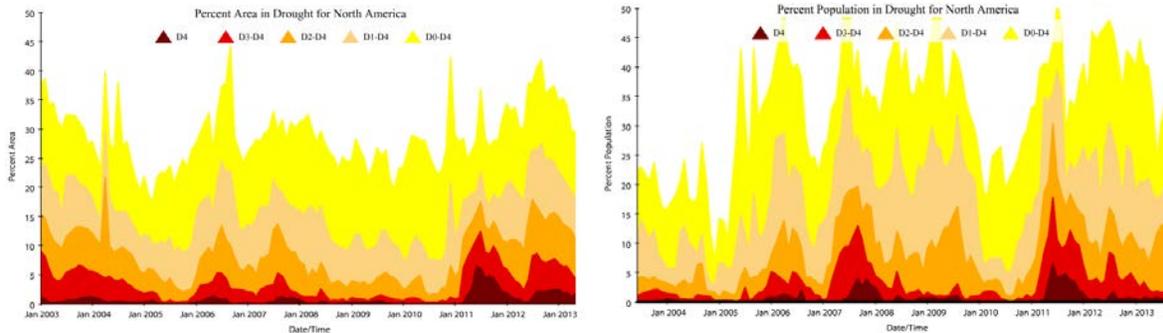


## North American Drought Monitor - August 2013

At the end of August 2013, moderate to exceptional drought (D1-D4) affected approximately 20.6% of the area and 19.9% of the population of North America. These percentages are an increase of 1.1% for area and an increase of 1.6% for population compared to the values for the end of July.



**CANADA:** The extent and severity of drought across Canada remained low in August; with no areas classified higher than Abnormally Dry (D0). The driest areas were concentrated in western Canada, along with small areas marked D0 in eastern Quebec and northern Nova Scotia.

August rainfall was above average on the southwest coast of British Columbia (BC), and along the American border across the Prairie Provinces. Central Alberta, eastern Saskatchewan and western Manitoba were particularly dry however, with rainfall less than 40 percent of average. Rainfall in eastern Canada was largely normal or better apart from eastern Quebec and northern Nova Scotia. Temperatures were warmer than normal from British Columbia to the Saskatchewan-Manitoba border. That increased fire risk and dry conditions, but also helped spur on harvest operations in agricultural regions. Normal temperature conditions prevailed from Manitoba eastward.

In western Canada sustained high temperatures and low rainfall continued the Abnormally Dry (D0) classification across the northern boreal forest region. Since April 1, rainfall in this region has been 40-60 percent of normal. Forest fire activity and risk remained high as a result. Dry (D0) areas also occurred in central Alberta where rainfall was less than 70 percent of normal over the past three months; subsequently soil moisture ratings continued to decline since late July. Across southern Saskatchewan, hay and pasture land and some pockets of crop land were very dry. That increased concern about continued dryness going into the autumn season, but overall impacts from the dry conditions were minimal.

Last month Moderate Drought (D1) was introduced on Vancouver Island because precipitation was 70 percent below normal for the past six months. August however brought above normal rainfall to these regions, in the order of 150 percent of normal which was more than 25 mm (one inch) additional. Coastal BC, including interior regions east of the Queen Charlotte Islands remained classified D0. Fire risk throughout the province remained high, and a ban on campfires continued for much of the southern region. Dry

(D0) areas were also found in interior British Columbia, where for the last three months rainfall remained 40-60 percent of normal.

Abnormally Dry classifications were added to the Gaspé region of eastern Quebec and to northern Cape Breton in Nova Scotia. In Quebec rainfall was half of normal in August, along with negative standardized precipitation index (SPI) values reported over the last three months. In Cape Breton rainfall was 50 mm (two inches) less than expected in July and August. Impacts from the dry conditions in both regions were minimal.

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- B.C. Ministry of Forests, Lands, and Natural Resource Operations – River Forecast Centre
- B.C. Ministry of Forests & Range, Wildfire Management Branch
- B.C. Ministry of Agriculture
- Manitoba Agriculture, Food and Rural Initiatives
- Manitoba Water Stewardship
- Nova Scotia Department of Agriculture
- New Brunswick Ministry of Agriculture, Aquaculture, and Fisheries
- New Brunswick River Watch
- Ontario Ministry of Natural Resources – Surface Water Monitoring Centre
- Ontario Ministry of Natural Resources – Aviation, Forest Fire and Emergency Services
- Ontario Ministry of Agriculture, Food, and Rural Affairs
- Ontario Ministry of Environment
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- La Financière agricole (Québec)
- Saskatchewan Ministry of Agriculture
- Saskatchewan Water Security Agency
- Saskatchewan Ministry of Environment Wildfire Management

**UNITED STATES:** August was the 28<sup>th</sup> warmest on record for the contiguous U.S., relative to the 20<sup>th</sup> century average. The western U.S. had the largest positive temperatures anomalies for the month with Idaho having its 2<sup>nd</sup> warmest August on record. During the latter half of August, hot temperatures expanded east to the Midwest after an absence of hot temperatures earlier in the summer. Daily record highs in the triple digits were established at Des Moines (104 °F) and St. Louis (103 °F) during the final days of August. Below-average temperatures extended from the central Great Plains to the Southeast, but no state ranked among its ten coolest. California, Georgia, and Kansas experienced their top 10 wettest August, while Illinois, Indiana, Iowa, and Minnesota each had a top ten dry month. Burlington, Iowa experienced its driest August on record with only a trace of rain observed. Rainfall associated with the North American monsoon periodically caused flash flooding across parts of Colorado and southern Nevada but also ameliorated long-term drought across the Southwest. Meanwhile, the number of wildfires increased across California and the Pacific Northwest with Rim fire burning more than 250,000 acres near Yosemite National Park and became the third-large in California's history by month's end.

Drought expanded and intensified across the Midwest during August due to the dry weather and late-month heat. According to the U.S. Drought Monitor on September 3, severe drought covered parts of Iowa, Missouri, Minnesota, and Wisconsin. Iowa was drought-free at the end of July, but nearly a third of the state was designated with severe drought by the beginning of September. Severe drought also developed across the lower Mississippi Valley. Monsoon rain resulted in scattered drought relief to the Southwest. Drought coverage peaked at 28 percent in Alaska during late August. Drought coverage for the United States, including Alaska, Hawaii, and Puerto Rico, increased by 4 percent to 46 percent but exception drought decreased from 2.7 to 1 percent.

The intensifying Midwestern drought increased stress on immature corn and soybeans and led to declines summer crop yield potential. According to the U.S. Department of Agriculture, by September 1, the nation's corn and soybeans were rated in good to excellent condition at 56 and 54 percent, respectively. These ratings were down from early-July highs of 68 and 67 percent. By early September, roughly one-third of cotton was rated in very poor to poor condition in Texas (33 percent) and Oklahoma (32 percent).

**MEXICO:** Six tropical waves hit Mexico during August. Most of them affected Quintana Roo, Chiapas and Oaxaca, but one traveled west of 95°W. The Six tropical waves are below the average for August (which is nearly eight). These systems brought rains to the Yucatan Peninsula that relieved dryness from previous month, but the low number of tropical waves in the Pacific worsened circumstances along southern Mexico experiencing abnormally dry conditions. There are concerns for the situation there, with drought development in these regions; receiving either below 75% of normal year to date precipitation or less than 80 % of normal precipitation in the last three months, and the upcoming seasonal rain forecast is below normal, too. Above-normal rainfall for the month occurred in northern Veracruz and southern Tamaulipas due to tropical storm *Fernand* (August 25-26). Northwestern and Baja California Sur received significant rains from tropical storms *Ivo* (23-25 August) and *Juliette* (28-30 August). For the rest of the country, the rains were below normal.

The summer rainy season (started in June) is poor for the Mexican Pacific coast (except for the Chiapas coast), plus northern Nuevo Leon and Tamaulipas, affected by the worst drought categories in the country. The August total rainfall of 135.8 mm (5.3 in) was only 2.5% below the long-term mean since 1941, in the middle of the statistics (37<sup>th</sup> wetter or drier). The rains in the last month were important to Morelos and Quintana Roo, which ranked as the sixth wettest and Baja California third. Otherwise, the State of Mexico and Guerrero had his twelfth and eight driest August, respectively. As mentioned above, significant rainfall occurred over the Yucatan Peninsula which helped to rank Campeche and Quintana Roo as the sixth and first wettest June-August period (3-months), and Chihuahua and Baja California classified as the sixth and second wettest, respectively; but the southern Pacific coastal states -- Guerrero and Oaxaca -- had their tenth and fifth driest June-August. Good Moisture persisted from March to August (6-months) for Quintana Roo and Campeche (seventh and sixth wettest), but Guerrero and Oaxaca were eleventh and fourth driest. Baja California Sur and Chihuahua experienced relief from the long-term drought, thanks to good rains, and had one of its top ten wettest twelve-month periods.

The national average temperature remained warm in the early part of the month, but dropped in the second half. The minimum temperature for the month was greater than the mean plus two standard deviations, while the maximum temperature decreased toward the end of the month. Regionally, the northern states of the country and the Yucatan Peninsula experienced near normal mean temperatures. The August monthly mean temperature for the country was 26.0 °C (78.8 °F), 2.8 °C (5.0 °F) above the 1971-2000 mean resulting in the warmest August since 1971. Last month, fourteen states experienced one of their top five warmest Augusts, including Coahuila (fifth), Colima, Hidalgo, Puebla and Tlaxcala (fourth), Chiapas and Veracruz (third), Baja California Sur, Campeche, State of Mexico and Queretaro (second), while the Federal District, Oaxaca and San Luis Potosi had the warmest August since 1971. By contrast, only two states might be considered as temperate, but outside the top ten coldest; Tabasco as fifth and Zacatecas had their eleventh coldest August.

The Information System for Agri-Food and Fishery (SIAP) reported that the whole area scheduled for major grain crops such as corn grain, beans and sorghum has been planted. Because of the beneficial rains in July and August, losses reports for drought are minimal, but became for frost, hail and floods. In the livestock, the daily yield of cow's milk has been satisfactory but bovine for fattening is still in shortage due to the long-term drought over the past two years.