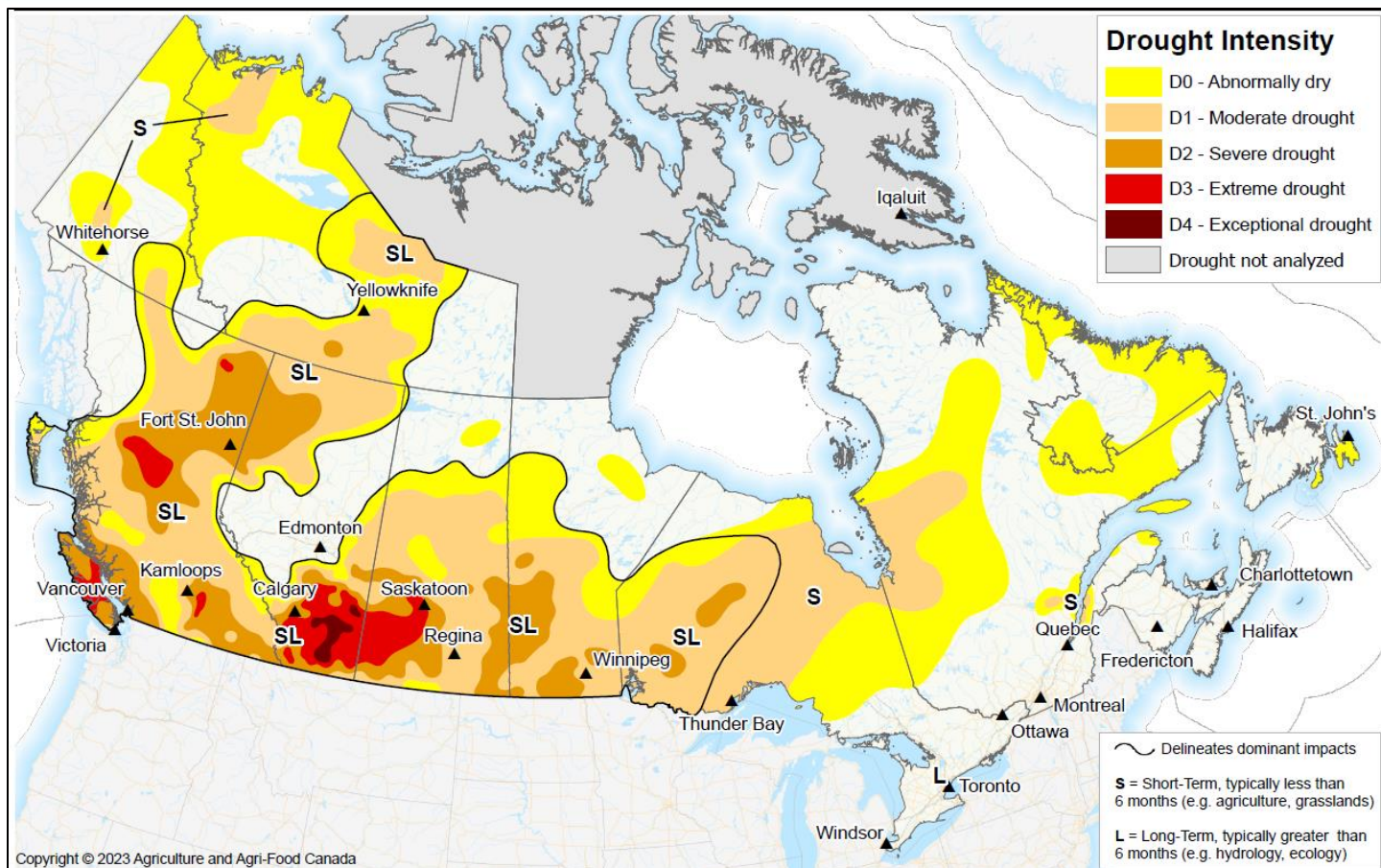


Canadian Drought Monitor

Conditions as of July 31, 2023



Exceptionally dry conditions dominated much of Western Canada while eastern parts of the country saw above- to well above-normal precipitation in July. Drought extent and severity continued to significantly increase with abnormally warm temperatures and well below-normal precipitation across Western Canada. British Columbia and Saskatchewan saw the largest precipitation deficits this month with substantial portions of southern Saskatchewan going more than 2 weeks without any precipitation. Exceptional Drought (D4) was introduced this month in southern Alberta due to both short- and long-term precipitation deficits, above-normal temperatures and significant impacts. Extreme Drought (D3) conditions continued to grow in southern Alberta, Saskatchewan and in various pockets throughout British Columbia.



Southern areas of Eastern Canada received significant precipitation in July resulting in the removal of most of the Abnormally Dry (D0) and Moderate Drought (D1) areas from last month.

At the end of the month, 59% of the country was classified as Abnormally Dry (D0) or in Moderate to Exceptional Drought (D1 to D4), including 67% of the country's agricultural landscape.

Pacific Region (BC)

Conditions across most of the Pacific Region remained warm and dry in July. Very little precipitation fell across much of Vancouver Island, the lower Mainland, Interior, Kootenay Cariboo and northeast regions, further exacerbating drought conditions. By the end of July, large portions of the province were experiencing extremely low streamflows, poor soil moisture and significant wildfires.

Although southern portions of Vancouver Island received near-normal rainfall leading to slight improvements, central parts of Vancouver Island continued to experience extremely low precipitation and increasing dry conditions. Several impacts were reported in the area including reduced hay production and cattle grazing, hauling water due to a lack of surface water supplies and irrigation ponds reporting historically low levels for July. Western parts of Vancouver Island, such as Tofino, reported exceptionally low rainfall since May 1st, receiving only 19 mm compared to the normal 249 mm. These impacts led to eastern and west central portions of Vancouver Island being degraded to Extreme Drought (D3). Additionally, the lower mainland and coastal regions continued to experience degradation from Moderate (D1) to Severe Drought (D2).

Across southern parts of the province, persistently low precipitation led to continued degradation this month, including the formation of Extreme Drought (D3) through the Okanagan. This area received less than 40% of normal precipitation this month and only 60% of normal precipitation since the start of the growing season. The west Kootenay region recorded low streamflows, low precipitation and warm temperatures this month as well, leading to an expansion of Severe Drought (D2) across the area.

Central parts of the province continued to see concerning drought impacts this month as short-term precipitation deficits persisted. There were numerous reports of hay shortages, significant water shortages and very short soil moisture; these impacts led to producers in the area needing to sell off livestock due to unavailable feed. With these impacts in mind, Severe Drought (D2) was expanded and Extreme Drought (D3) persisted. Northcentral parts of B.C. also

saw drought degradation, with limited precipitation and higher temperatures leading to greater levels of evapotranspiration. Moderate Drought (D1) degraded into Severe Drought (D2) this month, with a small pocket of Extreme Drought (D3) placed around Fort Nelson.

At the end of the month, 84% of the Pacific Region was considered Abnormally Dry (D0) or in Moderate to Extreme Drought (D1 to D3), including 98% of the region's agricultural landscape.

Prairie Region (AB, SK, MB)

Throughout July, the Prairie Region continued to experience abnormally warm and dry conditions. Across central and eastern parts of the Prairies, a substantial portion of the region received well below-normal precipitation while parts of the western Prairies, particularly Alberta's Foothills, Rockies, Central and Peace River Valley regions, received precipitation levels ranging from near-normal to above-normal. Similarly, along the southern border of Alberta as well as southeastern Manitoba, precipitation levels ranged from near-normal to above-normal. Overall, the region continued to witness an ongoing expansion and intensification of drought conditions.

Conditions across Alberta this month were extremely variable: southern and northern parts of the province continued to see extreme drought conditions persist, while central Alberta received sufficient monthly precipitation, enough to alleviate much of the remaining drought from the last month. Temperatures were warmer than average since June 1st, with some areas in the south and northwest seeing one in 25-to-50-year high temperatures. This exacerbated the significant precipitation deficits, leading to more significant impacts across these areas. Producers in southern Alberta reported severe insect damage to crops, exceptionally poor pastures as well as a significant lack of available water and feed; many producers resorted to reducing their herds as a result. Additional agricultural disasters were declared this month due to drought conditions forcing producers to abandon crops or sell off as much as 50% of their livestock, with many of these located in east-central Alberta and the Special Areas. With these agricultural disasters and other severe impacts in mind, Severe (D2) and Extreme Drought (D3) expanded across much of southern Alberta, in addition to the emergence of Exceptional Drought (D4) in southeastern parts of the province. Drought conditions in southwestern Alberta also degraded, with Extreme Drought (D3) reaching further west towards the foothills, south of Calgary.

In contrast, west-central regions of province saw improvements with the removal of Abnormally Dry (D0) conditions and Moderate Drought (D1). This area received 85 to 200% of normal precipitation, with localized areas receiving more than 200% of normal precipitation in

July. However, the province's northern and northwestern regions experienced degrading drought conditions with areas from Grande Prairie to High Level now classified as being in Moderate (D1) to Severe Drought (D2). This degradation was a result of crops reported as in extremely poor condition, poor hay pasture conditions and farmers lacking access to hay.

Drought conditions in Saskatchewan intensified in July as warmer-than-normal temperatures and spotty precipitation continued across the province. Eastern, central and western parts of the province received less than 40% of normal precipitation for July. In addition, more than 40 rural municipalities declared agricultural states of emergency as of the end of the month. Although spotty precipitation from convective storms provided some relief in southwestern parts of the province, it was insufficient to significantly alleviate the persistent dry conditions, especially considering the region's history of multiple years of drought and moisture levels still being in a state of recovery. This part of the province saw the greatest level of degradation this month due to limited water availability, stunted crop growth and a rise in pest populations. This led to the extension of Extreme Drought (D3) from the Saskatchewan-Alberta border towards Saskatoon and Swift Current as well as an expansion of Severe Drought (D2) to cover southwestern Saskatchewan. Southeastern parts of the province also experienced dry conditions this month, with less than 40% of normal precipitation and worsening drought impacts; this included lowest first-cut hay yields and producers considering selling off cattle due to hay shortages. As a result, drought conditions quickly degraded into Moderate (D1) to Severe Drought (D2) throughout the area. Central Saskatchewan experienced deteriorating conditions as well, although not as severely as southern parts of the province. Below-normal monthly precipitation led to an overall increase in Moderate Drought (D1), with the exception of an area west of Prince Albert, which remained Abnormally Dry (D0). Although northern parts of the province received slightly below-normal precipitation this month, precipitation has improved overall in the past 3 months and led to a reduction in Abnormally Dry (D0) conditions and Moderate Drought (D1).

July brought varied weather conditions to parts of Manitoba, with the northwest and Interlake regions experiencing wet spells while the remaining regions received precipitation levels ranging from below-normal to near-normal. Eastern and central portions of Manitoba experienced a precipitation deficit, receiving less than 40% of normal rainfall for July. Southern parts of Manitoba experienced worsening drought conditions with the entire region now in a Moderate Drought (D1) with pockets of Severe Drought (D2) added in southern and western parts of the province. Although much of southern Manitoba is experiencing meteorological drought, agricultural impacts have been minimal due to the moisture carryover from previous years and a lack of extreme temperatures. Despite low precipitation during the winter and spring, subsurface soil moisture and groundwater reserves from last year's precipitation have

provided some relief, lessening the impacts on the agricultural industry. Northern parts of Manitoba saw improvements to drought conditions this month, especially near Churchill, Manitoba with the removal of Moderate Drought (D1).

At the end of the month, 67% of the Prairie Region was classified as Abnormally Dry (D0) or in Moderate to Exceptional Drought (D1 to D4), including 87% of the region's agricultural landscape.

Central Region (ON, QC)

July brought above- to well above-normal precipitation to the southern parts of the central region including southern Ontario, eliminating any remaining drought or Abnormally Dry (D0) designations. Although conditions significantly improved across southern Quebec this month, small pockets of Abnormally Dry (D0) conditions and Moderate Drought (D1) remained due to longer-term precipitation deficits. Northwestern Ontario as well as northern Quebec continued to receive below-normal precipitation in July resulting in an expansion of Abnormally Dry (D0) and Moderate Drought (D1) areas. Two Severe Drought (D2) pockets also emerged in Northwestern Ontario in the Dryden and Pipestone River regions due to continued well below-normal precipitation.

At the end of the month, 52% of the Central Region was classified as Abnormally Dry (D0) or in Moderate to Severe Drought (D1 to D2), including 15% of the region's agricultural landscape.

Atlantic Region (NS, NB, PE, NL)

In July, Atlantic Canada experienced significant rainfall ranging from 115% to over 200% of normal, with Nova Scotia and eastern New Brunswick receiving the greatest amount of precipitation. The continued significant rainfall led to the removal of any remaining Abnormally Dry (D0) or Moderate Drought (D1) conditions across Nova Scotia, New Brunswick and P.E.I. Significant monthly precipitation across southern New Brunswick also led to groundwater wells replenishing their levels, with only one reporting slightly below-normal levels by the end of the month.

Southwestern Newfoundland also received above-normal precipitation this month, but the Avalon Peninsula, on the southeastern side of the island, missed out on significant precipitation. As a result, streamflow levels remained lower than normal and Abnormally Dry

(D0) conditions persisted. Coastal and western parts of Labrador also saw below-normal precipitation, leading to Abnormally Dry (D0) conditions remaining in place this month.

At the end of the month, 36% of the Atlantic Region was classified as Abnormally Dry (D0) or in Moderate Drought (D1), including 3% of the region's agricultural landscape.

Northern Region (YT, NT)

In Northern Canada, extremely warm temperatures and dry conditions persisted, leading to worsening drought this month. The entire region reported above-normal temperatures, with northwestern and southwestern parts of the Yukon reporting temperatures 4 to 5 degrees Celsius above normal. Many communities recorded their top three warmest July's on record including Fort Simpson with its third warmest July and Inuvik with its warmest July on record. Precipitation throughout the region was variable but most areas were below normal. Northwestern parts of the region received some of the lowest precipitation this month, receiving less than 50% of normal monthly precipitation. The Northwest Territories reported high to extreme fire danger across the territory with 181 fires burning, affecting close to 2 million hectares as of the end of July. Although lower, the Yukon still reported 110 fires thus far, affecting roughly 92,000 hectares of forested land. The Yukon and Northwest Territories reported above their 10-year average for number of fires, with the Northwest Territories close to 4 times higher than the 10-year average area burnt. Due to the dry conditions this month and throughout the summer, Abnormally Dry (D0) conditions and Moderate Drought (D1) expanded across northern and eastern portions of this region.

At the end of the month, 53% of the Northern Region was classified as Abnormally Dry (D0) or in Moderate to Severe Drought (D1 to D2).

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