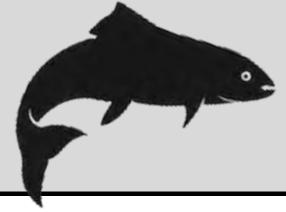



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CREWS IMPLEMENT ADDITIONAL MEASURES IN ANTICIPATION OF HIGH WATER AT BIG BAR



TOP: The fish ladder on June 5 showing high water at the site.

In early June, with water levels expected to exceed 7,000 cubic metres per second (cms), crews shifted focus to prepare for high water. Components of the concrete fish ladder structure were temporarily dismantled, precision monitoring equipment removed and the fish wheel relocated to prevent potential harm.

On June 7, freshet flows peaked at 6,400 cms but have since started to drop, allowing crews to safely return and reassemble equipment. On the same day, “trap and transport” crews from High Bar First Nation and

Stswecem'c Xgat'tem First Nation arrived onsite for their first shift of the season. When fish start to arrive at site, transport by truck will only occur when they are unable to migrate past the barrier on their own; this approach will minimize handling and risk to the salmon.

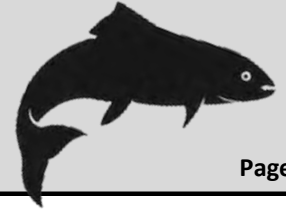
Rock fall protection work is ongoing, including repairs to the north mesh, a mini-drape net hung on the south slope and bolting of rocks along the Razorback. Due to the current high water, monitoring activities have been temporarily paused.

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2021 ENHANCEMENT OPERATIONS TO BEGIN SOON



PICTURED: The fish wheel at Big Bar will collect fish for both transport and radio tagging. A second fish wheel in Lillooet will collect Early Stuart sockeye for enhancement and for radio tagging to track their progress past the slide and through the Upper Fraser watershed.

Fish wheel operations in Lillooet are expected to begin in early July 2021.

The Gitksan Watershed Authorities, St'at'imc Eco Resources and Splitrock Environmental, in partnership with DFO, intend to capture approximately 800 Early Stuart sockeye to serve as brood stock for emergency conservation enhancement. Collecting these at-risk fish downstream of the slide will allow quicker transport to the DFO facility at Cultus Lake, reducing stress to the fish.

The Lillooet fish wheel will also be used to capture and radio tag salmon to track migration.

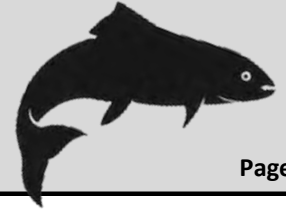
Due to the current high water, monitoring activities have been temporarily paused.

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FIRST NATIONS AND DFO RELEASE 60,800 EARLY STUART SOCKEYE FRY FROM 2020 TO SUPPORT SALMON POPULATION IMPACTED BY THE BIG BAR LANDSLIDE



PICTURED: On June 8, Guy Prince (left) was joined by fellow community members from Nak'azdli Whut'en and DFO fisheries technicians (middle) to successfully release 60,800 Early Stuart sockeye fry (right) into Gluske Creek.

On June 8, 2021, First Nations and DFO released 60,800 Early Stuart sockeye fry into Gluske Creek near Fort St. James and into Hudson Bay Creek near Takla Landing as part of the ongoing Big Bar landslide response. The eggs were collected from adults captured at the slide site in the summer of 2020. The release builds on the emergency enhancement work underway since 2019; it is a critical step towards supporting the long term survival of the at-risk early-season sockeye.

Planning for the release began in 2020 in partnership with the Takla Nation, Nak'azdli Whut'en, Tl'azt'en Nation, the Carrier Sekani Tribal Council, Upper Fraser Fisheries Conservation Alliance and staff from DFO's Salmonid Enhancement Program.

These fry were reared from eggs and milt collected from adult salmon that arrived at the landslide site during the 2020 migration season. The adults were transported to

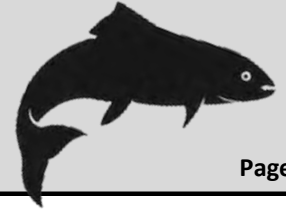
the Cultus Lake Research Laboratory outside of Chilliwack, where they were held until they matured, at which point eggs and milt were collected. Following several weeks of incubation at the laboratory, the eggs were then relocated to Inch Creek Hatchery near Mission, where they were reared until they were transported to their natal streams on June 8. The released fry will now imprint on creeks, streams and lakes in the Stuart River watershed. In spring 2022, they will make the 1,200-kilometre journey to the ocean as sockeye smolts. After two or three years in the Pacific, they will return to the Fraser River and migrate back to their natal streams in the Takla-Trembleur region of this watershed.

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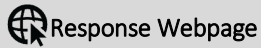


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The emergency enhancement program targeted Early Stuart sockeye blocked by the Big Bar landslide in 2019. The resulting juvenile sockeye were released into the Stuart River watershed in 2020.

Some of the lowest returns of early-season Fraser River sockeye were recorded in 2019 and 2020. While the natural passage of later timed sockeye to the Chilko and other Upper Fraser systems were more successful, a number of factors impacted the early migrating Fraser River salmon.

In 2019, fish were stalled for significant time at the slide area while repeatedly trying to pass through the canyon. This delay was compounded by severe flooding in the Chilcotin and Blackwater watersheds that July. In trying to pass the slide, they injured themselves and depleted their remaining energy reserves. Other salmon that were captured and carried over the slide in transport tanks also had low survival rates due to exhaustion and injury. In 2020, in addition to the remaining slide debris, severe high-water conditions on the Fraser River watershed slowed and stopped the migration of earliest timed sockeye stocks, devastating population numbers. Even the fish that were able to pass the slide mostly died from exhaustion along their migration routes.

In both 2019 and 2020, less than one percent of the Early Stuart sockeye that entered the Fraser River from the Pacific Ocean reached the Stuart River watershed to spawn. Therefore, fish taken into DFO's Salmonid Enhancement Program are a critical part of recovery efforts for a population under severe conservation threat and listed as endangered by the Committee on the Status of Wildlife in Canada.

Recent upgrades to DFO hatcheries, such as Inch Creek's expanded capacity, have enabled DFO to broaden its Early Stuart sockeye strategies. In addition to the 60,800 spring fry release, another 50,000 Early Stuart sockeye parr (a stage between fry and smolt) will be released in late summer 2021. Combined, these releases will support higher juvenile-to-adult survival rates. Most recently, on May 12, 11,000 Bowron Lake sockeye fry, another stock impacted by the landslide, were also released by helicopter into their natal stream. DFO and Indigenous partners will evaluate the results of this work when the adults return to spawn in 2024 and 2025.

This season, plans are in place for DFO and First Nations to conduct a third year of emergency conservation enhancement for sockeye and Chinook as part of the Big Bar landslide response. This work will be supported by Upper Fraser First Nations' facilities, community hatcheries and DFO facilities.

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REFINING 2021 SUMMER OPERATIONS WITH FIRST NATIONS GUIDANCE

The “trap and transport” and emergency enhancement programs strive for continuously better returns. The 2021 approach was developed based on feedback from First Nations partners who were on the front lines of the 2019 and 2020 summer operations. This included members of the truck transport and fish wheel operations, technical working groups and the Joint Executive Steering Committee. Building on these collective experience and knowledge, the response team further refined its plans for a more efficient and seamless execution in 2021.

This year’s approach was modified to include a DFO and First Nations co-managed operation. The first step was the creation of an organizational structure and the appointment of DFO and First Nations co-leads for onsite management. Clearly defined roles and work descriptions were developed and decision-making processes were established. This structure ensures there are adequate First Nation technical experts and experienced DFO staff in place to support “trap and transport”, fish wheel and natal stream collection operations.

Other feedback being implemented this year includes:

- Focused task groups with members working throughout winter 2020 and spring 2021 to develop enhancement evaluation frameworks with an emphasis on natal stream Chinook collection;
- Improved design, development and implementation of “truck and transport” operations, including water-to-water transfer to minimize handling stress on fish;
- Moving enhancement operations for Early Stuart sockeye to Lillooet to alleviate pressure on staff and equipment; and



PICTURED: DFO staff painted parts of the hopper with white marine paint to protect fish from abrasion from the metal surface and to increase visibility for counting the salmon.

- An upgraded road network to accommodate large transport trucks with pull-out locations and improved signage for safer and more efficient traffic flow.

With a tripartite governance structure in place, First Nations have been actively engaged in the operations at Big Bar since the response began in 2019. This unified approach to governance serves as a model for managing complex problems. As the 2021 summer operations progress, the continued commitment and guidance of leadership and community members remains key to helping salmon reach their spawning grounds this year and for the years to come.

