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The Columbia River Treaty: An Opportunity for Modernization of Basin Governance

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Speeches

The Columbia River Treaty: an Opportunity for Modernization of Basin Governance*

Barbara Cosens†

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* This Speech is an adaptation of the speech that was presented by Professor Barbara Cosens at the Getches-Wilkinson Center's 2015 Martz Summer Conference held on June 11th and 12th in Boulder, Colorado.

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Figure 1: Columbia River Basin and the major dams in the hydropower system¹



1. Top Figure: *About the Columbia River*, ENVTL. PROTECTION AGENCY <http://www.epa.gov/columbiariver/about-columbia-river> (last updated June 15, 2015).
 Bottom Figure: *Columbia Basin Water Management Division: Hydrologic Engineering and Power Branch Power Team*, U.S. ARMY CORPS OF ENGINEERS, <http://www.nwd-wc.usace.army.mil/PB/mainpage.html>.

I. INTRODUCTION

The headwaters of the Columbia River are in the Rocky Mountains of British Columbia, Idaho, and Montana. From its headwaters, the Columbia River's mainstem flows 2,000 kilometers (1,243 miles) crossing the U.S.–Canada border before it empties into the Pacific Ocean along the border between Oregon and Washington (Figure 1). It is the largest river in the Pacific Northwest and the fourth largest in the United States. The Columbia River Basin (“the Basin”) covers 671,000 square kilometers (259,500 square miles), an area roughly the size of France. About fifteen percent of the Basin lies in Canada (all within British Columbia), and the remainder is in the United States.² The Basin encompasses portions of seven states: Washington, Oregon, Idaho, Montana, Nevada, Utah, and Wyoming. The U.S. portion of the Basin includes the lands of fifteen tribal nations and the Canadian portion of the Basin includes the fifteen First Nations with interests in the Basin.³ Although only fifteen percent of the Basin lies within Canada, thirty-eight percent of the average annual flow and fifty percent of the peak flow measured at The Dalles (located on the mainstem between Oregon and Washington) originates in Canada.⁴ In addition, due to the delayed runoff from snowpack at higher latitudes, flow originating in Canada can account for half of the flow in late summer.⁵ The Columbia River produces more hydroelectric power than any other river on the continent. The average annual runoff for the Columbia River Basin is 200 MAF, but there is significant year-to-year variability.⁶ This variability led to a

2. James Barton & Kelvin Ketchum, *Columbia River Treaty: Managing for Uncertainty*, in TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY: THE COLUMBIA RIVER TREATY 43, 43 (Barbara Cosens ed., 2012).

3. RICHARD KYLE PAISLEY ET AL., UNIVERSITIES CONSORTIUM ON COLUMBIA RIVER GOVERNANCE, A SACRED RESPONSIBILITY: GOVERNING THE USE OF WATER AND RELATED RESOURCES IN THE INTERNATIONAL COLUMBIA BASIN THROUGH THE PRISM OF TRIBES AND FIRST NATIONS (2015), http://www.columbiarivergovernance.org/A_Shared_Responsibility_2015_FINAL.pdf.

4. Barton & Ketchum, *Columbia River Treaty: Managing for Uncertainty*, in TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY: THE COLUMBIA RIVER TREATY *supra* note 2, at 43.

5. Alan F. Hamlet, *The Role of Transboundary Agreements in the Columbia River Basin: An Integrated Assessment in the Context of Historic Development, Climate, and Evolving Water Policy*, in CLIMATE AND WATER: TRANSBOUNDARY CHALLENGES IN THE AMERICAS 263, 267 (Henry F. Diaz & Barbara J. Morehouse eds., 2003).

6. U.S. BUREAU OF RECLAMATION, U.S. ARMY CORPS OF ENGINEERS & BONNEVILLE POWER ADMIN. THE COLUMBIA RIVER SYSTEM INSIDE STORY 5 (2001) https://www.bpa.gov/power/pg/columbia_river_inside_story.pdf. The year to year variability of unregulated peak flow on the Columbia is 1:34, compared to a mere 1:2 on the Saint Lawrence River or 1:25 on the Mississippi River.

demand for large, upstream storage facilities to provide flood control and even out the natural hydrograph.⁷ The vehicle to achieve this goal across an international boundary was the Columbia River Treaty (“CRT”).⁸

For fifty-one years, the United States and Canada have cooperatively shared the management of the Columbia River under the CRT. The CRT has provided both countries with significant direct benefits from flood control and power generation, and indirect benefits of economic growth in the Pacific Northwest. While not without flaws, the CRT has been hailed as among the most successful transboundary water treaties, due to its focus on sharing of downstream benefits.⁹

The CRT contains no expiration date. The United States and Canada may mutually agree to modify or terminate the CRT at any time under international law. Under the terms of the CRT, either party may unilaterally terminate portions of the CRT beginning in 2024 by providing notice at least ten years in advance.¹⁰ The 2024 date coincides with the expiration date of the sixty-year period of assured flood control, which the United States paid for when the CRT entered into force.¹¹

The expiration of assured flood control and the potential for termination of the CRT has triggered review on both sides of the border.¹² Despite the focus on flood control, the reviews have been comprehensive, reflecting the fact that changes affecting energy demand, water supply, and the goals of the Basin’s stakeholders have occurred in the Columbia River Basin since 1964. In December of 2013, the U.S. Regional Review transmitted its recommendations to the U.S. Department of State,¹³ and the British Columbia Review transmitted its

7. See Paul W. Hirt & Adam M. Sowards, *The Past and Future of the Columbia River*, in *THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY* 115, 121 (Barbara Cosens ed. 2012).

8. Treaty Between the United States of America and Canada Relating to Cooperative Development of the Water Resources of The Columbia River Basin, U.S.-Can., Jan. 17, 1961, 15.2 U.S.T 1555 [hereinafter CRT].

9. John. M. Hyde, *Columbia River Treaty Past and Future*, HYDROVISION (July 2010), http://www.crt2014-2024review.gov/Files/10Aug_Hyde_TreatyPastFuture_FinalRev.pdf.

10. See CRT, *supra* note 8, at Art. XIX(2). To date, neither party has exercised this option.

11. See *id.* at Art. XIX(4).

12. U.S. Army Corps of Engineers & Bonneville Power Admin., *COLUMBIA RIVER TREATY: 2014/2024 REVIEW*, <http://www.crt2014-2024review.gov/> [hereinafter U.S. Army Corps of Engineers & Bonneville Power Admin.]; British Columbia, *COLUMBIA RIVER TREATY REVIEW*, <http://blog.gov.bc.ca/columbiarivertreaty/> [hereinafter *COLUMBIA RIVER TREATY REVIEW*].

13. U.S. ENTITY REG’L RECOMMENDATION FOR THE FUTURE OF THE COLUMBIA RIVER TREATY AFTER 2024 (2013), <http://www.crt2014-2024review.gov/Files/Regional%20Recommendation%20Final,%2013%20DEC%20201>

position to the Commonwealth Cabinet.¹⁴ With both parties recommending or seeking modernization of the CRT, the Basin now anticipates movement by the United States and Canada to commence negotiations.

This paper will introduce the 1964 CRT, outline the changes since 1964 that have led to broad review, describe the review processes and results, and conclude with a discussion of the likely next steps.

II. THE 1964 COLUMBIA RIVER TREATY

Consideration of shared development of the Columbia River Basin began long before the development of the CRT. In 1944, the United States and Canada utilized the referral process set up by the International Boundary Waters Treaty of 1909 to ask the International Joint Commission to study the potential for shared benefits from joint development of the Columbia River.¹⁵ In 1948, most dams on the U.S. portion of the Columbia River mainstem generated hydropower and aided navigation but did not store substantial water.¹⁶ In fact, storage capacity was approximately six percent of the average annual flow.¹⁷ In

3.pdf.

14. *Columbia River Treaty Review: B.C. Decision*, B.C. GOVERNMENT, http://blog.gov.bc.ca/columbiarivertreaty/files/2012/03/BC_Decision_on_Columbia_River_Treaty.pdf.

15. Treaty between the United States and Great Britain Relating to Boundary Waters, and Questions Arising between the United States and Canada, Gr. Brit.-U.S., Jan. 11, 1909, 3636 Stat. 2448, http://www.ijc.org/en/_BWT. The Boundary Waters Treaty established the International Joint Commission (IJC) (<http://www.ijc.org/en/>), and provided it with the authority to examine and report on issues not expressly mentioned in the BWT on referral from either of the parties. *Id.* at art. IX. The 1944 and 1959 letters of referral requesting studies on possible avenues for joint benefits from development of the Columbia River can be found in Appendix 6.5 of PAISLEY ET AL., *supra* note 3. For discussion of the history of CRT negotiations and implementation see Jeremy Mouat, *The Columbia Exchange: A Canadian Perspective on the Negotiation of the Columbia River Treaty 1944-1964*, in *THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY* 14-42 (Barbara Cosens ed., 2012); John Shurts, *Rethinking the Columbia River Treaty*, in *THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY* 192-248 (Barbara Cosens ed., 2012).

16. Shurts, *Rethinking the Columbia River Treaty*, in *THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY*, *supra* note 15, at 193. Exceptions to this run-of-the-river approach were the Grand Coulee Dam, a federal facility, which was completed on the mainstem in 1942 for irrigation and permanently blocked salmon runs from reaching Canada, and the Hungry Horse Dam, completed on the tributary, the South Fork of the Flathead, in 1953. *Id.*

17. Anthony G. White, *The Columbia River: Operation under the 1964 Treaty*, in *THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE*

1948, the interest in joint development was catalyzed when major flooding caused by rapid warming destroyed the town of Vanport, Oregon; homes for over 30,000 people were destroyed and 50 lives were lost.¹⁸ Nevertheless, treaty negotiations did not conclude until 1961, and the CRT did not enter into force until September 16, 1964, following negotiations between British Columbia (or, the “Province”) and the Commonwealth of Canada.¹⁹

The focus of the CRT on shared benefits was at the leading edge of transboundary cooperation in its time. Under the CRT, Canada agreed to build three new dams to provide 15.5 MAF of storage.²⁰ The United States agreed to pay Canada \$64.4 million for dedication of 8.45 MAF of that storage to assure flood control for sixty years²¹ and to share the added benefits from hydropower generation in the United States, resulting from the release of water from three reservoirs (referred to as the “Canadian Entitlement”).²² The CRT also allowed, but did not require, the United States to build a dam on the Kootenai River (spelled Kootenay in Canada) that would back water up into Canada.²³ The United States exercised this option when it built Libby Dam.

With the need to coordinate storage and release across yearly and

FACE OF UNCERTAINTY 50, 50 (Barbara Cosens ed., 2012). In comparison, the Colorado River’s storage capacity is of more than four times its average annual flow and the Missouri River’s storage capacity is more than two times its average annual flow. Barton & Ketchum, *The Columbia River Treaty: Managing for Uncertainty*, in THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY, *supra* note 2 at 45. Today, with the CRT dams and other dams, the Columbia River storage capacity is 40% of the average annual flow. Alan F. Hamlet, *The Role of Transboundary Agreements in the Columbia River Basin: An Integrated Assessment in the Context of Historic Development, Climate, and Evolving Water Policy*, in CLIMATE AND WATER: TRANSBOUNDARY CHALLENGES IN THE AMERICAS, *supra* note 5.

18. Barton & Ketchum, *The Columbia River Treaty: Managing for Uncertainty*, in THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY, *supra* note 2, at 43–44.

19. CRT, *supra* note 8; See also Hirt & Sowards, *The Past and Future of the Columbia River*, in THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY, *supra* note 7, at 115-136; Mouat, *The Columbia Exchange: A Canadian Perspective on the Negotiation of the Columbia River Treaty 1944-1964*, in THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY, *supra* note 15, at 14-42; Shurts, *Rethinking the Columbia River Treaty*, in THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY, *supra* note 15, at 192-248.

20. CRT, *supra* note 8, at art. II.

21. *Id.* at art. IV(2).

22. *Id.* at art. V.

23. *Id.* at art. XII, The Kootenai River is a tributary to the Columbia River that has its headwaters in Canada, flows into the United States, then back into Canada before it joins the Columbia River. Libby Dam is on the U.S. section of the river.

seasonal variation in water supply, the CRT required appointment of operating entities. The United States appointed the Administrator of the Bonneville Power Administration and Division Engineer of the Northwestern Division U.S. Army Corps of Engineers (USACE),²⁴ and Canada selected British Columbia Hydro and Power Authority (“BC Hydro”), a Crown Corporation.²⁵ In addition, the U.S. Congress authorized construction of the Pacific Northwest-Pacific Southwest Intertie,²⁶ which led to an interconnected North American electric grid and allowed BC Hydro to enter into thirty-year contracts for sale of the Canadian Entitlement to utilities in the U.S. Southwest. BC Hydro continues to sell that power on the U.S. market following expiration of the contracts.²⁷

III. CHANGES IN THE COLUMBIA RIVER BASIN SINCE 1964

Faculty representatives from public universities in the states and Province located in the Columbia River Basin came together in 2009 to form the Universities Consortium on Columbia River Governance (“Consortium”).²⁸ In addition to serving as a neutral convener of cross-border dialogues, the Consortium works to connect university research to stakeholders in the Columbia River Basin. One of the first projects was to bring together experts and stakeholders on both sides of the border to identify the changes that have occurred since 1964, which might alter how the Basin seeks to manage its water resources.²⁹ The following

24. Exec. Order No. 11,177, 29 Fed. Reg. 13,097 (Sept. 16, 1964).

25. Barton & Ketchum, *The Columbia River Treaty: Managing for Uncertainty*, in THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY, *supra* note 2, at 44.

26. Pacific Northwest Consumer Power Preference Act, 16 U.S.C. § 837 (2012).

27. Shurts, *Rethinking the Columbia River Treaty*, in THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY, *supra* note 15, at 195.

28. For the UCCRG website, *see* <http://www.columbiarivergovernance.org/>; *See also*, THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY (Barbara Cosens ed., 2012), detailing both this history of the CRT and the changes in the Basin. For an excellent layperson’s guide to the CRT, the changes since 1964, and the review process *see*, ROBERT SANDFORD ET AL, THE COLUMBIA RIVER TREATY: A PRIMER (2015).

29. Information on the symposium can be found at: <http://www.uidaho.edu/law/academics/emphasis-area/natural-resources/symposium/2009>. Results of the gathering are published at: THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY, *supra* note 28. *See also*, Barbara Cosens, *Transboundary River Governance in the Face of Uncertainty: Resilience Theory and the Columbia River Treaty*, 30 J. LAND, RESOURCES, & ENVTL. L.

changes relevant to the CRT were identified at the 2009 symposium: (1) energy markets; (2) climate; (3) viability of populations of anadromous fish (i.e. salmon and steelhead); (4) the values held by society concerning the river; and (5) the empowerment of local populations asserting new values. The results are summarized in the following paragraphs, and have proven to be remarkably prescient of the formal reviews that began in the United States and British Columbia the following year.

Energy Markets: The rapid acceleration in energy demand that followed World War II was expected to continue over the decades following 1964, resulting in the need to develop thermal power (at the time, it was assumed this would be nuclear power) to replace hydropower as the firm base load.³⁰ The impact of the 1973 Oil Embargo on increased conservation and reduced energy demand altered energy markets so dramatically, however, that hydropower remains the dominant energy source in the region.³¹ This means that the value of the hydropower system remains high. The Sixth Power Plan of the Northwest Power and Conservation Council, established among Oregon, Washington, Idaho and Montana by compact,³² indicates that “the most cost effective and least risky resource for the region” to meet electricity demand from 2010 to 2030 “is improved efficiency of electricity use.”³³ This suggests that the high value of the hydropower system will continue into the near future (with the cautionary note that forecasters also thought they knew the energy market to come in 1964). Innovation in technology, particularly in development of utility-scale storage, could substantially alter the current need to store electricity as water.

Climate: Climate change is impacting the Columbia River Basin water supply in three major ways. First, although precipitation is not

229 (2010) [hereinafter Cosens, *Transboundary River Governance in the Face of Uncertainty: Resilience Theory and the Columbia River Treaty*]; and Barbara Cosens & M. Kevin Williams, *Resilience and Water Governance: Adaptive Governance in the Columbia River Basin* *ECOLOGY AND SOC’Y* 17 (4): 3 (2012), <http://www.ecologyandsociety.org/vol17/iss4/art3/>.

30. Hirt & Sowards, *The Past and Future of the Columbia River*, in *THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY*, *supra* note 7, at 130–31.

31. *Id.* at 115. This is highlighted in the Columbia River Basin by the debacle of the efforts of Washington Public Power Supply System to invest in nuclear development, which turned out to be unnecessary and is referred to in the region as “Whoops.” RICHARD WHITE, *THE ORGANIC MACHINE: THE REMAKING OF THE COLUMBIA RIVER* 79–81, 109 (1995).

32. Pacific Northwest Electric Power Planning and Conservation Act, 16 U.S.C. § 839 (2012).

33. NORTHWEST POWER AND CONSERVATION COUNCIL, *SIXTH NORTHWEST CONSERVATION AND ELECTRIC POWER PLAN* 1 (2010), <https://www.nwcouncil.org/energy/powerplan/6/plan/>.

predicted to change significantly, increased temperatures will result in greater vegetation demand, producing an overall drying effect (or water deficit).³⁴ Second, as winter temperatures increase, snow-dominated watersheds are becoming rain-dominated, particularly at lower latitudes within the Basin.³⁵ Third, this alters the timing of runoff, moving it earlier in the spring and thus disrupting the historic reliance on natural storage (snow).³⁶ Experts anticipate that, under current operations, the combination of these three changes will reduce summer water supply, affecting power sales to the southwest, irrigation water availability, and fisheries.³⁷

Viability of Anadromous Fish Populations: The dramatic decline in populations of anadromous fish³⁸ dependent on the Columbia River

34. JOHN T. ABATZOGLOU ET AL., CLIMATE CHANGE IN THE NORTHWEST: IMPLICATIONS FOR OUR LANDSCAPES, WATERS, AND COMMUNITIES (Meghan M. Dalton et al. eds., 2013); Barbara Cosens et al., *The Columbia River Treaty and the Dynamics of Transboundary Water Negotiations in a Changing Environment: How Might Climate Change Alter the Game?*, in WESTERN WATER POLICY AND PLANNING IN A VARIABLE AND CHANGING CLIMATE (Kathleen Miller et al. eds.) (forthcoming Apr. 2016).

35. Philip W. Mote et al., *Declining Snowpack in Western North America*, BULL. AM. METEOROLOGICAL SOC'Y 86:39 (Jan. 2005) <http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/28018/MotePhilipW.CEOA.S.DecliningMountainSnowpack.pdf?sequence=1>; Philip W. Mote et al., *Effects of Temperature and Precipitation Variability on Snowpack Trends in the Western United States*, 18 J. OF CLIMATE 4545–4561 (Nov. 2005); A. Norlin et al., *Climate change impacts on snow and water resources in the Columbia, Willamette, and McKenzie River basins, USA: a nested watershed study Part II*, in THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY, 175, 175 (Barbara Cosens ed. 2012); Barbara Cosens et al., *The Columbia River Treaty and the Dynamics of Transboundary Water Negotiations in a Changing Environment: How Might Climate Change Alter the Game?*, in WESTERN WATER POLICY AND PLANNING IN A VARIABLE AND CHANGING CLIMATE, *supra* note 34.

36. I. T. Stewart, D. R. Cayan, & M. D. Dettinger, *Changes toward Earlier Streamflow Timing across Western North America*, 18 J. OF CLIMATE 1136–1155 (2005); Alan F. Hamlet et al., *20th Century Trends in Runoff, Evapotranspiration, and Soil Moisture in the Western U.S.*, 20 J. OF CLIMATE 1468–1486 (2007); Barbara Cosens et al., *The Columbia River Treaty and the Dynamics of Transboundary Water Negotiations in a Changing Environment: How Might Climate Change Alter the Game?*, in WESTERN WATER POLICY AND PLANNING IN A VARIABLE AND CHANGING CLIMATE, *supra* note 34, at ch. 10.

37. Philip W. Mote et al., *supra* note 35, at 4545–4561; Hamlet et al., *Effects of Projected Climate Change on Energy Supply and Demand in the Pacific Northwest and Washington State*, 102 CLIMATE CHANGE 103–128 (2010); CLIMATE CHANGE IN THE NORTHWEST: IMPLICATIONS FOR OUR LANDSCAPES, WATERS, AND COMMUNITIES 224 (M. Dalton et al. eds. 2013); Barbara Cosens et al., *The Columbia River Treaty and the Dynamics of Transboundary Water Negotiations in a Changing Environment: How Might Climate Change Alter the Game?*, in WESTERN WATER POLICY AND PLANNING IN A VARIABLE AND CHANGING CLIMATE, *supra* note 34, at ch. 10.

38. Anadromous fish are fish that spend their adult lives in the ocean and return to their natal stream to spawn. NOAA Fisheries, PROTECTED RESOURCES GLOSSARY,

Basin for spawning is well documented.³⁹ Thirteen populations of Columbia River salmon and steelhead are listed as either threatened or endangered under the Endangered Species Act (“ESA”).⁴⁰ One hundred seventy-eight salmon hatcheries support the fishery.⁴¹ Salmon are blocked from migration up the mainstem of the Columbia River by the Chief Joseph and Grand Coulee Dams, built before the CRT went into force and with the knowledge that migration blockage would occur.⁴²

Values: Possibly more dramatic than the decline of salmon populations is the fact that the dominant society now cares about that decline. Environmental laws, including the ESA⁴³ and the Canadian Species at Risk Act,⁴⁴ are products of that fundamental shift in societal values that began in the 1960s. At the same time the environmental movement took hold, people were demanding greater transparency, accountability, and participation in governmental decision-making affecting their lives. This is reflected in the passage of the Freedom of Information Act in 1966⁴⁵ and the National Environmental Policy Act in 1970.⁴⁶ The expectation of greater participation in the future of the

<http://www.nmfs.noaa.gov/pr/glossary.htm>.

39. See e.g., Peery, C. *The effects of dams and flow management on Columbia River ecosystem processes*, in *THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY*, 138–147 (Barbara Cosens ed., 2012); *Columbia River Inter-Tribal Fish Commission*, *SPIRIT OF THE SALMON: TRIBAL RESTORATION PLAN* (updated 2014), <http://plan.critfc.org/vol-1/>.

40. Current listings of salmon species found in the Columbia Basin: Snake River Sockeye (endangered), Upper Willamette River Chinook (threatened), Lower Columbia River Chinook (threatened), Upper Columbia River spring-run Chinook (endangered), Snake River fall-run Chinook (threatened), Snake River spring/summer-run Chinook (threatened), Lower Columbia River Coho (threatened), Columbia River Chum (threatened). Final Listing Determinations for 16 ESUs of West Coast Salmon, 70 Fed. Reg. 37,160, 37,193 (June 28, 2005). Note that four ESU’s of steelhead are also currently listed: 69 Fed. Reg. 33,105 (June 14, 2004) and 71 Fed. Reg. 5,178 (Feb. 1, 2006); see also *Species Lists*, NOAA FISHERIES, WEST COAST REGION, http://www.westcoast.fisheries.noaa.gov/protected_species/species_list/species_lists.html

41. HATCHERY SCIENTIFIC REVIEW GROUP, *COLUMBIA RIVER SYSTEM-WIDE REPORT 9* (2009) http://www.hatcheryreform.us/hrp_downloads/reports/columbia_river/system-wide/1_introduction.pdf.

42. *Pathways to Resilient Salmon Ecosystems*, *ECOLOGY AND SOC’Y* 14(1): 34 (D. Bottom et al. ed., 2009), <http://www.ecologyandsociety.org/issues/view.php?sf=34>.

43. 1973 Endangered Species Act, 16 U.S.C. §§ 1531–1544.

44. Species at Risk Act, S.C. 2002, c 29 (Can.).

45. 5 U.S.C. §552 (2012).

46. National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970) (current version at 42 U.S.C. § 4321 (2012)); See Hirt & Sowards, *The Past and Future of the Columbia River*, in *THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY*, *supra* note 7, at 115-36, for a discussion of the reflection of changing values in the law and its role in the Columbia River Basin.

Columbia River is documented in interviews conducted by Consortium members and their students with stakeholders in the Basin.⁴⁷ This expectation was particularly apparent from Native American Tribes and First Nations within the Basin, with the added desire to participate as sovereigns rather than as members of the public.⁴⁸

The desire for sovereign and public participation parallels a substantial increase in governance and participatory capacity within the Basin since 1964. These changes have been achieved through legal recognition of rights, legislation, and even constitutional-level changes.⁴⁹ The changes will be briefly summarized here.

Federal district court recognition of the treaty fishing rights of certain Native American Tribes in the portion of the Columbia River Basin not blocked from salmon runs⁵⁰ has led the organization that these tribes formed, the Columbia River Intertribal Fish Commission, to develop substantial technical and policy capacity.⁵¹ Much later, the rights of the upper basin tribes—whose land is blocked from anadromous runs by dams—were finally recognized.⁵² Canada recognized the rights of First Nations to consultation concerning their lands and resources in the 1982 Constitution.⁵³ At the state level, passage of the federal Northwest

47. See generally, Matthew McKinney et al., *Managing Transboundary Natural Resources: An Assessment of the Need to Revise and Update the Columbia River Treaty*, 16 HASTINGS W.-N.W. J. ENVTL. L. & POL'Y 307 (2010); See generally, University of Idaho and Oregon State University, *Combined Report on Scenario Development for the Columbia River Treaty Review* (2011) (unpublished manuscript) (on file with author).

48. *Id.*

49. See Cosens, *Transboundary River Governance in the Face of Uncertainty: Resilience Theory and the Columbia River Treaty*, *supra* note 29; Barbara Cosens, *Changes in Empowerment: Rising Voices in Columbia Basin Resource Management*, Part I, in *THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY* 61-68 (Barbara Cosens ed. 2012); PAISLEY ET AL., *supra* note 3.

50. *United States v. Washington (Boldt Decision)*, 384 F. Supp. 312, 332 (W. D. Wash. 1974), *aff'd* 525 F.2d. 676 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1975) (affirming treaty fishing rights associated with language found in the 1855 treaties of the Tribes now organized as the Columbia River Inter-Tribal Fish Commission); see also *Washington v. Washington State Commercial Passenger Fishing Vessel Ass.*, 443 U.S. 658, 685 (1979) (responding to litigation involving implementation of the *Boldt* decision, the Court stated: “[A]n equitable measure of the common right should initially divide the harvestable portion of each run that passes through a ‘usual and accustomed’ place into approximately equal treaty and nontreaty shares, and should then reduce the Treaty share if tribal needs may be satisfied by a lesser amount.”).

51. COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION, <http://www.critfc.org/>.

52. *In the Field*, UPPER COLUMBIA UNITED TRIBES, http://www.ucut.org/in_the_field.ydev#news_paragraph6.

53. Canadian Charter of Rights and Freedoms, Part II Sec. 35 of the Constitution Act, 1982, *being* Schedule B to the Canada Act, 1982 (U.K.) (discussing the 1982 patriation of the Canadian Constitution, which was the process of eliminating the need for an act of the

Power Act in 1980⁵⁴ led to establishment (by interstate compact) of the Northwest Power and Conservation Council,⁵⁵ the organization charged with energy and fishery restoration planning for the region.⁵⁶ The Columbia Basin Trust, which was initially formed to redress the losses to rural communities in the Columbia River Basin that had been harmed by CRT dam development, received provincial legislative recognition in 1995.⁵⁷ The Columbia Basin Trust receives a stream of hydropower revenue from the investment of the trust. This funding is used to facilitate economic development, education, and capacity building in the Canadian portion of the Basin.⁵⁸

The biophysical and social changes in the Columbia River Basin since 1964 are clearly substantial. The reality of what appears to be a paradigm shift in the Basin will be seen to have played out in the review of the CRT.

IV. REVIEW OF THE COLUMBIA RIVER TREATY: 2010-2013⁵⁹

Review of the CRT began in 2009 with joint technical studies by the operating entities,⁶⁰ but quickly evolved in 2010 to separate formal review processes. The U.S. Army Corps of Engineers and the Bonneville Power Administration led the regional review in the United States,⁶¹ and

British Parliament to amend the constitution and thus the acquisition of full sovereignty for Canada).

54. Pacific Northwest Electric Power Planning and Conservation Act, Pub. L. No. 96-501, 94 Stat. 2697.

55. NORTHWEST POWER AND CONSERVATION COUNCIL, <http://www.nwcouncil.org/>.

56. 16 U.S.C. §839 (1980); *Mission and Strategy*, NORTHWEST POWER AND CONSERVATION COUNCIL <http://www.nwcouncil.org/about/mission/>.

57. *See About Us: Formation of the Trust*, COLUMBIA BASIN TRUST, http://www.cbt.org/About_Us/.

58. *About Us*, COLUMBIA BASIN TRUST, http://www.cbt.org/About_Us/ (last visited Oct. 28, 2015); Columbia Basin Trust, *How We Invest* (2014) http://www.cbt.org/uploads/pdf/Investments-factsheet_web.pdf.

59. For a thorough analysis of the review processes on each side of the border, including interviews with participants, *see generally* Kim Ogren, *Water Governance Process Assessment: Evaluating the Link between Decision Making Processes and Outcomes in the Columbia River Basin*, SCHOLARS ARCHIVE OREGON STATE UNIVERSITY (July 17, 2015), <https://ir.library.oregonstate.edu/xmlui/handle/1957/56887>.

60. U.S. Army Corps of Engineers & Bonneville Power Administration, *Columbia River Treaty: 2012/2024 Review: Phase 1 Technical Studies 2009* (The 2009 studies are no longer available, but updates may be seen at <http://www.crt2014-2024review.gov/TechStudies.aspx>).

61. U.S. Army Corps of Engineers & Bonneville Power Admin., *supra* note 12.

British Columbia led the review in Canada.⁶² To fill the gap in a basin-wide process, the Consortium held annual symposia for cross-border dialogues from 2009 through 2012.⁶³ This effort also brought together Native American Tribes and First Nations in the Basin.⁶⁴

The U.S. Regional Review included the establishment of a sovereign review team, composed of one representative from each of the four main states in the Basin and five representatives of the fifteen Native American Tribes.⁶⁵ In a remarkable act of intertribal diplomacy, the fifteen Native American Tribes in the Basin came together to develop a set of “Common Views” on the future of the Columbia River and continued to work in concert throughout the process.⁶⁶ The sovereign review team also had comparable representation on a technical advisory body.⁶⁷ Listening sessions were held throughout the Basin to obtain input from other interest groups and the general public.⁶⁸ The U.S. Regional Review team also included representatives of the eleven federal agencies with interests in the Basin.⁶⁹

The British Columbia review process included extensive public engagement and consultation with the First Nations claiming resources in the Basin.⁷⁰ Although the federal government of Canada remains the final decision maker on international treaties, the delay in ratification of the CRT was due to negotiations between the federal government of Canada and the Province of British Columbia. The Provincial government was concerned that the major negative impacts of the CRT would be felt in British Columbia, and the major benefits of the CRT

62. COLUMBIA RIVER TREATY REVIEW, *supra* note 12.

63. *Annual Symposia*, UNIVERSITIES CONSORTIUM ON COLUMBIA RIVER GOVERNANCE, <http://www.columbiarivergovernance.org/Annual-Symposia.html>.

64. See PAISLEY ET AL., *supra* note 3.

65. U.S. Army Corps of Engineers and Bonneville Power Administration, COLUMBIA RIVER TREATY: 2012/2024 REVIEW, PROCESS, SOVEREIGN REVIEW TEAM (May 17, 2015), <http://www.crt2014-2024review.gov/Files//SRT%20Roster%20Update%2005172013.pdf>.

66. Columbia Basin Tribes, *Common Views on the Future of the Columbia River Treaty* (2010), <http://www.usea.org/sites/default/files/event-Common%20Views%20statement%20NQ.pdf>.

67. U.S. Army Corps of Engineers and Bonneville Power Administration, Columbia River Treaty: 2012/2024 Review, Process, Sovereign Technical Team, http://www.crt2014-2024review.gov/Files/STT_and_STT_Work%20Group%20Contact%20List_07222013.pdf.

68. U.S. Army Corps of Engineers and Bonneville Power Administration, *U.S. Entity*, COLUMBIA RIVER TREATY: 2012/2024 REVIEW, <http://www.crt2014-2024review.gov/UsEntity.aspx>.

69. *Id.*

70. *FAQs*, COLUMBIA RIVER TREATY REVIEW, <http://blog.gov.bc.ca/columbiarivertreaty/faqs/> (last visited Oct. 11, 2015).

would be felt in the United States. The provincial-federal negotiation led to a solution that would turn the operation and benefits under the CRT over to the Provincial government and divide the benefits between the United States and the Province.⁷¹ Thus, the Provincial government has led both the implementation of the CRT as well as the review process.⁷²

On December 13, 2013, the U.S. Entity transmitted the Regional Recommendation to the U.S. Department of State,⁷³ and on March 13, 2014, British Columbia announced its position on the future of the CRT.⁷⁴ Both reviews highlight the hope of modernizing the CRT. The following paragraphs summarize the results of each review and the next steps.⁷⁵

The United States Entity Regional Recommendation outlines three primary goals for modernization of the CRT: (1) to elevate ecosystem function to a third primary purpose of the treaty, along with hydropower and flood control; (2) to amend the formula for sharing of power benefits to more closely reflect actual operations;⁷⁶ and (3) to continue to

71. See generally Mouat, *The Columbia Exchange: A Canadian Perspective on the Negotiation of the Columbia River Treaty 1944-1964*, in *THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY*, *supra* note 15, at 22–33.; Shurts, *Rethinking the Columbia River Treaty*, in *THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY*, *supra* note 15, at 192, 192-199, 222-235.; Hirt & Sowards, *The Past and Future of the Columbia River*, in *THE COLUMBIA RIVER TREATY REVISITED: TRANSBOUNDARY RIVER GOVERNANCE IN THE FACE OF UNCERTAINTY*, *supra* note 7, at 115, 123-131.

72. For details on the review process on both sides of the border, see generally Kimberly L. Ogren, *Water Governance Process Assessment: Evaluating the Link Between Decision Making Processes and Outcomes in the Columbia River Basin* (Jul. 17, 2015) (unpublished Ph.D. dissertation, Oregon State University) (on file with the Oregon State University libraries).

73. U.S. ENTITY, REGIONAL RECOMMENDATION FOR THE FUTURE OF THE COLUMBIA RIVER TREATY AFTER 2024 (Dec. 13, 2013), <http://www.crt2014-2024review.gov/Files/Regional%20Recommendation%20Final,%2013%20DEC%202013.pdf>.

74. *Government of British Columbia Decision on the Future of the Columbia River Treaty*, COLUMBIA RIVER TREATY REVIEW (May 13, 2014), http://www.eneletters.gov.bc.ca/Columbia_River_Treaty_Review_eNewsletter/May_2014/Government_of_British_Columbia_Decision_on_the_Future_of_the_Columbia_River_Treaty_Review/article.

75. For more detailed analysis of the U.S. Entity Regional Recommendation and the position of the Province of British Columbia, see NIGEL BANKES & BARBARA COSENS, *PROTOCOLS FOR ADAPTIVE WATER GOVERNANCE: THE FUTURE OF THE COLUMBIA RIVER TREATY 6-14* (2014), <http://powi.ca/wp-content/uploads/2014/10/Protocols-for-Adaptive-Water-Governance-Final-October-14-2014.pdf>.

76. Under the CRT, changes to operations in the U.S. to satisfy the ESA that result in reduced hydropower production are not reflected in the calculation of the Canadian Entitlement. Instead, the Entitlement is calculated under the Annual Operating Plan developed by the entities. Shurts, *Rethinking the Columbia River Treaty*, in *THE*

cooperate on the development of a flood risk management plan that reflects, among other things, the implications of climate change. Although the CRT currently does not address apportionment of water supply or navigation, the Recommendation calls for acknowledgement of the importance of each. It also calls for the flexibility to seek mutual benefits in use and development of storage for out of stream use. The Recommendation responds to the call for greater public and sovereign participation by recommending the formation of an advisory body for negotiations and reconsideration of the composition of the U.S. Entity for implementation of the modernized treaty. In addition, the Recommendation acknowledges the uncertainty associated with climate change and other factors in the Basin, and seeks the means to assure flexibility and adaptation going forward.

The Provincial government of British Columbia seeks to “[c]ontinue the Columbia River Treaty and seek improvements within the existing Treaty framework,” and sets forth fourteen principles including: (1) recognition that shared benefits go beyond hydropower production and that British Columbia should be compensated accordingly; (2) recognition that the impacts of the treaty dams on Canada are ongoing and should be compensated; and (3) a greater use of U.S. storage for flood control and thus a reduced reliance on Canada. Similar to the U.S. Regional Recommendation, the position of the Province includes recognition of the need for adaptive mechanisms and consideration of climate changes, as well as consultation with First Nations. However, while the Province supports continued efforts to cooperate on ecosystem function, it does not view this as a component that requires change to the CRT.

As described above, although the positions of the two sides currently diverge on the level of shared benefits, degree of cooperation on flood control, and role of the CRT in facilitating ecosystem function, both have acknowledged that they have more to gain from mutual cooperation than from independent development of the river. They have until 2024 to decide how to accomplish that.

The region now awaits the position of the U.S. Department of State. In both 2014 and 2015, the regional congressional delegation jointly wrote the Department, requesting commencement of negotiations. An informal response to Senator Patty Murray (D-WA) from the Office of Legislative Affairs at the Department of State indicated that a decision to proceed along the lines of the Regional Recommendation, including

elevation of ecosystem function to a primary treaty purpose, is pending.

Possibly of equal interest and import is the fact that the considerable investment of the people of the Basin in engaging in cross-border dialogue, of the Tribes and First Nations in developing common positions, and of all sides of the various issues surrounding the future of the Columbia River in developing a greater understanding of the variety of interests, is leading to change, with or without treaty negotiations. In October 2014, the Northwest Power and Conservation Council amended its Columbia River Basin Fish and Wildlife Program to investigate reintroducing anadromous fish into the mainstem of the Columbia River, and reaches and tributaries in the United States.⁷⁷ In January 2015, the United States Columbia Basin Tribes, which include the Upper Columbia United Tribes, and the Canadian First Nations of the Columbia River Basin, have produced a paper that provides a proposal for restoring fish passage and reintroducing anadromous fish as an essential element in modernizing the CRT.⁷⁸

V. CONCLUSION

I have had the pleasure as an academic to observe, serve as an educator, and facilitate some of the dialogue that has taken place in the Columbia River Basin between 2009 and 2015. It has provided a unique opportunity to engage my students in a major public policy dialogue. But most importantly, in the past six years, the people of the Columbia River Basin have not only witnessed, but have engineered a paradigm shift in how the value and management of the Columbia River and the role of the public in its future is viewed. On a small scale, this presentation, and on a large-scale, the seemingly bright future of the Basin, is a tribute to their hard work and tenacity. It has been a privilege to be an observer. The future of the CRT itself is yet to be determined, but I have no doubt the future of the Basin has undergone a transformation.

77. Northwest Power and Conservation Council, *Anadromous fish mitigation in blocked areas* NWCCOUNCIL.ORG, https://www.nwcouncil.org/fw/program/2014-12/program/partthree_vision_foundation_goals_objectives_strategies/iv_strategies/c_other_strategies/3_anadromous_fish_mitigation_blocked_areas/.

78. COLUMBIA BASIN TRIBES AND FIRST NATIONS, FISH PASSAGE AND REINTRODUCTION INTO THE U.S. & CANADIAN UPPER COLUMBIA BASIN (2015), http://www.ucut.org/Fish_Passage_and_Reintroduction_into_the_US_And_Canadian_Upper_Columbia_River3.pdf.