



Big Bar Landslide Response: Update

March 1-3, 2022





2021 Migration Season - Salmon returns

- Due to favourable river conditions and improvements made to the “nature-like” fishway, over 1.9 million salmon voluntarily passed the barrier in 2021, including ~54,000 Early Stuart sockeye (ESS)
- The preliminary estimate of 45,000 Chinook, 15,000 coho, 120,000 pink and 1,720,000 sockeye successfully navigated the slide and were observed upstream at the Churn SONAR between July 1 and October 18, 2021
- Note – majority of Chinook migration occurred after July 1st and only ~600 migrated into and through the slide in May and June
- Chinook passage – unimpeded 3,650 cms and maximum passage at 4,560 cm

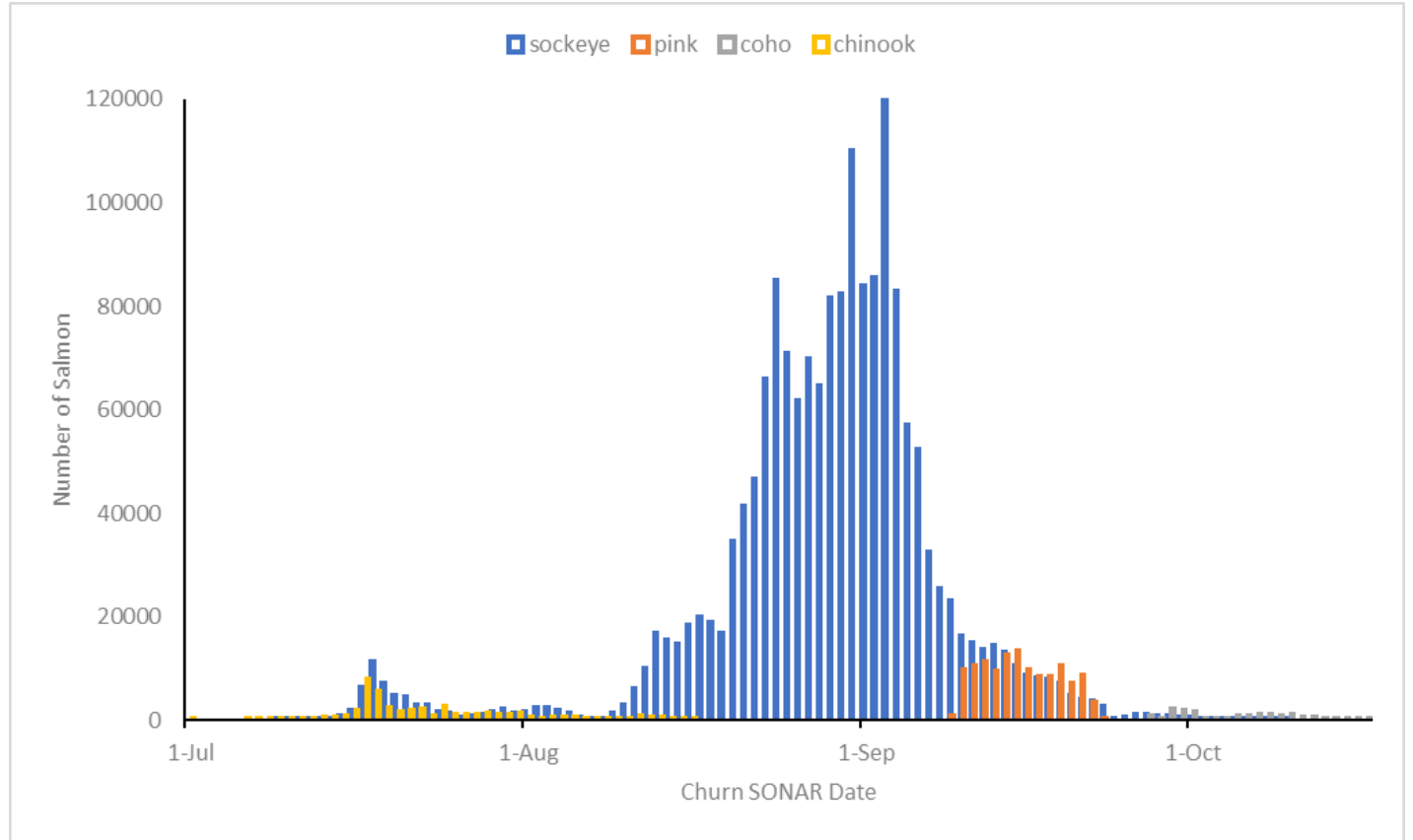


Figure 1. Expanded daily estimates of total Fraser salmon, by species, at the Churn Creek hydroacoustic site between May 2021





Early-Timed Sockeye – Remaining Challenge

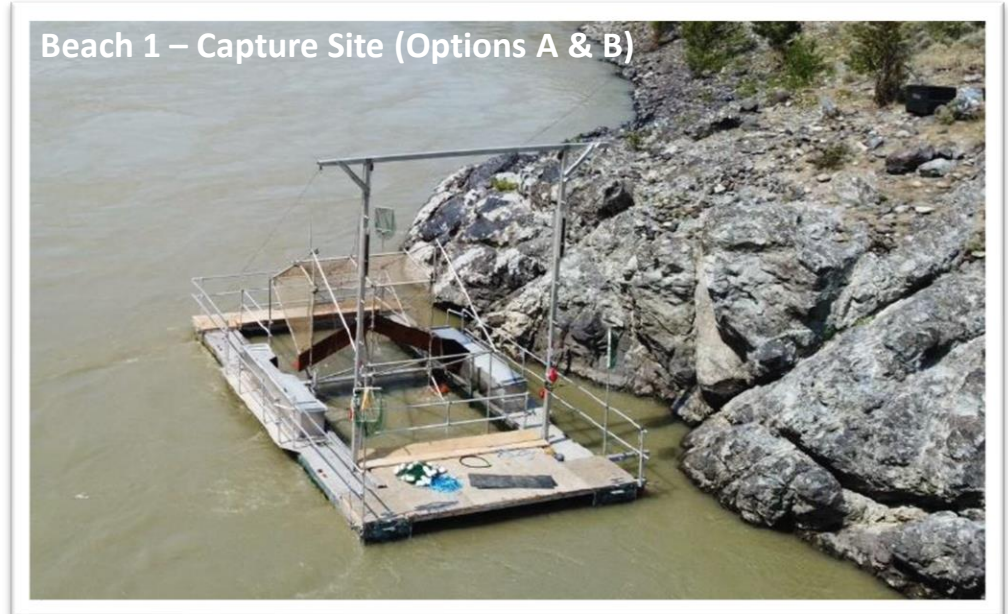
- Big Bar, Hells Gate and other locations can slow or block ESS and cause high mortality depending on the river flows each June
- Flow threshold at Big Bar stopping ESS is unknown; it's higher than 3,050 cms but not likely higher than 3,650 cms
- Statistically, every 1 in 4 years (25%), flows will be higher than 3,050 cms when ESS arrive at Big Bar, blocking passage
- Every 1 in 10 years (10%), flows will exceed 3,650 cms, blocking ESS arrivals at Big Bar
- Hells Gate is another barrier associated with high mortality events with ESS downstream of Big Bar every 1 in 10 years (10%) due to high flows; any surviving sockeye would then migrate to Big Bar and be blocked, which adds to the frequency/probability of blocked passage (1 in 10 years, impact ranges from 52% to 92% mortality, average of 75%).
- Based on historical data, global warming is causing extremes reducing predictability



2022 Migration Season – Preparation & Planning

- Implement “truck and transport” operations
- Continue monitoring salmon migration through the slide area to gather data needed to understand long-term solutions, and to trigger in-season management and mitigation actions
- Deliver emergency enhancement for early-timed Chinook, ESS and other priority sockeye stocks

Transport Option	Description
Option A – Short Haul via Beach 1 to French Bar	<ul style="list-style-type: none"> ■ Trap fish in fish wheels below slide ■ Transport 3 km by truck ■ Release at French Bar
Option B – Long Haul via Beach 1 to Stuart Lake	<ul style="list-style-type: none"> ■ Trap fish in in fish wheels below the slide (or other downstream location) ■ Transport ~500km km by truck ■ Release to Stuart River or Fraser River below Nechako confluence



Long-term – Structured Decision-Making (SDM)

- Need a permanent solution for safe fish passage at Big Bar
- With the support of First Nations partners and the Province of British Columbia, DFO working with 3rd party consultant (Compass) on SDM process
- SDM process will:
 - be used to redefine the passage problem;
 - determine project and management objectives;
 - research alternative management actions and their consequences and trade-offs;
 - arrive at a solution that satisfies the project objectives; and
 - draw from existing information and incorporate views, opinions and advice from stakeholders and subject matter experts.
- First phase began in December 2021, second phase to begin in spring 2022

