

# Alouette River Salmon Restoration Program

Alouette River Management Society, July 23, 2020 Update

**Background Information:** In order to assess the feasibility of anadromous sockeye salmon re-introduction into the Alouette Reservoir, studies are being conducted to determine the return success of sockeye adults to the Allco Fish Fence. 2020 is the fourteenth year of studying Alouette adult sockeye salmon enumeration. Originally, through BC Hydro's Water Use Plan for the Alouette Watershed, a spring surface release from the Alouette Dam allowed for kokanee/sockeye smolts to migrate to the ocean from 2007 to 2020. The first surface releases occurred in 2005 and in 2007 the first adult sockeye returned to the Alouette Watershed.

The main purpose of the original seven-year Alouette Adult Sockeye Enumeration monitoring program as funded under BC Hydro's Alouette Water Use Plan was to establish whether out-migrating Alouette Lake Reservoir kokanee/sockeye smolts were capable of adapting to an anadromous existence. Adaptation is considered successful when sockeye return from the ocean environment to spawn in Alouette Lake. Additionally, the original monitoring program sought to establish the timing and genetic structure of the returning sockeye run and to assess whether ocean survival rates of returning re-anadromized kokanee were comparable to that of sockeye stocks found elsewhere.

Tissue samples were also collected from all sockeye in order to ensure that returning adults were Alouette stock and not strays from other nearby coastal systems. The viability and authenticity of kokanee smolt "re-anadromization" is dependent on the stocks ability to adapt to salt water conditions, to adopt behavioural strategies to compete and avoid predation in an ocean environment, and to recognize and return to their native lake/stream system to spawn. Through the Alouette Adult Sockeye Enumeration program, sockeye returning to the Alouette River are collected, counted, aged, genetically tested and released into Alouette Lake.

Year of Adult Return	Number of Returned Adults	Number of Adults Released Alive into Alouette Reservoir
2007	38	5
2008	54	53
2009	45	43
2010	115	103
2011	11	8
2012	45	43
2013	10	7
2014	0	0
2015	4	0*
2016	6	6
2017	3	1
2018	15	15
2019	15	14
<b>Totals</b>	<b>361</b>	<b>298</b>

\*An experimental hatchery program was running in 2015 and therefore no sockeye were returned to the lake, rather they were transported to the hatchery. Unfortunately, all four sockeye were pre-spawn mortalities.

So far, the 2020 Alouette sockeye salmon run has seen sixteen adults return.

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The Alouette River Sockeye Restoration Program is a partnership between ARMS, BC Hydro, Fisheries and Oceans Canada, local First Nations including Katzie First Nation, Ministry of Environment, and LGL Ltd.

The adult Sockeye enumeration program is part of a larger body of work, the “Alouette Watershed Sockeye-Fish Passage Feasibility Project” which is funded by the Fish and Wildlife Compensation Program (FWCP). The FWCP is a partnership between BC Hydro, the Province of B.C., Fisheries and Oceans Canada, First Nations, and public stakeholders to conserve and enhance fish and wildlife in watersheds impacted by BC Hydro dams.

The Alouette River Management Society gratefully acknowledges the financial support of the Fish and Wildlife Compensation Program for its contribution to the “Alouette Watershed Sockeye-Fish Passage Feasibility-Year 4” project.

