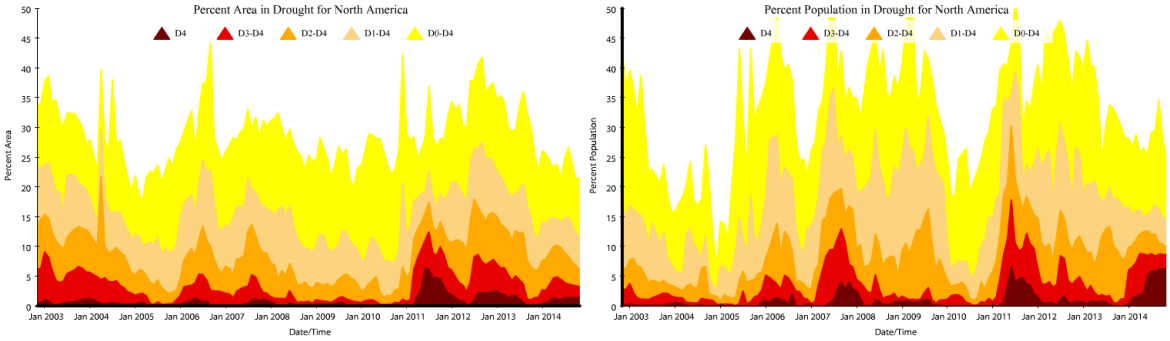
North American Drought Monitor – November 2014

At the end of November 2014, moderate to exceptional drought (D1-D4) affected approximately 11.4% of the area and 14.0% of the population of North America. These percentages are a decrease of 1.2% for area and 1.1% for population compared to the values for the end of October 2014.



CANADA: Drought conditions throughout Canada continued to improve in November. Significant rainfall throughout Western Canada provided relieve to areas dealing with lingering drought conditions. Soil moisture throughout many regions of British Columbia, Alberta and Saskatchewan improved prior to freeze up. Although conditions continue to improve throughout Western Canada, long-term impacts from the dry conditions and rainfall deficits remain resulting in pockets of Abnormally Dry (D0), Moderate Drought (D1) and one small region of Severe Drought (D2). November conditions in Southern Manitoba and Eastern Canada were much drier than the west. Abnormally Dry (D0) classifications have been applied to both Southern Manitoba as well as a small region of Southern Quebec and Eastern Ontario. While both of these regions had a very dry fall period, there is currently no concern for drought at this time.

In British Columbia and Alberta, drought continues to improve. Snow accumulations and rainfall throughout the interior and north east regions of British Columbia and north western Alberta continued to be above normal throughout November. Although precipitation has been above normal for much of this region through the fall period, long-term indicators still show significant moisture deficits resulting in lingering drought. Producers in the region continue to report the need for above-normal precipitation throughout the winter period to recharge soil moisture and surface water supplies. A small region of Northwestern Alberta is still classified as Severe Drought (D2), as this region has not received the precipitation other regions have.

Following a wet spring and summer, Southern Manitoba has received well below normal precipitation throughout the fall, with a large portion of the southern agricultural region receiving approximately half of the normal fall precipitation. The soils in the southern most portion of the province have gone into the winter with poor soil moisture resulting in the Abnormally Dry (D0) classification.

The southern region of Quebec and eastern Ontario extending from Montreal towards Toronto has also received well below normal precipitation throughout the fall. Precipitation deficits in this region are 40-60 percent of the three month average for this time of year. Once again, this is not of great concern at this time as the winter season has the opportunity to provide required spring moisture, however the precipitation deficits warrant an Abnormally Dry (D0) classification.

UNITED STATES: During the five-week period ending December 2, 2014, drought coverage across the contiguous United States fell slightly (down 0.48 percentage point) to 29.13%.

Periodic showers in northern California were insufficient to dent the three-year drought. Meanwhile, little, if any, precipitation reached southern California and the Desert Southwest. In contrast, significant precipitation fell across northern portions of the Rockies and High Plains. In the latter region, snow helped to insulate winter wheat from a harsh, early-season cold outbreak. Further south, however, some wheat on the central High Plains was exposed to temperatures ranging from 0 to -20°F (-18 to -29°C) at the height of the cold wave. In the southern and eastern Corn Belt, the sudden cool temperatures hampered the emergence and establishment of late-planted winter wheat. By month's end, wheat germination was incomplete in several Midwestern States, including Indiana (93% emerged) and Michigan (89%).

Reminiscent of the winter of 2013-14, cold weather dominated the central and eastern U.S. In fact, monthly temperatures averaged 5 to 10°F (2.8 to 5.6°C) below normal from the northern Plains and upper Midwest into the Southeast. Cold air also spilled across the northern Rockies into the Northwest, but did not reach California or the Desert Southwest. Monthly readings averaged at least 5°F (2.8°C) above normal in parts of California.

Elsewhere, significant precipitation was confined to the south-central U.S. (associated with remnant moisture from former eastern Pacific Hurricane Vance), the Atlantic Seaboard (in part due to a late-month coastal storm), and the Great Lakes region—where cold, snowy weather impeded late-season corn harvest efforts. By November 30, more than one-fifth of the corn remained in the field in Wisconsin (78% harvested) and Michigan (77%).

Historical Perspective: According to preliminary information provided by the National Climatic Data Center, the contiguous U.S. experienced its 16th-coldest, 46th-driest November during the 120-year period of record. The nation's monthly average temperature of 39.3°F was 2.4°F below the 20th century mean, while precipitation averaged 2.07 inches, or 52.6 mm—93% of normal). It was the nation's coldest November since 2000.

State temperature rankings ranged from the second-coldest November in Alabama and Mississippi to the ninth-warmest November in California. Monthly temperatures were among the ten lowest values on record in sixteen other states across the central and eastern U.S. Meanwhile, state precipitation rankings ranged from the 19th-driest November in Arizona to the 11th-wettest November in Florida.

Agricultural and Hydrological Highlights: As the 2014 growing season wound down, drought stress was noted for a variety of crops. Across the South, for example, the season ended with nearly one-fifth (18%) of the U.S. cotton crop rated in very poor to poor condition on November 2, according to the U.S. Department of Agriculture. Texas cotton was rated 26% very poor to poor, followed by Oklahoma (21%), Georgia (16%), and Alabama (13%). For some producers on the southern Great Plains, 2014 marked the fourth consecutive year that drought has adversely affected cotton yield prospects.

By November 23, only 6% of the newly planted U.S. winter wheat crop was rated in very poor to poor condition. However, drought stress on the emerging crop was apparent in parts of Texas (13% very poor to poor), Washington (13%), and Oklahoma (11%).

At the end of the November 2014, storage in California's 154 intrastate reservoirs was 55% of the historical average, down from 74% a year ago, 97% two years ago, and 125% on November 30, 2011. Statewide reservoir storage was also quite low in several other Western States, including Nevada, New Mexico, and Oregon.

Long-term water-supply issues also persisted on the southern Great Plains due to a drought that began in late 2010 and has lasted, with varying degrees of intensity, for four years. For example, reservoirs in Texas were cumulatively 62.5% full in mid-December 2014, compared to a historic average near 80% full at this time of year.

MEXICO: Hurricane Vance and three of six frontal systems provided the greatest amount of rainfall in the north, northeast, and central-west of the country in November. Specifically, Vance generated rainfall that helped to decrease or eliminate those abnormally dry areas (D0) in Nayarit and Sinaloa, as well as in Jalisco and Durango. The jet stream travelling from the Pacific toward the northeast, combined with frontal systems, left significant rainfall in Nayarit, Durango, and Coahuila, as well as in Tabasco. The absence of rainfall continued in the northwest due to the influence of the southwestern U.S. high, which extended to northern Baja California. This interference generated dry weather and extreme drought (D3) continues. The country continues to recover from drought; 84.6% of the national area was free of dryness and drought at the end of November 2014. In November three drought cores were observed; the main one was taken in northern Baja California where severe drought (D2) and extreme (D3) remained. Another was concentrated between Michoacán and Guerrero—a region that received below normal rainfall in the summer and the moderate drought (D1) has developed in the past two months. The third core with moderate drought (D1) was located in southern Veracruz and northern Oaxaca.

The 42.6 mm of rainfall in November 2014 was 35% above the long-term mean and was ranked as the eleventh-wettest November since 1941 at the national level. The states most significantly impacted by rain were Jalisco and Nayarit; both reached its third-wettest November, as well as Coahuila and Durango (third- and second-wettest November, respectively). In contrast, Baja California received very poor moisture and had its ninth-driest November since 1941.

The November mean temperature of 18.3°C was 0.6°C below the 1971-2000 normal and was classified as the seventh coldest since 1971. The mean temperature was below normal in the northeast, with Tamaulipas and San Luis Potosi (fifth- and second-coldest November, respectively). It was also cold in the north, with Durango and Coahuila (fourth- and third-coldest November, respectively) and in the states along the Gulf of Mexico, where Tabasco, Veracruz, and Yucatan had their sixth-coldest since November 1971. In November, frost days were monitored by counting days on which minimum temperature was equal to or less than 0°C. Some areas in Chihuahua, Durango, and Baja California, reported about twenty frost days. Cold air masses that drove behind frontal systems dropped temperatures, with declines of more than 20°C in parts of Zacatecas, Durango, and Coahuila on 24-25 November.

This year from January 1 to December 4, 5724 forest fires burned an area of 155,128.67 hectares. With a month left in the year, this forest fire season is shaping up to be the fifth-lowest surface area burned, according to the statistics from the National Forestry Commission (CONAFOR)—and represents 16% of the area burned in 2011 (954,849.2 hectares, the largest area on record). The small burned area is consistent with the small area in drought, which at the end of November 2014—just 15.4% of the country from D0 to D3—was the second-smallest drought area in November since 2002.