North American Drought Monitor - February 2008

CANADA: Drought conditions continued to improve in Eastern Canada; however, conditions in western Canada remained largely unchanged. Slight improvements took place throughout southeastern British Columbia, and into southern Alberta and the northern Peace River region due to above-normal precipitation over the last month. With above-average precipitation, southern Ontario continues to recover from last summer's drought. Drought areas in southern regions of Alberta improved slightly and were upgraded from D2 (severe drought) to D1 (moderate drought). Spring topsoil conditions still remain a concern in southern regions of western Canada due to low precipitation and below- or well-below-normal snow cover.

Southern Ontario continues to see significant improvements due to the heavy snowfalls throughout much of the region over the past few months. In fact, much of southern Ontario has received record or near-record precipitation this winter. As a result, the region has been upgraded to a D0 (abnormally dry) classification to represent an area recovering from drought. The region bordering northeastern Ontario and Quebec has remained in a D0 (abnormally dry) condition, although its extent and severity has significantly decreased due to more than 200 mm of precipitation received over the last 3 months. Southern portions of northwestern Ontario remain abnormally dry. The D0 (abnormally dry) classification has been expanded north in this region to reflect below-normal snow accumulations.

Much of the drought classification in western Canada has remained relatively unchanged from the last report; however, there have been small improvements in northwestern Alberta, southern Alberta, south-central Saskatchewan, and southeast British Columbia. A portion of southeastern Saskatchewan and much of southern Manitoba continue to be particularly dry, with less than 10 mm falling during the month. This drought area has expanded slightly in this month's assessment. As we move closer to the spring, concerns of drought conditions are increasing. The lack of winter precipitation throughout the southern prairies during the winter, following a fairly dry fall and summer period, will result in extremely poor conditions to start off the growing season if significant precipitation is not received in the next few months. Water supplies going into the winter, in southern regions, were very low and without abundant snow cover and significant runoff these water sources will not be recharged.

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UNITED STATES: During February, drought coverage and intensity decreased in much of the Southeast and Intermountain West, but increased across the nation's mid-section. Exceptional drought (D4), which stretched from northern and central Alabama into North Carolina at the end of January, was reduced to two small areas (near the Tennessee-Alabama-Georgia triple point and in the Carolinas) by early March. There were also broad reductions in the areal extent of moderate to extreme drought (D1 to D3) in the Southeast. Meanwhile, abnormal dryness (D0) was eradicated from parts of southern Georgia, northern Florida, and most areas from eastern Texas and southeastern Oklahoma into Mississippi. Farther west, coverage of abnormal dryness (D0) and moderate to severe drought (D1 to D2) generally diminished during February from California to Utah. In contrast, some drought intensification occurred in the Dakotas, including a slight expansion of extreme drought (D3) in the vicinity of the North Dakota-Manitoba-Saskatchewan triple point. However, the most serious drought intensification was observed in central and southern Texas, where abnormal dryness (D0) and moderate drought (D1) became severe to extreme drought (D2 to D3) by the end of February.

Agricultural and Hydrological Highlights: By March 2, the percentage of winter wheat rated (by the U.S. Department of Agriculture) very poor to poor included 21% in Kansas, 23% in Oklahoma, and 63% in Texas. In late February, Texas also endured a rash of wildfires, especially on February 25 during a heat wave and wind storm. On the 25th, temperatures climbed to 100 degrees F (37.8 degrees C) at several places in southern Texas, including locations near Carrizo Springs and Del Rio. At the official observation site in Del Rio, the high of 99 degrees F (37.2 degrees C) on the 25th tied its February record, previously attained on February 21, 1996. Winds above 50 mph (80.5 km/hr) were common in Texas on February 25.

In Texas alone, more than 30 late-February wildfires charred well over 300,000 acres (over 120,000 hectares) of vegetation, boosting the state's year-to-date total to nearly a half-million acres (over 200,000 hectares). During all of 2007, just 121,964 acres (49,357 hectares) burned in Texas.

Despite beneficial rain in the Southeast, some lakes lingered near record lows in the wake of the historic 2007 drought. By the end of February, the surface elevation of northern Georgia's Lake Lanier climbed to 1053.39 feet (321.07 meters) above sea level, up 2.60 feet (0.79 meter) from the record low established on December 26, 2007. In southern Florida, the average surface elevation of Lake Okeechobee hovered just above 10 feet (3.05 meters) for much of February and stood at 10.07 feet (3.07 meters) on March 3. That level was just 1.25 feet (0.38 meter) above the record low established in July 2007 and more than 4 feet (1.22 meters) below the historical average for this time of year.

Meanwhile, Western water-supply prospects were mostly favorable, following an unexpectedly stormy La Niña winter in the Southwest. (Unusually dry winter weather in the Southwest is a typical occurrence during a moderate to strong La Niña, such as was

observed in 2007-08.) In California, February snowfall added 9 inches (228.6 mm) of water equivalency (from 20 to 29 inches, or 508 to 737 mm) to the Sierra Nevada snow pack, according to the state's Department of Water Resources. In a typical year, approximately 29 inches (737 mm) of snow water equivalent accumulates in the Sierra Nevada by April 1, the traditional peak snow pack date. Last year at this time, the average water content of the Sierra Nevada snow pack stood at just 17 inches (432 mm).

Historical Perspective: Generally drier-than-normal conditions in the Pacific Northwest and the nation's mid-section contrasted with exceptional wetness from the middle Mississippi Valley into the Northeast. According to preliminary information provided by the National Climatic Data Center, it was the nation's 31st-wettest February during the 114-year period of record, with a precipitation average of 2.27 inches, or 57.7 mm (112% of the long-term mean). It was the wettest February on record in Connecticut, Massachusetts, Rhode Island, and Vermont, and among the ten wettest in Missouri, Illinois, Ohio, Pennsylvania, New York, New Jersey, New Hampshire, and Maine. Elsewhere, it was the 16th-driest February in Minnesota and the 27th-driest February in both Nebraska and Texas.

Winter precipitation averaged 7.21 inches, or 183.1 mm (111% of the 20th-century mean), marking the nation's 17th-wettest December-February period. It was also the wettest winter since 1997-98. Record-setting winter wetness affected New York, and it was among the ten wettest winters since 1895 in Colorado, Missouri, Illinois, Wisconsin, Michigan, Indiana, Ohio, Pennsylvania, and all of New England except Maine. In stark contrast, it was the fourth-driest winter in North Dakota and the 11th-driest winter in Texas.

MEXICO: In February, precipitation for the nation as a whole totaled 13.2 mm (0.52 inch), 28% below the average of 18.2 mm (0.72 inch). Mexico's National Meteorological Service ranked February 2008 as the 24th driest on record for the period 1941-2007.

Precipitation during the month resulted from the passing of five cold fronts, some transitory low-pressure systems, as well as the influence of jet streams. Precipitation occurred mostly over five administrative regions of CONAGUA: Peninsula of Baja California, North Gulf, Central Gulf, South Border, and Peninsula of Yucatan.

It is worth noting that the precipitation distribution over these territories was not homogeneous. The highest value was registered in Tabasco with 115.8 mm, or 4.56 inches (only 4% below normal).

The states with the greatest precipitation anomalies (above climatology) were: Campeche 181.3%, Yucatán 162.7%, Tamaulipas 43.6%, Querétaro 13.4% and Baja California 2.4%.

Even though Baja California's February precipitation was a little higher than climatology, most of it fell in the northwest of the Peninsula (Ensenada), and so D1 drought conditions

increased to D2 over most of the east region as well as in Baja California Sur, specifically in the region around Ciudad Constitucion.

Abnormally dry conditions (D0) increased from south to northeast across the country, mainly in Sonora, Chihuahua, Coahuila, Colima, Guerrero, and Oaxaca, and across some parts of Sinaloa, Durango, Nuevo León, Tamaulipas, and Zacatecas. Moderate drought (D1) that was affecting the east from Sinaloa to Durango, expanded to Coahuila, Nuevo Leon, and Tamaulipas; this could have an impact on livestock farming activities, according to some studies made by SAGARPA. Moderate drought (D1), which has been present for the last couple of months, has now increased to severe and extreme drought (D2 and D3) along the Rio Bravo basin from Coahuila to Tamaulipas, due to the high temperatures registered during the month. In Nayarit, D2 increased to D3 due to a lack of precipitation and high temperatures in recent months.

In Chiapas, abnormally dry conditions (D0) have persisted since November 2007 and have expanded in coverage; in addition, a new region with moderate drought (D1) has developed along the border with Guatemala due to below-normal precipitation in the area during the last 3 months.

D0 that developed during January in Veracruz expanded into Tabasco and Campeche. D1 persisted in some areas of the region. An important modification occurred in Campeche, where extreme drought (D3) improved to moderate drought (D1) due to heavy precipitation. Also, the coverage of severe drought (D2) in Yucatan and Quintana Roo diminished.

CONAFOR (National Forest Commission) reported a total of 913 fires affecting an area of 13,197 ha (33,742 acres), mostly covered by grass, scrub and shrubs. The most affected states were: Coahuila, Oaxaca, México, Distrito federal, Michoacán, Guerrero and Nuevo León.

CONAGUA (National Water Commission) reported a decrease in the dam capacity during February; for the South, the decrease was from 63.9 to 52.7% of capacity. Other values included: Northwest region from 71.5 to 64.7%, Central region from 78.7 to 72%, Central North from 71.1 to 69.5%, and Northeast from 58.7 to 57.9%.