

MEMORANDUM

To: OBWB Directors
From: Sandra Schira
Date: November 26, 2024
Subject: **Water Science Specialist Report**

Okanagan Basin Water Board
Regular meeting
December 3, 2024
Agenda No: 6.4

Weather Report

The US National Oceanic and Atmospheric Administration (NOAA) predicts that the La Niña could persist into the spring.¹ Which typically means cool, wet conditions in the Okanagan. Environment and Climate Change Canada's long-term forecast for November to January does not show a clear trend to any scenario for B.C.² (Figure 1). On the other hand, NOAA's long-term forecast trends toward slightly cooler and wetter conditions south of the border (Figure 2). Seasonal forecasting is highly challenging, so disagreement between models is not uncommon. Please note that figures 1 and 2 show different periods, Nov-Jan for ECCC and Dec-Feb for NOAA.

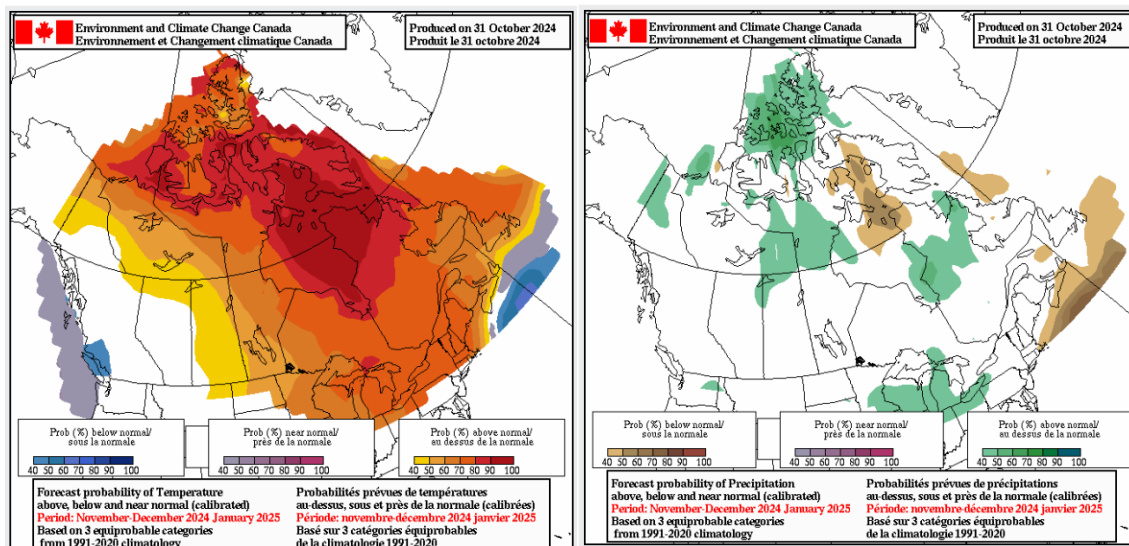


Figure 1 Long-term seasonal (Nov-Dec-Jan) temperature and precipitation forecasts from ECCC as of October 31, 2024. The colours show the probability of below, above, or near-normal scenarios. White areas do not have a clear tendency to a scenario.

¹ https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ens0_advisory/ensodisc.shtml

² <https://climate-scenarios.canada.ca/?page=cansips-prob>

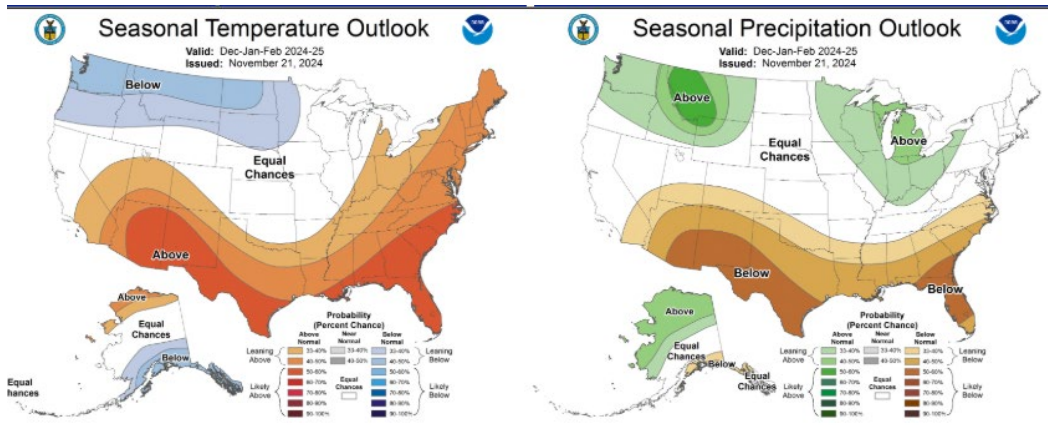


Figure 2 Long-term seasonal (Dec-Jan-Feb) temperature and precipitation forecasts from NOAA as of November 21, 2024. The colours show the probability of below, above, or near-normal scenarios. White areas did not have a clear tendency to a scenario.

This month, rainy and snowy conditions continued across the province in line with the predicted La Niña. Rainfall was significant on the coast, and several considerable precipitation and wind events occurred. These included a “bomb cyclone” that followed the atmospheric river event in mid-October, which resulted in four deaths in the Metro Vancouver area, according to CBC_1.³ Although both are significant storms, atmospheric rivers and bomb cyclones are not the same:

An *atmospheric river* is a flowing column of condensed water vapour in the atmosphere, which can lead to significant rain or snow events as they transport moisture north from the tropics. Although some lead to large storms, most are weaker systems that provide significant precipitation to western Canada and the United States (NOAA, 2023)⁴.

A *bomb cyclone* is a storm caused by a rapid drop in pressure, resulting in heavy rain and strong winds. A cyclone is an airmass of spiral winds formed as cold and warm weather systems collide. The “bomb” part of the name refers to the speed at which the cyclone forms (CBC_2, 2024)⁵.

These storms did not significantly impact the Okanagan, but we did see consistent small rain events through November. However, most months in 2024 saw less precipitation than typical over the last 30 years (Figure 3). However, unlike 2023, so far, snow accumulation in the upper watershed is in line with average trends as of November 26nd in Penticton, and Vernon (at Coldstream Ranch); below are the Provincial snow accumulation charts for Brenda Mines, Mission Creek, and Silver Star as of November 21 (Figures 4 to 6).

³ ['Bomb cyclone' set to bring strong winds to B.C.'s coast, forecasters say | CBC News](#)

⁴ [What are atmospheric rivers? | National Oceanic and Atmospheric Administration](#)

⁵ ['Bomb cyclone' sounds scary but it has a specific meteorological meaning | CBC News](#)

2024 Monthly Precipitation vs. 1994–2023 Average

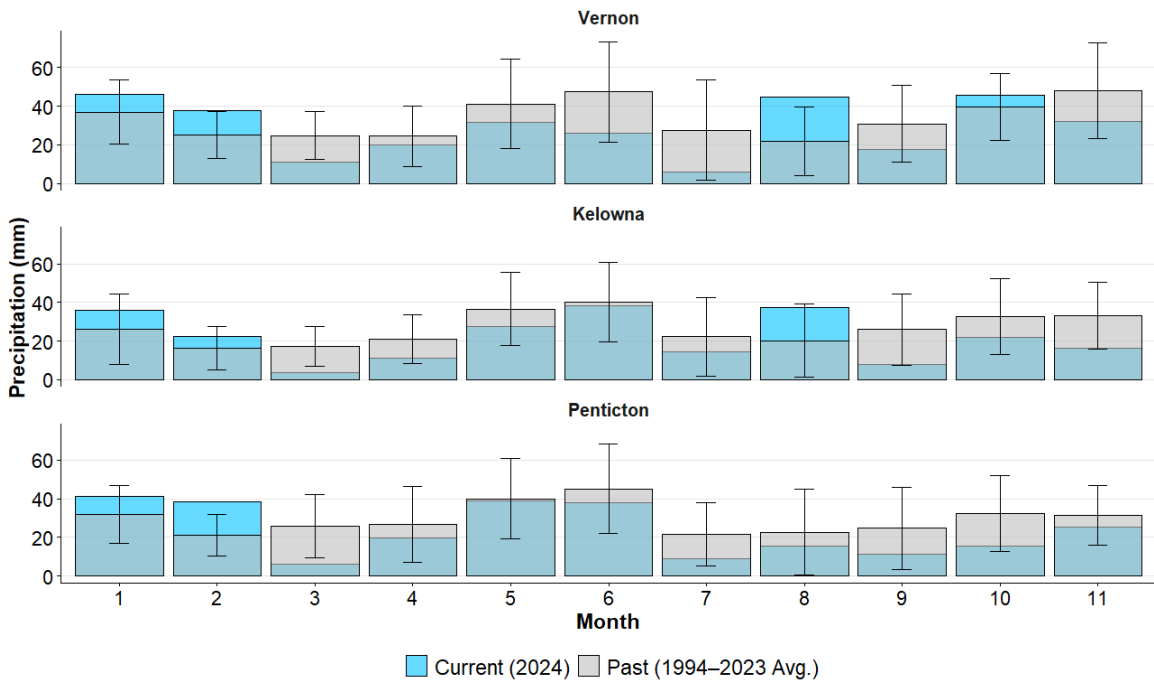
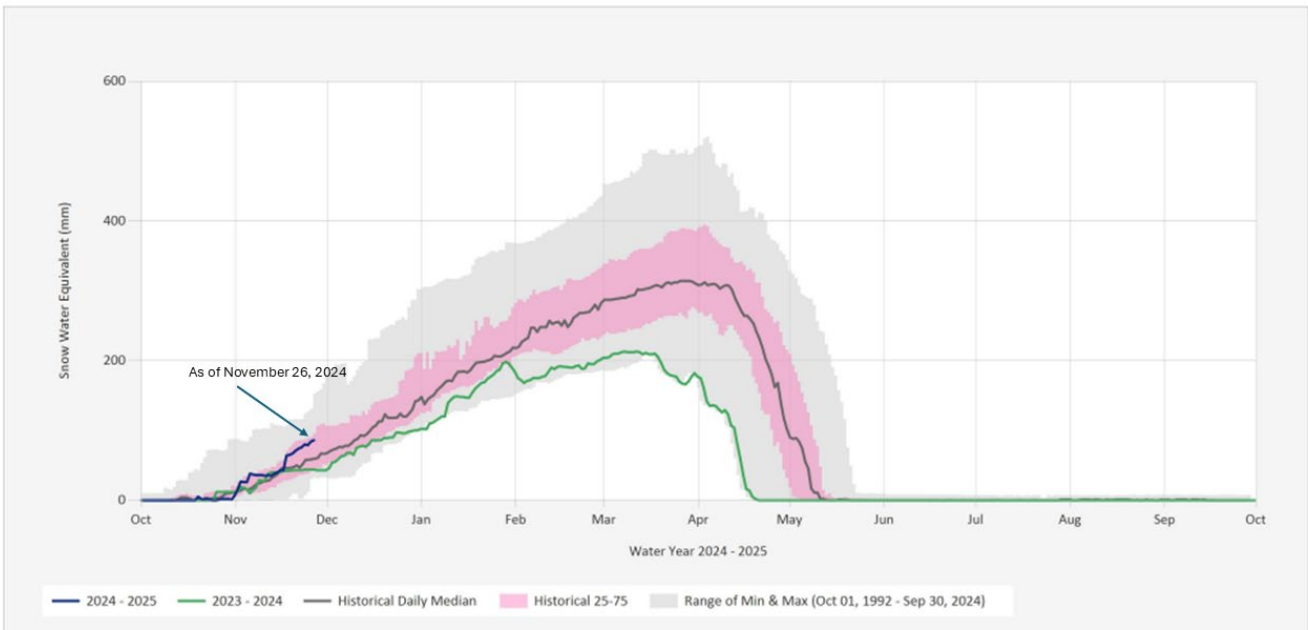


Figure 3 There is a difference between the monthly rain in 2024 (blue) and the average for each month from 1994 to 2023 (grey). December is not shown as it has not yet finished. The number label shows the difference between 2024 and the 30-year average. Values for Vernon are from Coldstream Ranch

Source Data: SW.Daily@2F18P
 Location: Brenda Mine, Latitude: 49.8623611, Longitude: -119.9821111, Elevation: : 1460 m

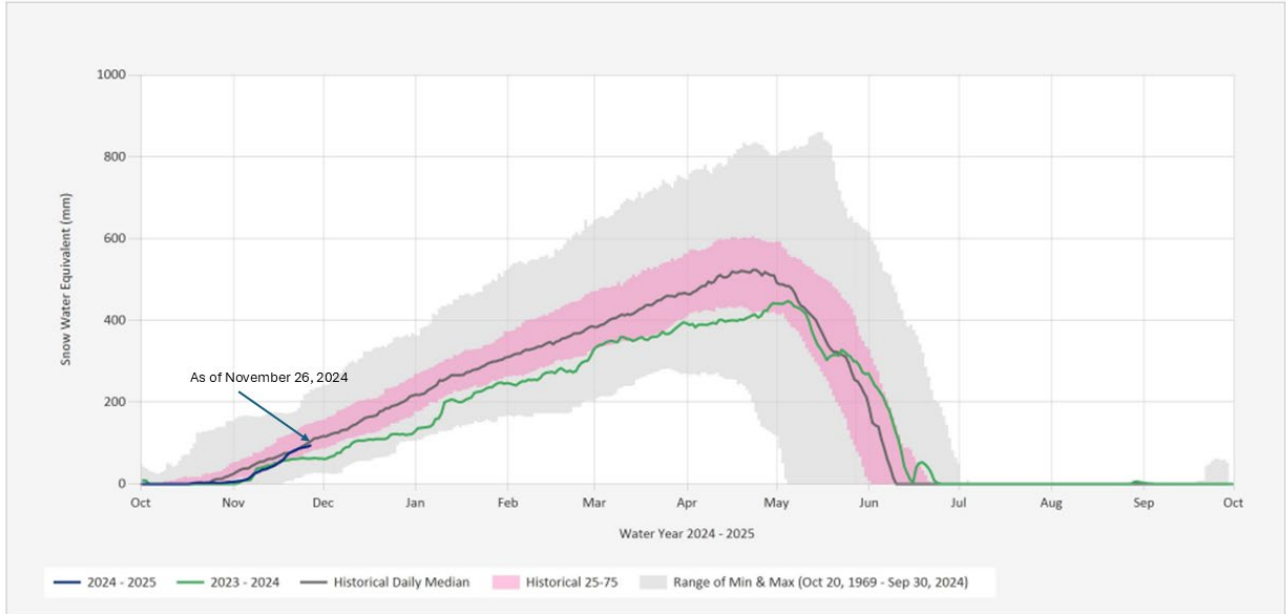


Statistics are based on the period of record prior to the current Water Year

Data last appended: November 26, 2024 16:00 UTC+00:00

Figure 4 Brenda Mines Snow Pillow: 1460 m Elevation. As of 26-11-2024

Source Data: SW.Daily@2F05P
Location: Mission Creek, Latitude: 49.94467, Longitude: -118.9497, Elevation: : 1780 m

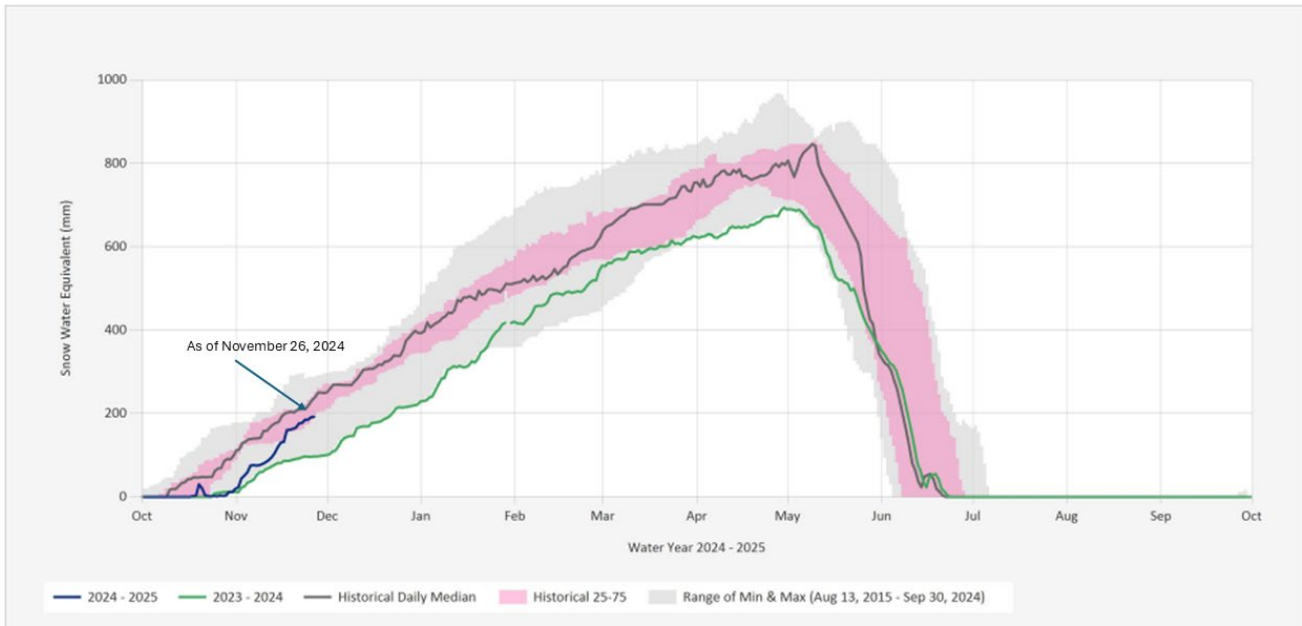


Statistics are based on the period of record prior to the current Water Year

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Figure 5 Mission Creek Snow Pillow: 1780 m Elevation. As of 26-11-2024

Source Data: SW.Daily@2F10P
Location: Silver Star Mountain, Latitude: 50.37136, Longitude: -119.06211, Elevation: : 1840 m



Statistics are based on the period of record prior to the current Water Year

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Figure 6 Silver Star Snow Pillow: 1840 m Elevation. As of 26-11-2024