

Capitalizing on Uncertainty: Development of Alternatives for Regional Dialogues of the Columbia River Treaty

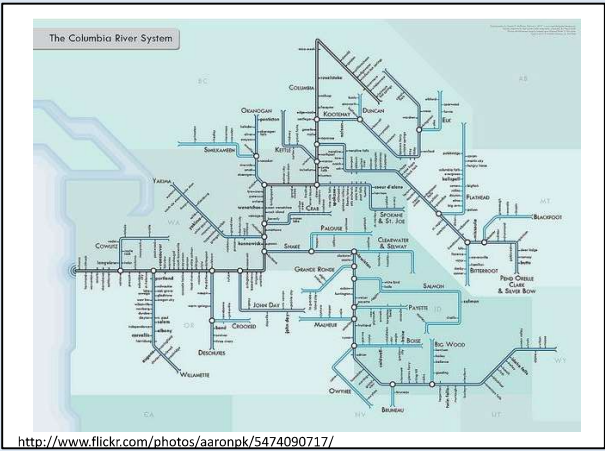
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Introduction

The Columbia River Treaty was originally drafted and signed in 1961 with full ratification occurring by both the U.S. and Canada in 1964. The original Treaty was created with two primary benefits in mind: hydropower and flood control. Since that time many other values and benefits have either emerged or have been further expressed by various sovereigns and stakeholders regarding the river. Additionally, various groups such as tribal sovereigns, fishermen, recreationists, power utilities, environmental NGO's etc., are also expressing an interest in playing a role in a possible reworking of the Treaty, as some of its flood control provisions will expire in 2024. Beginning in 2014, either country involved may also give a ten-year notice of intent to withdraw from or make changes to the Treaty.

The Universities Consortium on Columbia Basin Governance is hosting a series of symposia each year leading up to 2014 to engage and involve different stakeholders and sovereigns in discussions about the Treaty and management of the river basin. The next symposium, slated to take place in British Columbia in September of 2011, will involve the discussion of potential possible futures for the river based on various management schemes prepared by graduate students from Oregon State University and The University of Idaho. The plan is to then facilitate stakeholder dialogues using the alternatives in the discussion of the future of the Columbia River basin. These alternatives to the Treaty will also be presented to various stakeholder and sovereign groups as well as at the Pacific Northwest Region Economic Conference in Portland, Oregon in July 2011. In preparation for the symposium, graduate students at these two universities have been conducting background research and interviews with different stakeholder and sovereign groups. We have been seeking to learn both about what aspects of the Columbia River might be included in a new governance framework, and what might be included in a new treaty, if one were to be developed. This poster outlines the research and development process for these alternatives.



Literature review: Development and Use of Scenarios*

*Scenarios is the term used in the literature and thus is referenced as such in this section. However, we use the term alternative to be consistent with the US review of the Treaty. While the terms are not completely inter-changeable, lessons pulled from the literature on scenarios can be applied to our alternatives.

Scenarios emerged as a methodology for strategic management in the late 1940s. The defining property of a scenario is that it projects a concrete narrative description of an activity that the user engages in order to understand the sequence of steps (i.e., the process) and the projected outcome (i.e., potential futures). Thus scenarios needs sufficient details so that users can infer and understand its design (Carroll 1997, p. 385). A scenario must satisfy a specific goal, occur within a context and require the availability of certain resources, and the participation of one or multiple actors. The context is described detailing a geographical location, a temporal location, and other conditions. Scenarios can also help remedy the most serious obstacle in the design of a plan, which is the chronic lack of knowledge of the application domain (Dzida and Freitag 1998).

Scenarios have also been crafted in planning efforts for water resources management, Diamond (2005) defines environmental scenarios as encompassing future environmental factors and conditions that consist of threats to natural ecosystems and socio-ecological systems, and have consequences towards land use. Water resources scenarios can be used as forecasting tools for water allocation by highlighting water's importance in human survival, ecosystems management, economic activities, agriculture, power generation, and various other industries (Mahmoud et al. 2009). Chenoweth and Wehrmeyer (2006) developed scenarios to compare available water resources in the Israeli/Palestinian water sector. The scenarios identified the future water situations in the sector using the upper and lower bounds of the future population of Israel/Palestine in 2050, together with the most probable population. From these scenarios, they were able to forecast how to manage water in the most effective manner.

Gough et al. (1995) studied the development of scenarios and identified two steps. First, scenario headings and brief descriptions were generated, modified, and reviewed to ensure that the full usage of the system was captured. Second, scenarios were refined, written in natural language, and reviewed by others. Scenarios should be simply constructed. The simpler they are – and the simpler the process used to derive them – the more effective they may be, in part because users are able to understand how they work (Mercer 2003).

Diagram of “Alternatives” Development Process

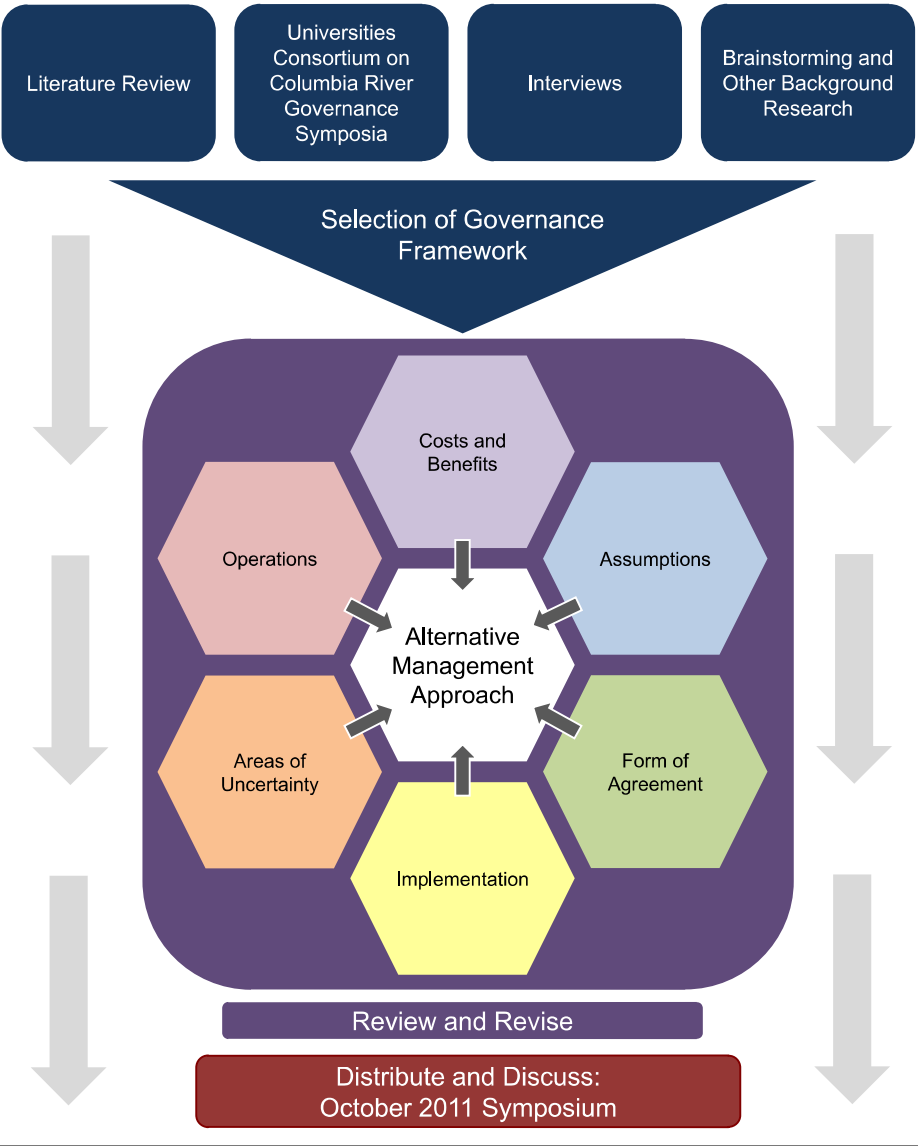


Diagram Explanation

The diagram above represents the process of developing alternative management schemes for the Columbia River employed by Oregon State University graduate students. The process involves three main stages: 1) theme and knowledge gap identification (green), 2) drafting of the alternative approaches (blue), and 3) the discussion of the alternatives in regional dialogues and planning (purple).

Alternative Management Approach Titles

- A River Basin Commission
- Establishing the Columbia River Basin as an "international commons"
- Independent River Management with an Information Sharing Agreement
- Planning for the Potential of Low Flows in the Columbia River Basin
- Regional River Governance



Example Alternative Approach: Regional River Governance

SCENARIO SUMMARY. As an alternative to the continuation of the Columbia River Treaty, this document proposes a new form of governance of the Columbia River with a 'values-based regional approach.' In this approach various regions in the basin are delineated and are governed to accomplish specific goals based on values/benefits identified by those negotiating the agreement(s). Values/benefits can vary from region to region. The size and breakdown of the regions can also vary (i.e., under this governance framework parties will negotiate how to divide the basin into regions based on what benefits they wish to promote). This proposed alternative assumes Treaty termination, allowing for new agreements to layout the governance of the regions. This approach allows for consideration of additional issues or values beyond flood control and hydropower and lists potential values the river could be managed for and potential ways of regionalizing the river. However, parties interested in modeling this alternative would need to take the time to determine the level of regionalization and the specific values they wish to include.

OPERATIONS.

- Regions of the basin will be governed to accomplish certain goals and to obtain certain benefits
- Flood control in the US would rely on domestic storage, the 1990 Non-Treaty Storage Agreement, and Called Upon measures unless flood control/flood risk management was identified as the (or one of the) values the region would be managed for
- Where there are existing non-treaty storage agreements Canada and the US coordinate operations according to those agreements
- Potential values that could dictate operations include, but are not limited to:
 - Canadian dam operation based solely on Canadian interests including maximizing power generation, ensuring Canadian flood control, and protecting listed species
 - US dam operation based on 1) flood control 2) Endangered Species Act requirements and 3) power generation
 - Preservation of cultural resources
 - Recreation and tourism on the undammed portion of the river
 - Meet irrigation water and other water supply needs
 - Manage the lower Columbia and Snake River based on navigation
- Coordination of river management could occur on multiple levels (depending on the number and size of the regions) and will depend on the development of agreements within and between regions. These sub-agreements could include but are not limited to agreements:
 - Within each nation on a national scale
 - Between two facilities or parties
 - Along tributaries or in sub-basins (e.g., parties along the Snake River)

ASSUMPTIONS.

- The Columbia River Treaty is terminated
- Involved parties will determine what regions to delineate within the basin; the number and size of the regions will be based on the values and benefits (and the combination of those values and benefits) the parties wish to include
- Subsidiary agreements (sub-agreements) will be developed between parties to coordinate activities to best serve regional interests
- Canada and the US (or the private companies in the country) will each take over complete ownership and operations of the dams and other infrastructure in their respective countries

FORM OF AGREEMENT.

Sub-agreements would be developed for the regions to operate dams, reservoirs, and other infrastructure on the river. These agreements spell out the goals for the region's management based on the identified values/benefits. These sub-agreements could be created on an international, national, state, sub-basin or local level as well as between the US and Native American Tribes or Canada and the First Nations. For example, privately and federally operated dams in the mid and lower Columbia or facilities along the Snake River could develop an agreement to coordinate dam operations to better meet flood control needs, maximize power generation, and restore ecosystem functions

IMPLEMENTATION.

To implement this alternative parties would need to determine how to regionalize the basin (this can range from keeping the basin as one region to any number of smaller regions of various sizes). This will include deciding the values or benefits a particular region will be managed to attain or maximize (this can range from one value to any number of combinations of values). In this management approach, payments to the Canadian Entitlement end and the implementation of any management is done at the regional level, though there may be coordination between regions. Without a formal treaty or overarching agreement the US and Canada would need to find an alternative way to equalize benefits across the international border if desired. A significant fact-finding effort is needed to better understand possible implementation including:

- Determining what Called Upon means on an operational level (this includes determining what is considered full utilization of US storage)
- Determining the range and timing of river flows as altered by dam operations for the various values and benefits
- Conducting a new Biological Opinion for a post-Treaty basin

BENEFITS.

Possible benefits or values which could be used determine river management include:

- Cultural resources
- Fish and wildlife
- Flood control
- Irrigation
- Navigation
- Power generation
- Recreation and tourism
- Water quality
- Water supply
- Other economic interests

AREAS OF UNCERTAINTY.

- Number, purview, and other details of subsidiary agreements (i.e., agreements will vary depending on the parties involved); potential agreements include Memorandums of Agreement, Memorandums of Understanding, and Annual Operating Procedures
- The findings of post-Treaty Biological Opinion and how they would impact dam operations and water supply/allocation in the US