North American Drought Monitor – January 2009

UNITED STATES: Two storm systems eased drought this month in the interior Southeast and Tennessee-Ohio Valley region, but below-normal precipitation deepened drought in the southern Plains. Below-normal rainfall also expanded dryness in Florida and worsened drought in northern California.

An early-month barrage of Pacific storms brought flooding to western parts of Washington and Oregon. These and other storms contributed to above-normal monthly rain and snow totals in northern Montana into North Dakota and near to above normal rain and snow southward into parts of Colorado and Nevada. The moisture slightly reduced the extent of dryness and drought across the Northwest and Intermountain regions. In contrast, much of California experienced below-normal precipitation, with very little moisture during the first three weeks of the month. Los Angeles, for example, reported no measurable rainfall during January 1-21. A Pacific storm system finally broke the dry spell on January 22-26, bringing anywhere from one-third inch to the southern coast to more than 5 inches to the Sierra. Nevertheless, the state ended up with below-normal precipitation in January, and 4-inch plus deficits contributed to expansion of D3 (extreme) drought in northern California. Above-normal temperatures (2 to 5 degrees F or 1 to 3 degrees C) increased evaporation.

Agricultural and Hydrological Highlights: In California, the State's snow water content averaged around 60 percent of normal at the end of January. Many reservoirs in the north stood at one-half their normal storage.

January was the fifth consecutive month with below-normal rainfall across much of Texas and southern Oklahoma, as central and western locations in Texas reported well under 25 mm (1 inch) of rain, and most locations in the western half of the state accumulated less than 6 mm (0.25 inches). Severe drought (D2) expanded northward from south-central Texas into southern Oklahoma. Extreme (D3) drought expanded to cover much of south-central Texas, and D4 continued over the San Antonio-Austin area. Winter crop conditions declined, with 64 percent of the wheat rated poor to very poor by early February, and some farmers reporting total crop failure. Grasslands deteriorated, creating feed shortages for ranchers. Wildfire danger increased, with 153 counties posting burn bans by month's end, including nearly every county in central Texas.

Frontal rains on January 30 dropped 12 mm (0.5 inches) to over 25 mm (1.0 inches) of rain across central Florida, but the southern Peninsula ended up with below-normal rainfall this month, continuing a dry trend that has been intact since November. Drought persisted in west-central Florida and along the southeast coast.

To the north, a major storm system during the first week of January brought significant relief to remaining areas of drought in the Southeast interior, as some locations saw over 75 mm (3.0 inches) of rain. Lake Lanier in northern Georgia rose 1.8 meters (2 feet) from the 5th to the 7th, although levels remained well below normal. Precipitation from the

storm that brought the wintry mix of ice, rain, sleet and snow to a vast area of the country during January 26-27 further eased dryness in the Ohio and Tennessee Valley region.

Historical Perspective: According to preliminary information provided by the National Climatic Data Center, Texas saw its fourth driest January on record, and the driest in over 35 years. In south-central Texas, where the drought reached exceptional status (D4), this was the driest September-January on record. Oklahoma measured its fifth driest January, while Kansas had its third driest January. California recorded its ninth driest January in 115 years and its sixth warmest January.

CANADA: During January, drought conditions in Canada remained relatively unchanged, as can be expected for this time of year. Small regions of northern British Columbia have improved throughout the past two months; however, the southeast portion of the province remains in drought. Due to very low precipitation throughout much of the fall and winter period, drought conditions persist through much of central Alberta. Southern Saskatchewan continues to receive above normal snow accumulations, although water availability is still a significant concern. The dry conditions in west-central Manitoba remain relatively unchanged with below-normal precipitation throughout January. One new feature on the map is the emergence of an abnormally dry region in the southern areas of North-Western Ontario. Additional details of these regions are discussed below.

Vancouver Island and adjacent coastlines continued to receive below-normal precipitation with most areas depreciating throughout the month of January. Central regions of Vancouver Island are the driest, reporting 40-60% below normal in each of the past three months. The southern region of Vancouver Island reported similar conditions, 60-85% below normal over the last three months. Snow pillows in the area are about 250 mm (10 inches) below normal. As a result, the central and southern portions of Vancouver Island have once again been classified in a D0 (Abnormally Dry) condition. The British Columbia interior, including mountainous areas north of Vancouver, are reporting 60-85% of normal precipitation over each of the past three months, representing a departure from normal of about 400 mm (16 inches). The area west of Kelowna and northeast of Abbotsford is also showing below-average precipitation accumulation over the past three months. The Nelson-Cranbrook area continues to report below-normal precipitation over the past three months as well. South of Cranbrook, conditions improved slightly in January. However, to the East, in the southeast corner of the province, precipitation remains well below normal. As such, the drought classification has remained similar in this region to the previous month's assessment. The area west of Williams Lake is still below normal, with less than 40% of normal for January precipitation. In contrast, the Peace River region around Fort St. John has steadily improved to 115-150% of normal precipitation over the past three months, including greater than 150% of normal precipitation in January, which has resulted in a reduction of the D0 (Abnormally Dry) and D1 (Moderate Drought) in that region.

Like British Columbia, the Peace River region in Alberta continues to improve, receiving up to 150% above-normal precipitation over the past three months. In fact, much of the

region is approaching normal precipitation levels, and in a few isolated areas, has even surpassed normal for the five month period. These conditions have resulted in a reduction of both the D0 (Abnormally Dry) and D1 (Moderate Drought) areas throughout this region. In the central region around Edmonton and to the north, areas have also gravitated towards normal. However, looking at short term and long term indicators, the region southwest and southeast of Edmonton is still extremely dry. Dry conditions intensified in the Red Deer and Coronation areas with less than 40% of normal precipitation in each of the past three months. Snow pack in this region is also light, reporting at less than 30 mm (1.2 inches) of snow water equivalent in some places. January precipitation amounts were extremely low in the east-central part of the province, with monthly precipitation below 35 % of normal over a large region. Precipitation accumulation over the five-month period was also below 50% of normal. As a result, the D1 (Moderate Drought) and D2 (Severe Drought) classifications have expanded throughout this region. The bulk of southern Alberta from Red Deer to the Saskatchewan border, and south to the US border, is 40-60% of normal precipitation for January with an area near Lethbridge reporting less than 40%. In contrast, the region east of Calgary (Strathmore area) is reporting above normal, and SWE (Snow Water Equivalent) is approaching 100 mm (4 inches). In the southwest around Pincher Creek, the area remains drier than normal, at 40-60% for January. This region has been consistently below normal for the past six months and as a result remains in a D0 (Abnormally Dry) to a D1 (Moderate Drought) classification.

Southern Saskatchewan continues to receive above normal precipitation. January totals in the south-central regions were more than twice the normal. There is optimism that the above-normal snow accumulations should replenish the on-farm surface water supplies and improve soil moisture going into the spring; thus alleviating some of the lingering drought conditions in the south-central region of the province. However until the snow melts, producers continue to be affected by last summer's drought and will continue to be forced to haul water for livestock. As a result, this region has remained in a D0 (Abnormally Dry) to a D1 (Moderate Drought) classification. Conversely, the southwest region, including Swift Current, Maple Creek, and Consul, continue to be dry and have slipped further below normal during January, as much of the area reported less than 40% of normal precipitation. Although Prince Albert and surrounding area has abundant snow cover, with above average precipitation in January, to the east near Hudson Bay, conditions have not been so favorable. In this region, conditions remain dry with below-average monthly precipitation. Coupled with that and a below-normal fall and winter, this region remains in a D0 (Abnormally Dry) classification.

The Swan River area in west-central of Manitoba continued to receive below average precipitation and are now less than 40% of normal over the past three months, having received less than 10 mm (0.4 inches) in January. The Swan River region has been dry for some time now, receiving less than 75% of average precipitation for the fall and winter period and less than 85% over the twelve month period. Precipitation has been below normal for more than two years in this region; therefore, this area has been classified in a D0 (Abnormally Dry) to a D1 (Moderate Drought) drought condition, even though current stream flows are near normal. In the Interlake region of Manitoba,

precipitation has been reported at 40% of normal over the past two months and 60-85% over the past three, with less than 3 mm (0.12 inches) of precipitation received in January. Although the precipitation amounts are extremely low in this region over the last three months, we have been hesitant to classify this region as a dry or drought region due to excessive fall moisture, which caused significant flooding. As spring approaches, this area will be monitored closely.

A small region of northwestern Ontario around Thunder Bay has received below-normal precipitation throughout the past number of months, resulting in a D0 (Abnormally Dry) classification. Although areas north and east of Thunder Bay are below 40% of normal in January, this area has remained near 60% of normal over the past three months.

There are currently no concerns for drought in Quebec or Atlantic Canada.

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- AAFC-PFRA District and Regional Offices
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- 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
- Saskatchewan Environment Fire Management & Protection Branch

MEXICO: The National Meteorological Service ranked January 2009 as the 10th driest in the period of 1941-2009. Nationwide rainfall averaged 13.5 mm (0.53 in), which was 47% below normal (25.5 mm, 1.0 in). Monthly precipitation was associated with the passage of six cold fronts and the influx of moist air, mainly from the Pacific Ocean, enhanced by the tropical jet stream.

The dry conditions during the month affected most of the country with the exception of Distrito federal and the states of Campeche, Hidalgo and Quintana Roo, which recorded, respectively, anomalies of 68.5%, 1.9%, 7.5% and 5.3% above normal.

As for drought conditions during January, we observed an increase in the areas previously ranked as abnormally dry (condition D0) in the northeastern and northern parts of the country. The Peninsula of Baja California continued to experience categories of abnormally dry and severe drought (D0 and D2) without any significant change from the previous month.

Hydrological drought, which had affected the central region of the country during the last five months, continues with almost no change. This “dry belt” extends from West to East covering most of Nayarit, the coast of Jalisco an Colima, northern and central Michoacán, Guanajuato, Estado de México, Distrito Federal, Morelos, Tlaxcala, northern and central

Puebla, Central Veracruz and northern Guerrero. In this “belt”, dry and drought conditions D0 and D2 are present, this last mainly in some regions of Michoacán, Estado de México and Distrito Federal where, in spite of some precipitation during the second half of the month, conditions persisted. It is important to note that the National Water Commission has implemented some policies to avoid supply shortages due to the low level in some dams (those which provide water to the population) in the Estado de Mexico and Distrito Federal.

In the southeastern of the Country and the peninsula of Yucatán, conditions have increased from D0 to D1 in Chiapas, Campeche and Yucatán. Tabasco has some areas with condition D1 and Quintana Roo has some with D0.

CONAFOR (the National Forest Commission) reported that in the period from January 1st to 29th, 2009, there have been 206 fires. These have affected an estimated area of 950 ha (2,347 acres). Ninety-four percent of the areas affected were mostly covered by scrubs and grass, with the other 6% wooded areas. The states with the most fires were Distrito Federal, Tlaxcala, Veracruz, Estado de México, Hidalgo, Michoacán, Chiapas, Puebla, Jalisco and Guerrero. These areas are within the “dry belt” described above.

CONAGUA (the National Water Commission) reported that during January there was a decrease in water levels for the dams in the northwestern region (84.4% to 80.4%), Northeastern (84.6% to 83.1%), North-central (97.3% to 96.9%), Central (85.3% to 81.5%) and Southern (95.3% to 92.4%). These levels are generally normal for this time of the year.