

North American Drought Monitor--- September 2005

Canada: September rainfall was near average across most of northern, central, and coastal British Columbia. Precipitation in the interior ranged from below average in south central portions to well above average in the southeast. Streamflows continued to experience seasonal decline, but were somewhat improved relative to long-term average flow levels.

Several heavy rainfall events in the southwestern Prairies resulted in well above average rainfall across southern Alberta and southwest Saskatchewan, delaying crop maturity and interrupting harvest operations. Below average rainfall in most of the Peace River region and well below average rainfall in the area centred by Edmonton, produced areas of moderate drought (D1) and expanded the areas of abnormally dry (D0) conditions. Southeast Saskatchewan and southwest Manitoba received very little September rainfall, advancing crop maturity and accelerating harvest operations. Forty-four percent of reporters in southeast Saskatchewan rate topsoil moisture as short or very short, but there were no reported negative impacts. Hard and dry fields in southwest Manitoba impeded some fall field work. Most of southern Manitoba received below average rainfall, while the northern forested region of the province received well above average amounts. Northern regions of Alberta and Saskatchewan received highly variable precipitation during September, ranging from 30% of average at Buffalo Narrows to greater than 200% of average at Stony Rapids.

September rainfall was near or below average across most of northern Ontario. Near average amounts improved the area of moderate drought (D1), which was reclassified as moderately dry (D0). Several streamflow stations in northern Ontario reported below 70% of average September flow, with five stations in the northeast reporting below 30% of average using the criteria defined by the Ontario Ministry of Natural Resources. In southern Ontario, rainfall was below average in the west, grading to above average in east, improving eastern areas that had been classified as experiencing moderate drought. Several streamflow stations in southern Ontario reported below 50% of average September flow, with nine stations reporting below 30% of average using the criteria defined by the Ontario Ministry of Natural Resources. No negative agricultural impacts due to drought were reported at the end of September.

Precipitation in Quebec was mostly near or above average, improving the area south of Quebec City that had previously been abnormally dry (D0), and downgrading the area northwest of that center from moderate drought (D1) to abnormally dry (D0). Rain and humid weather delayed harvest operations in the Bas-Saint-Laurent–Gaspésie and Saguenay–Lac-Saint-Jean regions. There were no reported negative impacts due to drought in the province.

Above average September precipitation alleviated dry conditions in Newfoundland, Prince Edward Island, and southern Nova Scotia, while Cape Breton remained abnormally dry (D0). New Brunswick received above average September rainfall, and monthly streamflow runoff was well above average across most of the province.

Mexico: Wide sections of México experience dryness during September, after wet conditions reported in July and August. According to preliminary data provided by the National Meteorological Service, September was the fifth driest September nation wide since 1941. The National Water Commission (CNA) reported that 11 of the 13 hydrological divisions received precipitations below the monthly long term average. The largest anomaly (60% below normal) was reported in Pacifico Norte (mainly Sinaloa) and Lerma-Santiago-Pacífico (central-western Mexico) divisions. The hydrological region Valle de México, which includes the Federal District (Mexico City) and portions of the surrounded states, reported during September 56% below normal precipitations. Despite a dry September, most of the dams in central-México report levels from near normal to normal, but decreasing. An early end of the rainy season in parts of northern and central Mexico was favored by both the strengthening of a high pressure ridge into México, and the mean tropical storm track that precluded land falling storms from affecting Mexico.

Changes during September includes the expansion of abnormally dry conditions over Baja California Sur, a westward expansion of the abnormally dry area (D0) over Tamaulipas and Nuevo León, that now includes most of Coahuila and eastern Chihuahua, in addition a small area of D1 (moderate drought) were introduced over east-central Coahuila. The largest increase of abnormally dry conditions (D0) during September took place over central-western Mexico, where the D0 category was introduced, this change is well reflected by the September Palmer Drought Index map. The only change in southeastern Mexico is the elimination of the abnormally dry conditions over the northern tip of the Yucatan peninsula.

United States: September 2005 will be remembered for the landfall of two powerful hurricanes along the Gulf Coast. Katrina, which came ashore at the end of August, and Rita both brought strong winds, heavy rains and large surges along the coasts of Texas, Louisiana, Mississippi, and Alabama. In particular, Katrina worked its way up the Mississippi Valley in early September and then turned northeast into the Ohio Valley and into the Northeast bringing with it welcomed rains and improvement to those areas that were seeing drought conditions. Improvements were noted and marked by the elimination of most D1, D2 and D3 in northeast Texas, Louisiana, Arkansas and southern Missouri.

For most though, September was a warm month with almost all locations east of the Rocky Mountains seeing an above-normal month as far as temperatures were concerned. The Southwestern states of Arizona and New Mexico also shared in this unseasonal warmth as did Alaska. As for precipitation, most of the southern Plains and the Eastern Seaboard from northern Florida up to southern New England saw a very dry month. In fact, it was the driest September on record (going back to 1895) for Georgia, South Carolina and Maryland with Virginia and Delaware experiencing their second driest September ever. Even with the locally heavy rains of Rita, Texas recorded their 10th

driest September. With the dryness came wide expansion of D0 and D1 into the Mid-Atlantic region (South Carolina up to New Jersey) with D2 even appearing in central North Carolina and extreme south-central Virginia. Soil moisture, pastures and even water supply impacts were readily apparent in these areas.

Fueled by long-term drought and record or near-record wetness over the past Water Year, conditions were ripe fuel-wise, which has resulted in many large fires across the West during the recent month. The National Interagency Fire Center reported at the end of September that over 8.1 million acres had burned nation-wide. This ranks the 2005 season as the 2nd highest season since 1960, second only to the year 2000. The recently concluded Water Year finished of dry in the Pacific Northwest with parts of north central Oregon seeing record dryness. Due to some very late season dryness (June-September), D3 was introduced to parts of extreme north-central Oregon and south-central Washington where streamflows have been well below average for most of the year. Statewide rankings show Oregon having their 2nd driest, Idaho their 4th driest, and Montana their 6th driest July-September on record. Generally speaking, low reservoir levels across the West still reflect the long-term (5-7 years or more in places) hydrological nature of this drought even given the influx of heavy precipitation across Nevada, Utah and parts of northern Arizona and southern California over the past Water Year. The coming Water Year will have a lot to say about where things go in the future within the Colorado and Columbia River Basins.

Although rains were mixed in both Alaska and Hawaii, they both generally saw favorable precipitation patterns over the past 30 days leading to the removal of D0 in Alaska and a removal of D0 in the western most islands of Hawaii.