



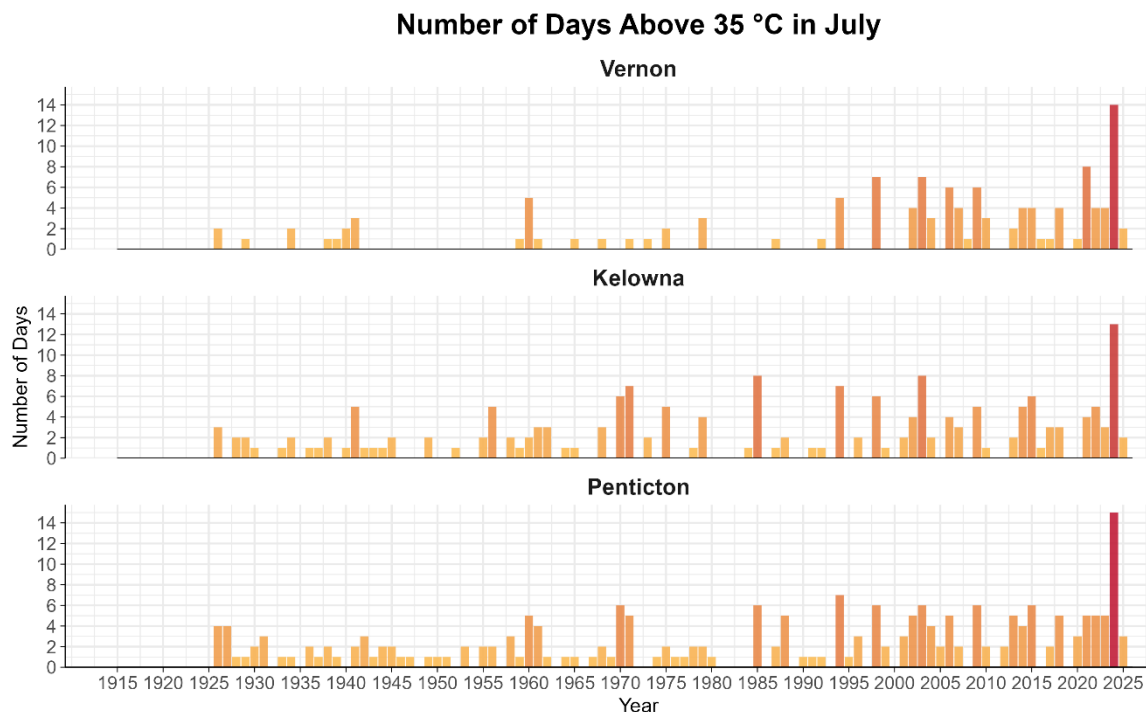
## MEMORANDUM

To: OBWB Directors  
From: Sandra Schira, Water Science Specialist  
Date: July 28, 2025  
Subject: Weather Update

Okanagan Basin Water Board  
Regular meeting  
Aug. 5, 2025  
Agenda No: 7.5

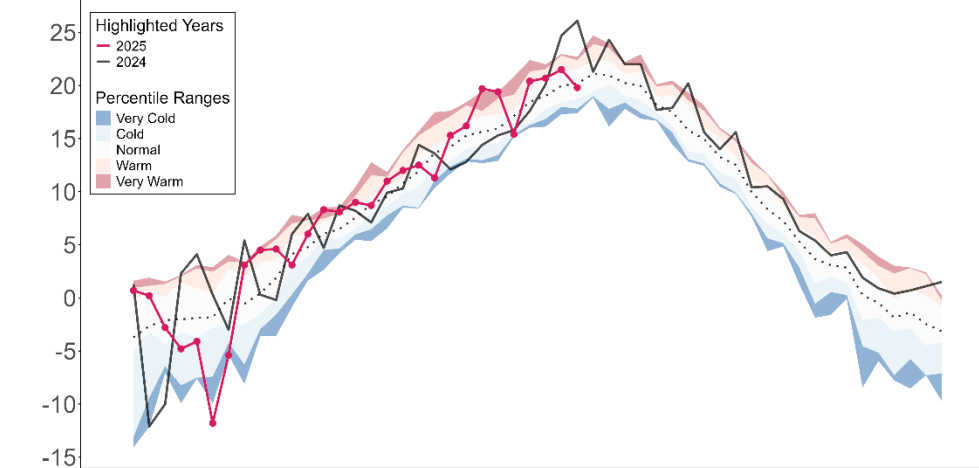
### Temperature

Summer temperatures were variable but mainly in the warm to normal range compared to 1991-2020. Between mid-May and early July, temperatures fluctuated from extremely hot to very cold over a two-week period. Temperatures remained relatively stable for the rest of June and July, staying within the warm to normal range (Figure 1). Last year, July experienced an extreme heat spell, with the most days exceeding 35°C on record (Figure 2). This year had no extreme hot spell in July, and the number of extreme hot days was more normal around 2 - 3.

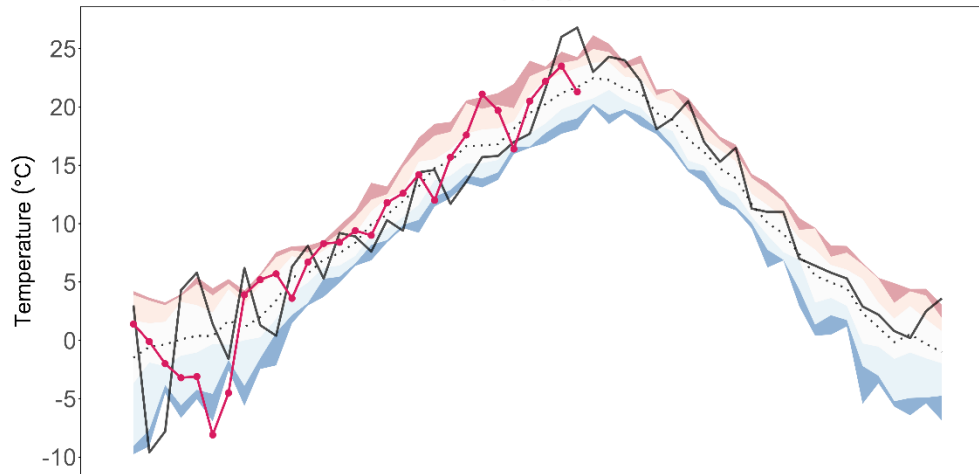


**Figure 1:** The number of days with a maximum temperature over 35 °C in July from 1915 to 2025. As of July 28, 2025. Data from Environment and Climate Change Canada.

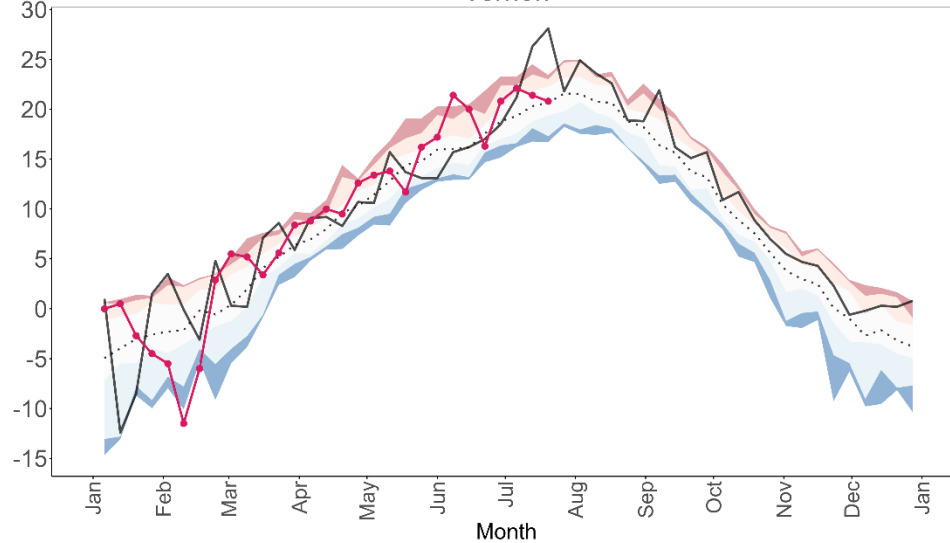
## Weekly Mean Temperature vs. 1991–2020 Normal Kelowna



## Penticton



## Vernon



Data Source: ECCC

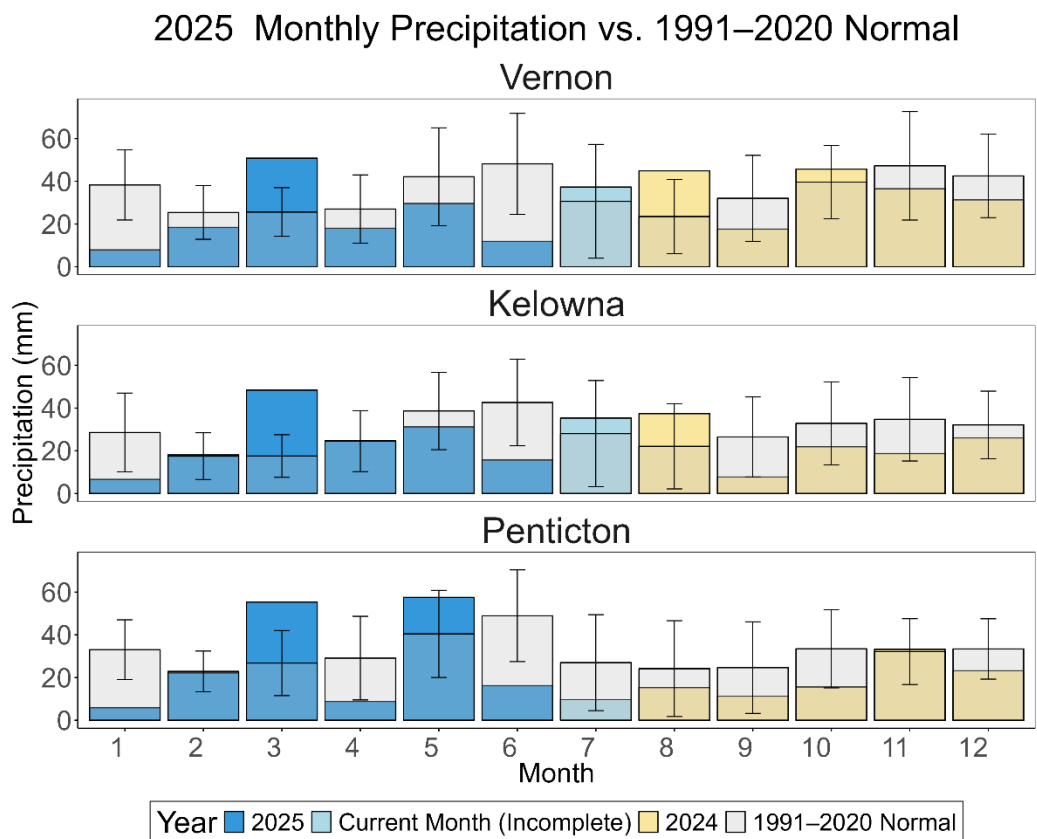
**Figure 2:** Weekly Average Temperature across the Okanagan as of July 28, 2025 compared to 2024 and then 1991 to 2020 range. Data retrieved from Environment and Climate Change Canada.

## Precipitation

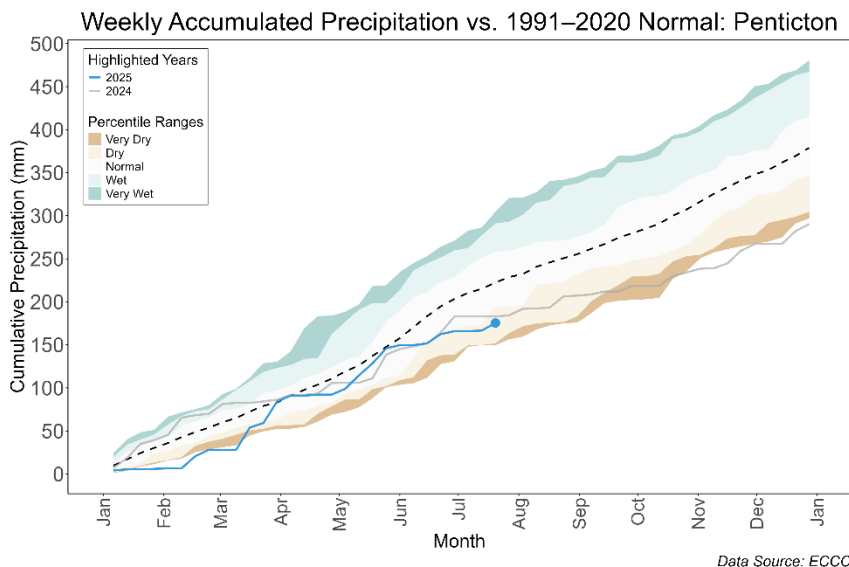
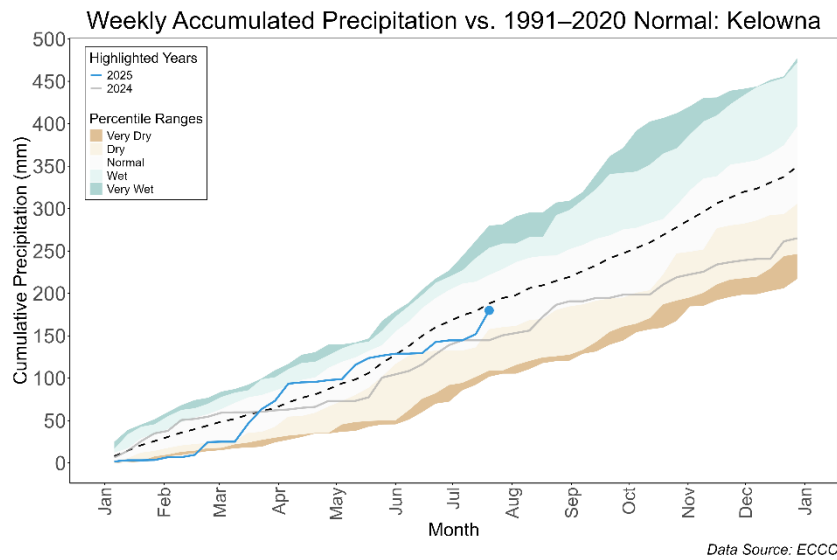
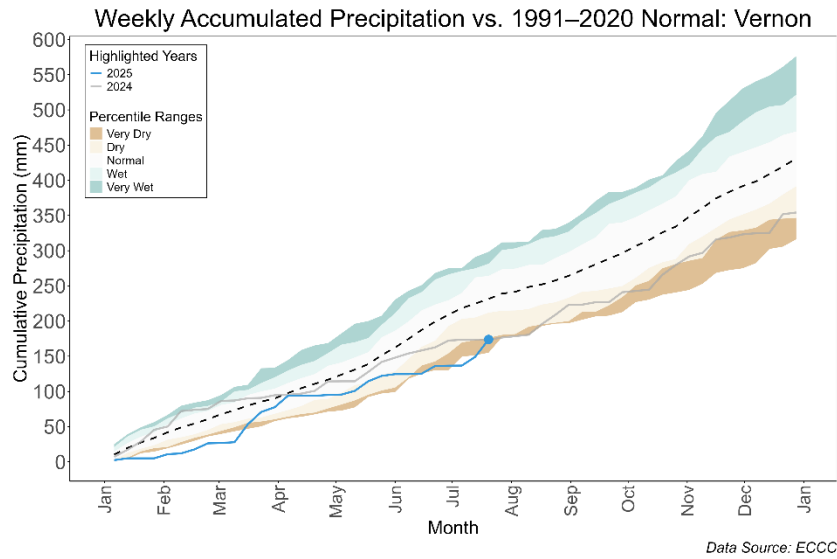
**Several significant rainfall events occurred in June and July; however, the annual total precipitation remains low for the region.** Across the valley, precipitation was below average in June (Figure 3). In July, Vernon and Kelowna experienced slightly above-normal precipitation, while Penticton had below-average precipitation but remained within normal variability.

June and July also had several large rain events that occurred across the valley; however, there was considerable variability in rainfall amounts. For example, on July 21, areas near Vernon received 12 mm of precipitation, while Penticton received only 1 mm. The rain was beneficial in replenishing reservoirs and preventing a severe drought in many areas.

**So far, the valley has not accumulated as much rain as usual for this time of year.** Total rainfall this year is below normal compared to the last 30 years, except in Kelowna, where it is close to normal (Figure 4). Cumulative precipitation is low for most regions because several months have had significantly below-average precipitation in each area - for example, January and June saw slightly below-normal precipitation that was not compensated for by the months with above normal precipitation.



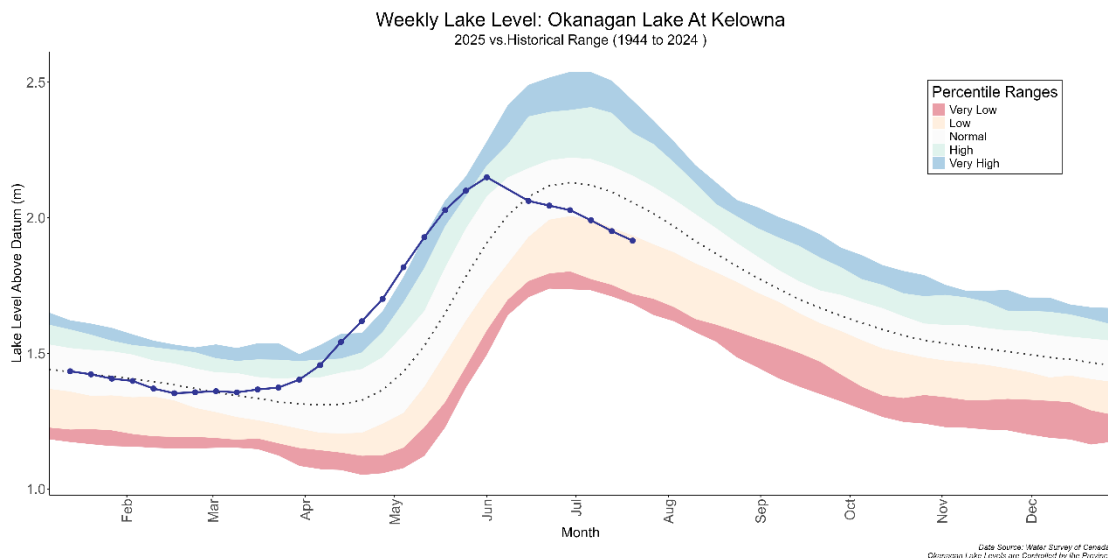
**Figure 3:** Monthly Precipitation in the Okanagan as of July 28, 2025. Compared to 1991 to 2020 range. Data retrieved from Environment and Climate Change Canada



**Figure 4:** Cumulative weekly precipitation in the Okanagan as of July 28, 2025. Compared to the 1991 to 2020 range. Data retrieved from Environment and Climate Change Canada

## Hydrology

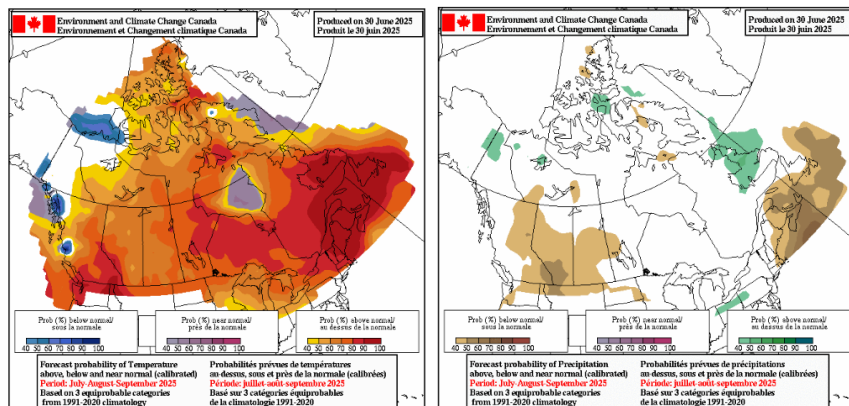
Streamflow was variable across the valley, but many systems are low, and water temperatures are warm. Okanagan Lake levels are low and consistent with an early and rapid melt, resulting in an early peak (Figure 5). Even with the rainfall and comparatively low temperatures, many unregulated systems are low, especially in the south. Warm waters are creating thermal barriers that make fish passage difficult. As a note, the Similkameen River is alarmingly low, with many parts of the river now setting new record-low levels.



**Figure 5:** Weekly lake levels for Okanagan Lake at Kelowna compared to the 1944 – 2023 range as of July 28, 2025. Data is retrieved from the Water Survey of Canada.

*Seasonal forecasts indicate that July through September is likely to be warm and dry.* The Environment and Climate Change Canada<sup>1</sup> long-term seasonal forecast shows a high possibility of above normal temperatures in the Okanagan over the next three months. Precipitation, forecasts indicate below-normal precipitation is likely (Figure 5). Seasonal forecasting is highly challenging, so disagreement between models or variations from projections is not uncommon. Seasonal forecasts can be used to provide a sense of likely future conditions but should not be taken as 100 per cent certain.

<sup>1</sup> ECCC Seasonal forecasts. <https://climate-scenarios.canada.ca/?page=cansips-prob> (Accessed 25.07.2025)



**Figure 5: Three-Month Seasonal Forecast from ECCC<sup>1</sup> (Jul-Sept).**

## Drought

**The valley remains in drought, even with the rain events.** The low snowpack and early melt this spring, combined with the dry conditions of the last few years, means there is not a lot of moisture in many parts of the valley. The rain has helped though, and the drought is so far not as severe as it was in 2023. Water supplies in many reservoirs have remained stable. However, without prolonged and consistent rain and snow, the valley does not recharge fully leaving many water bodies in the valley low, and water temperatures high.

**What kind of drought?** Drought is more than a lack of rain. The science of drought is complicated because there are many types of drought, and what constitutes a drought in one location won't be the same in another.

According to the [Intergovernmental Panel on Climate Change \(2018\)](#), a drought is "A period of abnormally dry weather, long enough to cause a serious hydrological imbalance." What it takes for a drought to occur isn't universal; it varies by location – much like what a Canadian considers "cold" differs from someone in Spain! That's why experts develop specific drought thresholds tailored to each area.

Scientists also classify drought into four types:



**Meteorological:** When there is less precipitation than usual for an extended period of time.



**Hydrological:** Low lakes, streams, reservoirs, and aquifers for an extended period of time.



**Agricultural/Soil Moisture:** The soil is so dry that plants are wilting and can't get enough water to grow for an extended period of time.



**Societal/Socioeconomic:** When the impacts of the other three types of drought impact the supply of critical human resources, such as agriculture.

These four types of droughts often co-occur but may also occur independently. Therefore, it is possible to be in a state of drought even with consistent rain, or not need watering restrictions even if it has not rained, depending on the source of the water.

Currently, across the Okanagan, different combinations of these four types of drought are happening in different places. In many parts of the Valley, the water supplies in the reservoirs are relatively stable. However, some streams and lakes are low and too hot. In some places, the rain seeped directly into the soil to replenish it and did not flow into streams, in others rain flowed into streams and the soil remains dry. The amount of rain also varied, but rainfall has been lower than normal this year for much of the region. With all this variability, the impacts of drought are also different across the Valley. In some cases, the drought is due to a spatial mismatch between water sources and water demands.

Impacts of a drought depend on the frequency, duration, and severity of the drought. For example, mild but long-term drought will have different impacts than many short but extremely intense droughts in quick succession. How well the system can recover once the drought is over also plays an important role. As a result, maintaining and building drought resilience in the valley is important, especially as summer continues, fish start returning, and farmers are getting ready to harvest their crops.