

Topic: EFN policies - opportunities and barriers

Title:

Achieving Late Summer Flow Targets During Drought in the Nicola River Watershed Through a Combination of Reservoir Releases and Curtailment of Surface Water and Groundwater Withdrawals

The Nicola River is a Fraser River tributary that lies in the rain shadow of the Coast Mountains. The arid watershed provides spawning and rearing habitat for chinook salmon, threatened coho salmon and endangered steelhead. In addition to their ecological and commercial values, these fish are integral to the indigenous peoples' culture. Low water levels and high temperatures in the late summer limit fish survival. Water is required for industrial agriculture and municipal purposes. Since 2015, each year has brought a new extreme climatic event (e.g., hottest summer, earliest freshet, driest summer) to exasperate the typical late summer drought. In 1997, legal provisions were instated to restrict surface water extractions when flows drop below a critical threshold whereby fish populations are at risk of irreversible damage. More recent water management changes in the Nicola watershed result from the new British Columbia *Water Sustainability Act* (WSA) (2016), new water supply forecasting tools (2017) and increased recognition of the legal requirement to consider the rights of indigenous people (2018). Prior to 2016, there were no provisions to licence groundwater extractions. The WSA now requires a licence for groundwater withdrawals and includes provisions to curtail both groundwater and surface water extractions when flows drop below the critical threshold. Curtailment of water extractions is particularly challenging in the Nicola because releases from upstream storage are also considered. Our poster describes the legal, technical and cultural frameworks that integrate reservoir releases with surface water and groundwater extractions to conserve the range of watershed values.

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