

Provincial Freshet and Flood Status

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Dashboard #	Provincial Lead Contact: Manager, River Forecast Centre & Flood Safety	Media Relations contact: Provincial Information Coordination Officer
Freshet 12 - 2021	George Roman Water Management Branch, Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) <a href="mailto:george.roman@gov.bc.ca">george.roman@gov.bc.ca</a> 250-896-2725	Tyler Hooper Public Affairs Officer <a href="mailto:Tyler.Hooper@gov.bc.ca">Tyler.Hooper@gov.bc.ca</a> 250-213-8172

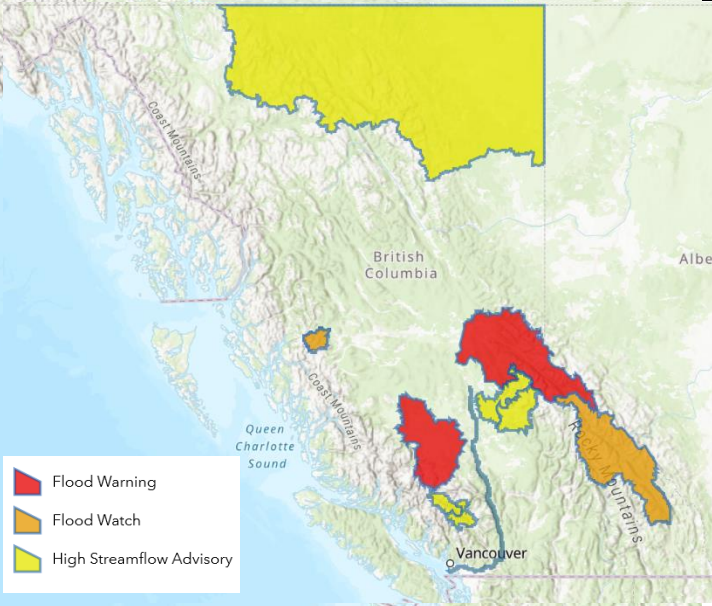
Provincial Summary

Several streams and rivers are flowing higher this week than seasonal due the unprecedented historic heat resulting in a number of Flood Warnings, Flood Watches and High Streamflow Advisories. In general, stream flows will begin to recede over the next week. The Fraser River is expected to rise into the weekend; however, flows are forecast to remain below their earlier 2021 peaks. Provincial staff, local government staff, First Nations, and other parties continue to monitor the situation and support the implementation of flood emergency preparedness, response, and recovery. The public is advised to stay clear of all fast-flowing rivers and streams and potentially unstable riverbanks during spring high streamflow periods.

Weather (Current and Forecast)

Temperatures have reduced from the historic heat we recently experienced. As the ridge that resulted in the high temperatures moves east there is increased risk of instability leading to thunder and lightening. Limited precipitation is expected over the next several days.

Flood Warnings and Advisories



- Flood Warning**
- Upper Fraser River
  - Chilcotin River
- Flood Watch**
- Upper Columbia Region, including the Columbia River mainstem and tributaries around Donald, Golden, Radium, Invermere and surrounding areas
  - Morice River
- High Streamflow Advisories:**
- Fraser River
  - Liard Basin
  - Lillooet River
  - Quesnel River

Please note that the [Current Flood Warnings and Advisories](#) public map must be consulted for up to date advisories.

Flood Warning and Advisory Map (July 2nd, 2021)

Active Floods of Note

Flood Warnings are in place for the Upper Fraser and the Chilcotin River. Flows remain elevated in the Lillooet, South Coast, and Central Coast rivers.

Resources

Emergency Management BC (EMBC) continues to support communities and First Nations throughout the province with seasonal readiness, preparedness, and response. This includes the coordination of flood-related resources and asset deployments where they are needed most.

FLNRORD staff throughout the province continue to support emergency management efforts through their roles and responsibilities as outlined in the Provincial Flood Emergency Plan.

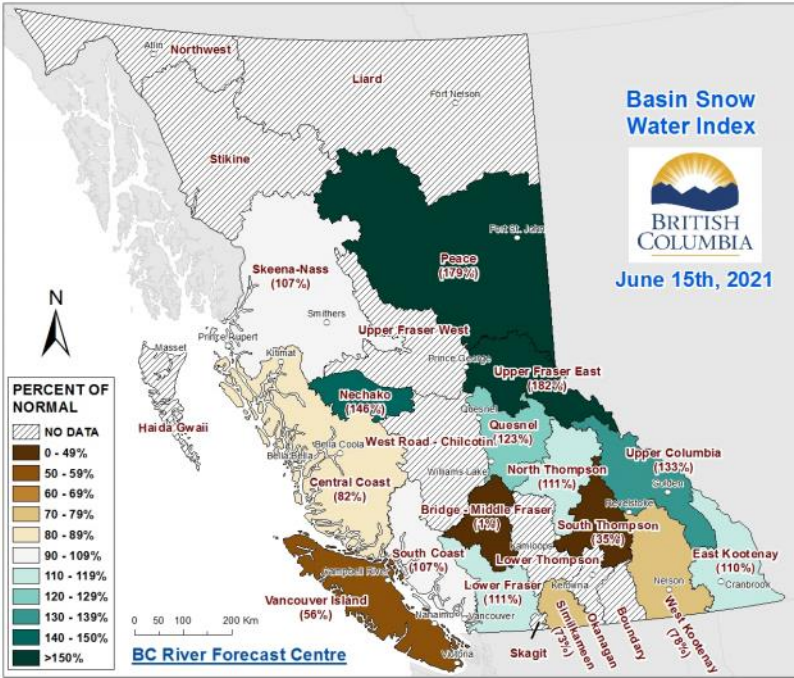
River Conditions and Outlook

The historic heat event has led to historic snow melt. Many streams responded to the extreme heat and high elevation snow and glacial melt. Several sites experienced record high flows for this time. Sites in the Upper Fraser peaked yesterday and today; those in the Chilcotin are forecast to peak today into Saturday. The Fraser River downstream of its confluence with the Chilcotin River is expected to rise as this snowmelt pulse moves through the system; at this time the Fraser is forecast to remain below peaks observed earlier this spring. Stream flows are expected to continue to recede as temperatures have reduced and little precipitation is expected. Moderate drought concerns are starting to emerge, especially in the Southern Interior, South Coast, and Vancouver Island. The primary flood risk moving forwards into the summer will be severe extreme rain weather events, which are more difficult to forecast far in advance. Currently there is no significant rainfall forecast for the province. The risk of significant precipitation events can, however, continue through July, which has occurred in areas in the South interior, Upper Fraser, Chilcotin and Peace over the past decade.

The [River Forecast Centre](#) public website is updated daily and should be consulted for up to date information.

\*All model outputs are subject to uncertainty, change, and revision. In addition, the level of service of federal and provincial partner agencies at remote snow and river gauges continues to be affected to some extent by operating constraints due to COVID-19, which may further reduce forecast accuracy.

Snow Conditions



The June 15<sup>th</sup> Snow Bulletin was the last one to be issued for the 2021 snow season. It best demonstrates the snowmelt timing rather than how much snow is left on the landscape (i.e., higher values indicate a delay in snowmelt relative to past years, and lower values an earlier than normal snowmelt).

The past week of exceptional heat melted significant amounts of snow at all elevations (including areas higher than the snow monitoring network sites).

The first snow bulletin of the 2022 snow season will be released in early January 2022. Thank you to our partners for their contributions to these bulletins.

# Definitions:

Flood Warnings and Advisories	
High Streamflow Advisory	River levels are rising or expected to rise rapidly, but no major flooding is expected. Minor flooding in low-lying areas is possible.
Flood Watch	River levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.
Flood Warning	River levels have exceeded bankfull or will exceed bankfull imminently. Flooding of areas adjacent to the rivers affected will result.
Hydrometrics and Forecasting	
Hydrometric Conditions	Current water flow and/or level conditions, based on the federal Water Survey of Canada (WSC) hydrometric gauge station sites indicating flood conditions in BC, based on a total of 247 WSC stations, binned by flood frequency analysis.
Forecast Return Period	<p>Forecast (estimated) future water flow and/or level conditions, based on the BC River Forecast Centre’s hydrologic models. The primary spring freshet flood forecasting model is the Channel Links Evolution Efficient Routing (CLEVER) model. For spring 2021, the CLEVER model includes outputs for 311 sites.</p> <p>The return period values represent the inverse measure of the probability of a particular flow occurring in any given year. For example, a 50-year flow has a probability of 1/50 or a 2% chance of occurring in any given year, a 100-year flow has a 1/100=1% chance of occurring in any given year, a 20-year flow has a 1/20 or 5% chance of occurring in any given year, a 5-year flow has a 1/5=20% chance each year, etc.</p>
Flood Frequency Analysis	Statistical analysis of historic peak flows used to understand the frequency or probability of extreme flows.
Snow Basin Index	Estimated average snow water equivalent (e.g. amount of water contained in the snowpack) across a watershed basin relative to its historic average.