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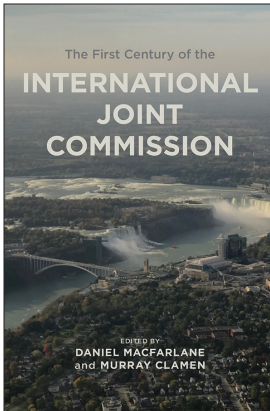
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THE FIRST CENTURY OF THE INTERNATIONAL JOINT COMMISSION

Edited by Daniel Macfarlane and Murray Clamen

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The International Joint Commission's Unique and Colourful Role in Three Projects in the Pacific Northwest

Richard Moy and Jonathan O'Riordan

The International Joint Commission (IJC) has a long and colourful history in the Pacific Northwest. There are always questions by the US and Canadian governments regarding the appropriate role the IJC should play in resolving issues in international river basins between the two countries. The following three, very different cases illustrate that the IJC can be very creative in defining innovative approaches for assisting governments. The strength of the IJC is that it brings together the best minds from governments, academia, and the private sector on both sides of the border to build a sturdier bridge to enhance the flow of science and objective data analysis across it. This process allows the IJC to be very successful in achieving consensus.

The role of the IJC in each of these cases is quite different. First, in the Ross Dam controversy, the IJC facilitated the resolution of a very contentious issue that had been festering for over forty years on the Skagit River. Second, the IJC developed the technical and policy foundation for the 1961 Columbia River Treaty (CRT). Lastly, in the Sage Creek Coal Reference, the IJC conducted an environmental assessment and defined the impacts of a proposed coal mine in Canada on the Flathead River,

near the international border, and made creative recommendations to governments.

In the Skagit decision, the City of Seattle developed a long-term plan for raising Ross Dam in stages on the Skagit River to produce additional hydroelectricity to meet Seattle's future electrical needs. British Columbia did not want the dam raised, as it would back up water into the province. The IJC facilitated the resolution of this difficult dispute and arrived at a very creative "win-win" solution that benefited both Seattle and British Columbia without raising the dam. The decision has been called "the paper dam" solution.¹ The controversy was so intense that it contributed to a change of government in British Columbia and nearly reached the United States Supreme Court.²

Between 1944 and 1960, the governments sought the IJC's expertise and objectivity to develop the technical and policy foundation for providing flood control and enhancing hydro-power production on the Columbia River. The primary goals of the CRT were met: the construction of the three dams in British Columbia and Libby Dam in the United States with the United States paying most of the costs of construction. As the CRT can now be terminated by either party after 2024 with ten years notice, there are ongoing discussions on what a future or revised treaty should look like. The issues and concerns of today are different than those defined in the original treaty over sixty years ago. A new vision, direction, and principles of operations are needed for the Columbia River system. Both parties to the treaty have signaled that restoring ecosystem values throughout the Columbia Basin should be included in the negotiations.

The IJC process and outcomes of the Sage Creek Coal Reference in the Flathead River drainage of British Columbia in the mid-1980s set a precedent for addressing water quality and other environmental impacts based on the interpretation of article iv of the Boundary Waters Treaty (BWT). Article iv includes the following sentence: "Boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other." The binational technical process used by the IJC shows its strength and value in providing science-based recommendations to governments. More importantly, the IJC's 1988 recommendations became the guiding light for a number of initiatives undertaken by both Canadian and US citizen groups and their

governments to protect the ecological integrity of the entire Flathead River Basin.

A common theme binds two of these three cases—that of building resilience in international watersheds through supporting and restoring healthy ecosystems. In both the Flathead and Skagit there was a strong desire to preserve the ecological integrity of the watershed. Although the CRT was completed in 1961, before scientists truly understood the value of protecting the ecological health of the basin, the renegotiated treaty will need to balance the needs of the environment against the other requirements and uses.

The Skagit River and the High Ross Dam Controversy

Basin Description

The Skagit Valley is a very special place because of its unique location and natural amenities. It is a three-hour drive from both Vancouver, British Columbia, and Seattle, Washington. The rather pristine valley stretches across the international border and is a favourite region for fishing, camping, hiking, and canoeing. The powerful Skagit River rises in British Columbia, west of the Cascade Mountains, and after flowing about 28 miles crosses the international border into the state of Washington. The river continues for another 135 miles in Washington before discharging into the Pacific Ocean through the Strait of Juan de Fuca.

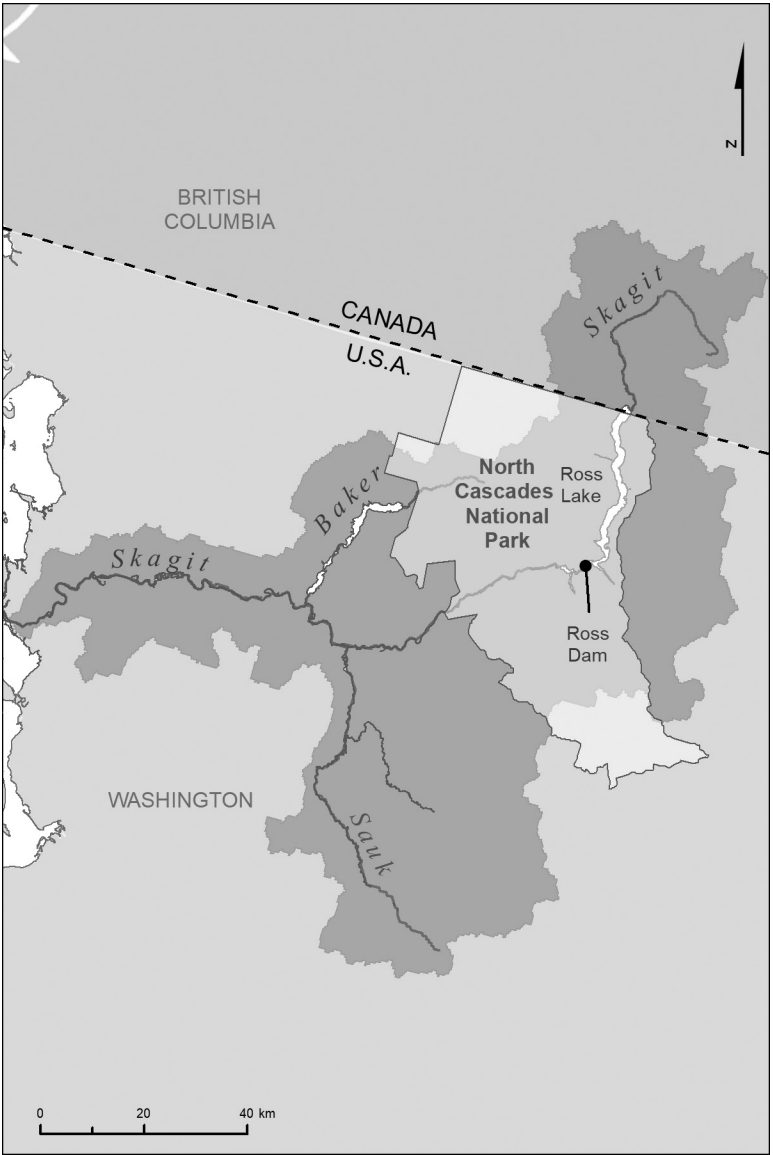


FIGURE 8.1. Skagit River Basin and Ross Lake.³ J. Glatz, Western Michigan University Libraries.

The IJC's History

The IJC had a long and contentious history of raising Ross Dam on the Skagit River in the state of Washington. The history dates back to 1906, when Seattle City Light (Seattle Light) became interested in developing the Skagit River's hydro-power potential to provide electricity to meet the growing demands of Seattle. Starting with the Gorge and Diablo Dams, Ross Dam was to follow in a series of staged developments. To begin the process, the City of Seattle applied to the US Federal Power Commission (now re-named the Federal Energy Regulation Commission, or FERC) for initial authorization to construct Ross Dam in 1926. Knowing land in the Skagit Valley of British Columbia would be inundated within the enlarged reservoir, Seattle Light acquired the former Whitworth Ranch, the only privately owned land in the Skagit Valley of British Columbia in 1929. British Columbia placed a Crown Reserve on all remaining lands within the BC portion of the basin in 1930. Informal negotiations began between Seattle and British Columbia on the purchase of the Crown lands. After a number of years of discussions without success, the negotiations were finally suspended in 1939.

Seattle began the construction of Ross Dam in 1937, reaching a height of 475 feet (145 metres). Then, in 1941, pursuant to article iii of the BWT, Seattle submitted an application to the IJC to obtain the authority to raise Ross Dam to its full designed height in stages for the generation of additional electrical power. Seattle needed permission from the IJC as the enlarged dam's reservoir footprint would extend into British Columbia. The final dam height would increase the reservoir area in British Columbia nearly ten-fold.⁴ Before issuing the order the IJC held a two-hour hearing on the project in Seattle on 12 September 1941. At that time, the Canadian Skagit was little known and very inaccessible, as the Silver-Skagit road had not yet been built. Seattle Light described the project and informed the IJC that it was urgently needed to meet the power demands for producing armaments for the Second World War. Since the dam was in Washington, far more American government agencies (43) were notified of the hearing, as compared to those from Canada (12).⁵

The few Canadian officials that attended the hearing had not heard details of the proposal. There was substantial confusion as to whether the

land to be flooded was owned by the Crown or privately owned in British Columbia. Victor Meek, controller of the Dominion Water and Power Bureau, provided Canada's only official comment. He indicated that he was representing the Canadian government's Department of External Affairs and had no statement to make at this time, but indicated that the government would provide comments later, after he and others had had a chance to study the details of the project. External Affairs, however, never provided comments.⁶

On 27 January 1942, the IJC issued its Order of Approval that granted the City of Seattle the authority to raise Ross Dam to its full height of approximately 130 feet (39.6 metres) (called the High Ross Dam).⁷ The enlargement would substantially increase Seattle's ability to produce peaking power and would reduce the city's dependence on the more expensive peaking power from the Bonneville Power Administration.⁸

The raised dam could flood an additional 4,475 acres (2,217 hectares) in British Columbia. The issue of compensating the province for the flooded acres was not resolved in the IJC's Order of Approval, but was a condition of the order. Figure 8.2 below illustrates the difference between the proposed High Ross Dam and the lower dam height.

In 1947, the BC Legislature passed the Skagit Valley Lands Act, which authorized the provincial cabinet to negotiate an agreement with the City of Seattle that would allow the upper BC portion of the Skagit Valley to be flooded by Seattle Light for its exclusive use. By 1952, a tentative agreement was reached. It allowed Seattle to flood the Skagit Valley for ninety-nine years in exchange for a single cash payment of \$255,508 and the clearing of the reservoir basin of trees.¹⁰

In 1953, the provincial government was toppled and the new premier, W. A. C. Bennett began his twenty-year reign. He decided to delay the signing of the agreement. The Seattle City Council, however, went ahead and ratified the \$255,508 agreement in May 1953 and proceeded to raise the dam 65 feet (19.81 metres) to a height of about 540 feet (160 metres), which in turn would flood about 494 acres (200 hectares) within British Columbia. This phase of construction would allow the dam to be easily raised to its final designed height. The province said nothing. However, in 1953 the Social Credit Party obtained a majority in the BC Parliament and suddenly informed Seattle that the proposed compensation agreement

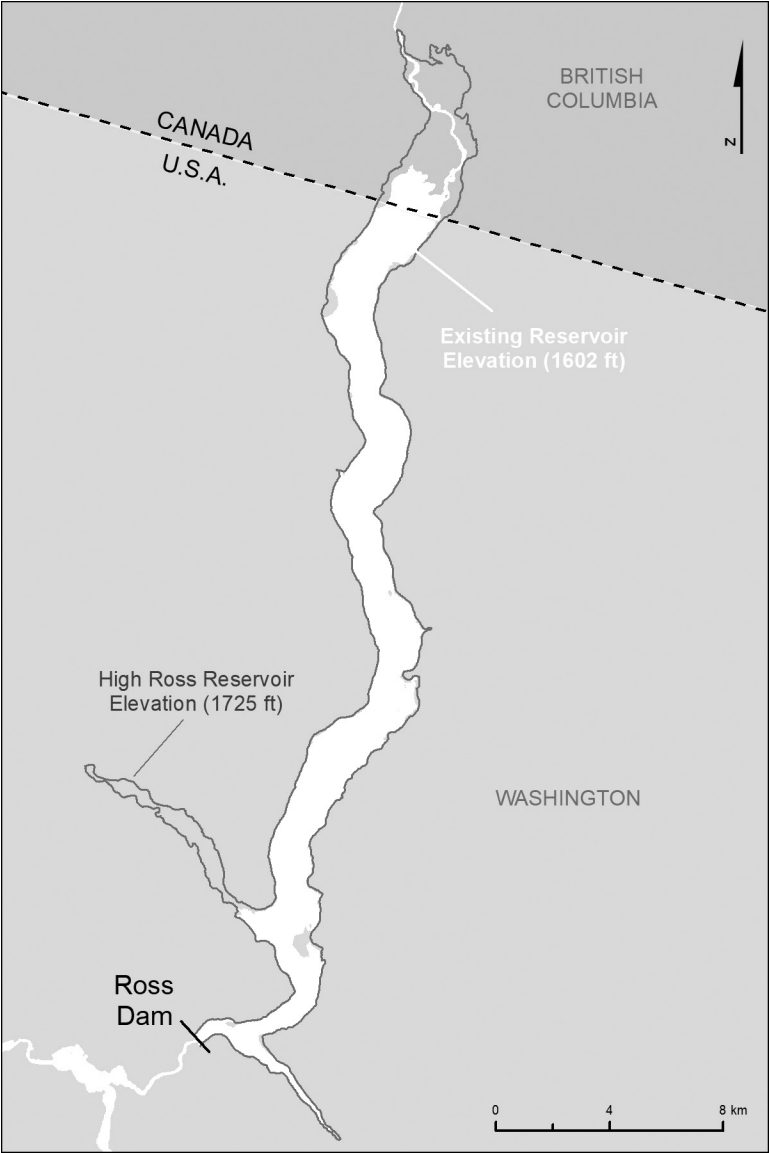


FIGURE 8.2. High Ross Dam Reservoir compared to the existing Ross Dam Reservoir.⁹J. Glatz, Western Michigan University Libraries.

was no longer acceptable. This was due in part to the influence of General A. G. L. McNaughton, the Canadian co-chair of the IJC. He realized that the value of the stored water behind Ross Dam was considerably more than that offered by the City of Seattle.¹¹ His assessment was based, in part, on his involvement with the IJC's technical storage studies that were being undertaken for the CRT.

The compensation controversy reached a peak in April 1954, when Seattle and the US Section of the IJC proposed that British Columbia be compelled to accept the \$255,508 offer as full and complete compensation for the flooding of its lands. The province countered that no agreement had been signed.¹² General McNaughton even went as far as stating that Seattle Light's flooding of BC lands violated Canadian sovereignty and the IJC's own 1942 Order of Approval. It is understandable that the US and Canadian commissioners could not reach a majority to enforce the compensation agreement. British Columbia, however, did agree to accept \$5,000 per annum as an interim settlement for the flooding of the 494 acres.

In 1958, Seattle Light made its final attempt to have the IJC impose a settlement on British Columbia, but was again rebuffed. The province decided to postpone further negotiations with Seattle Light until after the CRT was finalized, as it wanted to assure itself a fair share of the downstream benefits for compensation of lands that would be flooded in the province under a new treaty.

In 1967, British Columbia finally agreed to an annual rental fee of \$34,566.21 (or its equivalent in power at a price of 3.75mill/kwh) and taxes of about \$10,000 per year. And in return, Seattle Light gained the right to build Ross Dam to its full designed height and to flood a total of 5,189 acres (2,101 hectares) of land in British Columbia.¹³ Seattle Light would also be required to clear the reservoir basin before flooding, replace any inundated segments of the existing road, and pay stumpage and royalties for timber removed during the clearing. All work had to be done by provincial residents. Seattle began to pay the annual rental fee and taxes until Bennett's Social Credit government was replaced in 1972, and British Columbia decided to reject the agreement and cease accepting Seattle's payments. Many in the province and the Canadian Section of the IJC felt that Seattle Light received too good of a deal.

With the annual rental agreement in hand, Seattle Light formally applied to the US Federal Power Commission (FPC) in 1970 for the final authorization required to raise Ross Dam to its full and final elevation. The hearings were held in 1974 by the FPC and they were contentious, with strong Canadian opposition. Both Canada and British Columbia argued against any additional flooding into the province. Based on the evidence provided, the FPC ruled in favour of Seattle Light's application to raise the dam to its full height in July 1977. It is interesting to note that in the United States, the issue of the High Ross Dam was a localized issue, but in Canada, it became both a provincial and national issue.¹⁴

Prior to the late 1960s, there was little opposition to the dam in both the United States and Canada. But because of increased environmental sensitivity in British Columbia and the state of Washington, opposition became more prevalent. The environmental movement gained strength and opposition to the High Ross Dam began to crystalize on both sides of the border. With strong pressure from British Columbia, Jack Davis, the Canadian minister of environment, sought and obtained an IJC reference from the two national governments asking the IJC to re-examine the case.¹⁵ The reference requested that the IJC "investigate the environmental and ecological consequences in Canada of the raising of the Ross Lake to an elevation of 1,725 feet (525.8 meters) above mean sea levels, taking into account relevant information about environmental and ecological consequences elsewhere on the Skagit River, and measures being taken or planned to protect and enhance the environment in these areas." However, the reference stated that any recommendations made could not be "inconsistent with the commission's Order of Approval dated January 27, 1942," and the agreement reached between the City of Seattle and British Columbia on 10 January 1967. In other words, the outcome of this reference would not allow the IJC to alter its January 1942 Order of Approval giving the City of Seattle the authority to raise Ross Dam to its final height. Before beginning the environmental assessment, the IJC held three days of public hearings on the reference in Vancouver, Canada, and Bellingham, Washington.

Based on information from the hearings and its own assessment, the IJC submitted its environmental assessment report to the governments on 17 December 1971.¹⁶ In preparing the assessment, the IJC compared the

base case with no enlarged Ross Dam against changes that would occur if the dam was raised to its final height. The IJC began to believe that raising Ross Reservoir to its full elevation could impact the valley floor and its riparian environment. Based on the environmental assessment, and the public comments received, the commission began to question its original position over raising Ross Dam to its full designed height, but it could not change its decision without violating the terms of its original 1942 Order of Approval, as noted in the 7 April 1971 reference letter to the IJC from the national governments.

In the early 1970s, the volatility of the issue increased in Canada. On 2 November 1973, the House of Commons passed a unanimous resolution stating its “unalterable and unanimous opposition to the flooding of the Canadian Skagit Valley.” This was relayed to the US government by the Canadian secretary of state for external affairs. Prime Minister Pierre Trudeau even raised the issue with President Gerald Ford in 1974, and the House of Commons reaffirmed unanimously its earlier resolution in 1977.¹⁷

The stage was set for the final negotiations. Seattle had followed all the appropriate procedural requirements in developing its long-term plans for additional power-generation capacity on the Skagit River, and it was in a very strong position for a number of reasons. First, it had the 1942 IJC Order of Approval that gave it the authority to raise the dam to its full height. Second, Seattle had the 1967 compensation agreement that was signed by British Columbia and upheld by the IJC for the lands that would be inundated by the raised dam, and which Seattle complied with for a number of years until its payments were no longer accepted by British Columbia. Third, the FPC licence gave Seattle the authority to raise the dam. And lastly, the opponents to raising the dam lost their appeal in the US courts.¹⁸

British Columbia felt that if Seattle proceeded with construction, it would consider it to be a “hostile” act against a friendly neighbour.¹⁹ However, the province realized it was in a very difficult position because Seattle had all the appropriate authorizations to proceed. The province could not unilaterally repudiate the 1967 agreement that it signed without adequate restitution to Seattle.

On 14 August 1980, the BC government again asked the IJC to annul or rescind its 1942 Order of Approval for High Ross Dam.²⁰ In response,

the IJC invited “interested persons” to respond by 17 December 1981. Seattle Light and the US State Department filed legal arguments contesting British Columbia’s position, and urging the IJC to uphold its original 1942 ruling and order. The Canadian and provincial governments continued their objections to the High Ross Dam, noting the unanimous resolution by the House of Commons and the discussions between Prime Minister Trudeau and President Ford. A large percentage of the comments received by the IJC from US and Canadian citizens were now in opposition to raising Ross Dam over the impacts to the environment. As noted earlier, the real turning point on raising Ross Dam to its final height was the strong local opposition in both Washington and British Columbia over environmental concerns.

As the IJC began to consider the comments and what to do next, two of the three Canadian commissioners resigned and all President-Carter-appointed US commissioners were immediately fired by the newly-elected president, Ronald Reagan.²¹

The Final IJC Solution

The long and unsuccessful six-year period (1974–80) of bilateral negotiations had left both sides frustrated and mistrustful.²² With the new commissioners in place, the IJC visited British Columbia in December 1981 and made it clear to the province that it should not make the mistake of simply assuming that the commission would agree with its request to stop Seattle from raising Ross Dam to its final designed height. The IJC then delivered a similar message in Seattle. The commissioners let Seattle know that even though it might have the legal authority to raise the dam, it would be difficult for the city to move forward with construction, and it would not dismiss British Columbia’s request. The IJC wanted to find a solution that would be both equitable and durable for both sides.²³

In response to the province’s request, the IJC issued a rather innovative Supplemental Order on 28 April 1982.²⁴ In it, the IJC made it clear that British Columbia’s request and arguments presented in its August 1980 filing did not constitute sufficient grounds to persuade the new commissioners to grant the relief sought by the province. Further, the order stated that the Skagit Valley in British Columbia should not be flooded

beyond its current level, provided that appropriate compensation should be provided to the City of Seattle for the loss of the valuable and reliable source of electric power that would have resulted from raising the dam to its full designed height. In the order, the IJC took “an extra ordinary action” by ordering Seattle to maintain the low level of the Skagit River at the international border for a period of one year from the date of the 1982 Supplemental Order. Further, the order defined the membership and duties of a Special Board.²⁵ The composition of the board was very important. It was to be composed of two members from the commission who served as co-chairs, and two non-governmental experts. The IJC also invited representatives of the US State Department and the Canadian Department of External Affairs, the Province of British Columbia, and the City of Seattle to nominate a representative to be a member of the board. This board was required to coordinate, facilitate, and review on a continuing basis those activities directed at achieving a negotiated and acceptable agreement between the city and province and to provide status reports regarding such progress to the commission every four months.²⁶ Having the national representatives on the board was critically important as the final resolution of the issue would require a commitment by both federal governments to implement the final solution.²⁷

When board representatives first met in Washington, DC on 10 March 1982, neither side trusted the other. Most expected another round of talks that circled the wagons around a number of intractable issues between Seattle and British Columbia over raising or not raising Ross Dam. However the new commissioners recently appointed by President Reagan had a different view on how to approach the negotiations. US commissioner Keith Bulen’s opening remarks set the tone for the negotiations. He made it clear that the commission expected a different outcome. And if the negotiators could not come to an agreement, the commissioners would rule “not as Americans and Canadians” but in the best interest of both countries and no one in the room could predict the outcome. In other words, the IJC threatened to force a solution on the province and city that might not make either side happy. This strong statement forced both sides to the negotiating table. Further, it laid out a one-year timeline within which a negotiated deal had to be reached.

The year-long negotiations were tough, and they were almost terminated on several occasions. A critically important first step was the appointment of a team of special technical advisors: Douglas J. Gordon and George T. Berry. Both had impeccable credentials.²⁸ They were able to provide expert and impartial technical and economic advice to the IJC, and they prepared the 2 April 1982 Gordon/Berry Report for the commission. The report calculated the final construction costs and the additional electric output that would have been generated from a High Ross Dam. The report settled a number of economic and technical assumptions and conclusions that had been in dispute.²⁹ This data was used to inform Seattle on how much it would need to pay British Columbia (based on Seattle's costs to raise the dam to its designed height), and in return the amount of electrical power British Columbia would need to provide to Seattle if the dam was not raised. The technical information was absolutely key to the final solution. Further, the IJC had to continually push the board to complete its work, as the alternative would not be acceptable to either side.³⁰

To maintain the momentum for the year-long negotiations, the IJC oversaw each round of talks.³¹ In the end, the IJC functioned in exactly the way it is supposed to: it took politics, which had stalled the dam controversy for decades, out of the equation, thereby enabling a technically sound plan to be put together that was acceptable to all parties involved. The IJC played a new role as a neutral power broker that it had been unwilling to take on previously. Further, the IJC encouraged the key local BC and City of Seattle representatives to take more responsibility in finding a viable solution.

The “Paper Dam” Agreement

On 14 April 1983, BC environment minister Stephen Rogers and Seattle mayor Charles Royer announced details of a framework agreement that was reached between British Columbia and the City of Seattle for the resolution of the long-standing Skagit Valley/Ross Dam dispute.³² The agreement met both the needs of both parties. The agreement had four key components. First, no further flooding of the Skagit Valley would be allowed, and in return British Columbia would supply Seattle with the amount of electricity that would have been generated if Ross Dam had been raised

to its full height. Second, there was a clearly defined termination option. Third, a very creative Environmental Endowment Commission and funding source would be created to develop and manage the Ross Dam/Skagit Valley area for recreation and environmental conservation.³³ Lastly, a treaty would be required to bind the parties to the agreement.

Taking into account how long the issue had dragged on, the speed and manner in which the High Ross Dam controversy came to an end is remarkable. In this rare case, and as noted earlier, the IJC took politics out of the equation, which the authors feel can be one of the commission's strengths.³⁴ Another important reason for this success is the active involvement of local experts, who had a better understanding of the issues and the need for resolution.³⁵ Similar to the IJC's International Watershed Initiative program, transboundary disputes are more easily resolved when local leaders and stakeholders are involved in the decision-making process.

Leaders on both sides of the controversy thought the agreement was fair. President Ronald Reagan noted that it was "constructive and ingeniously settled."³⁶ Canada's minister of external affairs and the US secretary of state said it could serve as a model for resolving future transboundary disputes.

The IJC issued a Supplemental Order dated 18 January 1984 terminating its January 1942 Order of Approval that would have allowed Seattle Light to raise Ross Dam to its designed height.³⁷ The framework agreement became the key provisions included in the 1984 treaty. The United States and Canada entered into the treaty that ended the High Ross Dam controversy on 2 April 1984. Without the treaty, the agreement would probably have failed.³⁸

Recently, the BC government approved clear-cut logging in accordance with provincial forest and range practices legislation in an unprotected mineral claim area in the upper Skagit Valley. Although there have been attempts to buy out the existing mineral claims and include them in the surrounding protected areas, none of these initiatives has been concluded. The logging approval involves 39,000 cubic metres of timber on 67 hectares of lands. The strong objections to the logging approvals by the governor of Washington, the mayor of Seattle, and many others on both sides of the border illustrates the continued interest in protecting the ecological

integrity of the Skagit Valley. These are the same environmental values identified over three decades ago during the IJC intervention process.³⁹

Columbia River Treaty

The Columbia River Basin

The Columbia River is the fourth largest river in North America with an average discharge of 265,000 cfs (cubic feet per second; 7,500 cubic metres per second) and annual average volume of 198 maf (million acre-feet), with its head waters originating in both the United States and Canada (see Figure 8.3 below). The total area of the basin is 260,676 square miles (668,400 square kilometres). Approximately 15 per cent of the basin is in Canada and 85 per cent is in the United States. By comparison, the volume of water produced in the Columbia is more than eight times the run-off from the Colorado. As the water flows to the Pacific, the river is second only to the Missouri-Mississippi River System in terms of annual run-off. The steep gradient and high volumes of water of the Columbia are the primary reasons why the Columbia River has the largest hydroelectric generation capacity of any river system in North America.

Historically, hydro-power has been one of the most inexpensive and most efficient sources of electricity in the region. The United States realized this in the 1930s and began constructing hydro-power dams to produce hydro-power, control floods, and to meet the other authorized purposes within its portion of the basin.⁴⁰ The chief builders of these large dam projects were the US Army Corps of Engineers and the US Bureau of Reclamation.

The primary concern with the US storage and hydro-power system in the Columbia River Basin is that the highest demand for electricity occurs in the wintertime, when river flows are generally lower. However, the higher river flows occur in the late spring and early summer, when the demand for power is the lowest. At that time, there was not enough stored water in the US portion of the Columbia River to balance river flows with electrical demands. The United States clearly recognized that some of the best storage sites were located in the Kootenai River drainage of British

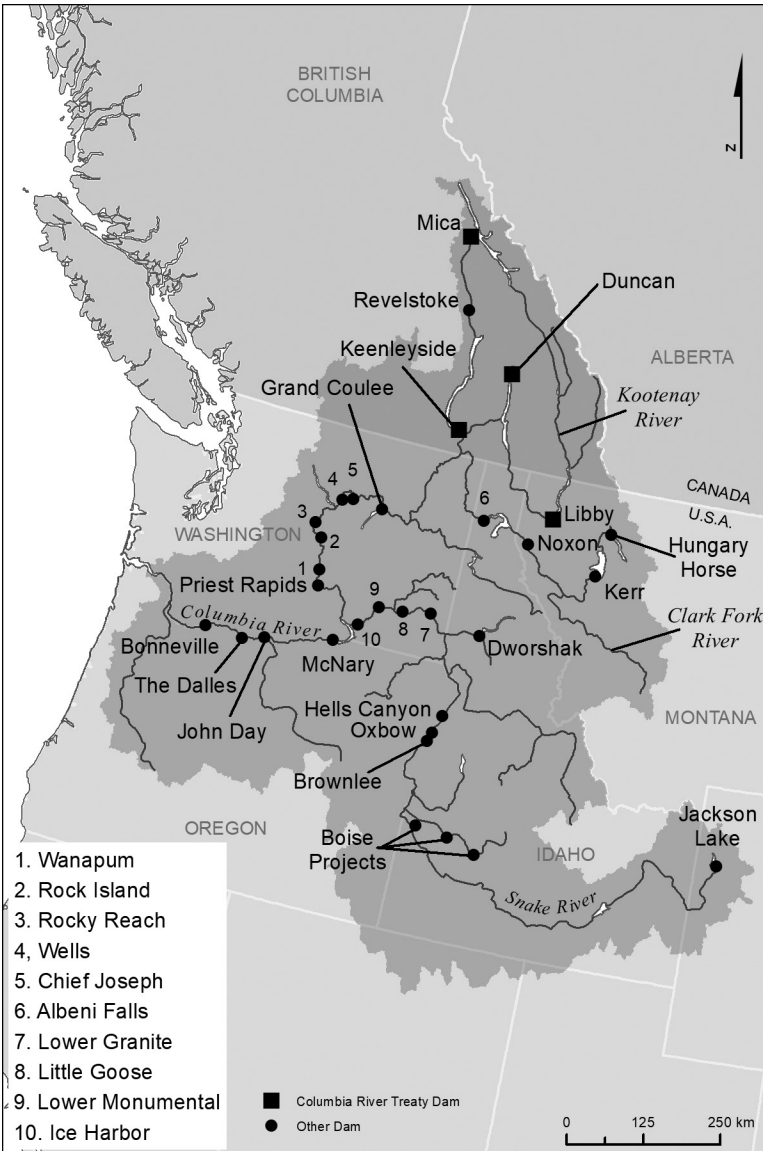


FIGURE 8.3. The Columbia River Basin.⁴¹ J. Glatz, Western Michigan University Libraries.

Columbia. Just as important, both countries needed the additional storage to control and mitigate floods. For these reasons, the United States approached Canada to begin discussions on the potential for additional Kootenai River storage in British Columbia as a means to optimize hydro-power production and flood control. Other important uses that could benefit from additional Canadian storage include irrigation, fisheries, navigation, and recreation.

The IJC's Role in Developing the CRT

Before formal negotiations could begin, the two countries needed technical information on viable storage sites and guiding principles to support the implementation of a treaty. Accordingly, the two national governments asked the IJC to develop the technical information for a treaty in a reference letter dated 9 March 1944.⁴² The reference requested that the commission:

determine whether in its judgment further development of the water resources of the river basin would be practicable and in the public interest from the point of view of the Governments, having in mind (A) domestic water supply and sanitation, (B) navigation, (C) efficient development of water power, (D) the control of floods, (E) the needs of irrigation, (F) reclamation of wet lands, (G) conservation of fish and wildlife, and (H) other beneficial public purposes.

Even though the reference letter identified a number of beneficial uses, the primary focus was to improve hydro-power production and to control floods through co-operative development of Kootenai River infrastructure. To accomplish this, the IJC established the International Columbia River Engineering Board to review existing technical reports and to conduct required engineering and other types of investigations. To assist the IJC, Canada conducted seven engineering studies on possible dam sites in British Columbia. Based on all the technical information, the IJC reported that Canada could provide 15.5 maf of additional storage at three different BC locations: 7 maf at Mica Dam, 7.1 maf at Keenleyside, and 1.4 maf

at Duncan. The IJC also considered the construction of Libby Dam in the United States. Canada had to agree to the construction of Libby, as this dam would inundate 42 miles (67.6 kilometres) into the province.⁴³

The then chief of the US Army Corps of Engineers for the Columbia, General Itschner, and the Canadian IJC co-chair, General McNaughton, had differing views for the future operations of the Columbia River system and the basic principles of administering the power arrangements.⁴⁴ The United States wished to integrate the operations of the Canadian storage and generation into the US system as an extension of the Bonneville Power Administration, and to be under its effective control. McNaughton, however, held the view that the waters in Canada belonged to Canada under the 1909 BWT and that the Canadian government would maintain independent operations of its storage, but in close co-operation with United States under guiding principles that would be defined in a treaty.

Canada also wanted to make sure that it received some form of compensation from the United States for the construction of storage sites—more than just paying for the cost of construction. General McNaughton realized that compensation for the BC land inundated by the reservoirs understated the true monetary value of the additional storage. He also felt the real value of these reservoirs in British Columbia was in the extra hydro-power that could be generated downstream in the United States, plus the reduction of flood damages.⁴⁵

Based on the results of the technical investigations, in January 1959 the two national governments returned to the IJC and asked it to now develop the guiding principles for a treaty based on the benefits from the co-operative use of stored waters and electrical interconnection within the Columbia River system and how best to apportion the benefits for flood control and hydro-power.⁴⁶ To prepare this special report, the IJC formed a special working group to review the technical studies and to consider how the benefits from co-operative development and management of the Columbia River could be shared equitably between the two countries based on the BWT and results from the technical investigations. The principal benefits to the United States are the additional water stored in British Columbia, which would enhance hydro-power production in the United States and reduce flood damages. In return, Canada would receive financial compensation from the United States.

On 29 December 1959 the IJC proposed to the two federal governments three categories of apportionment principles: general, power, and flood control. The IJC defined three guiding principles for general operations, seven power principles, and six flood control principles.⁴⁷ All the principles were based on equitable sharing of the benefits attributable to the proposed storage reservoirs. But the details of these principles would have to be worked out as part of the actual treaty negotiations. The three general principles guided the selection of projects that would best improve the international co-operation for flood control and power enhancement in the Columbia River Basin. The seven “power principles” provided guidance for determining and sharing power benefits from the co-operative use of upstream storage that allows for changing conditions over time in power needs. The six “flood principles” defined sharing flood control benefits applicable to the Kootenai River downstream from Bonners Ferry, Idaho, and the lower main stem of the Columbia River.

Based on the IJC’s technical studies and guiding principles, the two governments held nine negotiation sessions between February 1959 and January 1961. The treaty was signed by President Dwight Eisenhower and Prime Minister John Diefenbaker in January 1961. The two governments ratified and implemented the treaty in 1964, as it took British Columbia and the Canadian government another three years to agree on the appropriate administrative protocol for selling downstream power benefits to the United States and to transfer the rights, responsibilities, and implementation authority from the Canadian government to the Province.

During the negotiation sessions for the treaty, the IJC continued to provide technical and other types of advice to the governments.

Effects of Treaty Implementation

The four treaty dams provided an additional 20 maf of storage, or the equivalent of one-third of the total storage capacity of the Columbia River system. The CRT and co-operative operation of its dams improved the timing of river flows by capturing additional high spring flows and releasing the water more gradually over the summer, fall, and winter months.⁴⁸

The four entities responsible for implementing the provisions of the treaty are BC Hydro for Canada and British Columbia, and the

Northwestern Division of the US Army Corps of Engineers and the Bonneville Power Administration for the United States. The treaty also established a Permanent Engineering Board to monitor and report on the results under the treaty and to assist in reconciling any differences concerning technical and operational matters that might arise. The Engineering Board consists of four members: two appointments by the US secretaries of the army and energy, and one each by the Province of British Columbia and the Canadian federal government.⁴⁹

The treaty gave the United States incremental power and flood control benefits plus more water for recreation, irrigation, fishery, and other beneficial uses. However, there were adverse impacts in the United States, primarily on certain fish species,⁵⁰ and loss of small portions of land upstream of Libby Dam in the United States. It is important to note that the Grand Coulee Dam was constructed prior to the treaty and it effectively blocked passage of Columbia River salmon upstream of the dam. Overall, the coordinated storage and regulation of flows between the United States and Canada improved US hydro-power production by about 10 per cent. Besides power benefits, the United States has received significant flood control benefits as it has not suffered a serious overbank flood flow since the construction of the storage projects. This translates to billions of dollars' worth of protection of municipal, industrial, and agricultural lands—even though the protection is only partial. In the event of a huge flood, the United States could still see significant flood damage, as has been experienced in other regions of North America.

Under the CRT, British Columbia received half of the incremental downstream power benefits, but sold them off for the first thirty years—which turned out to be of less value than what the power benefits should have been. The biggest hydro-power benefit to British Columbia is not even considered in the treaty: generation at Mica and Revelstoke Dams.⁵¹ However, there were significant economic, environmental, and social impacts as entire communities and many farms were dislocated when the Canadian dams were built, resident sport fisheries were reduced, and there was a loss of riparian and wildlife habitats and forests.⁵² Some 231 square miles of valley bottom land was flooded. All these impacts were experienced without the benefit of environmental assessments and consultations with Indigenous Peoples.

The treaty negotiators agreed that the United States and Canada would share these power benefits equally. Canada's portion of downstream power benefits is called the Canadian Entitlement. These benefits are calculated annually according to a complex method negotiated by the treaty's authors, but which is generally recognized as now being out of date under current power supply conditions. The Canadian Entitlement is not solely a US federal responsibility, but it also includes the additional US power that is generated from five non-federal hydro-power dams on the Columbia River, which accounts for 27 per cent of the Canadian Entitlement. The Canadian Entitlement does not also include the effects of Libby Dam operations, which provide about 200 average-megawatts of additional power benefits downstream in Canada.⁵³

British Columbia sold the first thirty years of the Canadian Entitlement to a consortium of utilities in the United States for \$254 million and received its share of the predetermined US flood control benefits for the first sixty years for \$64 million. British Columbia used these funds to finance the construction of the three treaty dams in the province. Upon completion of the dams, Canada and British Columbia continued to receive the Canadian Entitlement based on the sharing of power revenues on all US hydro-power projects. The entitlement value has varied over time, and depending on the market value of the incremental power, averages approximately \$120 million annually.⁵⁴

Under the CRT, article xvi says that a dispute or difference that arises may be referred by either government to the IJC for a decision. If the IJC does not render a decision within three months of the referral, or within such other period as may be agreed upon by the two federal governments, either country may submit the dispute to arbitration by providing written notice to the other country. However, no referrals have ever been sent to the IJC for resolution.

The existing CRT has provided both countries with enormous benefits. While the IJC hasn't been part of the implementation, its technical studies and its guiding principles for the treaty in the 1940s and '50s really set in motion the great working arrangement that has existed for over fifty-five years between the US and Canadian governments.

An enormous amount of thought has gone into what should be included in a new or revised CRT. Most of the ideas outlined below are

presently being used by the IJC in other transboundary basins, including the Great Lakes. The national governments may wish to consider them in their negotiations of the CRT. They include:

1. Expand the focus of the treaty from optimizing power and flood control to include ecosystem-based management that balances the needs of power generation and flood control with the many ecosystem functions. Take a more holistic view for managing the basin as if no borders existed.
2. Rethink the governance structure for the basin to include local community leaders, Tribal/First Nation representatives, and key stakeholders. For example, the strength of the IJC's International Watershed Boards and Great Lakes Water Quality Board is that local leaders and stakeholders can help drive agendas and decision-making. This new governance structure should be used both in negotiating a new or revised treaty and for implementing the final CRT.
3. Address the needs of a changing climate and focus on mitigating the impacts of extreme weather conditions of floods, droughts, and wildfires. Build in an adaptive management process that addresses our changing climate. Further, the existing infrastructure in the Columbia may not be sufficient to control extreme floods in the future, as we have seen recently on Lake Ontario and in Houston, Texas. More effort is needed to protect the riparian corridor and to remove structures from within the flood plain.
4. Create and fund a binational science panel, similar to the IJC's Great Lakes Science Advisory Board, to assess the existing and required science on the river ecology and determine the best way to: a) re-establish a more natural

flow regime; b) recover the wild salmon fishery; and c) protect and improve riparian and aquatic habitats while at the same time optimizing hydro-power generation and flood control.

IJC Reference on a Proposed Sage Creek Coal Mine in the BC Flathead River Basin

The Flathead Valley sits within a larger international landscape known as the Crown of the Continent,⁵⁵ a roughly 18-million-acre transboundary region that straddles the Continental Divide in southeast British Columbia, southwest Alberta, and northwest Montana. The Crown is one of those few large natural eco-regions in North America that has built-in natural resiliency and the capacity to respond to a changing climate. The entire upper Flathead Valley (called the North Fork of the Flathead River in the United States) is a critical wildlife corridor and habitat for large ungulates and carnivores and for this reason is considered by many wildlife biologists and environmental organizations as the “heart” of the Crown. The BC Flathead River riparian corridor is over half a mile wide in some places and very rich in aquatic and terrestrial species. Much of the watershed straddles the border and is protected through parks and conservation areas, even though most of the Canadian portion of the Flathead is unprotected. There is also a complex historical web of Indigenous communities that lived and hunted in this region, including the Ktunaxa nation in Canada and Salish and Kootenai tribes in the United States.

By acts of the Canadian Parliament and the US Congress in 1932, Waterton-Glacier National Parks became the world’s first international peace park. Indeed, Glacier-Waterton is both an icon and a model for the many other international peace parks established around the world in subsequent years. As well, Glacier and Waterton Lakes National Parks have each been designated a World Heritage Site and Biosphere Reserve. The waters of the North Fork of the Flathead River have been classified as Class A-1, which is Montana’s highest water quality classification that includes a non-degradation standard.⁵⁷

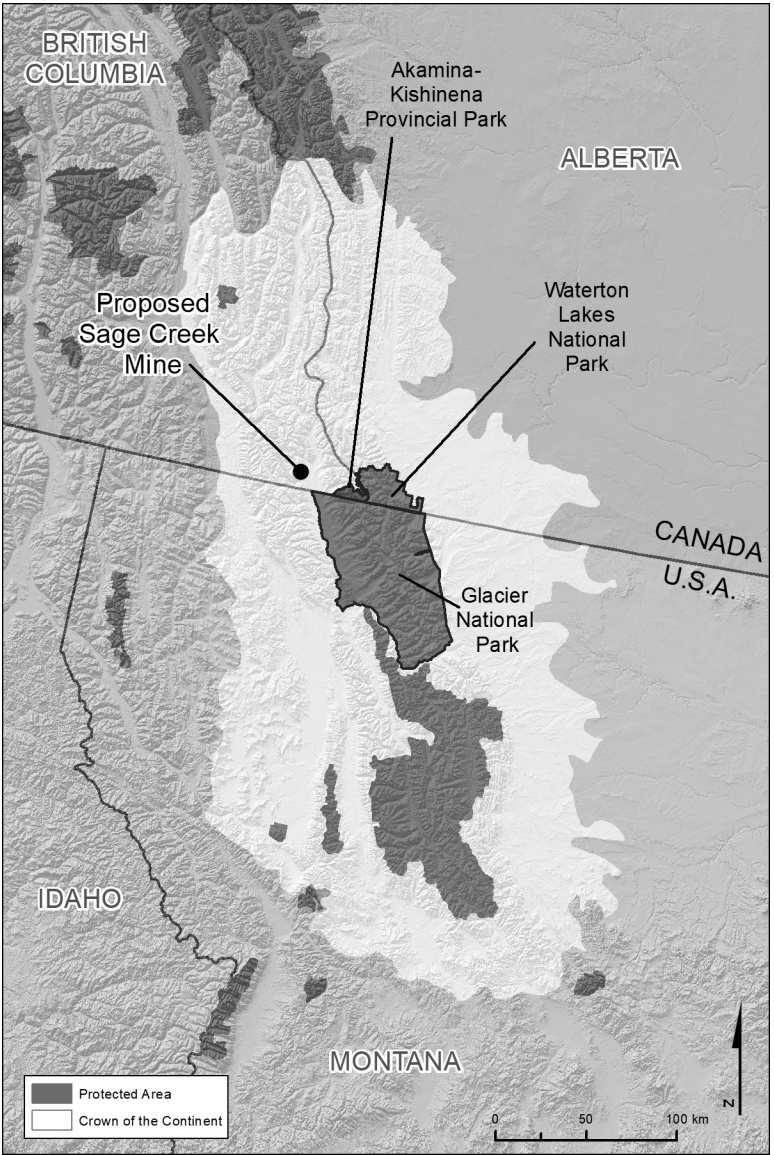


FIGURE 8.4. Crown of the Continent Eco-region.⁵⁶ J. Glatz, Western Michigan University Libraries.

In the 1980s, the upper Flathead Valley of British Columbia was very remote. The primary uses of the valley were hunting, fishing, and the limited harvest of timber. To this day, there are no permanent residences in the Flathead Valley of British Columbia.

The Proposed Sage Creek Coal Mine

Sage Creek Coal Limited, a subsidiary of Rio Algom Mines of Toronto began exploring the coal deposits in the Cabin Creek region of the BC Flathead Valley in 1980. The mine site would be located about 6 miles (9.66 kilometres) north of the US-Canada border and cover over 7,000 acres (2,832 hectares). The company proposed to mine 2.4 million tons (2.2 million tonnes) per year of thermal coal for a 21-year period with the option of a 20-year extension from two large hills adjacent to and between Howell and Cabin Creeks, two tributaries that flow directly into the Flathead River.⁵⁸ The mine would create two large open pits that would straddle Howell and Cabin Creeks. Six major waste dumps would surround the two creeks. A 230 kilovolt transmission line would be built to the mine site. Coal would be processed on site and hauled on a newly constructed paved road to Morrissey and shipped by rail to the BC coast for transportation overseas. The mine would be operated 24 hours a day, 365 days per year.

In February 1984, the BC government granted Sage Creek Coal Limited “approval-in-principle” to begin preparing detailed development and implementation plans for the mine site. These plans would be subject to an environmental assessment process where mitigation actions are determined.

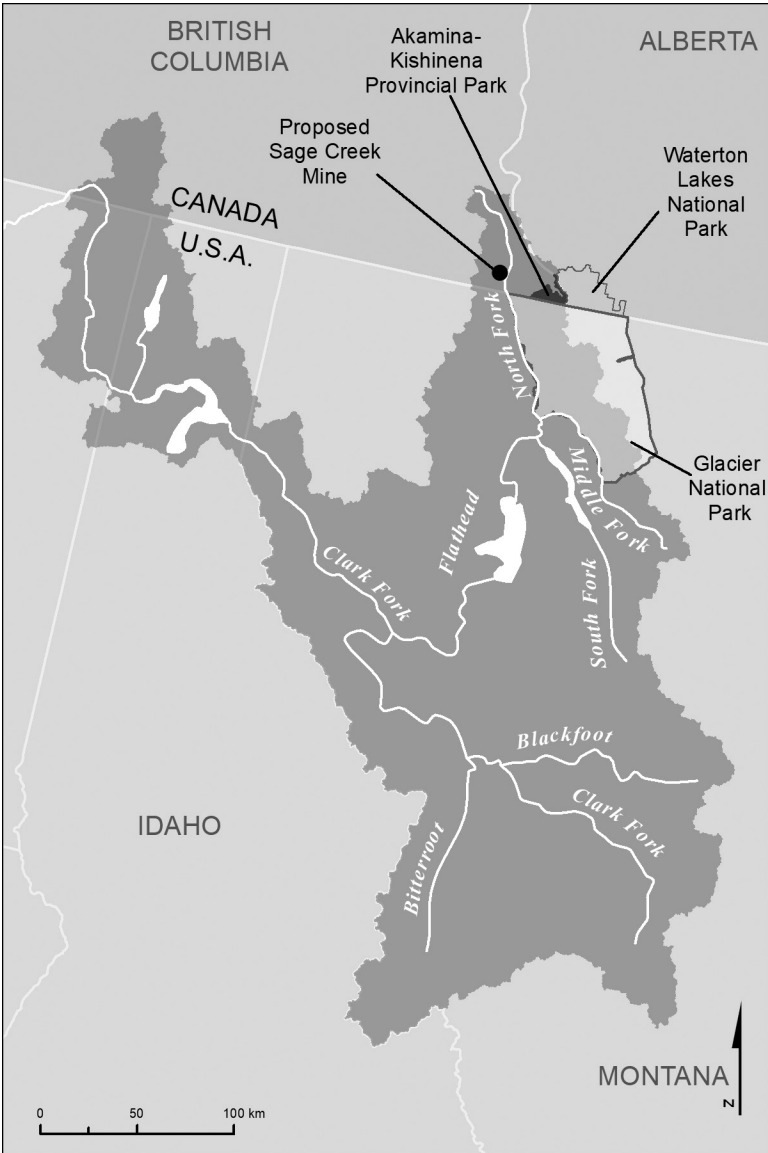


FIGURE 8.5. Location of the proposed Sage Creek coal mine within the Flathead River Basin.⁵⁹ J. Glatz, Western Michigan University Libraries.

The Reference Letter to the IJC

Due to concerns about the potential environmental degradation and transboundary pollution from the mine, the US and Canadian governments in separate, but identical, reference letters stated the following:

Pursuant to Article IX of the Boundary Waters Treaty, the governments requested the IJC to examine into and report upon the water quality and quantity of the Flathead River, relating to the transboundary water quality and quantity implications of the proposed coal mine development on Cabin Creek in British Columbia near its confluence with the Flathead River and to make recommendations which would assist governments in ensuring that the provisions of Article IV of the said treaty are honoured.⁶⁰

In this case, External Affairs Canada and the US Department of State invoked both articles iv and ix of the BWT. The governments further requested that the IJC examine and report on the potential impacts of the mine on the local fishery and other fisheries dependent on the waters of the Flathead River and its tributaries, Howell and Cabin creeks; the biological resources; current water uses (including water-dependent uses such as recreation); and other matters as the commission may deem appropriate and relevant to water quality and quantity at the border and downstream if the mine was constructed.

The Flathead River International Study Board Assessment Process

Based on the above reference, the IJC established the Flathead River International Study Board (henceforth “Study Board”) in April 1985. It consisted of six members and two secretaries divided equally between the two countries. The Study Board created six binational science committees involving over fifty scientists. The authors of this chapter were the US secretariat and the BC representative on the Study Board. The reference investigations took almost three years.

The Study Board created a well-thought-out approach for assessing the potential mine impacts. It appointed four primary binational technical committees of experts: the Mine Development Committee, the Water Quality and Quantity Committee, the Biological Resources Committee, and a Water Uses Committee. Each committee consisted of six to eight members divided equally between the two countries. The Mine Development Committee was asked to assess the potential water quality and quantity impacts within the mine site and effluent discharges from the site. During the initial stage of the process, the other three committees were requested to establish the baseline condition within Howell and Cabin Creeks and the Flathead River downriver into Flathead Lake. After the Mine Development Committee defined the effluent discharges from the proposed mine site, the Water Quality and Quantity Committee determined the changes to water quality and quantity in Howell and Cabin Creeks and the Flathead River. The Biological Resources Committee then assessed the impacts of these changes on the aquatic, riparian, and terrestrial ecosystems. Lastly, the Water Uses Committee used the above information to calculate the effects on recreation and tourism.⁶¹ Two additional binational committees were created by the Study Board: the Limnology Task Force and the Water Quality Subcommittee. The Limnology Task Force determined whether the increase in nitrates and phosphorous from the mine site would have a deleterious effect on Flathead Lake. It concluded that effects would be “imperceptible.”⁶²

The Water Quality Subcommittee described the salient physical, chemical, and biological characteristics of water required to protect and maintain certain sensitive water quality conditions in the Flathead River system.⁶³ The criteria were developed to assess the potential effects of mine effluents and other contaminants on human uses (i.e., drinking water, recreational fishing, and esthetic experience) and aquatic uses such as bull trout and western cutthroat fish species and other forms of aquatic life.

To make their assessment, the Study Board and technical committees developed two cases to define the impacts.⁶⁴ The “optimal” case assumed the mine applied state-of-the-art environmental control technology and would be in complete compliance with the BC mine regulatory requirements. The second case, called the “adverse” case, assumed the mine would experience occasional failures and not meet the provincial

regulatory requirements at all times. It is interesting to note that during the two-and-a-half-year Flathead mine assessment process, a number of waste dumps in the existing operating coal mines in the Elk Valley failed, and more concerning, a settling pond from one of the Elk Valley mines (Line Creek), which was designed to withstand a hundred-year flood, failed after a ten-year high flow. As stated by both the Biological Resources and Water Quality and Quantity Committees, these failures indicated that the adverse case was more realistic than the optimal case as a basis for the Study Board's final conclusions.⁶⁵

Study Board and Committee Findings

The Study Board and its technical committees encountered two major problems in meeting the terms of reference.⁶⁶ First, the detail in the proposed mine plan was not adequate to develop reliable, quantitative predictions of impacts on water quality, water quantity, or biological resources at the mine site, at the international boundary, and downriver into Flathead Lake. Second, the baseline data required to assess the impacts of the proposed mine were either not available or were inadequate in the Flathead and Elk River drainages. Therefore, the Study Board and its technical committees had to use their best professional judgment to develop findings rather than basing them on actual data. Initially, the Study Board and committees were asked to use, for comparison, the water quality effluent and downstream data available from the existing five metallurgic mines in the Elk and Fording River drainages. These mines are in the same basic stratigraphy and rock types of the coal-bearing sequence in the Flathead River Basin, although specific features of geologic structure and of topography are different. Many of the Elk River Basin mines have been operational since before the 1950s. However, little or no water quality data were available from them.

The requirement that all members of the IJC's binational technical committees participate in their "personal and professional" capacity and not in their "official" capacity became very evident during the two-and-a-half-year technical committee process.⁶⁷ For example, the Water Quality and Quantity Committee felt that the impacts of effluent discharges would be far more severe than that suggested by the Mine Development

Committee. Further, both the Water Quality and Quantity and Biological Committees did not believe that the optimal case was realistic, noting that operating mines in the adjacent Elk River drainage in southeast British Columbia exceeded provincial regulations.

Based on the results from the four primary technical committees, the Study Board reported that the mine would create significant impacts to the spawning habitat of endangered bull trout. They concluded that while there would be no impacts to water quantity at the international border, there could be significant impacts within the mine site as the two open pit mines would have to pump groundwater from them, thus dewatering both streams.⁶⁸ It is questionable if these boards could have made these statements if their members were acting in their “official” capacity as government representatives rather than in their “personal” capacity.

Within the mine site, water quality could be substantially impacted. The Study Board felt there could be significant increases in localized sediment, turbidity, water temperature, phosphorous, nitrate, and ammonia levels. Dissolved oxygen could decrease to harmful levels. Because of the lack of data, however, the Study Board and technical committees could not tell for certain if the concentrations of phosphorous, total dissolved solids, and pH would change significantly, nor could the board assess the impacts from increased selenium and other heavy metals.

Using the above information, the Study Board felt the biota at the border and for some distance downstream would be impacted. Algae biomass would increase significantly and more frequently, both locally and for some distance downstream of the border, and it was determined that there would be a detrimental impact to benthic macro-invertebrates.⁶⁹ The Biological Resources Committee concluded that the bull trout and cutthroat would be virtually eliminated from Howell and Cabin Creeks.⁷⁰ Consequently, the Study Board concluded that these fish populations would be drastically reduced.

Upon hearing about the potential environmental impacts and experience of non-compliance in the BC regulatory process, the two federal governments asked the IJC to direct the Study Board to determine whether the identified impacts could be mitigated and what would be the costs. After further analyses, the Study Board reported that many of the impacts

could not be mitigated because no viable technology existed and/or the mitigation requirements were not economically feasible.⁷¹

Public Hearings

The IJC held two public hearings in Cranbrook, British Columbia, and two in Kalispell, Montana, on the findings in the Study Board and technical committee report. Only one submission supported the mine. The primary reasons for the strong opposition was related to the adverse water quality affects to the fisheries, including the bull trout and westslope cutthroat, and to Glacier National Park, the Wild and Scenic Flathead River, and Flathead Lake. The submission by Montana governor Ted Schwinden reflects the general consensus shared by the US audience:

I want to emphasize that Montana's concerns really go beyond the constraints of the Treaty and the Reference. The [Study] board's findings in reality have escalated rather than alleviated the concerns of Montanans for the Glacier-Waterton International Peace Park, for the natural integrity of the North Fork of the Flathead River and for threats to the very rich tourism opportunities of this special area shared by our two countries.⁷²

After the evening public hearing in Kalispell, the two authors of this chapter developed (on a beer napkin) a possible prospectus for the upper Flathead drainage based on establishing an International Conservation Reserve Initiative (ICR).⁷³ The prospectus became the guiding light for future negotiations for protecting the Flathead drainage from mining in British Columbia and Montana. A number of its ideas were included in the final memorandum of understanding between Montana and British Columbia.

The IJC's Report to Governments

Based on the Study Board's findings and the public hearings, the IJC stated in its report to the two federal governments:

There are a number of impacts associated with the development of the mine that could affect spawning and rearing habitats for bull trout and cutthroat trout in Cabin and Howell creeks. These include toxic levels of nitrogen compounds in groundwater, increases in filamentous algae smothering spawning areas, increases in sediment concentrations and deposited sediments, possible reductions in dissolved oxygen, alternations to surface or ground water flow and changes in water temperature.⁷⁴

The IJC asked the US and Canadian governments to consider the ICR proposal, along with the Skagit Environmental Endowment Fund and Commission structure, as possible management frameworks for the future of the BC Flathead.⁷⁵

Based on the above findings and public hearings, the commissioners unanimously agreed to the following three recommendations in its report to governments:

1. [That] the mine proposal as presently defined and understood not be approved:
2. That the mine proposal not receive regulatory approval in the future unless and until it can be demonstrated that:
 - a. The potential transboundary impacts identified in the report of the Flathead River International Study Board have been determined with reasonable certainty and would constitute a level of risk *acceptable to both Governments* [emphasis added]; and
 - b. The potential impacts on the sport fish populations and habitat in the Flathead River system would not occur or could be fully mitigated in an effective and assured manner; and
3. The Governments consider, with the appropriate jurisdictions, opportunities for defining and implementing compatible, equitable and sustainable

development activities and management strategies in the upper Flathead River basins.⁷⁶

The recommendations were based on article iv of the BWT, which states that “boundary waters and waters flowing across the boundary shall not be polluted to the injury of health or property of the other.” British Columbia did not accept the recommendation, as it would have allowed the United States veto power over new mine developments that could potentially impact US waters. In 1989, Sage Creek Coal Limited voluntarily withdrew the Cabin Creek mining proposal.

Did the IJC make the Right Decision?

During the IJC assessment process, British Columbia and the coal mining companies indicated that no selenium data were available from the existing Elk River coal mines. Effluent from all five of these open pit metallurgic coal mines flow into the Elk River, which in turn flows into Lake Koocanusa—a transboundary reservoir .

Over the past twenty years, effluent discharge data from the Elk River mountaintop coal mines showed significantly elevated concentrations of selenium, cadmium, nitrates, and sulfates.⁷⁷ For example, water quality downstream of the existing Elk River mines showed nitrate concentrations were 3,000 times higher, sulfates 400 times higher, and selenium up to 70 times higher as compared to the upper Flathead River and the Elk River above the existing Elk River mines.⁷⁸ Further, the Flathead River has over 4 times the number of algae species as compared to the mine-impacted streams, indicating that the sensitive species were eliminated due to pollution from these mines.

Selenium is a concern due to its ability to bio-magnify in aquatic food chains and to accumulate in the tissues and eggs of higher trophic species. Recent studies have shown that selenium has severely reduced westslope cutthroat reproductive success by up to 54 per cent in the upper Fording River (the Fording is a tributary of the Elk River).⁷⁹ Furthermore, fish data from the 2008–13 period in the Montana portion of Koocanusa Reservoir showed increases in heavy metals in fish tissue for the seven species of fish studied, including Endangered Species Act-listed species. Some fish

showed increases of selenium in fish tissue of up to 70 per cent over the five-year period.⁸⁰

In early 2016, a number of new open pit coal mines were in the BC permitting process, as well as large-scale expansions at existing mines in the Elk Valley. Four expansions have been permitted even though the selenium-mitigation technology at Teck Coal's treatment plant initially failed and the plant has been shut down several times since it began operations in late 2014. In 2017, Teck discovered that the treatment plant was releasing a more bio-available form of selenium into the environment, making selenium more readily available to aquatic life and fish. Monitoring downstream of the treatment plant showed increasing concentrations of selenium in westslope cutthroat and aquatic insects, to such a degree that Teck suspend operations. To date, no technology has demonstrated the ability to successfully treat the contamination draining from the mines, including toxic heavy metals and nutrients.

In support of the above findings, Carol Bellringer, the BC auditor general reported in 2016 that the provincial mine regulators have neglected to comply and enforce the province's mine and environmental regulations for over a decade.⁸¹ The two-year investigation paid particular attention to the Elk Valley coal mines north of Montana's Lake Koocanusa. "We found almost every one of our expectations for a robust compliance and enforcement program within the [Ministry of Energy and Mines] and the [Ministry of Environment] were not met," Auditor General Bellringer wrote in the introduction to the report. Recently, the three Indigenous Tribes that make up the Council of the Ktunaxa Nation in the United States and Canada, along with all eight US senators from Montana, Idaho, Washington, and Alaska, have also raised similar concerns over BC's existing and future mine pollution into US waters.⁸²

The Movement toward Protection

After twenty-two years and seven new mining proposals in the BC Flathead for coal, gold, coal-bed methane, and phosphate, the IJC's third recommendation ultimately prevailed. The final decision to protect the watershed was based on the outstanding universal values of the transboundary Flathead. Premier Campbell of British Columbia and Governor Schweitzer

of Montana negotiated and signed on 18 February 2010 a historic and visionary agreement entitled *MOU and Cooperation on Environmental Protection, Climate Action and Energy between the Province of BC and the State of Montana*. The agreement calls for the state and province to work together to implement many of the ICR provisions, including the banning of mining in the US and BC portions of the Flathead River drainage. As part of the agreement, Cline Mining Company would be compensated for its expenditures associated with its approved exploration plans. Thanks in part to Gary Doer, at that time, the Canadian ambassador to the United States, funds were raised by Nature Conservancy of Canada to retire the mine application.

Finally in 2011, British Columbia passed the Flathead Watershed Area Conservation Act with parallel legislation passed by the United States Congress (the North Fork Watershed Protection Act) in March 2014 to protect the Flathead River in British Columbia and the North Fork of the Flathead in Montana from any future mining and oil and gas activity. The ecological integrity will be protected for generations, unlike the Elk River, where selenium and other mine contaminants will continue to leach for centuries through Elk River mountain valleys filled with hundreds of feet of waste rock.

It is clear that the IJC's scientific-based process and recommendations to governments for the Sage Creek mine site were appropriate. These recommendations were the foundation for the long and arduous process that ultimately led to the protection of the North Fork of the Flathead drainage from mining. The watershed is to remain one of the most pristine of the drainages shared by two countries in North America. After over twenty years of contentious conflict, the IJC's vision for this basin finally became a reality. However, the work is not done. Like in the many other international watersheds, a transboundary institutional structure needs to be put in place to implement many of the other provisions in the *2010 MOU and Cooperative Agreement*. Consideration should also be given to the IJC's recommendation to governments for including the IJC's ideas from the proposed International Conservation Reserve and the Skagit Environment Endowment and Commission (SEEC).⁸³

Conclusion

These three cases clearly illustrate the breath of the IJC's ability to use innovative approaches for assisting governments in their resolution. When the IJC steps away from political agendas and uses the best scientists and professionals from its staff, academia, the private sector, and governments from both countries—all working in their personal and professional (as opposed to official) capacities—solutions to disputes are more readily found. Without political agendas, the IJC can become more creative, can use science more effectively, and is more capable to assist governments resolve almost any issue. These three cases are good examples.

The resolution of the High Ross Dam controversy was rather innovative in that the IJC found a viable compromise without raising Ross Dam. It is conflict resolution at its best. The three key lessons learned are: involve local negotiators, not folks from afar; listen to local stakeholders and leaders concerning their knowledge of the issue and watershed; and lastly, make sure you have a sound scientific foundation of data and knowledge available for resolution. Just as important, the IJC's creation and recommendation of the SEEC and its funding source for the Skagit watershed has had many wonderful benefits. It has successfully improved the ecological health of the watershed and recreational opportunities for many.

The IJC provided governments with the technical and policy foundation for the 1964 CRT. Over the past twenty-five years the IJC has gained valuable experience with a number of innovative tools that clearly has benefited its work in other transboundary basins and the Great Lakes. These innovations may be helpful in defining a new or revised treaty.

The Sage Creek Coal Reference process was a creative, science-based process in which one layer of data was used to build the next layer of information until all potential impacts could be assessed. Like the Skagit, the third IJC recommendation that asked governments to consider a new and innovative management regime for the Flathead finally came to fruition. This 1988 recommendation became the cornerstone for preserving the ecological integrity of the Flathead from mining.

The relationship between British Columbia and the IJC has been rather contentious since the Sage Creek Coal Reference. Specifically, British Columbia did not like, nor did it accept, the IJC's recommendations on the

Sage Creek Coal Reference, especially the second recommendation, which gave the United States veto power over new BC mine proposals that could negatively impact waters flowing into the United States. British Columbia realized that it may not be able to meet this standard for new mines, or for that matter from existing mine expansions (e.g., Kootenai River).

British Columbia agreed to the Sage Creek Coal Reference because it appeared to have been satisfied with the outcomes of both the Ross Dam dispute on the Skagit River and the 1964 CRT. Further, the province had a better understanding and control of the technical data that was available to conduct the proposed Sage Creek mine assessment.

These three cases illustrate that the IJC needs to continually evaluate and improve adaptive management strategies to address a changing climate and to develop and use innovative tools for restoring ecological functions to international watersheds. It is hoped that current policy-makers in both national governments will realize this evolving capacity and continue to engage the commission in key boundary water issues in the Pacific Northwest.

Notes

- 1 The “paper dam” phrase was originally used by then US secretary of energy Donald P. Hodel, a past CEO of the Bonneville Power Administration, as part of his rationale for supporting the IJC’s solution to the Ross Dam dispute.
- 2 Jackie Krin and Marion Marts, “The Skagit High Ross Controversy: Negotiation and Settlement,” 26 *Nat Resources J.* 261, (1986), 261–2.
- 3 US data was derived from the National Atlas of the United States of America. Data for the map was also derived from: B. Lehner, K. Verdin, and A. Jarvis, “New global hydrography derived from spaceborne elevation data,” *Eos, Transactions, AGU* 89, no. 10 (2008): 93–4; WWF/ HydroSHEDS, <https://www.hydrosheds.org/>; information licensed under the Open Government Licence—British Columbia: Freshwater Atlas Lakes, <https://catalogue.data.gov.bc.ca/dataset/freshwater-atlas-lakes>, and Freshwater Atlas Rivers, <https://www2.gov.bc.ca/gov/content/data/open-data/open-government-licence-bc>.
- 4 William Ross and Marion Marts, “The High Ross Dam Project: Environmental Decisions and Changing Environmental Attitudes,” *Canadian Geographic* 19 (1975): 221–34.
- 5 Thomas C. Perry, *Excerpts from a Citizen guide to the Skagit Valley, IV: History of the High Ross Controversy* (Run Out Skagit Spoiler Committee, 1981).

- 6 International Joint Commission, "Transcript of hearing on High Ross Dam held at Seattle, Washington," 12 September 1941, 9–13.
- 7 International Joint Commission, *In the Matter of the Application of the City of Seattle for Authority to Raise the Water Level of the Skagit River Approximately 130 feet at the International Boundary between the United States and Canada: Order of Approval*, Docket 46, 27 January 1942.
- 8 Kirn and Marts, "The Skagit-High Ross Controversy," 265.
- 9 US data was derived from the National Atlas of the United States of America. Data for the map was also derived from: B. Lehner, K. Verdin, and A. Jarvis, "New global hydrography derived from spaceborne elevation data," *Eos, Transactions, AGU* 89, no. 10 (2008): 93–4; WWF/ HydroSHEDS, <https://www.hydrosheds.org/>; information licensed under the Open Government Licence—British Columbia: Freshwater Atlas Lakes, <https://catalogue.data.gov.bc.ca/dataset/freshwater-atlas-lakes>, and Freshwater Atlas Rivers, <https://www2.gov.bc.ca/gov/content/data/open-data/open-government-licence-bc>.
- 10 Perry, *Excerpts from a Citizen guide to the Skagit Valley*, IV.
- 11 Ibid.
- 12 Ibid.
- 13 Lieutenant-Governor in Council, Order No. 103. Agreement between British Columbia and the City of Seattle, Victoria, BC, 19 January 1967.
- 14 Jackie Kirn and Marion Marts, *The Skagit-High Ross Controversy: Negotiations and Settlement*, 26 Nat Resources J. 2611986, pgs. 265–9.
- 15 International Joint Commission, *National governments Letter of Reference to the IJC requesting the IJC determine the environmental and ecological consequences of raising Ross Lake in the Skagit Valley to elevation 1725*, Docket 71, 7 April 1971.
- 16 International Joint Commission, *IJC's Report to National governments, Environmental and Ecological Consequences of Raising Ross Lake in the Skagit Valley to Elevation 1725*, Docket 91 (1971).
- 17 Perry, *Excerpts from a Citizen guide to the Skagit Valley*, IV.
- 18 Kirn and Marts, *The Skagit-High Ross Controversy*, 267–9.
- 19 Ibid., 268.
- 20 Province of British Columbia, Request in the Application, International Joint Commission, Ottawa and Washington, DC, 6 February 1981.
- 21 Interestingly, the firing of existing US commissioners when a new president takes office has rarely occurred in the long history of the IJC.
- 22 Kirn and Marts, *Skagit-High Ross Controversy*, 270.
- 23 Ibid., 267–9.
- 24 International Joint Commission, *In the matter of the Application of the City of Seattle for authority to raise the water level of the Skagit River approximately 130 feet at the*

- international boundary between the United States and Canada, Supplementary Order, Docket 46, 28 April 1982.*
- 25 Later the Special Board was renamed the Joint Consultative Group to emphasize that it was an advisory rather than a decision-making entity.
- 26 International Joint Commission, *In the matter of the Application of the City of Seattle for authority to raise the water level of the Skagit River approximately 130 feet at the international boundary between the United States and Canada, Supplementary Order, Docket 46, 28 April 1982.*
- 27 Kirn and Marts, *The Skagit-High Ross Controversy*, 271–2.
- 28 Mr. Gordon and Mr. Berry were recently retired chief executive officers of Ontario Hydro and the Power Authority of the State of New York, respectively.
- 29 Kirn and Marts, *The Skagit-High Ross Controversy*, 270–3.
- 30 Ibid., 273.
- 31 L. Keith Bulen, “Statement of the International Joint Commission,” 10 March 1982, General Memoranda, vol. 2, box 56, Docket 46, IJC.
- 32 Province of British Columbia Ministry of Environment and City of Seattle Office of the Major, Joint News Release, Skagit Details Released (14 April 1983).
- 33 The SEEC is a very creative approach to ensure the preservation and protection of the natural and cultural resources, wildlife habitat, and recreational opportunities of the Upper Skagit Watershed. Under the SEEC, an Endowment Fund was established and is administered by a sixteen-member commission consisting of an eight-person Canadian delegation appointed by the premier of British Columbia and an eight-person US delegation appointed by the mayor of Seattle. Over its thirty-year history, the SEEC has evolved to where it has had a greater focus on education, ecosystem management, recreation, and land-management efforts.
- 34 Before a newly appointed commissioner can become active, he or she must take an oath to abide by and follow the terms of the 1909 Boundary Waters Treaty and not to represent their respective governments. The commission is to be an independent advisor to both national governments.
- 35 Philip Van Huizen, *Development, Politics, and Environmental Controversy in the Canadian-U.S. Skagit Valley* (PhD diss., University of British Columbia, June 2013).
- 36 “B.C. treaty settles Seattle dispute,” *Spokane [WA] Chronicle*, 28 June 1984.
- 37 International Joint Commission, *In the Matter of the Application of the City of Seattle for Authority to Raise the Water Level of the Skagit River Approximately 130 feet the International Boundary between the United States and Canada; Supplemental Order, Docket 46, 18 January 1984.*
- 38 Kirn and Marts, *The Skagit-High Ross Controversy*, 277.
- 39 Joe Foy, co-executive director, Wilderness Committee, “Save the Skagit,” 29 January 2019, <https://www.wildernesscommittee.org/publications/save-skagit>.

- 40 John Harrison, "Columbia River History," *Northwest Power and Conservation Council*, 31 October 2008, <https://www.nwcouncil.org/>.
- 41 US data was derived from the National Atlas of the United States of America. Data for the map was also derived from: B. Lehner, K. Verdin, and A. Jarvis, "New global hydrography derived from spaceborne elevation data," *Eos, Transactions, AGU* 89, no. 10 (2008): 93–4.
- 42 International Joint Commission, *Columbia River Reference letters from the national governments*, Docket 51R, 8 and 9 March 1944; International Columbia River Engineering Board Report to the International Joint Commission: *United States and Canada; Water Resources of the Columbia River Basin*, with VI Appendices, Docket 51, April 1959.
- 43 The reservoir behind Libby Dam has a rather unique name—Lake Koocanusa—a composite formed from the following three terms: Kootenai, Canada, and USA.
- 44 See McNaughton, "The Proposed Columbia River Treaty," *International Journal* (March 1964).
- 45 McNaughton had been a chief advocate of an all-Canadian St. Lawrence Seaway in the 1950s, and the failure of this scheme was a major contributor to his all-Canadian position on Columbia developments. See Daniel Macfarlane, *Negotiating a River: Canada, the US, and the Creation of the St. Lawrence Seaway* (Vancouver: UBC Press, 2014), 215.
- 46 International Joint Commission, *Reference Letters from national governments*, Docket 51, 28 and 29 January 1959.
- 47 International Joint Commission, *Principles for Determining and Apportioning Benefits from Cooperative Use of Storage of Waters and Electrical inter-connections within the Columbia River System*, Docket 51, 29 December 1959.
- 48 Harrison, "Columbia River History."
- 49 Ibid.
- 50 The white sturgeon has been significantly impacted by Libby Dam and the species is listed as endangered under the US Endangered Species Act.
- 51 John Shurts, Northwest Power and Conservation Council, personal communication, February 2018.
- 52 Robert W. Sandford, Deborah Harford, and Jon O'Riordan, *The Columbia River Treaty: A Primer* (Victoria, BC: Rocky Mountain Books), 2014.
- 53 Harrison, "Columbia River History."
- 54 Province of British Columbia, "What is the Canadian Entitlement?" engage.gov.bc.ca/columbiarivertreaty.
- 55 The name "Crown of the Continent" was first coined by conservationist George Bird Grinnell in the late 1800s.

- 56 US data was derived from the National Atlas of the United States of America; contains information licensed under the Open Government Licence—Canada; National Parks and National Park Reserves of Canada Legislative Boundaries:
<https://open.canada.ca/data/en/dataset/9e1507cd-f25c-4c64-995b-6563bf9d65bd>;
contains information licensed under the Open Government Licence—British Columbia; BC Parks, Ecological Reserves, and Protected Areas:
<https://catalogue.data.gov.bc.ca/dataset/bc-parks-ecological-reserves-and-protected-areas>.
- 57 Jim Posewitz and Dan Kimball, *Special Designations Applicable to the North Fork of the Flathead River*, appendix 9.8 of the *Flathead River International Study: Board Report*, June 1988.
- 58 International Joint Commission, *Flathead River International Study, Mine Development Committee Technical Report*, December 1986.
- 59 US data was derived from the National Atlas of the United States of America; contains information licensed under the Open Government Licence—Canada; National Parks and National Park Reserves of Canada Legislative Boundaries:
<https://open.canada.ca/data/en/dataset/9e1507cd-f25c-4c64-995b-6563bf9d65bd>;
contains information licensed under the Open Government Licence—British Columbia; BC Parks, Ecological Reserves, and Protected Areas:
<https://catalogue.data.gov.bc.ca/dataset/bc-parks-ecological-reserves-and-protected-areas>; B. Lehner, K. Verdin, A. Jarvis, “New global hydrography derived from spaceborne elevation data,” *Eos, Transactions, AGU* 89, no. 10 (2008): 93–4.
- 60 International Joint Commission, *National Governments Reference letters to the IJC*, Docket 110R, 12 December 1984 and 15 February 1985.
- 61 International Joint Commission, *Flathead River International Study Board Report*, July 1988.
- 62 International Joint Commission, *Flathead River International Study, Limnology Task Force Report on Flathead Lake, MT*, December 1986.
- 63 International Joint Commission *Flathead River International Study, Water Quality Criteria Subcommittee Technical Report*, May 1987.
- 64 International Joint Commission, *Flathead River International Study Board Report*, July 1988.
- 65 Ibid.
- 66 Ibid.
- 67 Ibid.
- 68 Ibid.
- 69 Ibid.
- 70 International Joint Commission, *Flathead River International Study, Biological Resources Committee Technical Report*, October 1987.

- 71 International Joint Commission, *Flathead River International Study, Board Supplementary Report*, 30 June 1988.
- 72 International Joint Commission, *Sage Creek Coal Mine Public Hearings Transcript*, vol. 2, *Flathead River Study, Montana governor Schwinden's Testimony*, 22 September 1988, p. 50.
- 73 Jim Posewitz, the US co-chair of the International Study Board, flushed out the prospectus on the ICR. The prospectus proposed that the "approval-in-principle" for the Sage Creek mine would be allowed to expire and the province would retire the existing coal leases in the upper Flathead and in return the United States would make funds available to retire the leases. Each nation would endow the ICR with a million dollars to be held in a common trust and a binational board of directors would be appointed by British Columbia and Montana to oversee the implementation of the ICR. The objectives of the ICR would be similar to the Biosphere Reserve Program with a focus on conservation and research. The ICR would be formalized into a binding agreement such as a treaty, similar to the one developed by the governments as part of the Skagit decision.
- 74 International Joint Commission, *Impacts of a proposed Coal Mine in the Flathead River Basin*, Docket 110, December 1988
- 75 Ibid.
- 76 The recommendations were drafted by the Honorable Davey Fulton, Canadian IJC commissioner and co-chair from British Columbia (1986–92), who was previously a justice of the BC Supreme Court and a leader of the Progressive Conservative Party of Canada.
- 77 Richard F. Hauer and Erin K. Sexton, *Transboundary Flathead River: Water Quality and Aquatic Life Use*, Rocky Mountains Cooperative Ecosystems Study Unit, 4 March 2013.
- 78 Lindsay McIvor, *Permit 107517 Environmental Monitoring Committee 2017 Public Report*, Teck Coal Ltd. (2017).
- 79 Dennis A. Lemly, *Review of Environment Canada's Teck Coal Environmental Assessment and Evaluation of Selenium Toxicology Tests on Westslope Cutthroat Trout in the Elk and Fording River in Southeast British Columbia*, Expert Report, 25 September 2014. <https://www.teck.com/responsibility/sustainability-topics/water/water-quality-in-the-elk-valley/>.
- 80 "Selenium Concentrations in Lake Koocanusa Resident Fish," memo from Trevor Selch, Montana Department of Fish, Wildlife and Parks, to Tracy Stone Manning, Montana Department of Environmental Quality, 30 September 2014.
- 81 Carol Bellringer, auditor general of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector*, May 2016, <https://www.bcauditor.com/pubs/2016/audit-compliance-and-enforcement-mining-sector>.
- 82 In March 2019, the three Indigenous transboundary Tribes of the Council of the Ktunaxa Nation sent a letter to the Honourable George Heyman, BC minister of environment and climate change strategy, Montana governor Steve Bullock, and

Idaho governor C. L. Otter raising concerns over BC selenium pollution into the transboundary Lake Koocanusa (note, the letter was not dated). On 13 June 2019, all eight US senators from Montana, Idaho, Washington, and Alaska sent a letter to the Honorable John Horgan, premier of BC, concerning the potential environmental and economic impacts to the Pacific Northwest and Alaska resulting from large-scale hardrock and coal mine activities in BC.

- 83 The IJC's International Watershed Initiative (IWI) is an ecosystem-based approach for addressing transboundary watershed issues. The IWI for the Rainy and Lake of the Woods watershed is a good example of a very effective governance structure. This institutional arrangement and the use of IWI guiding principles would be beneficial for addressing existing and future watershed issues in the Flathead River drainage of British Columbia and Montana.

