



MEMORANDUM

To: OBWB Directors
From: Melissa Tesche, Executive Director,
Nelson Jatel, Water Stewardship Director, and
Sandra Schira, Water Science Specialist
Date: Sept. 3, 2026
Subject: Drought Report

Okanagan Basin Water Board
Regular meeting
Sept. 11, 2026
Agenda No: 7.5

Summary

As of Sept. 1, 2026, drought conditions remain severe across the Okanagan, with multiple indicators showing sustained water stress. Taken together, the indicators suggest that the basin remains vulnerable through the remainder of the irrigation season and will remain vulnerable well into the next year. Continued water conservation and close monitoring the winter are warranted.

Precipitation

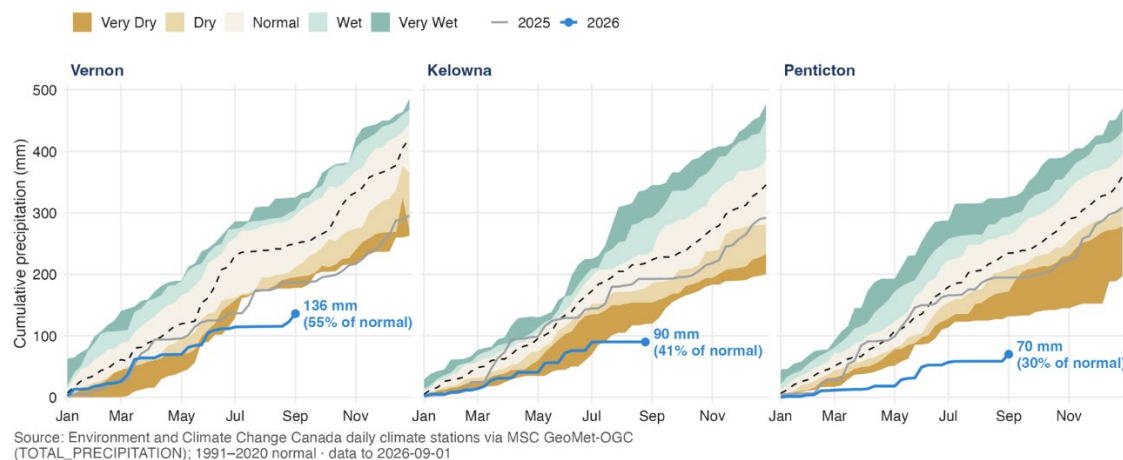


Figure 1. Cumulative precipitation from Jan. 1 to Sept. 1, 2026, at Vernon, Kelowna and Penticton, shown alongside historical normal precipitation for each location. Data source: Environment and Climate Change Canada.

Precipitation deficits remain pronounced across the Okanagan. Cumulative precipitation through September 1 was approximately 136 mm in Vernon, 90 mm in Kelowna and 70 mm in Penticton, representing about 50%, 41% and 30% of normal, respectively. The deficit gets

worse from north to south and has persisted through the spring and summer, with relatively little precipitation available to offset water use or replenish surface-water and groundwater supplies. The prolonged precipitation deficit is an important underlying driver of the low streamflows, declining lake levels and groundwater stress now being observed throughout the basin.

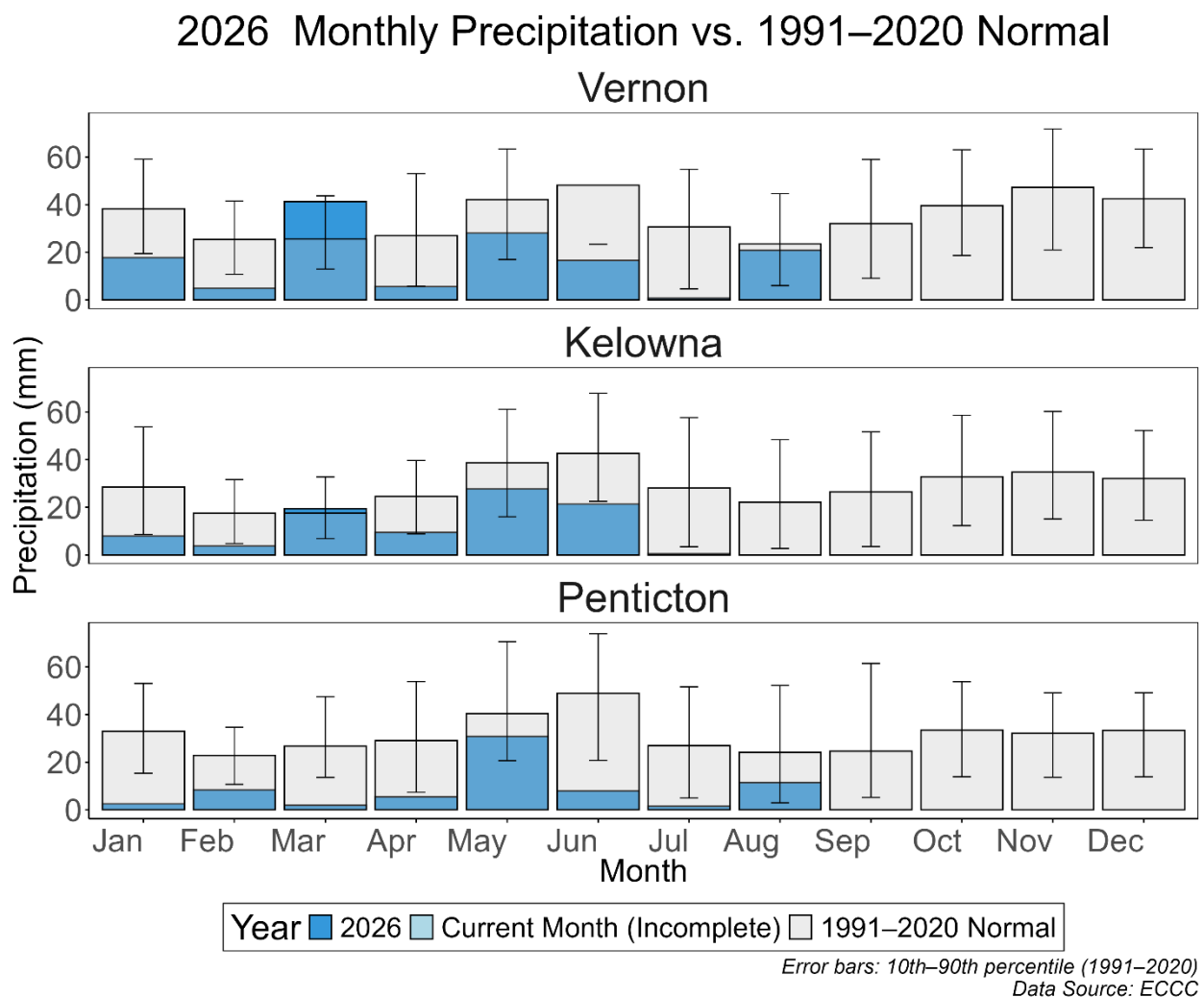


Figure 2. 2026 Monthly Precipitation Compared with 1991–2020 Normal at Vernon, Kelowna and Penticton. Error bars represent the 10th–90th percentile range for each month during the normal period. Data source: Environment and Climate Change Canada (ECCC).

Streamflows

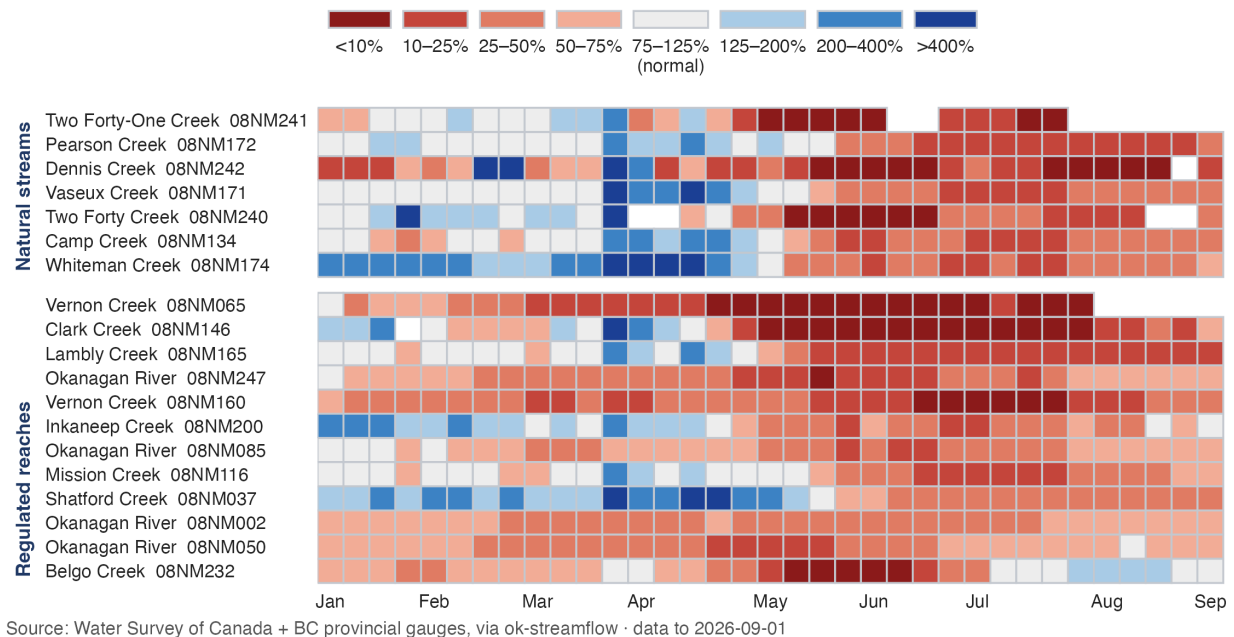


Figure 3. Weekly average streamflow conditions at monitored locations across the Okanagan, expressed relative to the historical range for each station. Data source: Water Survey of Canada and Okanagan Basin Water Board hydrometric monitoring stations.

Streamflow conditions continue to reflect severe hydrologic stress across the Okanagan. Many monitored streams transitioned from near- or above-normal conditions earlier in the year to below-normal flows during late spring, with flows remaining depressed through July and August. By late summer, numerous natural streams were within the lowest historical percentile ranges, while many regulated reaches were also substantially below normal. The persistence and geographic extent of these low flows are particularly important because they reduce available aquatic habitat, increase sensitivity to elevated water temperatures, and narrow the margin available to balance environmental flow needs with domestic and agricultural water demands.

Temperatures

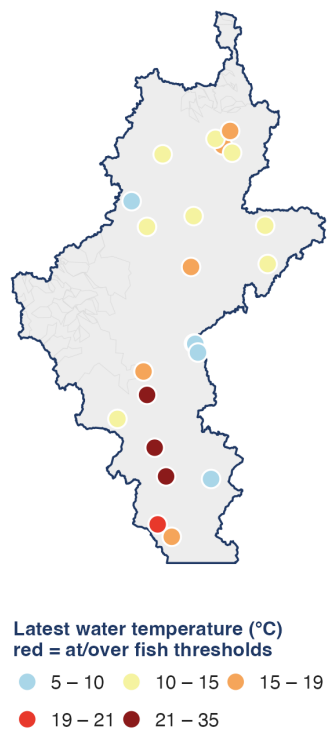


Figure 4. Observed stream temperatures on Sept. 1, 2026, at monitored locations across the Okanagan, displayed by temperature range to provide a basin-wide snapshot of current thermal conditions. Data source: Okanagan Basin Water Board and partner hydrometric monitoring stations.

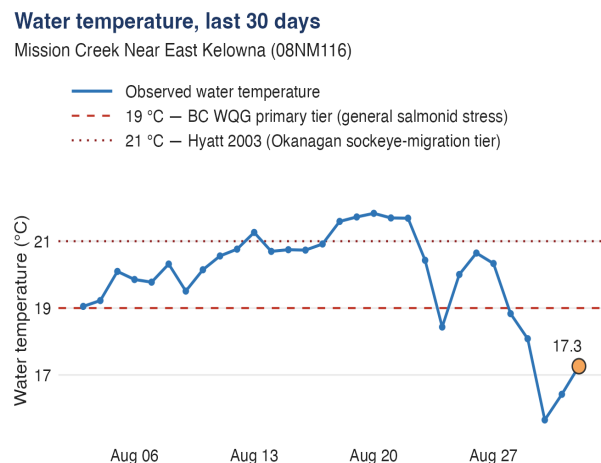
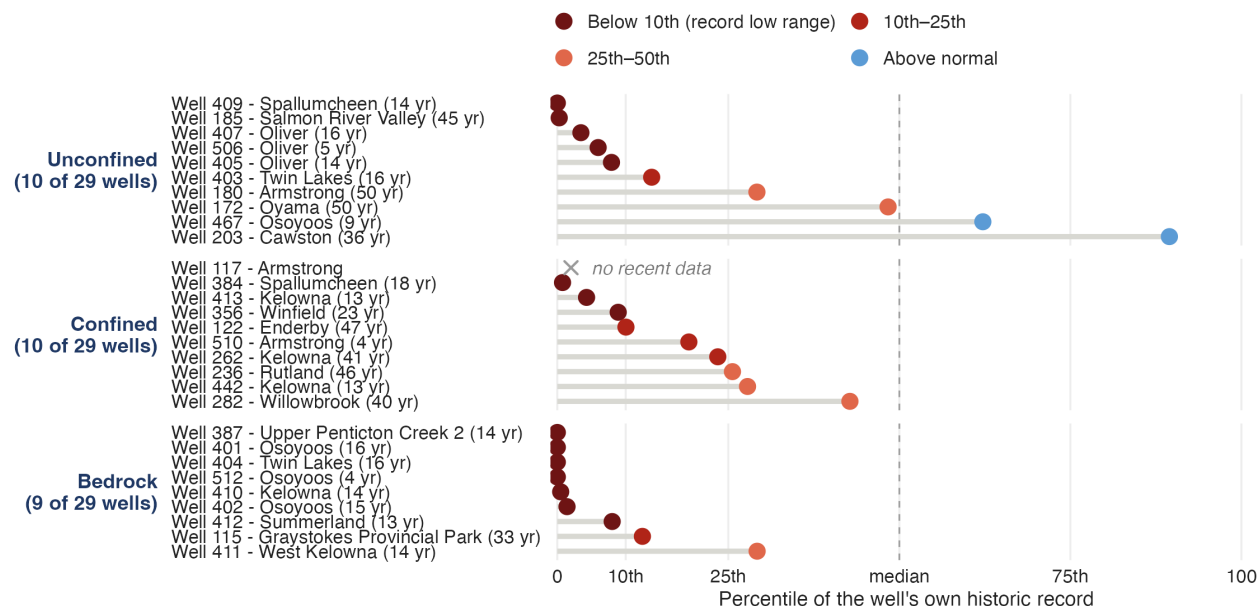


Figure 5. Observed water temperatures in Mission Creek near East Kelowna over the previous 30 days, with reference lines identifying the 19°C general salmonid-stress threshold and the 21°C Okanagan sockeye migration threshold. Data source: Okanagan Basin Water Board hydrometric monitoring network.

Stream temperatures were elevated through much of August, compounding the effects of low flows. At Mission Creek near East Kelowna, water temperatures were above the 19°C general salmonid-stress threshold for much of the month and exceeded the 21°C Okanagan sockeye migration threshold for several days during the warmest period. Temperatures declined sharply toward the end of August, with the most recent observation shown in the report at 17.3°C, providing some short-term relief from acute thermal stress. The cooler conditions are beneficial; however, continued low streamflows mean that aquatic systems remain vulnerable should another period of sustained warm weather occur.

Groundwater



Source: BC Provincial Groundwater Observation Well Network (PGOWN) daily means; fixed 29-well roster and aquifer class per the WSCOP reporting standard. Years in brackets = how many years of the same season stand behind that well's percentile; a well with only a few is weakly constrained, and one commissioned during this drought has only dry years to compare against, so it cannot read as dry - data to 2026-09-01

Figure 6. Groundwater levels measured on Sept. 1, 2026, at provincial observation wells in the Okanagan, expressed as historical percentiles and grouped by aquifer type. Data source: B.C. Provincial Groundwater Observation Well Network.

Groundwater monitoring indicates widespread stress across the region. Most of the observation wells shown in the report are below their historical median for this time of year, with numerous wells in unconfined, confined and bedrock aquifers falling within the lowest historical percentile ranges. Bedrock wells are particularly notable, with most observations concentrated near or below the 10th percentile, while only a small number of monitored wells, primarily in unconfined aquifers, remain near or above normal. The broad distribution of low groundwater levels indicates that drought impacts are not limited to surface-water systems and may also affect groundwater-dependent water supplies and groundwater contributions to stream baseflow.

Lake Levels

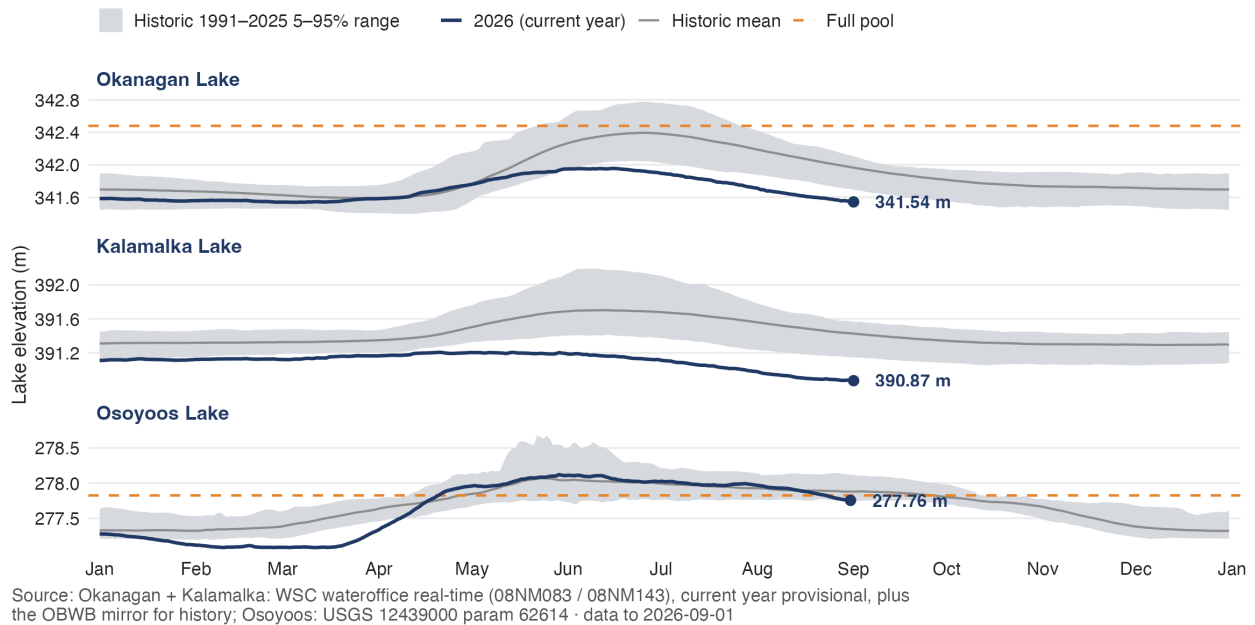
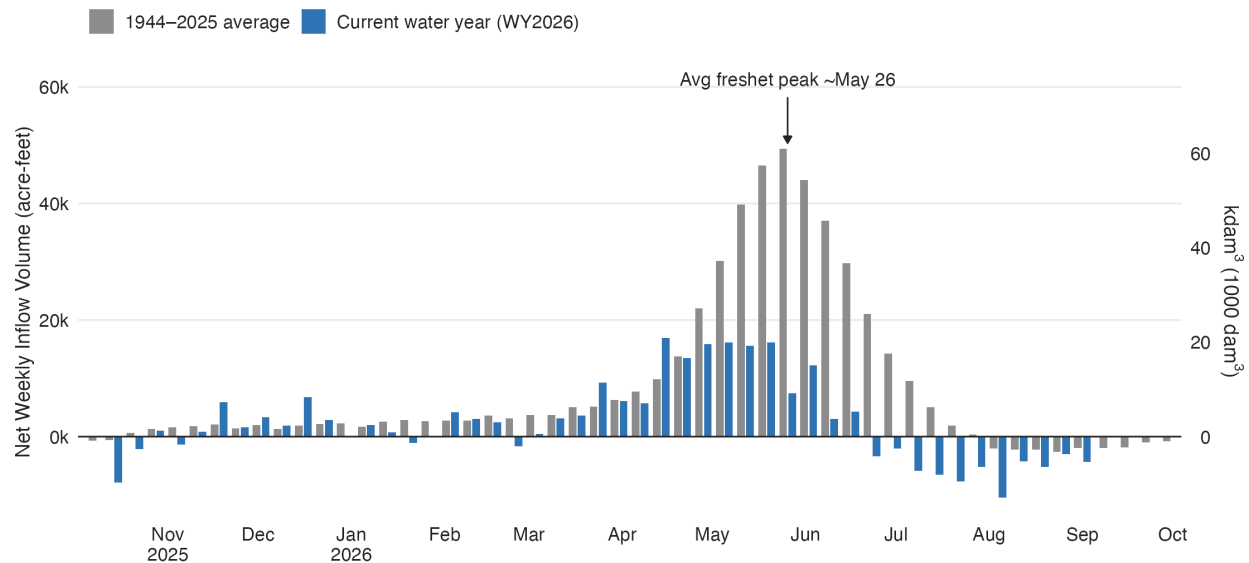


Figure 7. 2026 water levels in Okanagan, Kalamalka and Osoyoos lakes plotted against their historical ranges to show current lake elevations in seasonal context. Data source: Water Survey of Canada.

Mainstem lake levels remain extremely low for this time of year. As of Sept. 1, 2026, Okanagan Lake was approximately 341.54 m, Kalamalka Lake 390.87 m and Osoyoos Lake 277.76 m. Kalamalka Lake is at the lowest level recorded since the installation of the control structures – so low that water is no longer able to flow into Vernon Creek, a condition known as ‘dead pooling’. Okanagan Lake is at a historic low for this time of year. The low levels in Okanagan and Kalamalka lakes reflect both the limited water carried into the system by the 2026 freshet and continued summer losses, leaving less stored water available entering the fall and winter recharge period.

Net Inflow



Source: okanaganwatersupply.com (ok-waterconditions), WSC/ECCC gauges 08NM083 + 08NM050 · data to 2026-09-01

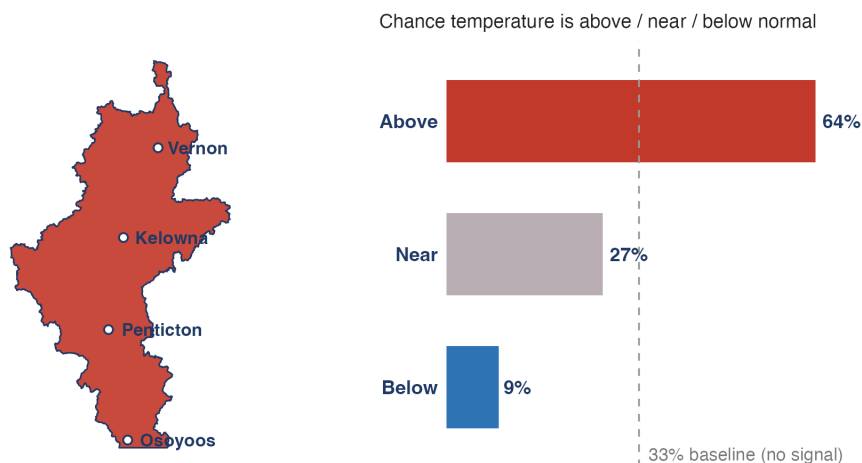
Figure 8. Weekly net inflow to Okanagan Lake during 2026 compared with the historical weekly average, illustrating the timing and magnitude of water entering and leaving the lake system. Data source: WSC and ECCC.

Net inflow provides one of the clearest indications of the magnitude of the 2026 water-supply deficit. The spring freshet was less than half of normal, peaking and ending very early. Weekly net inflow during the late-May period reached only roughly 15,000–17,000 acre-feet, compared with an average freshet peak approaching 50,000 acre-feet per week. Net inflows turned negative and the lake level started dropping by the end of June. In an average year, net inflows turn negative in August. The magnitude of lake drawdown was significantly greater than average.

Forecast

Seasonal Temperature Outlook — Okanagan Basin

September–October–November 2026 · 64% chance warmer than normal



Source: Environment and Climate Change Canada, CanSIPS 100 km seasonal forecast, issued September 2026 (MSC datamart), vs the model's own climatology; mean of the 4 grid cells over the basin · data to 2026-09-01 · MODEL OUTPUT, NOT OBSERVED DATA — the only forecast in this brief

Figure 9. Environment and Climate Change Canada's probabilistic seasonal temperature outlook for September through November 2026, showing the likelihood of below-normal, near-normal and above-normal temperatures across Canada. Data source: Environment and Climate Change Canada.

The seasonal temperature outlook does not indicate significant relief from drought pressure. Environment and Climate Change Canada's September–October–November outlook shows a 64% probability of above-normal temperatures for the Okanagan, compared with a 27% probability of near-normal and only a 9% probability of below-normal temperatures. Warmer fall temperatures can prolong evapotranspiration and outdoor water demand and may delay the seasonal reduction in water losses normally associated with cooler autumn conditions. Substantial and sustained precipitation would therefore be required to materially improve the basin's hydrologic position heading into winter.

El Niño Outlook

El Niño develops as sea-surface temperatures in the central and eastern tropical Pacific become warmer than normal, altering atmospheric circulation and influencing weather patterns across North America. ECCC notes that El Niño's strongest and most consistent effects in Canada generally occur during winter and spring. However, the Government of Canada's summer drought outlook specifically identified the developing El Niño as increasing confidence in a warmer and drier seasonal pattern across much of British Columbia, with southern B.C. among the areas showing the strongest signal for above-normal temperatures and elevated risk of drought intensification. For the Okanagan, the developing El Niño therefore adds to concern that existing precipitation deficits, low streamflows and depleted water storage could persist into the fall in the absence of substantial precipitation.

Water Scarcity Index

The Okanagan Water Scarcity Index is currently set at High (Sept. 3) for all five sub-basin regions. Unlike the provincial drought level, which describes how dry current hydrologic conditions are relative to historical conditions, the water-scarcity assessment considers the risk that available water will be insufficient to meet human and ecosystem needs. The Okanagan Water Scarcity Index was co-developed between the Syilx Okanagan Nation and the Province of British Columbia through their *nx̓w̓ʔulaʔx̓w̓* Management Committee. The pilot launched on July 30, 2026 and splits the Okanagan into five regions as shown in the figure below.

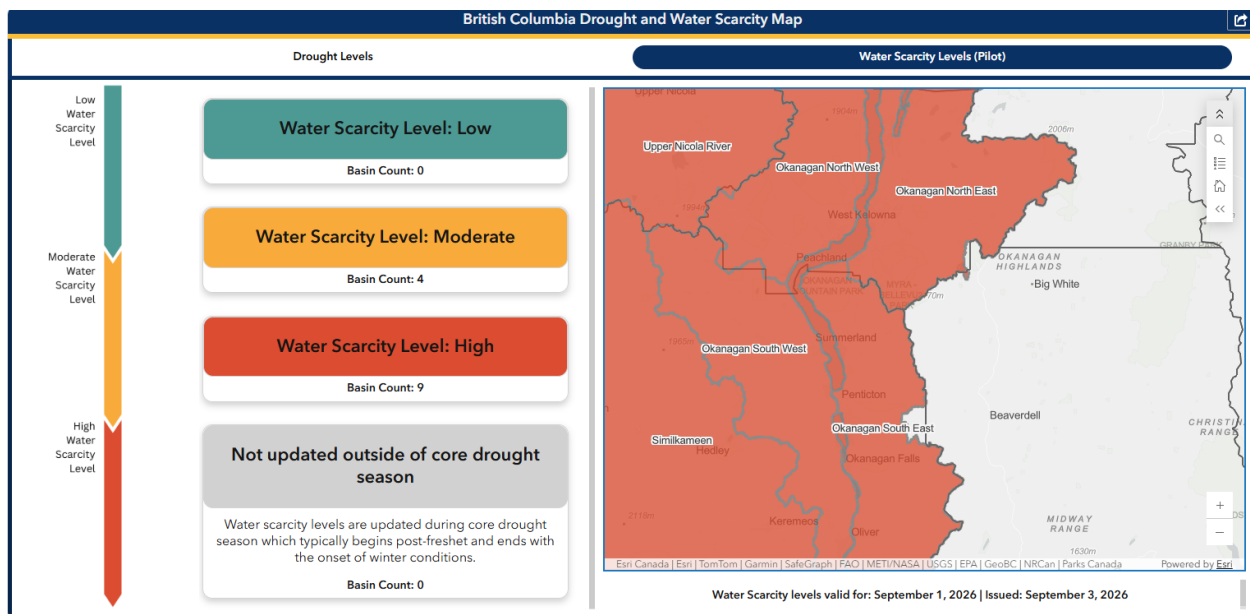


Figure 10. Water-scarcity classifications on Sept. 3, 2026, for the five Okanagan sub-basin regions under the Okanagan Water Scarcity Index. Data source: Province of British Columbia and Syilx Okanagan Nation, through the *nx̓w̓ʔulaʔx̓w̓* Management Committee.

Per the BC Drought Portal website: “The scale at which water scarcity levels are set is typically smaller than the scale at which drought levels are set. Monitoring and analysis for water scarcity levels is based on local watershed data and knowledge. This may include local streamflow measurements on priority systems, Indigenous and cultural knowledge, known recurring risks, and other considerations.

Water scarcity levels are associated with recommended management actions. These actions may include information sharing, targeted requests for voluntary water conservation or recommendations to relevant authorities for additional mitigation measures. Water scarcity levels do not trigger regulatory actions. Their intent is to raise awareness early and encourage voluntary action to prevent water scarcity from occurring or worsening.”

Provincial Drought Index

The Okanagan Drought Index is currently set at 4 (Sept. 3, 2026).

Per the 2026 BC Drought and Water Scarcity Operations Plan:

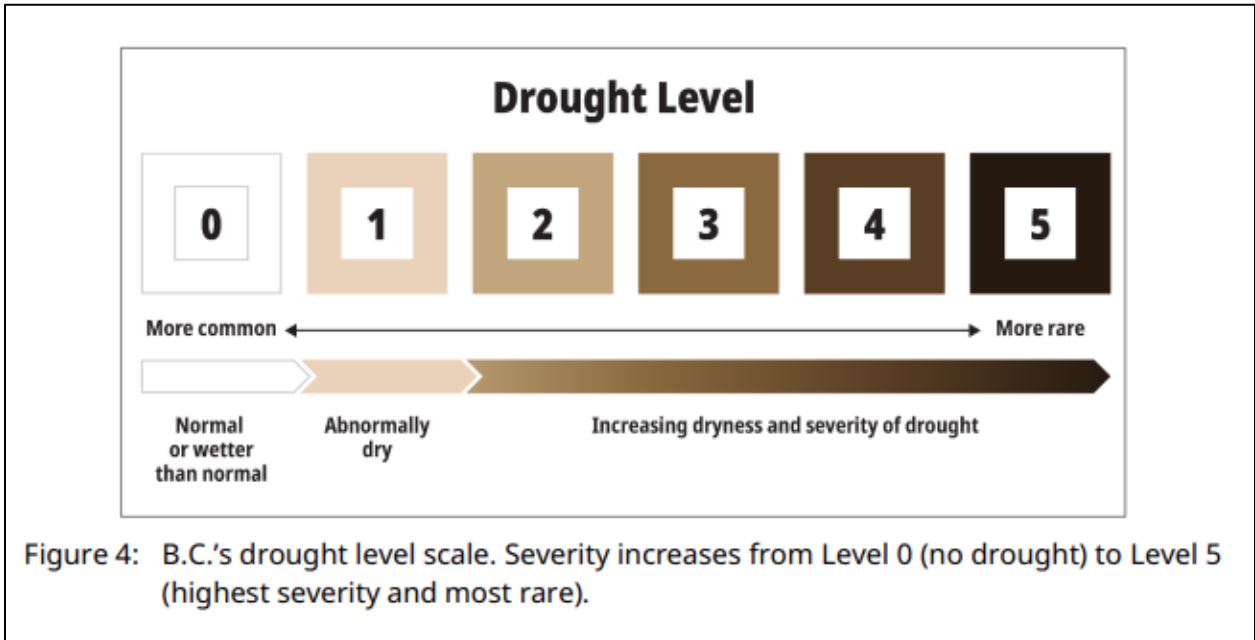


Figure 11. Explanation of B.C. Drought Levels from the 2026 B.C. Drought and Water Scarcity Response Plan (page 21).

“Drought levels measure a natural hazard; they are not direct measures of water scarcity, impacts, or response triggers. They help inform (but do not determine) water scarcity risk and response decisions. See Section 4.2 for more on water scarcity monitoring and risk assessment. A summary of what drought levels do and do not describe is provided in Table 4 to clarify the scope and limitations of the drought-level framework.”

Table 4: At-a-glance scope of drought levels.	
They describe	They do not describe
Meteorological/hydrological dryness	Ecosystem, social or economic impacts
Relative frequency (rarity) of dryness	Whether specific response actions should be taken
Current conditions on the assessment date	Outlooks or forecasts
Broad conditions and trends at the drought basin scale	Localized conditions on small tributaries or specific systems

Figure 12. Excerpt of Table 4 from the 2026 B.C. Drought and Water Scarcity Response Plan, outlining what drought levels describe and do not describe.

This is contrasted with the 2023 version of the same document, The 2023 BC Drought and Water Scarcity Response Plan:

Level 0: Green	At Level 0, conditions are average or wetter than average. Emphasis is on preparedness, taking proactive actions in advance of potential droughts to increase readiness of water users and communities where drought may occur.
Level 1: Yellow	At Level 1, conditions are starting to become dry and the likelihood for adverse impacts to socio-economic or ecosystem values is rare. Emphasis is on stewardship, voluntary conservation through education, communication and planning, and investigating unauthorized water uses.
Level 2: Peach	At Level 2, conditions are becoming very dry. Potential adverse impacts to ecosystem or socio-economic values are unlikely. Emphasis continues to be on voluntary conservation and restricting or curtailing unauthorized use. Water suppliers may consider invoking water restrictions where appropriate. If serious impacts are occurring in an area, the provincial government may begin considering regulatory action.
Level 3: Orange	At Level 3, conditions are becoming severely dry. Potentially serious ecosystem or socio-economic impacts are possible in some circumstances. All unauthorized use should be curtailed. Water suppliers are much more likely to impose watering restrictions, and data collection for regulatory action by the provincial government may start to occur.
Level 4: Red	At Level 4, conditions are extremely dry and adverse impacts to socio-economic or ecosystem values are likely. Voluntary measures and increasing use of watering restrictions will continue and may be augmented by regulatory action by the provincial government where necessary to reduce water user conflicts or protect the environment.
Level 5: Maroon	At Level 5, conditions are exceptionally dry and adverse impacts to socio-economic or ecosystem values are almost certain. All efforts should be made to conserve water and protect critical environmental flows.
Further action including emergency responses may be required in the event that a community or system experiences complete loss or near loss of supply. More information can be found in the regional drought plans and in the document; Dealing with Drought: A Handbook for Water Suppliers in B.C.	
<i>Table 2: B.C.'s Drought Response Levels</i>	
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Figure 13. Excerpt of Table 2 from the B.C. Drought Response Plan, describing the six provincial drought levels and associated response actions.

Okanagan Drought and Water Scarcity Levels Through 2026

Date	Drought Level	Okanagan Water Scarcity Level				
		Okanagan Mainstem	Okanagan North West	Okanagan North East	Okanagan South West	Okanagan South East
May 28	5	-	-	-	-	-
Jun 4	4	-	-	-	-	-
Jun 11	3	-	-	-	-	-
Jun 18	4	-	-	-	-	-
Jun 25	4	-	-	-	-	-
Jul 2	4	-	-	-	-	-
Jul 9	4	-	-	-	-	-
Jul 16	4	-	-	-	-	-
Jul 23	4	-	-	-	-	-
Jul 30	5	HIGH	HIGH	HIGH	HIGH	HIGH
Aug 6	5	HIGH	HIGH	HIGH	HIGH	HIGH
Aug 13	5	HIGH	HIGH	HIGH	HIGH	HIGH
Aug 20	5	HIGH	HIGH	HIGH	HIGH	HIGH
Aug 27	5	HIGH	HIGH	HIGH	HIGH	HIGH
Sep 3	4	HIGH	HIGH	HIGH	HIGH	HIGH

Table 1. Progression of Provincial Drought Levels and Okanagan Water Scarcity Levels Through the 2026 Drought Season. Data from BC Drought Portal, exported on Sept. 3, 2026.