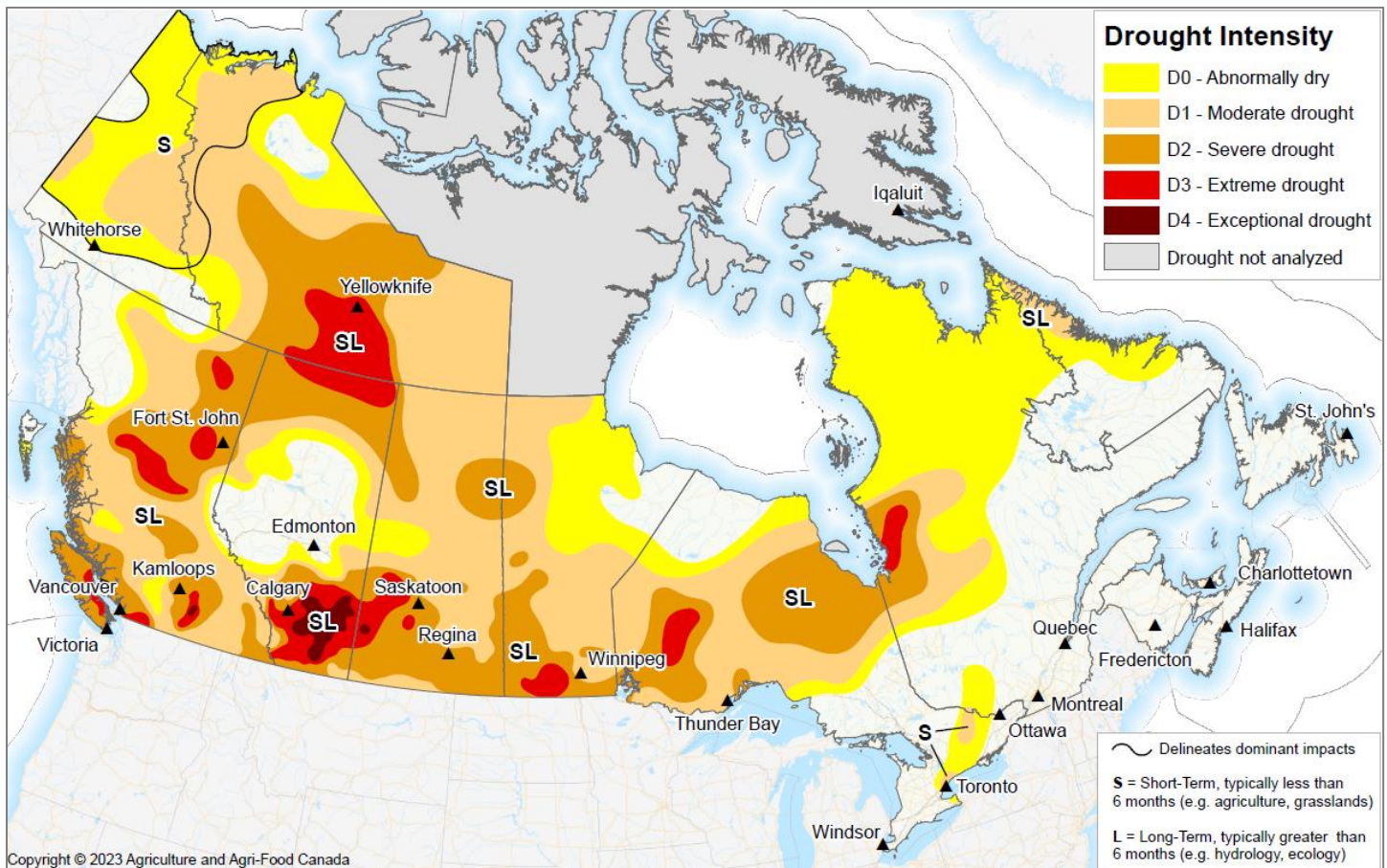


Canadian Drought Monitor

Conditions as of September 30, 2023



Western Canada and central Ontario and Quebec were exceptionally dry in September, while Atlantic Canada received above- to well above-normal precipitation. Severe (D2) and Extreme Drought (D3) expanded into the northern Prairies while Moderate (D1) and Severe Drought (D2) emerged in southern Ontario in September. Despite Extreme and Exceptional Drought (D3 and D4) persisted in southern Alberta and southwestern Saskatchewan given the significant long-term precipitation deficits and related impacts. Significant drought also remained across much of the Pacific and Northern Regions. Temperatures were reported as warmer-than-normal across the entire country, with the northern Prairies and southern Northwest Territories reporting the warmest monthly temperatures.

At the end of the month, 72% of the country was classified as Abnormally Dry (D0) or in Moderate to Exceptional Drought (D1 to D4), including 69% of the country's agricultural landscape.

Pacific Region (BC)

The Pacific Region experienced warm and dry conditions in the month of September with few exceptions. Southern Vancouver Island, the Lower Mainland, the Thompson-Okanagan region as well as northern B.C. received lower than normal precipitation, while the Kootenay-Boundary region as well as much of Vancouver Island and the Sunshine Coast received slightly above-normal precipitation this month. Temperatures remained warmer than normal for the 5th month in a row.

Although precipitation was reported as slightly above normal across much of Vancouver Island in September, impacts to water systems remained severe. There were reports of fish populations struggling with the extremely low streamflows, leading to the need to maintain flow conditions by pumping water from alternative sources. Additionally, although above-normal precipitation was reported, longer-term deficits remained across the island, with some locations receiving 850 mm less than normal in the past year. As a result, Severe Drought (D2) remained, with pockets of Extreme Drought (D3) stretching along the east side of the island.

On the Mainland, dry conditions persisted in the south and north, with some slight improvements in eastern parts of the province. Extreme Drought (D3) remained in the Lower Mainland as precipitation deficits continued into September as well as Severe Drought (D2) stretching up the west coast. Interior British Columbia remained relatively unchanged from last month with only minor adjustments to Extreme Drought (D3). However, Exceptional Drought (D4) remained between Kelowna and Vernon as this area only received 40 to 60% of their normal precipitation in the past year, with very little short-term precipitation to help alleviate longer-term impacts. These dry trends also continued in central and northern British Columbia as lake, creek and dugout levels were low and as well as reports of cattle losses and ongoing feed concerns. Prince George only received 26% of their normal precipitation and reported their 5th warmest September on record. As such, Extreme Drought (D3) was extended to include the city of Prince George. Conditions also remained significantly dry in the Peace River region in the northeast where Severe and Extreme Drought (D2 and D3) conditions and impacts persisted.

In contrast, southeastern areas, such as the Kootenay-Boundary region, started to see an improvement to streamflows with recent precipitation. As a result, there was further reduction

to the Severe Drought (D2) area north of Nelson and towards Revelstoke. However, this area remains vulnerable to significant drought in the absence of precipitation over the coming months.

At the end of the month, 86% of the Pacific Region was classified as abnormally Dry (D0) or in Moderate to Exceptional Drought (D1 to D4), including 98% of the region's agricultural landscape.

Prairie Region (AB, SK, MB)

Conditions across the Prairies were warm and dry in September with the warmest areas in northern and eastern parts of the region and the driest areas in northern Alberta, eastern Saskatchewan and west-central Manitoba. In Manitoba, Thompson and Churchill recorded their warmest September, while Fort Chipewyan, Alberta and La Ronge, Saskatchewan reported their second-warmest September on record. Large swaths of the Prairies received less than 40% of normal precipitation for the month, with the exception of extreme southern Manitoba, southwestern Saskatchewan and the southeastern Foothills in Alberta.

Weather across Alberta remained variable this month, with northern, central and southeastern Alberta receiving less than 40% of normal precipitation while southwestern Alberta received near-normal precipitation. Exceptional Drought (D4) remained across a large portion of southern Alberta, with surrounding Extreme Drought (D3) stretching from the Alberta-Saskatchewan border towards Banff. Significantly dry conditions over the summer led to extremely low crop yields and water restrictions in many jurisdictions, including around the City of Calgary. Low river and lake levels also continued their downward trend since the early spring melt off, leading to early shut-off notices for irrigators in the three major irrigation districts and several reservoirs reporting levels below capacity to irrigate. Significant concern remains for adequate soil moisture going into the winter season, especially with an already-parched landscape after consecutive years of drought and impacts to feed production and pasture conditions. This has led to an expansion of Extreme Drought (D3) stretching down from the Northwest Territories as well as a small expansion of Severe Drought (D2) across northern parts of the province. However, central Alberta remained drought-free due to adequate soil moisture from previous months of significant precipitation.

Conditions across Saskatchewan remained warm and dry in September. The province's northern, southwestern and central regions received below-normal precipitation, amounting for less than 40% of normal for September. In comparison, the southeastern corner of the province received average precipitation, ranging from 60% to 150% of normal. Northern parts

of the province were also impacted by high temperatures of 3 to 4 degrees above normal for September, including La Ronge, which reported temperatures 4 degrees higher than normal, marking their warmest September on record. Northern Saskatchewan saw the largest expansion of drought this month after an extended period of extremely low precipitation in the past 2 to 3 months; this resulted in Moderate Drought (D1) extending northwards as well as two areas of Severe Drought (D2) forming. Southwestern Saskatchewan continued to report the most severe drought in the province with low soil moisture, critically low surface water supplies and feed shortages persisting. Although there was a reduction to Extreme Drought (D3) and the removal of Exceptional Drought (D4) around Leader, Severe and Extreme Drought (D2 and D3) still dominated the area. In contrast, southeastern and east-central Saskatchewan reported near- to above-normal precipitation in the past 2 to 3 months and limited impact to annual crops and water systems. As a result, Severe Drought (D2) was reduced from Melville towards Hudson Bay.

September precipitation across Manitoba continued to be variable with northwestern and west-central Manitoba receiving less than 60% of normal precipitation for the month, while Interlake and southern regions received near-normal precipitation. During the past month, Manitoba experienced warmer temperatures overall, with northern Manitoba reporting temperatures between 4 and 5 degrees above normal and several communities reporting their second warmest September on record. These warm temperatures and lack of precipitation worsened drought conditions in northern Manitoba, leading to the expansion of Abnormally Dry (D0) and Moderate Drought (D1) conditions as well as Severe Drought (D2) stretching into the province from Saskatchewan. Although Manitoba has not seen the same impacts that the other two Prairie provinces have reported, Extreme Drought (D3) persisted in south-central parts of the province. Despite some minor improvement from recent precipitation, longer-term deficits as well as lower yields and water shortages still remained. Severe Drought (D2) also expanded towards northwestern Ontario due to low groundwater and streamflow levels.

At the end of the month, 86% of the Prairie Region was classified as Abnormally Dry (D0) or in Moderate to Exceptional Drought (D1 to D4), including 89% of the region's agricultural landscape.

Central Region (ON, QC)

In September, most of Ontario as well as southwestern and northwestern Quebec received below-normal precipitation, amounting to less than 60% of normal precipitation while southeastern Quebec received adequate monthly precipitation. The below-normal precipitation across northern parts of the Central Region led to Moderate to Extreme Drought (D1 to D3)

persisting with only minor adjustments this month. The Central Region also experienced unusually warm weather this month, unlike previous months of near- to below-normal temperatures. This led to a quicker deterioration of dry conditions in southern parts of the region.

A persistent ridge of high pressure led to a dry spell across the Greater Toronto Area and towards Ottawa, prompting the addition of Abnormally Dry (D0) conditions and two pockets of Moderate Drought (D1) across the region. Although short-term, these areas saw reduced streamflow and very little precipitation in September.

At the end of the month, 62% of the Central Region was classified as Abnormally Dry (D0) or in Moderate to Extreme Drought (D1 to D3), including 20% of the region's agricultural landscape.

Atlantic Region (NS, NB, PE, NL)

In September, Atlantic Canada experienced near- to above-normal precipitation levels with few areas reported drier-than-normal conditions. These drier areas included Newfoundland and Labrador as well as northern Nova Scotia. Newfoundland received 60% to 115% of normal precipitation for September, while New Brunswick and southern Nova Scotia experienced abundant precipitation at to over 200% of normal, notably due to post-tropical storm Lee, with southern areas of New Brunswick recording high water levels and flow rates.

Although slightly drier than August, New Brunswick, P.E.I, Nova Scotia and Newfoundland had no drought or dry conditions reported. Labrador continued to receive near- to below-normal precipitation, and as such, Abnormally Dry (D0) and Moderate Drought (D1) remained and expanded along the northern coastline in Labrador.

At the end of the month, 19% of the Atlantic Region was classified as Abnormally Dry (D0) or in Moderate Drought (D1). None of the region's agricultural landscape was impacted this month.

Northern Region (YT, NT)

Northern Canada received lower-than-normal precipitation in the past month; this continued a trend of dry conditions that has persisted throughout the summer, which would typically be the wettest period of the year in this region and thus, lead to larger precipitation deficits. A significant portion of the Northwest Territories (NWT), stretching from Fort Smith to west of the Great Slave Lake, received less than 25% of their normal precipitation since June 1.

Additionally, Yellowknife experienced a very warm September, being 3.9 degrees above normal and marking their second warmest September.

In the N.W.T., wildfires continue to burn in the South Slave region, near the communities of Kakisa, Enterprise, Hay River and Fort Resolution. Water levels in rivers and lakes of the central and southern N.W.T. were reported at or near record lows this year after the warm and dry summer stretch. The ongoing precipitation deficit, impacts from wildfires and low streamflows led to an expansion of Severe (D2) and Extreme Drought (D3) in southern NWT. The Yukon also continued to experience short-term moisture deficits, and as such, led to the expansion of Moderate Drought (D1) across western parts of the territory. Overall, the large moisture deficit in the region will require above-average snowpack and rainfall to return to normal levels.

At the end of the month, 78% of the Northern Region was classified as Abnormally Dry (D0) or in Moderate to Extreme Drought (D1 to D3).