The University of Montana
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Managing Transboundary Natural Resources: An Assessment of the Need to Revise and Update the Columbia River Treaty

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1. Introduction

a. Historical Perspective

The Columbia River basin is the fourth largest river basin in United States, equal to the size of France (see Appendix A). It includes parts of Oregon, Montana, Idaho, Nevada, Wyoming, Utah, Washington, and British Columbia. The Columbia River has ten times the flow of the Colorado River and two and one-half times the flow of the Nile River. It is one of the most hydroelectrically developed river systems in the world, with a generating capacity of more than 21 million kilowatts. There are 11 dams on the United States mainstem and three in Canada, in addition to more than 400 other dams for irrigation and hydropower on tributaries.[1] While this infrastructure has generated many benefits in the form of power and flood control, it has negatively impacted fish, navigation, irrigation, recreation, and indigenous cultures.

In 1944, planners in Canada and the United States recognized that cooperative development of the basin might generate more benefits than each country acting independently. The planners requested that the International Joint Commission (IJC) study the feasibility of cooperative development in the Columbia Basin. From 1944 to 1959, the IJC studied a range of options to cooperatively develop and manage resources within the basin. Following years of negotiation, the governments of Canada and the United States ratified the Columbia River Treaty and Protocol in 1964.

The "Treaty Between the United States of America and Canada Relating to Cooperative Development of the Water Resources of the Columbia River Basin" (CRT) is considered one of the most far-reaching water treaties in the world.[2] It required Canada to build three new storage dams - Keenleyside, Duncan and Mica (referred to as The Treaty Dams) - to optimize flows for hydroelectric power and flood control in both nations.[3] The Treaty Dams provide more constant year-round streamflows, as spring floods from snowmelt are held back and released throughout the year. In return for building the dams, Canada is compensated by the United States through two mechanisms that have provided efficient

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[1] "Uses of the Columbia River." Center for Columbia River History. http://www.ccrh.org/river/history.htm#hydro

[2] For a representative review of the literature on the formulation and implementation of the Columbia River Treaty, see U.S. Army Corps of Engineers and Bonneville Power Administration, *History and 2014/2024 Review* (undated); Keith W. Muckleston, *International Management in the Columbia River Systems* (Report prepared for UNESCO's International Hydrological and World Water Asessment Programme, 2003); Richard Paisley, "Adversaries Into Partners: International Water Law and the Equitable Sharing of Downstream Benefits," *Melbourne Journal of International Law* (2002): 280-300; Nigel Bankes, *The Columbia Basin and the Columbia River Treaty: Canadian Perspectives in the 1990s* (Northwest Water Law and Policy Project, 2001, available at www.lclark.edu/dept/water); and John Volkman, *A River in Common: The Columbia River, The Salmon Ecosystem, and Water Policy* (Western Water Policy Review Commission, 1997). Canadian and U.S. Entities,/ Principles & Procedures for Preparation & Use of Hydroelectric Operating Plans/, 2003; Neil Swainson,/ Conflict over the Columbia, The Canadian Background to an Historic Treaty/, 1979; John Krutilla,/ The Columbia River Treaty, The Economics of an International River Basin Development,/ 1967; and Depts. of External Affairs and Northern Affairs and National Resources Canada,/ The Columbia River Treaty and Protocol, A Presentation, Appendix, and Related Documents,/ April 1964.

[3] The treaty also gave the US power to build the Libby Dam with a reservoir that extended into Canada.

transfer of hundreds of millions of dollars annually. First, the United States paid Canada for half of the estimated flood control benefits provided by the Treaty Dams until 2024 (after 2024 the U.S. will pay operating costs and economic losses for any requested Canadian flood control operation). Second, the Treaty set-up a system in which the United States compensates Canada for one-half of the downstream hydrolectric power benefits generated by the upstream storage dams (known as the "Canadian Entitlement").[4] Canada also retains the rights to use all of the power generated by the Canadian Treaty Dams.

The CRT is considered by some experts to be one of the most sophisticated transboundary natural resource treaties in the world. Unlike other international water treaties, it does not focus on allocating fixed quantities of water, but rather allocates a mix of "benefits" to each country.[5] The primary benefits of the CRT -- hydroelectric power, flood control, and compensation -- were largely fixed in 1964. The governance of the Columbia River under the original CRT thereby excludes many of the values that society has found increasingly important in the intervening years, particularly the quality and quantity instream flows for ecosystem health, as well as legal obligations to tribes for treaty-based water and fishery resources[6].

The administration of the CRT is governed by what are commonly referred to as the "Entities" -- including the Bonneville Power Administration and Army Corps of Engineers from the United States, and BC Hydro from Canada. A Permanent Engineer Board is responsible for the preparing and approving an Annual Operating Plan[7]. Appendix B presents an organizational chart for the CRT.

The CRT does not have an expiration date. However, after sixty years of implementation (no sooner than 2024) the treaty can be terminated and renegotiated as long as either the United States or Canada give at least 10 years notice of their intent to terminate.[8] The flood control agreement expires in 2024.[9] While these deadlines may seem to be beyond the planning horizon of most political decision makers, many professionals involved in management of the basin have started to think about how, if at all, the CRT might be revised and updated in light of all the changes that have occurred since 1964.

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[4] Canada is entitled to one-half of the downstream power benefits created by Canadian storage. Canada sold its first 30-year entitlement, up front, to a group of US utilities for $254 million. This was known as the Columbia Storage Power Exchange (and was negotiated after the CRT was signed) and was important for establishing funding for the construction of the Treaty Dams. Since that 30-year period ended, Canada receives payment for its entitlement annually.

[5] Personal communication with Aaron Wolf and Richard Paisley.

[6] The recognition of tribal legal rights to water and fishery resources is largely a function of multiple lawsuits and judicial decisions, as explained more fully below.

[7] The CRT allows the Entities the option to prepare Detailed Operating Plans (DOP) annually that may produce results more advantageous to both countries than those that would arise from operation under the Annual Operating Plan. For more than 20 years, the DOP's have included operations that meet a growing number of fishery and recreation objectives.

[8] If the Treaty is terminated and not renegotiated, the Boundary Waters Treaty of 1909 will govern the transboundary Columbia River, however, certain provisions of the Treaty continue so long as the projects exist, including called-upon flood control, Libby coordination, and Kootenay diversion rights.

[9] Some people interpret that flood control provisions will continue beyond 2024.

b. Purpose and Methods

The purpose of this report is to present and discuss the findings of an assessment of the need to revise and update the CRT. During fall 2008, five graduate students in The University of Montana's Natural Resources Conflict Resolution Program set out to interview people representing the key "action agencies" in the United States and Canada (i.e., those agencies with primary authority to formulate and implement the CRT), other government agencies, tribal governments, and selected scholars. Due to time and financial constraints, the team was forced to limit the number of interviews. A more complete and robust assessment would include interviews with representatives from various interest groups and other stakeholders.

Appendix C presents a list of interviewees, and Appendix D presents the interview questions. In addition to the interviews, we reviewed scientific, legal, and other commentary on the merits of the CRT. We also provided interviewees a chance to review and comment on an earlier draft of this report and to provide any additional technical information. We are very grateful to all of those people and organizations that provided feedback (and, we remain open to additional feedback prior to publishing this report). Throughout this assessment, the team was guided by the Code of Professional Conduct for the Association for Conflict Resolution – which, in essence, compells members of the team to operate as nonpartisan, impartial servants of all stakeholders and decisionmakers.

The following sections of this report present our findings, along with conclusions and recommendations that build on what people told us and what we know about multiparty negotiation. We do not attribute ideas or comments to interviewees, preferring to operate on the principle that what is most important is what was said, not who said what. This principle allows everyone to consider the merits of the ideas presented, regardless of who said what. The people we interviewed represented their own viewpoints, not official positions of their organizations.

Our hope is that this report helps inform and invigorate discussions about the future of the CRT.

2. Performance to Date

a. What Is Working?

Nearly all of the interviewees said that the CRT is working well for its intended purposes – hydroelectric power production and flood control. Many people also agreed that the technical operations of the CRT have been very successful (i.e., the combination of the operating committee, annual operating plans, and the Permanent Engineering Board). One person asserted, "Lots of things are working well. The CRT is probably one of the most successful agreements of international cooperation." Another person explained how floods have been reduced with the infrastructure of new dams and the careful management of hydropower systems. One interviewee said that the CRT "contributed hugely to the

reduction of global warming by reducing the use of fossil fuels," and has also "provided the Northwest with some of the cheapest electricity in the world."

Although nearly all respondents said the CRT is working well for its original purposes, many interviewees cited various problems with the CRT. These difficulties—explained more fully below—include negative impacts on fish and wildlife in both Canada and the United States; the loss of thousands of acres of habitat; and harm to tribal interests (particularly fishing and hunting), community interests, and farming interests in both Canada and the United States. A few respondents, however, stated that the operating team does a pretty good job of integrating fishery interests when it can.

The interviewees are somewhat split over the distribution of benefits within the CRT. Some said that "the framework allows some of the economic benefits to be divided on an equitable basis between the countries." Others said that they "would like to see a better exchange of benefits across the border."

Finally, some respondents said that no single aspect of the CRT is working well. In fact, some interviewees failed to answer the original question (What is working well with respect to the CRT?), and instead cited various ways in which the CRT is not working well -- it does not satisfy current social and environmental needs, it does not allow for the legal rights of tribes in Canada and the United States to be met, and it does not provide sufficient opportunity for stakeholders and the public to be informed and engaged. These issues are addressed in more detail below.

b. Drivers of Change

According to the interviewees, the primary reason to revise and update the CRT is the changes that have taken place since ratification of the treaty. One interviewee succinctly noted that "we have moved from a time when the primary interests (hydropower and flood control) were readily quantified and generally complimentary, to a time with many more interests that are extremely difficult to quantify and often mutually exclusive." This sentiment was echoed by many of the interviewees.

The interviewees identified six specific drivers or reasons to revise and update the Columbia River Treaty -- (1) ecosystem health; (2) expectations for public participation; (3) tribal interests and rights in both Canada and the United States; (4) population growth; (5) climate change; and (6) other considerations. Appendix E, Chronology of Major Events Since 1964, provides additional information on issues and decisions that are and will influence the management of the Columbia River.

1. Ecosystem Health – Nearly all of the interviewees explained that issues around ecosystem health are one of the most compelling drivers (or reasons) to revise and update the CRT. This driver is a catch-all term for a number of specific issues identified by the respondents, including (but not necessarily limited to):

- The emergence of ecosystem health values as reflected by a series of environmental laws passed by the U.S. Congress since 1964, including the National Environmental Policy Act of 1969 (NEPA), the Clean Water Act of 1972 (CWA), and the Endangered Species Act of 1973 (ESA). The most influential of these to the CRT is the ESA, which provides protections for endangered and threatened plants and animals (listed species) and the habitats upon which they depend.[10]
- The impact of Treaty Dams and reservoir operations throughout the basin on fish species, including salmon and resident fish – particularly as these impacts influence the maintenance of commercial, tribal, and recreational fisheries.
- The impact of land use development, resource development (e.g., mining), and transportation infrastructure on fish resources.
- The importance of conserving and restoring fish and other wildlife in recognition of traditional cultural, spiritual and legal rights of the Tribes and First Nations consistent with the tenants of environmental justice.[11]
- The adequacy of water supply in the face of continued population growth and climate change.
- The degradation of water quality from point sources (e.g., industrial and municipal effluent) and non-point sources (e.g., urban growth, agriculture, and forestry) and the impact on fishery and other resource values.

The interviewees concluded that these and perhaps other ecosystem health issues are not adequately taken into account in the existing CRT. Some of the interviewees also noted that these ecosystem health interests are often at odds with each other -- for example, upstream and downstream fisheries may need water retained or released at conflicting times.

2. Expectations for Public Participation – Most of the interviewees agreed that another reason to revise and update the CRT is an increased expectation for public and stakeholder involvement in future management of the system.

As explained above, most interviewees agree that the Columbia River must be managed to meet a broader (and more complex) set of values, beyond the original focus on hydropower and flood control. These respondents explained that the best way to integrate the interests and concerns that revolve around ecosystem health, tribal rights, and recreation is to make the process of managing the Columbia River system more open, transparent, and inclusive. Several people cited the Pacific Salmon Commission as one model to improve the governance of the basin under the CRT – in large part because it provides meaningful opportunities for tribes and stakeholders to be involved in decision-making and implementation.[12]

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[10] EPA Website, http://www.epa.gov/espp/

[11] "Treaty Rights and the Trust Responsibility," Materials for U.S. Fish and Wildlife Service Training Seminars (1996). And "Protecting the Attributes of Native Sovereignty: A New Trust Paradigm for Federal Actions Affecting Tribal Lands and Resources," Utah Law Review 109-237 (1995).

[12] See www.psc.org for more information.

Some respondents explained that it is not only important to engage organized statekholder groups and unaffiliated citizens in setting priorities for the system, but also to involve them in monitoring and adapting the system over time.

Not all interviewees agreed about whether or when citizens and stakeholders should be engaged. Some of the respondents suggested that the best time to engage non-governmental interests is after the action agencies and other key actors have a chance to work through some of the issues and propose some type of revised plan.

3. Tribal Rights – According to many respondents, another significant reason to revise and update the CRT is to fulfill the trust responsibilities and legal obligations of the federal government with respect to the interests, customs, and legal rights of First Nations and Native Americans (collectively referred to herein as tribes). The existing operations of the Treaty dams have caused further damage to what was an already damaged fishery[13], and to which the tribes have a reserved legal right. The interviewees noted that the U.S. government has a "trust and fiduciary responsible to the tribes on actions that affect their treaty-protected resources." These resources include salmon fisheries, other fish species, wildlife, and native plants. These legal rights have been established through a long history of legal action.

In 1855, Native Americans in the Columbia River basin signed a series of treaties with the United States which ceded most of their lands, but reserved exclusive rights to fish and hunt within their reservations as well as rights to fish in usual and accustomed places off the reservation. First Nations have similar rights based on Section 35 of the Constitutional Act (1982) which gave constitutional protection to the aboriginal and treaty rights of the First Nations in Canada. To exercise these rights, most tribes have had to resort to lawsuits, according to some of the interviewees. Over time, the courts have increasingly recognized these legal rights as reflected by several notable cases[14] (*Winters v. United States*[15]*, Sohappy v. Smith/U.S. v. Oregon*[16]*, U.S. v. Oregon*[17]*, Settler v. Lameer*[18]*,and the*

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[13] When the U.S. Senate debated the treaty in 1961 (i.e. Senate Committee on Foreign Relations, Hearing Document, March 8, 1961), they assumed there couldn't be any more salmon losses since Grand Coulee had already knocked out the runs that would have returned to the area where the Canadians were to build their dams. However, they ignored the serious detrimental impacts to the fisheries that remained and the resulting impact to the Tribes right to fish.

[14] Though most of these court cases were not specifically referenced by interviewees, we feel their inclusion here reflects and refines the discussions with interviewees about legal rights of tribes in the US and Canada.

[15] *Winters v. United States (1908)*, which allows tribes to reserve future water needs in the amount necessary to meet the primary purpose of the reservation when established, with priority based on the date of establishment of the reservation.[15] This means that Native Americans in the Columbia Basin have an authority to legally define their water rights.

[16] *Sohappy v. Smith/U.S. v Oregon (1969)* "held that the tribes were entitled to a "fair share" of the fish runs and the state is limited in its power to regulate treaty Indian fisheries (the state may only regulate when "reasonable and necessary for conservation"). Further, state conservation regulations were not to discriminate against the Indians and must be the least restrictive means." (Columbia Inter-Tribal Fish Commission Website, A Short Chronology of Treaty Fishing on the Columbia River, www.critfc.org/text/timeline3.html)

[17] In *U.S. v Washington* (1974) the judge held that a "fair share" was 50 percent of the harvestable fish destined for the tribes' usual and accustomed fishing places and reaffirmed tribal management powers. This principle was then applied to the fisheries under U.S. v. Oregon in the Columbia River Basin."

Haida and Taku River decisions in Canada[19]). In addition, the Pacific Salmon Treaty incorporated tribal rights as it set out to cooperatively provide recommendations to managers of Pacific salmon stocks.[20] With so many existing court decisions and treaties governing fisheries management, some interviewees made it clear that the tribes do not want fisheries management incorporated into the CRT. Rather, they want the governance of the basin under the CRT to meet the needs and interests of fisheries managers.

Some interviewees explained First Nations have been displaced and otherwise negatively impacted during the creation of CRT storage reservoirs and dams in Canada. First Nations apparently lost significant hunting, fishing, and gathering land that they have historically relied on. Interviewees also explained that First Nations are concerned about the disruption of burial grounds and artifacts by the fluctuating water levels of reservoirs. These respondents went on to explain that First Nations have not been adequately compensated for the sacrifices they have made to develop the Columbia River under the CRT, and that their interests are not being represented in the current CRT.

In conclusion, some interviewees explained that the needs and interests of Tribes First Nations should be reflected in any process to revise and update the CRT. Most of the interviewees concluded that tribes from Canada and the United States should have a decision-making role in any process to revise and update the CRT.

4. Population Growth – Some interviewees expressed concern about the potential impact of population growth on the management of the Columbia River system, and the system's ability to meet increased demands for water and energy. When the CRT was ratified, it was anticipated that some of the dams on the Columbia would provide growing populations with water and power (in fact, consumptive use is the highest priority of the CRT). However, the Columbia Basin has continued to grow at unprecedented rates (between 20 to 40 percent in urban areas since 1960).[21] If populations in the lower basin continue to grow at the current rates, there will be a significant increase in demand for water and power in major metropolitan areas of the Pacific Northwest.[22]

Energy producers have voiced concerns about meeting future demands in the region.[23] Some have expressed concern about California's continued dependence on Columbia River

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[18] *Settler v. Lameer* (1974) ruled that treaty fishing is a tribal right, not an individual right, and the tribes had reserved the authority to regulate tribal fishing on and off the reservations.

[19] In the Haida and Taku River (2004) decisions the Supreme Court of Canada ruled that the Crown (federa/provincial government) has a legal duty to consult and accommodate First Nations when considering an action that might adversely impact Section 35 rights (established or potential).

[20] Pacific Salmon Treaty, Pacific Salmon Commission Website, http://www.psc.org/publications_psctreaty.htm. Some interviewees for this assesesment suggested that the Pacific Salmon Treaty could be used as a model in some respects for future negotiations of the Columbia River Treaty.

[21] Independent Scientific Advisory Board. Human Population Impacts on Columbia River Basin Fish and Wildlife. ISAB Human Population Report. p.9. June 8, 2007.

[22] In the final draft of this report, we may include some graphs and tables that illustrate demographic trends and protected demand for water and energy.

[23] Northwest Power Planning Council. NW Power Supply Adequacy/Reliability Study- Phase 1 Report. Paper Number 200-4. March 6, 2002.

hydropower, which could indirectly increase electricity rates as the demand for this power increases in the Northwest. Some interviewees concluded that the CRT should be revised and updated to prioritize the future water and energy needs of the basin before exporting either resource out of the basin.

5. Climate Change – Some interviewees said that the uncertainty and potential impacts associated with climate change (particularly its impact on future water availability) is another compelling driver to revise and update the CRT. In addition to a lack of information on climate change, interviewees suggested that changes to snowpack, temperature, and precipitation patterns will likely influence the management of the Columbia River to meet multiple interests. While the impacts of climate change are uncertain, interviewees explained there is a growing need to develop management scenarios to both mitigate and adapt to whatever impacts may emerge.

Some interviewees said that some of the agencies have started working on this issue, but that more attention might be focused on it in the near future. Others suggested that the CRT, in its current form, could already accommodate these issues through adjustments in operating plans.

6. Recreation – The impact of reservoir management on recreation in and around reservoirs and the associated impact on tourism was also mentioned by some interviewees as an important driver to change the CRT. At least one interviewee expressed concern about the need to maintain consistent water levels for reservoir-based recreation. The ability to access reservoirs and associated recreational resources is impaired when reservoirs levels fluctuate to meet downstream needs and interests.

Some interviewees noted that recreation objectives are sometimes met through special operating agreements authorized by the Detailed Operating Plan, but that these objectives must be balanced against competing objectives including power.

3. Prospects for the Future

a. People's Preferences

In light of the changes that have taken place since 1964, we asked interviewees what their preference was in terms of the future of the CRT -- maintain the status quo, terminate the treaty, or revise and update some or all aspects of the treaty.

Most interviewees expressed a desire to revise and update the CRT. A frequent sentiment was that "things have changed" and there are additional considerations that were not prevalent during the 1960s negotiation, such as climate change, sensitivity to ecosystem health, consideration of fish and wildlife, expectations for public involvement, and increased pressure (socially and legally) for tribal input. In addition, many respondents feel there is potential for more equitable sharing of benefits.

While most of the interviewees agree that the CRT needs to be revised and updated, many of them also explained that they hope the CRT could be revised and updated short of renegotiating the entire treaty. These respondents seem to embrace a princple of "keep the foundation in terms of what is working, and build on that foundation to revise and update the CRT." Some of these interviewees expressed a concern about opening Pandora's box if the entire treaty is open for renegotiation, some fearing that valuable benefits might be lost. One respondent put it very clearly: "[renegotiation is] probably the best option, as it would allow consideration of many facets, and allow for broad consultation with stakeholders. However, for almost the same reasons, a new treaty is probably impossible to accomplish, given the diversity of values, and rampant self-interest." Other interviewees concluded that the only option to fully incorporate their interests would be a full renegotiation of the CRT.

A few interviewees said that letting the CRT continue as is may be the easiest and, therefore, most preferred option. These respondents explained that opening the CRT to full and complete renegotiation and involving a diversity of interest groups has the potential to "dissipate more benefits than it could possible create." However, other respondents think that the existing CRT can integrate some, if not all, of the interests not currently reflected in the CRT through various procedures built into the existing framework. (The following section presents some of these more "informal" approaches to revise and update the CRT). These options provide an opportunity to reduce the risks inherent to a termination and renegotiation (e.g. the potential for national interests to over-run the interests of the Pacific Northwest).

Finally, none of the interviewees expressed a preference to terminate the CRT. Some respondents noted that termination would most likely result in a loss of the existing benefits associated with the CRT. This sentiment is captured by one respondent's answer: "The CRT cannot stay the way it is and I don't see how you can operate the river in these times without a cross-border agreement, so letting it go away is not an option."

While none of the interviewees said that the CRT should be terminated, some respondents speculated that other people or agencies might believe that termination is in their best interest.

In sum, most (if not all) interviewees agreed that the CRT should be revised and updated. The question is, "how" should it be revised and updated? To anwer this question, the following section reviews the legal and institutional options available. We offer these options as a place to begin a conversation, realizing that we are not legal experts and in the space of this paper cannot fully explore the ramifications of these options.

b. Legal and Institutional Options

Based on our research, there appear to be serveral options potentially available to revise and update the CRT. The purpose of this section is to simply lay out, in a preliminary way,

what the legal and institutional options are to revise and update the CRT, and to thereby inform and invigorate ongoing conversations.

Option 1 - Maintain the status quo: The first option is to maintain the status quo. As explained earlier, the CRT has no expiration date. If the United States and Canada agree (and neither country sends the other a notice to terminate), the existing CRT could presumably stay in place. One potential complication with this option is that Canada's obligations for annual flood control operation expire after 60 years (in 2024). At this time, the United States Congress would have to authorize additional payments to Canada for providing any requested flood control measures.[24]

Option 2 - Terminate the treaty: A second option is to terminate the CRT by giving formal notice anytime after 2014.[25] If one country chooses to terminate without renegotiating some or all of the existing CRT, the governance of the Columbia River would default to the 1909 Boundary Waters Treaty.[26] Under this option, each country would maintain exclusive control of the use of the river on their side of the border.[27] It also means that consent from the International Joint Commission must be obtained for any change in the flow of water at the boundary.[28]

Option 3 - Revise and update the treaty: The third option is to revise and update the CRT. According to our research, there are several ways to acomplish this objective. The following options are presented from most formal (and therefore, perhaps hardest) to most informal (and perhaps easiest). The CRT itself does not specify any procedures to revise or update the Treaty; it only provides a procedure for terminating the Treaty.

A. ***Renegotiate the treaty*** – As implied above, the existing CRT could be renegotiated after either Canada or the United States submit a notice to terminate. If both countries agree to renegotiate, then they can presumably proceed with whatever renegotiation process they determine appropriate under existing international and federal laws and customs. This option might best be referred to as a "formal renegotiation" of the CRT under the auspices of existing law and practice, which would include United States Congress and the Canadian Parliament.

B. ***Negotiate a "partner treaty"-*** A "partner treaty" could be negotiated that elaborates on and amends the CRT.[29] This option may, however, raise questions about how to resolve potential conflicts between the CRT and the "partner treaty." In addition, since it would be a new international treaty, it would need the approval of the United States Congress and the Canadian Parliament.

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[24] Bonneville Power Administration and the Army Corps of Engineers. 2008. Columbia River Treaty History and 2014/2024 Review.
[25] Columbia River Treaty. Article 19.
[26] Columbia River Treaty. Article 15. Section 2.
[27] Boundary Waters Treaty. Article II.
[28] Boundary Waters Treaty. Article IV.
[29] NOTE – WE NEED A CITATION FOR THIS OPTION.

C. ***Negotiate formal amendments*** **-** Yet another option to revise and update the CRT is to seek formal amendments. According to international law, a treaty may be amended under the same rules that govern creation of the treaty, as long as the current treaty does not prohibit this.[30] Therefore, amendments go through the same formal diplomatic process as a formal negotiation, but do not necessarily open the whole treaty for consideration. Currently, there are no formal amendments to the CRT.

D. ***Negotiate and implement protocols*** **-** Another option is to engage in diplomatic discussions without the presumption of terminating and completely renegotiating the entire treaty. After the CRT was initially signed in 1961, additional negotiations about the exchange of benefits and operations were completed with a diplomatic "Exchange of Notes" resulting in the Protocol (dated 1964), which is attached to the CRT.[31] Although this Protocol contains some significant provisions, it is viewed as consistent with the original CRT and therefore, not considered a formal renegotiation needing ratification. Protocols are simply another frequently used form of international negotiation.[32] The use of this option begs the question of how far the action agencies can go in revising and updating the CRT through the use of Protocols before such changes trigger a formal renegotiation. Any substantial changes require consultation with the United States' State Department (State) and the Canadian Department of Foreign Affairs and International Trade (DFAIT) to authorize the agreement with a diplomatic "Exchange of Notes".

E. ***Incorporate new "Entities" or advisors*** – In the United States, an Executive Order (EO) issued by President Johnson in 1964 carried out the implementation of the treaty.[33] The EO designated the U.S. Entities (BPA and the Corps) and the formation of the U.S. Section of the PEB. This EO may be modified by the President, which may provide an opportunity to expand participation on the U.S. side. For example, the President could add more agencies to the U.S. Entity, with circumscribed participation in a process for a renegotiation. Without modifications, under Section 204 of the EO, the U.S. Section of the PEB may call upon other federal agencies to aid it in "the performance of its functions." In this context, it would appear that the U.S. PEB could request that some federal agencies and the tribes (through delegations from the Interior Department through the Self-Determination Act) could "aid it" (participate) in some modeling exercises that explore post 2024 options. Finally, the State Department could appoint members to a negotiating team.

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[30] Vienna Convention on the Law of Treaties, 1969. Accessed at: http://untreaty.un.org/ilc/texts/instruments/english/conventions/1_1_1969.pdf

[31] Bankes, Nigel. 1996. The Columbia Basin and the Columbia River Treaty: Canadian perspectives in the 1990s. *Northwest Water, Law and Policy Project*.

[32] Another example of a Protocol used to incorporate additional interests is the Migratory Bird Convention (Canada), which amended a 1916 agreement between the US and Canada to incorporate Aboriginal practices and conservation. See Canada Legal Information Institute. http://www.canlii.org/ca/sta/m-7.01/part302240.html

[33] E.O. 11177, Sept. 16, 1964, 29 Fed Reg 13097, 3 CFR, 1964-65 Comp., p 243, as amended by E.O. 12038, Feb 3, 1978, 43 CFR 4957, 3 CFR, 1978 Comp., p 136.

F. ***Adjust annual operating plans*** – According to Article 14, Section 2(k) of the CRT, another option to revise and update the CRT is to adjust the annual operating plans. According to this section of the CRT, the implementing agencies have the authority for "preparation and implementation of detailed operating plans that may produce results more advantageous to both countries than those that would arise from operation under the plans [required by the CRT]."[34] Presumably, this means that the Operating Committee/Entities, have the authority to integrate what are sometimes referred to as "non-treaty interests" (i.e., those that are not currently recognized in the CRT) into the annual operating plans, as long as such actions are viewed as beneficial to both countries. The Operating Committee has also used Supplemental Operating Agreements to include objectives other than power and flood control. Whether or not these approaches to revising and updating the CRT is acceptable to all interested and affected parties is an open question. Nevertheless, the Operating Committee has apparently used this option in the past.[35]

4. Options on How to Proceed

Although we did not assume that interviewees would conclude that the CRT should be revised and updated, we wanted to ask various questions related to the process of revising the CRT *if the participants did conclude that the CRT should be revised and updated.* As the findings presented above indicate, most of the interviewees believe that the CRT should be revised and updated.

During the interviews, we framed a series of questions around the process of renegotiating the CRT. We quickly learned, however, that the word "renegotiating" is a term of art, interpreted by many people as the formal process of terminating the existing treaty and negotiating a completely new treaty. In response to this potential confusion, we have chosen to talk about "revising and updating" the CRT, whether the process to do that is more or less formal.

a. Convening the Dialogue

Many interviewees said that if the CRT is renegotiated in any formal sense (in other words, if either the U.S. or Canada terminate the existing treaty and seek to negotiate a completely new treaty), then the conveners would be the U.S. Department of State and the Canadian Department of Foreign Affairs and International Trade. Many of the interviewees explained that this is a simple matter of law – international negotiations must start with the highest level of government. In other words, they claimed that the CRT, the law

[34] Columbia River Treaty. Article 14. Section 2(k).
[35] For example, the Libby Coordination Agreement (2000), which allowed for maintenance of in-stream flow for endangered fish species in the U.S. and provided compensation to Canada for lost benefits. See Muckleston, Keith. International Management in the Columbia River System. Published by UNESCO.

governing international treaties, and law in both the United States and Canada dictate who can convene formal negotiations over international treaties and transboundary resources.[36]

Some interviewees, however, suggested that the authority to convene a multiparty negotiation to revise and update the CRT could be delegated to the Action Agencies (U.S. Army Corps of Engineers, Bonneville Power Administration, The Province of British Columbia, and BC Hydro). As explained in the previous section, one option along these lines is to amend the Executive Order that directs implementation of the CRT and officially name other agencies and tribes as part of any formal negotiation process.

A number of other respondents said that if the CRT is revised and updated through some type of informal process as explained in the previous section, then the question of who convenes the process is a bit more open. The interviewees identified a number of options along this line:

- Sovereign entities, including tribes, United States, and Canada;
- Action agencies and other governmental agencies (e.g., BOR, EPA, NOAA, USFWS, BC Ministry of Environment, Ministry of Energy, Mines and Petroleum Resources, Environment Canada, etc.)
- Northwest Power and Conservation Council[37] and Columbia Basin Trust;
- Permanent Engineering Board;
- International Joint Commission; and
- First Nations on both sides of the 49th parallel.

The interviewees who advocated a more informal approach to convening seemed to be open to combining the options presented above. These interviewees effectively articulated two principles around the question of convening. First, the convening body should be widely credible and legitimate in terms of making sure all of the interests within the basin are sufficiently represented. Second, a number of the respondents also emphasized a strong preference for creating a homegrown process—one that is largely convened and coordinated by and for people within the Columbia River Basin.

b. Represention – Who Should Be at the Decision-making Table?

A small minority of interviewees suggested that only representatives from the action agencies should be at the table. An equally small number of respondents said that everybody who has an interest or stake in the basin should be at the table.

The majority of respondents said that any process to revise and update the CRT should provide meaningful opportunities for all decision-makers, stakeholders, and citizens to influence the process. Realizing that it would be cumbersome to have representatives from

[36] At the time of this writing, we have not had the opportunity to conduct the research necessary to validate this assertion.

[37] Some interviewees suggested that this group is not appropriate to convene, as they have not been adequately satisfying tribal legal rights and have recently been sued by the Tribes.

every conceivable stakeholder group at the table, most of these individuals were quick to mention that the process to revise and update the CRT will need to be multi-faceted. That is, there can or should be a core negotiating group, one or more advisory groups, and multiple opportunities for public participation.

In terms of who should be in the core negotiating group, respondents identified the following options:

- Only sovereign entities, including the tribes, United States, and Canada (i.e., the "action agencies" and tribal representatives, similar to the negotiation process that led to the Pacific Salmon Treaty[38]);
- Some combination of "action agencies," tribes[39], and:
  - British Columbia, Montana, Idaho, Oregon, and Washington;
  - Groups that have legal rights to resources within the basin (e.g., irrigators);
  - Representatives of identifiable "communities of interest" (that is, groups of individuals that share a common interest, such as conservation, recreation, municipalities, utilities, irrigators, fisheries, etc.); and
  - Multi-stakeholder, place-based groups, such as the Lower Columbia River Estuary Partnership, Clark Fork River Watershed Council, and the watershed planning groups in British Columbia.[40]

c. Public Participation – How to Inform and Engage Unaffiliated Citizens?

Almost without fail, the interviewees stated that any process to revise and update the CRT should be open, inclusive, and transparent. The core concern here seems to be that all citizens and stakeholders should have an opportunity to (1) be informed and educated; and (2) provide input and advice. As the interviewees moved beyond this principle to clarify when and how the public should be involved, their responses were quite varied.

The respondents identified the following options with respect to when the public should be involved (at this point we distinguish between "organized" stakeholder groups and "unaffiliated" citizens; the focus of this section is on the latter):

- At the beginning to help frame values, issues, options, and priorities;
- At key stages throughout the process, such as those defined by the National Environmental Policy Act;

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[38] Once again, we have not yet had time to conduct research to clarify the process used to negotiate the Pacific Salmon Treaty. For more information, see www.psc.org.

[39] Some interviewees noted that the tribes are concerned about having fair distribution of representation (ex. the conservation, recreation, or fisheries groups have multiple representatives, where all tribes only have one). Given their sovereign role and multiple tribes involved, they would expect to have many representatives.

[40] These are only some representative examples of the type of multi-party, place-based groups that might play this role. Other groups that might meet these criteria include the Lower Columbia Solutions Group, The Deschutes River Conservancy,

- After they are sufficiently informed about the choices and consequences, and before the final plan is ratified.

In terms of how to involve the public, most of the interviewees seemed to agree on a principle that the process for public participation should be jointly designed by all of the affected parties: action agencies, other governmental agencies, tribal representatives, and various stakeholder groups. More specifically, the interviewees identified the following options on how to involve the public:

- Include one or more "public" representatives at the negotiating table;
- Convene regional (i.e., basin-wide) and sub-regional dialogues to inform and educate the public, seek their input and advice to clarify values and priorities;
- Coordinate separate public processes within the United States and Canada;
- Follow the legally required opportunities for public involvement as defined by the National Environmental Policy Act;
- Encourage citizens to provide input and advice through informal means such as lobbying elected officials, talking to interest groups, etc.

When asked who might be in the best position to facilitate meaningful public involvement, the interviewees identified the following options:

- A team of facilitators and mediators;
- Agencies;
- Universities;
- Communities of interest; and
- Place-based groups.

d. Process Management – The Role of Faciliation and Mediation

The responses to a question about facilitation and mediation were quite varied. On the one hand, some of the interviewees said that an impartial, nonpartisan person or team was not used during the original CRT negotiations, and it is not a common practice in negotiating international, transboundary agreements around natural resources. Nor is it legally required. Other respondents said that, while facilitation might be helpful, the action agencies will not likely support such a role, and that the diplomats representing the different countries are (at least in theory) capable of playing this role.

On the other hand, the majority of respondents said that it would be tremendously valuable to have an impartial, nonpartisan person (or team of people) to:

- Assess the needs and interests of other stakeholders, similar to what has been done with this project;
- Help design an effective process to revise and update the CRT;
- Organize and convene regional and sub-regional dialogues and other opportunities to facilitate public involvement;

- Work with communities of interest and place-based groups to prepare for participation in the process to revise and update the CRT;
- Facilitate communication, understanding, and agreement across government agencies;
- Mediate, as necessary, the conversation among the core group of decision makers (whoever that is).

The interviewees who support this role also said that a facilitator or mediator must be impartial and nonpartisan, and should have some knowledge about the CRT, issues, players, and the process to revise and update the CRT. Along these lines, the respondents suggested that one or more of the following entitites might play such a role:

- Northwest Power and Conservation Council and Columbia Basin Trust[41];
- International Joint Commission; and
- University-based policy and conflict resolution centers within the Columbia River Basin.

e. Information – The Need for Scientific and Public Learning

Most of the interviewees asserted that there is a huge need to promote and support both scientific and public learning. In terms of what information is needed, respondents offered the following suggestions:

- Clarify the process (and options) to revise and update the CRT;
- Identify public values, interests, and priorities – throughout the basin;
- Clarify legal rights (e.g., the rights of First Nations and Native Americans) and how different legal rights may conflict (e.g., endangered species vs. power and water supply);
- Examine the likely influence of numerous variables on what is preferable and what is doable in terms of revising and updating the CRT, such as:
    - Climate change;
    - Environmental laws adopted since 1964;
    - Change in population;
    - Demand for energy;
    - Demand for water; and
    - Species at risk.
- Map the options and consequences (costs, benefits, and trade-offs) to accommodate multiple interests and communicate this information to citizens, stakeholders, and decision-makers.
- Make hydrological models and data available as a public resource, as it is necessary for stakeholders to be informed and able to see the trade-offs of various policies.[42]

[41] Note NPCC and CBT are separate entities with different missions. Alhough they have some similar interests and both have direct connections with the interested public, they are not identical, and they operate under different mandates and different authority. In addition, some interviewees do not view these groups as "non-partisan" due to their lack of tribal representation.

In terms of how to gather and distribute the desired information, many of the respondents seemed to embrace the notion of joint fact finding. That is, several interviewees suggested that existing information should be pooled and made publicly available.[43] Then, based on what they know, they can begin a dialogue to jointly identify what they don't know, what they need or want to know, and how they might go about learning together. The respondents suggested that this approach to gathering, evaluating, and disseminating information would increase the chances that the information is politically relevant, scientifically valid, and widely accepted.

Some of the more specific methods recommended by interviewees include:

- Survey to clarify public values, interests, and priorities;
- Scenario building to examine options, consequences, and trade-offs;
- Modeling to assess the impacts of alternative operating scenarios;
- Research to clarify legal rights and potential conflicts among legal rights;
- Dialogue and deliberation to facilitate communication, understanding, and agreement on how to revise and update the CRT; and
- A public education campaign to raise awareness and seek informed input and advice.

In addition to joint fact-finding, the interviewees suggested that the following resources could be utilized to help generate and distribute the desired information: tribes, universities, NWPCC, CBT, students, watershed groups, agencies, and consultants.

f. Governance – Implementing and Adapting to Change

When asked what type of governance arrangement would be most effective to implement the treaty, many interviewees suggested that the answer would depend on the outcome of any process to revise and update the CRT. Others said that the existing system is working extremely well, particularly the Permanent Engineering Board (PEB), the Operating Committee (which meets frequently), and the annual operating plan. They said this success is due in large part to a history of trust and technical understanding. This consortium of actors is responsible for assembling flow records, resolving differences that may arise among competing uses, and creating annual reports of accomplishments. The PEB consists of two members appointed by Canada and two by the United States.

The underlying idea here is to build on what works and adjust accordingly. In other words, if the treaty integrates new interests, including but not limited to tribes and ecosystem

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[42] Note: some interviewees suggested that these models and data have been viewed by the Entities as proprietary, rather than public, information.

[43] Many interviewees explained that the NWPCC maintains one of the best websites, including information on the history of the CRT, key players and issues, and provides newsletters and other opportunities to inform and educate the public and to seek their input and advice. See www.nwcouncil.org. Some interviewees explained that the NWPCC and/or CBT might play an the role of an impartial, nonpartisan coordinator of information. Along these lines, the various action agencies would submit information to the NWPCC and/or CBT, which would make the information available for public use.

health, then the existing boards and committees designed to govern and implement the treaty should be accordingly revised. For example, if water quality interests are integrated into the CRT, perhaps is makes sense to have a representative from the EPA and/or Environment Canada to serve on one or more of the governing bodies. Likewise, if fisheries are integrated, a representative from the National Oceanic and Atmospheric Administration (which oversees endangered species recovery) might be appointed. Some interviewees opposed the idea of incorporating new players into the governance of the CRT, preferring to clarify that such interests should be better integrated and balanced with hydropower power and flood control.

Other respondents suggested a menu of possibilities in terms of governing the system:

- Create a standing Scientific and Technical Work Group that can research and respond to questions and issues (i.e. fishery management) as they arise, perhaps then reporting to an entity such as the PEB;[44]
- Create a Policy Board to address value-based issues, to complement the work of the PEB and operations committee (which is focused more on the technical operations of the system);
- Create a Consultative Committee of other agencies and stakeholders to monitor, evaluate, and suggest adaptations to the operations of the system;
- Create a Transboundary Commission that would include both policy and technical components
    - One option here might be to amend the Pacific Salmon Commission;
    - Another is to explore the possibility of creating some type of integrated commission from the NWPCC and the CBT, which seem to have more legitimacy, credibility, and capacity to integrate multiple uses);
    - A third option identified by at least one interviewee is to create an International Watershed Board under the auspices of the International Joint Commission;[45]
- Clarify governance protocols in terms of how decisions are made, disputes resolved, and goals and strategies are adapted.

5. Success and Barriers

Interviewees identified a number of indicators of success, as well as barriers to revising and updating the CRT. The comments on success and barriers include both substantive and process issues, which are integrated throughout the following discussion.

a. Indicators of Success

[44] A good example here is the Columbia River Fish Working Group, a joint advisory group created by Washington and Oregon to develop recommendations on a variety of Columbia River fishery-related issues facing the two states.
[45] See www.ijc.org/rel/comm/ref1198.

- ***Build on what is working*** – Most of the interviewees asserted that success should be measured, at least in part, by building on what is working: generating and distributing power, preventing floods, and reducing the use of fossil fuels. Maintaining an equitable distribution of benefits between the United States and Canada was also mentioned along these lines.

- ***Prevent harm and provide more explicit benefits to tribes*** **-** Most of the interviewees feel that the CRT's impact on indigenous people must be addressed in any process to revise and update the CRT. The sentiment of one tribal representative captures the essence of this issue: "The cultural aspects of flooding must be addressed. There are burial grounds and artifacts that are constantly being disrupted by fluctuating water levels in the reservoirs. Tribes are constantly forced to reexamine how to handle burial remains. It is like having your family dug up on a regular basis."

  Some of the respondents explained that tribal interests include compensation for past harms, as well as the prevention of future harms (or, more positively, the provision of benefits in the future).

- ***Balance multiple uses and benefits*** – In addition to building on what is working, and accomodating tribal interests, most of the interviewees said that one of the most important indicators of success will be to strike a balance between the multiple uses or benefits of the river, including power generation, flood control, ecological health (such as fish and wildlife concerns), cultural interests, recreation, and other offstream uses. An obvious element of this indicator of success is the need to be responsive to laws, policies, and judicial decisions that have been adopted since 1964, including the ESA, NEPA, Pacific Salmon Treaty, and judicial decisions recognizing the rights of tribes. Another aspect is to equitably balance or distribute benefits and costs upstream and downstream.

- ***Develop strategies to mitigate and adapt to climate change*** **-** Most respondents said that a new and improved CRT must include strategies to mitigate and adapt to climate change. Given that there is a great deal of uncertainty about how climate change may affect the amount and timing of precipitation, these respondents explained that it is important to consider a range of scenarios, impacts, mitigation procedures, and strategies to adapt the operating system as new information becomes available. Many interviewees also said that it is important to maintain the production of hydropower as a renewable energy source that helps reduce CO2 emissions.

In addition to successfully addressing several substantive issues, the interviewees also identified a number of process issues necessary for success.

- ***Action agencies should be more open and transparent*** – According to several interviewees, the success of revising and updating the CRT will depend on the action agencies embracing, supporting, and implementing a more open and transparent process. This means, at least in part, that the action agencies should not name the issues, frame the options, and design the process without the participation of other governmental agencies, tribes, organized interest groups, and unaffiliated citizens.

Instead, the action agencies should seek to engage all of these people and organizations as early as possible.[46]

- ***Provide opportunities for all interests to be meaningfully involved*** **-** Most respondents voiced a desire for a more inclusive process, meaning that people other than those associated with the action agencies should be meaningfully engaged in the process to revise, update, and implement the CRT. This should include state and provincial agencies, tribes, organized stakeholder groups, as well as unaffiliated citizens. As discussed above, this indicator of success could be accomplished through regional roundtables, watershed groups, web-based surveys, and direct contact with organized interest groups

b. Barriers to Overcome

Not surprisingly, the barriers to overcome in revising and updating the CRT correspond in many ways to the indicators of success identified by the interviewees.

- ***Overcome institutional inertia*** – Many of the respondents said that one of the biggest barriers to overcome in revising and updating the CRT is to overcome the inertia of the status quo. The confidence among interviewees varied about the degree to which action agencies might embrace and support an open, inclusive process from the get go. Some concluded that, while this is critical, it is not likely to happen. Other respondents explained that the challenge is to encourage and provide incentives for action agencies and others to move beyond self-interest and focus more broadly on the mix of benefits provided by the system. Unfortunately, as noted by the interviewees, action agencies are often unwilling to move beyond self-interest because they are bound by legislative mandates.

- ***Determine who participates, when, and how*** – Another barrier identified by most of the interviewees is the fundamental question of who participates, when, and how, and also who decides these questions. While this barrier is somewhat related to the issue of institutional inertia, most respondents seem compelled to highlight it given its fundamental nature. Most of the respondents realize that the more people, organizations, and interests engaged in the process, the more complex and harder it will be to find common ground. That said, many of the interviewees explained that this barrier can and should be overcome.

  The interviewees variously identified a number of specific questions along the lines of: (1) who is at the decision-making table? (2) Who is allowed to provide input and advice and when? (3) How will the decision-makers demonstrate that they have responded to the input and advice of individuals and groups? and (4) How will disputes be resolved among those at the decision-making table and between the decision-makers and those individuals and groups providing input and advice? The overarching question here is who decides how to address these process issues?

[46] For more on this theory of "deliberative democracy," see David Mathews, "Six Democractic Practices …"

- ***Address specific substantive issues*** – Many of the interviewees explained that any process to revise and update the CRT must successfully address a number of substantive issues, some of which will be more difficult than others:

    - Maximize power and flood control benefits while meeting the needs, interests, and legal requirements for tribes and endangered species.
    - Equitably distribute costs and benefits among the two countries, tribal nations, four states, and one province.
    - Quantify the costs (and appropriate compensation) to tribes in the upper basin that have lost cultural assets due to flooding.
    - Clarify the impacts of dams and water quality to anadromous fish and tributaries, and determine how to mitigate the impacts.
    - Resolve issues between commercial ocean fisheries and inland fishermen, given that there is not likely to be a sufficient resource to meet all of their respective interests.
    - Maintain high quality recreation and aesthetic values in upper basin reservoirs while meeting the downstream needs for fish and hydroelectric power.
    - Build-in flexibility and adaptability to deal with (what most interviewees assume is inevitable) climate change. Seek agreement on the scientific and technical facts associated with climate change, beginning with how much the average annual flow of the Columbia River might change over time and how future shortages should be allocated among different uses and benefits.
    - Encourage the action agencies to be open and forth-coming across the border prior to giving notice and undertaking negotiations, and to engage other governmental agencies, tribes, stakeholders, and unaffiliated citizens in the design of any process to revise and update the CRT. Avoid the conventional posturing and behind-the-scenes bargaining associated with these types of multiparty negotiations.
    - Clarify how the National Environmental Policy Act and other legislation and judicial decisions passed since 1964 will influence the process to revise and update the CRT.

6. Conclusions and Recommendations

The findings based on the interviews speak for themselves. Building on these findings, along with what we know about multiparty, multi-issue negotiation,[47] we offer the following conclusions and recommendations. To supplement these recommendations, Appendix F presents a commonly accepted set of principles for collaborative goverance.

a. **Conduct a more complete assessment** – This assessment of action agencies, other governmental agencies, and tribes is a solid beginning. However, it is incomplete. A

[47] See, for example, Lawrence Susskind, *Environmental Diplomacy: Negotiating More Effective Global Agreements* (Oxford University Press, 1994); NOTE, OTHER RESOURCES WILL BE ADDED PRIOR TO THE FINAL DRAFT OF THIS REPORT.

more complete assessment should be conducted to identify the interests and concerns of organized statekholder groups and unaffiliated citizens, and to evaluate the strengths and weaknesses of the CRT. A nonpartisan, impartial third party under the auspices of the action agencies and perhaps other governmental agencies and tribes could complete this assessement.

b. **Clarify the options to revise and update the CRT** – The material presented herein is a beginning. Perhaps a team of people could more clearly articulate the menu of legal and institutional options on how to revise and update the CRT.

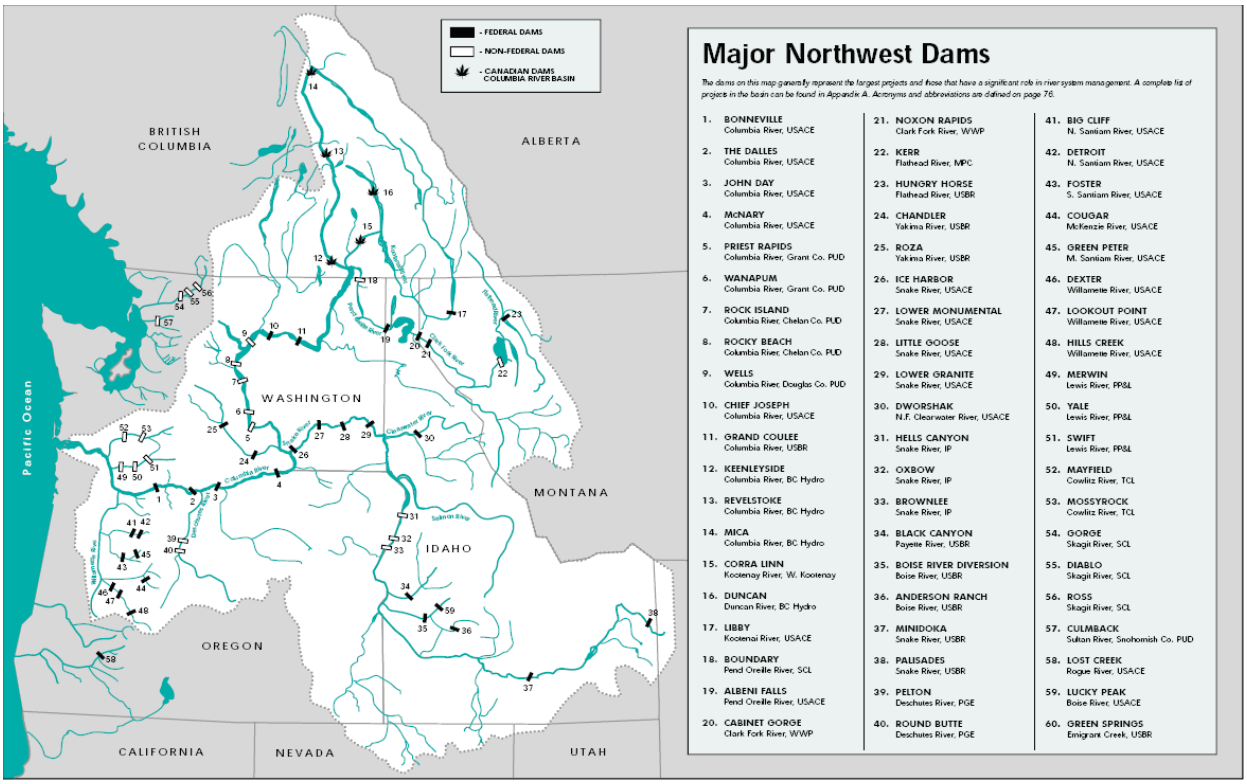
c. **Evaluate options to stakeholder and public participation** – As revealed above, most of the interviewees believe that whatever process is used to revise and update the CRT, it should provide more opportunities for stakeholder and public involement. Building the menu of possibilities presented herein, perhaps a team of people could evaluate, refine, and develop options to meaningfully engage stakeholders and citizens.

d. **Facilitate scientific and public learning** – Many (if not most) of the interviewees concluded that it is important to identify what we know, don't know, and need to know to make informed decisions and to promote scientific and public understanding about the CRT and the social, economic, and environmental forces shaping the future of the basin. Once again, perhaps a team of people could build on existing intiatives to answer these questions, and develop one or more strategies to faciliate public learning on these complex issues.

The Columbia River basin is special place, and the CRT is widely viewed as model for managing transboundary natural resources. We thank all of the interviewees and reviewers of this report, and hope that it can help inform and invigorate attempts to foster livable communities, vibrant economies, and healthy environments in this region.

Appendix A: Maps of the Columbia River Basin

Map of the Major Dams in the Columbia River Basin



Source: The Federal Columbia River Power System

The Treaty Dams

Source: COE BPA Columbia River Treaty History and 2014/2024 Review

Appendix B:
Columbia River Treaty Organization

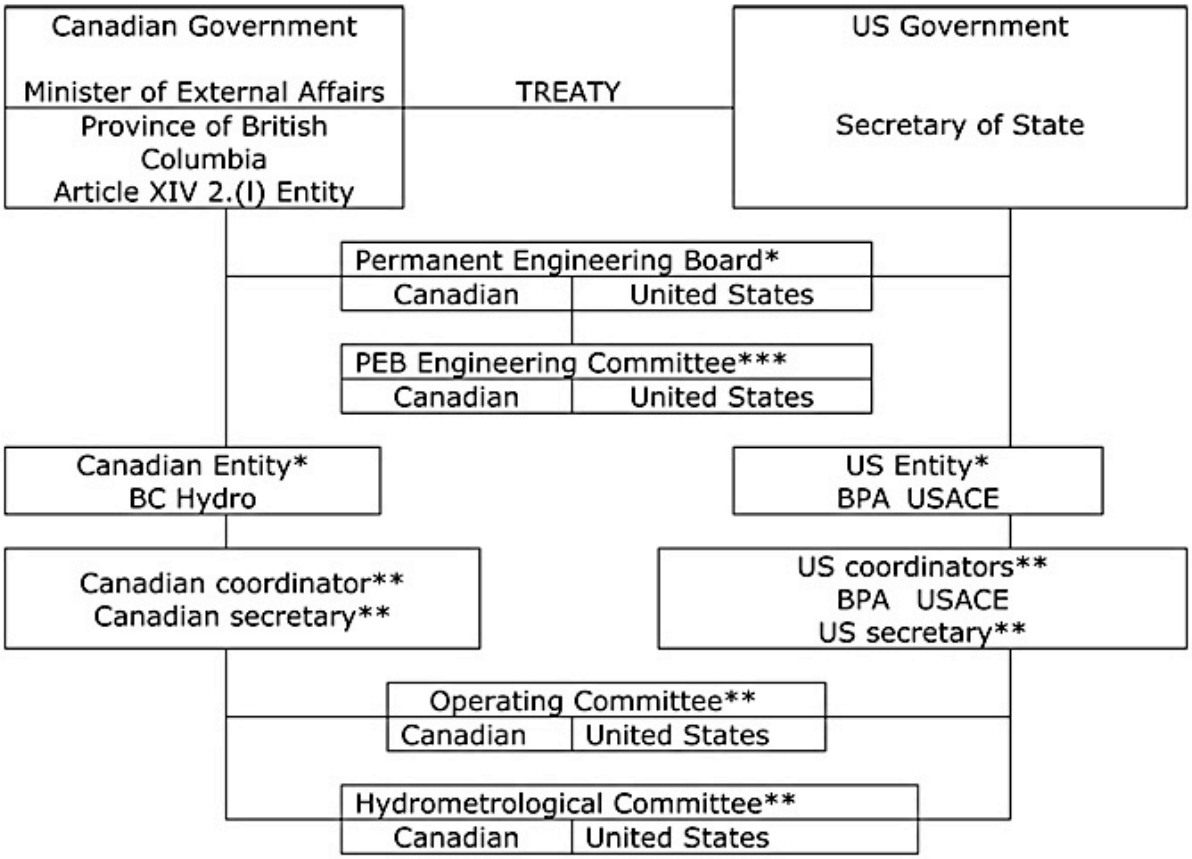


Figure 3. Columbia River Treaty Organization

Notes:
* Established by treaty
** Established by Entity
*** Established by PEB

Source: Annual Report of the Columbia River Treaty, Canada and United States Entities, November, 1999, p. 9.

Appendix C:
List of Interviewees[48]

Nigel Bankes, University of Calgary

Kat Brigham, Umatilla Tribe and Columbia River Inter-tribal Fish Commission

Barbara Cosens, University of Idaho

Lynette de Silva, Oregon State University

Bill Green, Canadian Columbia River Inter-tribal Fish Commission

John Harrison, Northwest Power and Conservation Council

Charles Hudson, Columbia River Inter-tribal Fish Commission

John Hyde, Bonneville Power Administration

Kelvin Ketchum, BC Hydro

Bob Lohn, National Oceanic and Atmospheric Administration

Mike Matylewich, Columbia River Inter-tribal Fish Commission (USA)

Pat McGrane, Bureau of Reclamation

Bruce Measure, Northwest Power and Conservation Council

Garry Merkel, Columbia Basin Trust

D. R. Michel, Upper Columbia United Tribes (and Colville)

Rebecca Miles, Nez Perce Tribes

Daniel Millar, Environment Canada

Keith Muckleston, Oregon State University

Tim Newton, Permanent Engineering Board

Richard Paisley, University of British Columbia

Ken Peterson, PowerEx (retired)

Bob Heinith, Columbia River Inter-tribal Fish Commission

Doug Robinson, BC Hydro

Derik Sandison, State of Washington, Department of Ecology

John Shurts, Northwest Power and Conservation Council

Marvin Wodinsky, Canadian Department of Foreign Affairs (retired)

[48] Please note that we are still in the process of trying to interview some additional people in key agencies and roles. We hope to complete those interviews and incorporate any additional findings into the final draft of this report.

Aaron Wolf, Oregon State University

Appendix D:
Interview Questions[49]

1. What is your interest, role, and history related to the Columbia River Treaty?

2. What is working well with respect to the Columbia River Treaty?

3. What is the most preferred future for the Treaty? Options may include, but are not limited to:
    a. Allow the treaty to expire?
    b. Extend the existing treaty?
    c. Renegotiate (i.e., revise and update) the treaty?

4. If the treaty is renegotiated, how could it be improved? What is the single most important change from your perspective?

5. What are the key issues (or drivers) that should be addressed in the renegotiation of the Treaty?
    a. What do you think will be the easiest issues to address?
    b. Most difficult?
    c. Where will conflicts arise?
    d. Between whom and on what issues?

6. From a process perspective:
    a. Who will or should convene the negotiation?
    b. Who should be at the table during the renegotiation?
    c. What type of information is needed (scientific, technical, legal, etc.), and who should provide that information?
    d. How should the public be involved?
    e. What role, if any, might an impartial facilitator or mediator play in the design and coordination of the renegotiation process?
    f. What type of governance arrangement will be most effective to implement the treaty? (That is, who should have decision-making authority, how should decisions be made, disputes resolved, etc.)?

7. What will a successful renegotiation of the Treaty look like? What do you think are the opportunities or potential gains possible through such a renegotiation? For your interests? For the region as a whole?

8. What do you think are the barriers to a successful renegotiation of the Treaty? Do you have any suggestions on how to overcome the barriers?

9. Is there anything else you would like to share?

[49] Some of these interview questions (such as question 3) were revised as we conducted interviews and learned more about the CRT.

10. Who else should we talk to?

Appendix E:
Chronology of Major Events Since 1964

1964: Columbia River Treaty was implemented, delineating power and flood control benefits between the U.S. and Canada. In addition it authorized construction of a number of Canadian storage facilities to improve storage capacity in the system and maximize hydropower generation.

1965: Water Resources Planning Act
The Water Resources Planning Act of 1965 established a Water Resources Council to be composed of Cabinet representatives, including the Secretary of the Interior. The Council was charged with maintaining a continuing assessment of the adequacy of water supplies in each region of the U.S. The Council also was mandated to establish principles and standards for federal participants in the preparation of river basin plans and in evaluating federal water projects with respect to agricultural, urban, energy, industrial, recreational, and fish and wildlife needs.

1966: To protect dwindling runs of summer chinook above Bonneville Dam, the Oregon Fish Commission asks the Oregon State Police to strictly enforce the law forbidding non-Indian commercial fishing upriver from Bonneville.

1968/69: SoHappy v. Smith and United States v. Oregon
Fourteen Yakima tribal members filed suit to prevent the state of Oregon from interfering with their off-reservation treaty fishing rights. The court found that the state's authority to regulate Indian fishing for conservation purposes was limited as treaties provide tribes an absolute right to a fair share of the fish produced by the Columbia River system.

1969: National Environmental Protection Act
The National Environmental Protection Act of 1969 requires federal agencies to examine the impacts of proposed major federal actions significantly affecting the environment.

1973: Congress passes the Endangered Species Act
"The purposes of this Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take steps as may be appropriate to achieve the treaties and conventions…"

1974: United States v. Washington
A federal district court in the state of Washington found that Native American Tribes were entitled to the opportunity to take up to 50 percent of the harvestable number of fish that can be taken. This havestable sharing principle was also applied in US v. Oregon (see above).

1977: Four Indian tribes with treaty fishing rights on the Columbia River form the Columbia River Inter-Tribal Fish Commission to coordinate fish management policies and objectives. The participants are the Nez Perce Tribe, Confederated Tribes of the Umatilla Reservation, Confederated Tribes of the Warm Springs Reservation, and Confederated Tribes and Bands of the Yakama Indian Nation.

1980: In December, Congress approves and President Jimmy Carter signs into law the Northwest Power Act, which authorizes the four Northwest States of Idaho, Montana, Oregon and Washington to form the Northwest Power and Conservation Council (the agency was known until 2003 at the Northwest Power Planning Council) and gives the Council three distinct responsibilities: 1) prepare a program to protect, mitigate and enhance fish and wildlife, and related spawning grounds and habitat, of the Columbia River Basin that have been affected by hydropower dams, while 2) assuring the Pacific Northwest an adequate, efficient, economical and reliable power supply, and 3) informing the public about energy and fish and wildlife and involving the public in decision-making. The Council met for the first time in April 1981.

1985: Pacific Salmon Treaty was ratified as a cooperative agreement between U.S. and Canada to research and enhance Pacific salmon stocks.

1988: Snake River coho salmon are considered extinct.

1991: In April, the National Marine Fisheries Service proposes to list Snake River sockeye as an endangered species. In June, the Service proposes to list Snake River spring/summer and fall chinook as threatened species. The Service declines to list lower Columbia coho on the grounds that the population was so infused with the genetic material of hatchery-bred coho that no truly wild coho remain.

1995: In May, British Columbia's Legislative Assembly approves the Columbia Basin Trust Act, which established the Columbia Basin Trust "...to help create a prosperous economy with a healthy and renewed natural environment." The Trust is "...an autonomous and independent organization of communities," according to its literature. Through the Trust, millions of dollars will flow into the Canadian Columbia River Basin from the sale of electricity in the United States—so called "downstream benefits"—made possible by the operation of storage reservoirs behind the three Canadian dams of the 1962 Columbia River Treaty

1995-1999: Endangered Species Act Listings
Nine additional species of fish throughout Columbia Basin were listed under the Endangered Species Act.

1999: The Entities determined that some provisions of the CRT covering Entitlement delivery did not address the realities of the Pacific Northwest grid, and that new rules covering the cost of electric transmission had not been anticipated. This change was considered to be "substantial" and the United States' State Department (State) and the Canadian Department of Foreign Affairs and International Trade (DFAIT) were consulted, and ultimately covered the agreements with an Exchange of Notes.

2000: The Entitles agreed to coordinate the operation of Libby with Canadian projects to self compensate Canada for losses incurred as a result of the operation of Libby for Endangered Species. The original difference of opinion was presented to State and DFAIT, but no resolution appeared to be possible, so the Entities were allowed to see if a pragmatic resolution could be developed. The idea of self-compensation allowed an agreement to be developed, without compromising the original position of either country. The agreement provides both parties with very short termination options, so there is an incentive to make it work, rather than go to a very lengthy arbitration process.

2001-2004: Salmon and steelhead returns to the Columbia River are far above recent 10-year averages. Some, such as the returns in 2003, are the highest since record keeping began at Bonneville Dam in 1938. In 2003, more than 920,000 chinook salmon were counted crossing Bonneville Dam, where the 10-year average count was 399,000. A number of factors appeared to be contributing to the increased run sizes, including improved fish passage at dams, improved spawning and rearing habitat, improved feeding conditions in the ocean, and a reduction of intercepting fisheries. In 2004, as strong runs continued, scientists at NOAA Fisheries who monitor the runs said it appeared the runs would stay high at least through 2006.

2008: The Pacific Salmon Treaty established the Pacific Salmon Commission, a bilateral body that recommends to the U.S. and Canada the ocean salmon fishing levels in Southeast Alaska and British Columbia. The United States and Canada adopted a new set of fishing regimes for Chinook, coho, chum and Transboundary Rivers on December 23, 2008 through an exchange of diplomatic notes (see discussion in comments for additional information).

2008: Fisheries have had recent steep declines and there have been closures of recent fishing seasons.

References:

Northwest Power and Conservation Council Website;
http://www.nwcouncil.org/history/Chronology.asp

Pacific Salmon Commission Website;
http://www.psc.org/publications_psctreaty.htm

Columbia River Inter-Tribal Fish Commission Website;
http://www.critfc.org/text/usvor.html

Large-Scale Ecosystem Restoration Initiatives Website;
http://www.nemw.org/columbiariver.htm#ecosystem

Appendix F:
Principles of Collaborative Governance

The Collaborative Democracy Network has identified at least 50 different theoretical frameworks for collaborative planning and policy- making.[i] Although there is some variation among these frameworks, the following propositions constitute a coherent and widely shared group of general principles that inform collaborative governance.[ii]

1. Collaborative governance needs to be intentionally designed and coordinated. It will not happen by accident, and is usually preceded by a 'situation assessment', a process of diagnosing the problem (or opportunity), identifying stakeholders and their interests, clarifying people's options to meet their interests, and determining whether a situation is ripe for some type of collaboration.
2. Collaborative governance should be professionally designed and coordinated by impartial, nonpartisan process managers jointly selected by the stakeholder representatives. Among other things, process managers help the participants draft grounds rules (or a charter, terms of reference, or a convening document), create and clarify options, assess trade-offs, improve communication, package outcomes in a way to satisfy as many interests as possible, and document and implement proposals.
3. Collaborative governance is most likely to succeed when a critical mass of the affected stakeholders—including decision-makers—agrees to participate and select their own representatives for the dialogue. This principle fosters ownership in the process and any potential outcomes.
4. All participants—elected officials, public administrators, private sector, non-governmental organizations, experts, etc.—must strive for transparency and communicate in good faith their interests, expectations, and predispositions.
5. Participants must be allowed to name issues and frame options jointly, thereby clarifying their underlying interests and predispositions.
6. Scientific and technical experts should help the participants name problems, frame options, analyse the consequences of alternative courses of action, and otherwise inform and invigorate the dialogue.

7. Collaborative governance must be managed in accordance with an agenda, ground rules, a timetable, and a budget approved by all the parties. In other words, the process must be structured in a way that meets participants' expectations and is credible to all.
8. The product of collaborative governance should be a written agreement that the participants commit to support.
9. The product of collaborative governance is a recommendation, not a final decision. In this respect, collaborative governance supplements (and does not replace) formal decision-making processes.
10. The complexity of most ecosystems means that we do not know enough to be able to anticipate (or model) the full range of effects of most important policy decisions. In the face of this complexity and the uncertain impacts of policy choices, it is best to take an adaptive management approach. This approach assumes that the effects of all policy choices must be monitored closely so that continuous adjustments can be made (and the desirability of certain decisions can be reconsidered).

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[i] Learn more about the Collaborative Democracy Network at www.csus.edu/ccp/cdn.

[ii] These propositions are adapted from speech presented by Professor Lawrence Susskind at *Water in the West*, Bozeman, Montana, September 2006. Also, see *Breaking Robert's Rules: The New Way to Run Your Meeting, Build Consensus, and Get Results*, Lawrence Susskind and Jeffrey Cruikshank, Oxford University Press, 2006.