Fraser River Environmental Watch Report

Sep 04, 2025

Ten-day daily forecasts of lower Fraser River temperature and flow conditions as well as current conditions throughout the Fraser basin are updated bi-weekly from roughly late-June until mid-August. These short-range forecasts are generated using river temperature and river flow forecast models (Hague and Patterson 2014).

The latest research on Pacific salmon freshwater migration suggests there are population-specific differences in temperature and flow tolerance thresholds (Eliason et al. 2011). These differences likely relate back to the variability in the average river environmental conditions experienced by salmon beginning their river migration at different times of the year and along different paths (Farrell et al. 2008). Despite these differences, there are also species-wide thresholds that will result in migration difficulties for most populations of Fraser River sockeye salmon. We provide species-level thresholds as a guide to interpreting the potential effect of current and forecasted river temperature and flow conditions on returning salmon. However, in general, fish historically returning to the Fraser River in the mid-summer will be more tolerant of higher temperatures than those fish returning in the early or late summer or early fall.

Current Temperatures September 3, 2025	Daily Mean	Historic Mean	Year Range
Stuart River @ Fort St. James	20.1	15.9	2000-2024
Stellako River @ Glenannan	19.4	16.6	2011-2024
Nautley River @ Fort Fraser	20.5	16.1	2007-2024
Nechako River @ Vanderhoof	19.5	15.7	2000-2024
Nechako River @ Isle Pierre	20.1	16.3	2006-2024
Bowron River @ Box Canyon	16.9	NA	2019-2024
Fraser River @ Shelley	NA	12.7	1994-2024
Quesnel River @ Quesnel	19.0	15.8	2000-2024
Fraser River @ Marguerite	19.1	15.8	2015-2024
Chilcotin River @ Hanceville	16.5	14.9	2019-2024
Fraser River @ Texas Creek	NA	16.0	2006-2024
North Thompson River @ McLure	18.1	14.1	2006-2023
South Thompson River @ Chase	22.5	18.8	1994-2024
Thompson River @ Ashcroft	20.6	18.0	1995-2024
Fraser River @ Qualark	20.7	16.3	1950-2024

**Nechako R @ Isle Pierre water temperature was calculated using a mixing model*

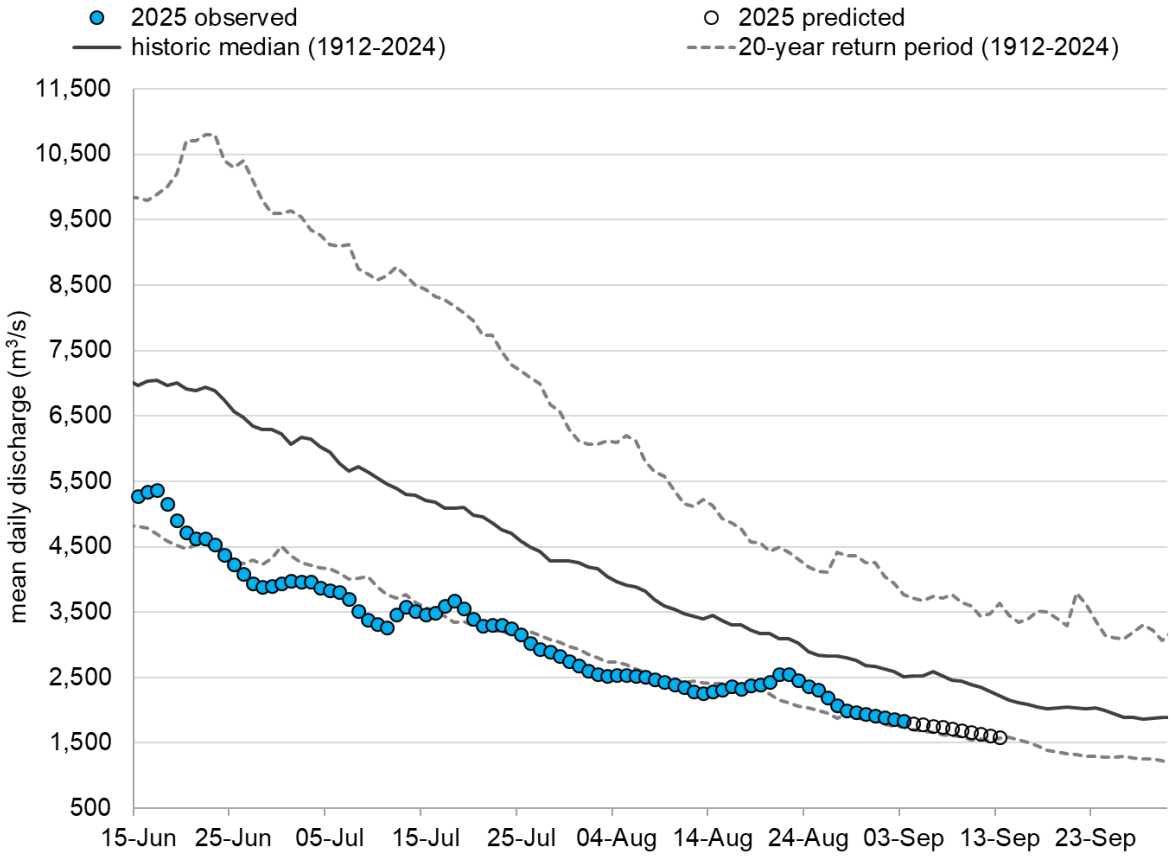
Fraser River Discharge at Hope

Critical levels for fish passage through lower Fraser Canyon:

7000 cms - Early signs of physiological stress evident

8000 cms - Difficultly in migration delaying migration time.

9000 cms - Barrier to migration through Hell's Gate.



Fraser River Water Temperatures at Qualark

18°C - Decreased swimming performance

19°C - Early signs of physiological stress and slow migration

20°C - Associated with high pre-spawn mortality and disease

21°C - Chronic exposure can lead to severe stress and early mortality.