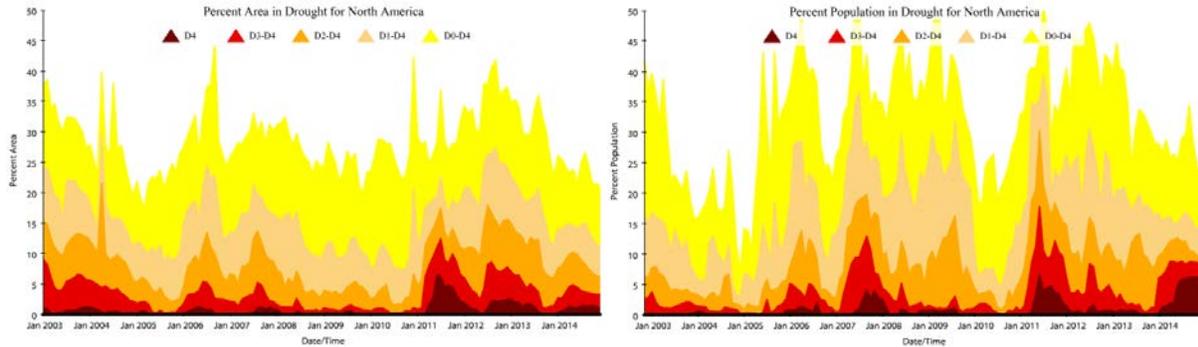


North American Drought Monitor – December 2014

At the end of December 2014, moderate to exceptional drought (D1-D4) affected approximately 11.1% of the area and 4.4% of the population of North America. These percentages are a decrease of 0.3% for area and an increase of 0.4% for population compared to the values for the end of November 2014.



CANADA: Drought conditions in western Canada continued to improve through the month of December. Substantial precipitation in northern British Columbia and Alberta has allowed the area's pockets of drought to recede considerably. The accumulation of snow was also welcome to help replenish soil moisture and surface water supplies in the spring. While the overall condition throughout the region improved, an area of Moderate Drought (D1) lingers in northern Alberta, due to the long-term impacts of a dry fall.

In contrast with the other western provinces, Manitoba as well as eastern Canada experienced a much drier December. The Abnormally Dry (D0) area in southern Manitoba and Northern Ontario, which is continuous with the broader D0 region in the Midwestern United States, has expanded and intensified. The region experienced a relatively dry autumn, with precipitation levels near half of the seasonal norm; as a result, the area entered winter with relatively poor soil moisture. Through December southern Manitoba saw precipitation levels 40% below the monthly average and temperatures three degrees above average. This allowed the inherited dry fall conditions to intensify, as an area of Moderate Drought (D1) emerged in southern Manitoba.

Much of the Quebec City–Windsor corridor experienced precipitation levels 20-40% lower than normal, as well as temperatures 2 to 3 degrees above normal through December. These conditions, compounded with the region's below normal precipitation through autumn, resulted in a small Abnormally Dry (D0) area within the corridor. The area, which was identified in November, intensified and expanded slightly through December. While some Moderate Drought (D1) has emerged in southern Quebec, the conditions remain localized and will likely subside as the winter season provides sufficient spring moisture.

UNITED STATES: According to the U.S. Drought Monitor (USDM), the portion of the contiguous United States in drought (D1 to D4) on December 30, 2014 was 28.68 percent which is a decrease from 29.13 percent coverage at the beginning of December and also the lowest coverage of 2014. This decrease in drought coverage occurred mostly across the eastern U.S. A 1–category improvement (from D4 to D3) in north-central California was a result of several rounds of heavy precipitation from late November through mid-December. However, since December 20, dry weather returned to California as a ridge of high pressure became anchored over the Northeast Pacific. As of December 30, the USDM designated nearly a third of California in the exceptional drought category (D4) which was a notable decrease from 55 percent at the beginning of December. The drought relief is limited since reservoirs remain very low, associated with the multi-year drought, and snowpack in the Sierras is below-average for this time of year. Elsewhere, across the southern Great Plains and lower/middle Mississippi Valley, drought changes were minor with a slight expansion or worsening of drought conditions. Meanwhile, drought coverage increased across the Big Island of Hawaii.

Historical Perspective: According to the National Climatic Data Center, the contiguous U.S. had an average temperature of 37.1 degrees F, 4.5 degrees above the 20th century average. This was the second warmest December on record for the contiguous U.S. and warmest since 1939. The precipitation (2.51 inches) for the contiguous U.S. ranked in the middle of the 120-year period of record. Below-average precipitation was observed across the Lower Mississippi Valley, Southern Great Plains, and Northern Great Plains with North Dakota recording its ninth driest December.

Agricultural and Hydrological Highlights: A low snowpack remains a major concern for the Sierras of California where snow-water equivalent values were generally below the 30th percentile during early January. According to the USDA fieldwork summary, Kansas winter wheat conditions rated at good to excellent decreased from 61 to 49 percent from late November to the end of December. This decrease was attributed to the lack of snow cover. Kansas typically leads the nation in winter wheat output and accounts for nearly one-quarter of U.S. production. Pasture and range conditions worsened in Missouri, Montana, and Oklahoma during the past month. Meanwhile, Florida's citrus growing areas benefited from adequate precipitation and above-normal temperatures during December.

MEXICO: The country's portion in moderate (D1) to exceptional (D4) drought was only 3.9 percent in December 2014. This amount is the second with less drought for December, only exceeded by December 2013 (0.83 percent from D1-D4), but far from the 54.6 percent accounted in December 2011, according from the Mexican Drought Monitor statistics since 2003. The monthly precipitation at the national level in December 2014 of 16.3 mm was 41 percent below the 1941-2013 mean and was classified as the 13th driest December on record. Regarding to the state-level, the December rainfalls left classified to Nuevo León as the 10th, Guerrero (9th), Tamaulipas and State of Mexico (8th), Federal District (6th), Tlaxcala (4th) and Morelos as the 3rd

wettest December. In contrast, Chiapas and Tabasco had their 2nd and 3rd driest December, respectively.

Nine frontal systems and moisture from the Pacific Jet Stream were the main rainfall contributors to the northeast and central country. Cold fronts entered from Baja California, moved to northeast and then tracked to southeast and to the Yucatan Peninsula. Cold fronts precipitations associated helped to reduce the extreme drought (D3) in Baja California, the contraction of abnormally dry (D0) areas in Yucatán, as well as the elimination of D0 in Nuevo León, Tamaulipas and Quintana Roo. Rainfalls in the west and south were scarce and the moderate drought (D1) remains in Jalisco, Michoacan, Oaxaca and Veracruz, while D0 areas grew-up in Sonora and appeared in Sinaloa.

The December mean temperature was slightly warmer than normal at the national level. The monthly average of 17.0 °C was barely 0.2 °C above the 1971-2000 normal, and was ranked as the 18th warmest December since 1971. Comparing statistics to the state level, Baja California, Michoacan and Tlaxcala had the warmest December, having departures of +3.1 °C, +1.8 +1.9 °C and °C, respectively. On the other hand, Yucatan, Chiapas and Tabasco had their 16th, 15th and the 10th colder December, with departures of -0.2 °C, -0.3 °C and -0.5 °C, respectively.

The National Forestry Commission (CONAFOR) noticed that 155,533.22 hectares were burned from January 1 to December 25 in 2014; this is 257,682 hectares less than the same period in 2013. The area burned in 2014 is the fifth-lowest surface area burned, and represents 16 percent of area burned in 2011 (956,849.2 hectares). The states with the largest area burned in 2014 were Sonora, Chihuahua, Baja California, Oaxaca, and Durango; these states also had drought concerning along the year. To December 31, the National Water Commission (CONAGUA) reported low levels (less than 25% capacity) only for Baja California reservoirs.