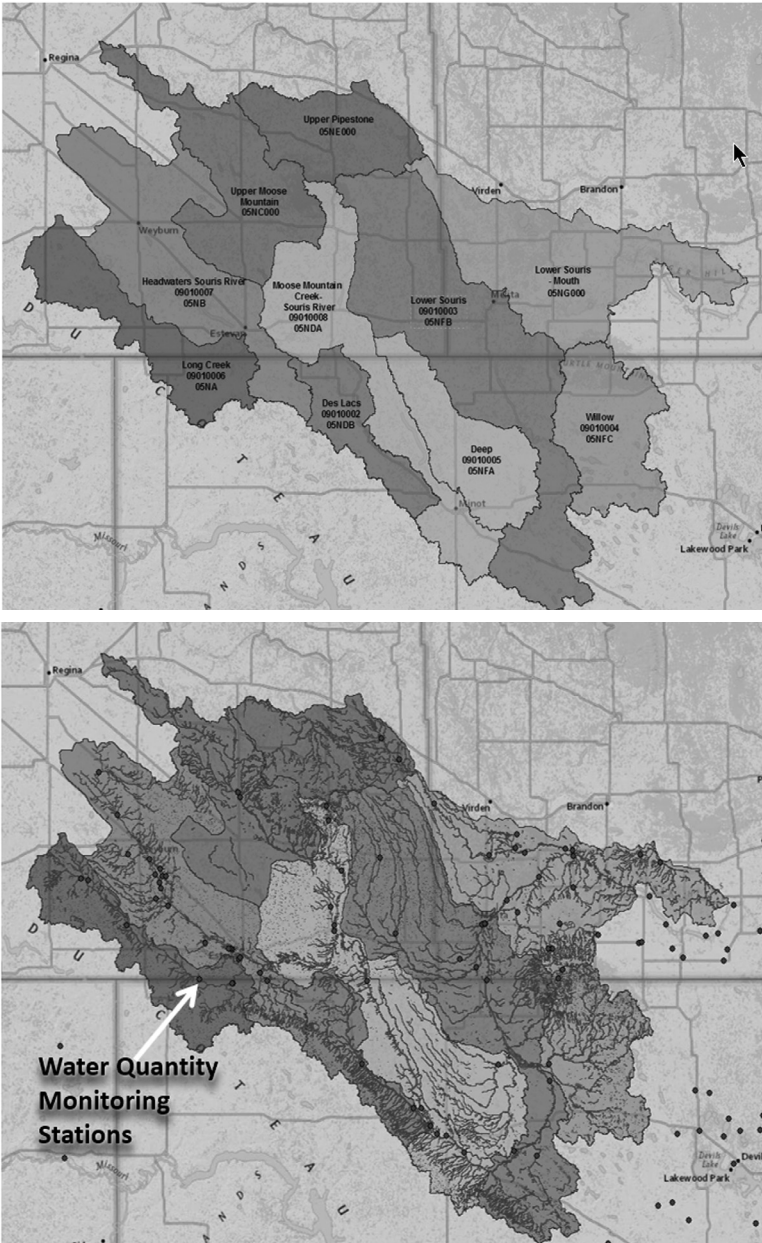


FIGURE 17.5. Harmonized data sets for Souris River basin (International Joint Commission, 2015).

varying standards in the two countries. Considerable time and funds are spent reconciling these essential data sets each time a binational study is undertaken. This prompted the commission to focus its effort on *standardizing and improving the data utility*, starting with the hydrographic data sets: river/stream/lake hydrographic features and associated drainage basin delineations.

After a 2006 pilot study produced a seamless, harmonized hydrographic data set in the St. Croix basin, the IJC determined that this work should be undertaken in all of the transboundary basins. This ambitious undertaking began in earnest in 2007 with the formation the binational Transboundary Hydrographic Data Harmonization Task Force with membership from the key federal agencies on both sides of the border that are responsible for the collection and stewardship of these important data. Figure 17.5 highlights the harmonized data sets created for the Souris River basin.

Over the past ten years this work has proceeded and harmonization of these data sets have been achieved in most of the transboundary basins, with the final thrust being on the Great Lakes–St. Lawrence River Basin. Current efforts are also focusing on the ongoing stewardship of these data with the key national agencies as these data sets become updated with improved higher-resolution data. The IJC is now beginning to reap the benefits of this extensive effort as these data sets are being applied in numerous binational studies involving hydraulic modelling and hydrological determination of net basin supplies to water quality assessments.

One example of the value of these harmonized data is the recently completed binational study of nutrient delivery in the Red–Assiniboine River basin.¹⁹ In this study, harmonized hydrographic data formed an underlying geographical information system data layer. Efforts were also made to standardize the water quality data inputs and the sources of nutrients in the application of the SPARROW (water quality) model throughout the basin. This work provided the first comprehensive assessment of nutrient loading to Lake Winnipeg from the transboundary portion of this extensive basin. The information from this study is being used as part of ongoing effort to help reduce nutrient loading in the basin.

Looking Ahead

These ten attributes clearly reflect why the IJC has been so successful in addressing water issues and avoiding any major water conflicts along the 8,800 kilometre Canada-US border, 40 per cent of which comprises shared waters. These examples highlight the efforts that have gone on from coast to coast over the past fifty years. The forward-looking BWT is responsible for much of the success story, but the commission's ability to interpret the treaty in the context of changing times, to continually evolve, and to nonetheless remain pertinent to the governments is equally remarkable. As one looks around the world there are few, if any, other examples of such an effective transboundary water management governance relationship among different nations.

The principles outlined in the BWT have generally stood the test of time, and they continue to be as relevant today as they were a century ago.²⁰ However, both the water and water-related issues facing the two nations, as well as the conventional wisdom regarding governance, have continually changed. Consequently, the attributes needed to address them have had to evolve, and will no doubt continue to do so.

Early in the twentieth century, most issues related to water apportionment and water level and flow regulation, and the capacity to deal with them, increased exponentially, especially related data-collection and the sciences. In the middle of the last century, the emphasis of governments and the IJC was in support of water resource development and projects of mutual advantage. In the early 1970s this focus shifted to a large extent to addressing common environmental problems, with an ecosystem approach gaining prominence by the 1990s. In more recent years, there has been an attempt to bring economic and environmental considerations together under the banner of sustainable development. A key response in the Canada-US context has been the International Watersheds Initiative highlighted in this chapter and which focuses on addressing water-related issues in a holistic manner in a transboundary basin.

Prognostication is always a hazardous undertaking. However, there are certain trends that are now well established, both globally and in North America, that would suggest a challenging future from both institutional and water issues perspectives. One institutional trend is toward globalization of

the world economy, which may or may not restrict the ability of individual nations to preserve their water resources. A second, perhaps related, trend is toward decentralization of water management decisions and a consequent attempt to build a more distributed capacity in both countries. A part of that second trend has also been a concerted effort to more fully involve the public and Indigenous Peoples in management processes.

A current troubling issue has been a steadily declining governmental-scientific capacity in both countries. This decline is compromising the IJC's ability to protect water resources because the commission relies heavily on credible scientific experts within governments to assist in binational fact-finding efforts and scientific assessments.

From an issues perspective, there is little doubt that our shared waters will increasingly be affected by global issues that are likely to intensify conflicts in shared waters. These include, for example, global energy security, climate change, exponentially escalating demands for non-renewable resources, intensifying environmental health issues, potentially widespread food or water shortages, and possibly even environmental refugees.

We would like to highlight three specific "wild cards" that could be particularly challenging in the Canada-US context in the coming decades:²¹

1. Uneven water demands: One example is the Great Lakes, specifically the Chicago Diversion, which is exempt from the state-provincial agreement prohibiting removals of water from the Great Lakes basin. A second example is in the Red River basin, where a 2005 US Bureau of Reclamation study included the option of diverting water from the shared Lake of the Woods to the US portion of the basin. Yet a third example is in the St. Mary-Milk region of the Great Plains, where US interests have been demanding a re-examination of a long-standing international water apportionment arrangement.
2. International trade agreements: The text of a proposed revised NAFTA (or USMCA) is currently being considered by the legislative authorities in Canada, the US and Mexico. The current NAFTA, as well as domestic legislation and policy in both countries discourages

inter-basin transfers of water that may damage ecological integrity, and the proposed USMCA would not change that fact. Nevertheless, unforeseen future changes in trade law, combined with other evolving issues, could conceivably influence that situation in such a way as to strain bilateral water relations.

3. Climate Change: The US population continues to migrate southward and westward, particularly to coastal regions and other parts of Texas and California. This shift in population puts citizens on a collision course with the storms, rising sea levels, and extended droughts that are associated with global warming. It is not impossible to imagine a time when the US Southwest becomes desperate for water, and political pressures intensify greatly for large-scale inter-basin transfers from the Northern Tier states, and eventually even from Canada.

Any or all of these broader issues could translate into increased conflict in boundary and transboundary basins. Nevertheless, we would not expect any appetite to renegotiate the generally successful BWT itself. Rather, we would expect the approaches to conflict resolution to continue to evolve as necessary to meet any new challenges, as they have over the past century.

With those considerations in mind, we would suggest that the IJC needs to continue focusing on its many positive attributes. In that regard, we would especially endorse further progress on the IWI. What is needed in many transboundary basins, and will increasingly be needed in the future, is the approach applied by the IWI that recognizes the complex interplay between socio-economic and environmental factors, quantity and quality concerns, and various segments of society, including Indigenous Peoples.

Also, as we have seen in the Columbia River example, society may very well begin insisting that more restorative approaches move to the forefront. Citizens in the basin—and we suspect in many other transboundary basins—are beginning to demand that natural assets be used and managed much more sustainably from an ecological-integrity perspective, that non-structural approaches be more seriously considered,

and that more consideration be given to the potential of renewable energy sources. In the end, sustaining and rebuilding natural resilience may be our only real defence against the impacts of climate change. The kind of credible, binational fact-finding and sound science for which the IJC is well-known will be crucial to future successes.

While it may be controversial initially, the IJC may also have to become less constrained in expressing its views on global and continental issues such as climate change and chemicals management. Many of the continental and worldwide advances in the water sciences over the past century took place because of Canada-US efforts in shared waters. But simply letting that happen by osmosis may be insufficient in the future. A more proactive stance would be to engage with other regions around the world to advance new ideas and concepts. And finally, regarding science capacity, the IJC may have to begin looking well beyond North America for guidance if government capacity on this continent continues to decline. Other parts of the world are now surpassing North America in some respects. For example, many knowledgeable observers believe we have much to learn from the overall European approach to water management as well as to chemicals management.²²

Notes

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