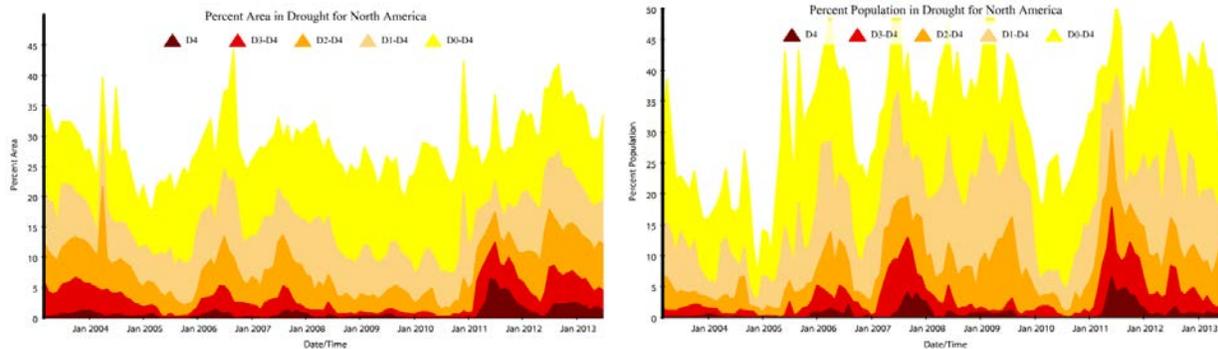


North American Drought Monitor – July 2013

At the end of July 2013, moderate to exceptional drought (D1-D4) affected approximately 19.5% of the area and 21.0% of the population of North America. These percentages are an increase of 0.6% for area and an increase of 0.8% for population compared to the values for the end of June.



CANADA: In July the extent and severity of drought across Canada remained low, with two areas that experienced moderate drought (D1) and a few occurrences of abnormally dry (D0) areas. The driest areas remained in western Canada, north of Victoria on Vancouver Island and the Queen Charlotte Islands in British Columbia.

Temperatures were warmer than normal throughout northern British Columbia, which increased fire risk and dry conditions. Cooler than normal conditions prevailed across the Prairies, while Quebec and Atlantic Canada saw higher than normal temperatures throughout.

Monthly precipitation was above average throughout the Prairie Provinces, particularly in southern Manitoba. Rainfall was also above normal in southern Ontario and on the east coast. Western British Columbia and northern Saskatchewan had the greatest departures from normal with significant moisture deficits of 60 and 30 mm (2.4 and 1.2 inches), respectively.

Moderate Drought (D1) was introduced on Vancouver Island and the Queen Charlotte Islands because precipitation was 40-60 mm (1.6 to 2.4 inches) below normal for the past six months. Coastal BC, including interior regions east of the Islands, and the southern portion of Vancouver Island remained classified D0. The Vancouver International Airport station set a record with 0 mm of rainfall recorded in July. Fire risk was very high, and a ban on campfires was instituted for much of southern BC. Dry (D0) areas were also found in interior British Columbia, where for the last three months precipitation was 40-60 mm less than normal.

Low rainfall and higher temperatures increased the Abnormally Dry (D0) classification across the northern boreal forest region in western Canada. Since April 1, precipitation in this region has been 40-60 percent of normal, and this was extended into northern Ontario in July. Forest fire activity and risk remained high as a result. Dry (D0) areas also occurred in east-central Alberta, where 23-60 mm (0.9 to 2.4 inches) less than normal precipitation occurred over the past six months. However, short-term impacts from the dry conditions were minimal.

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- Agriculture and Agri-Food Canada
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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: July ranked 90th out of 119 years of record for temperature and 115th for precipitation for the United States as a whole. The coolest regions were from the southern Plains into the Southeast and Midwest, while areas of New England and the West Coast were well above normal. As seasonal monsoon precipitation events started in the Southwest, many areas recorded their first significant precipitation in months. The Southeast had the 2nd wettest July on record while the Pacific Northwest experienced the 2nd driest July on record. Over the last 6 months, the drought areas in the Midwest have improved while drought has developed and expanded westward in the United States.

During the month of July, improvements to the drought status took place in portions of Arizona and New Mexico as well as areas of the central and southern Plains. July started with 39.29 percent of the United States in drought and ended with 41.49 percent in drought. The amount of extreme and exceptional drought did decrease from 11.34 percent to 9.86 percent during the month as some of the areas that had been impacted with long-term drought issues received some relief. As drought developed in the western United States, the amount of the region impacted by drought grew from 76.67 to 77.52 percent in July, but the amount of extreme and exceptional drought decreased from 20.18 percent to 17.59 percent of the region.

Because of dryness in the crop-producing regions, many producers are anticipating a slight drop in yields. The growing season started off with wet conditions, which delayed planting and also impacted the quality of hay being harvested. Crop development has been delayed by the cooler than normal temperatures in many locations, and this has also offset the impact of dryness in these regions. Concerns are developing about the potential impact of an early frost this year and how it would impact grain production.

MEXICO: Despite four tropical waves and two cyclones, the southern and northern Pacific regions recorded below normal rainfall. In the Pacific, two cyclones approached the coast but did

not make landfall. The tropical storm *Dalila* (June 30-July 7) and hurricane *Erick* (July 4-9) brought little rainfall to the Jalisco and Nayarit coastal areas. As a result, the Mexican Pacific coastline remained abnormally dry (D0) and new areas of moderate drought (D1) were introduced in Sonora, Sinaloa and Nayarit. In the Yucatan Peninsula, at least two tropical waves left enough moisture to eliminate the abnormally dry area in Quintana Roo. The most significant improvements occurred in the central and northern parts of the country, largely due to the onset of the rainy season, with the best recovery of drought in southern Chihuahua and Coahuila. However, the northern parts of Coahuila, Nuevo Leon and Tamaulipas remain under extreme (D3) and exceptional (D4) drought. As of the end of July, 13.3% of the country remains in drought (D1-D4), a recovery of 6.7% from the previous month.

Nationally, the monthly rainfall was 152.6 mm (6 in), 8.3% above July's long-term mean, which ranks as the 23rd wettest July since 1941. Statewide rainfall classifications ranged from the third and fourth wettest for Aguascalientes and Chihuahua to the eleventh driest for Nayarit and Guerrero and the third driest for Oaxaca (all of the driest states are located on the Pacific coast). The trough observed in the northern states brought beneficial precipitation that helped give Coahuila and Zacatecas their ninth and eighth wettest Julys, respectively. The total rainfall for the last three months (May-July) placed seven states in the top ten wettest: Campeche, Coahuila and Quintana Roo (ninth), Aguascalientes (fourth), Chihuahua (third), and Morelos and Baja California (second). The largest deficits were observed for Guerrero (twentieth driest), San Luis Potosi (fourteenth driest) and Oaxaca (fifth driest). Six-month (February to July) precipitation was favorable for Aguascalientes and Chihuahua (eighth and seventh wettest, respectively) and Morelos (second wettest), while precipitation was not favorable for Hidalgo (thirteenth driest), San Luis Potosi (sixth driest) and Oaxaca (second driest). In the last twelve months (from August 2012 to July 2013), Chihuahua and Baja California Sur were between the sixth and fifth wettest period, and another six states placed in the top ten driest, including Jalisco (tenth), Hidalgo (eighth), Tabasco (seventh), the Federal District and State of Mexico (sixth) and Oaxaca (fourth). All statewide calculations for precipitation are based on the record since 1941.

Cooler maximum temperatures were observed in July, mostly in northern states, but for the second month, morning temperatures continued above the mean plus two standard deviations. The monthly mean of 25.9°C (78.6°F) was 2.6°C above the 1971-2000 normal, resulting in the warmest July since 1971. Thirteen states were placed in the top five warmest Julys: Coahuila (fifth), Colima, Hidalgo, Puebla and Tlaxcala (fourth), Chiapas and Veracruz (third), Baja California, Campeche, and Queretaro State (second), and the Federal District, Oaxaca and San Luis Potosi (first), with Tabasco (fifteenth) and Zacatecas (eleventh) among the coldest states. All statewide calculations for temperature are based on the record since 1971.

From January 1 through the end of July, 10,287 fires were reported, affecting 407,055.35 hectares (1,005,855 acres); 93.1% of this corresponds to short vegetation and shrub strata and 6.88% to wooded area, with 75.3% of this reported in Sonora, Jalisco, Oaxaca, Chihuahua, Guerrero, Quintana Roo, Chiapas, Durango, Baja California and Michoacán.