

# Flooding averted after landslide blocked Meager Creek

Pemberton-area residents allowed to return to their homes after blocked river works its way through pile of debris

BY VIVIAN LUK, VANCOUVER SUN AUGUST 9, 2010



Water and ice backs up on the Meager Creek behind a earthen dam.

**Photograph by:** Bonny Makarewicz, For PNG

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- **Where:** [Mount Meager, 65 kilometres north of Pemberton, 150 kilometres north of Vancouver](#)
- **When:** 5:30 a.m. Frida, August 6, 2010
- **Volume:** 40 million cubic metres of rock, sand and debris
- **Size:** 300 metres wide and two kilometres long
- **Speed:** 30 metres per second
- **Impact:** The slide initially formed a dam across Meager Creek and Lillooet River, creating a lake. Fears of the dam collapsing and flooding the Lillooet Valley subsided Saturday after a breach in the dam slowly released the water. An evacuation alert was rescinded and residents have returned to their homes. No one was injured.

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Nearly 1,500 residents were allowed to return to their homes near Pemberton and the Lillooet River Valley on the weekend after a massive rock slide thundered down Mount Meager on Friday.

But their worries are not over.

Nobody knows what the slide's long-term impact will be, but it is expected to increase the possibility of future flooding — and the debris will require close monitoring, said Rick Guthrie, a regional geomorphologist at the Ministry of Environment.

The landslide swept down from Capricorn Glacier on Mount Meager and formed a dam that blocked Meager Creek and the Lillooet River. A lake about 60 kilometres away from Pemberton was formed, and fears of the dam bursting resulted in an evacuation order. The order was lifted after Meager Creek naturally carved a small breach in the dam that emptied the lake slowly.

RCMP say the landslide caused no injuries or deaths.

Flooding during the next rainy season — between November and February — is the most immediate concern.

“All that sediment that is now between the outlet of Meager Creek and Lillooet River is going to be transported downstream,” Guthrie said.

“It will cause the river to change its behaviour. In some places it may erode, in others it may deposit. If we have large plugs of sediments and debris jams then we can get local flooding.”

The massive amount — about 40 million cubic metres — of rock, sand and debris will need to be monitored closely to determine how the sediment will be redistributed.

It may pose threats to those who live within 30 to 60 kilometres downstream of the Lillooet River, said Guthrie.

Mount Meager, about 2,680 metres in elevation and located 150 kilometres north of Vancouver, has a long history of landslides and debris flows. The area surrounding it is made of altered volcanic bedrock, which falls apart easily. Mount Meager last erupted about 2,400 years ago, and it has been aging and breaking down ever since.

“We have observed numerous tension cracks right up at the peak,” Guthrie said. “Water is coming out of the cliff face, both adjacent to and at the actual location where the landslide occurred. That indicates that water is making its way deep into the mountain and it will go along planes and ruptured surfaces, and those become failure planes [the surfaces along which landslides occur].”

Climate change is also indirectly related to Mount Meager's increasing volatility, Guthrie said.

“The glaciers, in the long term, are melting,” he said. “Melting glaciers are a water supply, and that's allowing for water to go into the bedrock and along those fissures. But the entire mountain is breaking down and irrespective of the weather in the next two years — it could be cold season, warm season — we would still have a real hazard up there.”

Every mountain wants to meet ocean, and landslides are nature's way of bringing rock downstream to be eroded by rivers or to forge valleys, he said. Though B.C. is considered a hazardous area because of its mountainous terrain, its low population density in mountainous areas means natural disasters are less likely to affect residents.

“The positive side of this is Mount Meager, though very volatile, is some distance back from the residential areas,” Guthrie said. “But as urban areas in Squamish, Pemberton and Whistler push into the mountains, that presents a real

hazard to people living there. Careful land use includes measures against future events, either by passively avoiding the area or actively protecting houses.”

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View [Meager Creek mudslide, August 6, 2010](#) in a larger map

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