

Stakeholder Perspectives on Modernizing the Columbia River Treaty and Water
Governance Strategies

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ABSTRACT

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Various models of water governance suggest that the quality of the decision-making process should impact the quality of the outcome. With that in mind, the Columbia River Treaty (CRT), an international-boundary transcending agreement, can be examined for characteristics of “good” water governance and necessary improvements in water management. Water challenges society faces today are in part due to a crisis of governance (Ogren, 2015). Thus, it makes sense to examine water governance in order to recognize what actions might be taken for improvement. The potential for impact of a renegotiated CRT on Canadian and U.S. citizens, First Nations and Native American citizens, make this an ideal case for investigation of governance and decision-making processes. I collected data for my analysis through semi-structured interviews of stakeholders from federal agencies, Tribal and First Nations, state/provincial governments, local governments, and citizens. In addition to my interview data, I utilized stakeholder engagement documents produced by the US 2014/2024 Reviews and subsequent 2013 Regional Recommendation. I found that a majority of stakeholders affected by the CRT outcomes are worried about the degree of stakeholder inclusivity and accurate representation of their values and concerns within the Columbia River Basin and renegotiated Treaty. As a result of this research, I recommend more open and inclusive stakeholder participation; greater information sharing; acknowledgement and consideration of the cultural and natural resource expertise of tribal entities in the region; and a focus on subjects such as ecosystem-based functions of the river, and not just power generation and flood control.

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INTRODUCTION

Academics have defined governance as “how actors choose goals and the means by which they pursue those goals” (Huitema, 2009). In order to assess the qualities of governance, researchers have integrated the influences of formal and informal social institutions in their studies. These institutions include but are not limited to, social norms, hierarchies of government and laws that have a direct relationship to governance (Cosens, 2014; Huietma 2009). This thesis will specifically examine these structures in relation to water governance. In this context, “water governance” will refer to the establishment of a governing body that works to protect, develop and utilize a water resource on behalf of the public (Watson, 2007).

Water challenges society faces today result from a crisis of governance (Ogren, 2015). For example, 68 million people lack access to quality drinking water and this issue is only estimated to worsen with the additional stress of climate change (World Health Organization & UNICEF, 2013). With this in mind, it makes sense to examine water governance in order to recognize what actions to take for improvement. This thesis will explore governance through theory frameworks and further consider the link between the decision-making process and actual outcomes in water governance. For instance, this thesis considers the concepts of adaptive governance and management as primary theoretical frameworks to explain this phenomenon. In addition, if we as a society believe a revision of the decision-making process within water governance could help solve some of the water challenges in the Columbia River Basin, we must address the value of inclusive stakeholder participation and decide which aspects of water governance processes are most important to achieving desired outcomes.

Though many studies examine the qualities of “good” water governance and the strategies used to overcome poor governance, there is a lack of academic literature about the degree to which these models, such as adaptive governance, actually assist governing bodies in achieving their goals. In order to address this, I conducted interviews with process participants from federal agencies, Tribal and First Nations, state governments, local governments and other stakeholder interests. Additionally, I examined stakeholder panel discussion documents related to Columbia River Treaty negotiations (U.S. 2014/2024 Review). I utilized qualitative analysis software, atlas.ti, to assist in my analysis of the interview and panel discussion data, assessing the relationships between stakeholders and their governing structures using collective action theory, international water law, procedural justice, water rights, and integrated water resource management.

The Columbia River Treaty (CRT) has set the bar for international water treaties in the eyes of many researchers and water resource managers. The collaboration between Canada and the United States in the form of the CRT has frequently been cited in literature as “progressive” and “ideal” for trans-boundary water governance (Cosens, 2016; Engle, 2011). However, stakeholder involvement and inclusiveness has not been well examined in the literature regarding the CRT. The modernization of the Columbia River Treaty provides an opportunity for stakeholders from Canada and the United States to work collectively towards acknowledging past injustices and creating a new landscape for the Snake and Columbia Rivers in the face of climate change. Ratified in

1964, the first version of the CRT emphasized flood control and power generation, but failed to acknowledge the river’s fish, wildlife, and ecological communities. Due to the fact that the Columbia River Treaty came into force before the adoption of U.S. laws such as the 1970 National Environmental Policy Act and the 1973 Endangered Species Act, U.S. negotiators and politicians neither clearly asserted nor thought about the implications of the hydrological alterations the treaty would create. Additionally, the Treaty did not encompass the interests and priorities of Tribal citizens and First Nations. Thus, my research will address the questions: What are the main objectives or concerns of various stakeholder groups regarding the development of a modernized CRT governance process? What are characteristics of “good” water governance in this context and for these stakeholders?

Historical Background of the Columbia River Treaty

The idea for the 1964 Columbia River Treaty (CRT) dates back 20 years earlier to March 1944, when the United States and Canada requested an investigation into, “whether a greater use than is now being made of the waters of the Columbia River system would be feasible and advantageous” (Northwestern Division Army Corps



Figure 1: The map shows the size of the 3 Columbia River Basin (dark colored area). United States Entity (2014)

of Engineers, 2004). Tasked with this question, the International Joint Commission (IJC) spent fifteen years (until April 1959) completing a full report on the subject of collaborative management for the two countries. The report provided insight into potential benefits of hydropower development in the Canadian Columbia River Basin and how the benefits might be shared.

Signed in 1961 by US President Eisenhower and Canadian Prime Minister Diefenbaker and implemented in 1964, the CRT requires a U.S. Entity and Canadian Entity be elected to implement arrangements under the Treaty.

Appointed by the President, the U.S. Entity consists of one representative each of the Bonneville Power Administration (chair) and the Northwestern Division Engineer of the U.S. Army Corps of Engineers (member). The Canadian Entity, elected by the Canadian Federal Cabinet, represents the British Columbia Hydro and Power Authority (B.C. Hydro). These entities are responsible for and must abide by the CRT protocols.

The CRT addressed two primary purposes- hydropower and flood risk management. The Treaty authorized the construction and operation of three water-storage dams in British Columbia, to ensure flood control and hydropower generation on both sides of the border. The Treaty writers believed that the value of flood control and hydropower surpassed the importance of other costs and benefits. Due to this, the Treaty has no explicit provision for other values within the river basin, such as water-flow benefits for salmon and steelhead (National Research Council, 2004). As a result, salmon and steelhead disappeared from the upper Columbia River due to the construction of the Chief Joseph and Grand

Coulee Dams, which lack fish passage facilities for either juvenile or adult fish (National Research Council, 2004). The renegotiated Treaty should consider the health of the Columbia River ecosystem as a shared benefit and cost of the United States and Canada.

The construction of the three dams in British Columbia--Duncan on the Duncan River, a tributary to Kootenay Lake, and Keenleyside and Mica, both on the main-stem Columbia River--would benefit the two countries with extra hydroelectricity and flood control (Northwestern Division Army Corps of Engineers, 2004). Both would then bolster the economy of communities along the river. The Treaty preamble, states that agreements would, "... make the largest contribution to the economic progress of both countries and to the welfare of their peoples of which those resources are capable." (Northwest Power and Conservation Council, 2014).

In order to utilize the shared river resource for economic gains, representatives from the United States and Canada agreed upon their financial allocations regarding water storage for Treaty dams. Canada was required to provide 15.5 million acre-feet of water storage for the United States. Roughly seven million acre-feet would be located at Mica Dam with another seven million at Keenleyside. The remaining amount of 1.4 million acre-feet of water storage would be located at Duncan. Additionally, the U.S. government authorized the building of the Libby Dam, and Canada approved that its reservoir, Lake Koocanusa, could back 42 miles into British Columbia (Northwest Power and Conservation Council, 2014).

Article III, Paragraph 1 in the Treaty states, “the hydro-electric facilities included in the base system and any additional hydro-electric facilities constructed on the main stem of the Columbia River in the United States of America [will be] in a manner that makes the most effective use of the improvement in stream flow resulting from operation of the Canadian storage for hydro-electric power generation in the United States of America power system” (Northwestern Division Army Corps of Engineers, 2004). Therefore, the “Canadian Entitlement” was created and designates the downstream power benefit calculation for Canada. In essence, Canada gets compensated for their services (managing three dams and an interconnected series of reservoirs on the Canadian side of the border) through a combination of a lump sum payment and a percentage of income generated from hydropower production. In the Treaty, this payment is referred to as the Canadian Entitlement. Upon completion of the dams, the Canadian Entitlement amounted to “1,377 megawatts of capacity (half of the total additional dependable generating capability at the United States dams) and 759 average-megawatts of electrical energy, this means 759 average megawatts delivered at rates up to a maximum of 1,377 megawatts for a period of a year” (Northwest Power and Conservation Council, 2014). Current estimates put the size of the Entitlement in a range from \$229 million to \$335 million annually (Northwest Power and Conservation Council, 2014).

The U.S. and Canadian entities had projected the demand of hydropower would drop over time. This projection rested on the arguments that 1) higher demands for power would be met with new types of thermal-fuel power plants

(coal, natural gas, nuclear) for base-load generation, and 2) the dams' primary use would be to supply extra energy when needed in the future (Northwest Power and Conservation Council, 2014). Because of this, new fossil fuel powered electrical generating plants were constructed and many more were planned in order to support the Columbia River hydropower system as part of the Hydro-Thermal Power Program. However, base-load thermal energy has not become a major source of power generation in the United States as had been anticipated by Treaty writers. Instead, both countries continue to rely heavily on the dams that early Treaty planners expected to become inferior to new technologies. In the early 1960s, the Province of British Columbia did not need the electricity allotted under the CRT, and in fact, the B.C. government believed they would not require it until roughly thirty years later. There were plans to construct another large dam on the Peace River, located in the northern reaches of the province. As a result, the Province sold the Canadian Entitlement to a multitude of power utilities (Columbia Storage Power Exchange or CSPE) in the United States (primarily in California) for thirty years. The agreement had a price tag of \$253.93 million U.S. dollars.

Many facets had to be addressed within this new power-selling agreement. First, the power generated from the Treaty dams was to be transported over new high-voltage transmission lines (the Pacific Northwest/Pacific Southwest Intertie) and the construction of those transmission lines inherently depended on the successful completion of the CRT. Therefore, the Treaty unintentionally became dependent on the completion of the Intertie. Secondly, the Bonneville Power

Administration (BPA) created the “Pacific Northwest Coordination Agreement” which assured owners of projects downstream of Canadian storage that important American reservoirs would be managed efficiently, with exchanges of power between utilities as needed to create the expected Treaty power benefits. Lastly, the CSPE bartered its rights to the Canadian Entitlement with BPA in return for a definite amount of power to be delivered from Bonneville to the CSPE. This action was utilized to eliminate uncertainty of selling an unknown amount of power from future Entitlement calculations and allowed the CSPE to obtain a lower interest rate for the sale of CSPE bonds (Northwest Power and Conservation Council, 2014). As a result of these actions, the CSPE issued \$314.1 million in revenue bonds and later on delivered \$253.93 million to British Columbia Hydro to build the Treaty dams.

With this brief history of the Northwest electrical systems, we can now turn to examining water and resource planning regarding the dynamics of governance and the tense relationship between producers and consumers and between profit-seeking and the public interest. Building dams on the Columbia River and creating a regional federal power agency to sell their power (BPA) is one example of how governmental development can be readily associated with electric power production increases in the U.S. and Canada. Collectively, the electricity generated by all of the major dams in the Basin accounted for almost 56% of the Northwest’s power-grid in 2017 (Northwest Power and Conservation Council, 2014). While the Treaty dams operate individually they all continue to play a crucial role in regulating the flow of water through the Columbia River.

Therefore, the way in which they are managed has larger effects throughout the entire Basin.

U.S. CRT 2014/2024 Review

In anticipation of the CRT's expiration, the U.S. Entity and the representatives of Province of British Columbia have been actively engaging in the treaty review processes since 2009. The primary goal of their Treaty review process was to identify new means of management for the Columbia River Basin's waters. As previously mentioned, when the CRT was originally negotiated, environmental values (i.e., ecosystem, and fish and wildlife concerns) were hardly reflected, nor were the interests of indigenous communities (i.e., tribes and First Nations). Since then there has been an increase in acknowledgement of environmental values of the Columbia River and other ecological spaces in the United States' environmental management sectors (Cosens, 2016). Additionally, indigenous communities have been pursuing reparation for their economic and cultural losses corresponding to the mismanagement of the river and its fisheries, which resulted from the implementation of the treaty. There are also new political and climatic realities that require a degree of public participation and/or stakeholder involvement in governmental decision-making processes. Primarily concerning this latter point, the research described in this thesis examines U.S. stakeholder participation and collaboration in the basin by considering its 2014/2024 Review process.

Legal principles that determine the consideration of, and attention to, stakeholder participation and interests differ considerably between Canada and

the United States. Naturally, the CRT review process itself convenes at the intersection of natural resource management and policy, sovereign relations between indigenous peoples and the United States, and international negotiation. Because of this, numerous correlated questions are the focus of this research in regards to the US 2014/2024 Review process. First, this research aims to address, to what degree has the review process conducted by the US Entity provided the opportunity for meaningful participation by Columbia River Basin stakeholders? The structure of the review process in regards to stakeholder expression and US entities' integration of stakeholder concerns into the review process will be examined. Additionally, this portion of the research will provide an opportunity to address the value of inclusivity and other qualities of good governance in the eyes of stakeholders.

LITERATURE REVIEW

Introduction

As indicated earlier, water governance can be defined as “the manner in which authority is acquired and exercised on behalf of the public in developing, utilizing, and protecting a nation’s water resources” (Ogren, 2015). In order to improve water governance, researchers and policymakers have made efforts to identify principles of good water governance. These efforts have resulted in the incorporation of new laws, planning actions and enforcement of good water governance at local, regional, national and global scales. This analysis will

examine how different stakeholders and their accessibility to partake in governance influence the structure, functionality, and process of water governance.

The previous section introduced a brief historical outline of the Columbia River Treaty (CRT) and identified key stakeholders within treaty negotiations. In this literature review, the sections provide contextual information on the stakeholder perceptions and knowledge of the political landscape within the Columbia River Basin, especially as they pertain to the growth of energy production and co-evolution of people and place. The connection between resource development and regionalization resulted in large-scale energy production in the Pacific Northwest during the 1930s. A political landscape built on the promise of electricity production resulted in the construction of dams along the Columbia River--dams managed by the Bonneville Power Administration (BPA). In addition, the fact that the Columbia River serves as a vital connector between many regions within the Pacific Northwest needs to be understood as yet another political effort, suggesting ownership of resources derived from a shared river by diverse groups of people.

Resource development has been at the foundation of the Pacific Northwest's relationship with the Columbia River. Economic self-interest within the basin permeates the character of the Columbia River that had once flowed and functioned freely. However, developers, economists, and politicians of the Pacific Northwest were not alone in their visions of the energy produced by the Columbia River. As explained in more detail below, Canadians had similar goals for

development, and believed that harnessing the river for electricity and flood control could dramatically change their own region (Blumm, 2013).

The Columbia River is defined not only by human interaction, but also by its natural geography: a magnificent geographical space that transcends and overcomes boundaries structured in creating the political relationship existing to this day. The literature review will examine this more political relationship as it appears in international water law and the CRT. Additionally, this literature review cannot fully express the importance of the transforming political dynamics within the Columbia River Treaty without addressing some relevant solutions, such as adaptive governance.

First, this literature review will examine the concept of regionalism and its large impacts on energy and river development in the Pacific Northwest. In order to expand on those ideas, the next section will address Collective Action Theory and how the theory can be applied to improving international water law and water governance. Then this literature review will address procedural justice as a necessary lens to understand how the CRT has impacted vulnerable populations under poor water governance modes. Finally, this literature review will tie the previous sections together to address adaptive governance mechanisms that support good water governance.

Early Unified Regionalism and River Development

The conceptual and geographical term “region” has been studied as both a social idea and a physical construct throughout the past decades (Kim, 2002; Vogel 2012). Many authors maintain that the physical construct of a region requires tangible geographic areas that share interconnections and commonalities among people (for example, Vogel, 2011). The social concept and studying of a region’s inhabitants and structures is known as “regionalism”. A region then becomes a study-specific area that can be examined for social and ecological interactions. Regionalism itself is not a recent notion, as human history exemplifies. For this literature review, I will be addressing regionalism as both a political and a geographical construction. Utilizing geopolitical frameworks to examine the Columbia River Basin can reveal and extend knowledge of the region that has been embedded within the system.



Figure 2: A photograph of the Columbia River taken from the Historic Columbia River Gorge Highway, built in 1912-1914 (United States Army Corps of Engineers)

Over the past twenty years, journalists and historians have provided excellent insight into the relationship between the Columbia River and the

geographic region of the Pacific Northwest. For example, White and Harden, two early authors focused on the evolving landscape of the Columbia River, stressing its significance for the region (White, 1995; Harden, 1996). These authors initially examined the livelihoods of Native Americans who sustainably fished the Columbia, then examined how European immigrants transformed the river into a system based on property, rights, and technological development (Vogel, 2011). A slogan devised by The Bureau of Reclamation in the late 1930's sums the European immigrant's innovative vision for the Columbia and many other rivers throughout the basin: "Our Rivers: Total Use for Greater Wealth" (Harden, 1996). This type of propaganda becomes vital in understanding regionalism within the Columbia River Basin because it demonstrates the push to reallocate its power for the benefit of a specific group of people (European immigrants) at the expense of others (Native Americans).

White's, Harden's, and other historian's crucial analyses documented the power shift from Natives to Europeans within the Columbia River Basin; the authors also present contemporary ideas that continue to shape the perceptions of the Columbia River and Pacific Northwest. For example, their writings underscore the idea that humans should have the capability to care for all diverse people and species that rely on the river for life (Harden, 1996). However, the diminishing quality of the Columbia River waters, resulting from economic interests and development, directly contradicts this contemporary idea (Harden, 1996; White, 1995). Still, back in the late 1930s, businesses and governmental groups developed regional relationships within local, state and international

markets, creating the potential to exploit people and ecosystem services of the Columbia River (White, 1995). Many actors throughout the region were beginning to see the dire need to work together but they lacked the skills for doing so in many cases (Vogel, 2011). By creating and maintaining alliances between governmental and non-governmental entities, diverse groups of people were working together towards their mutually beneficial goals. As a result, united stakeholders unknowingly created the idea that the unification of a region's resources could lead to an autonomous body of governance, while still maintaining the needs of various populations. By collaborating and working towards their common goals, early settlers in the Columbia River Basin also demonstrated how easily power can shift from one group to another when a common goal is produced--which in this case was energy development.

The Columbia River Basin includes ancestral lands of seventeen First Nations in Canada, and fifteen Native American tribes in the United States--the native peoples have an ancient history intertwined with the Columbia River. Oral and then written accounts clearly show these groups had a special relationship with the Columbia River and its iconic salmon prior to European arrival (Robison, 2018). Salmon was a primary food source for the natives, and became the foundation for their religion, culture, and economy. For example, the lifecycles of fish formed their basis for marking and keeping time (Robison, 2018).

The Columbia River was also home to some of North America's oldest fishing villages. Many fishing villages became inundated with the construction of dams and reservoirs, and, while some villages were relocated, a majority

disappeared with the settling of the area and the growth of places like The Dalles, an early fur trading post and end point of the Oregon Trail. For example, *Wy-am* served as a trading center and was considered to be of huge economic and cultural importance to the local tribal citizens. Other tribes gathered to fish and trade at a bend of the Columbia, on land now occupied by the Hanford Nuclear Reservation. The earliest American explorers, who arrived by sea in 1792 and by land a short time later, were impressed by the size of the salmon runs on the Columbia.



Figure 3: Celilo Falls was a major fishing site on the Columbia River prior to the Columbia River Treaty dams, which made the tiny village completely disappear due to water inundation. (Finnigan, 2009).

The relationships between Euro-Americans and Native peoples remained centered on trade (Harden, 1996). This began to quickly change as curious

immigrants became interested in becoming the “first” settlers of the region. For example, commercial fishing in the basin started to boom around 1866, and in 1877 the first hatchery opened on the Columbia River (Harden 1996; Robison, 2018). The Euro-American settlers also spurred agricultural development and, as a result, increased changes to the environment as natural drainage systems were altered and native upland cover disappeared.

Around the same time, during the mid-1800s railroad interests and developing settlements in the Columbia River Basin resulted in land cessions (Cosens, 2012; Hamlet, 2003; Robison, 2018) The U.S. government appropriated Indian lands, reduced the size of territories, and often required Natives move onto reservations. For example, the territorial sovereignty of the Nez Perce prior to 1855 is estimated to be 17 million acres. However, after 1855, when the Nez Perce ceded land, their territory covered only seven million acres (Cosens, 2012; Hamlet, 2003). The size of the tribal territory continued to diminish, especially after the finding of gold on reservation land in 1863 (Hamlet, 2003; Robison 2018).

The transformation of the Columbia River region throughout the 1800's paved the way for river development in the 1900s. The basin became a part of the major federal public works projects under the New Deal, leading to the construction of Bonneville Dam and later Grand Coulee Dam. While these dams provided irrigation and flood control, they also inundated tribal territories and blocked salmon from returning to the upper Columbia Basin in Canada and anywhere above the dams (Cosens, 2012; Hamlet, 2003).

Shared interests among the U.S. government and developers emerged along the Columbia River and these interests fueled economic and political ties in the form of partnerships. When, in the early 1900s, policymakers began to tackle the greater idea of river development for the Columbia River (Vogel, 2011; Blumm, 2013), the main concern was what to prioritize and organize throughout the large Columbia River region.

In the 1920's and early 1930's, the U.S. government's studies focused on the economic development of the basin and resulted in a 1934 '308' report entitled *Columbia River and Minor Tributaries*. With the approval of the construction of three dams (Bonneville, Grand Coulee, and Fort Peck on the Missouri River in Montana), excitement grew among the new river developers. The developers had a vision for even more dam construction throughout the country, as they were beginning to believe that water could power an entire nation (White, 1995). Nonetheless, there was a continued lack of focus for the Pacific Northwest region in terms of implementation of river development plans, due to the difficulty of managing an area as large as the Columbia River basin.

The history of early basin planning efforts have usually included Lewis Mumford who was an early 20th-century advocate of urban and regional planning and ended up playing a large role in the Pacific Northwest Regional Planning Commission (PNWRPC). The PNWRPC, officially founded in 1934, focused on development that considered the river's hydropower potential through dam projects and public utility districts (PUDs) to offer cheap electricity to the region's communities, eventually developing a power distribution and marketing

system. Mumford and the PNWRPC planning projects focused on the role that the river could play in advancing the region from an underdeveloped supplier of raw materials to a more industrialized region.

However, developers within the PNWRPC were also interested in working towards creating an administrative body to promote consistent practices in river planning throughout Washington, Idaho, Oregon, and Montana. The administrative body considered plans and their viability in terms of how each state could or could not reach its goals. These projects focused heavily on energy production and natural resource development. A majority of the administrative body members consisted of state leaders who deliberated on the ideas brought to town hall meetings and inter-governmental planning focus groups. Priorities within these plans and models varied from state to state but generally focused on irrigation, power generation and river navigation (Blumm, 2013). The plans presented were intended to accommodate diverse groups and places within the river basin, and to work towards common solutions and goals. However, many of the plans presented by developers and governments heavily relied on the assumption of unified and undifferentiated people and places along the Columbia River. Understanding the significance of defining the Columbia River Basin as one homogenous region is of great importance because it was not just territories and people being connected and influenced by the resulting plans and agreements, but also jurisdictions and development goals. The political and economic alliances that emerged ultimately resulted in a basin plagued by resource exploitation, social inequity and political conflict around regional development.

Within the newly founded administrative body conflicts began to simmer due to the diversity of interests (primarily those of states) of the groups working together while creating plans for a shared resource but possessing different ideas of the best use of that resource. For example, administrators from areas with higher volumes of water from the Columbia River hesitated to coordinate with representatives of other states, for fear that the benefits would not be shared equally—they would eventually lose out (Vogel, 2011). With this in mind, the administrative body did not last very long and inevitably crumbled into forgotten and unused plans. As a result, the PNWRPC began to work more closely with BPA and the federal government to work towards their regional planning goals (Blumm, 2013; Vogel, 2011).

With the renegotiation of priorities and alliances at stake, the Columbia River Treaty stakeholders have to recognize the strengths and weaknesses of decisions made by their predecessors which made the region what it is today. The Columbia's hydropower generation and the hydropower relationships established with neighboring regions have had great importance to the history of the United States as a nation (White, 1995). This magnificent river powered the construction of the liberty ships and the manufacturing of plutonium for the Manhattan Project throughout the Second World War. The powerful impacts of the river can be seen throughout the region, even within the homes of basin residents who rely on its electricity for their heat in the cold winter months and cooling during the hot summer months. Additionally, water from the Columbia River irrigates roughly 670,000 acres of land through the Columbia Basin Project (Blumm, 2013). The

timeline of events that lead to the overall creation of the CRT itself go as follows: the planning project itself, the completion of Bonneville and Grand Coulee dams in 1938 and 1941, the position of the US in the Second World War and the following campaigns of shipbuilding, aluminum smelting, and the Manhattan Project and importantly, the recognition of the need to enhance hydropower capacity within the basin by increasing storage capacity in headwater areas for runoff.

Collective Action Theory

The previous section provided a brief historical outline of the development of the Columbia River Basin to provide a picture of the region's influencers and struggles in regards to river development. This section will discuss Collective Action Theory as a means to build upon the previously explained facts and to provide a theoretical framework for understanding shared river and resource management practices. Collective Action Theory helps address management strategies people have utilized to maintain their freshwater resources around the world. Collective Action Theory suggests "cooperation involves certain costs but ensures sustainable use of the resource" (Benvenisti, 1996, p. 389). Therefore, when stakeholders work together towards common goals, such as sustainability, the more sustainable the use of the resource will be. The theory also implies that "external enforcement" can hinder the stakeholders from interacting and cooperating amongst each other (Welch, 2018). External enforcement in this instance would potentially be some form of government or even non-governmental organization (NGOs) not directly using the resource but is

attempting to influence its management. In essence, anyone not directly managing or using the resource should remain otherwise uninvolved in the management process according to Collective Action Theory.

However, due to the degree of uncertainty involved in management decisions, following the advice of well-meaning but not totally informed outsiders can become difficult and results in conflict over use of the shared resource (Benvenisti, 1996). Collective Action Theory primarily addresses the actors in water-sharing arrangements at an individual level due to the fact that individuals have diverse needs and that can complicate a given governing process. For example, states as partner entities cannot be regarded as unitary. They must not compromise their own state agendas and they must deal with varying domestic groups. The domestic groups, in turn, affect the state's capabilities to participate in agreements on an international level (Benvenisti, 1996; Welch, 2018). Although in the case of the CRT, the states have become primary actors, as they have been chosen to represent their regions within a hierarchal form of water governance.

Collective Action Theory also suggests that all parties need to work together in defining cross-boundary rivers as international water resources, and bringing people from both sides of the border to negotiations to ensure that the resources will be subject to co-management and mutual regulation. Collective Action Theory advises that co-management become the basis for the resource's distribution and welfare. In the particular case of the CRT, co-management of a shared freshwater resource involves the redistribution of the resource under the constraints of political, social and environmental landscapes. Co-management of

resources results in jointly addressing underlying issues of priorities and goals for the resources. For example, international waters are especially unique in terms of co-management due to the fact that there is neither private nor public ownership of them (Benvenisti, 1996; D'Estree, 2014). International waters are shared resources that demand a shared responsibility. Attaining the best use of an international water resource implies that governments and private citizens must act collectively. Water resource agreements, like the CRT, evolve from the negotiations over the interests of two or more nations with a shared resource.

International Water Law

What interests helped shape the CRT? The United States wanted water storage on the Columbia River. With floods becoming more common and Euro-American immigrants moving into floodplains, communities and governments needed to confront the power of an untamed river. Secondly, demand was not high enough in the United States to absorb the amount of electricity the dams would be producing. Until the late 1940s, the Columbia River Basin had a very little natural capacity to store water; the three major dams that had been constructed along the river had little potential to store water since the water in their reservoirs was to be utilized for irrigation (Cosens, 2012). Storage had not been considered an issue until 1948 when runoff peaked in mid-December and resulted in a major flood. The planning of the massive hydroelectric and flood control system initiated by the treaty commenced with the historic 1948 flood (also known as Memorial Day or Vanport Flood). The flood completely destroyed what was then Oregon's second largest city. The town of Vanport, Oregon,

situated on a floodplain between Portland and Vancouver, was wiped out as flows of more than one million cubic feet per second (28,317 m³/s) inundated the land (Cosens, 2012). Creating more storage by constructing more dams could address the issue of low amounts of storage on the Columbia. However, the best remaining storage sites lay with Canadian territory.

The idea to expand water storage in Canada was not a new one; the United States and Canada had been researching the environmental opportunities for power benefits since the signing of the 1909 Boundary Waters Treaty (Cosens, 2012). The CRT provided a plan for the completion of a study that had been proposed earlier in accordance to with the 1909 Boundary Waters Treaty. However, the earlier study had failed at enacting any mentionable results due to lack of funding and government follow through (Cosens, 2017). Within the negotiations leading up to the signing of the CRT, locating storage basins in Canada became increasingly important for the United States. This is largely attributed to the fact that most of the benefits generated from the hydropower and storage facilities would be going to the United States, while Canada would be left to maintain the additional three dams. In the end, the CRT writers determined that the benefits would have to be divided between the two countries (Cosens, 2012).

The division of benefits was reflected in the control of water and the Canadian Entitlement, a primary remediating factor in the CRT signing. Diverse scholars considered that decision to be a model of cooperation for non-navigational use of freshwater resources (Barton, 2012). Both countries were then responsible for appointing their own operational entities under the CRT

provisions. Those operational groups would not be given decision-making authority. Rather the decisions would still be made amongst federal government representatives and the operational groups would work out the logistics. In regards to the amount of energy being produced by the dams, the U.S. representatives realized that there could be a surplus of energy produced by the river. As a solution, the U.S. Congress passed a bill authorizing the construction of the Pacific Northwest-Pacific Southwest Inter-tie. This resulted in the ability to sell excess electricity to utilities in the southwestern parts of the United States (Cosens, 2012), and set the foundation for an interconnected power grid along the west coast.

Today, with renegotiations under way, the U.S. Entity has expressed concern with the amount they spend on flood control from Canada. The flood control provision covers 60 years worth of maintenance for dam repairs and expires in 2024. While there is no termination date for the treaty, either country may terminate it, renegotiate it or adjust any of its provisions beginning in 2024. A ten years' notification must be provided to the other party to terminate the treaty (Cosens, 2012).

The U.S. and Canadian Entities may find it in their best interests to let the treaty continue as is without being renegotiated or modified; however, beginning in 2024, the treaty's flood control provisions will expire, significantly affecting existing hydropower arrangements. Furthermore, international law agreements, such as the CRT, cannot rely on third parties to resolve any of the issues that may

arise. As a result, no mechanism for mediation between parties exists in cases of disagreements during the process of planning and disbursement of resources.

Procedural Justice

There are many challenges associated with maintaining integrated natural resource management; the issue of developing fair processes among stakeholders has been receiving a lot of attention in recent decades. Competition for resources on the planet continues to grow and many planners and developers find it increasingly difficult to meet their resource demands. Additionally, as Emami explains, “concern is also mounting about the efficiency and effectiveness of many resource management and planning processes” (2015, p. 120). In an effort to address these issues, the United Nations introduced Integrated Resource Management (IRM) as an approach that ensures a fair planning process. IRM holds that governments singularly cannot make fair and sustainable decisions regarding resources (Emami, 2015). Therefore, IRM supports and provides collaboration between governments, key stakeholders and the general public to create a diversity of perspectives that address natural resource issues. IRM seeks to ensure procedural justice, which has been an increasingly important focus for resource planners in the past decade.

Procedural justice also focuses and inherently becomes a part of integrated natural resource management because of its focus on how decisions are made rather than on the outcomes of the decisions. For decisions made among groups of stakeholders and governmental actors, there is also a need to address social justice, consideration of the allocation of power, benefits, resources and the rights

and responsibilities of planners and managers (Emami, 2015). Unfortunately, procedural justice literature suggests that fairness within the planning process cannot be guaranteed because determining “fairness” is very subjective. The literature provides no models for implementing procedural justice within IRM strategies, nor does the current literature comprehensively address procedural justice in the context of shared water source management. To help fill that gap, this section of the literature review will address some background on the concepts of social justice, the planning process and water management in order to examine procedural justice in terms of the CRT negotiations.

To further understand procedural justice, we must first understand the concepts that create justice in the first place. Clayton claims that issues of injustice occur when there is an unequal distribution of resources between groups, or when resources are thought to be in low supply (2000). Each theoretical framework maintains core principles that focus on human rights and the moral behaviors of people. For example, egalitarianism is centered on the “equality of access to all resources” and asserts that *all* humans are equal in worth and moral status (Emami, 2015 p. 122). Liberalism relies heavily on the concepts of having a collective expressions and a free society. Lastly, utilitarianism suggests that to achieve morality one must maximize utility and minimize damage. Social justice builds on these concepts.

Social justice requires creating fair and equal societies, recognizing and protecting individuals’ matters and rights when decisions are made. Therefore, authors examine social justice in regards to three main concepts: equity,

distributive justice, and procedural justice. Finding precise and agreed upon definitions of these concepts can be a challenge. For example, there are various perspectives one can use when defining equity. This inherently contributes to arguments against the existence of equity that take a variety of forms. The first issue is that equity is simply a word that people use to hide their self-interest, or as Syme states, “it has *no intrinsic meaning* so therefore fails to exist” (1999, p.3). Secondly, even if equity does exist in some theoretical sense, it is considered much too subjective therefore, it cannot be analyzed scientifically. Lastly, some have argued that no sensible theory exists in regards to equity (Syme, 1999). Considering the topic of governance and decision-making, it is important to think about this issue through the framework of procedural justice as a way of providing a basis for evaluation. As mentioned previously we should understand the concepts that create justice in the first place to address inequity or inequality. Procedural justice and equity are intrinsically linked due to the fact that procedural justice is focused on the lack of equitable access and influence within a given decision-making process.

Procedural justice, as described by Tyler, means, “fairness of procedures mitigates loss of support due to poor outcomes and maintains supportive behavior” (1994, p. 210). We can explore procedural justice by examining the steps within a decision-making process and then evaluating the fairness of the process. Fairness can be understood as the quality of being reasonable, right, and just (Tyler, 1994). Within natural resource management, procedural justice is primarily concerned with the fairness of individual components of the planning

process, and relies on public opinion to assess the fairness of a given process as a whole (Emami, 2015).

Scholars have understood procedural justice as a suitable measure for evaluating fairness in a given planning process, such as the Columbia River Treaty negotiations. The literature suggests three main theories that essentially influence research on procedural justice: 1) theory of procedure 2) group value theory and 3) justice judgment theory (Kals, 2013; Lind, 1988; Lukasiewicz, 2013). Theory of procedure states that any legal process must try to resolve conflict in a manner that maintains social fabrics (i.e. communities and cultures) and encourages the collaborative exchange between individuals within their planning processes (Lukasiewicz, 2013). Group value theory focuses on supporting individual voices during a planning and decision making process that promotes procedural justice. And finally, justice judgment theory helps identify the procedural rules for fair allocation of a resource, based on an individual's beliefs. These theories can offer more insight into the value and specific qualities of procedural justice that are integral to this thesis.

From this information, it is easy to see the difficulties that can arise when designing a fair procedure. For example, as long as there are disagreements on the perception and value of fairness, there will inevitably be difficulties in creating fair-decision making procedures (Leventhal, 1980). Despite the growing concerns of fairness in governance, there has been relatively little stress on the development of theory in regards to community's meaning of equity, fairness and justice in the context of natural resources (Emami, 2015). Therefore, it may

become more prevalent of international resource planners to adopt or alter procedural components of their planning process according to circumstances and new theory research. In addition, as previously noted, no models outline what procedural justice would look like in a comprehensive planning process. Inevitably, this requires an on-going balance of designing technical rules (i.e. laws) and the incorporation of individual needs (i.e. various stakeholder positions). As Emami states, “the issue of balance becomes more prominent in the regional planning process” as a response to lack of clearly defined models within procedural justice (2015, p. 123).

Emami (2015) outlines five guiding principles to consider when using a procedural justice framework to understand IRM. The principles in essence provide guidance for planners and developers in order to achieve fair and just resource management goals. The five principles being: 1) an absence of bias, 2) provision of information, 3) representation that is inclusive and legitimate, 4) active, as opposed to passive, participation, and 5) resolution of conflicts. When used together, these five principles provide a framework for evaluating and creating procedurally just decision-making processes. The following subsections will address each of the five principles in brief detail.

Unbiased Process

Because of what each person brings to the table, bias is not absent from planning and decision-making processes (Davidoff, 1962). Identifying and recognizing bias within these processes is one of the first steps to achieving a fair process. To minimize the impacts of bias within decision-making processes,

planners and developers should provide accurate information to participants and ensure internal consistency. Transparency can help manage certain group dynamics that arise throughout a planning process. The more transparent people are within their governing body, the less room there is for confusion, irritation and distrust amongst stakeholders. Consistent transparency across people, methodologies, times, and objectives have been identified as an essential part of a fair planning process (Drew, 2002; Syme, 2000). Accuracy of information complements this idea because it has been shown to nurture the conditions required for making informed evidence-based decisions. Therefore, if the accuracy of information is compromised or if information is incomplete, the chances of a poor decision being taken increase (Emami, 2015). Holding stakeholders accountable for their actions and the outcomes of those actions is a valuable bias reduction strategy, which allows for open and honest dialogue. In the end, a fair and unbiased planning process would require consistency and accuracy and ease in understanding information.

Provision of Information

A second element vital to procedurally just planning processes is providing information that empowers all participants to continuously work towards their process goals. There are two primary goals of informative procedure: 1) provide background knowledge to public entities, and 2) provide opportunities for effective participation across stakeholder groups (Lind, 1988; Solum, 2004; Lukasiewicz, 2013). For example, in the context of resource planning, the informative process requires the distribution of general information

about the region as well as the planning process itself in regards to potential outcomes and legal agreements. This can sometimes be seen in the form of an Environmental Impact Statement, a document that outlines the perceived environmental and social impacts of a project and how the plan will respond to the challenges presented. These types of documents that provide basic information to the general public are increasingly important to ensure that stakeholders can thoughtfully address and consider the issues (Syme, 2000).

Inclusivity and Legitimacy

The third element of a planning process with strong procedural justice attributes requires the consultation of stakeholders, government and experts in a specific field to work together towards their natural resource management and regional planning goals. This supports the previous section's claim that inclusivity is valuable within a planning process. Additionally, inclusion of expert knowledge or traditional ecological knowledge provides more legitimacy to a planning process (Davidoff, 1962; Drew, 2002). In addition, within a fair decision-making process, each participant should have equal chance to represent their respective group so that there is a balanced mixture of political, gender, ethnic, racial, and religious interests/ ideologies giving voice throughout the process (Leventhal, 1980). In fact, all representatives should be treated equally and respectfully (Leventhal, 1980; Kals, 2012; Syme, 2000). Planners must ensure that they provide stakeholder groups with platforms for their input to be considered.

Active Participation

The fourth element of a fair planning process involves legitimate representatives and active participation from the public. The public's voice must be properly considered and acknowledged throughout the planning process. Procedural justice literature has shown that stakeholders within a planning process are more likely to actively contribute via investing resources, time, and energy, when they perceive that a planning process is fair (Davidoff, 1962; Solum, 2004). Offering the public opportunities to share their concerns and interests encourages active participation (Solum, 2004). In essence, active participation allows participants to voice their feelings around a planning process and its contents. However, there are unique cases, during which participants can exercise control over the process itself and the outcomes (Lane, 2005; Davidoff, 1962).

Resolution of Conflicts

Within IRM and other planning processes, an inevitable conflict arises due to competing interests and values (Emami, 2015). To prevent or reduce conflict requires that formal conflict resolution processes be in place. In order to do this, there should be mechanisms in place to allow participants to understand the shared and different values amongst them and therefore improve the procedural quality of the process. An example of this comes from Leventhal's work that demonstrates the importance of correctability (i.e., the ability to detect a poor decision and then correct that decision) (1980). There are various modes of compensation which would be applicable in these cases: monetary and resource replacement. Compensation can then be understood as one way of correcting past injustices and poor decision-making. Overall, these characteristics of procedural

justice framework from Emami provide a more positive and clear understanding of a planning process and therefore promote actors to participate.

An integrated approach to managing natural resources has become increasingly popular in the recent decade. This section has discussed some ideas that would make these planning efforts become more successful in regards to resource allocation, planning challenges and fairness throughout the process. The social justice research provided in this section offers several tools for advancing positive collaboration among diverse groups of people with conflicting goals and values.

Water rights and impacts on Native communities

Water rights relate directly to the topic of justice because one should understand the relationships between humans and natural resources and how effectively or fairly resources are distributed. In the State of Washington, the Water Resources Program and the Washington State Department of Ecology (DOE) oversee the management of water. Their duties include, but are not limited to, ensuring consumer availability, quality of ground and surface waters, and finally, issuing permits for private, government and municipality bodies (Wu, 2011). For a water right or permit to be issued, there must be scientific data on location, quantities, and limitations. Limitations in this context would refer to accessibility to the source of water and quality of said water. A water right does not equate to a water permit. Water permits provide a pathway for developers,

government agencies, water users, and scientists to conserve and overall manage a precious resource such as water.

However, permits can also contribute to the overconsumption of water due to the “use it or lose it” nature of water rights. A majority of the Western United States water rights include a requirement of use it or lose it. Per this requirement, if an there is an existing water right that is not being put to use for a period of years, that right is then forfeited and becomes obtainable to other water users (Wu, 2011). The primary intention of maintaining a use it or lose it clause on a water right is to ultimately prevent any wasteful use of water.



Figure 4: Native women pictured at Celilo Falls prior to inundation from the created dams. Celilo Falls in *Wy-am*, means "echo of falling water" or "sound of water upon the rocks" (McCool, 1993).

During the 1940s, the federal government laid claim to large quantities of water in Western states. Most of these claims were supported through connections to national parks, forests and other land holdings (McCool, 1993). However,

conflicts between states and tribes have arisen over those claims. In 1908, the U.S. Supreme Court, in *Winters v. United States*, ruled that whenever the federal government was allocating land for native reservations, it had to also reserve sufficient amounts of water to meet reservation needs (McCool, 1993). This ruling marked an era of court battles between state and tribal entities, both sides fighting for more water.

In 1855, tribal members throughout the Pacific Northwest ceded most of their lands along the Columbia River to the U.S. government. By signing treaties with the U.S. government, tribal members retained rights to fish, gather and hunt within their usual and accustomed places (Phillips, 2017). Many of the tribal citizens maintained their livelihoods of fishing by continuing to live along the riverbanks (Harden, 1996). The settling of the lands around the Columbia River by non-natives restricted historical access to the river. Tribal citizens have attempted to maintain their treaty rights to the resources provided by the water and navigate new political landscapes. The lack of accessibility to their spiritual and traditional lands threatened fishing and family networks among tribal communities (Elkind, 2006). The transformation of landscape due to the development of dams, and the ensuing loss of cultural and subsistence resources, also contributed to the already tumultuous relationship between tribal citizens and the U.S. and Canadian governments.

Exclusion of Native Americans from the process of creating and signing the CRT was not surprising given the time frame and larger governmental landscape throughout the United States. Many of the treaties signed between

native and non-native governments had not been upheld (Nichols, 2009). European settlers attempted to terminate ownership of and colonize native lands. In Canada, particularly in British Columbia (BC), these same ideas permeated native and non-native relationships. Eventually, in the 1982 Charter of Rights to the Canadian Constitution, the Canadian government recognized the rights of First Nations to their lands and resources (Cosens, 2016). Still, the roots of both BC and the United States in colonialism can help explain some of the similarities in proceedings on both sides of the border as related to native exclusion (Nichols, 2009).

The lack of recognized native autonomy in both the United States and Canada contributed to a new tribal landscape (Elkind, 2006). While coping with the transformation of their sacred homelands, natives were learning to navigate that landscape. Treaty development involved a political process that demonstrated the lack of knowledge of traditional native cultures and beliefs on the part of non-natives, and little understanding of native oral traditions. This lack of understanding weakened the value and contribution of native histories in the face of western-dominated structures and sciences (Jackson, 2006).

I argue that economic and environmental transformation of the Columbia River and Pacific Northwest since the 1930s should be investigated by examining the environmental injustices befalling Native American communities. However, the current academic literature lacks environmental histories of Native Americans, primarily because tribal citizens transmitted these histories orally (Finnigan, 2009). This impedes our understanding of the Columbia River Treaty and the

evolution of policies that directly impacted the Columbia River's natural and cultural resources. New research should focus on the impacts of environmental justice as it relates to resource management. This thesis aims to consider the relationships between treaties and questions of indigenous identity. Understanding this exclusion and the impacts that it has had on communities--human and non-human--will help us in crafting a CRT that does encompass environmental justice.

Adaptive Governance

In addition to considering the CRT from the perspectives of Collective Action, procedural justice and water rights, we need to understand how adaptive governance could positively affect CRT negotiations, if implemented correctly. Studies have shown that conflicts between ecosystems' and human demands for freshwater resources will increase as climate change continues to impact regions worldwide (Cosens, 2014; Engle, 2011; Watson, 2007). These climatic shifts result in a growing concern that water managers may be less equipped to respond to current and future threats. However, increasing ecosystem/human conflicts might also contribute to better understanding of river systems and thus the emergence of better river management practices.

In some cases, conflicts may result in new alliances among scientists and stakeholders, with a more holistic consideration of water resource use and climate change. Therefore, with the predicted changes resulting from climate change, there may be a call for more close alliances and collaborative management in planning for and governing resources. This portion of the literature review will

address framework ideas from adaptive governance that could be utilized to create better water resource management.

Adaptive governance has been defined as “the use of novel approaches within policy to support experimentation and learning” (Cooper, 2015. p. 27). Due to its experimental nature, adaptive governance allows for building of knowledge that comes from understanding environmental feedbacks. Some of the important feedbacks can be seen in Figure 5, which illustrates the outcomes of having multi-stakeholder knowledge integrated into governance practices. However, for adaptive governance to function among a group of stakeholders, scholars have suggested that there must be some degree of self-organization, knowledge sharing, strong leadership and networking to promote a multi-scalar decision-making process (Cooper, 2015; Du Bray, 2018; Xue, 2018). Being open-minded and willing to change governance practices is the only way adaptive governance can truly be integrated into resource management practices. Adaptive governance would permit a shift and restructuring of social norms and values within water governance models. Adaptive governance has been utilized as a way to manage ecosystems in terms of resiliency. A new form of management focused on ecosystem resilience would, “require new forms of human behavior with a shift in perspective from the aspiration to control change in systems, assumed to be stable, to sustain and generate desirable pathways for societal development in the face of increased frequency of abrupt change” (Folke, 2010, p.443). Within resilience literature, some scholars utilize the term governance to explain the laws, policies, regulations and institutions involved in governing natural resources

(Folke 2010; Huiteima, 2009). Adaptive governance has continuously become a major focus for adaptation policies, challenging traditional governance systems (Du Bray, 2018, Xue, 2018). For example, in the CRT reviews and negotiations, governance is arranged in centralized, inflexible bureaucracies, with slight-to-no accountability or transparency, and with stringent controls of information.

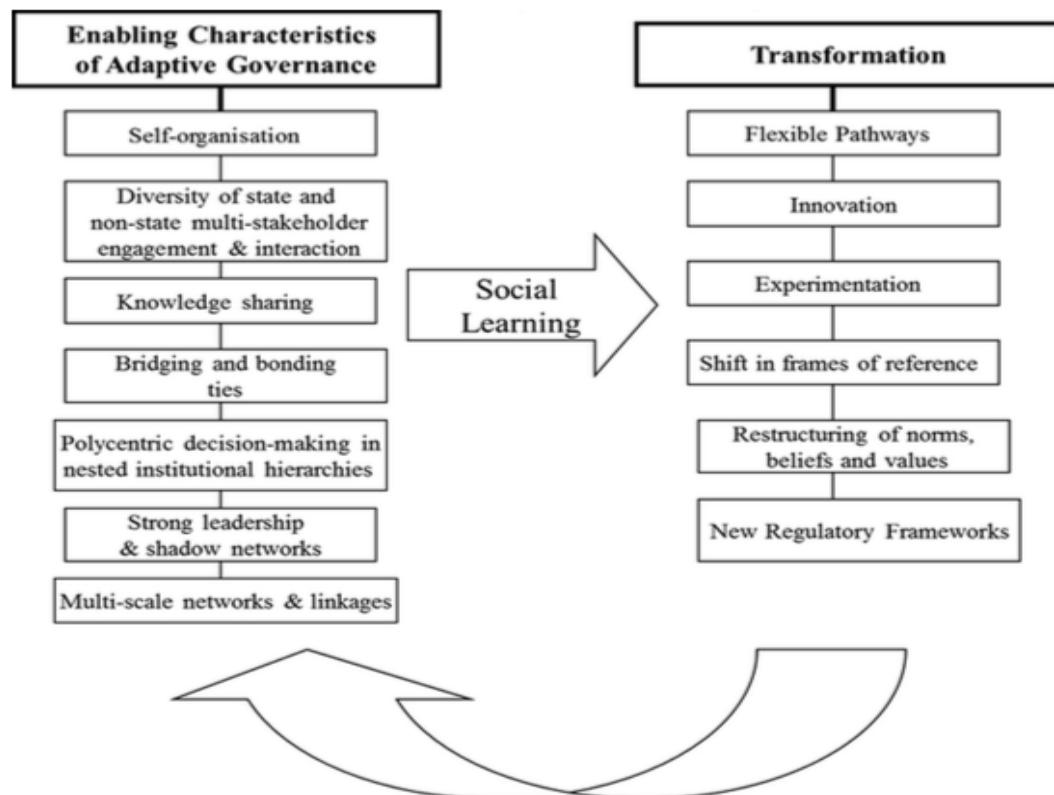


Figure 5: The figure demonstrates a variety of adaptive governance characteristics, which support and provide social learning, inherently creating transformative governance processes such as new regulatory frameworks (taken from Cooper, 2015).

Fundamentally, adaptive governance combines the knowledge held by formal and informal institutions (Cooper, 2015; Xue, 2018). Formal institutions are subject to legal regulation and organizational constraints (i.e. rules, laws, constitutions). Informal institutions can be characterized as being rooted

intangibles such as cultural norms and values (Cooper, 2015). These two types of institutions should maintain positive interpersonal- relationships built upon trust and mutual benefits. Therefore, scholars have often cited that, uniting organizations and stakeholders in regards to environmental solutions can serve as catalysts to enhance communication and multi-scalar activities (Cooper, 2015).

While the research regarding adaptive governance is well established, there is less clarity in regards to how adaptive governance processes ‘play out’ within real-world contexts. The value of adaptive governance therefore cannot be overstated; however, this portion of the literature review intended to evaluate how adaptive governance has the potential to support multi-scalar stakeholder activity and provide a framework for equitable ecosystem management. The relatively contemporary concept of adaptive management and governance has been applied within multiple resource sectors (agriculture, water resource management, fisheries, etc.) in addition to a variety of socio-political contexts (Australia, Canada, Europe, Southeast Asia, South Africa, United States). For example, adaptive management become a central component of the Forest Ecosystem Management Assessment Team (FEMAT) report completed in 1993 and the following Northwest Forest Plan (hereafter, NFP) (Cosens, 2012). The integration of adaptive management qualities allowed the FEMAT to introduce an ecosystem-based management approach across 24 million acres (9.7 million hectares) of federal land in a three-state region where conflict was not absent among stakeholders (Cosens, 2012).

Summary

This literature review examined key concepts and ideas around water and the ways in which human's interaction with this resource has changed over time. This literature review examined how the concept of regionalism inherently affects development and in turn how development affects the needs of unification within a society. Additionally, this literature examined the historical relationship native peoples in the U.S and Canada have with the Columbia River and considered this relationship as necessary in understanding the development of the basin. After understanding that as a basic history of the Columbia River Treaty, this literature then explained how Collective Action Theory and international water law begin to play a much more specific role within management practices and development strategies. Therefore, once there is an understanding of the political landscape, we can examine flaws within it. This literature addressed procedural justice as a key component in the lack of stakeholder collaboration within the Columbia River Treaty. Expanding on this further, this literature discussed the complexity of water rights and who is involved in the process. Finally, this literature review offers insights on how to integrate collaboration within adaptive governance practices while acknowledging past injustices and mistakes, by considering adaptive governance as a key pathway to achieving good governance within the Columbia River Treaty.

METHODS

Setting and Approach

This thesis research investigated the link between the quality of a decision-making processes surrounding the Columbia River Treaty (CRT) and outcomes using interviews and analysis of the US 2014/2024 Review documents. Interview participants were involved in the U.S. review of the Columbia River Treaty in 2014 and/or are actively engaged in treaty renegotiations as of 2019, in varying capacities. I heard from First Nations/Tribes, state/province representatives, and other governmental and non-governmental stakeholders. I asked interviewees for their opinions as to what shaped the CRT review process and what influenced the outcomes of the decision making process.

Due to time constraints and other factors, I could not interview every stakeholder that is or has been involved in negotiations of the CRT. Therefore, this thesis focused on the U.S. side of the negotiations, rather than providing a cross comparison between the United States and Canada. In order to do this, I utilized documents from the U.S. 2014/2024 Review process, such as the Regional Recommendation, published in 2013. I coded relevant portions of the documents, as support for my interview data. In essence, I wanted to understand what participants identified as crucial outcomes of the process that reflected good water governance principles within the CRT context. I also probed what interviewees and stakeholders' thought about how the renegotiation process was working or what could be improved in regards to stakeholders' experiences within CRT's renegotiations.

Interview Participants

I used a purposive sampling strategy for selecting interviewees. Purposive sampling is a non-probability sampling method, utilized when “elements selected for the sample are chosen by the judgment of the researcher” (Black, 2010). I chose this strategy because I wanted to guarantee that a variety of perspectives would be represented in the data. I interviewed twenty-one individuals within subdivided stakeholder groups of interest. These groups of interest were: 1) Federal representatives, 2) Tribal Representatives, 3) State representatives, and 4) other stakeholder interests (environmental, power, irrigation, navigation and risk management). Throughout my data collection, I also aimed for data saturation, when no additional or new information appeared in further interviews or data collected. Note that scholars usually reach data saturation within roughly six to fifteen interviews (Guest, 2006).

In order to identify potential study participants, I compiled a list of members of the CRT review committees, relevant stakeholders, and those contributing to public comment periods and the media (newspapers and online articles). I recruited interviewees by phone and email. Table 1 outlines the U.S. stakeholder groups I focused on for interviewee selection. In addition to that, a copy of my interview questions can be found in Appendix B.

Table 1: This table outlines interviewee groupings by affiliations and funnels those groupings into specific stakeholder groups and organizations. The total number of interviews per grouping can be seen in the right-hand column, for a total for 21 interviews conducted.

Affiliations		Number of interviewees
Federal Government	<ul style="list-style-type: none"> • Bonneville Power Administration (Lead Agency) • US Army Corps of Engineers (Lead Agency) • US Environmental Protection Agency (EPA) • US Forest Service • US Fish and Wildlife Service • US Geological Survey • US National Marine Fisheries Service • US Bureau of Indian Affairs • US National Park Service • US Department of Interior 	4
Native American Tribes	<ul style="list-style-type: none"> • Columbia River Inter-tribal Fish commission (Yakama, Nez Perce, Warm Springs, and Umatilla tribes) • Confederated Salish and Kootenai Tribes • Cowlitz Tribe • Upper Columbia United Tribes • Upper Snake River Tribes (Burns Paiute Tribe, Shoshone-Bannock Tribes of the Fort Hall reservation) • Confederated Tribes of the Grand Ronde 	6
State Government	<ul style="list-style-type: none"> • Idaho • Montana • Oregon • Washington 	3
Stakeholders	<ul style="list-style-type: none"> • Environmental interests • Irrigation Interests • Power Interests • Navigation Interests • Flood and risk management Interests 	8
Total		21

Interview Protocol

The duration of the interviews ranged from ten to forty minutes and depended on the amount of time the interviewee could dedicate and the extent to which they wanted to share information. I asked each participant if I could record our conversation in order to transcribe it and analyze the text. Since this research included human subjects, I submitted the research to the Evergreen State College Institutional Review Board (IRB) for approval prior to data collection. I did not associate names or other personal identifiers with the data to ensure confidentiality. Identification code numbers were used in place of names in all transcriptions and supporting documents. After transcription, I deleted and shredded all copies of the interviews. In addition, I am the only person who had access to the digital audio recordings from the interviews and transcriptions of recordings on a password-protected computer. The digital audio recordings and all transcriptions will be erased/destroyed at the completion of the study.

In my research, I have included select text quotes from interviewees in my presentation of findings. The quotes are not credited to the interviewees by name but rather by general interest or involvement in the CRT governing process (i.e., hydropower interest, U.S. federal participant). The quotes offer examples that clarify findings and concepts resulting from the study.

Coding and Analysis

After each interview, I transcribed the audio recordings for later analysis either on

paper or in atlas.ti a qualitative coding software. The U.S 2014/2024 Review documents were publicly available online. I utilized atlas.ti to systematically code interview and review documents, which involves labeling single lines of text within data with a short and descriptive name. Often, the systematic coding framework helps identify themes and can contribute to theory development (Charmaz, 2014). While coding the transcribed interviews and review documents, I identified statements where discussion of the decision-making process influencing or not influencing the actual decision or byproducts were present (for example, inclusivity). Those passages led to creation of overarching themes for my data.

As previously explained, content analysis methods were used to obtain representative data from documents explaining various panel dialogues (four documents were analyzed). Thereafter, I used a basic coding process to extract themes mentioned by SRT, STT and other stakeholder members in each document. These codes related specific content to one or more of a variety of themes mentioned within a given panel document. For instance, content such as ‘knowledge sharing’ and ‘mutual benefits’ was categorized under the theme ‘collaboration’. I coded for the themes without consideration for positive or negative meaning. For example, if an SRT member mentioned wanting to work with more diverse panel members, and a panel member criticized that the SRT could have been doing more to improve collaboration, these statements were put under the same code of ‘collaboration’. These lists were then merged to fabricate a final list of themes that could be used for the four panel documents.

US 2014/2024 Reviews

I assembled the U.S. 2014/2024 review data from publicly available documents published on the U.S. Entity's official Treaty Review website (see Appendix A). Various public engagement events were organized by the U.S. Entity during the period extending from early Fall of 2011 to the Fall of 2013 across the basin. Many of these events included panel dialogues. I used these panel dialogues to gather responses from stakeholder groups and any other interested parties not explicitly participating in the SRT. Other listening sessions, panel discussion transcripts and community meeting notes contained some amount of dialogue between attendees and the SRT, although these documents were highly summarized. Additional information sessions and open houses were aligned with circulating new knowledge about the review process rather than collecting input from stakeholders.

Given the difficulties of analyzing these diverse stakeholder engagement documents across a multitude of timelines and circumstances, I used the U.S. CRT 2014/2024 Review documents primarily as a way to support the previously mentioned interview dataset. This data did allow for a content analysis of the opinions, concerns and issues distinguished by panel participants were interpreted into themes using coding software (atlas.ti).

RESULTS

As might be expected, I found a diversity of responses related to stakeholder's attitudes towards treaty engagement, information transparency and procedural justice in interviews and the U.S. 2014/2024 Review. Themes that

were relatively consistent across the narratives (regardless of stakeholder affiliation) such as leadership, accountability, inclusivity, and information sharing/transparency are examined below, followed by recommendations towards improving water planning and governance.

Interviews: Leadership

As I coded the text of the interviews, I discovered that leadership throughout the CRT negotiations and reviews had a strong impact on the quality of water governance. Water governance in this case can be understood as the processes in which people manage and/or work together to achieve equitable outcomes in regards to resources provided by a water source. Many stakeholders identified feeling that the review and negotiation process leads (U.S. Entity agencies) could not represent their constituencies' interests very well. This was largely attributed to what was referred to by one stakeholder as the "balancing act", or the fact that the U.S. Entity must maintain neutrality as process leads. However, interviewees that represent the U.S. Entity suggested that the lead found it difficult to maintain neutrality during CRT reviews. As one representative from the U.S. Entity agency noted:

We felt a strong responsibility to represent the entire region and be neutral throughout the reviews process. However, it can be difficult to be accountable to our stakeholders and be regionally neutral simultaneously.

When interviewees mentioned this issue, I asked if they had recommendations in regards to achieving better governance in terms of leadership. Some interviewees stated that the U.S. Entity agencies would benefit

from more closely involving and working with diverse levels of government, such as the Department of State. However, these stakeholders identified that with additional process leads such as the Department of State supporting the U.S. Entity, there would be variation in the technical capabilities and understanding of the region in terms of stakeholders and the decision-making processes. In essence, there was concern regarding overall stakeholders' participation in regards to their technical capabilities and how lower capability may affect governance outcomes. Additionally, interviewees expressed concerns about the quality of higher leadership in the United States and its effects on CRT outcomes. Some stakeholders mentioned that there has been a lack of communication with the Trump administration during negotiations and this has influenced the water governance process for them. As one representative from a sovereign entity explained:

We have just had a much better relationship with the previous lead from the State Department, on CRT, and we were talking a lot with the Obama administration but we don't talk to the administration anymore. They don't reach out to us, and we don't necessarily reach out to them, so that's a big impediment, it's just a lack of communication.

Some participants also discussed their experiences with both of the U.S. Entity agencies as well. Certain stakeholders (primarily power and irrigation affiliated) considered BPA to be a strong and supportive collaborator during the reviews and negotiations. Other stakeholders would have much rather worked with the Army Corps of Engineers and did not think highly of BPA. Therefore, it appears that there are disagreements about the quality of relationships between the

U.S. Entity and various basin sovereigns and stakeholders in regards to communication and leadership.

Interviews: Accountability

Another theme within the interview dataset was the degree of accountability and action that stakeholders felt the U.S. entities were upholding throughout the process. The U.S. Department of State was mentioned frequently and cited as an “essential source of accountability” for CRT reviews and negotiations. For example, the Department of State recommended that it would be in the region’s best interest to create a consensus document rather than review individual letters sharing dissimilar opinions. Various sovereign representatives agreed with the recommendation, also mentioning the value of having the Department of State hold the U.S. Entity accountable for Tribal consultation efforts.

In regards to accountability, interviewees also discussed the lack of ideas or structure in regards to what the subsequent steps of a given Treaty negotiation and post-negotiation process would look like. Multiple interviewees expressed their frustrations with a lack of information on how the Department of State and other federal agencies would be making decisions within the negotiation processes. Some stakeholders also pointed out a lack of clarity on how and to what extent these U.S. entities would be disclosing information to stakeholders throughout the region throughout negotiations with Canada. A majority of the sovereign entities I interviewed echoed this sentiment of worry during our conversations. As one representative explained:

We need to keep trying to inform each other of our issues and work towards inclusiveness in respect to each water user's needs. A more inclusive type of communication would lead to agreements and less tensions that ultimately could be captured into good policies. It's not clear what's going on right now in negotiations because of this closed box between the Canadian and U.S. Governments.

Most interviewees mentioned that they felt the U.S. Entity did follow the most appropriate laws and promptly met their legal obligations to stakeholders throughout their US CRT 2014/2024 Review process. In this sense, it does appear that there is some level of accountability being achieved throughout the water governance processes. However, two major stakeholder groups did not necessarily support this viewpoint. Power utility representatives disagreed with the U.S. Entity's choice to not recognize public utility districts (PUDs) as sovereigns, therefore not allowing them a position within the Sovereign Participation Process. Note that in this context sovereign entities are political bodies that have independent political authority within a given geographic territory (Northwest Power and Conservation Council, 2014). Sovereign entities in the Columbia River Basin in regards to Treaty development are the U.S. Federal Government, States and federally recognized Native American tribes.

The second group was the tribes, whose members stated that they did not agree that the U.S. Entity was adequately meeting its obligation to consult and collaborate with the tribes as mandated by Executive Order 13175. Former U.S. President Bill Clinton had issued "Consultation and Coordination with Indian Tribal Governments," on November 6th, 2000, requiring federal departments and

agencies to consult with Indian tribal governments when considering policies that would impact tribal communities. As one tribal member said:

It really hasn't been since the last four to five decades that tribes have elevated their political, legal, and really their scientific and technical capacity. So when this treaty (CRT) was negotiated sixty years ago, that was close to the termination era. People probably didn't think the tribes would ever be around in sixty years, but if you look at it in the shift that tribes have in self-determination, in building competent and capable science and technology programs, I mean we can stand toe to toe. This commission and our four member tribes can stand toe to toe with the state and federal fish and wildlife managers in our capacity. So we're equally as capable of implementing a treaty as they are. We have the technology that can inform decision makers, too. So we feel we should be at the table supporting the negotiations.

There are clearly quite diverse levels of perceived accountability within the past U.S. CRT 2014/2024 Review processes and negotiations in regards to a modernized CRT. Concerns regarding low degrees of accountability from the U.S. entity were most expressed in interviews where the representatives were affiliated with energy interests and tribal organizations.

Interviews: Inclusivity

Earlier, I defined inclusivity as *how concerned and effected stakeholders are involved in a range of stages of a decision making process, in terms of degree and quality*. In the next paragraphs, I will provide my analysis of interviews addressing the following facets of inclusivity that came from the interviews: 1) representation, 2) capacity to influence, and 3) avenues of participation. I asked interviewees to share their views on the value of inclusion in CRT

negotiations/reviews and how they or their organization were included in either of those processes.

More than half of the interviewees (16 out of the 21) agreed that involved and affected stakeholders had some form of venue for participating in the Treaty review. However, when asked if stakeholders felt adequately represented, responses were more mixed. A majority of interviewees mentioned and objected to the fact that a variety of stakeholders were omitted from the SRT and had not been allowed to listen or participate in the closed-door meetings. Some interviewees suggested that promoting and maintaining more accurate and adequate stakeholder representation should be involved in future water governance models and a modernized CRT. These interviewees proposed developing a process that included sovereigns and stakeholders together in a manner that kept the number of people at the table manageable. No interviewee had a suggestion or specific ideas on how to accomplish that goal.

Many interviewees proposed creating “greater access to the decision-making process”. Their varying capacities to influence the reviews/negotiations came at different times and through different avenues, which depended on whether they were a sovereign or stakeholder. Sovereigns had a certain level of influence in the U.S. CRT 2014/2024 review due to their direct access via the Sovereign Review Team and Sovereign Technical Team. However, stakeholders’ influence, according to some interviewees, almost entirely depended on their political power in the basin and their political relationship to the U.S. Entity. This variability in capacity to influence can largely be attributed to a lack of funding

and power among interested CRT parties. For example, as the leader of the U.S. CRT 2014/2024 review and major funding source for all technical studies, the U.S. Entity had more influence in establishing what would be examined within their research. Tribal stakeholders I interviewed believed that their studies regarding ecosystem-based function and salmon populations would also be helpful for treaty negotiations but they did not have the opportunity to share these studies.

As previously stated, a majority of the stakeholders I interviewed did believe and supported that the U.S. Entity provided sufficient avenues of participation in the U.S. CRT 2014/2024 Review. However, providing resources for participation in a process such as treaty negotiations is a difficult task. Access to these participation resources are essential for allowing the appropriate parties space to act within a decision making process. Participation resources in regards to the CRT 2014/2024 Review could be providing reliable sources of information and/or equal opportunity to give feedback or opinions. In the specific case of the CRT, the process lead (U.S. Entity) does not have much control over this. Typically, water governance models have explained this issue as a result of meager funding and staffing, usually controlled by an external group, and in this case, by Congress. Interviewees expressed a common concern over limited resources and the role that played in reducing a stakeholder's ability to participate in a decision-making process.

Table 2: This table indicates a code/theme under “Characteristics of governance” and some of the mentioned potential barriers from interviewed stakeholders.

Characteristics of governance	Potential Barriers
Leadership	<ul style="list-style-type: none"> • Misrepresentation of stakeholders • Variability in relationships between stakeholders • Lead entities having to maintain neutrality
Accountability	<ul style="list-style-type: none"> • Limitations in authority (entity leads cannot share information) • Mistrust in leadership (uncertainty within the process) • Lack of structure and/or understanding of review/negotiation results
Inclusivity	<ul style="list-style-type: none"> • Complex political relationships (federal, state, county, tribal) • High number of significant stakeholders • Large geographic space

One sovereign interviewee addressed the frustration that was commonly felt amongst “low-influence” stakeholder groups:

The EPA is really good at marketing and selling power, the Corps of Engineer’s background is in building and operating these dams, and for thousands of years the tribes have lived with those resources, counted on them as our way of surviving, so we feel that it’s important for the tribes to be at the table and to speak for those who cannot speak for themselves; the fish, the water, the wildlife, the berries, the roots, you know all of those things that were instrumental in our culture and our way of life, that we were at the table to speak for those, and then again the government has shut the door on us, so we have limited access and input and a real knowledge of what’s going on behind the scenes in these negotiations, but we continue to push real hard for a modernized treaty that we believe must include these other purposes.

Overall, these interview results indicate what some stakeholders believe could be improved within the CRT governance process such as, the quality of leadership, accountability of said leadership and inclusivity of stakeholders within the process.

Important Themes and Topics	Environmental Challenges	Energy Security	Collaboration	Risk management	Economic feasibility and solutions	Sustainable practices implementation
Stakeholder Group						
Federal • Interviews • 2014/2024 Review	R	X R	X	X R	X R	R
Tribal • Interviews	X		X	X	X	X
State • Interviews • 2014/2024 Review	X	X R	X	X R	X	X
Environmental • Interviews • 2014/2024 Review	X R	R	X		X	X R
Power • Interviews • 2014/2024 Review	X	X R		X R		R
Irrigation • 2014/2024 Review	X R		X	X R	X	X
Navigation • Interviews • 2014/2024 Review	X			X	X R	
Flood Management • Interviews • 2014/2024 Review	X R	R		X R	X R	R

Table 3: This table demonstrates the presence of theme (code) within interview and US 2014/2024 Review data that was used to examine the relationship between stakeholder collaboration and influence within a governance process. The top line indicates the code of theme that is being represented. The column to the left indicates the stakeholder affiliations and how they were represented (either by interview or 2014/2024 review documents, both). The presence of an “X” indicates that the theme or topic was relevant during an interview, while the presence of an “R” indicates that the theme or topic was relevant within the 2014/2024 review documents. The presence of “X” and “R” indicates that in both document analyses there was some explicit mention of said theme or code.

CONCLUSION & RECOMMENDATIONS

The expiration of CRT provisions in 2024 offers an opportunity for water managers and stakeholders to collaborate to provide better overall resource management within the Columbia River Basin. In general, the U.S. CRT 2014/2024 Review process and the subsequent 2013 Regional Recommendation can be considered more progressive than the planning efforts undertaken in the early 20th century by the Pacific Northwest Regional Planning Commission (PNWRPC) when the Columbia River Treaty was first signed. These more recent efforts focus on ecosystem-based functions, indigenous community needs and values, and on stakeholder collaboration during the review process. However, current treaty negotiations (conducted by the Canadian and U.S. Entities) do not encourage broad inclusivity of stakeholders and collaboration amongst them. The groundwork completed by the U.S. and Canadian Entities, in addition to the SRT during the review process, seems to have encouraged a large degree of stakeholder involvement however, from my research, it is clear that the current degree of involvement from stakeholder groups in the modernization of the CRT is not adequate.

From my analysis of the Columbia River Treaty Review process, I conclude that while this process is technical, and potentially frustrating for some groups, it should be considered a triumphant example of collaborative international resource planning. The structure of the U.S. CRT 2014/2024 Reviews process allowed space for meaningful stakeholder engagement by providing an assortment of stakeholder engagement events (specifically panel

dialogues and informational conferences). Certainly, it is difficult to envision how the U.S. CRT 2014/2024 Reviews process could have been more comprehensive considering the timeframe allocated to it and the contextual diversity the Columbia River region. As the U.S. 2013 Regional Recommendation letter states:

This recommendation represents the U.S. Entity's best effort to reflect the perspectives of the full spectrum of regional interests, but, like any process of this scope and complexity, some compromise was necessary to garner as much region-wide support as possible. As such, not every opinion or perspective submitted to the U.S. Entity could be incorporated into the recommendation (USACE & BPA, 2013, p. 1–2).

The emphasis the U.S. Entity placed on integrating stakeholder interests and on attaining regional consensus can support the claim that in general the CRT review process did attempt to promote inclusivity and wanted to hear from stakeholder groups. However, there is potential for more meetings and community sessions to promote broader inclusivity. Additionally, the governance process of modernizing the CRT could benefit from a neutral party or entity holding these events throughout the region. Multiple interviewees mentioned feeling pressures or uncomfortable in their regional meetings hosted by the U.S. Entity due to their position. Still, this process of governance can serve as a strong example of Collective Action theory at play (Watson, 2007; Welch, 2018). Co-management is evident when stakeholders work together towards common goals, such as better resource management. Co-management could also lead to more sustainable uses of a given resource. For example, co-management can allow diverse groups to work together to achieve their goals, which allows space for re-examining

previous practices to promote the overall quality of a resource. However, it should be noted that tribal interests were not strongly represented in the U.S. CRT 2014/2024 review stakeholder engagement events. Representation of tribal entities in the SRT did provide a platform for some tribal entities to share their interests and there was hope that these interests would receive consideration from the U.S. Entity and other stakeholders.

As the U.S. Entity explained, for the CRT to truly be modernized, the “adverse effects to U.S. tribal cultural resource interests [needed to be] addressed under the Federal Columbia River Power System (FCRPS) Cultural Resources Program” (USACE & BPA, 2013, p. 5). This is just one example of a shift towards better governance in regards to collective management and procedural justice that was relatively absent from the early 20th century CRT process. However, for the past 50 years, the Columbia River Treaty excluded tribal participation and acknowledgement in its governance and implementation. Future water planners should consider the impacts of excluding indigenous peoples from the governing and management processes. As one tribal stakeholder explained, “The sovereignty of each tribal government has not been respected. Recognition and protection of the rights of native peoples is an established principle of the legal systems of both the U.S. and Canada, and a recognized principle of international law.” The tribes and First Nations of the Columbia River Basin have lived and cared for the land and water in this region for thousands of years. My recommendation to future water planners is to acknowledge and implement the cultural and natural resource expertise of tribal entities that can be integrated into

river management. As many native stakeholders suggested, a modernized CRT should focus on subjects such as ecosystem-based functions of the river to improve the environment and salmon populations.

This research sought to answer the questions, ‘What is the value of inclusive stakeholder participation and how does this in turn affect water governance outcomes?’ The interview data collected for this thesis demonstrate that answers depend on whom you ask within these diverse stakeholder groups. The degree and quality of stakeholder participation will continue to depend on the power balance, or imbalance, among Columbia River Basin stakeholders. Some interviewees believed that the time for stakeholder involvement ended with 2013 Regional Recommendation. However, seventeen interviewees held strongly to their belief that inclusive stakeholder involvement was more vital than ever at this point and were continuously looking for ways to “get inside closed doors”. The difference between the two being that some stakeholder groups claim that there is a time and a place for stakeholder involvement, while others claim that there is a consistent need for inclusivity. Since the end of the U.S. CRT 2014/2024 review timeframe, stakeholders lacking the social, economic and political power of the U.S. and Canadian Entities have not been able to actively engage in treaty concerns or support the Entities throughout the process.

All five characteristics outlined in Emami’s procedural justice framework (outlined above) played some role in the development of the content and/or support of the U.S. CRT 2014/2024 reviews. In general, when procedural justice was evident and well supported by stakeholders it improved the legitimacy and

acceptance of the decision. This then supports the claim that governments cannot make fair and sustainable decisions regarding resources without the inclusion of diverse stakeholder concerns (Emami, 2015). As a result, promoting and understanding theories such as 1) theory of procedure 2) group value theory and 3) justice judgment theory (Kals, 2013; Lind, 1988; Lukasiewicz, 2013) will be incredibly important in ensuring positive development of water governance processes in the future. This will be important because, these theories offer solutions to address the unjust management techniques that have been in practice for hundreds of years.

Due to the closed-door structure of the current CRT negotiations, stakeholders lack continued opportunity to be actively engaged in the final treaty outcomes--many stakeholders were only able to provide input very early on in the CRT negotiation process. This frustration consistently appeared in my research. Interviewed stakeholders had hoped that the review process would provide more adequate and accurate representation of their concerns and values. However, these same interviewees expressed “feeling in the dark” and honestly unsure of the changes being made by the Entities on both sides of the table (U.S. and Canada). Thus, even the modernized CRT process maintains a structure of gathering information and input from stakeholders, but then turns to negotiating terms in private without relinquishing information to any stakeholders. To overcome this issue, future negotiations should consider allowing the continuation of high-degree stakeholder involvement throughout the governing process.

Currently, no updated information has been released to stakeholders in regards to the ongoing negotiations over CRT. However, the U.S. Entity had proposed in the CRT 2014/2024 Review that they would lead an effort in consultation with regional sovereigns and stakeholders to develop a plan identifying the steps necessary to implement a modern Treaty post-2024. Their plan proposed to define the “appropriate work needed to incorporate and implement any new ecosystem-based function, flood risk management, hydropower, and any other expected new operational objectives under the Treaty” (USACE & BPA, 2013, p. 7). This strong commitment towards continued collaborative and inclusive water governance seemed to be a positive step on the part of the U.S. Entity. Still, stakeholders expressed a lack of follow-through from the Entity and maintained that there was an increased need for clarity in regards to intentions and information from the U.S. Entity moving forward. This serves as a primary example of the need for continuous implementation of procedural justice in modernizing the CRT not just the review process.

Other lessons learned from the U.S. CRT 2014/2024 Review process and ongoing treaty negotiations include the need to: 1) Provide a neutral entity to lead the process, 2) Engage stakeholders and sovereigns with equal representation while acknowledging sovereignty, 3) Identify how decision-making authority will or can be shared, 4) Find ways to incorporate new decision-making criteria to improve our water governance strategies and, 5) Recognize ways to equitably distribute resources among stakeholder groups. Overall, these lessons support the claim of this thesis that future trans-boundary governance processes should

develop processes that allow for more active stakeholder engagement throughout the entirety of the process not just one portion of the timeline.

A majority of my interview questions can be considered as practical in nature and sought to offer interpretations and suggestions to those responsible for managing water in the Columbia River Basin. However, these questions have also offered insights in regards to developing stronger adaptive governance theory. As Cosens explains, the use of adaptive management characteristics within avenues of governance is often unnoticed (2014). To properly apply adaptive management in diverse, multi-jurisdictional systems, adaptive governance must be addressed. Therefore, characteristics such as accountability, inclusivity, and quality information sharing can influence governance outcomes required to achieve adaptive governance. As one example, knowledge and learning are viewed as critical for maintaining quality adaptive governance (Folke, 2005; Huitema, 2009; Pahl-Wostl, 2008). These qualities of adaptive governance can be readily noticed in the Treaty reviews process documents I analyzed, which led to improved knowledge and understanding of the ecological system in the Columbia River Basin.

Scholars have noted that a certain level of trust is vital for resilience and allows for the formation of adaptive governance systems (Walker, 2004). These findings suggest that characteristics such as inclusivity have potential to increase trust, collective understanding and legitimacy, as seen in the U.S. CRT 2014/2024 Review. As a result, future water planners should attempt to increase levels of

trust, understanding and legitimacy to support and improve the basin's resilience and/or transition into adaptive governance.

The relationship between the quality of governance and the unique water challenges our society faces today should be examined more closely in future research and our own communities. With this in mind, it has been the goal of this thesis to examine water governance in order to recognize what actions to take for improvement in the Columbia River Basin. Additionally, this thesis explored governance by examining the topic through a variety of theories and lenses (such as Collective Action theory and procedural justice). Furthermore, this thesis considered the link between the decision-making process and actual outcomes in water governance from stakeholder perspectives. To better govern and in turn co-manage the cultural and physical resources of the Columbia River Basin we must address the value of inclusive stakeholder participation and decide which aspects of water governance processes are working in regards to the Columbia River Treaty.

The balancing act between the two Entities and a diversity of stakeholder interests can provide insights into the challenges of achieving good water governance while developing a new Treaty. There is immense difficulty and responsibility that comes with managing a river that runs through seven states while crossing international borders. The situation becomes even more intensified when that same river sustains a multi-billion dollar industry, produces a little over 40 percent of hydroelectric power in the U.S. and functions as a primary ecosystem for endangered runs of native fish. There are varying opinions on what

the CRT has and has not accomplished since its original ratification. Some stakeholders, for instance, view the Columbia River Treaty as having created a “mechanized” river. In other words, these stakeholders believe that the river is managed in a way that displays insufficient concern for ecosystem needs. Others claim that the Treaty has and continues to help millions of people in the U.S. and Canada by warranting irrigation, creation of renewable energy, recreation and other benefits to modern society. Both points of view have value and merit.

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Appendices

Appendix A: <http://www.crt2014-2024review.gov/CurrentMeetingMaterials.aspx>

Appendix B: Interview Questions

1. What are characteristics of good water governance? How do these characteristics influence governance outcomes?
2. What barriers impede achieving good water governance in the Canadian and American negotiations of the CRT?
3. What do you think the value is of inclusive stakeholder participation in a revised CRT?
4. How are resource management and ecological issues being addressed in the renegotiations of CRT?
5. Is there anyone else you think I should speak with regarding this subject?