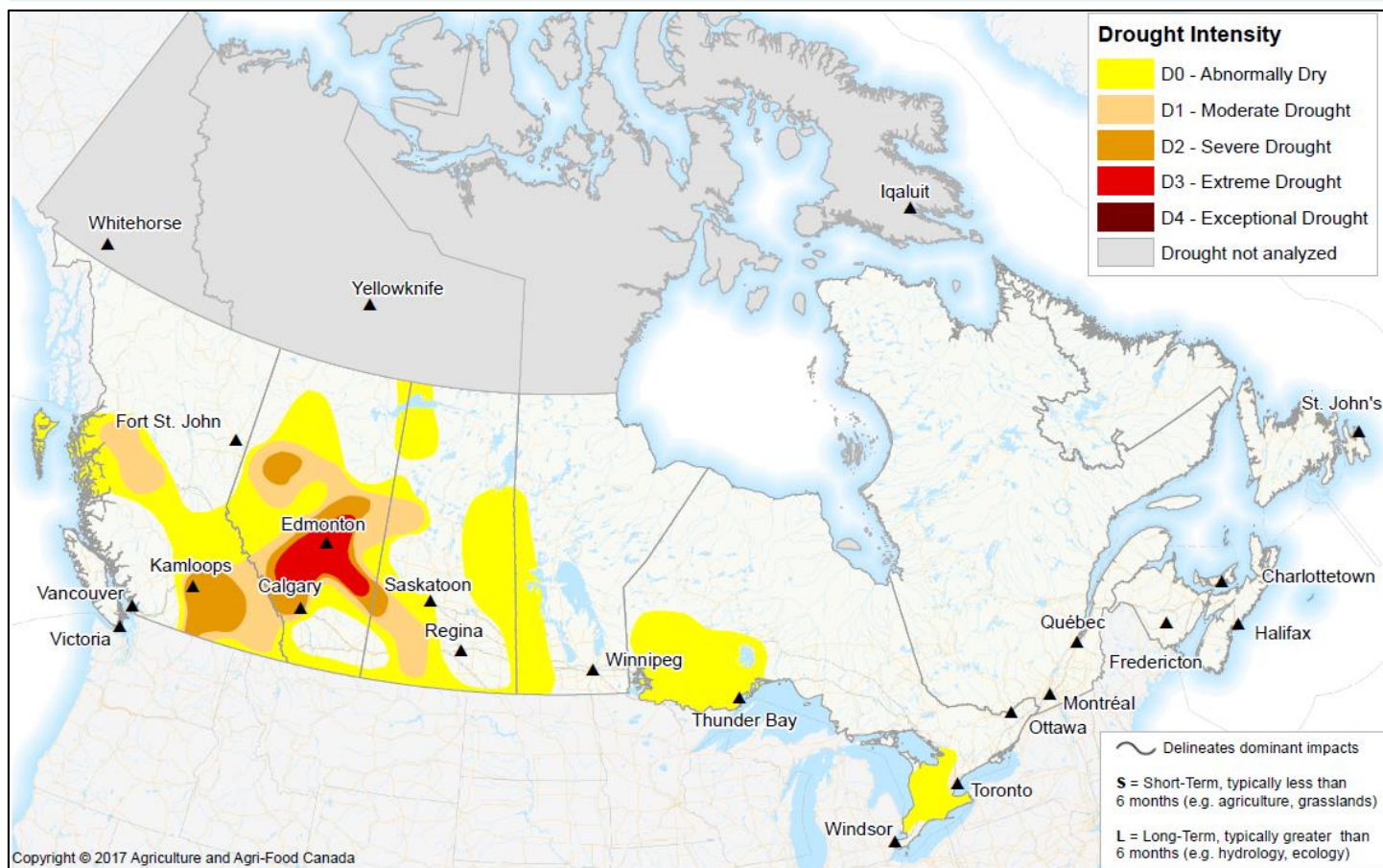


# Canadian Drought Monitor

Conditions as of December 31, 2009



Drought conditions continue throughout central and northern Alberta and south-central British Columbia. In these areas, extremely low precipitation leading into freezup resulted in very low soil moisture. Winter precipitation has been well below normal, raising concerns for spring runoff and soil moisture conditions. As of December 31, the percentage of land area in Canada excluding the Arctic regions north of the 60<sup>th</sup> parallel classified as drought or abnormally dry, had been increased to approximately 25%; up from 15% last month. The percentage of agricultural area classified as drought or abnormally dry also increased by 10%, from 40% to 50%. The majority of these changes are a result of substantial increases in the extent of the abnormally dry areas.

In December, precipitation was above normal in eastern Ontario and Quebec. The majority of Atlantic Canada was near normal with drier than normal conditions persisting in Prince Edward



island, central Nova Scotia and western Newfoundland. Below normal precipitation was received across much of British Columbia, the Prairies, and northwestern Ontario. However, parts of west-central Alberta, including some of the most exceptional drought areas, received above normal snowfall. Snowpack was generally near normal throughout the Rocky Mountains of British Columbia, however some basins in the central-interior and the northwest are considerably below normal. For example, the Skeena-Nass in the northwest is at 75% of normal snowpack for this time period. With the exception of the southern B.C. Coast, the two month precipitation was extremely low for much of western Canada, with many regions reporting below 40% of normal.

Monthly average temperatures for December were near normal in Eastern Canada, with the exception of northern Quebec which was more than 5.0°C (9.0°F) above normal. Following a warmer than normal November, Western Canada experienced a much colder than normal December. The Prairies were plunged into a deep freeze with departures of more than 7°C (12.6°F) below normal. Edmonton, Alberta set a record overnight low of -41.6°C (-42.8°F) on December 13, making it the coldest place in Canada, and one of the coldest in the world on that day.

## **Pacific Region (BC)**

Drought also endures in the southern interior of British Columbia where precipitation has been less than 75% of normal over the past six months. This resulted in a continuation of the D2 (severe drought) and D1 (moderate drought) classifications. In much of this area, mountain snowpack is currently average and conditions at the end of the calendar year do not indicate significant potential for flood or drought risk. However, given the drought conditions of this past summer in the south-central interior region (Thompson, Okanagan, Nicola, Similkameen, Kettle, and other areas), an above normal snowpack by April 1<sup>st</sup> will be needed to replenish the diminished groundwater, lake, and reservoir storage in those regions. Areas in west-central British Columbia also remained under 75% of normal precipitation over the past six months, resulting in a persistence of the D1 (moderate drought) classification. Snowpack in this area is currently about 75% of average, and SPI values were less than -2.00 in December.

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

Significant drought continues through central and northern Alberta, and western Saskatchewan. Some areas within this region have annual precipitation deficits of more than 250 mm (nearly ten inches); about half of the expected normal accumulation. Standardized Precipitation Index (SPI) values of less than -2.00 have persisted since December 2008, leaving soil moisture reserves extremely low. The result is a continuation of the D3 (extreme drought) and D2 (severe drought) classifications accordingly. For these areas, well above average snowfall and spring precipitation is needed to bring soil moisture and water reserves to near normal, otherwise it is likely that the drought will persist into next growing season. In northwestern Alberta, the extent of drought remained constant with the region continuing to be assessed in a D2 (severe

drought), due to having received less than 60% of normal precipitation over the past six months. West-central and southwestern regions of Saskatchewan continued to be assessed D1 (moderate drought) due to precipitation being less than 60% of normal over the past three months, and less than 70% of normal since December 2008. Abnormally dry (D0) areas remain in northwestern and southwestern Ontario. Both regions have received less than 60% of normal precipitation over the past three months. The D0 (abnormally dry) classification along the Saskatchewan-Manitoba border expanded to include areas that have had SPI values of less than -2.00 for the past two months. In addition, much of this region has only received 60% of normal precipitation over the past three months.