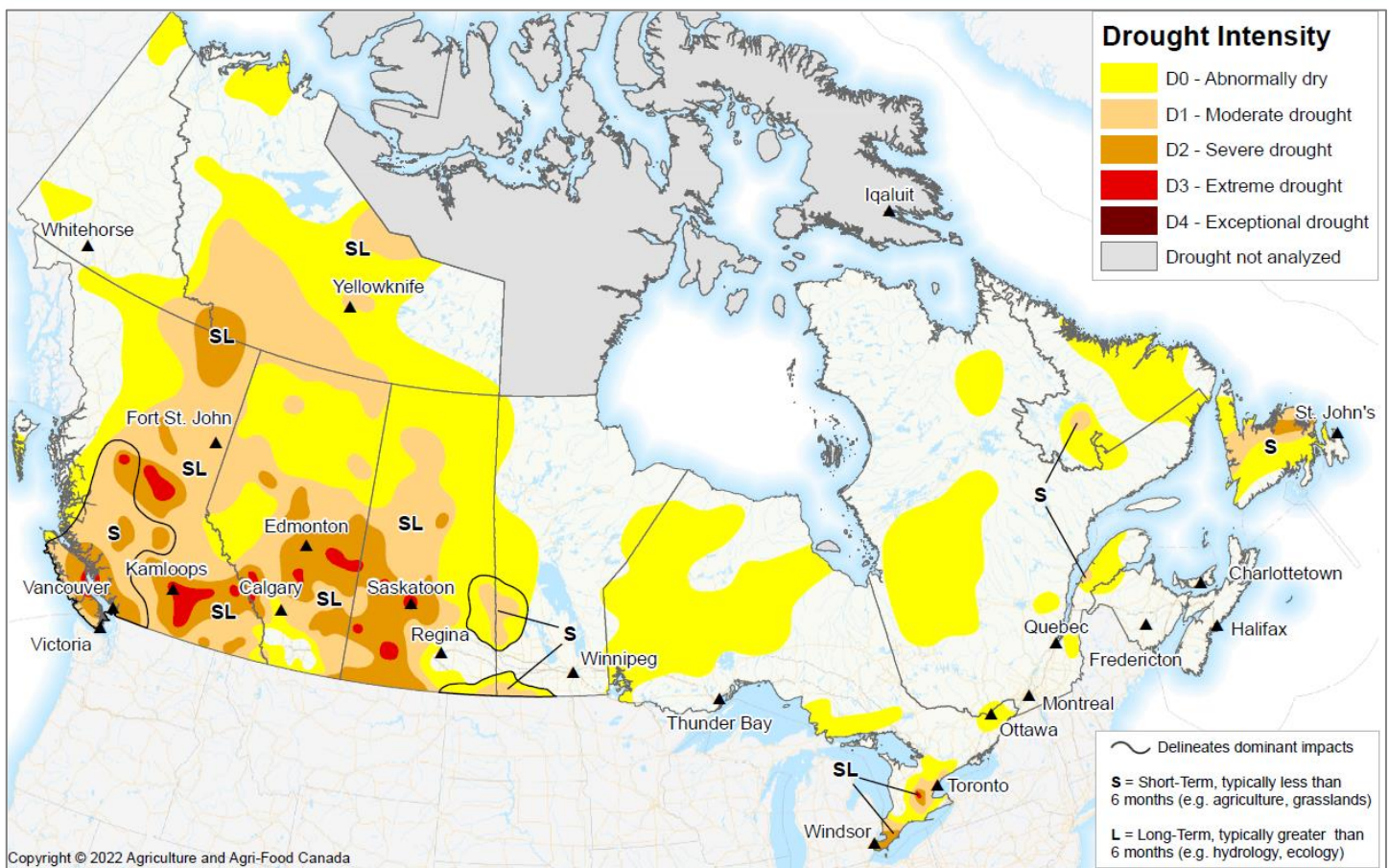


# Canadian Drought Monitor

Conditions as of October 31, 2022



Abnormally dry and warm conditions throughout much of Canada during October resulted in expansion or development of drought conditions in all regions of the country. Temperatures were above normal across the country, with Western Canada experiencing the highest temperatures at 3 to 5 degrees above the monthly average. Precipitation was below or much below normal throughout large regions of the country. In British Columbia and northern agricultural areas of the Prairies, above-normal temperatures and extremely low precipitation quickly intensified dry conditions, resulting in significant expansion of drought severity and extent including the development of several small pockets of Extreme Drought (D3). This region saw soil moisture and several water sources at extremely low levels. In Southern Ontario, drought conditions continued to expand and worsen, including the development of an Extreme



Drought (D3) pocket in the Kitchener-Waterloo area. In the Atlantic region, drought continued to grow through Newfoundland and Labrador with Severe Drought (D2) developing in the northeastern region of the province along with substantial expansion of Moderate Drought (D1) area.

At the end of the month, fifty-one percent of the country was classified as Abnormally Dry (D0) or in Moderate to Extreme Drought (D1 to D3), including sixty-seven percent of the country's agricultural landscape. There was no Exceptional Drought (D4) reported this month.

## **Pacific Region (BC)**

The first two thirds of October was significantly dry, with limited but much-needed precipitation falling in the last week of the month. Central and west central areas of the province along with eastern Vancouver Island received the least amount of precipitation this month, with Exceptionally Low precipitation reported around Kamloops, Vancouver Island and central areas since August. Temperatures were reported at 3 to 5 degrees warmer than average in October as well, with record high temperatures reported in the Lower Mainland and surrounding areas at the beginning of the month.

As significantly low precipitation was reported across much of southern and central British Columbia. since July, streamflows unfortunately suffered and led to significant salmon loss. Water restrictions were implemented on the Sunshine Coast, just north of the Lower Mainland; these restrictions halted production at breweries and water bottling businesses as well as impacting concrete and asphalt manufacturing. Mushroom harvests also severely suffered from the exceptionally dry weather on Vancouver Island, with a 95 percent reduction in yield. Severe Drought (D2) expanded and Extreme Drought (D3) emerged along the west coast and the Vancouver Island in October; this drought expansion was limited to the Lower Mainland as much of the total monthly rainfall fell in this area.

The rest of the province remained dry this month as well: numerous pockets of Extreme Drought (D3) emerged throughout the Okanagan and towards Banff, Alberta, in addition with Prince George and Burns Lake in central British Columbia. Severe Drought (D2) also expanded into the Peace region in the northeastern corner of the province due to a continued lack of precipitation and low streamflows. These areas only received between 40 and 60 percent of normal precipitation in the last 2 to 3 months, leading to these expansions of drought. At the end of the month, eighty-five percent of the Pacific Region was considered Abnormally Dry (D0) or in Moderate to Extreme Drought (D1 to D3), including ninety-nine percent of the region's agricultural landscape.

## **Prairie Region (AB, SK, MB)**

Despite a few late month precipitation events passing through southern portions of the region, drought significantly expanded across much of the Prairies. Very little precipitation fell since August, which, in conjunction to the existing long-term precipitation deficits from the last 2 to 5 years, added to the drought vulnerability in this area. Sufficient winter precipitation across southern Alberta and Saskatchewan will be crucial in order to replenish water supplies and improve hay and pastures lands by the spring. Temperatures were all reported as higher than average, with the warmest temperatures seen in Alberta, particularly the Peace Region.

Although monthly precipitation improved conditions in southern parts of Alberta, the rest of the province remained significantly dry. Very little precipitation fell across central Alberta at a important time for soil moisture recharge to occur, leading to significant expansion of Severe Drought (D2) as well as small pockets of Extreme Drought (D3). The area between Calgary and Edmonton received less than 40 percent of average precipitation in the last three months. Moderate to Severe Drought (D1 to D2) was also extended northward beyond the agricultural areas of the province as Extremely Low precipitation fell since September 1st.

Southern Saskatchewan received slightly higher than normal precipitation after a couple of storm systems passed through near the end of October; however, long-term deficits remained. In addition to ongoing water supply concerns, nearly half of all hay and pasture lands reported very short topsoil moisture this month. There are also concerns about germination of winter wheat due to the dry soils, leading some producers to avoid seeding winter wheat or fall rye. As a result of this ongoing precipitation deficit, Severe Drought (D2) remained in the southwestern corner of the province. Extreme Drought (D3) pockets emerged across western parts of the province due to both short- and long-term precipitation concerns. Northern Saskatchewan saw a small expansion of Moderate to Severe Drought (D1 to D2) this month, while moisture conditions in the southeastern corner of the province remained adequate.

Conditions across Manitoba were closer to normal this month, with slightly above-normal precipitation and near-normal temperatures. Precipitation continued to miss Swan River along the west-central side of the province where Moderate Drought (D1) was slightly expanded. This area reported concern for livestock water supplies, but adequate amounts of feed exist to carry cattle over into the spring. Contrary to the drying trend in western Manitoba, southcentral and southeastern parts of the province received adequate precipitation this year; Winnipeg reported its wettest year on record with 739.5 mm on October 24, 2022. As such, drought did not pose a concern in this area this month.

At the end of the month, seventy-two percent of the Prairie Region was classified as Abnormally Dry (D0) or in Moderate to Extreme Drought (D1 to D3), including eighty percent of the region's agricultural landscape.

## **Central Region (ON, QC)**

Conditions across Central Canada were varied this month, with below-normal precipitation in the south and above-normal precipitation in northern portions of the region. The areas of biggest concern continued to be in Southern Ontario, specifically around Chatham-Kent and Kitchener-Waterloo, where precipitation deficits continued to grow. The area surrounding Kitchener-Waterloo, for example, received between 100 and 120 mm less precipitation than normal in the past three months. This area also only received 40 to 60 percent of the expected rainfall since the start of the growing season. As a result of these concerns, a small pocket of Extreme Drought (D3) was placed around Kitchener-Waterloo as well as, a larger pocket of Severe Drought (D2) from Windsor to Chatham-Kent. Northwestern Ontario has dried out further, with only 40 to 60 percent of normal precipitation received; as a result, Abnormally Dry (D0) conditions were expanded in this area towards Lake of the Woods.

Although southern portions of Quebec received limited rainfall this month, previous precipitation from August and September helped to dampen drought concerns. However, the Gaspé Peninsula received less than 85 percent of normal precipitation in the last few months, leading to an extension of Abnormally Dry (D0) conditions and the emergence of a small pocket of Moderate Drought (D1). A few large areas of Abnormally Dry (D0) remained across central and northeastern Quebec, but conditions overall improved with above-normal monthly precipitation.

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

## **Atlantic Region (NS, NB, PE, NL)**

Abnormally warm temperatures and near-to below-normal precipitation characterised the Atlantic region in October. Substantial portions Prince Edward Island, Cape Breton and Newfoundland and Labrador received less than 50 per cent of their normal monthly precipitation. Despite dry conditions throughout the region in October, longer-term precipitation was adequate across much of the region with the exception of Newfoundland and

Labrador. Much above-normal temperatures accompanied these systems, resulting in several new daily maximum temperature records. Overall, the Maritime region saw temperatures of 2 to 4 degrees above the monthly normal. Bas-Caraquet, Charlo NB, Halifax, NS and Charlottetown, P.E.I. all reported their second warmest October on record with most stations recording in their top 5 warmest Octobers. Newfoundland and Labrador also continued to be warmer than normal with October representing the 5th consecutive month in Newfoundland and the 3rd consecutive month in Labrador of above-normal temperatures.

As a result of the near-to above-normal precipitation over the past 60 days and longer, the addition of an Abnormally Dry (D0) pocket in the Maritimes was not warranted. However, in Newfoundland and Labrador, short-term and longer-term dry conditions along with above-normal temperatures resulted in degrading conditions: less than 40 percent of normal precipitation across the province resulted in a substantial expansion of the Abnormally Dry (D0) and Moderate Drought (D1) as well as the addition of Severe Drought (D2) in the Gander area. Drought now covers much of northern Newfoundland, from the western shore near Corner Brook all the way through to the eastern shore north of St John's.

At the end of the month, forty-one percent of the Atlantic Region was classified as Abnormally Dry (D0) or in Moderate to Severe Drought (D1 to D2), including four percent of the region's agricultural landscape.

## **Northern Region (YT, NT)**

Significant precipitation fell throughout much of the Yukon and in the northern region of the Northwest Territories in October. Dawson and Whitehorse received the most precipitation in the region, receiving 249 and 224 percent of normal precipitation, respectively. All of the Northern Canada region reported above-normal temperatures, with southwestern areas reporting the highest monthly temperatures. Multiple high temperature records were broken in the Yukon mid-month including in areas around Whitehorse. As a result of the significant monthly precipitation, a substantial reduction of Abnormally Dry (D0) conditions in the Yukon occurred. However, southern and central regions of the Northwest Territories continued to receive below-normal precipitation. As a result, the Abnormally Dry (D0) and Moderate Drought (D1) classifications expanded slightly through this region. In addition, the Severe Drought (D2) pocket in the southern Northwest Territories expanded south into northern British Columbia.

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

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