

# Improving Ecosystem Function in the Upper Columbia Basin

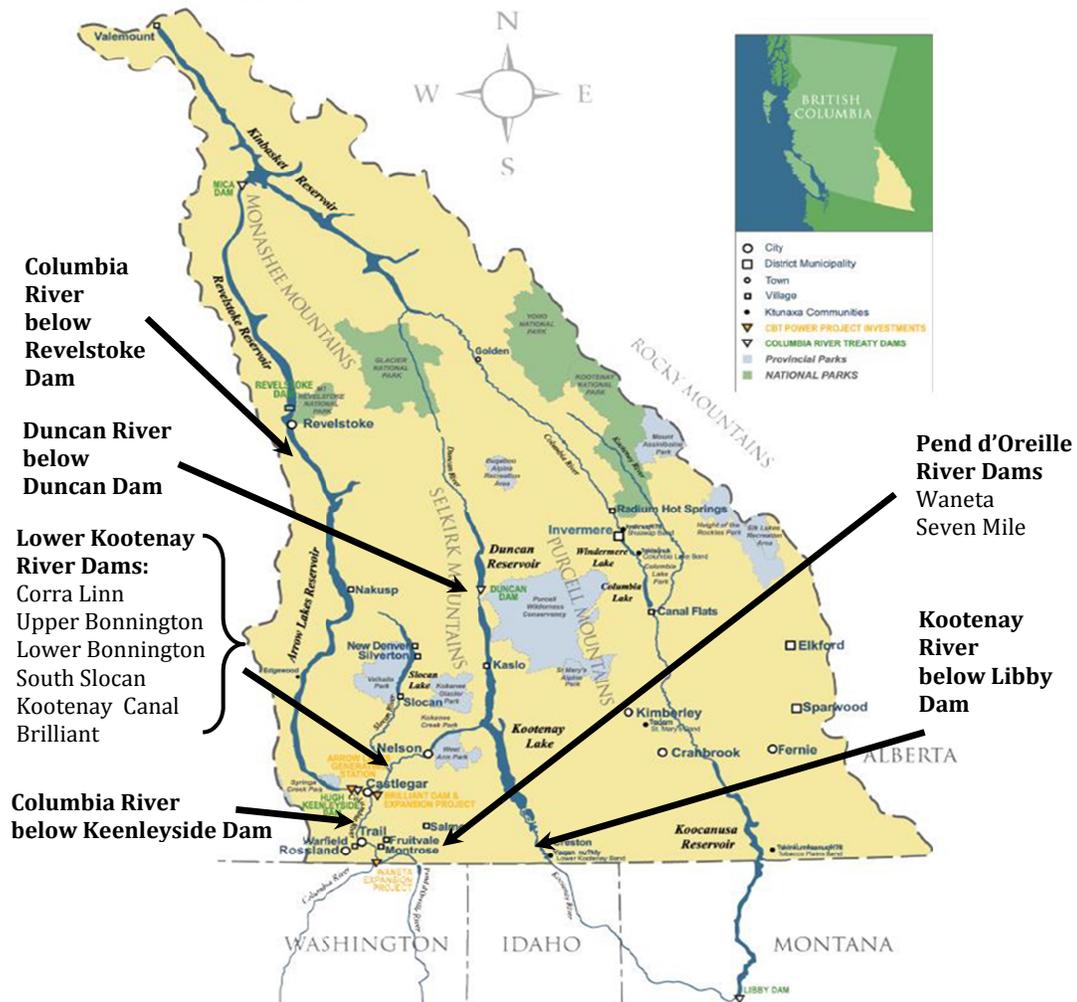
## Upper Columbia Basin Environmental Collaborative (UCBEC)<sup>1</sup> Summary of Discussion Paper (version 2) – April 17, 2020

Download the full Discussion Paper at <http://www.kootenayresilience.org/columbia-river-treaty>

**WHO:** UCBEC is a partnership, comprised of a cross-section of Canadian environmental voices from the Upper Columbia Basin. We represent provincial, regional and local environmental organizations, supported by scientific, technical and policy experts.

**WHAT:** The purpose of our Discussion Paper is to present proposals for further studies and operational changes to dam operations that lead to improvements in ecosystem function in the Canadian portion of the Upper Columbia Basin (UCB). The scope includes the Columbia, Kootenay and Pend d'Oreille Rivers. The focus is on improving aquatic, wetland, riparian and terrestrial ecosystems in reservoir footprints and river reaches downstream of dams.

**WHY:** Since Columbia River Treaty negotiations began in May 2018, Canadian and US negotiating teams have been evaluating how a modernized treaty could improve ecosystem function alongside other Treaty purposes. However, there is also a need to advance research and discussion on this topic in the public realm. Environmental NGOs (such as those involved in UCBEC) can contribute relevant ecological expertise and a unique perspective and help inform discussions on appropriate tradeoffs between different values.



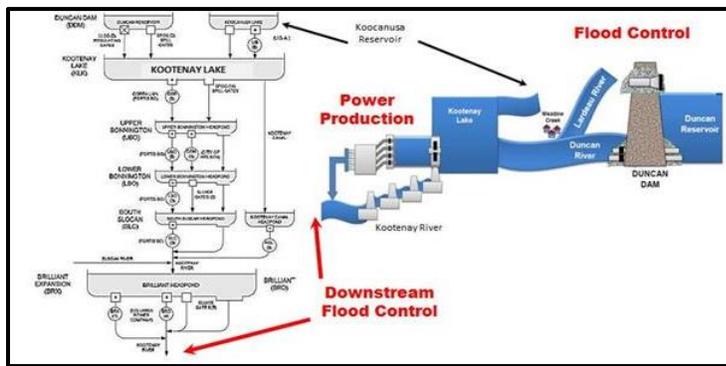
Canadian Columbia, Kootenay and Pend d'Oreille Rivers (adapted from Columbia Basin Trust)

<sup>1</sup> Contact Martin Carver (UCBEC Lead) at [aqua@netidea.com](mailto:aqua@netidea.com) for further information.

## Summary of Proposed Measures to Improve Ecosystem Function

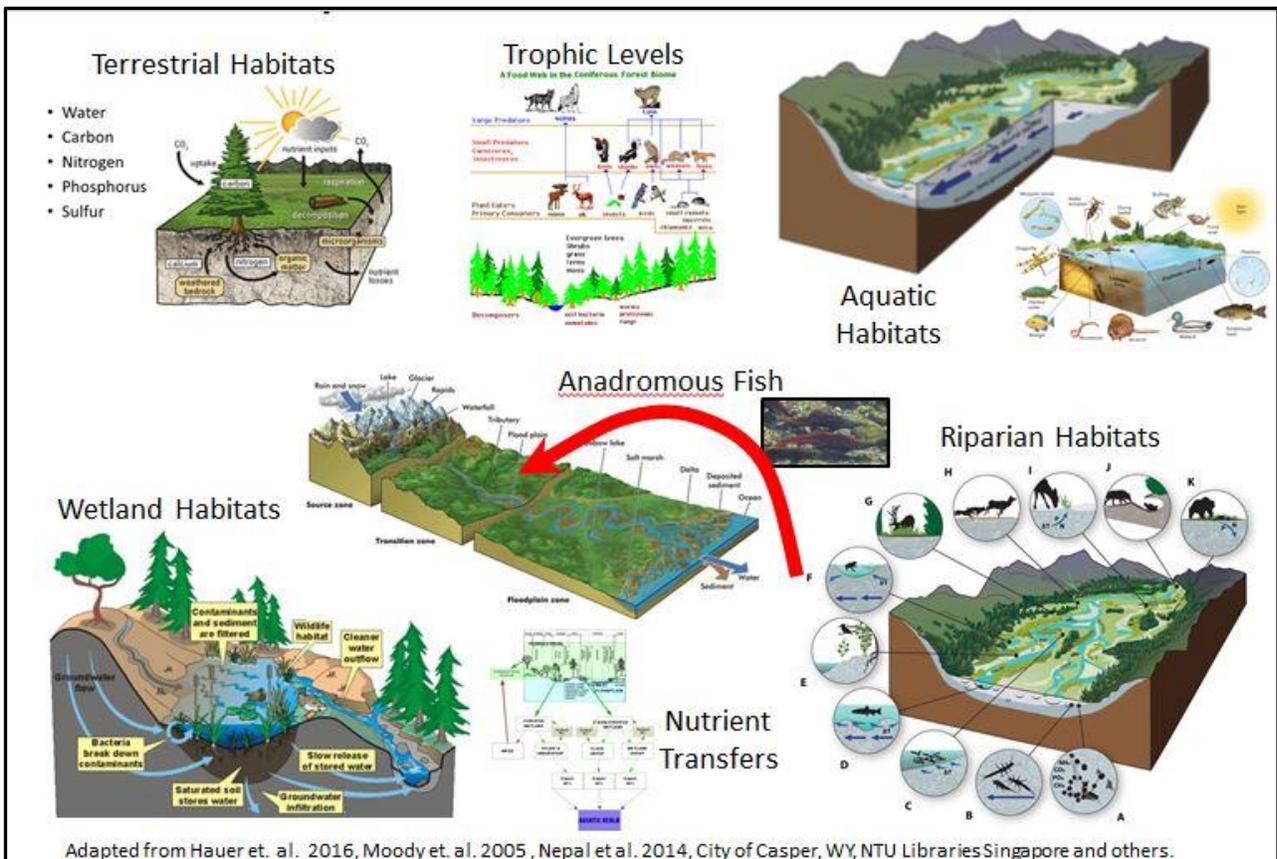
- Add ecosystem function as a third primary purpose of the Treaty, equal to the existing purposes of flood-risk management and hydropower generation.
- Ensure equal and effective representation of ecosystem function objectives in all dam operations and related decision-making including Treaty governance.
- Establish an ongoing funding source for ecosystem restoration and mitigation programs, including for adaptive management research that proactively and continually evaluates management for improvements.
- Ensure there is flexibility in dam operations to improve ecosystem function in the UCB, respond to future climate disruption, and implement adaptive management.
- Specific proposals for improving ecosystem function in each reservoir and river reach in the UCB are provided in the Discussion Paper.

(below) Schematic diagram of Canadian dams on Kootenay River demonstrating system functions as seen by managers operating to maximize the two ecosystem services specified in the Treaty.



**UCBEC's primary objective is to shift the focus of watershed management – both within and outside the Treaty – from the upper figure to lower figure.**

Doing so will restore biodiversity, build long-term ecosystem resilience and, as a by-product, achieve the persistence and productivity of the ecosystem services desired. With increasing climate disruption, this is critical for ecological and human communities.



Adapted from Hauer et. al. 2016, Moody et. al. 2005, Nepal et al. 2014, City of Casper, WY, NTU Libraries Singapore and others.

(above) Schematic representation demonstrating complexities of a fully functioning watershed.