


BIG BAR LANDSLIDE UPDATE

JULY 12, 2021



 Response Webpage

 BC River Forecast

CREWS OVERCOME A RAFT OF ENVIRONMENTAL CHALLENGES

From record-breaking heat and raging wildfires to high water and heavy rain, the Big Bar response has been battling tough conditions over the last two weeks.

McKay Creek Wildfire

On June 29, the BC Wildfire Service (BCWS) alerted crews to the McKay Creek wildfire burning 50km south of the Big Bar camp, and quickly moving north. The fire had blocked the West Pavilion Road, the only direct land access route to the landslide site.

Due to the remote location and as a safety precaution, all First Nations, DFO staff and Peter Kiewit Sons ULC (Kiewit) crews were evacuated, crossing the Fraser River by boat and heading to Clinton later that evening. Operations at all locations, including the landslide site and French Bar Creek, were temporarily paused. The initial evacuation alert soon became an order.

When the evacuation order was lifted on July 1, a small crew of essential workers returned to the site to better protect the camp from the McKay Creek fire, relocating fuel and equipment, and mobilizing pumps, hoses and water trucks. With the return of high water, crews also worked to protect the concrete fish ladder from river debris.

Beginning July 5, teams were remobilized at the West Beach work site to assess the damage from high water and begin repairs in advance of the sockeye arrival in the coming weeks.

As of July 7, the Big Bar response team is also monitoring wildfire activity on the east side of the Fraser River, which has closed Jesmond Road, one of two access routes to Clinton. The camp remains in a restricted area due to the wildfire and cannot be utilized.

The Big Bar response team would like to especially thank staff from BCWS, Kiewit, Prime Quality Construction and the Gitksan Watershed Authorities for supporting the swift evacuation of the Big Bar area as the McKay Creek fire came within 7.5km of the camp.



TOP: McKay Creek Wildfire

BOTTOM: Smoke from the McKay Creek fire, north of Lillooet

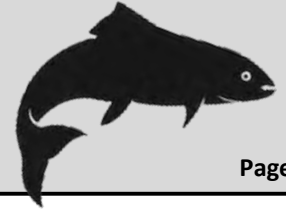


UPDATE CONTINUES ON PAGE 2




BIG BAR LANDSLIDE UPDATE

JULY 12, 2021



Page 2

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TOP: Crews returned to the slide site to prepare for high water levels, including making adjustments to fish ladder equipment to protect against damage.

BOTTOM: Gear was moved to the west side of the Fraser River in response to the wildfire evacuation order.



Before the wildfire, crews had successfully completed the first tests of the fish transport system using the concrete fish ladder and the new fish transport trucks. Kiewit also worked on additional rock stabilization.

Spiking Temperatures

As the rest of the province experienced an unprecedented heat wave, temperatures at the slide site reached over 50°C in the shade. To ensure the health and safety of team members, operations, shifts and breaks were adjusted to ensure crews were managing the extreme heat.

Thunderstorms, Heavy Rainfall

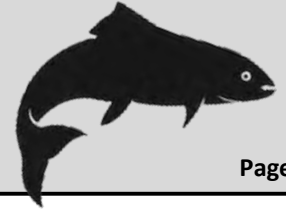
On July 1, heavy rain forced mud and debris onto one section of the Chinook Main Road, a critical route for “trap and transport” operations. All fish transport to French Bar Creek are paused until the Province’s engineering team completes the necessary repairs in the coming days.

UPDATE CONTINUES ON PAGE 3



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ENVIRONMENTAL IMPACT ON MIGRATING FISH

Fish monitoring efforts at Big Bar are key to understanding the response of salmon populations to in-river passage conditions, passage improvement efforts to date, as well as the local and regional effects of climate change. Monitoring also helps assess their distribution, productivity and growth.

During the most recent runs of Fraser salmon, impacts associated with climate change have been observed in their ecosystems. These effects at Big Bar include warmer temperatures, more frequent heatwaves, extreme rainfall and rapid snowmelt causing high river flows.

As a result of this past week's extreme weather, Big Bar crews are even more mindful of assessing the health of migrating salmon.

During the recent heatwave, the Fraser River reached water temperatures of almost 18°C. Studies have shown that salmon get stressed when exposed to water temperatures over 19°C, which in turn impacts growth and reproduction, and can be lethal to fish. The experience of the adults during migration can have intergenerational effects on their offspring's survival and development. For example, high stress on female adults can affect their offspring's swimming performance and predator avoidance behavior. Temperatures over 20°C can cause in-river mortality before the adults reach their spawning grounds.

As water levels drop this week and radio tagging activities resume, fisheries technicians are looking for signs of stress in fish. Most recently, Chinook caught at the fish wheel were observed to be in good health—a positive sign that salmon can continue their journey past the slide site.



PICTURED: Radio tagging activities resumed in Lillooet after the evacuation alert was lifted; radio-tagged Chinook on July 7, 2021.

2021 BIG BAR SALMON COUNTS ([Daily counts available online](#))

Date	Salmon radio tagged below the Big Bar landslide site	Salmon transported by truck past the slide site and released upstream		Fish 40 km upstream of Big Bar landslide site (detected via SONAR)
		Chinook	Sockeye	
TOTAL as of July 11	198	15	-	957

