

BIG BAR LANDSLIDE UPDATE

MAY 29, 2020

 Response Webpage

 BC River Forecast



ONGOING ONSITE OPERATIONS



LEFT: Fitting a water pump pipe to the fish ladder for the Whooshh Passage Portal™

This week, a spike in water levels and heavy rain slowed progress at the site. Work on the foundation for the pneumatic fish pump system, the Whooshh Passage Portal™, was suspended for several days. In addition, the DFO salmon monitoring team continues to encounter high water levels south of the slide site, which is preventing the installation of key monitoring equipment.

Despite these challenges, work continues on the Whooshh™ installation. Progress is being made on the electrical components, mounting the intake piping and hangars for the tubes, and placement of the last two in-river pumps. The prime contractor,

Peter Kiewit Sons ULC, also continued scaling work and the installation of rock fall protection mesh.

The Province of B.C.'s River Forecast Centre is predicting water flows to reach up to 6,000 cubic metres per second (cms) for this portion of the Fraser River. Crews are taking every safety precaution as they continue to work onsite during these flood conditions. This situation may slow progress as water levels rise further. Teams are currently working diligently to redesign the Whooshh™ installation to ensure it performs in these conditions.

UPDATE CONTINUES ON PAGE 2

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MONITORING FISH MOVEMENT AT THE SLIDE SITE

Fish monitoring provides the key to understanding fish population size, movement and health in near real time. DFO will use this data to calculate the migration time of individual fish of select species, size and gender. Between now and the end of the migration season in November, two types of monitoring methods will be used above and below the Big Bar landslide site – hydroacoustic and radio tagging.

Hydroacoustic monitoring uses sonar technology to count the number of salmon successfully passing through the slide site and to track their continued migration. This method is non-invasive and does not require fish handling. The equipment counts the number of salmon and technicians can delineate between species in most cases but it does not provide data on which stocks are passing by. Each salmon stock returns to a different spawning ground. Hydroacoustic monitoring stations are currently operating below the slide site near the Big Bar ferry and 40 km upstream at Churn Creek.

Radio tagging involves inserting a tag into a fish's stomach or attaching it to their back. The internal tag does not affect migration as salmon typically do not eat while moving upstream. The radio tag emits a signal that is detected by a shore-based receiver. The monitoring team has installed the radio receiver network to monitor fish passage through the main stem of the Fraser River and into major spawning streams. Location data from these tags provide the passage rate of fish and the survival-to-spawn rate of the



PICTURED: Working platform used to install the Whooshh Passage Portal™ tubes

stocks. The team will also collect a tissue sample for genetic stock identification and a small blood sample to assess the energy and stress levels of the fish expected to pass the slide site.

UPDATE CONTINUES ON PAGE 3

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MONITORING FISH MOVEMENT AT THE SLIDE SITE



Both monitoring methods were used in 2019 during the emergency response phase to track fish passage at the slide site. The team has refined and improved its approach based on information gathered through last year's response by:

- expanding the upriver radio receiver network to improve data collected on the survival-to-spawn rate;
- identifying better sites for tag application to minimize the tagging effects (see below) on fish; and,
- linking fish behaviour observations to velocity maps with detailed tracking through the slide area.

The monitoring team has been onsite since May 19, however, the high freshet flows from the region's rapidly melting snow pack are impacting the deployment of equipment. Radio tagging and sonar counting operations are underway. DFO expects to receive fish passage data in the coming weeks and will share this information in upcoming issues.



TOP: Aerial view of the working platform and rock mesh installation

BOTTOM: Generators for the Whooshh Passage Portal™

Tagging effects refers to how fish change their behavior as a result of being tagged. The team is working to minimize these effects to learn what "normal" fish do in the face of a barrier to migration similar to the Big Bar landslide.