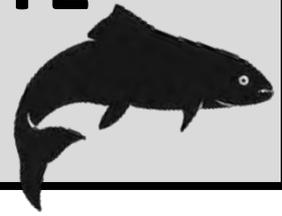


BIG BAR LANDSLIDE UPDATE

NOVEMBER 6, 2019



Incident Webpage



BC River Forecast

Big Bar Slide Response Enters Second Phase

Fisheries and Oceans Canada was notified of a landslide near Big Bar, British Columbia on June 23, and investigated this remote area of the Fraser River on June 25. The Big Bar Incident Command System (ICS) and Incident Command Post (ICP) were established on June 29 in Lillooet, BC with experts and response specialists from the Government of Canada, the Province of British Columbia and First Nations to respond to this emergency situation.

Phase 1 of the Operation, from July through September 2019, successfully achieved the identified short-term objectives, ensuring the safety of personnel and the public and moving salmon past the slide by whatever means possible. Trap and transfer, plus the partial re-establishment of natural fish passage through a combination of rock manipulation and lower water levels as of the second week of September, resulted in thousands of salmon migrating above the slide site.

Through the month of October 2019, the government-to-government-to-government (3G) response to the Big Bar Landslide fully transitioned from the Emergency response ICS organization, to an ongoing Project Response. Construction site preparation work adjacent to the slide area and on the west and east banks concluded mid-October. Water velocity and levels, plus rock stability and security at the site, are still being actively monitored, however. Currently there is minimal on-site activity while the urgent project planning for winter construction work takes place off-site.

While the majority of the 2019 Fraser salmon migration has now concluded, continued sustained efforts will be required in the short and long-term, possibly even into years ahead, to reduce the impact of the landslide on future salmon stocks. Work is also ongoing to finalize the scientific evaluation of the success of the measures taken during the emergency response and to identify lessons learned for future implementation. This is Phase 2 of the response.

The majority of winter construction is expected to happen prior to the spring freshet, while water levels are expected to be at their lowest. The freshet is anticipated to begin in March. This will bring increased water levels and velocity back to the slide area, making it difficult to safely continue any instream construction works.

We are fully aware of the high stakes involved. The Fraser River is one of the largest salmon producers in the world. More than 140 First Nations in BC are annually licensed to fish Fraser salmon for food, social and ceremonial purposes; Indigenous fishers also represent a significant portion of the commercial salmon fishery.

We are still waiting for the final results of our radio tagging and monitoring program related to the effectiveness of the fish transport system. However, we do know that some fish that were transported, particularly the earlier runs of salmon, had been holding downstream and exhausting themselves trying to get past the slide. Based on their condition and experience of observing stressed fish, we knew that fish moved would still be challenged to make it to their natal stream and successfully spawn. However, no action would have meant no early salmon



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runs getting to their home stream (Spring and early Summer). Looking forward, expected returns of sockeye and chinook in four to five years is challenging to predict this early in the salmon's life cycle.

In 2019, the trap and transport was initiated quickly under an emergency response order midway through the salmon migration season. Recognizing an urgency to prepare for next season, we are currently pursuing and planning to more effectively assist salmon migration in 2020, should this be required. On-going rock manipulation through winter construction will hopefully reduce or eliminate the trap and transport requirement.

A primary option to improve passage is the use of explosives, combined with the use of heavy equipment, to remove a large portion of the rock presently creating the fish barrier. During Phase 1, Incident Command received support from the US Army Corps of Engineers for its proposed engineering plans. Both the Departments of National Defence and the Canadian Armed Forces have also been engaged, and a number of experts in the use-of-explosives and heavy construction continue to be engaged as part of the current project planning process. An expert panel commissioned by the BC Premiers office and the Minister of Fisheries and Oceans Canada also reviewed the options being considered and provided endorsement to the approaches taken to date. As water levels and velocities continue to decrease to winter low flow levels, opportunities for additional underwater survey and visual observation of the rock debris in the River will assist in refining project plans. In addition, if a longer-term, more permanent solution, such as the construction of a fish passage structure, is deemed necessary after an intensive construction period this winter, the work accomplished and further data acquired next season will inform the feasibility studies to inform those decisions.

First Nations have been engaged from the outset of the Big Bar Landslide incident and remain an integral part of the planning, operations, and decision-making process. Direct First Nations involvement continues at the Joint Executive Steering Committee (JESC) and other levels, while the First Nations Leadership Panel guides the First Nations JESC representative. As the Incident Response moves into the next phase, First Nations involvement will occur at other levels as well. First Nations' traditional ecological knowledge continues to inform operations, and First Nations specialists and personnel are expected to be part of the on-the-ground activities during winter 2019/2020 and beyond.

The government-to-government-to-government ICP established in Lillooet to oversee and support work in the field, as well as the Unified Command Structure that was implemented, was unique and at the heart of the initial phase of the response. To ensure continuity of direction, retain the deep knowledge gained during the emergency phase, and demonstrate the ongoing commitment to transparency and a robust 3G action team — the Joint Executive Steering Committee (JESC) members, dedicated project leads and select environment and engineering specialists, will remain in place to lead this important next phase.

As we move into the very difficult winter construction and rock work phase, the Big Bar Landslide Project Response JESC will issue more information updates directly, and via the website, to report out on our actions going forward, and the outcomes of our post-mortem evaluations of the Big Bar Landslide emergency response operation.

