

North American Drought Monitor – August 2007

CANADA: The southern Prairies, southern British Columbia and portions of Ontario continue to be the areas of significant concern. Small regions in Northern Alberta and in Northern Quebec remain classified as abnormally dry. The Atlantic region has no issues to report at this time.

British Columbia: Most major rivers in the northern and western regions are at, or near, typical seasonal levels. This is not the case for the majority of the southern interior, and southeast where flows in the Thompson, Nicola, Okanagan, Columbia and Kootenay basins are near five-year return periods. For some of the river systems, flows are near 10-20 year return periods. Dry conditions in August, less than 10 mm for much of the south has lead to moderate to high fire risk, with some patches of extreme risk. As a result of low precipitation and low stream flows in the southern regions, D0-D2 classifications have been assigned.

Alberta: For the majority of the province, harvesting is progressing and generally crops are good with average yields. The southwest of the province remains dry, particularly south and west of Lethbridge. In this area, growing season precipitation is between 40-60% of average, contributing to low soil moisture, poor pasture production and decreased yields. As a result, much of the area has been classified as a D0-D3 drought condition depending on severity. In the North, the region around Fort McMurray has been given a D0-D1 assessment due to a high fire risk and low long-term precipitation.

Saskatchewan: Areas of concern still loom in the southwestern corner of the province where 60–85% of normal rainfall has been reported for the entire growing season. In these areas, pastures are deteriorating and some livestock water shortages have been reported, and thus have been classified as a D0-D2 drought designation.

Manitoba: Harvesting is progressing in most of Manitoba, with variable yields and quality resulting from early season uneven rainfall. Despite some recent local thundershowers, pasture re-growth has slowed because of cooler temperatures. Livestock producers are considering supplemental feeding in the southwest. This region has been given a D0 condition as a result.

Ontario: Dry conditions have prevailed throughout much of the growing season for the Northwest and Southern parts of the province. The southern portions of Northwest Ontario have now experienced its third straight year of drought. In the Southern Ontario, spotty showers and lack of precipitation have affected crop yields and quality. Much of this region is still under a Level I (10% voluntary reduction in water use) and Level II (20% voluntary reductions) low water advisory. For these regions, drought classifications range from a D0-D3 depending on location and severity of conditions.

Quebec: Good growing conditions have been the norm for the majority of Quebec, as yields and qualities are expected to be average or above average for most crops. The

dryness in the Lac-St. Jean region, north of Quebec City has eased in the last couple of weeks with significant rain fall. This region has been upgraded to a D0 classification.

Atlantic Canada: Generally, temperature and precipitation conditions are good across most of Atlantic Canada as tropical storm Chantal dropped more than 160-200mm on parts of Newfoundland, Nova Scotia and PEI. At this time, no drought concerns exist in this region.

Acknowledgements

We acknowledge and thank the following organizations whose reports and assessments are consulted to produce the Canadian portion of the North American Drought Monitor:

AAFC-PFRA District and Regional Offices
Alberta Environment
Alberta Agriculture, Food and Rural Development
B.C Ministry of Environment – River Forecast Centre
Environment Canada
Manitoba Hydrologic Forecast Centre
Natural Resources Canada – Canadian Forest Service
Ontario Ministry of Natural Resources – Low Water Response
Saskatchewan Agriculture, Food and Rural Revitalization
Saskatchewan Watershed Authority

UNITED STATES: August brought much of the southern U.S. record dry heat and near-record dryness. An intense heat wave was responsible for breaking many record highs across the country and according to NOAA's National Climatic Data Center, resulted in Top Ten dryness from California on the west coast all the way over to the east coast affecting the Central Plains, Ohio Valley, Southeast and Mid-Atlantic along the way. In fact, a staggering nine states reported their warmest August on record (going back 113 years) including: Utah, Alabama, Tennessee, Kentucky, West Virginia, North Carolina, South Carolina, Georgia, and Florida. Virginia ended the month with their 2nd warmest August on record. In general across the Southeast, temperatures averaged an amazing 6-10° F (approximately 3.0 to 5.5° C) above-normal for the month.

As for precipitation, NCDC reported that several of these states and others came in with Top Ten dryness with several reporting one of their driest Augusts ever including: Arkansas (4th driest), Kentucky (4th), Tennessee (2nd), North Carolina (2nd), South Carolina (5th), Massachusetts (3rd), and Rhode Island coming in with their 2nd driest. As a whole, the Southeast region has recorded their driest year-to-date ever through the end of August 2007.

Consequently, this led to an expected intensification of drought categories (1 to 3 classes). The deterioration was most pronounced in the Southeast where D2, D3 and D4 expanded in all direction out of Alabama and Tennessee and into Mississippi, Arkansas, Missouri, Kentucky, Illinois, Indiana, the Carolinas, Georgia and Florida's Panhandle,

respectively. In the West, a worsening of conditions was also noted with an expansion of D2 and D3 across Idaho and western Montana.

The combination of the heat and dryness led to a pretty steady level of drought across the country according to the U.S. Drought Monitor. As of the end of August, 38% of the U.S. was classified as being in some form of drought (D1-D4), the same as last month. However, there was a noted spike in the percent area of the country falling into the more intense D3 or D4 categories with 10.7% in D3 or worse (up 5% from last month) and 2.3% now in D4 (up nearly 2%) since the end of July.

The border areas between Canada and the United States didn't fare very well either in the precipitation department leading to an expansion of D2 and D3 across parts of Montana, northern Minnesota, northern Wisconsin and Michigan's Upper Peninsula.

All weren't losers last month however as many states in the northern Plains, Great Lakes region and Ohio Valley saw very wet months. Iowa reported their wettest August on record and Nebraska their 4th. Others in the regions listed above observed one of their Top Ten wettest Augusts. Improvement is noted here since the end of July with large improvements in the Drought Monitor over that time frame. Parts of South Dakota, eastern Nebraska, Iowa, southern Minnesota, southern Wisconsin, and the northern reaches of the Ohio Valley saw anywhere from a 1 to 3 class improvement. This led to the reduction and/or removal of most of the severe drought (D2) and much of the moderate drought (D1) as well.

MEXICO: During August, the average precipitation for the country was 179.4 mm (7.17 inches), which represents 31% above the climatologic average of 137.2 mm (5.48 inches). The National Meteorological Service (SMN) ranked August 2007 as the third wettest month for the period 1941-2006.

The notorious precipitation that fell across Mexico during August was associated with the passage of nine tropical waves, some transitory systems of low pressure, and Hurricane Dean. Hurricane Dean actually hit Mexico twice, first on the south side of the Yucatan Peninsula (as a Category V), and then later advancing back into the Gulf of Mexico and reentering Mexico in northern Veracruz as a Category II storm before degrading quickly into a tropical storm, which continued its advance towards the central states bringing with it surplus moisture to those states along the Pacific. This event brought copious rainfall and record totals over a 24 hour period, for example: 391.0 mm (15.4 inches) was recorded in San Luis Potosí, 276.0 mm (10.9 inches) in Logwood, and 200.0 mm (7.9 inches) in Hidalgo. All of these locations surpassed their prior historical recordings of 297.0 mm (11.7 inches), 117.0 mm (4.6 inches) and 136.0 mm (5.4 inches) respectively.

Those states receiving the greatest precipitation were: Hidalgo with 116% of normal, San Luis Potosí 132%, Tamaulipas 109%, and Guerrero 90%. In contrast, those states reporting below-normal precipitation were South Baja California (80%), Aguascalientes (44%), Zacatecas (43%), Durango (41%), and Coahuila (31%), respectively.

Toward the end of month, tropical storm Henriette brought another round of heavy rains in the Pacific Coast states.

Consequently, important changes happened during the month with regards to the distribution of the drought across Mexico. A diminution in intensity was observed mainly in the North Pacific region, northern Veracruz, southern and southeastern Mexico. In the northern Baja California northern Sonant, D3 drought conditions prevailed throughout the month. Nevertheless, a slight diminishment of D3 and D2 conditions was observed in southern Mexico due to typical monsoon rains. However, D2 drought expanded across the rest of the Baja California peninsula. CONAFOR reported that during the three last weeks of the month, 15 forest fires in Baja California were observed, affecting a total of 146.08ha (360,97 acres). Most of the affected vegetation corresponded to areas mostly covered by grasses, shrubs, scrubs, and to a lesser extent the wooded areas.

Areas with abnormal dryness (D0) and/or moderate drought (D1) disappeared across southern Chihuahua, western Durango, and throughout Sinaloa due to the humidity from the Pacific Ocean that favored monsoonal development. In spite of this, areas of hydrological drought (D1) and abnormally dry conditions (D0) are still persisting within southern Durango and northern Jalisco.

A slight diminution of hydrological drought (D3 intensity to D2) appeared in both Jalisco and Michoacán, with small bordering areas of drought D1 and D0 still present. Areas of central Mexico showing D0 last month disappeared this month due to the passage of tropical waves and Hurricane Dean.

Significant changes in the diminution of the drought happened in southern Veracruz, northern Chiapas, Tabasco, Campeche, and Quintana Roo where areas previously affected by D3 drought disappeared and D2, D1, and D0 areas diminished significantly due to the passage of Hurricane Dean. Even though the drought of last the three months persisted in these regions, it is important to emphasize that some perennial plantations were only harvesting at levels between 70% and 90% before the passage of Dean.

According to preliminary information reported by local authorities, passage of Hurricane Dean into the Yucatan Peninsula resulted in many important agricultural losses, mainly in maize, sugar cane, peanuts, chiles, vegetables, and also to beekeeping. In Veracruz, the most affected crops were bananas, citruses, hemstitches, and maize.

The National Water Commission (CONAGUA) reported a slight increase in the levels of the dams during the month of August. In the northwest region, levels increased from 65% to 69.7%. In the North, levels rose slightly from 65.7% to 65.9%, in the Center they jumped from 74.3% to 80%, and in the south improved from 62.4% to 68.2%. In contrast, however, the northeast region registered a slight reduction from 50.6% to 50%.